Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Greenwood Beach Restoration Project Draft Initial Study/MND

Lead Agency: Town of Tiburon — Contact Person: Dina Tasini

Mailing Address: 1505 Tiburon Blvd. — Phone: (415) 473-6530

City: Tiburon — Zip: 94920 — County: Marin

Project Location: County: Marin — City/Nearest Community: Tiburon

Cross Streets: Tiburon Blvd. at Trestle Glen Blvd. — Zip Code: 94920

Longitude/Latitude (degrees, minutes and seconds): ____° ____ ′ ____ ″ N / ____° ____ ′ ____ ″ W Total Acres: ____

Assessor's Parcel No.: ____ Section: ____ Twp.: ____ Range: ____ Base: ____

Within 2 Miles: State Hwy #: SR 131, US 101 — Waterways: San Francisco Bay

Airports: ____ Railways: ____ Schools: ____

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☒ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other: ____

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: Beach Restoration

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Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☒ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☐ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☐ Public Services/Facilities
☒ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☐ Solid Waste ☐ Toxic/Hazardous ☐ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☐ Water Supply/Groundwater ☒ Wetland/Riparian ☐ Growth Inducement ☐ Land Use ☐ Cumulative Effects ☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Park

Project Description: *(please use a separate page if necessary)*

The project calls for the restoration and enhancement of Greenwood and Brunini beaches at Blackie's Pasture Park on Tiburon Blvd. using "nature-based" or "living shoreline" solutions to reduce rates of shoreline erosion, improve shoreline habitat and recreational values, and improve shoreline sea-level rise resilience. Local sediment sources would be used. 75 cy of grading would occur.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

POSTED 6/25/2024 TO 7/25/2024

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

_____ Air Resources Board	X Office of Historic Preservation
_____ Boating & Waterways, Department of	_____ Office of Public School Construction
_____ California Emergency Management Agency	_____ Parks & Recreation, Department of
_____ California Highway Patrol	_____ Pesticide Regulation, Department of
_____ Caltrans District # _____	_____ Public Utilities Commission
_____ Caltrans Division of Aeronautics	X #2 Regional WQCB #
_____ Caltrans Planning	_____ Resources Agency
_____ Central Valley Flood Protection Board	_____ Resources Recycling and Recovery, Department of
_____ Coachella Valley Mtns. Conservancy	X S.F. Bay Conservation & Development Comm.
_____ Coastal Commission	_____ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
_____ Colorado River Board	_____ San Joaquin River Conservancy
_____ Conservation, Department of	_____ Santa Monica Mtns. Conservancy
_____ Corrections, Department of	_____ State Lands Commission
_____ Delta Protection Commission	_____ SWRCB: Clean Water Grants
_____ Education, Department of	_____ SWRCB: Water Quality
_____ Energy Commission	_____ SWRCB: Water Rights
X Fish & Game Region # 3	_____ Tahoe Regional Planning Agency
_____ Food & Agriculture, Department of	X Toxic Substances Control, Department of
_____ Forestry and Fire Protection, Department of	_____ Water Resources, Department of
_____ General Services, Department of	
_____ Health Services, Department of	_____ Other: _____
_____ Housing & Community Development	_____ Other: _____
X Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency) Starting Date: June 26, 2024 Ending Date July 26, 2024

Lead Agency (Complete if applicable):

Consulting Firm: Grassetti Environmental Consulting, Inc.
Address: 3501 Civic Center Drive Suite 308
City/State/Zip: Berkeley, CA 94705
Contact: Richard Grassetti
Phone: 510 849-2354

Applicant: Marin County Department of Public Works
Address: 3501 Civic Center Drive Suite 308
City/State/Zip: San Rafael, CA 94903
Phone: (415) 473-6530

Signature of Lead Agency Representative: Dina Tasini **Date:** 6/14/2024

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

DRAFT INITIAL STUDY/

MITIGATED NEGATIVE DECLARATION FOR THE

GREENWOOD BEACH RESTORATION PROJECT

Prepared for:

Town of Tiburon
1505 Tiburon Blvd
Tiburon, CA 94920

Prepared by:

Grassetti Environmental Consulting
7008 Bristol Drive
Berkeley, CA 94705

June 10, 2024

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADWF	average dry weather flow
APE	Area of Potential Effect
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CAA	Clean Air Act
CAP/RCPS	Clean Air Plan/Regional Climate Protection Strategy
CARB	California Air Resources Board
CDFW	California department of Fish and Wildlife
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO2E	carbon dioxide equivalent
CY	cubic yards
DBA	decibel, "A" weighted
DPM	diesel particulate matter
DMMO	Dredged Material Management Office
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
gpd	gallons of wastewater per day
GWP	Global Warming Potential
HTL	high tide line
LOS	level of service
MCSTOPPP	Marin Countywide Stormwater Pollution Prevention Program
mgd	million gallons per day
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NAVD88	North American Vertical Datum (1988) (approx. mean sea level)
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OHP	State Office of Historic Preservation
O3	ozone
PCBs	polychlorinated biphenyls
PM10	particulate matter less than 10 microns
PM2.5	particulate matter less than 2.5 microns
RBSD	Richardson Bay Sanitary District
RWQCB	Regional Water Quality Control Board
SCH	State Clearinghouse
SOx	sulfur dioxide

ENVIRONMENTAL DETERMINATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Greenhouse Gas Emissions		Public Services
	Agricultural and Forestry Resources		Hazards and Hazardous Materials		Recreation
	Air Quality		Hydrology/Water Quality		Transportation/ Traffic
X	Biological Resources		Land Use/Planning	X	Tribal Cultural Resources
X	Cultural Resources		Mineral Resources		Utilities/Service Systems
	Energy		Noise		Wildfire Hazards
	Geology/Soils		Population/Housing	X	Mandatory Findings of Significance

DETERMINATION: On the basis of this initial evaluation:

I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	X
I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.	

Dina Tasini

Dina Tasini, Director of Community Development
Town of Tiburon

6/10/2024

Date

SECTION V – REFERENCES: Identifies source materials that have been consulted in the preparation of the IS.

SECTION IV – REPORT PREPARERS: Identifies the firms and individuals who prepared the IS.

APPENDICES - Includes technical reports, comments and responses on the Draft IS/MND, and Mitigation Monitoring and Reporting Program.

PROJECT DESCRIPTION

Project Location

The Greenwood Beach Restoration Project (the project) is a nature-based beach restoration and shoreline erosion protection project proposed on approximately 1.4 acres of the Richardson Bay shoreline at Blackie's Pasture Park in Tiburon, California. The project area is situated on lands owned by the Town of Tiburon (APNs: 055-041-18, 055-041-17, 055-014-12) and intertidal lands under a Public Trust easement held by the State of California. The site is accessed from the terminus of both Greenwood Beach Rd. and Blackie's Pasture Rd., from Tiburon Blvd. (Figure 1).

This document uses local beach and marsh place-names adapted from the closest adjacent trails and roadways identified in the Town of Tiburon Bay Trail Gap Study (Town of Tiburon, 2012). The predominantly sandy beach at the southwest end of the park, nearest the end of Greenwood Beach Road is referred to as "Greenwood Beach". The small eastern pocket sand beach adjacent to the northeast end of Brunini Way is referred to as "Brunini Beach", and the small salt marsh at the end of Brunini Way is called "Brunini Marsh". The proposed project would take place on both Greenwood and Brunini beaches (Figure 2).

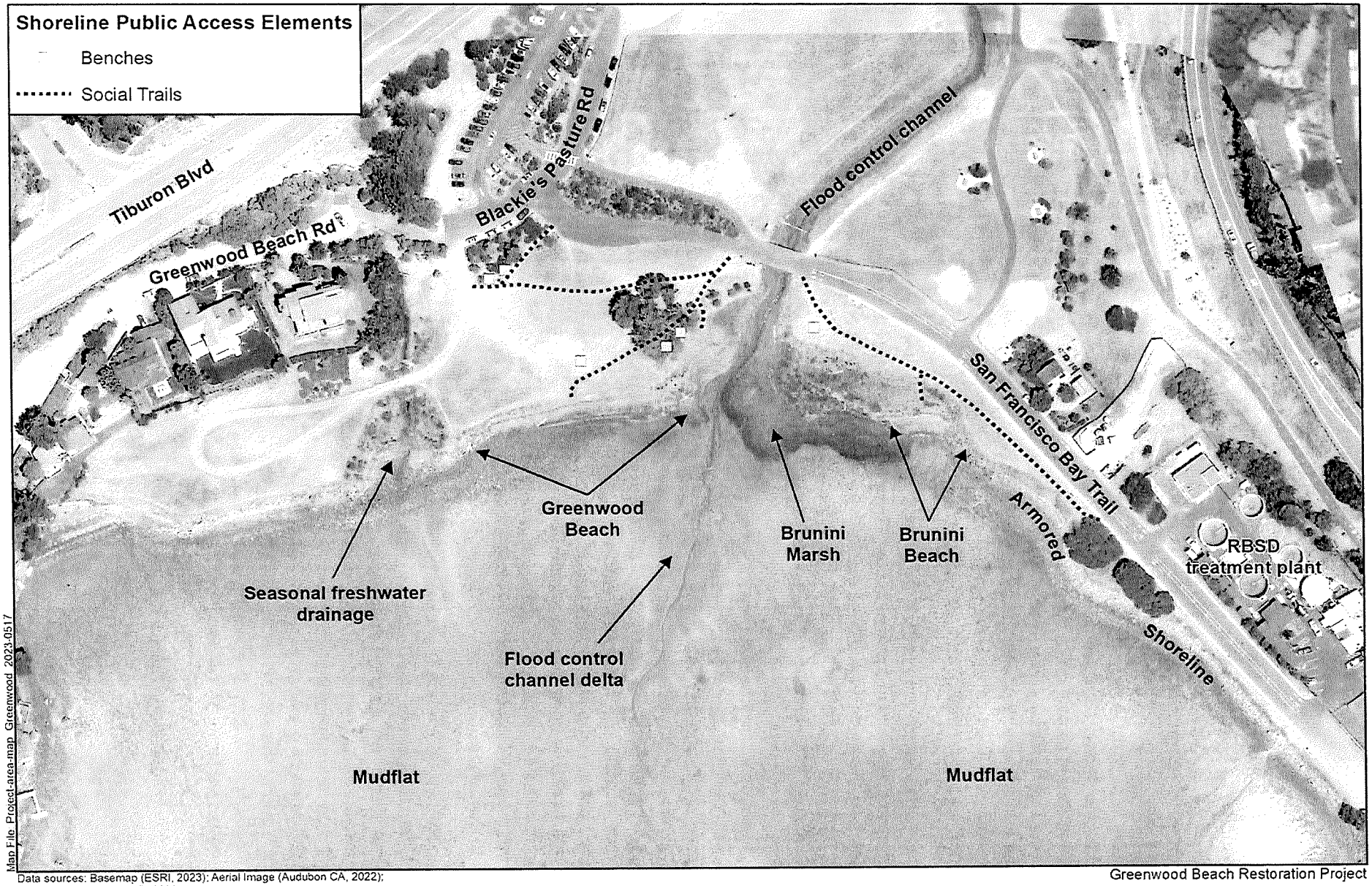
Surrounding Land Uses

Greenwood and Brunini beaches are situated on the shoreline of a reclaimed, filled historical salt marsh that was historically used as a private horse pasture, and is currently a public park (Blackies Pasture Park) (Figure 2). The beaches are bordered to the south by wide Richardson Bay tidal flats. To the north of the beaches are the nearly level lowlands of Blackie's Pasture Park. A flood control channel draining a portion of the Ring Mountain watershed runs through the park and enters Richardson Bay between Greenwood and Brunini beaches, bisecting the project area. A paved bicycle/pedestrian trail (part of the San Francisco Bay Trail) runs from the Blackie's Pasture parking lot and along the east side of the project area, adjacent to Brunini Beach, to the Tiburon Town center. The Richardson Bay Sanitary District (RBSD) water treatment plant is located on the east side of this trail. Beyond the immediately surrounding parklands and RBSD infrastructure are medium-density residential developments.

Existing Site Conditions

Greenwood and Brunini beaches exist at the head of a shallow embayment of Richardson Bay. They are separated by a flood control channel delivering sediment from Ring Mountain to an intertidal delta and salt marsh bordering tidal flats up to 470 feet wide (Figure 2). Greenwood Beach is on the west side of the flood control channel and extends from that channel to a small seasonal freshwater drainage channel approximately 250 ft to the west.

Greenwood Beach was historically a mixed sand and gravel beach. For decades, the beach was wide and sandy and was held in place by high salt marsh that formed on the west side of the flood control channel (Figure 3; Photo 1). The salt marsh helped retain the beach sediments by restricting wave-driven drift eastward into the flood control channel.



Map File: Project-area-map_Greenwood_2023-0517

Data sources: Basemap (ESRI, 2023); Aerial Image (Audubon CA, 2022); Public Access (GillenH2O, 2022)

1:1,800 (1" = 150' at letter size)

0 75 150 ft

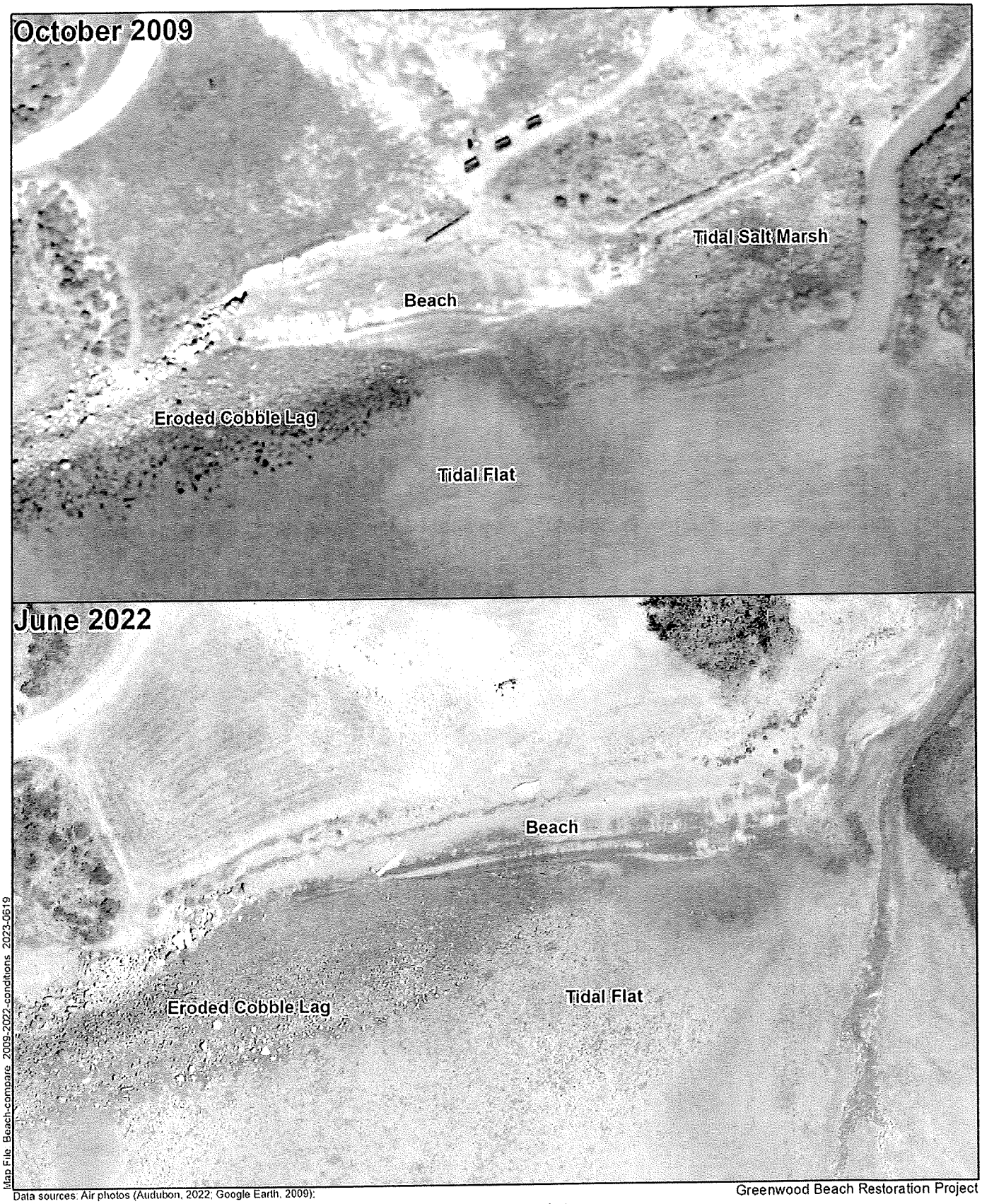
0 25 50 m

Greenwood Beach Restoration Project

Figure 2

Project Area and Existing Features

Gillenwater GillenH2O Consulting



Map File: Beach-compare_2009-2022-conditions_2023-0619

Data sources: Air photos (Audubon, 2022; Google Earth, 2009);

Greenwood Beach Restoration Project

1:600 (1" = 50' at letter size)

0 25 50 ft

0 7.5 15 m

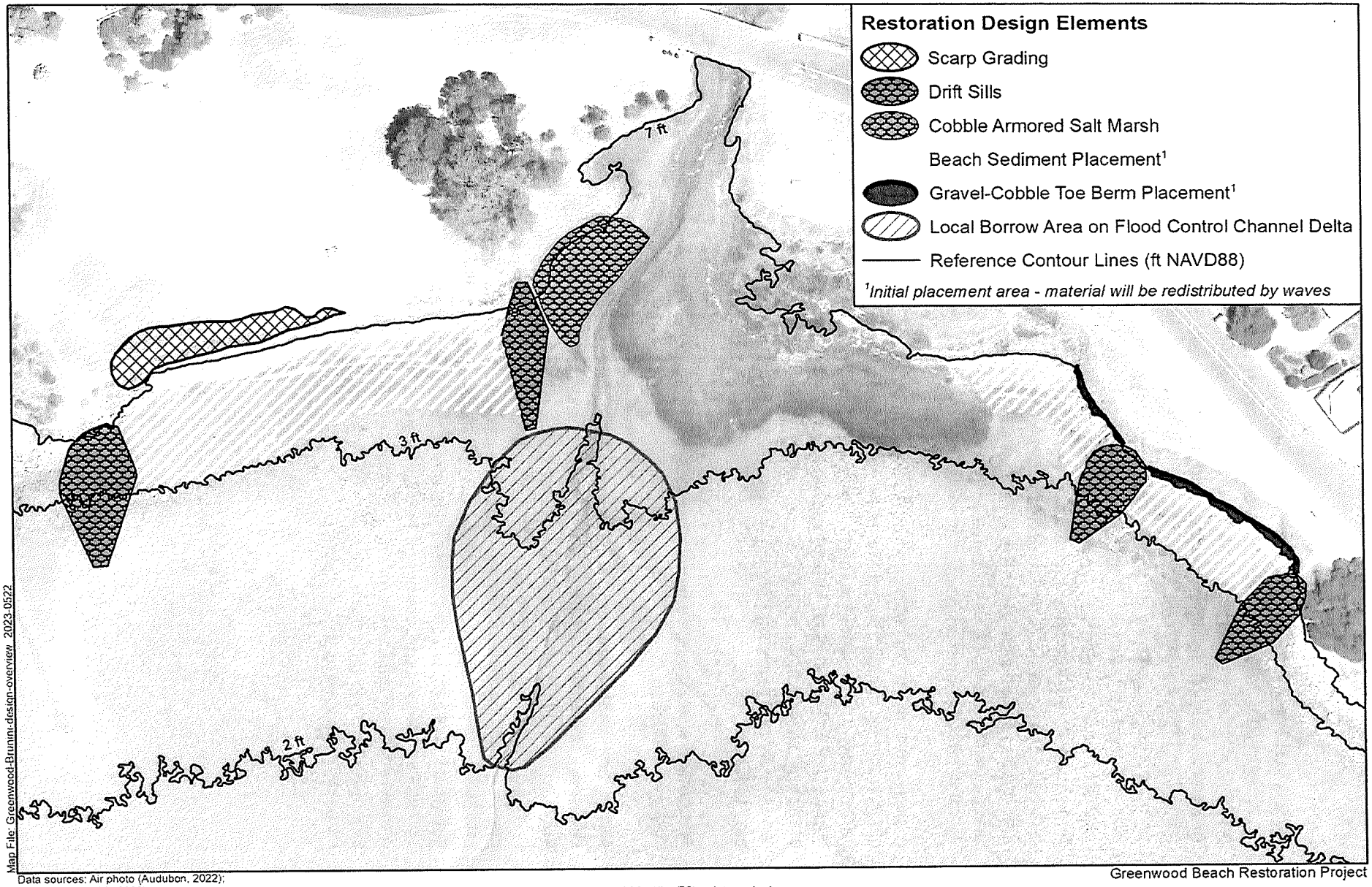
Gillenwater GillenH2O Consulting

Figure 3

Greenwood Beach 2009 vs. 2022 Conditions

Photo 3. Brunini Beach in June 2022 - looking west (photo by P. Baye)

Photo 4. Rocky shore below the steep bluff to the east of Brunini Beach in September 2022 (photo by P. Baye)



Map File: Greenwood-Brunini-design-overview 2023-0522

Data sources: Air photo (Audubon, 2022); Design (GillenH2O, 2023)

Greenwood Beach Restoration Project

1:900 (1" = 75' at letter size)

0 37.5 75 Feet

0 10 20 Meters

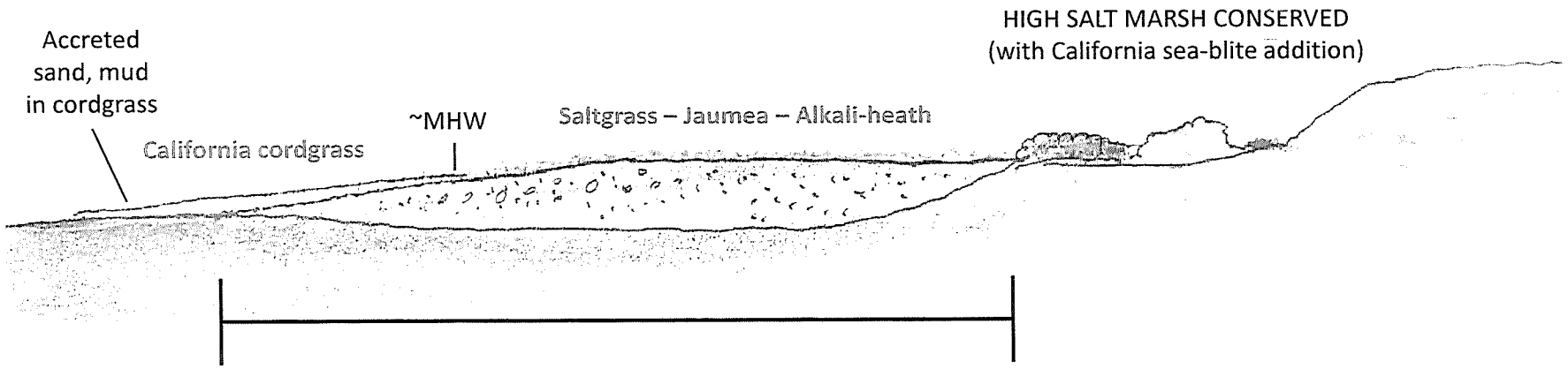
Gillenwater GillenH2O Consulting

Figure 4

Greenwood and Brunini Beach Restoration Design Elements

COBBLE SALT MARSH DRIFT-SILL

- Muddy sand/gravel matrix core, intermixed with boulders (as needed)
- Cobble and gravel embedded lag surface or mixed in mud
- Vegetative stabilization by salt marsh turf in mud
- Constructed top elevation near beach crest elevation (~8 ft NAVD88)
- Slopes bayward at ~10:1 (H:V); side slopes ~4:1
- Sequential sand accretion in vegetation canopy raises elevation over time



Drift-sill length approximates or exceeds maximum width of downdrift beachface (~60-80 ft)

Greenwood Beach Restoration Project

Figure 5

Peter Baye, PhD

Drift Sill Conceptual Design Rendering

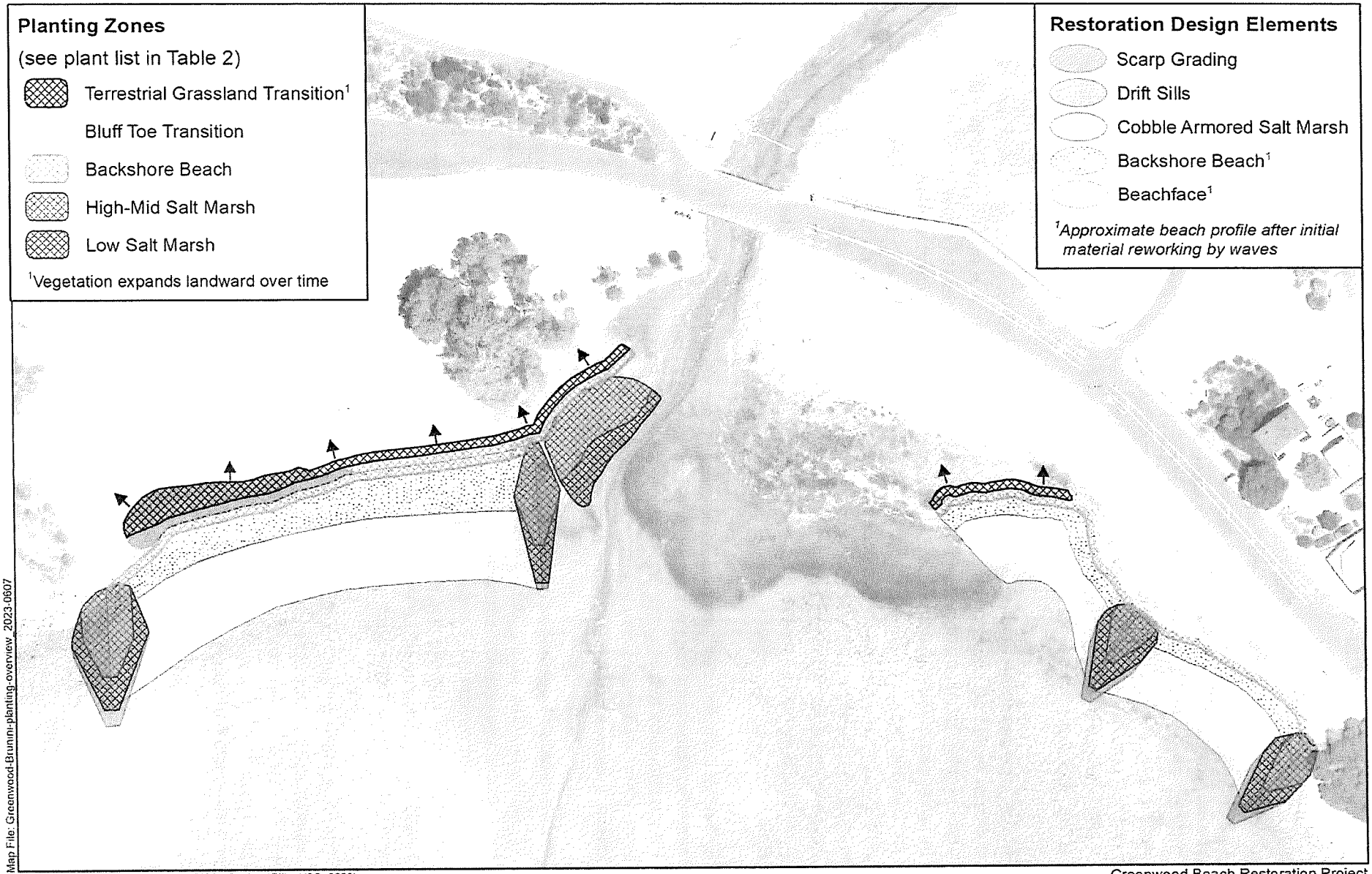
of the expanded beach, a narrow lens of an imported mixture of gravel and cobble would be placed over the existing boulders at the toe of the cliff (at the top of the beach profile) to form a relatively erosion-resistant, mobile berm that would buffer the cliff against erosion and retreat. The proposed beach material sources and their end uses are described in further detail below.

- **Imported gravel and cobble for toe berm.** Quarried, rounded gravel and cobble material from commercial sources potentially as far away as Sacramento would be imported to the site for the toe berm feature at Brunini Beach. The material would be placed at the toe of the shoreline bluff either by direct dumping out of the delivery truck, or by an excavator or loader working from a local stockpile. Up to 5 truckloads of this material would be delivered to the site, assuming a standard 10 CY dump truck is used for delivery.

- **Locally-borrowed sand and gravel.** The flood-control channel delta is composed of a suitable mixture of sand and gravel for beach nourishment, closely matching the grain size distribution of the existing beaches. The project would involve excavating approximately 925 cubic yards (CY) of mixed sand and gravel from a 0.41-acre borrow area on the central delta. This borrow area would have a maximum depth of 2 ft and have a minimum bottom elevation of 1.3 ft NAVD88. The existing low-tide channel through the delta would be enlarged at the outlet of the depression to improve tidal drainage after construction. The depression would be refilled by natural sedimentation from storm outflows of the flood control channel and by deposition of bay mud. It is expected to fill in over the course of a single winter with typical rainfall/runoff events. In the case of extreme multi-year drought, it would fill in two to three years by natural bay mud deposition.

  Prior to initiating excavation, appropriate sediment control measures would be implemented to prevent migration of sediment into open water areas outside of the work area (see discussion in Section X, Hydrology and Water Quality). Sand and gravel material would be excavated from the borrow area by a low ground pressure excavator and directly placed on the shoreline, or loaded into low-ground-pressure (track) dump trucks for transport and placement at the desired end use area for subsequent reworking. Direct transport of material to the Brunini shoreline may not be possible due to the soft mudflats that exist between the delta and the eastern shoreline. If direct transport to Brunini Beach is not possible, material would be dumped on the Greenwood Beach shoreline, and reloaded into a wheeled dump truck for transport to Brunini Beach via the paved Bay Trail. The material would be then either dumped directly over the bluff onto the shoreline, or deposited in an upland temporary stockpile where a wheel loader or excavator would relocate it to the desired end use location for subsequent reworking.

- **Imported dredged bay sand from Petaluma River.** The project would import recycled, dredged San Francisco Bay sand matching the local beach sand grain



Map File: Greenwood-Brunini-planting-overview_2023-0607

Data sources: Air photo (Audubon, 2022); Design (GillenH2O, 2023); Planting plan (Baye, 2023)

Greenwood Beach Restoration Project

1:900 (1" = 75' at letter size)

0 37.5 75 Feet

0 10 20 Meters

Figure 6

Gillenwater GillenH2O Consulting

Greenwood and Brunini Beach Preliminary Revegetation Plan

8. **Long term site maintenance and adaptive management.** Following project implementation, the site would continue to be managed by the Town of Tiburon as part of Blackie's Pasture Park, as it is currently. The drift-sills are expected to resist significant erosion and are likely to accrete (grow) with trapped sand in the upper shoreline vegetation. The beaches confined by the drift-sills are designed to be more stable than the former beaches, but within a decade they may benefit from replenishment of sand to compensate for gradual erosion and sea-level rise. Gravel is much less likely to be eroded away from the beach than sand, but also could be replenished opportunistically with imported material, as needed.

   Beach nourishment needs are anticipated to be on the order of 100-300 CY over a 10-year time period, occurring in 10-50 CY nourishment events. Suitable material would be sourced from dredging operations occurring in the region. Beach logs (driftwood) also would be replaced as needed. Beach nourishment of Greenwood Beach would likely occur by mechanical placement of sand on the sloping intertidal beach at the far west (updrift) end in late fall, before high tides and high wave action occurs. Nourishment of Brunini beach would likely occur by direct placement (dumping) of sand over the bluff edge to the shore, to be eroded and re-deposited by waves.

Post-Construction Site Evolution

The initially placed beach sediments would only be temporary features. Following their placement, waves would erode and re-deposit the sediments, re-shaping them into natural beach forms that would continue to change seasonally, and over decades. The beaches would flatten and become coarser (i.e., more gravelly) under the influence of winter storms, and become sandier, slightly steeper, and higher during calm periods of constructive wave action (usually spring, summer, and fall). A rendering of potential beach planform morphology and vegetation colonization after approximately three years is provided in Figure 7.

Over decades, the high tide line is expected to retreat landward, driven by major storm wave action and extreme high tides that reach higher as sea-level rises. The beach is expected to retreat landward as well (where not confined by the shoreline bluff). Logs placed on the beach also would be driven landward by waves over time and rolled into native vegetation at the back of the shore. Adaptive management, as described above, would increase stability of the beaches and help to reduce sea-level-rise impacts to the beaches.

Construction

Construction Equipment and Crews

The project would be constructed using typical land-based equipment. Construction activities taking place from the soft sediments of the shoreline and offshore areas would require low ground pressure equipment, potentially supported by crane mats in some circumstances. The construction equipment proposed for this project includes:

- Low ground pressure excavator (2-4)
- Low ground pressure (track) dump truck (2-4)
- Wheel loader (1-2)
- Compact track loader (1)
- Wheeled dump truck (1-2)
- Track bulldozer (1)
- Concrete breaker
- Various hand tools and small equipment

Equipment would be delivered to and retrieved from the project site by flatbed truck. Equipment would be staged and maintained in a dedicated upland staging area behind Greenwood Beach, adjacent to the work area (Figure). This area would be fenced off to prevent public access.

The construction crew would likely consist of 5-10 people, depending on construction sequencing and the number of concurrent activities taking place at the site at a given time. Crew members would park at the Blackie's Pasture public parking lot during construction.

Public Access During Construction

Public access within the active work area along the shoreline and backshore would be restricted during earthwork activities (Figure). Temporary construction fencing and/or symbolic visual barriers (cordon, barricade tape, cone lines, etc.) would be installed around these work areas and warning signs would be posted to prevent the public from accessing the work areas. In addition, access along the Bay Trail immediately adjacent to the construction area would be controlled by flagger (traffic control person) to prevent bicycle/pedestrian conflicts with construction vehicles utilizing the Bay Trail. Signs announcing the project construction timeline and public access restrictions would be posted at the Blackie's Pasture public parking lot at least one month in advance of construction. Notice also would be posted on the Town of Tiburon and Bay Trail websites. It is anticipated that the public access restrictions would be in place for approximately 8 weeks during construction in the late summer-fall (see the construction schedule discussion below).

Construction Schedule and Approach

The project would be constructed as early as 2024, depending on the timing of implementation funding. Construction would take place late in the dry season, likely in the August – October timeframe, though construction could potentially extend through November as necessary. Earthwork is anticipated to take approximately two months to complete, with revegetation and driftwood placement activities extending further into the winter depending on precipitation timing and intensity. All work on the shoreline, below the high tide line, would cease by November 30 to protect migrating salmonids. Construction activities on the shoreline would occur during low tides on emergent tidal flats and beach surfaces (i.e., in the dry), which would restrict potential work hours.

Construction would take place on weekdays during daylight hours, between 7AM and 5PM, consistent with the Town of Tiburon municipal code. No night work or work under lights is proposed. Work on weekends is not proposed but may be necessary since the work is dependent on tide levels. Weekend work would occur only if necessary to ensure earthwork is completed by the end of November, and would be consistent with Town of Tiburon code requirements. There would be no work on observed holidays.

Site Preparation, Resource Protection, and Site Restoration

Prior to earthwork commencement, all preconstruction biological surveys, habitat protection measures, and worker training required in the project permits and all stormwater and sediment management measures required in the project Water Pollution Control Plan (WPCP) would be implemented. Equipment staging and temporary material stockpile areas would be identified and established, and temporary construction fencing, visual barriers, and signage would be installed around the work area.

Following earthwork completion, equipment would be demobilized from the site, temporary equipment staging and material stockpile locations and construction fencing would be decommissioned, and unintentional damage to public access infrastructure (trails, paths, benches, etc.) and landscaped areas would be restored to pre-project conditions. Erosion control elements (straw wattles, seed-free rice straw, etc.) would be installed around disturbed areas as necessary.

State and Local Agency Approvals Utilizing this Document

- Town of Tiburon (CEQA Lead Agency) approval of the proposed project construction at its Blackie's Pasture Park
- San Francisco Bay Conservation and Development Commission (CEQA Responsible Agency). San Francisco Bay Permit
- California State Lands Commission (CEQA Responsible Agency). Public trust easement consistency.

III. INITIAL STUDY CHECKLIST

The initial study checklist recommended by the CEQA Guidelines is used to describe the potential impacts of the proposed Project on the physical environment.

I. Aesthetics

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X

Discussion

a, c) The proposed project would temporarily alter views of Greenwood and Bernini beaches during the approximately 2-month construction period. Construction equipment would be visible on the shore and in the marsh/beach area intermittently during this time. Post construction, views of the beaches would be improved compared to existing conditions, with sandy beaches and enhanced marsh vegetation replacing concrete and asphalt debris, mud flats, and artificial rocky shore areas. Overall, this impact would be ***less than significant.***

b) US Highway 101 (also incorporates US 1 in the project area) is a designated State Scenic Highway. However, the proposed project would be about 2 miles from the highway and would not be visible from it. Therefore, the project's impact would be **less than significant.**

II. Agricultural and Forestry Resources

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Discussion

a-e) The project site is covered by existing park facilities, including the existing beach and uplands. There are no agricultural or forested lands on or in the vicinity of the park. Therefore, the project would not result in the conversion of farmland or forestland to non-agricultural uses would have **no impact** on agricultural or forest resources.

Discussion

a) The BAAQMD *2017 Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS)*, which provides a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. The 2017 *CAP/RCPS* identifies potential rules, control measures, and strategies that BAAQMD can pursue to reduce air quality and greenhouse gas emissions in the Bay Area. Determination of whether a project supports the goals in the 2017 *CAP/RPCS* is achieved by a comparison of project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project is consistent with the goals of the 2017 *CAP/RPCS*. As presented in the subsequent impact discussions, the proposed project would not exceed the BAAQMD significance thresholds; therefore, the proposed project would support the primary goals of the *2017 CAP/RCPS* and would not hinder implementation of any of the control measures. Therefore, this impact would be **less than significant**.

b) ***Construction Impacts***

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. The BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to significance thresholds. The Sacramento Metropolitan Air Quality Management District (SMAQMD) Road Construction Emissions Model (Version 9.0.1) was used to quantify construction-related pollutant emissions (SMAQMD 2022).

Table AQ-1 provides the estimated short-term construction emissions for the proposed project. The average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds. Construction-related emissions would be below the BAAQMD significance thresholds.

Table AQ-1: Estimated Daily Construction Emissions (pounds)

Condition	ROG	NOx	PM_{10}[1]	$PM_{2.5}$[1]	CO
Construction	2.06	20.50	0.96	0.83	24.45
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No

NOTE: PM_{10} and $PM_{2.5}$ significance thresholds apply to exhaust emissions only.
SOURCE: SMAQMD, 2022.

BAAQMD's *CEQA Air Quality Guidelines* require that projects implement best management practices (BMPs) to control fugitive dust and exhaust emissions regardless of the estimated construction emissions including:

related construction and operational emissions would be below the significance thresholds. Therefore, the proposed project would not be cumulatively considerable and cumulative impacts would be **less than significant.**

Conclusion

As shown, the proposed project construction and operational emissions would be **less than the BAAQMD significance thresholds** per BAAQMD's *CEQA Air Quality Guidelines.*

c) The proposed project would constitute a new emission source of diesel particulate matter (DPM) from construction activities (on-road haul truck and off-road equipment exhaust emissions). Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. The proposed project is a short-term construction activity (approximately two months) and exhaust PM_{10} and $PM_{2.5}$ emissions (see Table AQ-1) would be 1.2 and 1.5 percent of BAAQMD's significance thresholds, respectively. Off-road construction equipment would be regulated per the State's In-Use Off-Road Diesel Vehicle Regulation and on-road haul trucks would be regulated per the State's Truck and Bus Regulation. Therefore, emission of substantial concentrations of pollutants and associated health impacts would be **less than significant.**

d) The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the proposed project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people. The proposed project would not involve operational activities that generate odors. Therefore, odor impacts would be **less than significant.**

California 2022). The long-term and short-term ecological outcomes of similar projects in the region were also reviewed by the project team. "Desktop" review of biological resources included examination of published literature, related environmental assessments and regional biological conservation plans, aerial photo analysis, and biological databases.

In addition to the project site, biological conditions and potential impacts are discussed briefly for the Petaluma River dredged sand stockpile at Shollenberger Park, which is a proposed material source for this project.

Biological Resources Setting

The shoreline habitat complex of Blackie's Pasture occurs within northern Richardson Bay, at the northwest end of the Tiburon Peninsula's Tiburon Linear Park. Tiburon Linear Park lies above rocky shore intertidal habitats (steep rocky slopes and cliffs, wave-cut intertidal benches) with natural bedrock outcrops, artificial boulder revetments (rock slope protection), and pockets of natural remnant natural mixed sandy and rocky shores. The tidal flats are narrow along the relatively steep shorelines of Tiburon Linear Park. Tidal flats and backshore slopes widen at the valley location of Blackie's Pasture shore. The shoreline of Blackie's pasture is mostly a rocky artificial fill embankment, including boulders from local quarries. A description of the various habitat types found within and adjacent to the project area is provided below. The project area and primary features of interest are presented in Figure 2.

Lowland terrestrial habitats and drainages. The lowland valley and bayland fill found in the backshore areas of the project site (immediately behind the shoreline) are flat to gently sloping, and support mostly rough (ruderal) non-native grassland. The park also includes minimally irrigated ornamental landscaping (shrubs, perennials) and some scattered non-native and native trees and shrubs. Recreational use of the rough grassland is high. The predominantly non-native weedy vegetation of the rough grassland is highly trampled, and disturbed by gophers. Low-density residential development with mixed ornamental and native tree cover is prevalent along the shore to the west, on artificial fill platforms adjacent to the park, and on cliff tops to the west. A small freshwater drainage ditch with sparse, shaded freshwater marsh and riparian thickets occur at the extreme west end of the park, bordering residential development outside the project area.

No coastal scrub vegetation stands occur along the shoreline within the project area. Most small scrub stands near or on the shore are non-native ornamental species. A few isolated coyote brush shrubs, one California sage shrub, and one black elderberry shrub occur on the eroded artificial bluff fill above Brunini Beach and Marsh. Relatively intact stands of remnant coastal scrub vegetation occur on natural cliff and bluff substrates along Tiburon Linear Park, south of the project site.

Tidal flood control channel and delta habitat complex. The center of Blackie's Pasture grassland flats is bisected by a trapezoidal earthen flood control channel that drains a sub-watershed of Ring Mountain. The flood control channel is artificially channelized to drain the filled historic

Salt marsh wildlife at Brunini Marsh includes songbirds that move between the rough non-native grassland and scrub of the park, to the thicker cover of high salt marsh and grassland in the marsh. Western meadowlarks forage in sea-blite, pickleweed, and wildrye, and song sparrows (including San Pablo song sparrows) move between upland weed and scrub (fennel, bristly ox-tongue, coyote-brush) and gumplant and pickleweed in the salt marsh. Snowy egrets forage in the tidally flooded margins of the fringing salt marsh of the flood control channel, but wading birds and shorebirds seldom occur in the higher zone of Brunini Marsh.

The narrow fringing salt marshes of the flood control channel are mostly dominated by pickleweed, mixed with alkali-heath that tolerates mowing along the banks. The outer edges of the fringing channel salt marsh include patches of native Pacific cordgrass, and some patches of alkali-bulrush in the upstream reach of the channel, above the sharp bend. The flood control channel tidal marsh also has established a persistent reproductive population of an invasive, rapidly spreading non-native Mediterranean sea-lavender, which extends to the mouth of the channel.

Beach habitats. Existing beaches along the Blackie's Pasture shoreline originally formed decades ago around the margins of the salt marsh patches that flanked the mouth of the flood control channel. The beaches are composed mostly of mixed gravel and sand eroded from the watershed, sorted and deposited by wave action. The beach habitat is recent in origin, associated with the bay fill and flood control channel sedimentation, but it occurs close to the footprint of a larger natural, historic beach. There is only sparse and unstable vegetation on the beach: either annual or transient shoreline weeds in drift-lines of debris (saltwort, spearscale), or extensions of high salt marsh edges or remnants (saltgrass, alkali-heath). Some native perennial beach plant species, such as beach-bur, do occasionally establish, but they are heavily trampled and seldom persist. The lower, saturated beachface, closer to mean sea level, is pebbly to muddy, and supports low density populations of burrowing worms and other invertebrates like ghost shrimp and amphipods (beach hoppers and relatives). Beach habitats in Richardson Bay today are scarce, but were historically frequent in small pockets and coves, where they formed the bay edge of some salt marshes. The nearest beach habitats are natural ones at Richardson Bay Audubon Sanctuary (sand and gravel beaches at the bluff toe, west Greenwood Beach Road), and recently constructed cobble, gravel and sand beaches at Aramburu Island.

Rocky shore habitats. The extreme west and east ends of the Blackie's Pasture shoreline are covered with a mix of older concrete and asphalt rubble eroded out of post-WWII unregulated earthen bay fill, and later non-engineered placement of quarry rock and boulders for protection against wave erosion. These hard substrates are ecologically similar to the natural rocky shore habitats of local bedrock headlands and cliffs, some of which persist in relatively natural conditions where boulder armoring does not occur. The remnant natural rocky shore habitats appear to provide local source populations for rocky shore invertebrates to colonize the artificial rocky fill. The rocky shore habitats here support relatively small populations of attached macroalgae (seaweeds), but the sheltered undersides of rocks and rubble support many species of crabs (mud crabs, porcelain crabs, shore crabs), amphipods, acorn barnacles, and small tidepool fish

Submerged aquatic vegetation in Richardson Bay subtidal zones is composed of eelgrass, *Zostera marina*. Eelgrass an important habitat-forming clonal perennial plant that supports rich fish and invertebrate communities, including herring spawning habitat. No eelgrass beds occur in the extensive tidal flats bayward of Blackie's Pasture shoreline, although eelgrass litter is a common component of the shore drift-lines after winter storms.

Shollenberger Park Sand Stockpile

The off-site source of imported sand (Shollenberger Park dredge disposal site) is an unmanaged, sparsely vegetated, weed-dominated hydraulically deposited fan of sandy sediment that is well-drained (non-wetland) habitat. It is located within a diked bayland used intermittently as a confined dredge disposal site, most of which is seasonally flooded and filled with bay mud. The proposed excavation area is dominated by common non-native annual and perennial broadleaf weeds, and some young native shrubs and subshrubs common on the levees around the site, including gumplant (*Grindelia stricta* var. *angustifolia*) and coyote-brush (*Baccharis pilularis*). No special-status plants, or even any species in the same genus as special-status plants (with the exception of non-native doorweed, *Polygonum arenastrum*), have been observed in the weed-dominated sand mounds since they were first colonized by local levee weeds after deposition in 2020. No seed sources of sensitive native plant species that are adapted to dry sand mounds occur in the area.

The fringing brackish (low salinity) tidal marshes bordering Shollenberger Park along the Petaluma River are dominated by intertidal tule and bulrush marsh vegetation, sloping up to narrow zones of high brackish marsh dominated by saltgrass (*Distichlis spicata*), Baltic rush (*Juncus balticus*), alkali-heath (*Frankenia salina*), pickleweed (*Sarcocornia pacifica*), and gumplant. The naturally restored, young tidal marsh and mudflats south of the park, Grey's Marsh, are dominated by alkali-bulrush (*Bolboschoenus maritimus*), fringed with pickleweed. The Grey's Marsh tidal flats support high use by shorebirds, wading birds, and waterfowl, but recent protocol surveys for endangered California Ridgway's rails (performed periodically for the California Coastal Conservancy's Invasive Spartina Project) in the brackish tidal marsh habitats that are marginally suitable for this species have resulted in non-detections for California Ridgeway's rails (Olofson Environmental 2021). Historically, California Ridgway's rails have been detected at a very low frequency in the uppermost reaches of the most freshwater-influenced brackish tidal marshes of the Petaluma River. Virginia rails, a common rail species well-adapted to brackish tidal marshes, are audible at times in the fringing marshes along the Petaluma River. Typical San Pablo Bay brackish marsh wildlife, including song sparrows, gopher snakes, river otters, voles, and coyotes, range from common to occasional in various parts of the marshes beyond the perimeter levee of the park.

The tidal marsh and the weedy sand mound are separated by a high-use public trail on the top of the perimeter levee. The trail is used for wildlife and public shore viewing, on-leash dog recreation, and infrequent maintenance road use. The opposite bank of the Petaluma River near the park supports industrial land uses including an asphalt plant and gravel barge offloading facilities and

a long-established one near Greenbrae Boardwalk in Corte Madera, and a series of colonies in south Richardson Bay from Bothin Marsh to Seminary Drive, so it is within dispersal distance of the project site. Sporadic colonies have appeared briefly at Aramburu Island (currently extirpated), but no colonies have ever been reported from the relatively young and small salt marshes around the tidal channel at Blackie's Pasture. No plants have been detected at or near the project site since 2012, despite repeated searches during its flowering season. This species is determined with high confidence to be absent at the project site, so is not further evaluated.

Johnny-nip, salt marsh owl's-clover *(Castilleja ambigua subsp. ambigua).* Johnny-nip is another annual wildflower that historically grew in the upper edges and transition zones of San Francisco Bay salt marshes, but has become extirpated over most of its range within the Bay's tidal marshes. No populations have been reported from Richardson Bay to the Petaluma River in either seasonal non-tidal wetlands or salt marsh edges in many decades. No plants have been detected at or near the project site since 2012, despite repeated searches during its flowering season. This species is determined with high confidence to be absent at the project site, so is not further evaluated.

Marin knotweed *(Polygonum marinense*). Marin knotweed is a slender, inconspicuous, narrow-leaved annual plant that was long presumed to be a native and endemic rare plant of tidal brackish and salt marshes of West Marin. It subsequently spread to shorelines and tidal marshes of San Francisco Bay, San Pablo Bay, and Suisun Marsh/west Delta. Its rapid range expansion from isolated occurrence of small populations, to widespread populations in a few decades is consistent with its suspected origin as a cryptic non-native species, and a questionable native rare species. California Native Plant Society has placed it on its "review list", rather than assign it a rarity rank. No Marin knotweed has been observed at or near the project site despite repeated searches since 2012; only the common non-native doorweed (*P. arenastrum*) is present in the uplands near the shore. Marin knotweed is determined with high confidence to be absent at the project site, so is not further evaluated.

White hayfield tarplant *(Hemizonia congesta subsp. congesta).* The white-flowered hayfield tarplant occurs in lowland grasslands and marsh edges, including disturbed areas. It is a conspicuous wildflower that blooms in summer to fall. No tarplant species been observed at or near the project site despite repeated searches since 2012, including the yellow tarplant (*H. congesta* subsp. *lutescens*) that is more widespread near Marin County bayshores. White hayfield tarweed is determined with high confidence to be absent at the project site, so is not further evaluated.

California sea-blite *(Suaeda californica).* California sea-blite is a gray-green salt marsh shrub that typically grows in or near the high tide line. It was extirpated in San Francisco Bay by 1960, but a population was experimentally re-introduced for research at the shore of Blackie's Pasture (Brunini Beach and Marsh) in 2017. It has persisted and spread locally in a robust colony in Brunini Marsh that re-established after severe storm erosion in 2017. This species is also included in the project planting design as a sand-stabilizing, erosion-buffering component of the upper shoreline and transition zone vegetation at Greenwood Beach and Brunini Beach (see Section II, Project

reaches of the San Francisco Estuary, from the lower Delta to south San Francisco. Most of the San Francisco Bay population of Longfin smelt occurs upstream of the Carquinez Strait, but adults from San Francisco Bay migrate to fresher water in the Delta in the fall to spawn. Longfin smelt larvae inhabit open water, and occur in the upper water column.

Special-status Wildlife Species

The following special-status wildlife species are known to occur in tidal marsh habitats in Marin County that are comparable to those of the project site. Some are known to occur there; others are likely or somewhat likely to occur there at times, and some are highly unlikely or are effectively precluded from inhabiting the site. As described previously, no special-status wildlife species are anticipated to occur at the Shollenberger Park sand stockpile location.

San Pablo song sparrow *(Melospiza melodia samuelis).* The San Pablo song sparrow is one of the three geographically distinct song sparrow subspecies that occur in estuarine wetland and peripheral habitats of the San Francisco Estuary. It is considered a species of concern in state and federal wildlife conservation plans. San Pablo song sparrows frequently forage pickleweed marsh and shrubby or other tall vegetation borders of tidal marshes, including weedy disturbed habitats with seed and insect food sources. They nest in tidal marshes near channel banks with tall, dense salt marsh vegetation, often including gumplant. Song sparrows, including San Pablo song sparrows have been observed at the project site and elsewhere in Marin baylands and tidal marshes. They are expected to feed along the shoreline habitats at Blackie's Pasture, but they are not expected to nest there because habitat structure and patch size are poor for nesting, and levels of disturbance (recreational use, density) are high.

California black rail *(Laterallus jamaicensis coturniculus).* California black rails are small, dark, elusive rails. In the San Francisco Estuary, they are primarily associated with high brackish tidal marshes including thick pickleweed or other dense high tidal marsh vegetation, and tall bulrush vegetation. North Bay and Suisun Marsh brackish marsh are typical habitats, but black rails have been detected in tidal salt marshes in San Rafael, and probable detections as far south as Corte Madera. No California black rails have been observed or reported from Blackie's Pasture, and none would be expected from the small salt marsh habitat patch there, where high levels of recreational disturbance are prevalent nearby.

California Ridgway's rail *(Rallus obsoletus obsoletus).* federal and state listed as endangered). No California Ridgeway's rails have been observed at the small salt marsh habitat patches at the project site since at least 2005. The Invasive Spartina Project of the California Coastal Conservancy performed initial rail surveys in 2006-2007 at the site, prior to removal of non-native hybrid cordgrass. The surveys were negative. Subsequent Estuary-wide California Ridgway's rail survey data compiled or conducted by the ISP and its partners reported Blackie's Pasture as "insufficient habitat" for California Ridgeway's rail, and did not perform further surveys (Olofson Environmental 2021). California Ridgway's rail is almost entirely restricted to tidal salt marsh habitats with tidal creeks and banks with well-distributed high tide vegetation cover present.

worms). The small salt marsh patches at the project site are remote from any other potential Central Bay salt marsh source populations of the salt marsh wandering shrew, and the patches originated in recent decades, when no antecedent salt marshes existed in this sub-embayment of Richardson Bay. Salt marsh wandering shrews are presumed absent the project site and the vicinity of Richardson Bay, where required habitat is absent.

Discussion

a) Project construction would have the potential to affect special-status species in a number of ways; these are discussed below with associated mitigation measures. Over the long term, the project would generally provide a net habitat benefit to native plants, fish, and wildlife (including special-status species), and human use patterns and intensity would not change appreciably after project implementation. Therefore, long-term operational impacts to these species would be less-than significant and are not discussed further.

Potential impacts to special-status plants. No direct construction impacts would occur to the patches of endangered California sea-blite established in 2017 for research by the Estuary, Ocean and Science Center of San Francisco State University, because equipment operation, staging, travel, or sediment stockpiling would be excluded from wetland areas, including Brunini Marsh. Similarly, the patch of native lowland grassland composed of native creeping wildrye (*Leymus Xgouldii*, syn. *Elymus Xgouldii*) that occurs in the Brunini Marsh transition zone would be excluded from any construction-related activities and their impacts.

The supplemental sand source for beach nourishment located at the Shollenberger Park dredge disposal site supports young (recently colonized, less than 5 years old) disturbed weed-dominated vegetation. The sand imported from this source is likely to contain non-native invasive plant (weed) seeds that may establish and spread at the project site in the rainy season after sand placement, potentially impacting existing California sea-blite stands and other native plants. No weed species at Shollenberger Park sand fans are absent in the project vicinity in Tiburon, but the number of weed seeds concentrated at the shoreline (weed "seed rain", or propagule pressure), would likely increase and result in a flush of weed growth at the back of the constructed beach. Similar surges in weed growth have also occurred at recent sand and gravel placement locations along restored wetland shorelines of the North Bay, such as Sears Point Wetland Restoration Project.

Nuisance weeds that are present at or near Blackie's Pasture, and could increase temporarily at the project site shoreline as a result of Shollenberger Park sand import, include stinkwort (*Dittrichia graveolens*), start-thistles (*Centaurea solstitialis, C. melitensis*), and doorweeds (*Polygonum arenastrum*), and annual mustards and radish (*Brassica* spp., *Raphanus sativa*). The winter storm overwash flooding of the sand-gravel beach (pulses of high salinity over seedlings during the wet season) would restrict the range of invasive non-native species, and their invasiveness, at the project site, relative to their performance at the drained, non-saline Shollenberger Park sand borrow site. The maximum amount and duration of weed invasion increase at the project site shoreline

movement of the wetted tidal shoreline, either in wet flats above the water line, or in very shallow water below it. Shorebirds foraging at the project site are accustomed to existing human recreational uses and park maintenance activities occurring on the shoreline. Construction activities occurring on the shoreline will cause a temporary increase in human disturbance in the area. The most potentially impactful project activities would be the excavation of sand and gravel from the designated borrow area on the flood control channel delta, which would occur within shorebird foraging habitat. This impact will be relatively short in duration (less than two weeks) and limited in impact extent, as daily work activities will be concentrated only in the active excavation area and material transport routes. The maximum potential extent of cumulative delta and mudflat area that could be temporarily impacted by borrow material excavation and transport is 1.5 ac, which represents approximately 12% of the total foraging habitat available in the local sub-embayment of Richardson Bay at low tide (mean lower-low water [MLLW]). As ample foraging habitat is available locally and in other nearby areas of Richardson Bay, construction impacts to shorebirds would be **less than significant.**

No special-status wildlife species are anticipated to occur at the Shollenberger Park sand stockpile location. Regardless, sand excavation would occur after the end of the nesting season for special status bird species (after September 1), including rails that could, but are highly unlikely to (Olofson Environmental 2021), occupy adjacent tidal marsh areas within 700 ft of the work area. Following excavation, the area would re-establish the same weedy, disturbed vegetation that currently exists at the site, but probably at higher density because of higher moisture in the excavated depression left. The site would continue to provide the same marginal, ruderal habitat following construction. The outer levee slope supports continuous stands of vegetation providing wildlife cover above highest tides, at elevation ranges higher than or equal to the interior sand fan. No impacts to high tide refuge habitat for tidal marsh wildlife would therefore occur because of excavation in the diked interior weedy sand fan. Therefore, off-site sand excavation would have a **less-than-significant** impact to special-status wildlife species.

Potential impacts to special-status fish. Impacts to special-status fish at the project site may occur from:

- Potential short-term direct construction impacts from on-site borrow area excavation.
- Potential short-term degradation of shallow aquatic habitat due to sediment disturbance, elevated turbidity and suspended sediment, caused by excavation of the tidal delta borrow area.
- Persistence of shallow tidal pool or pond habitat within the on-site sediment borrow area depression, resulting in increased bird predation.
- Potential temporary aquatic habitat degradation and fish stranding due to seasonal tidal choking or damming at the mouth of the tidal flood control channel.

with typical rainfall/runoff events, but could take two to three years under drought conditions with reduced stormwater and sediment outflows from the flood control channel.

To reduce the potential for temporary increases in fish predation within the borrow area pool before it fills in, the borrow area outlet channel would be enlarged following completion of material excavation to ensure adequate tidal drainage and fish egress. The downslope (bayward) end of the borrow area would be excavated to form a funnel-shaped outlet (neck, or nick-point) to remove coarser gravels, and concentrate ebb drainage into a short pilot ebb channel approximately 10 feet long, one foot deep (below grade) and three feet wide at the base. This short pilot channel would concentrate ebb outflows and initiate rapid ebb tidal channel erosion during spring tide series, regardless of freshwater runoff. The increased tidal prism of the borrow area would provide tidal energy to erode a shallow outlet channel that enables fish in the channel or borrow area pool to follow ebb currents out to the bay. Further, implementation of Mitigation BIO-2 would ensure that any **potentially significant** impacts to fish due to the temporary presence of the borrow area pool are reduced to a **less-than-significant level**.

> ***Mitigation Measure BIO-2***: The evolution of the borrow area depression/pond and outlet channel shall be monitored monthly at low tide for the first 2 years post-construction. If erosion of a continuous ebb tidal outlet channel is slow enough to restrict fish movement on ebb tides by the first winter after construction, the project manager shall consult with NMFS and CDFW. The consultation shall focus on practical adaptive management measures to reduce restrictions to movement of estuarine fish out of the pool to insignificant levels. The project manager shall implement such measures if the tidal channel constriction does not self-correct by mid-winter after construction. Adaptive management measures may include partial manual removal of sills that persist and restrict ebb drainage, sufficient to correct potential impairment of fish movement to the bay during lower ebb tide stages. If the ebb outlet channel erosion is impeded by exposure of a relatively erosion-resistant sill, such as a heavier gravel lens or firm clayey mud, such sills may be manually excavated to a depth of half a foot, in a zone 1-foot wide.

The addition of sand and gravel to the shore could increase the frequency of tidal choking by drifted sand and gravel at the mouth of the flood control channel that runs through Blackie's Pasture park. Before sand-trapping salt marsh vegetation is fully established over the drift-sill, some drifting sand may bypass the drift-sill and temporarily choke the flood control channel mouth. Temporary choking of the channel mouth during the dry season could partially impound the channel like a closed lagoon at low tide. This temporary condition has been part of the pre-project environmental baseline for at least a decade, but the lagoon-like tidally choked habitat was transient and reversed by the next spring high tide cycle within two weeks. The project could potentially increase the pattern or intensity of this impact by adding a large volume of sand to the shore. Special-status fish species trapped within the flood control channel behind any such impoundment could be exposed to increased water temperatures, reduced dissolved oxygen levels, and

zones. This temporary impact would be minor. Therefore, the impact to shorebirds and special-status fish would be **less-than-significant.**

b) As described in the Setting discussion, regular mowing of the banks of the tidal flood control channel within the project area prevents the development of vegetated riparian habitat. The channel does, however, support some narrow fringing salt marsh on the banks and in-channel bars. While the project would not directly impact these wetland areas, the addition of sand and gravel to the shore could increase the frequency of tidal choking by drifted sand and gravel at the mouth of the flood control channel that runs through Blackie's Pasture park, potentially impacting the wetland and aquatic habitats within the channel. The risk that the potential duration or intensity of drift-induced tidal choking impacts would increase substantially after project construction is low. The temporary impact, however, is possible under some circumstances, such as higher than typical rates of sand drift before sufficient salt marsh vegetation establishes on the drift-sills. This **potentially significant** impact would be reduced to a **less-than-significant** level by implementation of Mitigation BIO-3, above. Impacts to wetlands outside of the flood control channel, as well as impacts to tidal flat and rocky shore habitats, are discussed in Item c) below.

There are no riparian or other sensitive habitat types at the Shollenberger Park sand stockpile site. Excavation activities at this location would have **no impact** to such habitats.

c) The project would bury small areas of salt marsh, tidal flat or rocky shore habitats with beach sand and gravel, both by direct placement during construction and later by natural drift of the material. The existing salt marsh at Brunini Marsh would be excluded from all direct sand and gravel placement. However, there are small, ephemeral patches of tidal salt marsh vegetation that exist within the project footprint that would be impacted by construction of the drift sills and placement of beach materials. These patches are too small and unstable to quantify (less than 0.01 ac) and their loss would be more than offset by colonization and expansion of wetland vegetation on the drift sills, cobble marsh armor, and beach habitats (>0.25 ac). Therefore, direct construction-related impacts to wetlands would be **less-than-significant.**

The project would result in conversion of approximately 0.26 ac (300 linear ft) of artificial rocky shore habitat (coarse beach platform, rubble lag, and rip rap) into cobble marsh and beach habitats, restoring the types of habitats that existed at the site prior to the onset of marsh and beach loss after 2013. The vegetated cobble drift-sills would provide different habitat than the existing rocky shore, because they would be embedded in fine sediment bound by plant roots. The gravel and sand placed over concrete and asphalt rubble surfaces and artificial rocky shore would convert the habitat from rocky shore to beach habitat. Intertidal beachface invertebrates (amphipods, worms, ghost shrimp) would displace small crabs, barnacles, and infrequent Olympia oysters found in the rocky shore habitats The conversion of rocky shore to beach and cobble marsh habitat would be a minor individual and cumulative impact to the rocky shore habitats of Tiburon Linear Park

vegetation. Adjacent tidal wetlands on the outboard side of the perimeter wetlands would be avoided entirely. There would be **no impact** to wetland habitats due to sand excavation.

d) Please see response to Item b), above with respect to project impacts to wetland habitats. These impacts would be **less-than-significant**.

e) Please see discussions of fish movement in the on-site flood control channel and on-site borrow area in Item a), above. These impacts would be potentially significant, but mitigated to **a less-than-significant** level with implementation of Mitigation Measures BIO 2 and 3.

The proposed sand excavation at Sholleberger Park would have **no impacts** on wildlife movement from the adjacent exterior tidal marsh to emergent above-tide vegetation during extreme high tide flood events. The sand fan is separated from tidal brackish marsh along the Petaluma River and Gray's Marsh by a levee with a well-used, maintained public trail around the park.

f) The proposed project, including sand excavation at Shollenberger Park, would not involve tree removal and would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. It would enhance the shoreline habitats, in furtherance of local and regional policies. There would be **no impact**.

g) The project site and Shollenberger Park site are not covered by any federal, state, or local conservation plan. Therefore, the project would have **no impact** with respect to habitat conservation plan compliance.

Consultation between the Town of Tiburon and the Graton Rancheria is currently underway, and this report will be updated to provide all correspondence including the results of consultation should project specific requests, culturally sensitive areas, or tribal cultural resource locations be identified.

Discussion

a) As discussed above, the project site contains no historical resources as defined in CEQA Guidelines Section 15064.5. The project would not have the potential to affect any off-site historic resources due to its location internal to the park and adjacent off-shore areas. Therefore, the project would have **no impact** on historical resources.

b) As discussed above, the site is comprised of artificial fill and recent sediment deposits. Construction would remove some of the artificial fill (rip rap) along the shoreline and smooth out that shoreline. The project also would excavate a 2-foot deep depression off-shore in the mud near the flood control channel outlet. Because the project work would be limited to areas of artificial fill and recent sediments, the likelihood of grading and to encounter and disturb archaeological resources is low. While it is unlikely that intact deposits will be present, due to the extensive infilling of the shoreline, there is a possibility that redeposited midden soil, artifacts, and/or human remains could be present within the fill material. If such material were to be damaged or destroyed during construction of the project, a **potentially significant impact** may occur. This impact would be reduced to a less-than-significant level by implementation of Mitigation Measures CULT-1 and CULT-2, below.

c) Although no prehistoric or historic-era human remains are known to exist on the project site, and none are expected to be encountered in the artificial fill and recent sediments, it is possible that presently undocumented human interments may be uncovered during grading. Implementation of Mitigation Measures CULT-3 would reduce this **potentially significant impact** to a **less-than-significant** level.

Mitigation Measures

Mitigation Measure CULT-1: Archaeological Deposits. A focused archaeological testing program shall be conducted in areas proposed for ground disturbance prior to construction to address the potential for pre-contact Native American deposits within the ADI and to complete the identification of historical resources as per CEQA. In addition, construction monitoring by qualified personnel shall be conducted during project excavation activities. If archaeological remains are encountered during the focused testing or project activities, project ground disturbances at the find and immediate vicinity shall be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). The archaeologist shall examine the finds and recommend mitigation measures which may include documentation in place, avoidance, testing, and/or data recovery.

VI. Energy

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Discussion

a) The proposed project would require short-term energy consumption of petroleum fuels (primarily gasoline and diesel fuel) by construction workers traveling to and from the project site, transportation of construction materials, and equipment for on-site construction activities. Gasoline and diesel fuel would be the primary sources of energy for these activities.

The proposed project construction activities would require the use of some diesel fuel and gasoline for construction equipment. This increase in gasoline and diesel fuel consumption would be temporary, of short duration, and would cease once proposed project construction is completed. The proposed project would not result in a wasteful, inefficient, or unnecessary consumption of energy. Therefore, this impact would be **less than significant.**

b) There are no state or local plans for renewable energy or energy efficiency that are applicable to the proposed project. Therefore, **no impact** would occur.

Background

Soil and Geologic Conditions

Greenwood and Brunini beaches are situated on the shoreline of a filled historical marsh. The most recent shoreline fill placement activities took place in the mid-1960s. The geology and soil maps of Marin County reflect this history of fill, with the shoreline geology being mapped as artificial fill over bay mud and the soils mapped as xerorthents (fill) (USDA 1985, USGS 1997-2007). Greenwood and Brunini beaches formed at the interface between the artificially filled shoreline and the native San Francisco Bay sediments on the adjacent mudflats (i.e., bay muds).

The beaches and adjacent tidal salt marsh (Brunini Marsh) formed and are maintained primarily by sediments (medium to coarse sand and gravel) eroded from the Ring Mountain watershed and delivered to the shoreline by the adjacent flood control channel (See Figure 2 in the Project Description). These sediments deposit at the mouth of the flood control channel and create a broad delta across the adjacent mudflat. Waves then slowly transport this deposited material shoreward, where it forms the beaches. The geology of Ring Mountain is mapped as Franciscan complex, mélange with inclusions of Coast Range ophiolite/serpentinite.

Seismic Conditions

The project site is located within a seismically active region that includes the Central and Northern Coast Mountain Ranges. Several active faults are present in the area including the San Andreas, San Gregorio, and Hayward/Rodgers Creek faults, among others. An "active" fault is defined as one that shows displacement within the last 11,000 years and, therefore, is considered more likely to generate a future earthquake than a fault that shows no evidence of recent rupture. The California Department of Conservation, California Geologic Survey, formerly the Division of Mines and Geology, has mapped various active and inactive faults throughout California. The project site is located approximately equidistant from the Hayward (9.5 mi to the northeast) and San Andreas (10 mi to the northwest) fault zones (CGS 2022).

Numerous earthquakes have occurred in the region within historic times. The three most significant earthquakes to have occurred in recent history that have impacted the greater Marin County area, including Tiburon, are outlined below:

- *1906 San Francisco Earth*quake – The April 18, 1906, magnitude 8.3 earthquake occurred on the northern segment of the San Andreas Fault. The earthquake resulted in catastrophic damage throughout the greater Bay Area. Significant damage, including complete structural collapses, and 498 deaths were reported in San Francisco.

- *1969 Rodgers Creek/Healdsburg Fault Earthquake* – Two earthquakes of magnitudes 5.6 and 5.7 originated on the Rodgers Creek and Healdsburg Faults. The resulting damage was concentrated in Santa Rosa with partial and near structural collapses. No loss of life was reported.

the Greenwood Beach shoreline scarp to a gentler slope, thereby reducing the potential for a landslide occurring at this location. The project would not modify the existing slope of the shoreline bluff at Brunini Beach, but the enhanced and created beaches would help to buffer the toe of the bluff from wave erosion at this location, thus enhancing its stability and potentially reducing the likelihood of slope failure. Even if a landslide were to occur along the shoreline bluff, the project would not include any structures that could be damaged by such an event, nor would it substantially increase visitation in this area. Therefore, project impacts related to landslides would be **less than significant.**

b) Construction of the proposed project could potentially result in soil erosion due to earthwork activities (excavation and grading) and transit of construction equipment within earthen/vegetated areas. Because the overall footprint of proposed construction activities within upland areas is less than one acre, the project is unlikely to require coverage under the General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ), known as the "Construction General Permit". However, as noted in the Project Description, a Water Pollution Control Plan (WPCP), which is similar in content and purpose to a Stormwater Pollution Prevention Plan (SWPPP) required by the Construction General Permit, would be prepared and implemented to satisfy requirements in the project's Water Quality Certification issued by the San Francisco Bay RWQCB The WPCP would require application of Best Management Practices (BMPs) to control soil erosion and runoff from construction work sites. The BMPs would include, but would not be limited to, physical barriers to prevent erosion and sedimentation, limitations on work periods during storm events, protection of stockpiled materials, establishment of dedicated equipment staging and maintenance areas, and post-construction soil stabilization and erosion control measures. Compliance with these measures would result in a **less-than-significant impact** on soil erosion during construction.

One of the primary goals of the project is to reduce rates of shoreline erosion. Installation of the constructed beach elements and grading back the vertical, unstable shoreline scarp along the western half of Greenwood Beach would significantly buffer the shoreline against wind waves and reduce current rates of shoreline erosion and topsoil loss. Therefore, long term operation of the proposed project would have a **less-than-significant impact** on shoreline erosion and would in fact result in a beneficial impact.

Excavation of sand at the Shollenberger Park dredge disposal site for beneficial reuse at the project site would not have any soil erosion concerns as the excavation site is an existing dredged sand pile with no topsoil that is isolated within a containment levee. The impact at this location would be **less-than-significant.**

c) As described in items a-iii and a-iv, project impacts related to ground failure, liquefaction, and landslides **would be less than significant.** Implementation of the project would not make the underlying soils more prone to such structural failures and should in fact reduce

VIII. Greenhouse Gas Emissions

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

Background

This section is based on the *Air Quality Technical Report* prepared for the proposed project by RCH Group. This section describes construction and operational greenhouse gas (GHG) emissions impacts associated with the proposed project and is consistent with the methods described in the BAAQMD *CEQA Air Quality Guidelines* (May 2017).

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices, coal mines, and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-

IX. Hazards and Hazardous Materials

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

Discussion

a, b) Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the construction

X. Hydrology and Water Quality

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Background

Project Area Hydrology and Water Quality

The project is located on the shoreline of Richardson Bay, a shallow arm of San Francisco Bay approximately 2 miles north of the Golden Gate. Richardson Bay tides are the dominant driver of

it particularly vulnerable to sea-level rise. The proposed project is designed to provide some shoreline habitat resilience to moderate amounts of sea-level rise over the next ~30 years.

The project site sits at the outlet of the local watershed, and therefore the bottom of the local groundwater gradient. Both the Bay tides and flood control channel outflows influence local groundwater dynamics. The presence of several large trees immediately behind the beach indicates the presence of shallow, fresh groundwater adjacent to the shoreline.

Regulatory Overview

There are several federal, state, and local laws and programs regulating water quality that would be applicable to the proposed project. Adherence to these laws would be mandated through the various federal, state, and local permits required for the project, including:

- Clean Water Act Section 404 Nationwide 27 permit (U.S. Army Corps of Engineers [USACE])
- Clean Water Act Section 401 Water Quality Certification (RWQCB)
- Town of Tiburon Grading Permit (Town)

The Federal Clean Water Act and the California Porter-Cologne Water Quality Control Act require that large urban areas discharging stormwater into the San Francisco Bay or the Pacific Ocean have an NPDES permit to prevent harmful pollutants from being dumped or washed by stormwater runoff, into the stormwater system, then discharged into local waterbodies. In 2003, smaller (less than 100,000 population) municipalities and unincorporated counties were required to obtain coverage under a statewide NPDES Municipal General Stormwater Permit (Phase II Permit) issued by the State Water Resources Control Board. In Marin, the County and all Marin's municipalities are subject to the conditions of the regulations described in the current 2013 Phase II Permit. The permit encompasses:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Controls
- Post Construction Stormwater Management for Development Projects
- Pollution Prevention and Good Housekeeping for Municipal Operations
- Water Quality Monitoring
- Program Effectiveness Assessment and Improvement

At the local level, the Town of Tiburon's stormwater runoff is controlled by the Marin Countywide Stormwater Pollution Prevention Program (MCSTOPPP)[11], which was established in 1993 to reduce the pollution carried by stormwater into local creeks, San Francisco Bay, and the Pacific Ocean. Each MCSTOPPP member agency implements a local stormwater pollution prevention program and

[11] https://mcstoppp.org/

Discussion

a) Construction activities both on the shoreline and in backshore upland areas could cause short-term, temporary impacts to water quality that would violate requirements in federal, state, and/or local stormwater control programs. Earth-moving and material placement within the shoreline enhancement areas could cause increases in suspended sediment concentration and introduce petroleum contaminants (oil, grease, fuel, etc.) into the waters of the Bay, if performed at times when there is water on the work area. Construction activities in backshore upland areas, including earth-moving and material stockpiling/transportation, also could introduce sediment and petroleum contaminants into the bay via rainfall runoff or storm wave over-wash. During the period between the completion of earthmoving and vegetation reestablishment, bare graded areas could be subject to erosion from these forces as well. The project includes several design elements and preventative measures, summarized below, that would ensure these potential impacts are reduced to a **less-than-significant** level. Over the long term, the project would have a **net benefit** on the water quality of Richardson Bay by reducing rates of shoreline erosion and resulting sediment pulses to the Bay.

a. As described in the project description (Section 2), all work on the shoreline and low tide terrace (i.e., mudflats), including excavation, grading, and material placement, would occur during lower tides when these areas are exposed (i.e., in the dry).

b. Measures specific to the process of excavating borrow material from the flood control channel delta for beach nourishment would be implemented to prevent migration of sediment into open water areas outside of the active work area. These measures would include excavating a low-flow bypass channel around the borrow area. Other measures to control sediment migration from the borrow area may be recommended by the RWQCB in the project's Water Quality Certification or by the National Marine Fisheries Service (NMFS) in the Biological Opinion appended to the project's Nationwide 27 permit.

c. The dredged sand from the stockpile at Shollenberger Park proposed for use in the project would be tested for contaminants prior to use for beach nourishment with input and approval from the RWQCB and/or DMMO. Prior Corps sampling and analysis may be used for this screening analysis.

d. A Water Pollution Control Plan (WPCP) would be prepared to satisfy requirements in the project's Water Quality Certification for protecting surface water quality from construction related impacts. The WPCP would require applications of Best Management Practices (BMPs) to control soil erosion and runoff from construction work areas. The BMPs would include, but would not be limited to, physical barriers to prevent erosion and sedimentation, limitations on work periods during storm events, protection of stockpiled materials, establishment of dedicated equipment staging and maintenance areas, and hazardous material storage and spill response protocols. The BMPs included in the WPCP would be included in the

extreme storm/flood events or tsunamis. The project does not include any elements that, in the long term, could potentially release pollutants during such inundation events. The project would be constructed during the dry season, which would reduce the likelihood of flood inundation and resulting sediment/pollutant migration from work areas to a **less-than-significant** level.

Tsunamis and seiches are extremely rare events, and may occur at any time. If the site were inundated by tsunami during construction, the migration of sediment or other pollutants from the work areas would be a miniscule and **less-than-significant** fraction of the cumulative water quality impacts associated with such an event.

e) As discussed in item a, project construction would require compliance with applicable water quality control plans and laws. Implementation of the measures identified in item a would achieve compliance with these laws, resulting in a **less-than-significant impact** due to project construction. The project will provide a net benefit to water quality in the long-term by reducing rates of shoreline erosion and resulting sediment pulses to the bay. As discussed in item b, the project will have no impact upon groundwater resources and would not conflict with any applicable sustainable groundwater management plan.

The proposed project would comply with these policies and would not change the existing land use on site. Therefore, it would have **no impact** on plan conformance.

c) The project site is not located within the boundaries of a habitat conservation plan or a natural community conservation plan; therefore, the project would not conflict with any habitat plans and there would be **no impact.**

XIII. Noise

Would the Project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a Project within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the project area to excessive noise levels?				X

Background

RCH Group, Inc. (RCH) performed noise monitoring at the project site on February 7, 2023. The following analysis details the results of the noise monitoring and potential noise impacts from the project.

Noise Descriptors

Noise can be defined as unwanted sound. It is commonly measured with a sound level meter, which captures the sound with a microphone and converts it into a numerical sound level, which is expressed in units of *decibels*.

To correlate the microphone signal to a level that corresponds to the way humans perceive noise, the A-weighting filter is used. A-weighting de-emphasizes low-frequency and very high-frequency sound in a manner similar to human hearing. The use of A-weighting is required by most local General Plans as well as federal and state noise regulations (e.g. Caltrans, EPA, OSHA and HUD). The abbreviation dBA is sometimes used when the A-weighted decibel level is reported.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, that also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites (or a landfill with heavy equipment moving dirt and solid waste daily and trucks entering and exiting the main gate daily – activities similar to construction sites) would have characteristics of both "point" and "line" sources, so attenuation would probably range between 4.5 and 7.5 dB per doubling of distance.

Vibration

Vibration is an oscillatory motion which can be described in terms of the displacement, velocity, or acceleration. The peak particle velocity (PPV) is the descriptor used in monitoring of construction vibration.

Tiburon General Plan

The following policies are relevant to the project:

N-3: Environmental reviews (environmental impact reports, initial studies/negative declarations) of projects within the Tiburon Planning Area will be required to, where appropriate, include an acoustical analysis of the project's potential to cause a noise impact.

N-10: Standard quiet construction methods shall be used where feasible and when construction activities take place within 500 feet of noise sensitive areas.

Tiburon Municipal Code

The following Tiburon Municipal Code regulations would be applicable to the project:

> *Chapter 13-6, Hours of Construction: (A) Generally, all work covered by a permit issued under this chapter shall be performed only between the hours of seven a.m. to five p.m., Monday through Friday, and nine thirty a.m. to four p.m. on Saturday. Only quiet work is allowed to be performed on Saturdays, such that noise from any source associated with the permitted work, including but not limited to construction activity, amplified sound, and worker's voices, shall not be plainly audible beyond the property line. (B) Work covered by a permit shall not be performed on Sunday or on holidays observed by the Town of Tiburon. These holidays are New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. (C) For work covered by a permit, the arrival or departure of heavy equipment (including but not limited to concrete trucks, graders and backhoes) and/or the delivery of heavy items*

Figure NOISE-1: Noise Measurement Locations

Construction would only occur between the hours of seven a.m. to five p.m., Monday through Friday, and nine thirty a.m. to four p.m. on Saturday to comply with the City of Tiburon established hours of construction. Project construction would not exceed standards established in the local general plan or noise ordinance. Therefore, proposed project construction impacts would be **less than significant.**

Operational Noise Impacts

Following project implementation, the site would continue to be managed by the Town of Tiburon as part of Blackie's Pasture Park, as it is currently. The proposed project would not generate more noise than what is currently generated by the existing project site (See Table Noise-2 for ambient noise levels nearby the shoreline). Therefore, proposed project operational impacts would be **less than significant**.

b) Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures (Caltrans 2013). Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans 2002). There are no structures within 25 feet of the proposed construction site. Therefore, proposed project vibration impacts would be **less than significant**.

c) The project site is not within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public use airport. The nearest airport is San Rafael Airport (the nearest runway of which is approximately eight miles north of the project site). Therefore, **no impact** would occur.

XV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

Discussion

a) The Tiburon Fire Protection District (TFPD) provides fire protection and emergency medical services for the project site. The TFPD is a combination department with 21 career safety employees, one clerical and one finance officer, 13 volunteer firefighters, and 6 trainee firefighters. The fire station nearest the project site is Station #11, Sausalito, located at 1679 Tiburon Blvd., approximately 700 feet west of the site. Restoration of the existing beach would not materially alter uses of the site, and therefore would not result in a change in demand for fire protection services. The project would not require the provision of or need for new or physically altered facilities to continue to serve the project site. Therefore, the project would have **no impact** to fire protection services.

b) Police services are provided to Blackie's Pasture Park by the Tiburon Police Department, headquartered at 1155 Tiburon Blvd., about 0.75 miles west of the park. As discussed for fire, above, the project would be a beach restoration, and therefore would not increase the need for police services or facilities. Therefore, the project would have **no impact** to police services.

c) The proposed facilities would not increase the population or otherwise increase demands for school services. It would not alter the capacity of students at school. Therefore, the project would have **no impact** on schools.

d) As described above, the proposed project would not result in an increase in residents and therefore, would not increase demand for any parks facilities from additional residents. The enhanced beach may slightly increase the use of the Greenwood Beach area of Blackie's Pasture Park (see Recreation discussion, in Section XVI, below), however no additional park

XVI. Recreation

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?				X
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Discussion

a) As described in response to question d) under Public Services, above, the project would have no adverse effects on parks and other recreational facilities. A survey of park users was conducted to determine if the proposed beach restoration would increase park visitorship[16]. This survey included 19 in-person interviews at the park parking lot, and an online survey.

Of the 19 individuals interviewed, visitation to Greenwood Beach varied greatly. One interviewee noted only visiting four times a year while another came to Greenwood Beach every day. Average visitation to the site was between 1 and 3 times per week. Nearly everyone interviewed stays at least 30 minutes and leaves within 1.5 hours. Communities represented in the interview pool were Mill Valley, Los Angeles, San Francisco, San Rafael, Sausalito, and Tiburon. Nearly everyone interviewee drove to the site.

The most noted primary activities were walking and using the benches, with several people noting they also walk their dogs along the shoreline. Four individuals stated being in nature was a reason for visiting Greenwood Beach and the shoreline.

When asked about additional sand or gravel placement on the shoreline, 68% of interviewees said this would not increase or decrease their visitation to Greenwood Beach while 21% said it would increase their visitation. Two interviewees were undecided.

The online survey added 6 respondents, all of whom lived in nearby Marin communities. Those respondents did not state additional sand or gravel on the beach would increase or decrease their visitation to Greenwood Beach.

[16] Richardson Bay Audubon Center, Greenwood Beach Engagement Memo, December 2022.

XVII. Transportation/Traffic

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadways, pedestrian and bicycle facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) (vehicle Miles traveled)?			X	
c) Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

Discussion

a) The project would not alter uses or any traffic routes compared to existing Park access. Minor construction traffic would not conflict with program, plan, ordinance or policy addressing the circulation system, including transit roadways, pedestrian and bicycle facilities. Therefore, the project would have **no impact** with respect to any such plan or policy, or underlying circulation systems.

b) With the passage of Senate Bill SB 743 in 2013 and full implementation on July 1, 2020, Vehicle Miles Traveled (VMT) became the main metric to evaluate transportation impacts of proposed development projects. Traffic LOS and parking deficiencies are no longer considered significant impacts in CEQA analysis. With SB 743, most development projects need to provide a VMT analysis to determine traffic impacts. However, there are several exceptions. These include small projects that generate fewer than 110 daily trips; locally serving retail and similar land uses; and locally serving public facilities such as public schools and parks.

As discussed above, the project is a restoration of an existing beach, and would not result in additional or more intensive activities at the site that would change the current traffic circulation patterns and operations in the area. The project will not add new driveways or parking. The project is part of a park that primarily serves the residents from the nearby communities and, as such, would be exempt from VMT analysis. The park use survey described above in Section XVI, Recreation, indicates that the project would result in a minor increase in visitors to the park. According to the Governor's Office of Planning and Research (Technical Advisory on Evaluating Transportation Impacts in CEQA, April 2018), similar to

XVIII. Tribal Cultural Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project cause a significant adverse change in the significance of a tribal cultural resource defined in Public Resource Code Section 21074 as either a site, feature, place cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				X
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

Background

As per compliance with AB 52, Far Western Anthropological Research Group, on behalf of Marin County Department of Public Works and the Town of Tiburon, contacted the NAHC on October 6, 2023, requesting a review of their Sacred Lands File for this project and list of individuals/groups who might have knowledge concerning cultural and tribal resources within the ADI. The NAHC's response, dated November 9, 2023, stated that there are Native American sacred sites documented within the Area of Direct Effect (ADI) and to contact the Federated Indians of Graton Rancheria for information. Additionally, they provided a list of five Native American contacts including the Federated Indians of Graton Rancheria, Guidiville Indian Rancheria, and Wuksachi Indian Tribe/Eshom Valley Band that could provide information about archaeological and/tribal resources in the area.

XIX. Utilities and Service Systems

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

Background

Blackie's Pasture Park includes water fountains and restroom facilities along the paved trail east of the project site, and also abuts the location of Tiburon's wastewater treatment plant. The Greenwood and Brunini Beach areas have no public utilities other than including the location of the mouth of a flood control channel.

Discussion

a, b, c) The project would be a beach restoration and therefore not increase water demand. Therefore, **no impact** would occur to water supplies or associated facilities. Similarly, a possible small increase in Park usership would not substantially increase the quantity of sewage generated from that generated by the existing park. Therefore, any impacts to water or wastewater facilities would be **less than significant.**

XX. Wildfire Hazards

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Discussion

a, b) The project is in a park in a developed urban area, surrounded by other urban uses and waters of Richardson Bay. It is mapped as being in a Non-Wildlands/Non-Urban wildfire hazard area[17]. The site itself is generally developed with park uses with the exception of the off-shore tidal area, which is mostly covered with water. The project would not introduce any new fire hazards. Therefore, the project would have a **less-than-significant** impact with respect to wildfire hazards.

c, d) The project would be a beach restoration in a park in an urbanized area, and would not require any additional fire protection infrastructure or fuel breaks. Because of the scope of the project (i.e., beach restoration), it would not construct any new structures or otherwise expose people or structures to post-fire land instability or runoff issues. Therefore, the project would have a **less-than-significant** impact with respect to these wildfire hazards.

[17] https://gisopendata.marincounty.org/datasets/MarinCounty::fire-hazard-severity-zone-1/explore?location=37.894186%2C-122.493274%2C16.00 0

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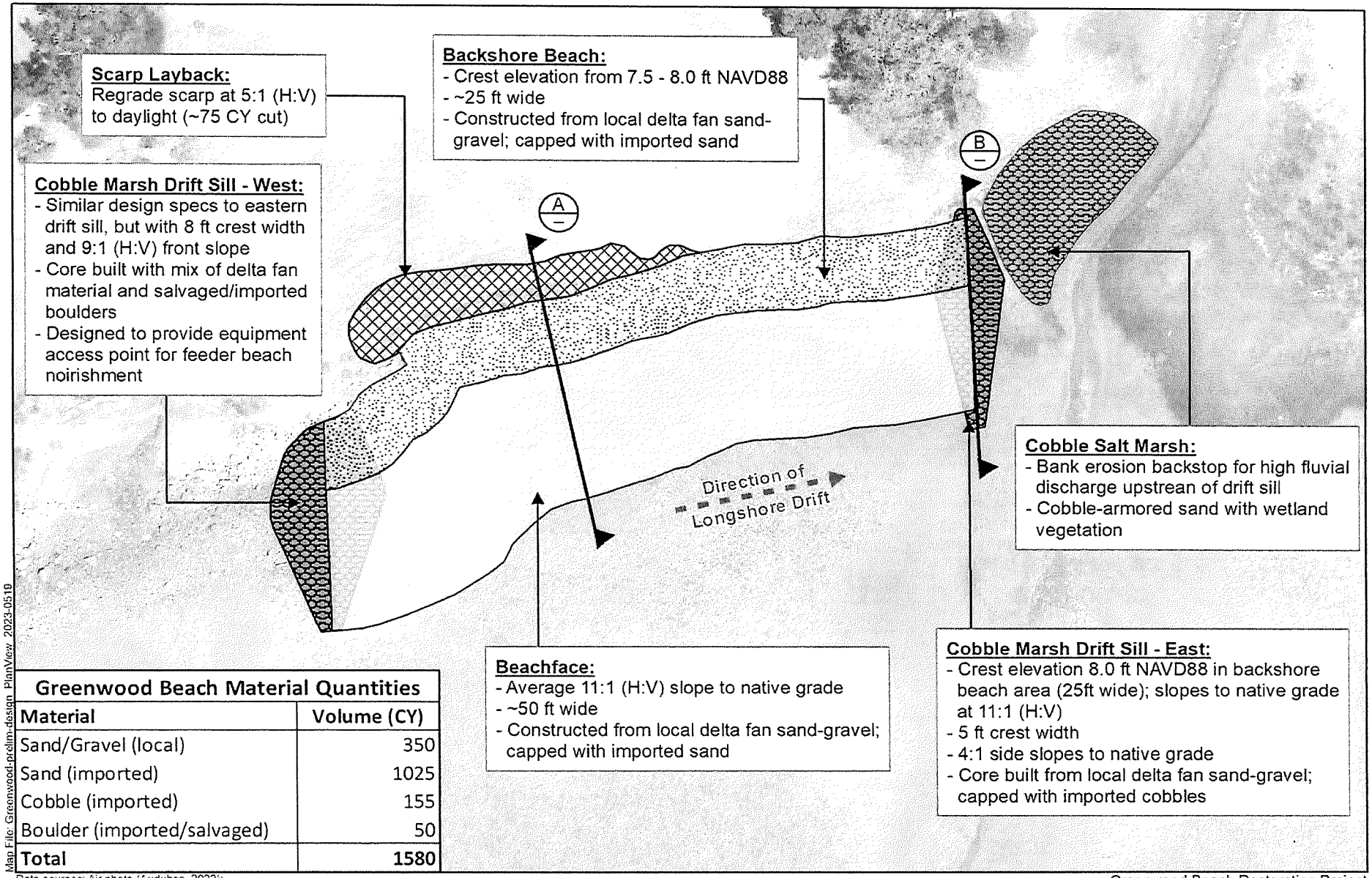


Greenwood Beach Material Quantities

Material	Volume (CY)
Sand/Gravel (local)	350
Sand (imported)	1025
Cobble (imported)	155
Boulder (imported/salvaged)	50
Total	**1580**

Map File: Greenwood-prelim-design_PlanView_2023-0510

Data sources: Air photo (Audubon, 2022); Topo/grain size data (GillenH2O, 2022)

Greenwood Beach Restoration Project

Gillenwater GillenH2O Consulting

Layout represents beach design profile, not as-built conditions. Profile will adjust over time based on cross-shore and long-shore transport processes.

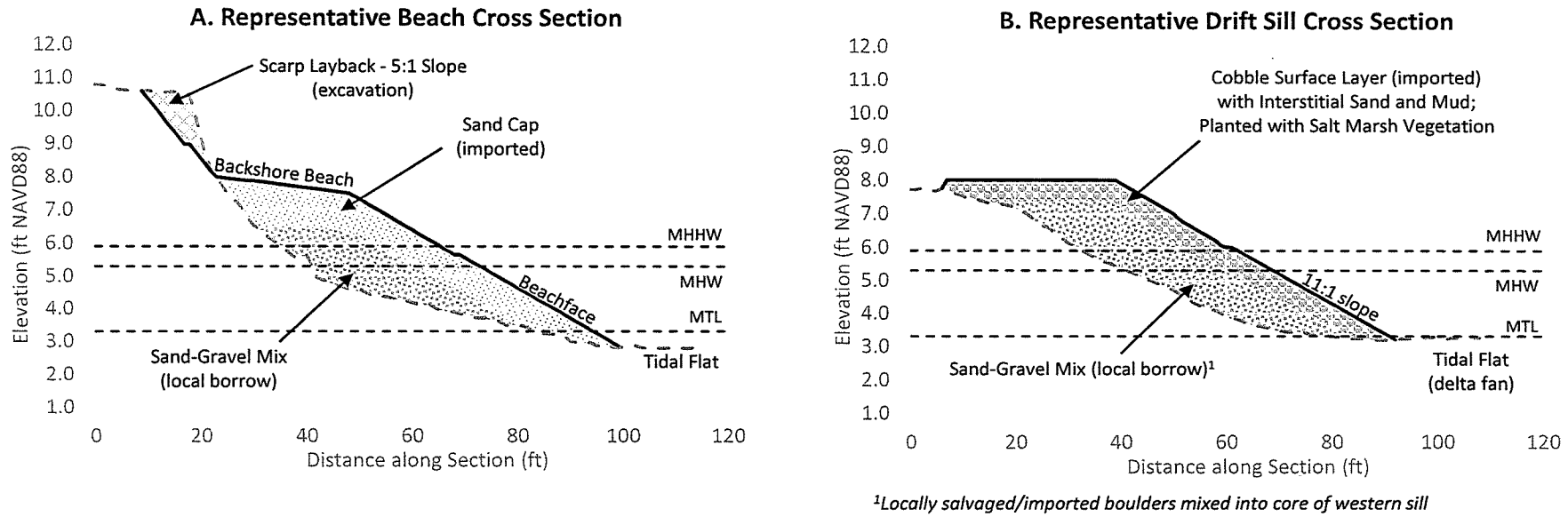
1:600 (1" = 50' at letter size)

0 25 50 Feet

0 7.5 15 Meters

Figure 1

Greenwood Beach
Preliminary Beach Restoration Design



Greenwood Beach Restoration Project

Figure 3

Greenwood Beach

Preliminary Beach Restoration Design – Typical Cross Sections

Gillenwater
GillenH2O
Consulting

APPENDIX B: REGIONAL SPECIAL-STATUS SPECIES NOT CONSIDERED FURTHER IN THIS ANALYSIS

Special-status plant species	English name	Biogeographic or ecological exclusion factors	Confidence of permanent absence determination for project effects area*
		Richardson Bay salt marshes	
Chloropyron molle subsp. *molle*	Soft bird's-beak	Restricted to brackish tidal marshes	Confirmed absent
Chorizanthe cuspidata var. *cuspidata*	San Francisco spineflower	Restricted to stabilized maritime coastal dunes.	Confirmed absent
Chorizanthe cuspidata var. *robusta*	Robust spineflower	Not present in eastern Marin County; known only from Point Reyes in Marin.	Confirmed absent
Cirsium andrewsii	Franciscan thistle	Restricted to freshwater wetland seeps or marshes. Habitat not present at project site.	Confirmed absent
Cirsium hydrophilum var. *hydrophilum*	Suisun thistle	Variety not present in Marin County. Endemic to brackish tidal marshes.	Confirmed absent
Clarkia franciscana	Presidio clarkia	Not present in Marin County.	Confirmed absent
Collinsia multicolor	San Francisco Collinsia	Not present in Marin County. No suitable moist grassland or woodland edge habitat present.	Confirmed absent
Dirca occidentalis	Western leatherwood	Restricted to moist, shaded coastal forest or woodland.	Confirmed absent
Eriogonum luteolum var. *caninum*	Tiburon buckwheat	Endemic to serpentine soils or outcrops.	Confirmed absent
Erysimum franciscanum	Franciscan wallflower	Rocky soil or rock outcrop habitats not present at project site.	Confirmed absent
Fritillaria liliacea	Fragrant fritillary	Grassland hillslopes, coastal; no records in southern Marin bayland watersheds	Confirmed absent
Fritillaria lanceolata var. *tristulis*	Marin fritillary	Strictly maritime distribution and habitats. No records in Marin bayland watersheds	Confirmed absent
Gilia capitata subsp. *chamissonis*	Coast gilia	Endemic to stabilized maritime coastal dunes.	Confirmed absent
Grindelia hirsutula var. *maritima*	San Francisco gumplant	Not present along Marin bayland coast.	Confirmed absent
Helianthella castanea	Diablo helianthella	Presumed extirpated in Marin County. Rocky habitat does not present at site.	Confirmed absent
Hemizonia congesta subsp. *congesta*	White hayfield tarweed	Suitable habitat present, but only yellow hayfield tarweed (subsp. lutescens)	Confirmed absent

Special-status plant species	English name	Biogeographic or ecological exclusion factors	Confidence of permanent absence determination for project effects area*
Pentachaeta bellidiflora	White-rayed pentachaeta	Restricted to serpentine grassland and scrub borders.	Confirmed absent
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	Restricted to coastal prairie in western Marin County.	Confirmed absent
Plagiobothrys glaber	Hairless popcornflower	Presumed extinct since early 20th century in Marin County, but potential shoreline habitat at project site.	Confirmed absent
Pleuropogon hooverianus	Hoover's semaphore-grass	Restricted to vernal marsh and grassland swale wetland habitats, absent at the project site.	Confirmed absent
Polemonium carneum	Fleshy polemonium	Potential habitat on grassy or brush slopes.	Confirmed absent
Quercus parvula var. *tamalpaisensis*	Tamalpais oak	No oaks present in the project area. Nearby oaks all *Q. agrifolia*.	Confirmed absent
Ranunculus lobbii	Lobb's aquatic buttercup	Restricted to seasonal freshwater pool and swale habitats, absent at the project site	Confirmed absent
Sanicula maritima	Adobe sanicle	Presumed extinct in San Francisco Bay since 19th century, never reported from Marin County. Alkali clay wetland soil habitat absent.	Confirmed absent
Sidalcea calycosa var. *rhizomata*	Point Reyes checkerbloom	Restricted to maritime freshwater marsh and wetland grassland swales, west Marin	Confirmed absent
Sidalcea hickmanii var. *viridis*	Marin checkerbloom	Restricted to serpentine grassland	Confirmed absent
Silene scouleri var. *scouleri*	Scouler's catchfly	Restricted to maritime soils and rock outcrops, west Marin	Confirmed absent
Silene verecunda subsp. *verecunda*	San Francisco campion	No occurrences in Marin County. Sandy maritime habitat absent at project site.	Confirmed absent
Stebbinsoseris decipiens	Santa Cruz microseris	Restricted to serpentine grassland or rock outcrops.	Confirmed absent
Streptanthus batrachopus	Mt. Tamalpais jewelflower	Restricted to serpentine rock outcrops	Confirmed absent
Streptanthus glandulosus var. *niger*	Mt. Tamalpais bristly jewelflower	Restricted to serpentine rock outcrops	Confirmed absent

APPENDIX C: MITIGATION MONITORING AND REPORTING PROGRAM (TO BE COMPLETED IN FINAL IS)

Mitigation Measure	Implementing Responsibility	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
Biological Resources				
Mitigation Measure BIO-1. a. Most weed seeds are deposited in the upper few inches of sand or soil. Best Management Practices applied during sand harvest from the Shollenberger Park sand stockpile shall include scraping the surface of the sand prior to sand quarrying to clear weeds and accumulated seeds in the top few inches of sand in excavation areas. b. During the first winter rainy season following sand placement, when weed seedling establishment is at the 2nd-3rd leaf stage, the shoreline weed seedling zone shall be monitored to detect elevated frequencies of weeds. If elevated levels of weed seedlings are detected, they shall be manually removed (rake, hoe or spade) at the seedling-juvenile stage, before flowering or seed set. The shoreline weed seedling zone shall be limited to the zone below the highest tide line or the landward limit of imported sand placement, whichever is higher.	Project Biologist	Town Project Manager to monitor implementation	Prior to importation of sand/soil As specified in measure	

excavated to provide at least 50% unimpeded cross-section area to facilitate tidal drainage and circulation. If the drift-sill is not adequately vegetated to significantly inhibit sand drift into the channel mouth by the second year after construction, the project manager shall supplement it with additional transplants of species adapted to the tide zones where sand or gravel drift is occurring. Transplants of sand-trapping native vegetation shall be secured in position by placement of protective cobbles embedded in sandy mud.				
Cultural Resources				
Mitigation Measure CULT-1: Human Remains. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities all such activities in the vicinity of the find shall be halted immediately and the Town shall be notified. The District shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within	Construction Contractor; Qualified Archaeologist	Town Project Manager	During ground-disturbing activities at the project site.	

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