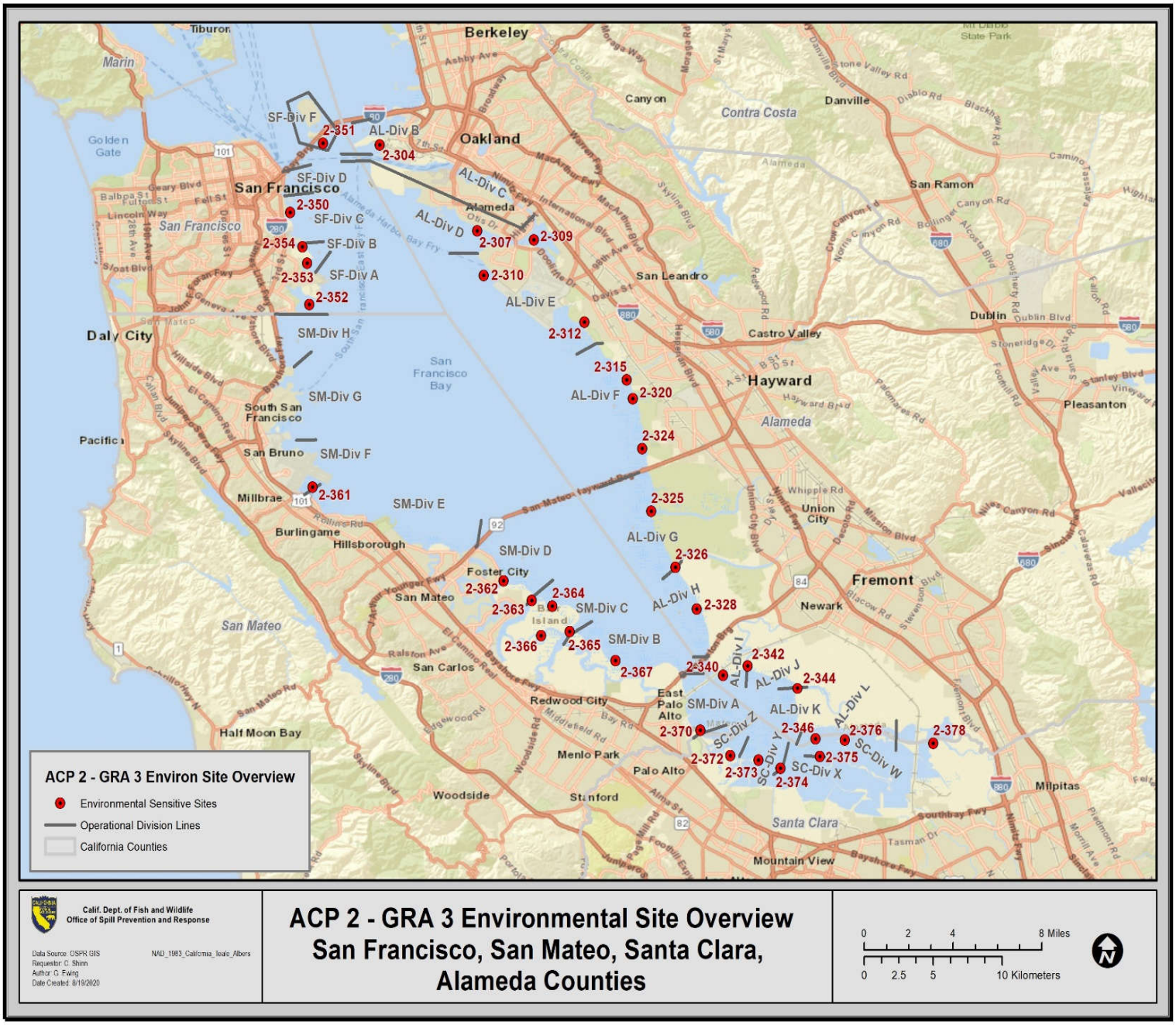


Figure 1: GRA 3 Environmental Sensitive Sites + Operational Divisions Overview

ACP 2 – South San Francisco Bay

9816 South San Francisco Bay (GRA 3)

9816.1 Geographic Response Strategies for Environmental Sensitive Sites

9816.1.1 GRA 3 Site Index

County: Alameda **ACP Division/Segment:** AL - B - S004

NOAA Chart: 18650 ***Map Book:*** ***Decimal Degrees:*** 37.806591 -122.324127

Site Description:

Middle Harbor Shoreline Park consists of the cove inside the breakwater and Western Pacific Mole north to Seventh Street and encompassing beach and riprap habitat. This site is the former Oakland Naval Supply Depot and is now under management of The Port of Oakland. The shallow cove consists of mudflats, sand/gravel beachfront and rip-rap. The site has been restored by the Port of Oakland offering pocket sand beaches, and salt-marsh restoration in progress along southeastern edge. Patches of eelgrass vary seasonally within the shallow waters. The northern edge and southern boundary are primarily manmade or rip-rap shoreline habitat. BEWARE OF SUBMERGED HAZARDS (see diagram for seawall location) which may be underwater based on current tidal height.

Resources at Risk:

ESI and Habitat: 8B Sheltered solid man-made structures
6B Riprap
5 Mixed sand and gravel beaches

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Alameda song sparrow	SSC	Year-round	Mar
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	Pacific herring		Year-round	Nov-Apr
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	eelgrass		Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Office	Port of Oakland	(510) 773-9991
E	/Office	Port of Oakland	(510) 627-1469
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

The primary concern at this site is the presence of T&E species: black rails, clapper rails, least terns and various migratory species and their respective habitat.

Concerns and Advice to Responders:

The main concerns are the very sensitive marshes and mudflats which support listed species habitats. These habitats are almost impossible to cleanup. The intention is to prevent oil from entering the marshes by diverting it to collection sites on water. Avoid disturbing or trampling marsh vegetation or trampling oil into the substrate.

Hazard and Restrictions:

Port of Oakland may have heavy big rig traffic getting into/out of the terminal facilities. There are several unmarked
underwater obstructions near the northwest edge of the Pacific Mole. Average water depth is four feet depending on tidal
stage.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-304.1** ***Objective: Strategy 2-304.1 Objective: Exclude/Deflect oil from embayment by deflection to collection.

Strategy: Deploy a continuous line of harbor boom (2500' 9X9+ Hboom) across the harbor beginning from the Western Pacific Mole north to the sheetpile breakwall, making a 100° bend and terminating at the apex point of the Portview Park. Provide shoreline boom seal for tidal changes. A collection pocket may be set up at the end of the Mole or Portview Park to collect oil via vacuum truck or skimmer. Advise Incident Command if collectable quantities of oil are present. BEWARE of underwater obstructions near the tip of the Western Mole as indicted
in site diagram.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	2500	feet
Boom	Sorbent			2500	feet
Anchor	Danforth	22	lbs	7	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			7	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-304.2** ***Objective: Backup initial exclusion strategy when strong winds or wave conditions are likely to move oil past initial exclusion deployment.

Strategy: Repeat the deployment with a second deployment (2500' 9X9+ Hboom). Back Hboom with 2500' absorbent boom and change out absorbent boom as necessary.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	feet		2500
Boom	Sorbent		feet		2500
Anchor	Danforth	22	lbs	7	
Staff	Staff to Deploy			7	
Vessel	boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			7	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: From I-80 West take the last offramp before the Bay Bridge Toll aka West Grand/Maritime St. Keep right at the fork and follow signs to Maritime St/Harbor Terminals/7th St. Continue on Navy Roadway & turn right on 7th St. Continue to Middle Harbor Shoreline Park located on the corner of 7th and Middle Harbor Rd. Middle Harbor consists of

the cove inside the breakwater and Western Pacific Mole north to Seventh Street and encompassing beach and riprap habitat. This site is the former Oakland Naval Supply Depot and is now under management of The Port of Oakland. The land and restoration funds donated by the Port of Oakland.

Land Access: Access from 7th St and Middle Harbor Rd. Locked gates at night.

On-Water Limitations: Jack London Aquatic Center is the nearest launch/docking directly to the South located at 1st street/Embarcadero Way in Oakland. Ave depth of middle harbor is 4 feet. Beware of underwater hazards!

Facilities, Staging Areas, Command Posts, Available Equipment: Restrooms onsite, parking max at 30 vehicles.

Communications Problems: Good cell reception.

Additional Operational Comments: Ave depth of middle harbor is 4 feet. CAUTION: UNDERWATER HAZARDS MAY BE UNSEEN DUE TO TIDAL STAGE.

Imagery: NAIP 2010 (Summer) 4-Band

2-307-A Site Summary - Crown Beach/Alameda Eelgrass Beds 2-307-A

County: Alameda **ACP Division/Segment:** AL - D - S007

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.760659 -122.273012

Site Description:

Robert W. Crown Memorial Beach is a man-made beach managed under East Bay Regional Park District (EBRPD) using imported dredging materials from Suisun Bay Shoal. The sandy beach is approx two linear miles and includes Elsie Roemer Bird Sanctuary at the southeastly end. Elsie Roemer is also managed under EBRPD. Endangered snowy plovers have recolonized on the beach (location varies annually). EBRPD closes off the area where snowy plovers congregate each spring-summer season.

The Alameda Eelgrass Beds offshore Crown Beach extends from near the entrance to Ballena Bay to the southerly extension of Park Street in Alameda. Each individual eelgrass bed can expand or contract seasonally. The densest portion of the bed is near Ballena Bay and becomes more sparse along a sand bar running to the east about 150 yards off shore. The beds are in 8 to 10 feet of water and would not necessarily be exposed to oil on all low low tides. Eelgrass may become exposed at tides less than 0.00ft. (MLLW: Mean Lower Low Water). Pacific Herring spawn in the eelgrass (Nov-Feb).

Resources at Risk:

ESI and Habitat: 3A Fine- to medium-grained sand beaches
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	Alameda song sparrow	SSC	Year-round	Mar
Fish	Pacific herring		Year-round	Nov-Apr
Fish	longfin smelt	ST	Year-round	Nov-May
Plants	eelgrass		Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Crown Beach Park Supervisor	East Bay Regional Park District	(510) 862-7984
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
E	/Shoreline Parks Manager	East Bay Regional Park District	(510) 881-1832
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
O	/Dispatch, 24-hr	Oakland Airport	(510) 563-3361
O	/Marina Manager	Safe Harbor Ballena Isle	(510) 220-3705
T	/Agency Representative	California Department of Fish and Wildlife	(707) 644-2812
T	/Agency Representative	NOAA National Marine Fisheries Service	(562) 980-3232

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Several sensitive plant species occur in the area. Vessels avoid transiting thru eelgrass beds offshore.

Concerns and Advice to Responders:

The concern is that oil will readily stick to any eelgrass blades which come in contact with the oil. The oil is disruptive to the eelgrass and would be damaging to any herring eggs spawned during the herring spawning season November to February. The strategy is to deflect the oil past this area to currents leading to collection setup to the east in San Leandro Channel. In the event Elsie Romer Bird Sanctuary is affected, contact EBRPD for entry/clean-up operations.

Hazard and Restrictions:

Water is relatively shallow near shoreline.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-307.1** ***Objective: Assess need for protective booming: Eelgrass is only vulnerable at very low tides when eelgrass tops are exposed to floating oil.

Strategy: Biological staff must assess this site to determine if eelgrass is at risk. Because this bed is fairly deep, eelgrass tops are rarely, if ever, exposed to floating oil, and then only at very low tides. Oil readily sticks to floating eelgrass tops, and once eelgrass gets fouled with oil, oil becomes a subsurface threat to fish and other organisms which thrive in this cover. Scientific staff must review tidal information to see if minus tides less than -0.5 ft may result in eelgrass exposure, and must conduct on-site evaluation as necessary. Any booming recommendations should be expedited though ICS to operations.

Table of Response Resources

Last Page Update

Strategy:* 2-307.2** ***Objective: Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Bay: 2-309.

Strategy: Cascade 3000 ft of 9X9+ Hboom from the mouth of Ballena Bay at a southeasterly angle to direct oil past the eelgrass beds and the southern side of Alameda Island toward the San Leandro channel.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3000	feet
Anchor	Danforth	22	lbs	7	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			6	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

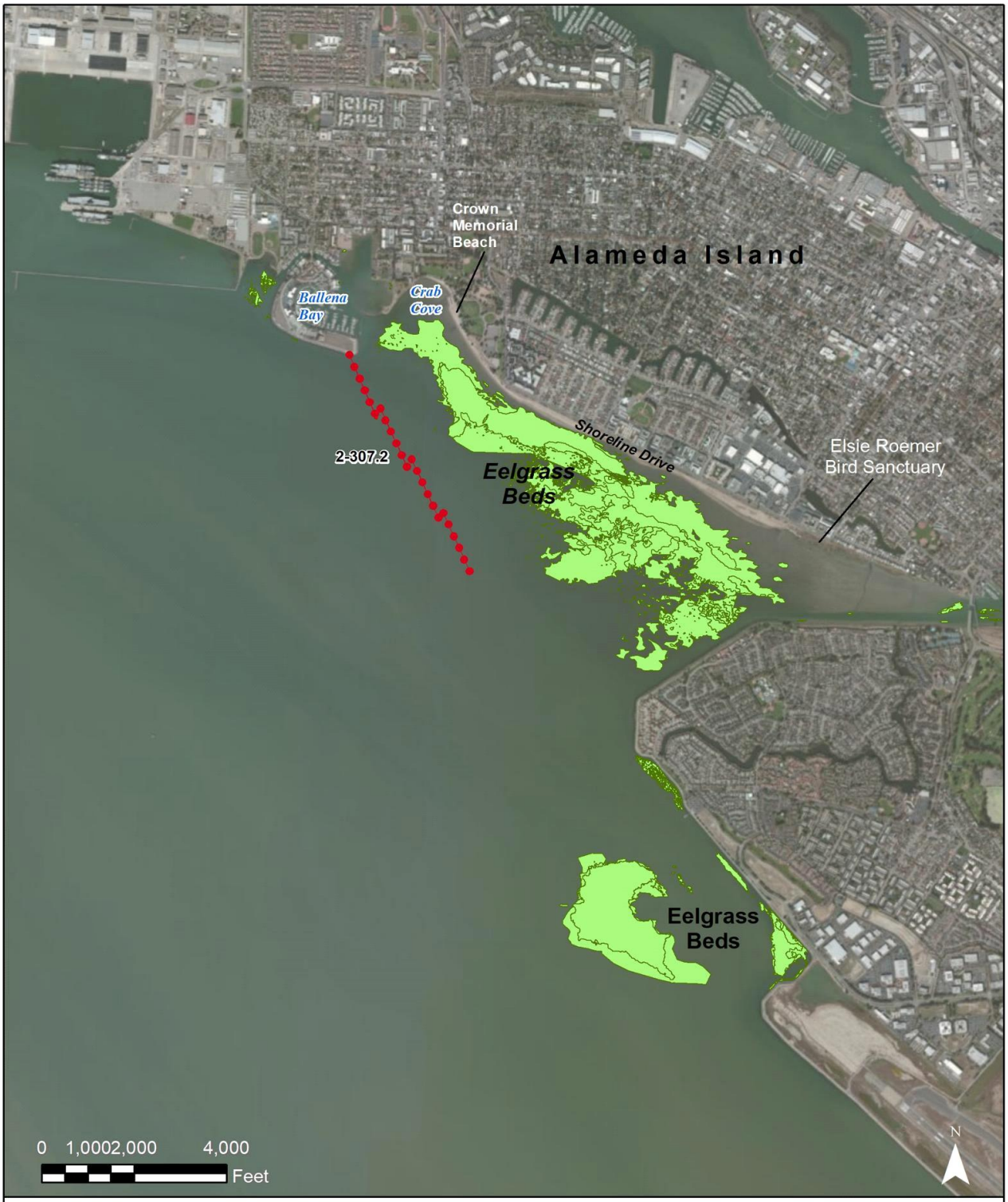
Directions: The Eelgrass beds are approx 200 yards offshore from Alameda Marina mouth. Follow the signs to Alameda from I-880. Exit on Webster and continue to the terminus of Webster at Crown Beach: right (west) on Central to 4th Street to Ballena Bay and Ballena Isle Marina or left to 8th Street which becomes Shore Line Drive.

Land Access: Ready access to the nearby shoreline. EBRPD has ample parking at north end of Crown Beach. Restrooms and a small conference room at Crab Cove.

On-Water Limitations: Public launching at Encinal Boat Launch located at the end of Lincoln off of Central. Docking & fuel available at Ballena Isle Marina just to the west.

Facilities, Staging Areas, Command Posts, Available Equipment: The nearby Ballena Isle Marina is the most convenient boat facility to support this operation. Robert W. Crown Beach (EBRPD) may be useful for staging. The Alameda Ferry Slip on Bay Farm Island to the south is also a good site to stage boom and support equipment. Also, San Leandro Harbor, just south of the Oakland Airport is a small boat harbor accommodating 500 boats with a minimum of 15 guest slips. The channel leading into the harbor is dredged and has a controlling depth of 5-6 ft. It is marked by day beacons and two lights, and the northernmost light has a fog signal. There is a yacht club and the Harbor Master's office is on the southwest side.

Communications Problems: None


Crown Memorial Beach
Alameda Island
Ballena Bay
Crab Cove
2-307.2
Shoreline Drive
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CDFG - OSPR & USCG Site: 2-307 Name: Crown Beach / Alameda Eelgerass Beds
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/23/2021
Harbor Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - D - S008 AL - D - S015

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.750827 -122.221723

Site Description:

This site includes all of San Leandro Bay including San Leandro Channel, north to High Street Bridge and includes Arrowhead Marsh. This shallow bay between Alameda and Bay Farm Islands has extensive mudflats and well developed salt-marsh, including the 50-acre Arrowhead Marsh at the south-east end. The west and south margins are part of Martin Luther King Jr. Regional Shoreline - EBRPD. The Oakland Estuary feeds into the north end, and San Leandro Channel feeds in from the west. San Leandro Creek enters into the bay at its southeast corner at the base of Arrowhead Marsh.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	Alameda song sparrow	SSC	Year-round	Mar
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	robust spineflower	FE	Year-round	Apr-Sep

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Crown Beach Park Supervisor	East Bay Regional Park District	(510) 862-7984
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
E	/MLK Park Supervisor	East Bay Regional Park District	(510) 544-3115
E	/Shoreline Parks Manager	East Bay Regional Park District	(510) 881-1832
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Several sensitive plant species occur in the area. The Elsie Roemer Bird Sanctuary is at the east end of Crown Beach and supports many sensitive salt-marsh species.

Concerns and Advice to Responders:
The main concerns are the very sensitive salt-marshes and mudflats here, which are almost impossible to cleanup. Endangered birds and salt-marsh mice live here. The intention is to prevent oil from entering the marshes by diverting it to collection sites on the north shore of Bay Farm Island near the bridge. Avoid disturbing or trampling salt-marsh vegetation and oil into the mud.

Hazard and Restrictions:
Beware of shallows and submerged hazards.

Site Strategies: **Site Validation Level: III**

Strategy:* 2-309.1** ***Objective: Exclusion/deflection to shoreside collection at Bay Farm Island Bridge.

Strategy: Deploy 1600' ft of 9X9+ Hboom (800' per leg) in a chevron configuration from north side of Bay Farm bridge, across San Leandro Channel to south side at fishing pier, establish collection pockets on both sides, and exclude oil from San Leandro Bay marshes. Place interim anchors as needed based upon conditions. Flood tide - Using 1200 ft. of 9X9+ Hboom and 300 ft of swamp boom (or intertidal barrier boom) connected together, place boom across channel at approximately a 45 deg. Angle. Place intertidal barrier boom on north side of channel across mudflat, extending harbor boom across channel to form a collection pocket on south side of channel at inlet next to the Alameda/Bay Farm Island bridge.

Ebb Tide:- If little to no oil is inside San Leandro Bay; flood tide harbor boom can remain in place. If strong currents exist the boom may be opened, using the boom to line the marshes on either side of the channel, allowing oil to move out of the bay. If a significant amount of oil is present inside the bay; leave existing flood tide harbor boom in place, collect oil on the north bank.

Backup considerations- see substrategy 2-309.5: A secondary line of defense in the San Leandro Channel may be required. This could involve sorbent boom behind harbor boom or additional harbor boom and skimmers working near the bridge. Specific equipment requirements will be determined based on oil, current, and weather conditions during the incident. Advise UC/IC.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1600	feet
Boom	Sorbent			3000	feet
Anchor	Danforth	22	lbs	5	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update
Strategy Updated:
Last Test: 1/13/2017

Strategy:* 2-309.2** ***Objective: Deflection away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.

Strategy: Deploy 1500 ft of 9X9+ Hboom from the Park St. jetty on Alameda. Depending on weather and spill conditions, this boom can be used to either deflect oil away from the marsh east of jetty and into channel, or to deflect oil to the sandy beach into a collection area. SPS skimmer in San Leandro Channel may be replaced by portable skimming head operated from shore with vac truck or other shore storage.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor Boom	9x9	inch	1500	feet
Anchor	Danforth	22	lbs	4	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-309.3** ***Objective: Exclude oil from entering the bay via Oakland Estuary.

Strategy: Protective measures on the north channel (Oakland Estuary) entrance to San Leandro Bay may also be necessary depending on the size and location of the spill. Spills in SF Bay should be confronted in the Oakland Inner Harbor to prevent oiling of the inner harbor and San Leandro Bay. Spills in the harbor should be confronted in the Park Street Bridge Reach. Currents in the Park St. Bridge Reach are very fast. Specific strategies have not been developed for these locations, although extensive use and deployment of several thousand feet of harbor boom, boom boats, skimmers and vacuum trucks may be required. Diagonal booming will be necessary to move oil out of swift water to slower shoreside collection pockets and eddies.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9		3000	feet	
Boom	Sorbent			100	feet	
Anchor	Danforth	22lb		10		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			7		
Staff	Staff to Tend			2		

Strategy:* 2-309.4** ***Objective: collect / ground oil washing along Alameda Beach toward Elsie Romer Bird Sanctuary

Strategy: To contain and collect along-shore transported oil on Alameda Beach, set 300 ft of swamp boom at a diagional just west of Park St. jetty. Use sorbents and provide for additional oil collection as needed.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6		300	feet	
Boom	Oil Snare (pom-pom)			50	feet	
Anchor	Danforth	12 lbs		3		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			2		
Staff	Staff to Tend			2		

Strategy:* 2-309.5** ***Objective: Collection by skimming - as needed

Strategy: Best skimming location is at south side of Alameda-Bay Farm Island Bridge in conjunction with 2-309.1. There is a pocket with immediate vehicle access, sea wall, and walkway immediately to the west of bridge footing. This site is well suited for a Shoreside skimming system. Extra boom to reinforce the pocket is recommended.

Skimming with a Self propelled skimmer may be effective upstream from the bridge and particularly in conjunction with strategy 2-309.2 (deflection boom from Park Street jetty at Elsie Romer Bird Sanctuary.) The channel on the south side is favorable to navigation. Shoreside skimming may also work in conjunction with 2-309.2.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6		100	feet	
Self propelled skimmer				1		
Staff	Staff to Deploy			4		
Staff	Staff to Tend			4		

Logistics:

Directions: By vehicle, exit I-880 at Hegenberger Rd and proceed bayward (toward OAK airport). Turn right (north) on

Doolittle Dr (Hwy 61) which runs along the west side of San Leandro Bay and crosses the San Leandro Channel. By boat, from the tip of Alameda Island, the bay is at the east end of the Island and may be approached via the Oakland Estuary or, preferably on the south side of the island, via the San Leandro Channel.

Land Access: Good on west shore.

On-Water Limitations: Exceedingly shallow. There are launches in Oakland Estuary and at the southwest of Alameda Island at the end of Lincoln St. All services available in Oakland Estuary. MLK Shoreline Park also has a launch and conference facilties, contact EBRPD for details.

Facilities, Staging Areas, Command Posts, Available Equipment: Good staging at the foot of Alameda-Bay Farm Island Bridge. Also at Crown Park, San Leandro Regional Shoreline, and Bay Farm Ferry Landing. Field Post at USCG, Alameda. Foss Environmental HQ is at the west end of Alameda.

Communications Problems: None known.


Alameda Island
horeline Drive
Otis Dr
2-309.4
2-309.2
2-309.1
61
Eelgrass Beds
Arrowhead Marsh
MLK Shoreline
San Leandro Creek
Doolittle Dr
Eelgrass Beds
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CDFG - OSPR & USCG Site: 2-309 Name: San Leandro Bay
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/23/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - E - S001

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.72956 -122.261217

Site Description:

This site extends from the tip of Bay Farm Island at San Leandro Channel (ferry landing) to the next point south. This reach is a shallow cove with a rip-rap margin and shallow water of up to 15' deep. It is a natural collection area for debris. The eelgrass beds begin about 50 ft off shore and are about 200 yards long. There is an exclusion zone 200 yds from OAK Airport shoreline. Bouys mark the exclusion zone. Contact Alameda County Sheriffs Department Dispatch for access to site or to deploy any 2-310 site strategies.

Resources at Risk:

ESI and Habitat: 6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Year-round	Apr-June
Fish	Pacific herring		Year-round	Nov-Apr
Fish	longfin smelt	ST	Year-round	Nov-May
Plants	eelgrass		Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Coordinator	City of Alameda Parks and Recreation	(510) 747-7529
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
O	/Dispatch, 24-hr	City of Alameda Police Department	(510) 747-7900
O	/Dispatch, 24-hr	Oakland Airport	(510) 563-3361
T	/Agency Representative	California Department of Fish and Wildlife	(707) 644-2812
T	/Agency Representative	NOAA National Marine Fisheries Service	(562) 980-3232

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

Primary concern is oiling of eelgrass at -0.5 ft tides and its impacts on wildlife. This is a natural collection area for debris and can function as an effective oil collection site. Oil may become imbedded in the riprap.

Hazard and Restrictions:

Riprap poses slip, trip and fall hazards. Vessels beware of shallows at margins. Oakland Airport has an exclusion zone within 200 yds of shoreline near the NW end of the runway. Contact airport security to gain access to this area for strategy deployment or shoreline assessment.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-310.1** ***Objective: Assess need for protective booming: Eelgrass is only vulnerable at very low tides when eelgrass tops are exposed to floating oil.

Strategy: Biological staff must assess this site to determine if eelgrass is at risk. Because this bed is fairly deep, eelgrass tops are rarely exposed to floating oil, and then only at very low tides. Oil readily sticks to floating eelgrass tops, and once eelgrass gets fouled with oil, oil becomes a subsurface threat to fish and other organisms which thrive in this cover. Scientific staff must review tidal information to see if minus tides may result in eelgrass exposure, and must conduct on-site evaluation as necessary. Any booming recommendations should be expedited though ICS to operations.

Table of Response Resources

Last Page Update

Strategy:* 2-310.2** ***Objective: Deflection boom from the runway point to divert oil borne on currents past cove.

Strategy: This strategy is most appropriate if very low tides are likely to expose eelgrass. Deploy 1000 ft of 9X9+ Hboom from the point at the end of the runway parallel to the shoreline to deflect oil past the pocket of the cove. This strategy will require heavy anchoring since current is very strong (2+kn at point); previous deployment attempts have failed if not properly anchored.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor Boom	9x9		2000	feet
Anchor	Danforth	22	lbs	8	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-310.3** ***Objective: Maximize oil capture at this locale with deflection to shore skimming unit.

Strategy: a) Ebb Tide: deploy 1000' 9X9+ Hboom at an angle to direct oil to shore about 200'south of ferry landing. Complete with a lined capture and hold pocket (2000'4X4+Hboom). Line shore with 4X4+ and/or sorbent boom to keep oil from imbedding in riprap. Deploy additional 1000 ft Hboom to cascade oil into collection.

b) Flood Tide: skimmer and collection booms will need to be positioned in the pocket of the cove to effect recovery.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	2000	feet
Boom	Swamp	6x6	inch	2000	feet
Anchor	Danforth	22	lbs	9	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Land access is from I-880: exit at High St, continue south (left) on Doolittle across San Leandro Bay and then continue right (west) on Mecartney Rd bay front, Shoreline Park. By water the site is about a mile southeast from the marina at Robert Crown State Beach.

Land Access: Do not access shoreline without contacting OAK Airport Security.

On-Water Limitations: Beware of shallows at margins. Launch and moorage across at Ballena Isle Marina, Alameda.

Facilities, Staging Areas, Command Posts, Available Equipment: Shoreline Park and Robert Crown Beach can provide local field support and deployment sites. EBRPD facilities at Crown Beach, Alameda may serve well as a field post.

Communications Problems: Cell reception excellent.


Arrowhead Marsh
61
Ferry Landing
Bay Farm Island
2-310.3(a)
2-310.1
Eelgrass Beds
2-310.2
2-310.3(a)
Harbor Bay Parkway
OAK Airport
0 1,000 2,000 4,000
Feet
N
CDFG - OSPR & USCG Site: 2-310 Name: Bay Farm Islands Eelgrass Beds
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/23/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - E - S003

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.703591 -122.191389

Site Description:

The site is made up of wetlands at Oyster Bay Regional Shoreline located along the east side of San Francisco Bay, bounded to the northwest by Oakland International Airport, to the east by the San Leandro Davis Street Waste Transfer Station, and to the southwest by San Francisco Bay. The site consists of 4 acres of emergent salt-marsh bordering the Oyster Bay Regional Shoreline to the north and 5 acres of tidally influenced marsh located along the southeast portion of the shoreline. The salt-marsh in the northern portion of the site occurs on both side sides of the drainage channel and consists primarily of cordgrass. Access should be made through Davis St. gate managed by EBRPD. Access is restricted on the north side of the channel (OAK Airport). The salt-marsh along the southeast portion of the shoreline is bordered to the east by private industrial facilities, and to the south by a mudflat cove where shorebirds are present. The shallow mudflats in the vicinity of Oyster Bay Regional Shoreline, which provide habitat for numerous shorebirds, may make access for deployment of large boom sections problematic at low tides.

Resources at Risk:

ESI and Habitat: 6B Riprap

9B Vegetated low banks

8B Sheltered solid man-made structures

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Apr
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
E	/MLK Park Supervisor	East Bay Regional Park District	(510) 544-3115
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
O	/Dispatch, 24-hr	Oakland Airport	(510) 563-3361

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:
Should oil enter the marsh, expect impacts to marsh vegetation, small mammals, shorebirds and waterfowl. Avoid trampling salt-marsh vegetation and trampling oil into mud. Delinieate and minimize pathways for responders to access marsh/mudflat habitat.

Hazard and Restrictions:
Shallow water near shoreline, seas may be up to 3 feet with westerly winds. Soft substrate. Contact OAK Airport Security if within 200 yds of Airport shoreline or deployment of strategy 2-312.1a

Site Strategies: **Site Validation Level: III**

Strategy:* 2-312.1** ***Objective: Exclude oil from entering the marshes. Should oil enter the marshes, contain oil to the smallest possible area

Strategy: a. Deploy 600 ft of swamp boom having a minimum freeboard of 4 inches and a minimum draft of 4 inches in the tidal channel on the north side of Oyster Bay Regional Shoreline. Deliver the boom by truck. A john boat and 4 people will be needed to deploy the boom. Access is through the Davis Street Waste Transfer Station. A skimmer and portable storage device may be located here if significant quantities of oil can be accumulated.
b). Deploy 250 ft of swamp boom across the mouth of the salt marsh at the southeast corner of Oyster Bay Regional Shoreline. Stakes must be used to keep boom in place. Water is very shallow at low tides. Access is through East Bay Regional Park gate at the northern-most end of Neptune Drive.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	950	feet
Anchor	Danforth	12	lbs	6	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			4	
Staff	staff to tend			2	

Last Page Update
Strategy Updated: 4/28/2015
Last Test: 4/28/2015

Strategy:* 2-312.2** ***Objective: Exclude oil from salt marsh at the southern end of Oyster Bay Regional Shoreline.

Strategy: Deploy 2,500 ft. of 9X9+ Hboom from the southern most point of Oyster Bay Regional Shoreline to Mulford Landing near the intersection of Marina Blvd. and North Dike Rd. One boom boat, two john boats and 6 people will be needed at this site. Angle of boom may be altered to take advantage of wind. Divert oil to an accessible shoreline.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	2500	feet
Anchor	Danforth	22	lbs	8	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			6	
Staff	Staff to Tend			2	

Last Page Update
Strategy Updated: 4/28/2015
Last Test: 4/28/2015

Strategy:* 2-312.3** ***Objective: Oil Recovery by skimming

Strategy: If product accumulates as a result of strategies .1 and/or .2, deploy skimmers and vac truck to recover product.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
skimmer	shoreside			1	
Vac truck				3	
Staff	Staff to Deploy			4	

Last Page Update

Logistics:

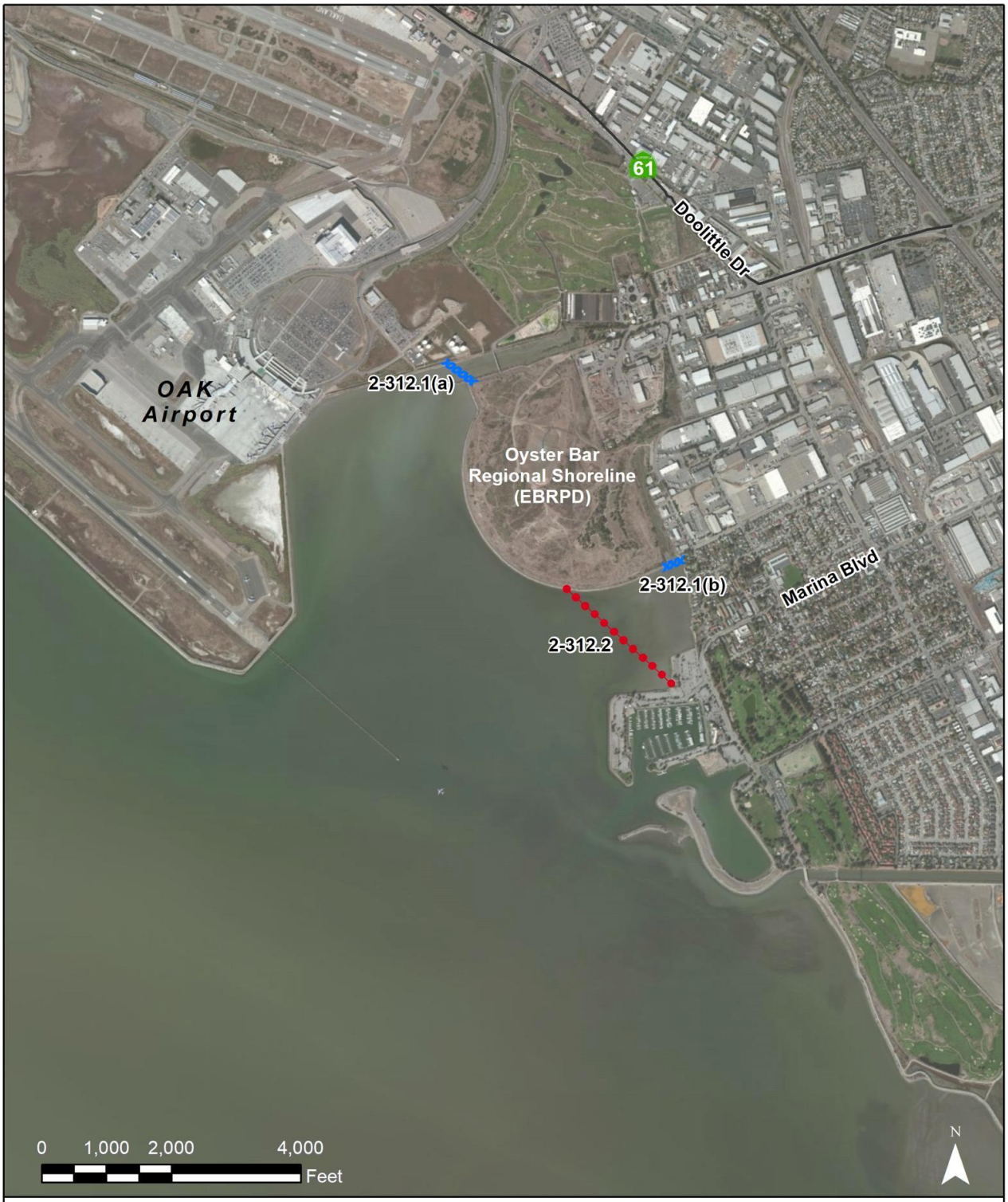
Directions: Take Highway S 880 to Alameda/San Jose. Take Davis Street exit. Proceed west on Davis St., access through the Davis Street Waste Transfer Station. To San Leandro Marina: Take Highway 880 to San Leandro. Take Marina Blvd. exit. Go west on Marina Blvd. to San Leandro Marina. West bank access can be made through the East Bay Regional Parks trail located on Neptune Drive, just south of the Davis Street Waste Transfer Station. Alternate access to the marsh inlet may be made through Paradise Mechanical, Inc. located at 2600 Williams Drive.

Land Access: Access for trucks on well maintained, graveled levee roads. Contact OAK Airport Security to access shoreline adjacent to Airport.

On-Water Limitations: Shallow draft vessels<3'. Boat launching available at San Leandro Marina. Small skiffs may be launched from

Facilities, Staging Areas, Command Posts, Available Equipment: This is all part of East Bay Regional Park District's Hayward Shoreline. A small staging area and access is available at the shoreline office at the west end of W. Winton Ave. Access is also available at the west end of Breakwater Ave. adjacent to Highway 92.

Communications Problems: Cell reception excellent.


61
Doolittle Dr
OAK
Airport
2-312.1(a)
Oyster Bar
Regional Shoreline
(EBRPD)
2-312.1(b)
Marina Blvd
2-312.2
0 1,000 2,000 4,000
Feet
N
CDFG - OSPR & USCG Site: 2-312 Name: Oyster Bay Marshes
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/23/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - F - S002

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Fremont - N Alameda ***Decimal Degrees:*** 37.670255 -122.163125

Site Description:

Site under juristiction of East Bay Regional Park District's (EBRPD) Hayward Shoreline, this large contiguous section of bay front marshes, diked marshes and tidal channels/creeks (150 acres) is located along the east side of San Francisco Bay in San Leandro. The site covers approx 2.25 miles of shoreline and is bounded on the north by Estudillo Canal and on the south by Bockman Channel at the Oro Loma Sanitary Waste Facility. San Francisco Bay is west of the site and the railroad on the east limits the upstream extent of San Lorenzo Creek. The shoreline consists of rip-rapped levees; a small segment of sand beach outboard of Bunker Marsh; a 3/4 mile long bayfront cordgrass marsh in the southern part of the site; and four separate tidal channels with vegetated banks. At the northern-most portion of the site is Estudillo Canal. This Canal is dammed approx. 100 yds upstream by a bridge with 12 large (48") culverts with flap gates to prevent bay water from moving upstream. Two small salt-marshes are present adjacent to the golf course, yet contained by levees. The smaller northern marsh is connected to the bay via culvert with flap gates. The gate prevents bay water from flowing into the marsh. The larger marsh is fully tidally connected to the bay via a 24" culvert w/o gate structures. However, there are concrete risers located on the inboard and outboard ends of the culvert with slots for weir boards.

North and Bunker marshes are diked with riprap levee shorelines. North Marsh (94 acres) is bounded by levees but open to the bay via a gate structure of 4 x 48" culverts with grates on either end and screw gates on each. The bayfront cordgrass marsh (28 acres) is exposed to the bay and fronted by a wide tidal mudflat. The largest channel is the San Lorenzo Creek in the middle portion of the site. It's banks are lined by a wide band of marsh vegetation (>75ft) and extend upstream to the railroad tracks (1/2 mile). A tidal slough extends to the north off the mouth of San Lorenzo Creek and cuts through the bayfront marsh. This slough extends northward to Bunker Marsh (26 acres) and other marshes controlled by the City of San Leandro (e.g. Bunker, East, North, and Citation Marshes). The Bunker Marsh levee has an open breach at the south end at this slough. On the south end of the site is Bockman Channel, a narrow and short (<1/2 mile) channel lined on both banks with marsh vegetation (<20ft).

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	migratory waterfowl	FP	Apr - Sep	
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:
Prevent oil from entering bay front and diked marshes, and marsh-lined channels (San Lorenzo Creek). Avoid trampling marsh vegetation and trampling oil into mud.

Hazard and Restrictions:
Shallow waterwith potential underwater hazards (old pilings), Seas up to 3 feet w/ windchop. Soft sediments. Possible strong currents within channels.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-315.1** ***Objective: Exclude oil from entering the bay diked marshes and tidal channels. Should oil enter the marsh or channels contain oil to the smallest possible area.

Strategy: a) Deploy 600 ft of 9X9+ Hboom across the outer mouth of San Lorenzo Creek, near the edge of the marsh. Deploy 600ft of swamp boom at small angle from levee to levee, across that channel and vegetated flood plain banks. This is a wide creek (150ft) with potentially strong currents. Boom angle should be small. Deflect oil to southern shore/levee where road and small staging area are available for oil recovery. Skiffs can be deployed from levee. The boom can be delivered to site by truck. A shoreside skimming system and storage will be needed to recover oil if sufficient volume accumulates.

B) Deplot 50 ft of swamp boom (4x4+) across unnamed slough channel extending north off San Lorenzo Creek near the mouth. Deploy boom in slough near the confluence with San Lorenzo Creek. Back swamp boom with sorbent boom. Boom angle should be small as currents may be strong. Requires 1 skiff and 4 people and sufficient anchoring to seal banks of slough during the rise and fall of the tide. This slough provides water to Bunker Marsh and others north of San Lorenzo Creek.

C) Deploy 50 ft of swamp boom (4x4) at the entrance to Bunker Marsh, and another 50 ft across channel leading to East and Citation Marshes. Back swamp boom with sorbent boom. This is a leveed marsh with an unrestricted opening to the slough channel that flows to San Lorenzo Creek.

D) Close tide gate structure at entrance to North Marsh. Contact City of San Leandro - Public Works (510) 577-6022.

e) Place weir boards in concrete risers on culvert at larger tidal marsh (adjacent to the golf course and north of North Marsh).

F) Ensure flap gates are adequately closed to tidal flooding at Estudillo Canal, small marsh adjacent to golf course, and at Bochman Channel.

G) Deploy 200 ft of swamp boom (4x4) in the mouth of Bochman Channel located at southern edge of site adjacent to Oro Loma Sanitary Waste facility. Back swamp boom with sorbent boom. Requires 1 skiff and 4 people, or may possibly be deployed from land by heaving lines across this narrow channel and pulling boom across at an angle to any current. The boom can be delivered to the site by truck.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	600	feet
Boom	Swamp	6x6	inch	950	feet
Anchor	Danforth	22	lbs	8	
Anchor	Stakes			15	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-315.2 *Objective: Exclude oil from entering the bay front cordgrass marsh. Should oil enter the marsh contain oil to the smallest possible area.

Strategy: Deploy 3,000 ft of 9X9+ Hboom around the marsh delta formed at the mouth of San Lorenzo Creek. This may require as many as 4 skiffs or shallow draft boom boats and 12 people. Anchor north end to rip rapped levee of Bunker Marsh, extend around outside (bayside) of marsh and San Lorenzo Creek mouth, south to rip rapped levee just south of Bockman Channel. Boom and skiffs may be deployed from south levee of San Lorenzo Creek or from offshore supply vessel at high tide.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3000	feet
Anchor	Danforth	22	lbs	10	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-315.3 *Objective: Oil Recovery by skimming

Strategy: A shoreside skimming system and adequate storage will be needed to recover oil if sufficient volume accumulates as a result of strategy .1. Likely locations are San Lorenzo Creek, Bockman Channel, and Estudillo Canal.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
skimmer	shoreside			1	
Vac truck				1	
Staff	Staff to Deploy			4	

Last Page Update

Logistics:

Directions: Hwy 880 to San Leandro; exit Washington Ave. west; right on Grant to Sanitary Waste Facility to launch ramp at San Leandro Marina, take Highway 880 to San Leandro, exit at Marina Blvd. Go west on Marina Blvd. to San Leandro Marina.

Land Access: Access for trucks on well maintained, graveled levee roads.

On-Water Limitations: Shallow draft vessels<6'. Boat launching available at San Leandro Marina. Small skiffs may be launched from

Facilities, Staging Areas, Command Posts, Available Equipment: Staging areas and access are available at the Oro Loma Sanitary Waste Facility. There are 6,000 lb vehicle bridges across both San Lorenzo and Bockman channels. Bockman also has a foot bridge near the mouth. Shoreline south of San Lorenzo Creek is the East Bay Regional Park Districts Hayward Shoreline. Areas north of San Lorenzo Creek, such as Bunker Marsh and North Marsh are owned by the City of San Leandro.

Communications Problems: Cell reception strong.

Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - F - S003

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.660435 -122.157586

Site Description:

As part of East Bay Regional Park District's (EBRPD) Hayward Shoreline, this large contiguous section of pickleweed salt-marsh located along the east side of south San Francisco Bay and bounded on the north by the Bockman Channel, the east by the city of Hayward, the south by Cogswell Marsh, and on the west by San Francisco Bay. The bay front edge off this site is rip-rapped levee, with the exception of a small-marsh at Hayward Landing. Mudflats extend 1000's of feet out from the levees into San Francisco Bay. The site consists of three separate salt-marshes running approximately 1.7 miles along the east bay shoreline from the mouth of Bockman Channel to the southern tip of Triangle Marsh. The largest of these and the highest priority is the approx 364 acre Oro Loma Marsh located south of Bockman Channel and north of Sulpher Creek. Oro Loma is partially protected by levees and fed by two 65 foot channels, one which opens directly to the Bay, and one opens to Sulphur Creek. Frank's Dump Marsh, and a higher elevation landfill/grassland area, is located south of Sulphur Creek and North of West Winton Channel. It is fed by one rubber-valved channel from Sulphur Creek. The third and smallest marsh is Triangle Marsh which extends south from West Winton Channel to Cogswell Marsh and has one inlet near the mouth of West Winton Channel.

Resources at Risk:

ESI and Habitat: 6B Riprap
10A Salt - and brackish-water marshes
8B Sheltered solid man-made structures
8B Sheltered solid man-made structures

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	burrowing owl	SSC	Year-round	Mar-Apr
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:
The main concerns are the very sensitive marshes and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the marshes. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

Hazard and Restrictions:
Shallow water, seas up to 3 feet with windchop. Soft sediments. Small pilings offshore, which may be subemrged by tides, northwest of Sulphur Creek. Rocks and pilings of old Hayward Landing running parallel to shore northward from West Winton Channel (about 1/4 mile long).

Site Strategies: **Site Validation Level: II**

Strategy:* 2-320.1** ***Objective: Exclude oil from entering the Oro Loma Marsh and Frank's Dump Marsh. Should oil enter the marsh, contain oil to the smallest possible area.

Strategy: a) Deploy 800 ft of 9x9+Hboom in chevron outside of main uncontrolled breach into Oro Loma from bay. High currents (up to 5 kt) at breach, require boom anchored well outside of breach to prevent entrainment. Can be accomplished with 2 skiffs and 6 people. Shallow draft boom boat would also be useful. Use 100 ft of sorbent boom, 50 ft of Oil Snare (OS) to collect any oil that may accumulate. If oil accumulates in skimmable quantities contact IC/UC.
B) Deploy 500 ft of 9x9+Hboom in mouth of Sulphur Creek at steep angle under bridge, deflecting to southern shoreline just west of rubber intake to Frank's Dump Marsh West. Plug or cover 12" rubber intake valve. Can be accomplished with 1 skiff and 4 people. Use 100 ft of sorbent boom, 50 ft of Oil Snare (OS) to collect any oil that may accumulate. If oil accumulates in skimmable quantities contact IC/UC.
c) Close two screw-down tide gates at inlet to Triangle Marsh. Contact EBRPD to do this.
d) Exclude oil from West Winton Channel and inlet to Triangle Marsh with 500 ft of 9x9+ Hboom angled from southern tip of Hayward Landing point to point of land south of inlet of Triangle Marsh. Tasks can be accomplished with 1 skiff and 4 people.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1800	feet
Boom	Sorbent	6x6	inch	200	feet
Boom	Oil Snare (pom-pom)			100	feet
Anchor	Danforth	22	lbs		
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			7	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-320.2** ***Objective: Exclude oil from entering Frank's Dump Marsh, East/West. Should oil enter the marsh, contain oil to the smallest possible area.

Strategy: a) Should only be deployed after Strategy 2-320.1b which also protects this opening. Deploy 200 ft of 9X9+ Hboom in chevron across northern opening to Oro Loma located ~2000 ft to the east inside Sulphur Creek. Can be accomplished with 1 skiff and 4 people.
b) Close the six 36" open pipes under West Winton Channel bridge.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	200	feet
Anchor	Danforth	22	lbs	2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-320.3** ***Objective: Exclude oil from entering Triangle Marsh and West Winton Channel. Protect bayfront pickleweed marsh. Should oil enter the marsh, contain oil to the smallest possible area.

Strategy: Deploy 1,200 ft of 9X9+ Hboom from southern tip of Hayward Landing point, extending north around point to shoreline to the north to protect the pickleweed marsh north of the point.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	1200	feet	
Anchor	Danforth	22	lbs	6		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			4		
Staff	Staff to Tend			2		

Strategy:* 2-320.4** ***Objective: Oil Recovery by skimming

Strategy: Deploy skimmers, and vac trucks if needed, if oil accumulates in skimmable quantites. Consult IC/UC prior to initiation of this strategy

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	shoreside			1		
Staff	Staff to Deploy			4		
staff	Staff to Tend			2		

Logistics:

Directions: Hwy 880 to Hayward. Take Winton Ave. exit. Go west on W. Winton Ave to Hayward Regional Shoreline. Launch ramp at San Leandro Marina. Take Highway 880 to San Leandro. Take Marina Blvd. exit. Go west on Marina Blvd. to San Leandro Marina.

Land Access: Access for trucks on well maintained, graveled levee roads. Coordinate with EBRPD for gate access.

On-Water Limitations: Shallow draft vessels<6'. Rocks, pilings offshore at Hayward Landing. Boat launching available at San Leandro Marina. Small skiffs may be launched from levees or small dirt ramp south of Hayward Landing

Facilities, Staging Areas, Command Posts, Available Equipment: This is all part of East Bay Regional Park's Hayward Shoreline. A small staging area and access is available at the shoreline office at the west end of W. Winton Ave. Access is also available at the west end of Breakwater Ave. adjacent to Highway 92.

Communications Problems: Cell reception very good.

Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - F - S005 AL - F - S006

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.636206 -122.146896

Site Description:

The site consists of three contiguous salt-marshes: Cogswell, Hayward and HARD Marshes, which are contained within levees, two emergent salt-marshes at Johnson's Landing, and the Oliver Bros. salt ponds. Length of the site is approximately 3 miles total, along the east side of San Francisco Bay, south of Hayward Landings' Triangle Marsh to the Highway 92 bridge and bounded on the east by the Southern Pacific Railroad. Ownership of Cogswell, Hayward and the Johnson Landing marshes is public through East Bay Regional Parks District. HARD marsh is owned by Hayward Area Recreation District and the Oliver Bros. salt ponds are private but managed by the USFWS. Cogswell Marsh (250 acres) is located immediately south of Hayward Landings Triangle Marsh. The Cogswell Marsh levee has two openings of 800 ft and 300 ft to the Bay and is a fully tidal salt-marsh. Hayward Marsh (145 acres) is a managed brackish marsh. Cogswell and Hayward Marshes are separated by a leveed discharge channel. There are two 36" flap gates for discharge that drain into this channel. An intake channel on the southside of Johnson's Landing feeds into Hayward Marsh. This channel has a single 48" diameter screw-gate at the mouth. Adjacent to the intake channel for Hayward Marsh is the mouth of the HARD Marsh channel. This channel passes under a vehicle bridge and runs along the Breakwater Ave. access road and opens into the HARD marsh (80 acres) which is a fully tidal salt-marsh. The Oliver Bros. salt ponds (+100 acres) intake water from this channel via tide gate controls. Johnson Landing has two exposed bayfront pickleweed salt-marshes of approx 2 acres total in size.

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	migratory waterfowl	FP	Apr - Sep	
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Supervisor	CDFW, Region 3	(415) 250-0243
T	/Agency Representative	NOAA National Marine Fisheries Service	(562) 980-3232
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:
Primary concern is to prevent oil from entering the interior marshes via levee breaches and tidal channels. Secondarily, prevent oiling of marsh margins. Avoid trampling the marsh vegetation and be aware that small endangered mammals and birds are present. Avoid trampling oil into marsh. Should oil enter the marsh, expect injury and death of marsh vegetation, small mammals, shorebirds and waterfowl.

Hazard and Restrictions:
Very shallow water, offshore access may be limited to high tide periods. Be aware of submerged hazards. Seas to 3 feet with windchop. Soft mud substrates.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-324.1** ***Objective: Exclude oil from entering Cogswell, Hayward and HARD marshes. Should oil enter the marshes, contain oil to the smallest possible area.

Strategy: a) Cogswell Marsh (north levee breach): Deploy 1400 ft of 9X9+ Hboom in an apex across the levee breach (800 ft.). Road access from W. Winton Ave. Small skiffs can be deployed from levees.
b) Cogswell Marsh (south levee breach): Deploy 600ft of harbor boom in apex across the levee breach (300 ft.). Foot bridge spans this breach. Road access from Hwy 92 side. Small skiffs can be deployed from levees.
c) Hayward Marsh: Ensure that intake tide gate (single 48" diameter screw gate) at mouth of intake channel is closed. Ensure that discharge culverts (two 36" discharge flap gates) located in discharge channel are closed to Bay inflow. Contact East Bay Regional Park District Dispatch (510) 881-1833.
d) HARD Marsh: Deploy 600ft of harbor boom from easterly most points of land at an angle to close channel. Vehicle bridge spans channel near mouth. Strong current at bridge. Road access from Hwy 92 side. Contact East Bay Regional Park District Dispatch (510) 881-1833.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3200	feet
Boom	Sorbent	6x6	inch	1000	feet
Anchor	Danforth	22	lbs	9	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-324.2** ***Objective: Exclude oil from entering interior of Cogswell Marshes. Should oil enter the marshes, contain oil to the smallest possible area.

Strategy: a. Deploy 800 ft of 9X9+ Hboom from north breach to south end of the foot bridge to the east. This closes off northern interior marsh opening. Land access from W. Winton Ave.
b. Deploy 600ft of 9X9+ Hboom on the inside of the south breach (300 ft.) to act as a collection pocket. Land access from Hwy 92 side.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1400	feet
Anchor	Danforth	22	lbs	8	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			6	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-324.3 *Objective: Exclude oil from Johnson's Landing marshes

Strategy: Deploy 600 ft of swamp boom to protect two bayfront pickleweed marshes. Use 600ft around Johnson Landing point. Use 400 ft in front of second exposed marsh (200ft south of Johnson's Landing) and connect with HARD Marsh harbor boom. Road access from Hwy 92 side.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	600	feet
Anchor	Danforth	22	lbs	4	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Hwy 880 to Hayward. Cogswell Marsh: Take Winton ave. exit. Go west on W. Winton ave. to Hayward Regional Shoreline. HARD and Hayward Marshes: Take Hwy 92 exit. Take Breakwater Ave. exit (Hayward shoreline Interpretive Center). Access by levee road to marshes (roads may be marginal in wet conditions). Launch ramp at San Leandro Marina. Take Highway 880 to San Leandro. Take Marina Blvd. exit. Go west on Marina Blvd. to san Leandro marina.

Land Access: Access for trucks on well maintained, graveled levee roads. Work thru EBPRD Personnel for access & coordiantion.

On-Water Limitations: Shallow Draft Vessels<6'. Boat launching available at San Leandro Marina. Small skiffs may be launched from

Facilities, Staging Areas, Command Posts, Available Equipment: This is all part of East Bay Regional Park's Hayward Shoreline. A small staging area and access is available at the shoreline office at the west end of W. Winton Ave. Access is also available at the west end of Breakwater Ave. adjacent to Highway 92.

Communications Problems: Strong cell reception.


W. Winston Ave
Cabot Blvd
Depot Rd
Whitesell St
2-324.1(a)
2-324.2(a)
2-324.1(a)
2-324.1(b)
2-324.2(b)
2-324.3
2-324.1(d)
92
0 1,000 2,000 4,000
Feet
N
CDFG - OSPR & USCG Site: 2-324 Name: Cogswell, Hayward and HARD Marshes
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/27/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

2-325-A Site Summary - Eden Landing Ecological Reserve -Alameda Creek 2-325-A

County: Alameda **ACP Division/Segment:** AL - G - S002 AL - G - S004

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.607559 -122.142345

Site Description:

Eden Landing Ecological Reserve is a 6,200 acre salt-marsh on the east side of south San Francisco Bay extending four miles south from the San Mateo Bridge to the levee on Coyote Hills Slough, and inland three miles. This California Dept of Fish and Wildlife Reserve is roughly bounded on the north by Highway 92, the east by the Southern Pacific Railroad, on the west by San Francisco Bay, and on the south by Coyote Hills Slough (Alameda Flood Control Channel). It is fronted by very shallow mudflats extending offshore for a mile. There are four major channels allowing tidal exchange with the extensive marshes, most of which are behind levees and dikes; but there are two large areas (320 acres) of undiked salt-marsh fronting on the bay. The exposed salt-marsh frontage is in two locations: there's an 18 acre pocket salt-marsh just south of the San Mateo Bridge (about 1/3 mile of bay frontage), and a large marsh (Whale's Tail Marsh - 300 acres) extending about a mile north and a mile south from the mouth of the Alameda Creek channel which is about a half mile wide. Both bay front marshes are fairly elevated pickleweed salt-marsh with cordgrass margins. The remainder of the 4 miles of bay frontage, about 1.5 miles, is exposed rip-rap with eroding levees with low sensitivity.

Marshes behind bay front levees include about 40 diked ponds and channels that vary from well vegetated to newly converted salt ponds of largely open water. As of November 2004, the entire marsh circulation system is undergoing improvement including repositioning and replacement of existing channels and interior tide gates and siphons. Of the four openings to inner ponds from the bay, two have tide gate controls. The major exposure from the bay is via Old Alameda Creek channel which, in addition to extensive marshes along its margin, has several openings (North Creek and uncontrolled tide gates) to inner ponds. There is also significant site exposure from the upstream Alameda Creek urban drainage (most of Alameda Creek Drainage has been diverted to Alameda Flood Control Channel): at the east edge of the marsh, Alameda Creek has a road crossing with twenty 48" flap tide gates (open to ebb flow) where stream flows enter tidal channels.

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Fish	steelhead - Central/Northern California	FT	Year-round	Nov-Apr
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	eelgrass		Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Supervisor	CDFW, Region 3	(415) 250-0243
T	/Agency Representative	NOAA National Marine Fisheries Service	(562) 980-3232

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A variety of bird species inhabit the area. Harbor seals haul out on this shoreline as well.

Concerns and Advice to Responders:

Threatened and endangered species are located in salt-marshes as are thousands of birds and fish: should oil enter the marsh, expect severe injury and death of marsh vegetation, small mammals, shorebirds and waterfowl. Primary concern is to prevent oil entry to extensive marshes (6,000 acres) by blocking water exchanges. Secondary concern is oiling of two large bay front marshes. Avoid trampling vegetation and trampling oil into sediments.

Hazard and Restrictions:

Extremely extensive and shallow mudflats in SF Bay in front of this site. Seas to 3 feet under windy condtions. High voltage powerlines at east end of site pose hazards to helicopter and other Air Operations (UAVs).

Site Strategies: **Site Validation Level: II**

Strategy:* 2-325.1** ***Objective: Primary: Exclude oil from entry channels by booming and closing tide gates at bay front.

Strategy: a. Mt. Eden Creek opening needs 200 ft of 9x9+ Hboom in a chevron to exclude oil from entering the Creek.
b. Exclude oil from entering Alameda Creek mouth with a chevron deployment at the mouth (1500 ft of 9X9+ Hboom), with shoreline attachments just past the mouth to the south and well north (200 ft) of mouth. Back with sorbent boom (1000 ft)
c. Exclude oil from entering channel at south end of 'Whale's Tail Marsh with chevron (600 ft of 9x9+ Hboom), with attachments north and south of the mouth. Back with sorbent boom (600 ft).
d. About a mile south of Alameda Creek mouth is a screw tide gate for two 48" culverts. These must be closed to exclude oil and boomed with 100ft of 9X9+ Hboom.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9		2400	feet
Boom	Sorbent	6x6		1600	feet
Anchor	Danforth	22	lbs	15	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			7	
Staff	staff to tend			2	

Last Page Update

Strategy:* 2-325.2 *Objective: Protective booming of Whale's Tail Marsh and pocket marsh south of HWY 92.

Strategy: Prevent oiling of exposed marsh and exclude oil penetration via finger channels:
a) Deploy 2000 ft of 9X9+ Hboom and sorbent from riprap near toll plaza to riprap levee shore 1/3 mile south of Hwy. There is a lot of debris at this location which indicates that oil would tend to collect here.
b) Deploy 9300 ft of 9X9+ Hboom and sorbent from rip-rap at north edge of Whale's Tail Marsh to riprap at south end of Whale's Tail Marsh; link it to exclusions at mouth of Alameda Creek and unnamed channel at south end of marsh which should be already be deployed (2-326.1). [upper leg is about 4700 ft; lower leg to south is about 4600 and should be linked to lower exclusion which should already be in place (2-326.1c: 600 ft).] The area at the south end of Whale's Tail marsh below the unnamed channel has a lot of debris and may be a locale where oil will naturally collect.
NOTE: Call Reg 3, DFW, for information and assistance for keys, directions, and road conditions - 415-454-8050.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	11300	feet	
Boom	Sorbent	6x6	inch	10000	feet	
Anchor	Danforth	22	lbs	25		
Vessel	Boom Boat			4		
Vessel	Skiff or Punt			3		
Staff	Staff to Deploy			16		
Staff	stsff to tend			2		

Strategy:* 2-325.3 *Objective: Collection - develop or enhance skimming at mouth of old Alameda Creek when substantial oil is present.

Strategy: Create a skimming pocket by deploying an additional 300 ft of 9X9+ Hboom just inside the mouth of Alameda Creek. Back the pocket with second layer of boom (50 ft swamp boom) and sorbent. Deploy a shoreside skimming system (SSS) on the north levee (may be limited by wet weather). On-site storage will be necessary.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	300	feet	
Boom	Sorbent	6x6	inch	50	feet	
Anchor	Danforth	15	lbs	5		
Vessel	Skiff or Punt			1		
skimmer	shoreside			1		
Staff	Staff to Deploy			4		
Staff	Staff to Tend			2		

Strategy: **2-325.4** ***Objective:*** For inland spills from upstream Old Alameda Creek, collect oil at east creek crossing.

Strategy: Divert oil to bank using diagonal deployment of two 250 ft layers of swamp boom and establish shoreside skimming. If oil is light, consult IC for alternatives to SSS. If current is strong, contact IC about underflow dam construction. NOTE: it may be possible to manipulate current pattern to benefit skimming by blocking selected culverts.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Sorbent	6x6	inch	500	feet
Anchor	Danforth	15lb	lbs	4	
skimmer	shoreside			2	
Staff	Staff to Deploy			4	
Staff	Staff to Tend				

Last Page Update

Logistics:

Directions: Access to site at three points. 1) East side access: exit I-880 at Alvarado, north (right) and continue north about 2 miles crossing Union City Blvd onto Horner St and continuing to Veasy St then right to the locked gate. 2) South side access to site and bay front: exit I-880 as above and turn left on Lowry Rd after crossing the flood control channel and continue to Newark Blvd (Union City Blvd): on the opposite side of the Blvd is an East Bay Regional Park District (EBRPD) access parking area: the flood control levee is accessible though a locked gate (EBRPD). 3) North side access: exit Hwy 92 freeway at Eden Landing Rd and proceed south to a locked gate (Reg 3 DFW for access).

Land Access: During wet season, south channel only; otherwise roads all traffic. Coordinate with EBRPD Personnel for access & comms.

On-Water Limitations: Shallow draft vessels<4'. Boat launching available at San Leandro Marina or Redwood City Harbor . Small skiffs may be launched from local levees or Hayward Regional

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at end of Veasey Rd, also at EBRPD Property off Newark Blvd at the Alameda Flood Control Channel access. Small staging area and field post possible at Hayward Regional Shoreline or National Wildlife Refuge. Command Post available at Alameda County OES.

Communications Problems: Good Cell reception.

Additional Operational Comments: Vehicle access is controlled by Cargill Salt and Alameda County Flood Control. Truck turn-arounds are available within several hundred yards of the Bay shoreline and will be useful when roads are passable. There is a possible access to the levee from west bound Hwy 92 at the toll plaza, but that would require improvement with several truckloads of fill to enable exit from the hwy grade to the levee.

Imagery: NAIP 2010 (Summer) 4-Band

2-326-A Site Summary - Coyote Hills Slough -Alameda Flood Control Channel 2-326-A

County: Alameda **ACP Division/Segment:** AL - G - S005 AL - H - S001

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Hayward - U ***Decimal Degrees:*** 37.59384 -122.142999

Site Description:

Coyote Hills Slough, a flood control channel, begins at I-880 and extends 5 miles to the bay front mouth (about 3.5 miles south of the San Mateo Bridge and 2 miles south of Alameda Creek mouth). At the mouth, the channel is one-third mile wide. It is bounded by flood control levees and includes over 440 acres of salt-marsh and several adjacent marshes and salt ponds draw water from the channel. This channel is owned and maintained by Alameda County. The narrow portions of the channel are over 500 feet wide, and the waterway itself is only a small portion of the total channel. The north half of the channel had historic levees which separated it from the bay and from the old slough, but these levees are now compromised, and small finger channels provide tidal exchange. Most of the channel is salt-marsh and is tidally influenced. Of the adjacent properties which draw water from the Slough, the land to the north is mostly Eden Landing Ecological Reserve land (CA DFW); property on the south side of the channel is mostly East Bay Regional Parks District land on the east end (Coyote Hills Regional Park); and toward the bay, USFWS land (currently leased to Cargill Salt). Alameda Creek Trails EBRPD maintains trails on both levees. The watershed of this large channel drains several hundred square miles including urban areas; so, urban threats are also a concern here. The levees are year-round roads all the way to the bay front.

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Fish	steelhead - Central/Northern California	FT	Year-round	Nov-Apr
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Solar Plant Manager	Cargill Salt	(541) 261-9719
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Oil Spill Point of Contact	NOAA National Marine Fisheries Service	(707) 480-3496
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

Oil from the bay or inland poses a threat to over 430 acres of salt-marsh which provide habitat for many species including rare and endangered birds and small mammals. Concern is to stop oil from entering the waterway and salt-marshes from the bay, or for inland oil, minimize impacts and keep oil from leaving the channel. Minimize trampling of vegetation and disturbance of wildlife. Avoid trampling oil into sediments.

Hazard and Restrictions:

Shallow water and extensive mudflats at mouth. Seas to 3 feet at bayfront during windy conditions. Aircraft beware of highpower wires crossing the channel about 2 miles east of waterfront.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-326.1 *Objective: Primary: Exclusion booming when oil threat is from bay.

Strategy: a. Exclude oil from entering main channel: deploy boom at the mouth in a chevron and deflect as much as possible to natural collection site south of mouth. 1400 ft of 6X6+ Sboom (9X9+ Hboom may be substituted). Back with a 500 ft diagonal of sorbent boom. This action is best addressed from water or from south levee.

b. Exclude oil from entering the marsh area north of the stream mouth by booming from the chevron above, to the north levee. 1300 ft of 6X6+ boom (9X9+ Hboom may be substituted). There is a low partially destroyed dike which extends from the north channel levee to the mouth of main channel; several small finger channels enable flow thoughout this large pickleweed marsh section: block each of this with a bat of sorbent boom and stake in place. This action is best addressed from water or from north levee.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	9x9	inch	2700	feet
Boom	Sorbent	6x6	inch	500	feet
anchors	Danforth	22	lbs	8	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-326.2 *Objective: Backup primary bay exclusion: secondary layer of exclusion booming for oil threat from bay under windy conditions or major oil threat. This is a repeat of primary strategy minus sorbent boom.

Strategy: a. Back-up exclusion on main channel: deploy boom at the mouth in a chevron and deflect as much as possible to natural collection site south of mouth, behind primary exclusion. 1400 ft of 6X6+ boom (harbor boom may be substituted). This action is best addressed from water or from south levee.

B. Back-up exclusion from entering the marsh area north of the stream mouth by booming from the chevron above, to the north levee, behind primary exclusion. 1300 ft of 6X6+ boom (harbor boom may be substituted). This action is best addressed from water or from north levee.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Sorbent	6x6	inch	2700	feet
Anchor	Danforth	22	lbs	7	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			7	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-326.3** ***Objective: Skimming operations at this site. Natural skim pocket with access just south of mouth.

Strategy: There is a natural skimming pocket surrounded by low dikes just to south of channel mouth. Strategy 2-326.1 and .2 should direct skimmable oil to this location. Use 600 ft of Sboom with sorbent backing to devise a skimming pocket to trap and hold oil in the pocket (also Oil Snare for trapping on ebb). It may be necessary to excavate a depression to enable skimming head. Storage tank or vacuum truck will be necessary for oil collection. Light stations will be needed for night operations including skimming. NOTE: if oil is too light for effective skimming, on-scene staff should contact IC to consider passive collection with Oil Snare.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	600	feet
Boom	Sorbent			400	feet
Boom	Oil Snare (pom-pom)			100	feet
Anchor	Danforth	22	lbs	2	
Anchor	Stakes			10	
Vessel	Skiff or Punt			1	
skimmer	shoreside			1	
Vac truck				1	
Staff	Staff to Deploy			3	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-326.4** ***Objective: Inland oil threats: exclusion, deflection, collection.

Strategy: In the event of inland oil threats, seek collection site offering best advantage in current management and access and create a skim pocket. (Excavation of pocket may be necessary to keep oil from entraining or re-entering current.) Use diagonal booming (Sboom) to move oil into collection pocket, and back deflection with sorbent. Line skim pocket with light boom and sorbent. Use Oil Snare to collect oil as needed. Shoreside skimming (SSS) will require on-site storage or vacuum truck. Light stations will be needed for night operations including skimming. Actual amount of boom needed will depend on where oil can be controlled: 700 ft of Sboom and 100 ft of oil snare should be adequate.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	700	feet
Boom	Sorbent			700	feet
Boom	Oil Snare (pom-pom)			100	feet
Anchor	Danforth	22	lbs	5	
Anchor	Stakes			10	
Vessel	Skiff or Punt			1	
skimmer	shoreside			1	
Staff	Staff to Deploy			3	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Access to northside levee: exit I-880 at Alvarado, north (right) and after crossing the flood control channel, turn left on Lowry Rd and continue to Newark Blvd (Union City Blvd): on the opposite side of the Blvd is an East Bay Regional Parks District (EBRPD) access parking area: the flood control levee is accessible though a locked gate (call EBRPD or Alameda County Flood Control). Access directly by boat (very shallow on low tides).

Land Access: All season gravel roads to bay front on Alameda Co Flood Control levees. Coordinate access thru Alameda Co Flood Control District or EBRPD Personnel.

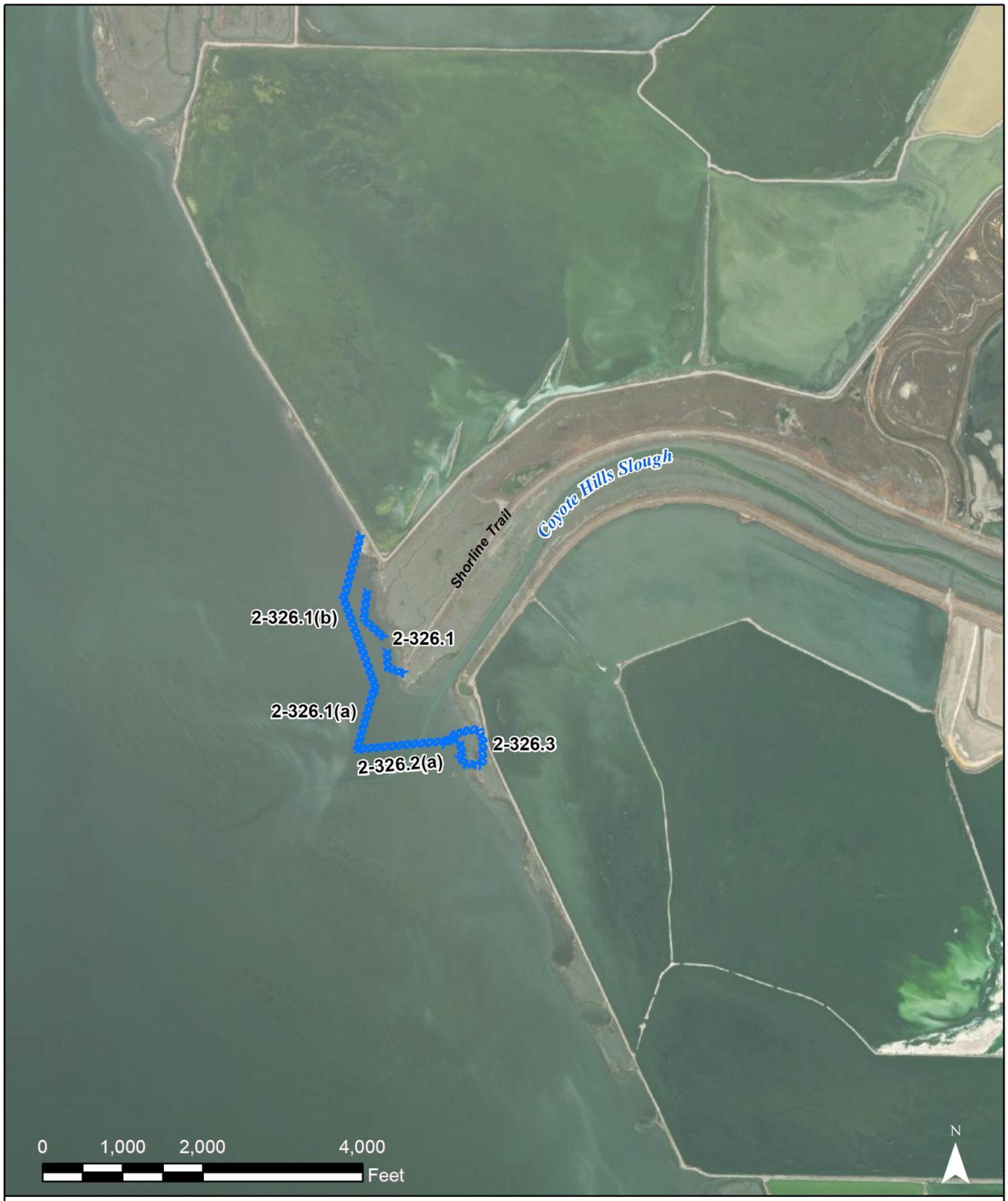
On-Water Limitations: Shallow draft vessels<3' Boat launching available at San Leandro Marina or Redwood City Harbor.

Small skiffs may be launched from levees: south levee is closer to

Facilities, Staging Areas, Command Posts, Available Equipment: Large staging area available at Redwood City Harbor. Four small local staging on north and south levees at East Bay Regional Park - Alameda Creek Trails (5 acres, parking, chem toilets: 2250 Issherwood, Fremont). Additional staging area and field post possible at National Wildlife Refuge HQ or EBRPD Coyote Hills Regional Park. Full Command Post available through Alameda County OES.

Communications Problems: Good cell reception.

Additional Operational Comments: Vehicle access is controlled by Alameda County Flood Control District.


Coyote Hills Slough
Shoriline Trail
2-326.1(b)
2-326.1
2-326.1(a)
2-326.3
2-326.2(a)
0
1,000
2,000
4,000
Feet
N
CDFG - OSPR & USCG Site: 2-326 Name: Coyote Hills Slough - Alameda Food Control Channel
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/27/2021
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - H - S002

NOAA Chart: San Francisco Bay, Southern Part ***Map Book:*** AAA Hayward - U ***Decimal Degrees:*** 37.538461 -122.114071

Site Description:

A large contiguous section of salt-marsh located along the east side of south San Francisco Bay and bounded on the north by Coyote Hills Slough (Alameda County Flood Control Channel), on the east by the Coyote Hills, on the south by Highway 84, and on the west by San Francisco Bay. The salt-marsh is surrounded by Cargill salt ponds on three sides and is part of the Don Edwards San Francisco Bay National Wildlife Refuge. The bay front edge of this site is not leveed and is therefore vulnerable to oiling. Mudflats extend 1000's of feet from the site. The site consists of a contiguous salt-marsh, approximately 0.25 mile wide, running approx 1.2 miles along the east bay shoreline beginning from below the mouth of Coyote Hills Slough and surrounded to the north, east and south by three salt ponds. Ideal Marsh is fed by numerous small tidal channels linked directly to the bay and has several small coves which function as natural collection areas.

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
10A Salt - and brackish-water marshes
6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	gulls	FP	Year-round	Mar-May
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	shorebirds		Year-round	
Birds	waterfowl		Year-round	
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE		

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
O	/Dispatch, 24-hr	Alameda County Flood Control	(510) 670-5500
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Important gull nesting area.

Concerns and Advice to Responders:
The main conerns are the very sensitive aslt-marsh and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the salt-marsh. Avoid distrubing or trampling marsh vegetation. Should oil enter the salt-marsh, expect injury and death of marsh vegetation, small mammals, shorebirds and waterfowl.

Hazard and Restrictions:
Shallow water. Seas to 3 feet. Soft sediments.

Site Strategies: **Site Validation Level:** II

Strategy: **2-328.1** ***Objective:*** Deflection booming. Deployment of this strategy should be followed by strategy 2 or 3, as time and resources permit.

Strategy: On an incoming tide or oil coming from the northwest, deploy 2000 ft of 9X9+ Hboom from northern edge of Ideal Marsh angled to the southwest to divert oil from contacting the marsh. On outgoing tide and oil coming from the south bay or bridge, deploy same length of harbor boom from southwest corner of Ideal Marsh to the northwest. High currents (up to 5kts) require shallow angle for deployment. Can be accomplished with 2 skiffs and 6 people. Shallow draft boom boat would also be useful. Boom can be delivered by truck on levee roads to north and south of Ideal Marsh. Use 50 ft of oil snare, 100ft of sorbent boom to collect oil that may accumulate. Contact IC/UC if oil accumulates in skimmable quantities.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	2000	feet	
Boom	Sorbent			100	feet	
Boom	Oil Snare (pom-pom)			50	feet	
Anchor	Danforth	22	lbs	6		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			6		
Staff	Staff to Tend			2		

Strategy: **2-328.2** ***Objective:*** Exclude oil from entering Ideal Marsh. Should oil enter the marsh, contain oil to the smallest possible area of the marsh.

Strategy: a) Deploy 6500 ft of 9X9+ Hboom along 1.2 miles of Ideal Marsh shoreline. Can be accomplished with 4 skiffs and 12 people. Boom can be delivered by truck on levee roads.
b) Deploy 1000 ft of Sboom in 100-200ft increments to block tidal inlets to Ideal Marsh. Can be accomplished with 2 skiff and 6 people. Boom can be delivered by truck on levee roads. Tidal inlets to marsh will need to be indentified in the field.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	6500	feet	
Boom	Swamp	6x6	inch	1000	feet	
Anchor	Danforth	22	lbs	22		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			10		
Staff	Staff to Tend			2		

Strategy:* 2-328.3 *Objective: Oil Recovery by Shoreside skimming

Strategy: Deploy skimmers if oil accumulates in skimmable quantities. Consult with IC/UC prior to the initiation of this strategy.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
skimmer	shoreside			1	
Vac truck				1	
Staff	Staff to Deploy			3	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Hwy 880 to Newark. Take Highway 84 west to Dumbarton Bridge. Exit at Thorton Ave. and travel south for 0.8 miles to the wildlife refuge entrance on the right on Marshlands Rd. Drive 3 miles to end and then under Dumbarton Bridge to access salt pond levee to Ideal Marsh. An alternate route exists through Coyote Hills Regional Park. Lauch ramp at San Leandro Marina. Take highway 880 to San Leandro. Exit Marina Blvd. Go west on Marina Blvd. to San Leandro Marina.

Land Access: Gravel roads to bayside and Coyote Hills Slough channel.

On-Water Limitations: Shallow Draft Vessels<6'. Boat launching available at Redwood Creek Boat Ramp and San Leandro Marina. Small skiffs may be launched from levees or small boat ramp at Refuge entrance off Thorton

Facilities, Staging Areas, Command Posts, Available Equipment: This area is all part of the Don Edwards San Francisco Bay National Wildlife Refuge. A small staging area and access is available at the USFWS HQ/Vistor's Center on Marshlands Rd.

Communications Problems: Cell reception good.

Additional Operational Comments: Vehicle access is controlled by Alameda County Flood Control. Dry season vehicle access on Cargill salt pond levees

Imagery: NAIP 2010 (Summer) 4-Band

2-340-A Site Summary - Dumbarton Point Marsh/Mudflat 2-340-A

County: Alameda **ACP Division/Segment:** AL - I - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.499321 -122.103994

Site Description:

This large contiguous section of salt-marsh located along the east side of south San Francisco Bay and bounded on the northwest by the Southern Pacific Railroad line & levee, the east by Newark Slough, and the south and west by San Francisco Bay. This is a marsh with many primary slough channels entering the salt-marsh from its southern shore. These channels present an opportunity for oil to enter the interior of the salt-marsh. There is a mudflat between the main channel of the bay and the salt-marsh. This site is part of the Don Edwards San Francisco Bay National Wildlife Refuge (USFWS).

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9A Sheltered tidal flats
9 Hypersaline tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

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C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
E	/Strategic Action Coordinating Official	US Army Corps of Engineers	(415) 503-6573
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Complex Manager	USFWS, SF Bay NWR Complex	(510) 453-6695
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of birds utilize this location. This is one of the most important nesting areas for California Ridgeway's rail. Harbor seals haulout here as well.

Concerns and Advice to Responders:

The concern is to prevent oil from being carried into the salt-marsh via large and small tidal channels and minimize oiling of marsh fronts. Should oil enter the marsh there will be injury and death of marsh vegetation, small mammals, shorebirds and waterfowl, including endangered and threatened species. There is also the concern that response and cleanup activity will result in trampling of marsh, trampling of oil into sediments, and disturbing wildlife.

Hazard and Restrictions:

Railroad Bridge, Dumbarton Bridge, overhead powerlines, submerged hazards, shallow water, soft mud can all be hazards to response activity.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-340.1** ***Objective: Exclude oil from entering marsh front, mudflat, and small channels to the marsh interior.

Strategy: Protect nine small slough channels with approximately 2000 ft of fence boom or 6X6 Sboom and sorbent boom. Block culvert near pump house with sediment, plywood or steel plate.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6	inch	2000	feet	
Boom	Sorbent			2000	feet	
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			6		
Staff	Staff to Tend			2		

Strategy:* 2-340.2** ***Objective: Deflection Booming

Strategy: Deploy approximately 3000 ft of 9X9+ Hboom off mudflats in 1000ft sections.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	3000	feet	
Anchor	Danforth	22	lbs	12		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			6		
Staff	Staff to Tend			2		

Strategy:* 2-340.3** ***Objective: Protection booming of shoreline

Strategy: Line marsh front with sorbent boom. Use 9X9+ Hboom at shelf break.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Sorbent			8000	feet	
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			4		
Staff	Staff to Tend			2		

Logistics:

Directions: Hwy 880 to Hwy 84 West. Thornton Ave. exit south to Marshlands Rd. Take Marshlands Rd. out to bay front near foot of Dumbarton Bridge. Access levee road via contact with San Francisco National Wildlife Refuge HQ. Nearest large boat ramp is at Alviso Public Launch, small boat launch near Refuge HQ on Newark Slough.

Land Access: All access levels.

On-Water Limitations: Wide mudflats, shallow water. Nearest large boat ramp is at Redwood City, small boat launch near San Francisco National Wildlife Refuge HQ on Newark Slough or Alviso Launch Ramp.

Facilities, Staging Areas, Command Posts, Available Equipment: Large staging area available at Redwood City Harbor. Small staging area and field post possible at National Wildlife Refuge HQ. Command Post available at Alameda County OES.

Communications Problems: Good cell reception.


84
Powerline
Railroad Line
2-340.1
Dunbarton Point
2-340.2
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-340 Name: Dumbarton Point Marsh / Mudflat
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/21/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - I - S001 AL - J - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.503775 -122.085401

Site Description:

Newark Slough and Plummer Creek join and form one outlet to South San Francisco Bay two miles SE of Dumbarton Bridge (Hwy 84). Extensive salt-marshes with numerous tidal channels extend over a mile to the north and south of the inlet. The entire area including much of the offshore mudflats is part of the USFWS San Francisco Bay Wildlife Refuge. Mudflats are shallow and extensive and are cut with deep tidal channels. Bay frontage is cordgrass salt-marsh. Newark Slough and Plummer Creek are leveed and bordered by Cargill salt ponds.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	peregrine falcon	FP, SP	Year-round	Mar-May
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Northern harrier	FP, SSC	Year-round	Jun-Jul
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

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E	/Strategic Action Coordinating Official	US Army Corps of Engineers	(415) 503-6573
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

The primary concern is oil penetrating the salt-marsh by being carried up creeks and small tidal channels. The secondary concern is oiling of pinnipeds and impacts to marsh and wildlife. First objective is to exclude oil from entering salt-marsh via tidal channels; secondary objective is to deflect oil away from marsh; and the final objective is protective booming of marshfront. There is always the concern that response and cleanup activity will damage marshes: trampling of vegetation, pushing oil into sediments and disturbing wildlife.

Hazard and Restrictions:

Shallow water. Levee roads impassable in winter.

Site Strategies: **Site Validation Level: II**

Strategy: **2-342.1** ***Objective:*** Exclusion/Diversion boom to prevent oil from entering channel between bay and site.

Strategy: a. Offshore skimming by on-water task force (see GRP-2-400).
b. Deflection booming off mudflat break with 9X9+ Hboom.
c. Plug small finger sloughs and channels inside Newark Slough with fence boom, sorbent, and swamp boom.
d. Deploy curtain boom from west side of mouth back into Plummer Creek's eastern shore. Also deploy harbor boom along east shore of mouth from bayfront back to skimmer pocket.
e. Use skimmer in channel or possibly vac truck with skimmer from shore levee in Plummer Creek (dry season only).

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	8000	feet
Boom	Swamp	6x6	inch	1000	feet
Boom	Sorbent			5000	feet
Anchor	Danforth	22	lbs	25	
Vessel	Boom Boat			3	
Vessel	Skiff or Punt			2	
skimmer	shoreside			1	
Staff	Staff to Deploy			12	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Take Hwy 880 south to the Thornton Avenue exit. Proceed east on Marshland Road. Need San Francisco National Wildlife Refuge assistance for access via Levee Road. Access to Newark Slough possible through the Cargill Plant. NOTE: Access to levee only during dry months. Access may be limited to small vehicles. Tractor trailer rigs may not be able to access area.

Land Access: 2WD,4WD,ATV in DRY SEASON ONLY, hovercraft or airboat in wet season.

On-Water Limitations: SHALLOW DRAFT VESSELS<6'. Launch ramps at Redwood City for large vessels Small boat launch (punts, airboats, kayaks) at SFBNWR HQ on Newark

Facilities, Staging Areas, Command Posts, Available Equipment: Large staging area available at Redwood City Harbor. Small staging area and field post possible at National Wildlife Refuge HQ. Command Post available at Alameda County OES.

Communications Problems: Cell reception good.


84
Newark Slough
Railroad Line
Powerline
Plummer Creek
Dunbarton Point
2-342.1(b)
2-342.1(c)
2-342.1(c)
2-342.1(c)
2-342.1(c)
2-342.1(d)
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-342 Name: Newark / Plummer Creek
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/21/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - J - S001 AL - K - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA Fremont - N ***Decimal Degrees:*** 37.491866 -122.051417

Site Description:

Mowry Slough is a large, linear salt-marsh along the east side of south San Francisco Bay bounded on the northwest by Newark Slough, on the east by Cargill salt pond levees, and on the west by San Francisco Bay. Mowry Slough is bordered by mudflats and salt-marshes. The adjacent pickleweed and cordgrass marshes are included within this site. Many primary/secondary channels are present along its length, conveying water into the distant interior portions of the salt-marsh. Most of this site is included in the USFWS South San Francisco Bay National Wildlife Refuge.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9 Hypersaline tidal flats
6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Birds	peregrine falcon	FP, SP	Year-round	Mar-May
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

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C	/Coordinator	Native American Heritage Commission	(916) 373-3710
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E	/Strategic Action Coordinating Official	US Army Corps of Engineers	(415) 503-6573
O	/Dispatch, 24-hr	Alameda County Sheriffs Department	(510) 667-7721
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

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Additional Site Summary Comments:

California Ridgeway's rail nesting area and harbor seal rookery.

Concerns and Advice to Responders:

The concern is to prevent oil from being carried into the marsh via large and small tidal channels and minimize oiling of marsh fronts. Should oil enter the marsh there will be injury and death of marsh vegetation, small mammals, shorebirds and waterfowl, including endangered and threatened species. There is also the concern that response and cleanup activity will result in trampling of marsh, pushing oil into sediments, and disturbing wildlife.

Hazard and Restrictions:

Levee roads impassable in wet seasons. Shallow water. Seas may reach up to 2 feet.

Site Strategies:

Site Validation Level: II

Strategy:* 2-344.1** ***Objective: Deflect oil from marshes to be recovered on-water by skimmers. Prevent oil from entering the slough.

Strategy: a. Offshore mechanical collection with on-water recovery task force.
b. Use Hboom or double layers of smaller boom to deflect oil from marshes into skimmer in Mowry Slough channel near mouth.
c. Plug small slough channels along marshfront w/ Sboom and sorbent booms.
d. Line marsh front with Sboom or oil snare (pom-poms) and/or sorbent booms.
e. If possible use Sboom at mudflat shelf break to deflect oil away from slough channel.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	10000	feet
Boom	Swamp	6x6	inch	10000	feet
Anchor	Danforth	22	lbs	50	
Vessel	Boom Boat			4	
Vessel	Skiff or Punt			3	
Staff	Staff to Deploy			18	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

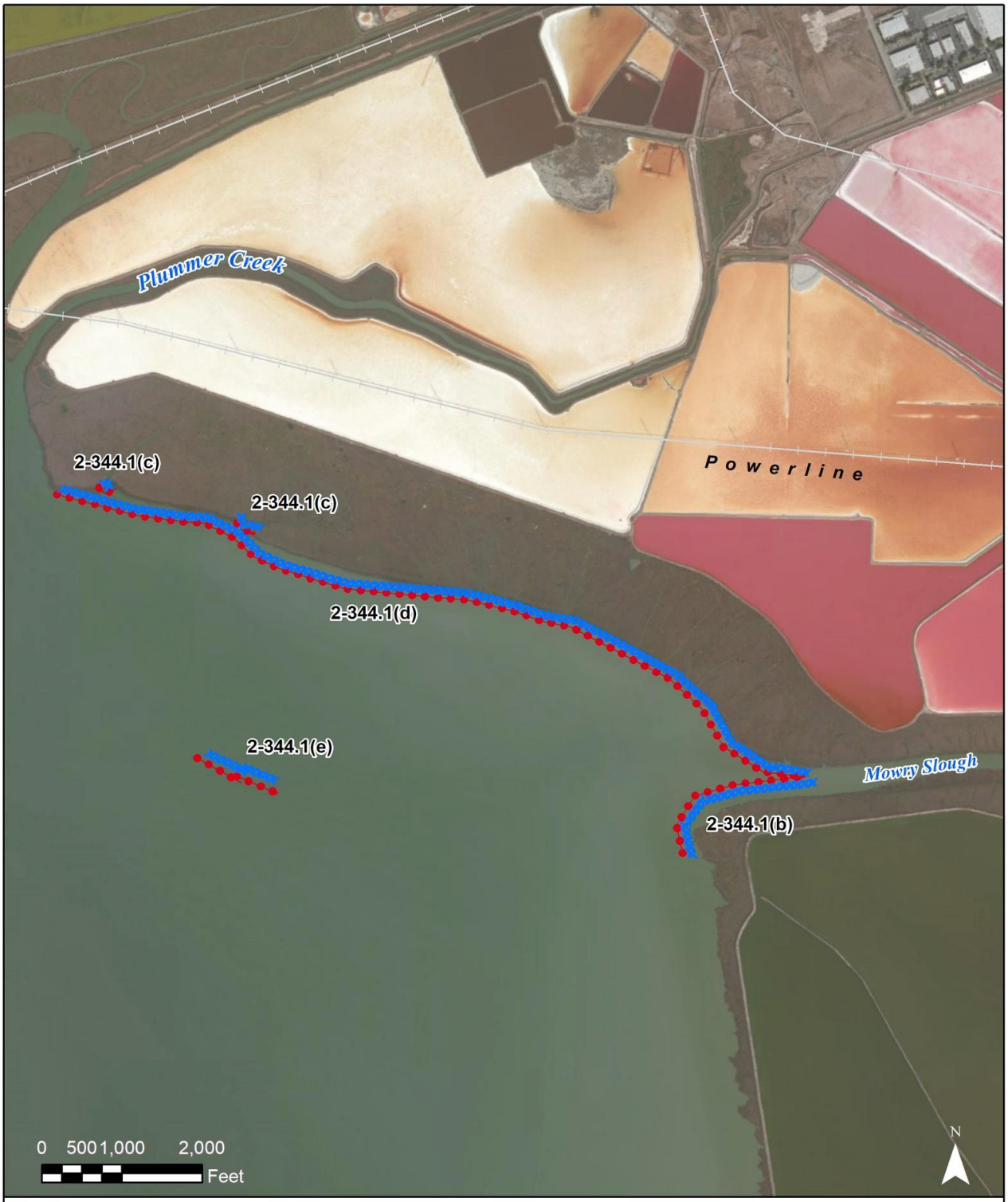
Directions: Access area through Cargill Plant (from north) and Durham Landfill (from south).

Land Access: Large truck on gravel levees during dry season. For access, coordinate thru USFWS Personnel.

On-Water Limitations: Shallow draft vessels<6'. Vessel launch ramp and services at Redwood City. Small vessels may launch in Newark Slough near National Wildlife Refuge HQ at high

Facilities, Staging Areas, Command Posts, Available Equipment: Large staging area available at Redwood City Harbor. Small staging area and field post possible at National Wildlife Refuge HQ. Command Post may be available at Alameda County OES.

Communications Problems: Cell reception good.


Plummer Creek
Powerline
2-344.1(c)
2-344.1(c)
2-344.1(d)
2-344.1(e)
Mowry Slough
2-344.1(b)
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-344 Name: Mowry Slough
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/21/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: Alameda **ACP Division/Segment:** AL - L - S001 AL - L - S002

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** ***Decimal Degrees:*** 37.461085 -122.035572

Site Description:

This site extends from the mouth of Coyote Creek at the southeast corner of South San Francisco Bay upstream to Hwy 880/237 junction and includes all salt-marshes and tributaries. Shoreline Marshes are under management of USFWS. Coyote Creek is the primary drainage for the Santa Clara Valley. The creek mouth is five miles southeast of the Dumbarton Bridge and the mouth is over a mile wide. Extensive salt-marshes and mudflats occur near its mouth and along the creek's shores. The mudflat along the north shore has deeply carved channels (5 ft+) from the marsh to the deep water channel. Alviso and Guadalupe Sloughs both branch off its south side not far from the mouth.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9 Hypersaline tidal flats
9B Vegetated low banks

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Birds	peregrine falcon	FP, SP	Year-round	Mar-May
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

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Additional Site Summary Comments:

A variety of bird species nest and winter in this area.

Concerns and Advice to Responders:

Primary concern is to stop oil from entering (or, if oil originates inland, leaving) the Creek by exclusion booming the mouth. Once oil has entered the creek, the concern is that oil will be transported to the interior of bordering marshes via the deep side tidal channels. If marshes become oiled, concerns are that marsh may become damaged by cleanup and foot traffic and oil may be trampled into sediments. Minimize damage to plants, wildlife and birds from foot traffic.

Hazard and Restrictions:

Aircraft, beware of overhead power lines and towers. Vessels beware of shallow water and tide height.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-346.1** ***Objective: Deflect oil away from marshes, keep oil in deep water channel & skim

Strategy: a. Deflection boom placed off NW point at creek mouth. Possibly use 8000 ft of 9x9 Hboom across marsh and mudflat then connect to harbor boom in channel to deflect oil away from marsh and mudflats into deep water channel.

b. Short segments of 6x6+ Sboom deflection can be placed along north side mudflat to keep oil in channel. Can use powerline tower supports as boom attachment points.

c. Skimmers (3 SPS) to operate at mouth of Coyote Creek, at split of Alviso Slough and Coyote Creek.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	8000	feet
Boom	Swamp	6x6	inch	200	feet
Anchor	Danforth	22	lbs	30	
Vessel	Boom Boat			4	
Vessel	Skiff or Punt			3	
Staff	Staff to Deploy			10	
Staff	Staff to Tend			4	

Last Page Update

Strategy:* 2-346.2** ***Objective: Exclusion of mouths of small tidal channels to inner marshes.

Strategy: Plug small slough channels along marshfront on N. side with approximately 400 ft of fence boom or 6x6 Swamp and sorbent booms.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	400	feet
Boom	Sorbent			400	feet
Anchor	Danforth	22	lbs	4	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-346.3** ***Objective: Protective booming of windward shores to prevent oil from being carried into marshes by wave and tidal action

Strategy: Line marshfront with 4000 ft of oil snare, swamp boom, or sorbent boom.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	4000	feet
Boom	Sorbent			4000	feet
Anchor	Danforth	22	lbs	10	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

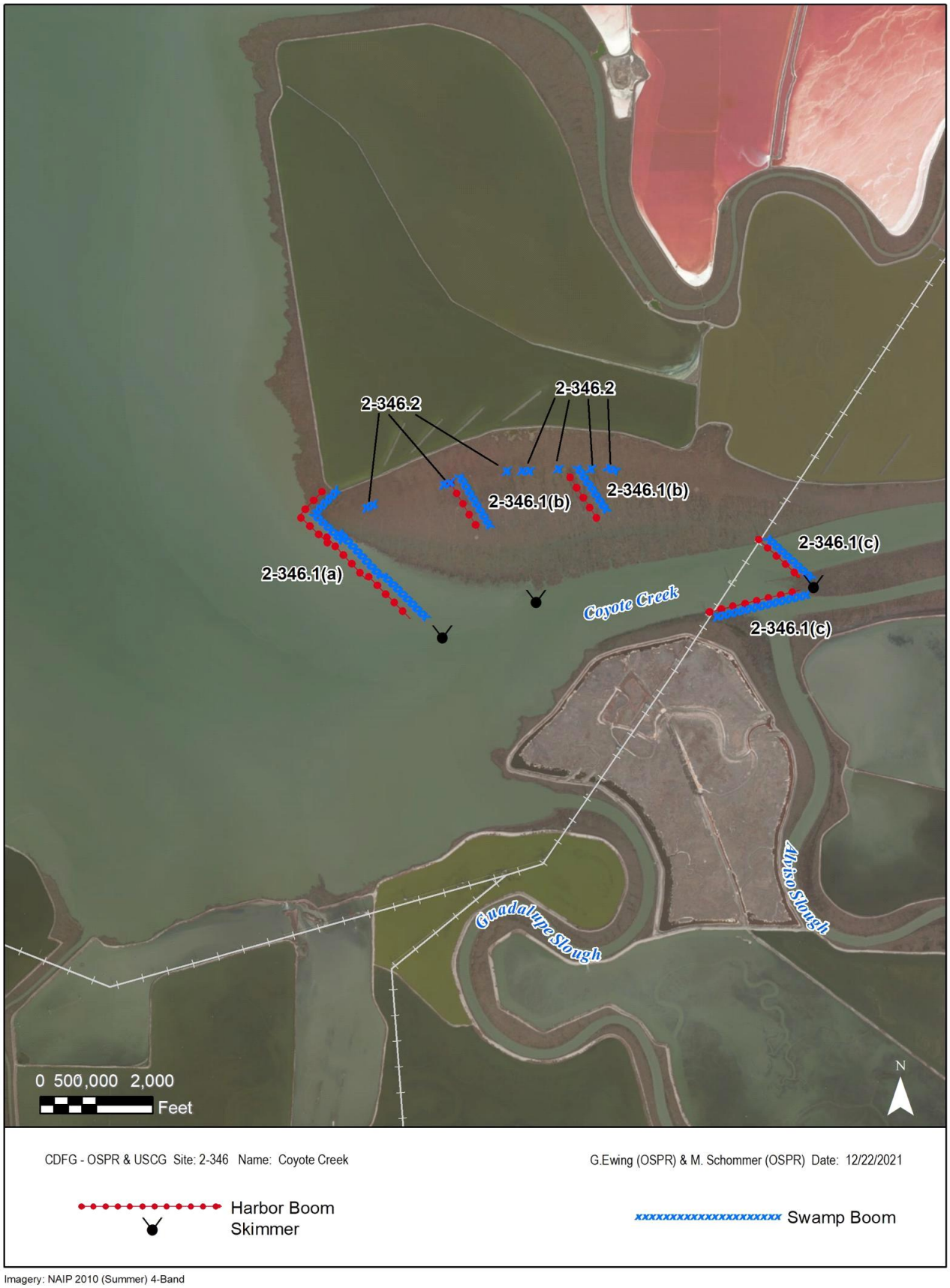
Directions: Take Hwy 880 south and exit at West Warren Avenue. Turn right on West Warren Avenue and follow it to Fremont Blvd. Turn right on Fremont Blvd. and left on the next road. Follow this road to where it crosses a dirt road. Turn right and follow this road to where it crosses Coyote Creek (first collection point) and follow it across to the dead end slough to the second collection point. Access to Coyote Creek and Mowry Slough is possible through Durham Landfill off of Automall Road. South side access available through Alviso to Cargill and refuge property.

Land Access: 2WD,LG TRK,4WD,ATV When levees are dry.

On-Water Limitations: Very shallow, beware of tides. # Launch ramp at Redwood City and possibly at Alviso Slough for ģ smaller boats at high tide.

Facilities, Staging Areas, Command Posts, Available Equipment: USFWS South Bay Refuge may be a useful field post and staging area. Cargill Salt is another proximal location providing use can be negotiated.

Communications Problems: Cell reception may vary depending on service provider.


2-346.2
2-346.2
2-346.1(b)
2-346.1(b)
2-346.1(a)
2-346.1(c)
2-346.1(c)
Coyote Creek
Guadalupe Slough
Alviso Slough
0 500,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-346 Name: Coyote Creek
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Skimmer
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SF - D - S001 SF - D - S006 SF - C - S001 SF - C - S007

NOAA Chart: Entrance to San Francisco Bay ***Map Book:*** AAA - San Franc ***Decimal Degrees:*** 37.761698 -122.379304

Site Description:

This site is the shoreline of San Francisco from Bay Bridge south to Islais Creek at base of Pier 80. This shoreline consists of man-made structures including piers, seawalls and rip-rap. Approx 3 linear miles of shoreline under management of the Port of San Francisco. The bottom of the channels generally consists of soft sediments. Currents near shoreline may be strong, depending on tidal height change, potentilally reaching up to 6 knots on max flood/ebb tides.

Resources at Risk:

ESI and Habitat: 8B Sheltered solid man-made structures
6B Riprap
8D Sheltered rocky rubble shores

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Fish	Pacific herring		Year-round	Nov-Apr
Fish	longfin smelt	ST	Year-round	Nov-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 336-0888
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 819-8965
O	/Duty Officer (24hr)	San Francisco Dept. of Emergency Management	(415) 260-2591

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

This collection strategy should be used to take advantage of the slow water between piers and the boats at anchor to divert oil out of swifter along shore currents to shoreline where collection pocket is possible.

Hazard and Restrictions:

There are submerged obstructions to navigation (tide dependent) in many areas, sunken vessels and old pier pilings. Proceed with caution.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-350.1 *Objective: Deflection to Collection at Pier 70 for shoreside collection

Strategy: 600 feet of 9X9 Hboom may be deployed from the southeast corner of pier 70 with collection pocket to collect oil on the flood tide. Use sorbent to back the collection pocket. The oil may be collected against the seawall north of the power plant intake with an additional 800' boom. If oil is inside of Pier 70, it will flow past unless shoreside leg deployed. Alternative is deflected to a self propelled skimming vessel from Pier 70.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	600	feet
Boom	Sorbent			100	feet
Anchor	Danforth	22	lbs	4	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			5	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-350.2 *Objective: Deflection to Collection at Pier 80 for shoreside collection

Strategy: Deploy 1500' 9X9 Hboom to deflect incoming oil on flood tide and to establish shoreside collection pocket at Pier 80.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1500	feet
Anchor	Danforth	22	lbs	6	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Public boat launch ramp near Pier 52 at 679 Terry A Francois Blvd, San Francisco. Shoreline access from the Embarcadero and China Basin St.

Land Access: There is access for large trucks on most piers and seawalls. Contact Port of SF for access /coordination.

On-Water Limitations: There are submerged obstructions to navigation. Boat launching is available near Pier 52 at 679 Terry A Francois Blvd, San Francisco.

Facilities, Staging Areas, Command Posts, Available Equipment: Flat paved areas for staging and field posts are common throughout this area. Contact OES or Port of SF for potentially available IC.

Communications Problems: Excellent cell reception.

Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SF - F - S006 SF - F - S007

NOAA Chart: Entrance to San Francisco Bay ***Map Book:*** AAA - San Franc ***Decimal Degrees:*** 37.807521 -122.364824

Site Description:

Yerba Buena Island (YBI) is the prominent, rocky island mid-span of the I-80 Bay Bridge. The sensitive portion of the shoreline is the south-westerly shoreline from the lighthouse at the south tip to just north of the west Bay Bridge span (just short of the underwater cable crossing). The shoreline and access under management of USCG. There are small cobble-gravel pocket beaches on the south side of the island which are used by pinnipeds and birds, primarily during low tides. A small sandy pocket beach on the North (Clipper Cove) provides a another haul-out for pinnipeds.

Resources at Risk:

ESI and Habitat: 6B Riprap
8B Sheltered solid man-made structures
5 Mixed sand and gravel beaches

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	double-crested cormorant	FP	Year-round	May-Jul
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	harbor seal	FP	Year-round	Mar-Jun
Plants	blue coast gilia	SSSP	Year-round	Apr-Jul

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Emergency	US Coast Guard, Yerba Buena Island	(415) 399-3547
O	/Duty Officer (24hr)	San Francisco Department of Emergency Managem	(415) 260-2591

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Harbor seal pupping and haulout area.

Concerns and Advice to Responders:

The concern is oiling of beach where oil will become hazardous to Harbor Seals using the site. Injury and death to be expected if harbor seal pups inhale or ingest oil. There is high risk of pups ingesting oil while nursing if mothers become oiled. Minimize disturbance of seals during deployment. Small pocket beach on north side of YBI (Clipper Cove Beach) which may also have seals present.

Hazard and Restrictions:

Potential for 3 foot seas. Most of the water is very deep close to shore but there are occasional rocks and pilings. There are underwater cables just north of the Bay Bridge. Approaching shorelines by foot is extremely hazardous because of steep cliff face.

Site Strategies:

Site Validation Level: II

Strategy:* 2-351.1** ***Objective: Protective booming of beach and rocks used by seals.

Strategy: Deploy 3,000 feet of 9X9+ Hboom parallel to the shoreline around the south side of the island to keep oil off the pocket beaches between lighthouse point and the west span of the Oakland Bay Bridge. Great care must be taken to prevent oil from getting behind the boom at either end throughout the tidal cycle. A 200 foot deflection boom should be in place at the west end of the boom during the flood tide. (A similar deflection may be necessary at the east end of the boom under some wind and tide conditions.)

Anchoring Recommendations: Waters are very deep at the shore and there are relatively few obstructions. The east end of the boom may be fastened or anchored off the the lighthouse (there is an EYE bolt embedded in the rock below the lighthouse which may be helpful). The west end of the boom should be anchored west of the sand and gravel beaches just south of the western span of the Bridge. Few midpoint anchors are needed because the boom is deployed parallel to straight shorelines and currents are minimal near the shoreline. (Although the tidal currents are strong, they run parallel to the shore in these areas.) Midpoint anchors are needed primarily to keep the boom off the shoreline. Danforth anchors are satisfactory in the soft bottoms off the beaches where seals haul out, but Northhill anchors should be used on the rocky bottom below the lighthouse. The boom may be attached to the dolphin pilings off the beaches.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3000	feet
Anchor	Danforth	22	lbs	7	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Boat access is designated method of approaching this site. Foot access to pocket beaches is either minimal, extremely dangerous, or impractical due to steep cliffs. There is vehicle access to site: take Highway 880 to westbound Highway 80; get on the Oakland Bay Bridge; while still on the Bridge take the Yerba Buena Island exit; follow signs to the USCG Station.

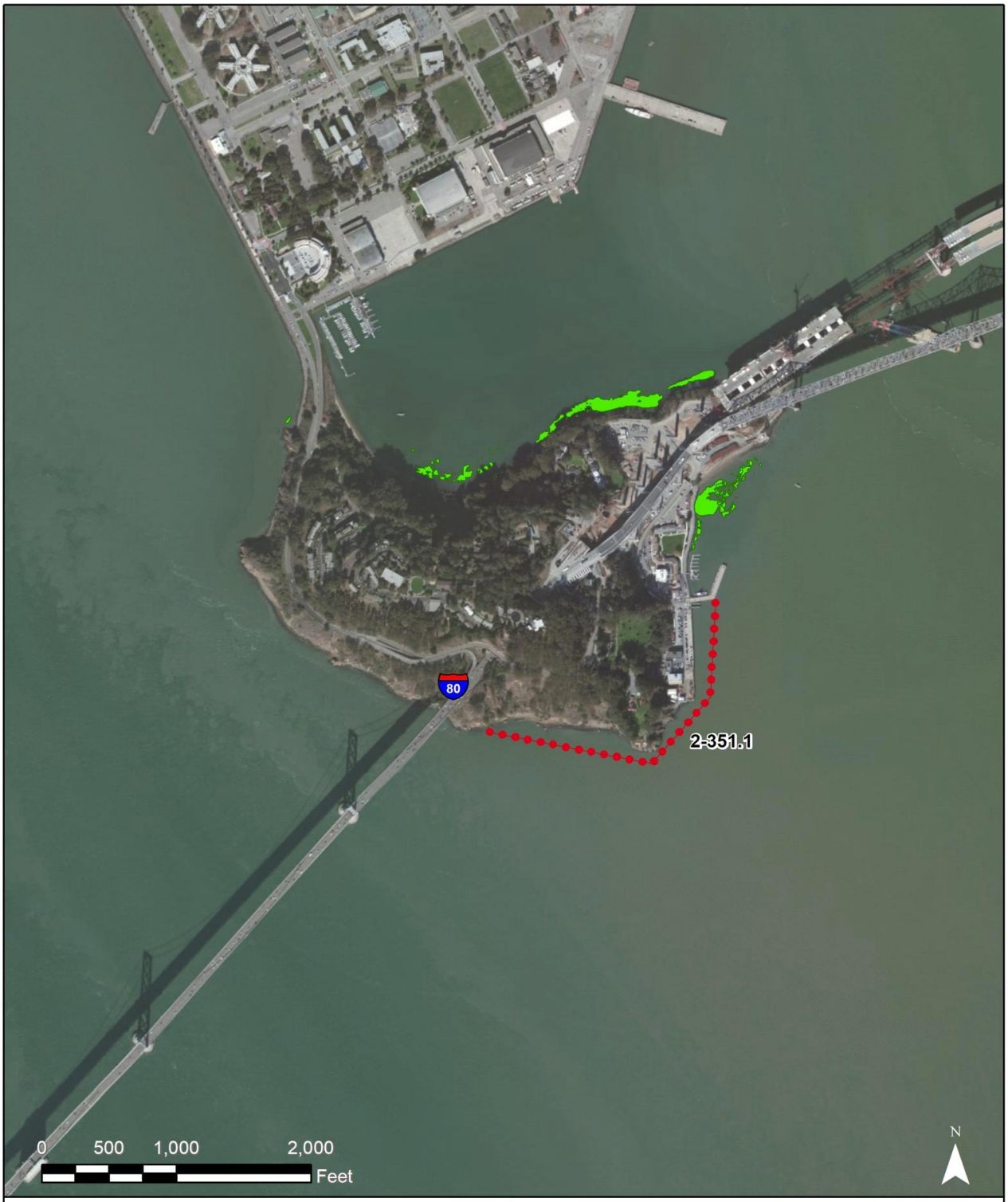
Land Access: Poor access to shoreline from land by foot only. Check tides for optimal accessiblity.

On-Water Limitations: Water is deep and fairly unobstructed along this margin. Estuary Park & Fifth Ave. Marina, Oakland; Ballena Isle Marina, Alameda; Emeryville Marina; Berkeley Marina, Berthing at Clipper Cove Marina. There is a boat launch at the Treasure Island Yacht Club.

Facilities, Staging Areas, Command Posts, Available Equipment: Space for large staging area, and Command Post is available on Treasure Island and YBI. Contact YBI USCG for boom staging at USCG base.

Communications Problems: Excellent cell reception.

Additional Operational Comments: Bottom type - hard mud, shell, rocks. Possible staging and collection site at USCG station or US Navy facility. Some boom on-scene in water at Treasure Island Navy docks. Contact USCG at YBI and US Navy at Treasure Island.



Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SF - A - S002 SF - A - S004

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.716009 -122.376079

Site Description:

South Basin lies between Hunter's Point and Candlestick Point on the San Francisco Peninsula (Bayside). Yosemite Slough extends inland to the northwest from South Basin and is the site of a major salt-marsh restoration project beginning in 2011. Shoreline acccess under management of US Navy. At the head of South Basin is a narrow fringing marsh and mudflat, shorelines along Candlestick Point Shoreline has a combined sand, gravel and rip-rap, the majority of the remaining shoreline is composed primarily of concrete slab rip-rap.

Resources at Risk:

ESI and Habitat: 6B Riprap
8D Sheltered rocky rubble shores
3A Fine- to medium-grained sand beaches

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	Pacific herring		Year-round	Nov-Apr
Plants	eelgrass		Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Environmental Scientist	California State Parks	(831) 335-6384
E	/Archaeologist	California State Parks, Diablo Vista District	(707) 769-5652
O	/Duty Officer (24hr)	San Francisco Department of Emergency Managem	(415) 260-2591
T	/Dispatch, 24-hr	California State Parks (Dispatch)	(916) 358-1300

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Several sensitive plant species occur in the area as well as high concentrations of migratory bird species during fall and winter.

Concerns and Advice to Responders:

This site is used by large numbers of birds, particularly in fall/winter, and there are marshes and mudflats which are vulnerable to oiling. The primary concern is to keep oil out of pocket coves by exclusion booming and collection. Always a concern is that response and cleanup will result in impacts: avoid disturbing wildlife, trampling vegetation, tearing up eelgrass beds with anchors and boat props, and tracking oil into marsh and mudflat sediments.

Hazard and Restrictions:

Vessels beware of shallow waters and obstructions. Shoreline composed of large concrete slabs may be unstable. Access shoreline with great caution at proper tide window.

Site Strategies:

Site Validation Level: II

Strategy:* 2-352.1** ***Objective: Exclusion/protection booming to prevent oil from reaching marsh in South Basin or beaches at Candlestick Point.

Strategy: a. Deploy 1,500 ft. of 9X9+ Hboom across narrowed opening to inner South Basin to exclude oil from marsh and mudflat. Place skimmer at apex of boom if oil collects here.
b. Deploy 2,000 ft of 9X9+ Hboom in a J-hook configuration from middle point at the opening of the inner South Basin to the inside of Candlestick Point. Place skimmer or vacuum truck hose at J-hook pocket near shore if oil collects here.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	3500	feet	
Anchor	Danforth	22	lbs	7		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			1		
skimmer	self propelled			1		
Staff	Staff to Deploy			8		
Staff	Staff to Tend			2		

Strategy:* 2-352.2** ***Objective: Deflect oil away and past site.

Strategy: Deploy deflection with 500 ft of 9X9+ Hboom off end of Navy pier.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	500	feet	
Anchor	Danforth	22	lbs	3		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			4		
Staff	Staff to Tend			2		

Logistics:

Directions: Site is south of San Francisco at Candlestick Point area. Exit Hwy 101 at 432 exit and Take Evans Ave and Innes Ave to La Salle Ave proceed to Candlestick Point State Recreation Area.

Land Access: Good access of all types although may be under new ownership.

On-Water Limitations: Shallow water and multiple underwater obstructions (tide dependent). Oyster Point Marina, and boat launches near piers 70 and 50.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Candlestick Point. Access restricted from land for heavy trucks. Contact Park Maintenance.

Communications Problems: Excellent cell reception throughout South Bay.


Hunter Point
Yosemite Slough
South Basin
2-352.1(a)
2-352.2
2-352.1(b)
101
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-352 Name: South Basin, Hunters Point
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Skimmer
Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SF - B - S005 SF - B - S006

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.737503 -122.372363

Site Description:

This site includes the entire north margin of India Basin and the land north of the (decomissioned) power plant discharge channel. Shoreline is managed under San Francisco Recreation & Parks Department. This wetland park is undergoing restoration. It is a narrow peninsula with high ground, about 8 acres of tidally influenced salt-marsh. The site has been graded to create a combination of pools and high grounds with walking paths. There are several small tidal exchange inlets on the south and west margins (about 500 ft total length) which function as baywater exchange to interior ponds. The bay to the south is exceedingly shallow. The north side is a rip-rap/gravel/sand shoreline. The site is undergoing natural revegetation.

Resources at Risk:

ESI and Habitat: 6B Riprap
5 Mixed sand and gravel beaches
9B Vegetated low banks

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	Pacific herring		Year-round	Nov-Apr
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 336-0888
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 819-8965
O	/Duty Officer (24hr)	San Francisco Department of Emergency Managem	(415) 260-2591
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Many sensitive plant species occur in the area.

Concerns and Advice to Responders:
The tidal inlets could admit oil to the lagoons, ponds, and low marsh areas on this site. As emergent marshes develop along shorelines, these would also be vulnerable to oil impacts. Exclude oil from all inlets and protect shorelines or deflect away. Avoid trampling marsh vegetation. This is a salt-marsh restoration site.

Hazard and Restrictions:
This basin is very shallow - remain between the stakes which mark the channel.

Site Strategies: **Site Validation Level: III**

Strategy:* 2-353.1** ***Objective: Exclude oil from entering small tidal inlets to inner ponds and lagoons.

Strategy: Close small tidal inlets with shore sections of swamp boom (80 ft) and back with sorbent boom. Stake in place. Several openings are along south middle margin of the site and one at the end of a rock wall opposite the power plant. This can be most easily accomplished by land deployment.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	200	feet
Boom	Sorbent			200	feet
Anchor	Stakes			12	
Staff	Staff to Deploy			2	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-353.2** ***Objective: Deflect when oil is likely to enter India Basin, such as easterly winds, deflect oil away from site to south shore. Protect emergent marsh located on the south shore of Indian Basin.

Strategy: Deploy 2,500 feet of 9X9+ Hboom from the tip of the east end of the spit to the south shore of India basin, east of the emergent marsh. Deploy at an angle to the prevailing wind so that the oil will slide down the boom to the south shoreline where the oil can be collected at the shoreline with shore-based skimming equipment. The boom may be cascaded if that will make it easier to deploy. Stakes may be helpful to keep the boom from forming caternary pockets. Boom can be delivered to site by boat or vehicle. Sites on south side can enable rapid recharge of boom boats from shore support. A cascade may be necessary to admit boat traffic to boat launch at India Basin Park.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	2300	feet
Anchor	Danforth	22	lbs	7	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			8	
Staff	Staff to Tend			2	

Last Page Update
Strategy Updated: 9/20/2017
Last Test: 9/20/2017

Logistics:
Directions: By boat the site is at the back of India Basin: proceed south along the SF waterfront about 4 miles from the Bay Bridge and turn west into India Basin just north of Hunters Pointt. By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Army and turn south (right) on Evans Ave. Evans Ave becomes Hunters Point Blvd. India Basin Shoreline Park is on the left and there is a marina at Griffith St. Shoreline is under San Francisco Recreation & Parks. Department.

Land Access: Foot & ATV on site. Easy access on south shore of India Basin. Coordinate with personnel from San Francisco Recreation & Parks.

On-Water Limitations: Very shallow < 4' in most of basin and shallower at shore. Launch on south shore of basin.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging on south shore of India Basin.

Communications Problems: Good cell reception throughout basin.


Lash Lighter Basin
Heron's Head Park
Evans Ave
2-353.1
India Basin
2-353.2
Hunter Point Blvd
India Basin
Shoreline Park
Hunter Point
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-353 Name: Heron's Head Park - India Basin
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SF - B - S001 SF - B - S002

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** ***Decimal Degrees:*** 37.746861 -122.37547

Site Description:

This 10+ acre site is the corner of Pier 94 at the south edge of the mouth of Islais Creek Channel and extends from Pier 96 back into the channel approx one-third of a mile. The shoreline is under management of the Port of San Francisco. It is a narrow 200+ yard wide parcel along the south side of the channel with high ground and about 5 acres of high salt-marsh. The site had been undergoing fill and there are mounds of rubble interspersed across the pickleweed and salt-grass marsh. The north side is a rip-rapped shore with low sensitivity. There is a small tidal inlet on the east margin near the Pier 96 wharf which admits tidal exchange to an interior marsh there.

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
8B Sheltered solid man-made structures

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	Pacific herring		Year-round	Nov-Apr
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 336-0888
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 819-8965
O	/Duty Officer (24hr)	San Francisco Department of Emergency Managem	(415) 260-2591

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Several sensitive plant species occur in the area. A wide variety of bird species utilize this area year-round, an in high numbers in fall anf winter.

Concerns and Advice to Responders:

The tidal inlet could admit oil into the ponds and low-level marsh areas. The openings are at the east end and can be protected with exclusion booming at the inlet and protective booming just offshore. Avoid trampling marsh vegetation. This is a salt-marsh restoration site.

Hazard and Restrictions:

Rip-rap poses slip, trip and fall hazards. Vessels beware of submerged objects and shallows at margins.

Site Strategies: **Site Validation Level: III**

Strategy:* 2-354.1** ***Objective: Exclude oil from entering inlet and protect site from oil.

Strategy: a. Place 600 feet of swamp boom at opening of rocks near Pier 96 wharf and back with sorbent. Stake in place.

b. Deploy 1,300 feet of 9X9+ Hboom from Pier 94 to the south shore of the entrance to Islais Creek. Place anchors at 150' intervals due to strong offshore currents.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1300	feet
Boom	Swamp	6x6	inch	600	feet
Boom	Sorbent			50	feet
Anchor	Danforth	22	lbs	5	
Anchor	Stakes			6	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			4	
Staff	Staff to Tend			2	

Last Page Update

Strategy Updated: 5/15/2015
Last Test: 5/15/2015

Logistics:

Directions: By boat the site is at the south margin of the mouth of Islais Creek Channel (which is Pier 94): proceed south along the SF waterfront about 4 miles from the Bay Bridge to Islais Creek Channel (just south of Army St. Terminal-North Container Terminal -Pier 80). By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Army and turn south (right) on 3rd St. and then left on Cargo Way. Access through industrial drives toward bay - Pier 94 and Pier 96.

Land Access: Easy access throughout and to adjacent piers.

On-Water Limitations: Submerged objects and shallows at margins. Boat launch on south shore of India Basin or at South Beach Marina near the Bay Bridge, where there are facilities, fuel and mooring available.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging on Pier 96 or Pier 80, on either side of the channel.

Communications Problems: Cell reception strong throughout.


Potrero Point
280
Pier 80
3rd Street
Islais Creek Channel
2-354.1(b)
2-354.1(a)
Lash Lighter Basin
0 500 1,000 2,000
Feet
N
CDFG - OSPR & USCG Site: 2-354 Name: Isais Creek - Pier 94 Saltmarsh
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: San Francisco **ACP Division/Segment:** SM - F - S001 SM - E - S004

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.60888 -122.3724

Site Description:

This site is fringing salt-marsh and a large tidal mudflat (tide dependent) in the cove between the San Francisco International Airport runway and Coyote Point. The cove is a deeply recessed crescent to the west with rip-rap on most shorelines. Along the south shore, two openings allow tidal exchange to marshes behind the rip-rap shoreline. The eastern-most opening is Sanchez Creek. Shallow water and obstructive debris are present throughout this area. There is an exclusion zone 200 yds from SFO Airport shoreline. Bouys mark the exclusion zone. Contact SFO Airport Security for access to shoreline or deployment of strategy 361.1a

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 336-0888
E	/Agency Representative, 24-hr	Port of San Francisco	(415) 819-8965
E	/Dispatch, 24-hr	SFO Airport Security	(650) 821-7111
O	/Duty Officer (24hr)	San Francisco Dept. of Emergency Management	(415) 260-2591

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species utilize this area year-round, with highest numbers in fall and winter seasons.

Concerns and Advice to Responders:

This site is used by endangered birds to breed and many other birds throughout the year for resting and feeding. The primary concern is to keep oil from entering the marshes and to keep oil out of the cove where birds gather. In addition, response activity itself can be severely damaging: avoid harassing wildlife, trampling marsh plants, treading oil into marsh and mud, or disturbing the tidal flat bottom.

Hazard and Restrictions:

Aircraft beware: this is in or near S.F. International Airport restricted airspace; hazards from incoming planes. Vessels beware of shallow water and submerged obstructions.

Site Strategies:

Site Validation Level: II

Strategy:* 2-361.1** ***Objective: Exclude oil from entering slough openings and cove. Contact SFO Airport Security for access to shoreline or deployment of strategy 361.1a

Strategy: a) Deploy 7,600 ft of 9X9+ Hboom along the outer edge of the intertidal mudflat to exclude oil from the marsh. Line boom from SE corner of runway along mudflat to rip rap on southern shoreline.
b) Exclude oil from entrance to "pond" on south shore with 200 ft. of 9X9+ Hboom doubled back across entrance (100 ft. across two times)
c) Exclude oil from Sanchez Creek, a rip rapped slough channel leading to the large marsh along freeway. Deploy 400 ft. of 9X9+ Hboom in apex configuration out from channel entrance with two 200 ft legs each.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	8200	feet
Anchor	Danforth	22	lbs	25	
Vessel	Boom Boat			3	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			12	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: Vehicle access available near the shoreline: From Hwy 101, exit on Millbrae and drive along shoreline on Bayshore Hwy and Airport Blvd., or exit on Peninsula Ave and proceed bayward on Coyote Point Drive to Coyote Point County Recreation Area and Coyote Point Marina.

Land Access: Large truck access.

On-Water Limitations: Extremely shallow waters and obstructions are limiting. Coyote Pt. Marina and Oyster Point Marina.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Coyote Point Marina, Oyster Point Marina, possibly SF airport, and parking lots along south shore.

Communications Problems: Cell reception strong in south bay.


SFO
Old Bayshore Hwy
2-361.1(a)
2-361.1(a)
101
Coyote Point
0 1,000 2,000 4,000
Feet
N
CDFG - OSPR & USCG Site: 2-361 Name: Airport Mudflat
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: San Mateo **ACP Division/Segment:** SM - D - S002 SM - D - S001

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.552876 -122.244889

Site Description:

This site includes the length of Belmont Slough and adjacent Bay Slough and the salt-marsh and mudflat frontage including Bird Island. The southeastern side of the slough is managed by SF Bay National Wildlife Refuge (USFWS) and the northwesterly side is joint owned by CDFW & CA State Lands Commission. Belmont Slough is a narrow channel on the southwest shore of South San Francisco Bay, one-mile south of the San Mateo-Hayward Bridge. Salt-marsh and mudflats are present at the mouth and along its banks. There is a large salt-marsh between the bay and Bay Slough. The mudflat bayward of the marsh is very wide and shallow. It is part of CDFW Redwood Shores Ecological Reserve.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-June
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	Alameda song sparrow	SSC	Year-round	Mar-Jul
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species reside in the area.

Concerns and Advice to Responders:

The concern is oil and response impacts to salt-marsh, wildlife, endangered species and resident species which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Belmont Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats and avoid trampling oil into salt-marsh and mud.

Hazard and Restrictions:

Aircraft beware of high power lines. Vessels be aware that Belmont Slough is very narrow with unmarked hazards, mudflats and margins are very shallow (tide dependent).

Site Strategies: **Site Validation Level: II**

Strategy:* 2-362.1 *Objective: Exclude/collection oil fom entering Belmont Slough.

Strategy: a) Deploy several 600 to 1,000+ ft. sections of 9X9+ Hboom cascading south along the mudflat/channel shelf contour to deflect oil back into main current and away from shore.
b) Deploy 200 ft. of swamp boom from prominent rip rapped point NW of Belmont Slough entrance marsh across mudflat to channel margin. Exclude and deflect oil away from the marsh into a skimming pocket located in the main channel near the confluence of Belmont and Bay Sloughs. Light oil may be engaged using oil snare but heavier oil will require skimming per strategy 2-362.3.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	4000	feet	
Boom	Swamp	6x6	inch	200	feet	
Anchor	Danforth	22	lbs	18		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			8		
Staff	Staff to Tend			2		

Strategy:* 2-362.2 *Objective: Protective booming of bayfront tidal marsh

Strategy: Deploy 6,000 ft. of 9X9+ Hboom on the bay side of Bird Island in front of Bay Slough. At the north end connect with boom leg of skimmer system. Tidal barrier boom is preferred, however, 9X9+ Hboom backed with several layers of sorbent boom may also be adequate.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	6000		
Anchor	Danforth	22	lbs	18		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			10		
Staff	Staff to Tend			2		

Strategy:* 2-362.3 *Objective: For Collectible oil quantities oil use SPS skimmer

Strategy: Oil threat to the site via the channel and carried on tidal currents can only be addressed midchannel; shallow water Self Propelled Skimmer (SPS) or Stationary Floating Skimmer (SFS) can function in the collection pocket of initial deployment 2-362.1 to capture collectible oil.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	self propelled			1		
Staff	Staff to Deploy			2		

Logistics:

Directions: Primary access is via water since land access is limited by fronting marsh. By land, exit Hwy 101 at East Hillsdale Blvd and proceed on Hillsdale or Foster City Blvd. bayward to Beach Park Blvd.

Land Access: Easy access along Beach Park Blvd.

On-Water Limitations: Extreme shallows and mudflats at low tide. Redwood City Marina.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Redwood City Marina, harbor and possibly along Beach Park Blvd. on Brewer Island in Foster City.

Communications Problems: Cell reception throughout south bay.


2-362.1(b)
2-362.1(a)
2-362.1(a)
2-362.2
2-362.1(b)
Bird Island
Belmont Slough
Bay Slough
Radio Point
Steinberger Slough
0
1,000
2,000
4,000
Feet
N
CDFG - OSPR & USCG Site: 2-362 Name: Belmont Slough
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/22/2021
Harbor Boom
Swamp Boom
Imagery: NAIP 2010 (Summer) 4-Band

County: San Mateo **ACP Division/Segment:** SM - C - S001

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.543869 -122.224425

Site Description:

This site extends from the mouth of Bay Slough to Bair Island and includes the salt-marshes landward along Steinberger Slough and Smith Slough to Hwy 101. It is part of San Francisco National Wildlife Refuge (USFWS) and California Dept of Fish and Wildlife (CDFW) Bair Island and Redwood Shores Ecological Reserve. Steinberger Slough is on the southwest shore of South San Francisco Bay, two miles south of the San Mateo-Hayward Bridge. It lies to the northwest of Bair Island. This slough has no defined channel and is relatively shallow. It has a well developed salt-marsh and mudflat at the mouth and along its banks.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species utilize this area year-round.

Concerns and Advice to Responders:

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Steinberger Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh sediments.

Hazard and Restrictions:

Aircraft beware of overhead power lines overhead; vessels be aware of shallow water; channel/slough not clearly marked, proceed with caution.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-363.1 *Objective: Exclude/collect oil from entering Steinberger Slough

Strategy: a) Deploy 3,500 ft of 9X9+ Hboom along the north side channel margin to divert oil to a collection pocket positioned in the main slough channel. [Connect this boom to exclusion boom deployed as part of the Belmont Slough strategy (2-362.2) to exclude oil from Bay Slough and the marsh NW of Steinberger Slough mouth.]

b)Use a portion of original 3,500 ft of 9X9+ Hboom deployed for legs of skimming pocket in mid channel. Use oil snare / sorbents to collect light oil or sheen, but implement skimming per 2-363.2 for skimmable oil.

c) Place swamp boom across mudflats on both sides of main channel. Connect to Hboom.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9		3900	feet	
Boom	Swamp	6x6		500	feet	
boom	Oil Snare (pom-pom)			50	feet	
Boom	Sorbent			50	feet	
Anchor		22		16		
Vessel	boomboat			2		
Vessel	Skiff			1		
Staff	Staff to Deploy			12		
Staff	Staff to Tend			2		

Strategy:* 2-363.2 *Objective: For Collectible oil quantities, use SPS skimmer

Strategy: Position self propelled skimmer (SPS) or stationary floating skimmer (SFS) in main slough channel. Use a portion of original 3,500 ft of boom deployed for legs of skimming pocket. Connect southern leg to levee or extend out to remnant concrete pier on small island on the south side of main channel.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	self propelled			1		
Staff	Staff to Deploy			3		

Logistics:

Directions: Nearest vehicle access is San Carlos Airport: exit Hwy 101 at Holly/Redwood Shores Pkwy.

Land Access: No road access to Bair Island. Access by vessel only at high tides.

On-Water Limitations: No defined channel, impassable at low tides, very shallow. Nearest launch is at Redwood City.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Port of Redwood City, possibly through sewage facility on north side of channel.

Communications Problems: Cell reception throughout south bay.

Imagery: NAIP 2016, 60 cm resolution

County: San Mateo **ACP Division/Segment:** SM - C - S002 SM - C - S006

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.539532 -122.212531

Site Description:

The site includes all of Bair Island between the mouths of Redwood Creek and Steinberger Slough. Bair Island is located on the southwest shore of South San Francisco Bay, three miles south of the San Mateo-Hayward Bridge (Hwy 92). It is part of San Francisco Bay National Wildlife Refuge (USFWS) and California Department of Fish and Wildlife (CDFW) Bair Island Ecological Reserve. This site includes Bair Island State Marine Park. Bair Island has an extensive salt-marsh complex inside its levees. Water flows through breaches in several places around the island. This site is bounded on the southeast by Redwood Creek, on the northwest by Steinberger Slough and on the south by Corkscrew Slough.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-Jun

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Dispatch, 24-hr	California State Parks (Dispatch)	(916) 358-1300
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species utilize this area year-round and in highest numbers in fall and winter. This is also the largest harbor seal rookery in San Francisco Bay

Concerns and Advice to Responders:

The concern is oil and response impacts to marsh, wildlife, and rare and endangered species including plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering openings to Bair Island and adjacent sensitive sites. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh plants; avoid disturbing soft mudflats, and avoid trampling oil into marsh sediments.

Hazard and Restrictions:

Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

Site Strategies: **Site Validation Level:** II

Strategy:* 2-364.1** ***Objective: Exclude oil from entering Bair Island interior marshes.

Strategy: Deploy 2700' 9X9+ Hboom in a chevron across the large levee breach existing approximately halfway between Steinberger Slough and Redwood Creek.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3300	feet
Boom	Sorbent			200	feet
Anchor	Danforth	22	lb	12	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			7	
Staff	Staff to Tend			2	

Last Page Update

Strategy:* 2-364.2** ***Objective: Protective booming of exposed marsh frontage.

Strategy: Deploy 4,000 ft of Hboom around unleveed marsh on eastern Bair Island, northwest of Redwood Creek, beginning near levee breach midway along the bay side shore. Extend boom east and south into Redwood Creek channel. Connect with Hboom from Redwood Creek strategy (2-365-A).

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	4000	feet
Anchor	Danforth	22	lb	17	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			10	
Staff	Staff to Tend			2	

Last Page Update

*Strategy Updated:*9/18/2017
Last Test: 9/18/2017

Logistics:

Directions: Bair Island has no vehicular access. By water it is at the mouth and to the north of Redwood Creek, just bayward of the Port of Redwood City.

Land Access: Foot only: no road access to Bair Island. Contact USFWS personnel for access.

On-Water Limitations: Very shallow on bay frontage and at margins. Port of Redwood City has nearest launch.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Port of Redwood City.

Communications Problems: Cell reception strong throughout south bay.


See 2-363
2-364.1
2-364.2
Steinberger Slough
Bair
Island
Corkscrew Slough
Redwood Creek
See 2-365
0 500 1,000 2,000
Feet
N
CDFW - OSPR & USCG Site: 2-364 Name: Bair Island
G. Ewing (OSPR) & M. Schommer (OSPR) Date: 2/6/2020
Harbor Boom
Swamp Boom
Imagery: NAIP 2016, 60 cm resolution

County: San Mateo **ACP Division/Segment:** SM - C - S005 SM - C - S006

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.525714 -122.198361

Site Description:

Redwood Creek extends from the bay to Hwy 101 including Westpoint Slough, and several side channels excluding Corkscrew Slough. Site also includes Redwood Shores State Marine Park. Portions of the mouth are included in San Francisco National Bay Wildlife Refuge (USFWS). Redwood Creek is the dredged channel for vessel access to the Port of Redwood City. Creek banks are lined with cordgrass and pickleweed salt-marshes. Large volume tidal exchange flows through this creek feed adjacent sloughs and fringe salt-marsh habitat.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
8C Sheltered riprap
9B Vegetated low banks

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-Jun

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
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C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
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T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

a wide variety of bird species utilize this area year-round.

Concerns and Advice to Responders:
The concern is oil and response impacts to salt-marsh, wildlife, endangered birds, and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Redwood Creek. Secondary objective is to minimize exposure and impacts to bay marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive species, avoid disturbing soft mudflats, avoid trampling oil into marsh sediments.

Hazard and Restrictions:
Aircraft beware of overhead power lines. Vessels be aware of shallow water.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-365.1** ***Objective: Deflect past, Deflect to collection, Protective boom shoreline.

Strategy: a) Deploy several 600+ ft sections (3000 ft) of 9X9+ Hboom with heavy anchors from Redwood Creek channel markers # 3,4,5, and 6 to deflect oil back into main current and away from shore.
b) Deploy 1,500 ft of 6X6 inch deflection swamp boom off both channel markers # 7 and 8.
c) Deploy 5,000 ft of 6X6 inch swamp boom along the north channel margin and on the south side of the channel, connect with boom deployed in the Bair Island strategy (2-364.2). Exclude and deflect oil away from the marsh into a skimming pocket located in the main channel near channel markers #9 and 10: use oil snare / sorbents to collect light oil or sheen, but implement skimming per 2-365.2 for skimmable oil.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	3000	feet	
Boom	Swamp	6x6	inch	8000	feet	
Boom	Sorbent			2000	feet	
Anchor	Danforth	22	lb	35		
Anchor	Danforth	40	lb	15		
Vessel	Boom Boat			6		
Vessel	Skiff or Punt			3		
Staff				25		

Strategy:* 2-365.2** ***Objective: For Collectible oil quantities, use SPS skimmer

Strategy: Position self propelled skimmer (SPS) or stationary floating skimmer (SFS) in main slough channel in or attached to the skimming pocket deployed in 2-365.1. Skimmer system may need be set up so that it can rearranged for flood and ebb tides.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	self propelled			1		
Staff	Staff to Deploy			3		

Strategy:* 2-365.3** ***Objective: Draft Interior Redwood Creek Strategy. Prevent oil from Port of Redwood City from reaching interior marshes.

Strategy: 1) Exclude oil from Westpoint slough. Use 1500' 9x9 Hboom across mouth of Westpoint Slough
2) Exclude oil from interior marshes on Bair Island/ Steinberger Slough marshes.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	1500	feet	
Anchor	Danforth			1		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			5		
Staff	Staff to Tend			2		

Logistics:

Directions: Vehicle access to margin of site is from Hwy 101, exit on Seaport Blvd and continue to Port of Redwood City or Municipal Marina. Vessel access is from the Port or marina bayward to the mouth of Redwood Creek.

Land Access: Access to land by foot only except at harbors.

On-Water Limitations: Extreme shallows near shore. Redwood City Marina and Port of Redwood City have launch ramps.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Redwood City Marina and harbor.

Communications Problems: Good cell reception throughout.

Imagery: NAIP 2016, 60 cm resolution

County: San Mateo **ACP Division/Segment:** SM - C - S004

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.523831 -122.206928

Site Description:

Corkscrew Slough lies to the south of Bair Island and extends from Redwood Creek on the east to Steinberger Slough on the west. The easterly half of the slough is included in the San Francisco Bay National Wildlife Refuge (USFWS). Corkscrew Slough is a water channel on the southwest shore of South San Francisco Bay, approx three miles south of the San Mateo-Hayward Bridge, on the back side of Bair Island. Primary water flow comes from Redwood Creek. Its banks are lined with cordgrass and pickleweed salt-marsh. The easterly half of Corkscrew slough is included in the San Francisco Bay National Wildlife Refuge.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-Jun

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species utilize this area year-round, especially in fall and winter. Hrabor seals haul out and pup in this location as well.

Concerns and Advice to Responders:

The concern is oil and response impacts to marsh, wildlife, including seal pupping, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Corkscrew Slough. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants, avoid disturbing soft mudflats, avoid trampling oil into marsh sediments.

Hazard and Restrictions:

Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water and strong currents.

Site Strategies:

Site Validation Level: II

Strategy:* 2-366.1** ***Objective: Exclude oil from entering Corkscrew Slough. Corkscrew Slough is an interior Slough between Steinberger Slough and Redwood Creek

Strategy: a) Protect from spills coming from the Bay by implementing Redwood Creek (2-365) and Steinberger Slough (2-363) strategies. The main flow of water into Corkscrew Slough is through Redwood Creek.
b) Protection from spills in Redwood Creek (Port of Redwood City): Deploy 1200 ft of 9x9+ Hboom in a chevron, with a J hook on the deeper south side for collection, outside Slough mouth. Current swift inside mouth.
c) Deploy 800 ft sorbent boom and/or hard boom inside the slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1200	feet
Boom	Sorbent			800	feet
Anchor	Danforth	22	lb	5	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			5	
Staff	Staff to Tend			2	

Last Page Update

Logistics:

Directions: This site is accessible from water only, just bayward and across creek from Port of Redwood City. Nearest land access is Port and marina: Exit Hwy 101 on Seaport Blvd and proceed bayward to marina and Port.

Land Access: Access to land by foot only, vessiles and vehicles at harbor nearby.

On-Water Limitations: Very shallow near shore. Port of Redwood City and Oyster Point Marina.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Port of Redwood City. No road access to Bair Island.

Communications Problems: Cell reception strong throughout south bay.


Steinberger Slough
Bair Island
Corkscrew Slough
2-366.1c
2-366.1b
Redwood Creek
Westpoint Slough
0 500 1,000 2,000
Feet
N
CDFW - OSPR & USCG Site: 2-366 Name: Corkscrew Slough
G. Ewing (OSPR) & M. Schommer (OSPR) Date: 2/7/2020
Harbor Boom
Swamp Boom
Imagery: NAIP 2016, 60 cm resolution

County: San Mateo **ACP Division/Segment:** SM - B - S002 SM - B - S001 SM - B - S004

NOAA Chart: 18649/18650 Entrance to SF Bay ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.5098 -122.178396

Site Description:

This site extends from the mouth of Redwood Creek to the Dumbarton Bridge (Hwy 84) and includes Greco Island, Ravenswood Slough and the salt-marsh between the slough and Ravenswood Point. This site is part of San Francisco Bay National Wildlife (USFWS) Refuge. Greco Island habitat consists of a salt-marsh island on the southwest shore of South San Francisco Bay, one-mile northwest of the Dumbarton Bridge. It is bounded on the northwest by Redwood Creek and on the southwest by Westpoint Slough. Ravenswood Slough opens to the Bay south of Greco Island near Westpoint Slough. Fringing cordgrass/pickleweed salt-marshes line the mouth and banks. The Greco Island site was combined with formerly designated Ravenswood Slough site due to their close proximity to each other, similar sensitivities, and combined response protection strategies.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-Jun

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Harbor seals haul out and pup in this area. A wide variety of bird species utilize this location year-round, especially during fall and winter.

Concerns and Advice to Responders:

The concern is oil and response impacts to marsh, wildlife, including seal pups and adults, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Ravenswood Slough, Westpoint Slough and small tidal sloughs. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants, avoid disturbing soft mudflats, avoid trampling oil into sediments.

Hazard and Restrictions:

Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

Site Strategies: **Site Validation Level:** II

Strategy: **2-367.1** ***Objective:*** Exclude oil from entering main sloughs and outer margin bay approach booming.

Strategy: a) At entrances to Ravenswood and Westpoint Sloughs, deploy chevron exclusions using swamp boom. (about 1200' total).
b) Additionally, deploy 8,000 ft of 9X9+ Hboom with 2,000 ft of 6X6 swamp boom for shore connections, along the outer edge of the mudflat from the prominent point by side of Greco Island south to the point on the levee between Ravenswood Point and Ravenswood Slough.
c) Coordinate with SF Bay National Wildlife Refuge staff to insure closure of tidal gates, pumps, syphons, and other water structures admitting water (and oil) to wetlands behind levees.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	8000	feet	
Boom	Swamp	6x6	inch	2000	feet	
Boom	Sorbent			2000	feet	
Anchor	Danforth	22	lb	24		
Vessel	Boom Boat			6		
Vessel	Skiff or Punt			5		
Staff	Staff to Deploy			25		

Strategy: **2-367.2** ***Objective:*** Exclusion/protection of bay marsh front of Greco Island and Ravenswood Slough.

Strategy: Deploy 10,000 ft of 9X9 Harbor boom or swamp boom across the upper portion of the mudflat fronting the marsh of Greco Island and connect boom at the north end with Redwood Creek strategy.
ALTERNATIVES: It is critical that channel entrances leading into Greco Island be blocked. If tidal barrier boom should fail or time to impact does not permit its deployment. Block channel mouths with curtain boom, swamp boom, sorbent boom, or combination thereof.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor Boom			10000	feet	
Anchor	Stakes			50		
Vessel	Boom Boat			6		
Vessel	Skiff or Punt			2		
Staff	Staff to Deploy			24		

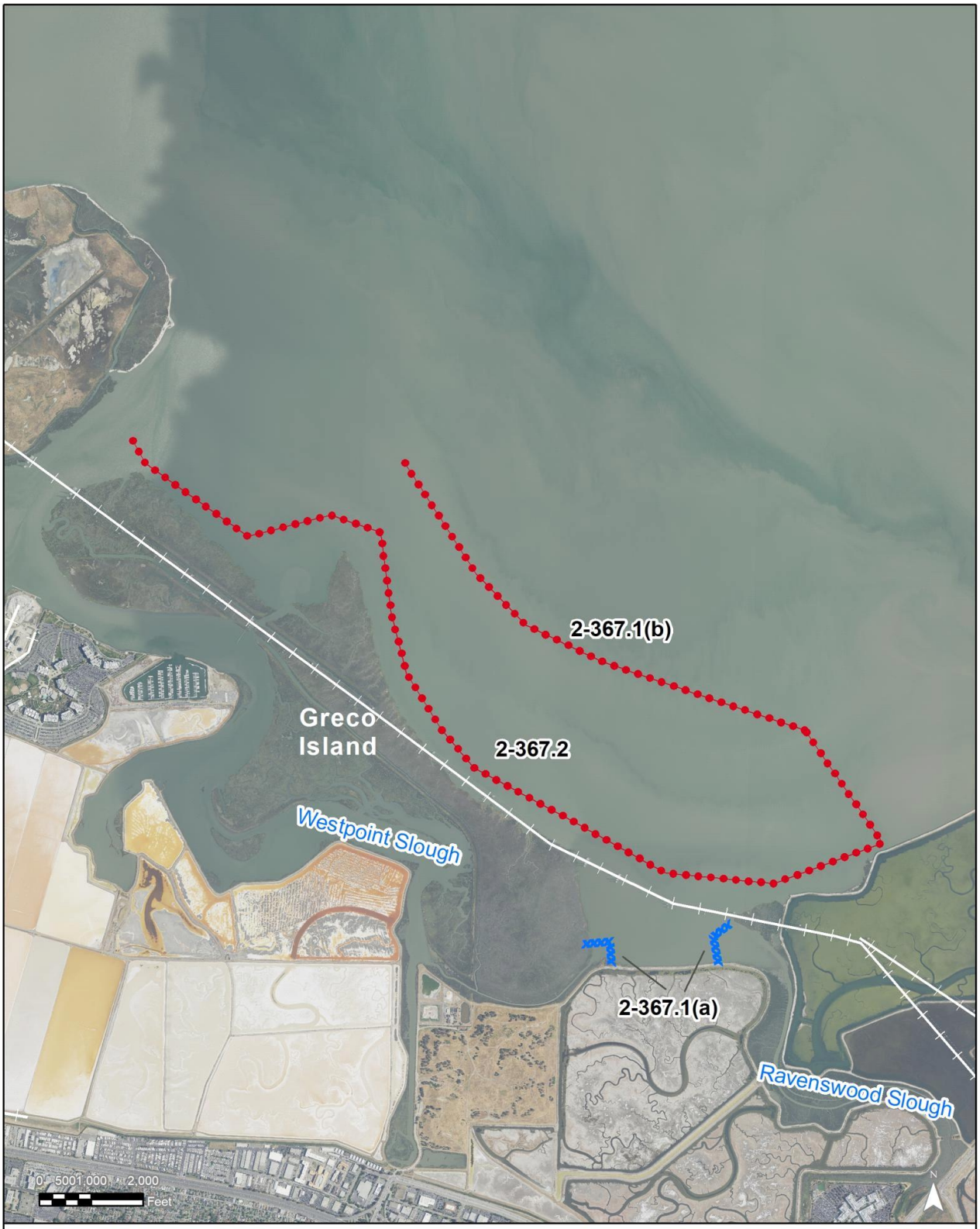
Logistics:

Directions: There is no vehicle access to this site. Nearest vehicle access is Port of Redwood City: Exit Hwy 101 at Seaport Blvd. and continue bayward to Port or marina. Water access is from Port or Marina immediately to the south from Redwood Creek.

Land Access: No road access, access by foot only.

On-Water Limitations: Very shallow mudflats. Redwood City Marina and Port.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Redwood City Marina & Harbor.
Communications Problems: Good Cell reception.



Imagery: NAIP 2016, 60 cm resolution

County: San Mateo **ACP Division/Segment:** SM - A - S001 SC - Z - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.467976 -122.11849

Site Description:

Palo Alto Marsh lies on the southwest shore of South San Francisco Bay, immediately south of the Dumbarton Bridge to Mayfield Slough. This site is included in the San Francisco Bay National Wildlife Refuge (USFWS) and is part of the City of Palo Alto's Baylands Nature Preserve. Cordgrass salt-marsh and mudflats are bisected by several channels, including San Francisquito Creek. The site is fronted by extensive very shallow mudflats.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	steelhead - Central/Northern California	FT	Year-round	Nov-Apr
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Solar Plant Manager	Cargill Salt	(541) 261-9719
E	/Supervising Ranger	City of Palo Alto, Baylands Nature Preserve	(650) 304-4094
O	/Dispatch, 24-hr	San Mateo Co. Dept. of Emergency Management	(650) 363-4963
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Several sensitive plant species reside in the area. This is one of the largest and few remaining steelhead trout runs in the San Francisico Bay.
A wide variety of bird species utilize this location year-round and in large numbers during fall and winter.

Concerns and Advice to Responders:

Primary concern is to exclude oil from entering the interior salt-marsh via channels. Second concern is oiling of this low energy marsh front. Also of concern is damage to marsh from response activities: trampling salt-marsh vegetation, disturbing sensitive species, and trampling of oil into sediments.

Hazard and Restrictions:

Aircraft beware of airport traffic and overhead power lines nearby; vessels beware of shallow water; pilings and debris in sloughs and adjacent mudflats.

Site Strategies:

Site Validation Level: II

Strategy:* 2-370.1** ***Objective: Exclude oil from entering the entrances to Palo Alto Marsh and San Francisquito Creek, if time to impact does not permit its deployment or if tidal barrier boom (strategy 2-370.2) should fail.

Strategy: ALTERNATIVES: It is critical that channel entrances leading into Palo Alto Marsh (Baylands Nature Preserve) and San Francisquito Creek be blocked, and also, the small tidal inlets to the marsh north of Cooley Landing. Deploy 100' lengths of appropriate curtain boom and block channel mouths with Harbor boom, swamp boom and sorbent boom, or combination thereof.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	500	feet
Boom	Swamp	6x6	inch	500	feet
Boom	Sorbent			500	feet
Anchor	Danforth	22	lb	8	
Anchor	Stakes			5	
Vessel	Boom Boat			1	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			5	

Last Page Update

Strategy:* 2-370.2** ***Objective: Protective booming of marsh front to keep oil from impacting marsh and mudflats.

Strategy: Deploy 9,000 - 10,000 ft of exclusionary 9X9+ Hboom across the mudflat from Cooley Landing around Sand Point to Mayfield Slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	10000	feet
Boom	Swamp	6x6	inch	1000	feet
Boom	Sorbent			1000	feet
Anchor	Danforth	22	lb	50	
Vessel	Boom Boat			5	
Vessel	Skiff or Punt			3	
Staff	Staff to Deploy			20	

Last Page Update

Logistics:

Directions: Vehicle access is available at two points: Cooley Landing - from Hwy 84 or Hwy 101, exit on University Ave and then bayward on Bay Rd; Palo Alto Baylands Nature Preserve - from Hwy 101 exit on Embarcadero Rd and proceed bayward to terminus.

Land Access: All weather, all vehicle road to site.

On-Water Limitations: Launch at Mayfield Slough and at Cooley Landing. Larger craft may launch at Redwood City Marina or Harbor.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Palo Alto Boat Works and Redwood City Marina or Harbor. Also, at public access at mouth of Mayfield Slough.

Communications Problems: Cell reception strong throughout south bay.

Imagery: NAIP 2016, 60 cm resolution

County: Santa Clara **ACP Division/Segment:** SC - Z - S002

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** ***Decimal Degrees:*** 37.455411 -122.100898

Site Description:

This site includes Mayfield and Charleston Sloughs, including the bay frontage adjacent and open to Charleston Slough, and all inland tributary marshes. These sloughs are on the southwest shore of South San Francisco Bay, four miles south of the Dumbarton Bridge. The old Palo Alto Yacht Harbor is located on Mayfield Slough. This site is adjacent to the San Francisco Bay National Wildlife Refuge (USFWS). Both sloughs have fringing cordgrass and pickleweed marshes at their mouths and along their banks. These three sloughs network tidal exchange throughout over 200 acres of salt-marsh habitat.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	common yellowthroat	FP, SSC	Year-round	Jun-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Solar Plant Manager	Cargill Salt	(541) 261-9719
E	/Supervising Ranger	City of Palo Alto, Baylands Nature Preserve	(650) 304-4094
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

Primary concern is that oil will enter Mayfield and Charleston sloughs, exposing extensive salt-marsh, mudflats, and wildlife to oil. Strategies are designed to exclude oil from being transported to inner salt-marsh by deflecting to skimmers and by exclusion booming. Secondary concern is oiling of marsh front. Also of concern is damage to marshes and soft slough bottoms from response activity. Avoid trampling salt-marsh and trampling oil into soft sediments.

Hazard and Restrictions:

Aircraft beware of overhead powerlines nearby, and airport traffic in area. Vessels beware of shallow water and strong currents in area: channel is narrow and privately maintained.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-372.1** ***Objective: Deflect oil away from marshes to skimmers.

Strategy: a. Deploy 2000' of 9X9+ Hboom across entrance to Mayfield and Charleston Sloughs.
b. Place skimmer in J-hook of boom on north side of channel near small boat dock.
c. Deploy 500' of 9X9+ Hboom across the north entrance of Charleston Slough at the confluence of Mayfield Slough. Create a J-hook against the levee and place skimmer or vac truck there.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	2500	feet	
Anchor	Danforth	22	lb	7		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
skimmer	shoreside			2		
Staff	Staff to Deploy			12		

Strategy:* 2-372.2** ***Objective: Exclude oil from entering Charleston Slough

Strategy: Deploy 1200' of swamp boom across southern entrance to Charleston Slough. Place boom along power line tower supports and foot bridge. Back with sorbent booms.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6	inch	1200	feet	
Boom	Sorbent			1200	feet	
Anchor	Danforth	22	lb	6		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			6		

Strategy:* 2-372.3** ***Objective: Close all tide gates and salt pond intake structures to exclude oil from expanding to inner marshes and impoundments.

Strategy: a. Close large tide gates near confluence of sloughs and tide gate under road near Baylands Nature Preserve Interpretive Center (operated by City of Mountain View).
b. Notify Cargill Salt Co. to close saltwater intake culverts (2x48") on east side of Charleston Slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Staff	Staff to Deploy			2		

Logistics:

Directions: From Hwy 101 in Palo Alto, exit east bound on Embarcadero, passt airport to Mayfield public access. Public access area and dock are at mouth of Mayfield Slough. Mountain View Parks Dept. has access roads to south side of Charleston Slough. Possible access at Palo Alto Boat Works.

Land Access: All traffic when levees are dry.

On-Water Limitations: Shallow draft; Redwood City and Palo Alto Boat Works for launch of large vessels; Mayfield Slough public access area; hand launched vessels at Mayfield Slough dock.

Facilities, Staging Areas, Command Posts, Available Equipment: Possibly Palo Alto Boat Works could be used as a staging area. Also, Mayfield Slough public access area.

Communications Problems: Cell reception good throughout the south bay.

Imagery: NAIP 2016, 60 cm resolution

County: Santa Clara **ACP Division/Segment:** SC - Y - S001 SC - Y - S002

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** ***Decimal Degrees:*** 37.44802 -122.07806

Site Description:

This site includes Mountain View Slough to North Shoreline Blvd. and the bay frontage for a one-half mile on each side of its mouth, and the extensive mudflat at the mouth. It is located on the southwest shore of South San Francisco Bay, approx 4.5 miles south of Dumbarton Bridge (Hwy 84). This site is within the San Francisco Bay National Wildlife Refuge (USFWS). This slough has a riparian cordgrass and pickleweed salt-marsh at the mouth and along its banks. An extensive sheltered mudflat, over one-mile wide, extends from the mouth out to the main channel of south San Francisco Bay.

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
9A Sheltered tidal flats
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	
Mammals	harbor seal	FP	Year-round	Mar-Jun

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

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C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species reside in the area.

Concerns and Advice to Responders:

The many rare and endangered species and plants living here are threatened by oil and oil spill response and trampling. Primary concern is to exclude oil from entering the Slough. Secondary concern is to minimize the exposure of the salt-marshes fronting the bay by protective booming. Additional impacts from response and cleanup, and tramping of oil into soft marsh and mudflat sediments are also a concern.

Hazard and Restrictions:

Aircraft beware of overhead powerlines in the area. Watercraft be aware: the outlet to the bay is mostly silted in and undefined and the water is shallow (tide dependent); the extensive mudflat is over one mile wide.

Site Strategies: **Site Validation Level:** II

Strategy:* 2-373.1** ***Objective: Exclude oil from entering Slough and small marsh channels.

Strategy: a. Deploy several (3-4) layers of 6X6 Sboom in an inverted "V" formation (chevron exclusion) at mouth of slough. Deploy sorbent boom between each layer of containment boom. Anchor with conventional anchors and stakes.
b. Place fence booms in small marsh channels.
c. Notify Cargill Salt to close all salt water intake culverts to the salt ponds.

NOTE: Airboat, hovercraft, helicopter deployment may be the only way to gain access to this site. In summer (dry season) it may be possible to deploy from south levee near towers.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6	inch	2000	feet	
Boom	Sorbent			2000	feet	
Anchor	Danforth	22	lb	12		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			7		

Strategy:* 2-373.2** ***Objective: Shore line protection booming.

Strategy: Deploy oil snare, 6X6 Sboom or sorbent boom along marsh front. Anchor and/or stake in place.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6	inch	3800	feet	
Anchor	Danforth	22	lb	8		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			6		

Logistics:

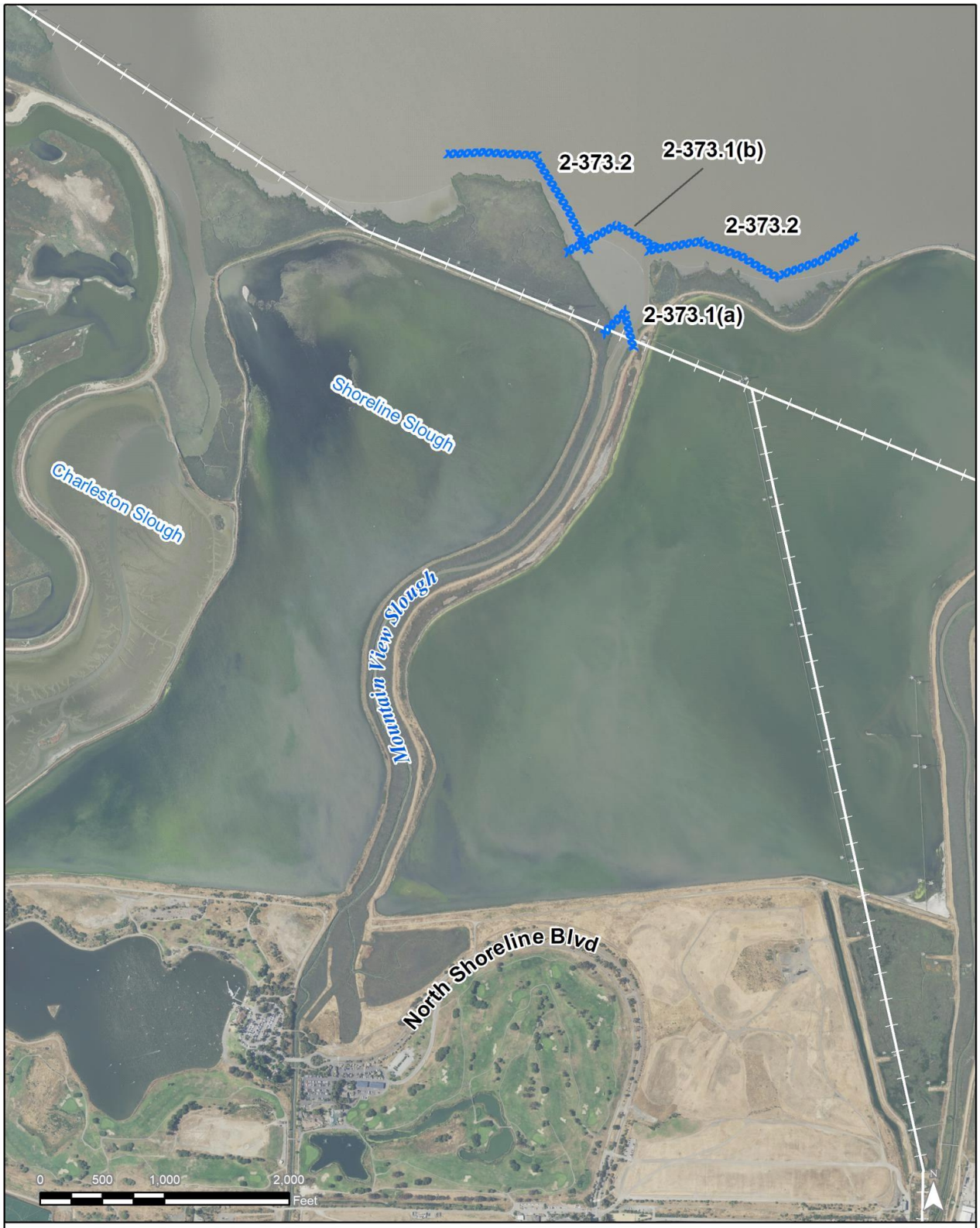
Directions: From Hwy 101, exit at Shoreline Blvd/Sterlin Rd and proceed bayward to Shoreland at Mountain View Park. Vehicle access is restricted: for levee road access contact City of Mountain View or Cargill Salt Co.

Land Access: Large trucks and ATV when levees are dry.

On-Water Limitations: EXTREME SHALLOW WATER; Boat launch ramps at Redwood City. Small hand launched boats can deploy from the south levee during summer (dry season). Also, small craft launch at Mayfield Slough.

Facilities, Staging Areas, Command Posts, Available Equipment: Staging at Port of Redwood City or public access at Mayfield Slough.

Communications Problems: Good reception throughout south bay.


2-373.2
2-373.1(b)
2-373.2
2-373.1(a)
Shoreline Slough
Charleston Slough
Mountain View Slough
North Shoreline Blvd
0 500 1,000 2,000
Feet
N
CDFW - OSPR & USCG Site: 2-373 Name: Mountain View Slough
G. Ewing (OSPR) & M. Schommer (OSPR) Date: 2/7/2020
Swamp Boom
Imagery: NAIP 2016, 60 cm resolution

County: Santa Clara **ACP Division/Segment:** SC - Y - S002 SC - X - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.445612 -122.063539

Site Description:

The Stevens Creek site includes salt-marshes that fringe the banks inland (1.5 miles) to Hwy 101 and 0.75 mile of bay frontage on each side of the creek mouth. Located in the extreme South San Francisco Bay between Guadalupe Slough and Mountain View Slough, Stevens Creek Channel is bounded by rip-raped levees. This site is located within the San Francisco Bay National Wildlife Refuge (USFWS). Tidal action extends about 1.5 miles upstream. Cargill salt evaporator ponds border the bayward half of the channel, while the landward channel is industrialized to different degrees. There are very extensive mudflats (>one-mile wide) in front of creek.

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
6B Riprap
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
E	/Strategic Action Coordinating Official	US Army Corps of Engineers	(415) 503-6573
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

The concern is oil and response impacts to salt-marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Stevens Creek. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into salt-marsh and mud.

Hazard and Restrictions:

Aircraft beware of overhead high power lines in the area. Vessels be aware of shallow water and submerged hazards.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-374.1 *Objective: Exclude oil from entering the creek. Deflect oil down-coast.

Strategy: Deploy several (3-4) layers of 100 ft 6X6 swamp boom in an inverted "V" formation (chevron) at mouth of creek. Place Sorbent booms between each layer. Responders may be able to use tidal barrier boom straight across mouth.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp	6x6	inch	400	feet
Boom	Sorbent			800	feet
Anchor	Danforth	22	lb	4	
Anchor	stake			8	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			4	

Last Page Update

Strategy:* 2-374.2 *Objective: Protective booming of marsh front

Strategy: Line bayfront marshes w/ 7000 ft of oil snare and/or sorbent boom.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Sorbent			7000	feet
Boom	Pom-pom			7000	feet
Anchor	Danforth	22	lb	14	
Anchor	Stakes			70	
Vessel	Skiff or Punt			2	
Staff	Staff to Deploy			6	

Last Page Update

Logistics:

Directions: From Hwy 101, exit at Shoreline Blvd/Sterlin Rd and proceed bayward to Shoreland at Mountain View Park. Further vehicle access is restricted: for levee road access contact City of Mountain View or Cargill Salt Co.

Land Access: Levee roads impassable in winter.

On-Water Limitations: Very shallow/no access at low tide; Launch skiffs upstream at mid to high tide.

Facilities, Staging Areas, Command Posts, Available Equipment: Stage upstream in business parking area.

Communications Problems: Good cell reception throughout area.

Imagery: NAIP 2016, 60 cm resolution

County: Santa Clara **ACP Division/Segment:** SC - X - S001 SC - W - S001

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** AAA San Mateo C ***Decimal Degrees:*** 37.452586 -122.03632

Site Description:

Guadalupe Slough extends from its mouth on Coyote Creek inland approx 5 miles to Sunnyvale Baylands County Park. This site is a large channel on the southwest shore of South San Francisco Bay, four miles southeast of the Dumbarton Bridge (Hwy 84). Site is adjacent to the San Francisco Bay National Wildlife Refuge (USFWS). It has salt-marshes and mudflats near its mouth and along its banks, cordgrass and pickleweed salt-marshes on both sides. This large levee-bound slough is a navigable waterway with strong currents near the mouth. Cargill Salt evaporation ponds border most of the length of this slough.

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
8C Sheltered riprap
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Fish	longfin smelt	ST	Year-round	Nov-May
Fish	chinook salmon - Winter-run	FE, SE	Year-round	Oct-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Mammals	salt-marsh wandering shrew	SSC	Year-round	

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
E	/Strategic Action Coordinating Official	US Army Corps of Engineers	(415) 503-6573
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

Concerns and Advice to Responders:

The concern is oil and response impacts to salt-marsh, wildlife, and rare and endangered species and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Guadalupe Slough. Secondary objective is to minimize exposure and impacts to bay frontage salt-marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into salt-marsh and mud. Notify Cargill Salt Co. to close any water intake structures to mitigate potential HAZMAT threats.

Hazard and Restrictions:

Aircraft beware of overhead powerlines in area. Vessels be aware of strong currents exist near the mouth and shallow mudflats. Vehicles be aware that levees are impassable in wet winters.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-375.1** ***Objective: Exclude oil from entering Guadalupe Slough and adjacent marshes.

Strategy: a. Deploy 2500 ft of 9X9+ Hboom from both levees towards skimmer in part of channel with slow current. Use tidal barrier or swamp boom across marsh and mudflat. Strong currents will make location of equipment upstream from mouth probable. ALTERNATIVE: Use several layers (2-3) of 6X6 Sboom (7500 ft) with less skirt in strong currents. Use same configuration as in step 1.
b. Place skimmers outside mouth in deeper water near confluence of Coyote Creek and Guadalupe Slough.
c. Notify Cargill Salt Co. to close any salt water intake culverts to salt ponds in area.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	2500	feet	
Boom	Swamp	6x6	inch	7500	feet	
Anchor	Danforth	22	lb	25		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			2		
skimmer	self propelled			1		
Staff	Staff to Deploy			12		

Strategy:* 2-375.2** ***Objective: Protective booming of bayfrontage marshes from oiling and oil intrusion.

Strategy: To minimize oil entering slough along fringing tidal marsh, deploy 1000 ft of sorbent or swamp boom along marsh front outside mouth in both directions.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6	inch	1000	feet	
Boom	Sorbent			1000	feet	
Anchor	Danforth	22	lb	4		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			4		

Logistics:

Directions: From Hayward-San Mateo Bridge, take Hwy 101 south to Hwy 237 east. Exit at Caribbean Drive and proceed to Borregas Avenue. Contact City of Sunnyvale Water Pollution Control Plant. Access restricted by NASA and the US Navy.

Land Access: 4WD only.

On-Water Limitations: Possible at low tide only; Small boat ramp at NASA fuel barge dock upstream: Entry by permission only through Moffett Field; road is paved. Redwood City launch ramp for all size boats.

Facilities, Staging Areas, Command Posts, Available Equipment: There is a small staging area at NASA fuel barge dock. Larger staging may be arranged at Moffett Field.

Communications Problems: Great cell reception throughout south bay.


2-375.1(a)
2-375.2
2-375.1(b)
Power Lines
Guadalupe Slough
0
500
1,000
2,000
Feet
N
CDFW - OSPR & USCG Site: 2-375 Name: Guadalupe Slough
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 04/14/2014
Harbor Boom
Swamp Boom
Skimmer
Sorbent Boom
Other Boom
Offshore Containment Recovery
Dike or Berm
Filter Fence
Imagery: NAIP 2010 (Summer) 4-Band

County: Santa Clara **ACP Division/Segment:** SC - W - S003

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** ***Decimal Degrees:*** 37.46208 -122.021794

Site Description:

Site extends from the mouth on Coyote Creek inland for approx six miles to the railroad tracks at Alviso Marina. This is a waterway with salt-marshes and mudflats near its mouth and along its banks. Alviso Slough is a water channel on the southwest shore of south San Francisco Bay, five miles southeast of the Dumbarton Bridge (Hwy 84) and the terminal end of Guadalupe River. It is a tributary to Coyote Creek encased by salt-marsh fringe habitat. The northeasterly first two miles of west margins are part of San Francisco Bay National Wildlife Refuge (USFWS).

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
8C Sheltered riprap
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Birds	California least tern	FE, SE	Apr-Sep	Apr-Jun
Birds	Alameda song sparrow	SSC	Year-round	Mar
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	Delta tule pea	SSSP	Year-round	May-Jul
Plants	salt marsh bird's beak	FE, SE	Year-round	May-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Agency Representative, 24-hr	Cargill Salt	(510) 790-8182
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bir species reside in the are.

Concerns and Advice to Responders:

The concern is oil and response impacts to salt-marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Alviso Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling salt-marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into salt-marsh sediments.

Hazard and Restrictions:

Be aware of overhead powerlines, shallow water and submerged hazards. Head of slough at marina almost completely silted in.

Site Strategies:

Site Validation Level: III

Strategy:* 2-376.1** ***Objective: Collection booming to prevent oil from entering Alviso Slough.

Strategy: Deploy 9x9 Harbor boom from both levees to skimmer in mid-channel. Create a collection pocket at the check gate. Vacc truck to remove accumulated product from levee. Use swamp boom across marsh and mudflat. Close the check gate to adjacent wildlife refuge area to prevent cross contamination.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	1000	feet
Boom	Swamp	6x6	inch	2000	feet
Boom	Sorbent			2000	feet
Anchor	Danforth	22	lb	10	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			1	
skimmer	self propelled			1	
Staff	Staff to Deploy			10	

Last Page Update

Strategy Updated: 10/5/2017
Last Test: 10/5/2017

Strategy:* 2-376.2** ***Objective: Deflect oil past slough and keep oil in Coyote Creek for skimming.

Strategy: a. Deflection boom, using 100' segments, along south shore of Coyote Creek to keep oil away from Alviso Slough and in deep water.
b. Deploy boom and skimmers near power line towers for collection.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	400	feet
Anchor	Danforth	22	lb	4	
Vessel	Skiff or Punt			1	
skimmer	self propelled			1	
Staff	Staff to Deploy			4	

Last Page Update

Strategy:* 2-376.3** ***Objective: Protective booming of marsh front near mouth.

Strategy: Line marsh front near mouth with both swamp and sorbent boom.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Swamp Boom	6x6		2000	feet
anchors	Danforth		22	5	
Boom	Sorbent			2000	feet
Anchor	Stakes			20	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			1	

Last Page Update

Logistics:

Directions: Take Hwy 880 south to Hwy 237 west and exit at Zanker Road. Turn right on Zanker Road to Esteros Road. Follow Esteros Road to Access Road which leads to the Alviso Slough. Roadway access is secured by a locked gate. Contact San Jose/Santa Clara Water Pollution Control to gain entry. 700 Esteros Road, San Jose, CA (408) 945-5300 (24 hours). Access to levee from SFBNWR and Cargill Salt Co.

Land Access: 4WD year round.

On-Water Limitations: Shallow draft vessels<6'. Small boats at high tide at Alviso Marina. Redwood City launch ramp for all

Facilities, Staging Areas, Command Posts, Available Equipment: Alviso Marina Boat Launch Ramp (Public Access) located at 1195 Hope St, Alviso, CA 95002

Communications Problems: Good cell reception.

Imagery: NAIP 2016, 60 cm resolution

County: Santa Clara **ACP Division/Segment:** AL - L - S002

NOAA Chart: 18654 San Francisco Bay Southern Part ***Map Book:*** ***Decimal Degrees:*** 37.46422 -121.990514

Site Description:

Mallard Slough is a tributary to Coyote Creek (site 2-346) in the extreme southern end of South San Francisco Bay. It extends from its confluence with Coyote Creek upstream to the outfall of the San Jose Sewage Treatment Plant (STP). Mallard Slough has both fresh and brackish salt-marshes along its banks due to the freshwater input from the San Jose STP (the largest freshwater source for South San Francisco Bay). This freshwater inflow maintains brackish conditions for most of Coyote Creek. The slough is mostly leveed, resulting in fringe salt-marshes along the banks. Cargill salt evaporation ponds flank the slough, and the STP and urban development form its headwaters. The majority of the Mallard Slough is in South San Francisco Bay National Wildlife Refuge (USFWS).

Resources at Risk:

ESI and Habitat: 9B Vegetated low banks
8C Sheltered riprap
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE	Year-round	Feb-Aug
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Oct
Birds	California black rail	FP, ST	Year-round	Mar-Aug
Fish	longfin smelt	ST	Year-round	Nov-May
Mammals	salt-marsh harvest mouse	FE, SE	Year-round	
Plants	California seablite	FE, SSSP	Year-round	Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Supervisor	Cargill Salt	(641) 670-0654
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C – Cultural, Historic, Archaeological; E – Entry/Owner/Access; O – Other; S – Safety; T – Trustee; X – Exclusion or Security

Additional Site Summary Comments:

A wide variety of bird species utilize this area.

Concerns and Advice to Responders:

Concern is to exclude oil from entering the slough. If oil enters the slough and oils salt-marshes, stay out of the slough. Activity should proceed only with presence of US Fish and Wildlife experts since this is an important nesting area for herons, especially in April through August: there could be severe impacts from cleanup activities.

Hazard and Restrictions:

Vessels should be aware of shallow waters: Mud Slough is silted in, so access it difficult depending on tidal height.

Site Strategies: **Site Validation Level: II**

Strategy:* 2-378.1** ***Objective: Exclusion booming at mouth Coyote Creek. Collect oil at Coyote Creek/Alviso Slough.

Strategy: a. In addition to on water skimming near mouth of Coyote Creek and near powerline towers, place 2 lines of deflection 9X9+ Hboom (2 X 1000) across Mud Slough from north bank to point of land between channels.

b. In Coyote Creek, near confluence with Mud Slough, use deflection 9X9+ Hboom (1500ft) from both banks to center of channel to skimmer. NOTE: Mud Slough is silted in at low tide and inaccessible to deep draft vessels. The current tends to flow past Mud Slough and continues up Coyote Creek.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	3500	feet
Anchor	Danforth	22	lb	9	
Vessel	Boom Boat			2	
Vessel	Skiff or Punt			2	
skimmer	self propelled			1	
Staff	Staff to Deploy			12	

Last Page Update

Logistics:

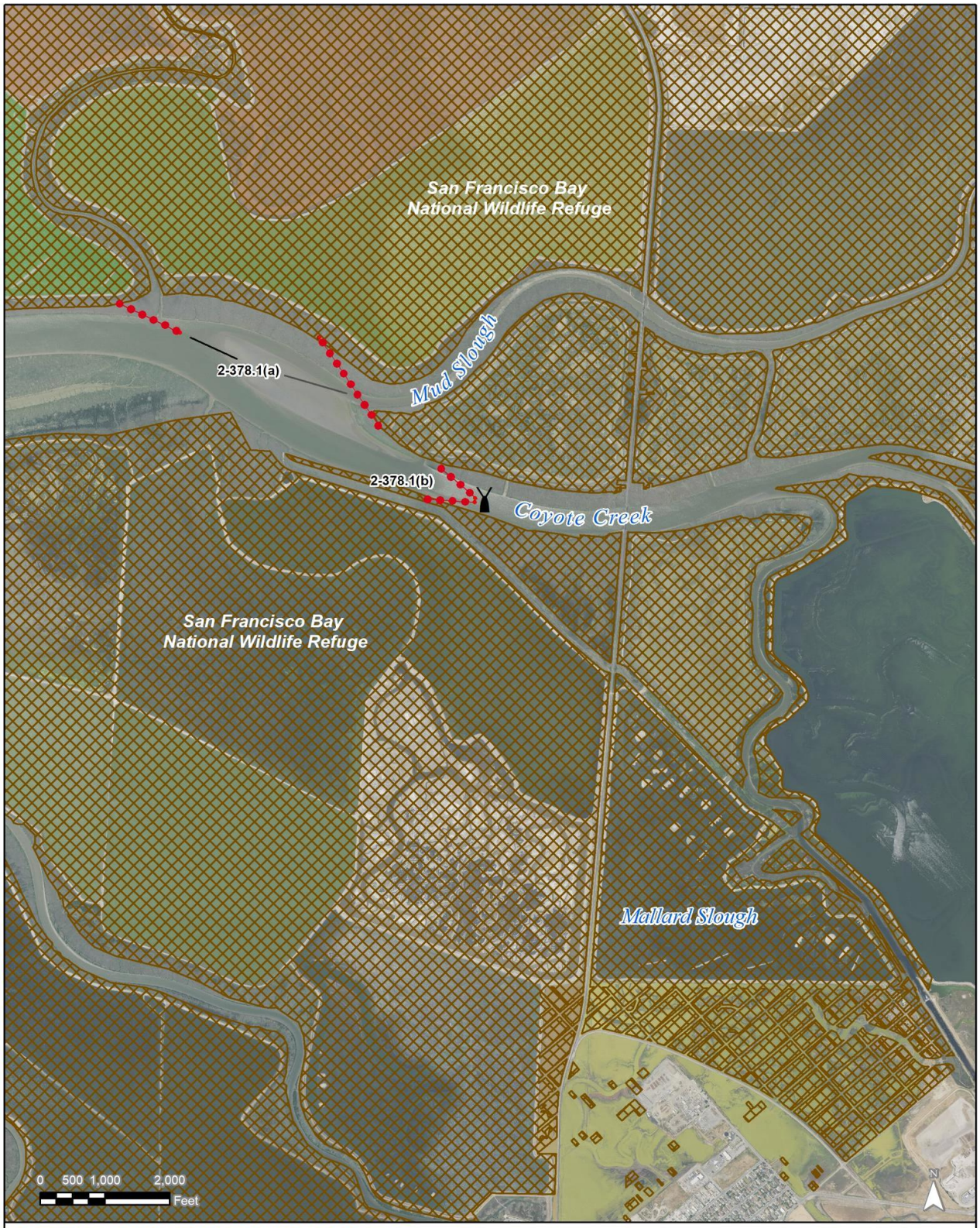
Directions: Foot and vehicle access: contact SF Bay National Wildlife Refuge. Boat access: approach via Coyote Creek or from Alviso Boat Launch in Alviso Slough.

Land Access: Levee roads can support a wide variety of vehicles during dry months.

On-Water Limitations: Very shallow water. Only small boats can be launched from levees. Nearest boat ramp is at 1195 Hope St Alviso, CA 95002 or Redwood City Harbor.

Facilities, Staging Areas, Command Posts, Available Equipment: From adjacent levees or Redwood City Harbor.

Communications Problems: Good cell reception throughout.


San Francisco Bay
National Wildlife Refuge
Mud Slough
2-378.1(a)
2-378.1(b)
Coyote Creek
San Francisco Bay
National Wildlife Refuge
Mallard Slough
0 500 1,000 2,000
Feet
N
CDFW - OSPR & USCG Site: 2-378 Name: Mallard Slough
G. Ewing (OSPR) & M. Schommer (OSPR) Date: 2/7/2020
Harbor Boom
Skimmer
San Francisco Bay National Wildlife Refuge
Imagery: NAIP 2016, 60 cm resolution

9816.2 Response Summary Tables

A summary of the response resources is listed by site and sub-strategy next.

Summary of ACP 2 GRA 3 Response Resources by Site and Sub-Strategy

Site ***Site Name***

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-304	***Middle Harbor Shoreline Park***		
.1 - Strategy 2-304.1 Objective: Exclude/Deflect oil from embayment by deflection to collection.			
Vessel	Skiff or Punt		1
Staff	Staff to Tend		2
Vessel	Boom Boat		1
Anchor	Danforth	22 lbs	7
Staff	Staff to Deploy		7
Boom	Harbor	9x9 inch	2500 feet
Boom	Sorbent		2500 feet
.2 - Backup initial exclusion strategy when strong winds or wave conditions are likely to move oil past initial exclusion deployment.			
Boom	Sorbent	feet	2500
Boom	Harbor	9x9 feet	2500
Anchor	Danforth	22 lbs	7
Vessel	Skiff or Punt		1
Staff	Staff to Deploy		7
Staff	Staff to Tend		2
Staff	Staff to Deploy		7
Vessel	boom Boat		1
2-307	***Crown Beach/Alameda Eelgrass Beds***		
.1 - Assess need for protective booming: Eelgrass is only vulnerable at very low tides when eelgrass tops are exposed to floating oil.			
.2 - Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Bay: 2-309.			
Anchor	Danforth	22 lbs	7
Staff	Staff to Tend		2
Staff	Staff to Deploy		6
Boom	Harbor	9x9 inch	3000 feet
Vessel	Skiff or Punt		1
Vessel	Boom Boat		2

Site *Site Name*

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-309 ***San Leandro Bay***			
.1 - Exclusion/deflection to shoreside collection at Bay Farm Island Bridge.			
Boom	Harbor	9x9 inch	1600 feet
Boom	Sorbent		3000 feet
Staff	Staff to Tend		2
Staff	Staff to Deploy		8
Anchor	Danforth	22 lbs	5
Vessel	Boom Boat		2
Vessel	Skiff or Punt		1
.2 - Deflection away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.			
Boom	Harbor Boom	9x9 inch	1500 feet
Staff	Staff to Deploy		8
Vessel	Skiff or Punt		1
Anchor	Danforth	22 lbs	4
Staff	Staff to Tend		2
Vessel	Boom Boat		2
.3 - Exclude oil from entering the bay via Oakland Estuary.			
Staff	Staff to Tend		2
Vessel	Skiff or Punt		1
Staff	Staff to Deploy		7
Boom	Harbor	9x9	3000 feet
Boom	Sorbent		100 feet
Anchor	Danforth	22lb	10
Vessel	Boom Boat		2
.4 - collect / ground oil washing along Alameda Beach toward Elsie Romer Bird Sanctuary			
Anchor	Danforth	12 lbs	3
Boom	Oil Snare (pom-pom)		50 feet
Vessel	Skiff or Punt		1
Staff	Staff to Deploy		2
Staff	Staff to Tend		2
Boom	Swamp	6x6	300 feet
.5 - Collection by skimming - as needed			
Staff	Staff to Deploy		4
Staff	Staff to Tend		4
Self propelled skimmer			1
Boom	Swamp	6x6	100 feet
2-310 ***Bay Farm Island Eelgrass Beds***			
.1 - Assess need for protective booming: Eelgrass is only vulnerable at very low tides when eelgrass tops are exposed to floating oil.			
.2 - Deflection boom from the runway point to divert oil borne on currents past cove.			
Staff	Staff to Tend		2
Boom	Harbor Boom	9x9	2000 feet
Anchor	Danforth	22 lbs	8
Staff	Staff to Deploy		4
Vessel	Boom Boat		1
Vessel	Skiff or Punt		1
.3 - Maximize oil capture at this locale with deflection to shore skimming unit.			
Boom	Swamp	6x6 inch	2000 feet
Anchor	Danforth	22 lbs	9
Vessel	Boom Boat		2
Boom	Harbor	9x9 inch	2000 feet
Staff	Staff to Tend		2
Vessel	Skiff or Punt		2
Staff	Staff to Deploy		8

Site *Site Name*

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-312 Oyster Bay Marshes			
.1 - Exclude oil from entering the marshes. Should oil enter the marshes, contain oil to the smallest possible area			
Anchor	Danforth	12 lbs	6
Staff	staff to tend		2
Vessel	Skiff or Punt		2
Boom	Swamp	6x6 inch	950 feet
Staff	Staff to Deploy		4
.2 - Exclude oil from salt marsh at the southern end of Oyster Bay Regional Shoreline.			
Staff	Staff to Tend		2
Boom	Harbor	9x9 inch	2500 feet
Anchor	Danforth	22 lbs	8
Vessel	Boom Boat		1
Staff	Staff to Deploy		6
Vessel	Skiff or Punt		2
.3 - Oil Recovery by skimming			
Staff	Staff to Deploy		4
Vac truck			3
skimmer	shoreside		1
2-315 San Lorenzo Creek, Bunker and North Marshes			
.1 - Exclude oil from entering the bay diked marshes and tidal channels. Should oil enter the marsh or channels contain oil to the smallest possible area.			
Anchor	Danforth	22 lbs	8
Boom	Swamp	6x6 inch	950 feet
Staff	Staff to Tend		2
Boom	Harbor	9x9 inch	600 feet
Anchor	Stakes		15
Vessel	Skiff or Punt		2
Staff	Staff to Deploy		8
.2 - Exclude oil from entering the bay front cordgrass marsh. Should oil enter the marsh contain oil to the smallest possible area.			
Vessel	Boom Boat		1
Staff	Staff to Tend		2
Boom	Harbor	9x9 inch	3000 feet
Anchor	Danforth	22 lbs	10
Vessel	Skiff or Punt		2
Staff	Staff to Deploy		8
.3 - Oil Recovery by skimming			
Staff	Staff to Deploy		4
Vac truck			1
skimmer	shoreside		1

Site Site Name

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit

2-320 Oro Loma Marshes

.1 - Exclude oil from entering the Oro Loma Marsh and Frank's Dump Marsh. Should oil enter the marsh, contain oil to the smallest possible area.

Equipment	Sub-Type	Size/Unit	QTY/Unit
Anchor	Danforth	22 lbs	
Staff	Staff to Deploy		7
Vessel	Boom Boat		1
Boom	Oil Snare (pom-pom)		100 feet
Boom	Sorbent	6x6 inch	200 feet
Boom	Harbor	9x9 inch	1800 feet
Staff	Staff to Tend		2
Vessel	Skiff or Punt		2

.2 - Exclude oil from entering Frank's Dump Marsh, East/West. Should oil enter the marsh, contain oil to the smallest possible area.

Equipment	Sub-Type	Size/Unit	QTY/Unit
Boom	Harbor	9x9 inch	200 feet
Anchor	Danforth	22 lbs	2
Staff	Staff to Tend		2
Vessel	Skiff or Punt		1
Staff	Staff to Deploy		4

.3 - Exclude oil from entering Triangle Marsh and West Winton Channel. Protect bayfront pickleweed marsh. Should oil enter the marsh, contain oil to the smallest possible area.

Equipment	Sub-Type	Size/Unit	QTY/Unit
Staff	Staff to Tend		2
Staff	Staff to Deploy		4
Vessel	Skiff or Punt		1
Vessel	Boom Boat		1
Anchor	Danforth	22 lbs	6
Boom	Harbor	9x9 inch	1200 feet

.4 - Oil Recovery by skimming

Equipment	Sub-Type	Size/Unit	QTY/Unit
staff	Staff to Tend		2
skimmer	shoreside		1
Staff	Staff to Deploy		4

2-324 Cogswell, Hayward, and HARD Marshes

.1 - Exclude oil from entering Cogswell, Hayward and HARD marshes. Should oil enter the marshes, contain oil to the smallest possible area.

Equipment	Sub-Type	Size/Unit	QTY/Unit
Vessel	Skiff or Punt		2
Boom	Harbor	9x9 inch	3200 feet
Boom	Sorbent	6x6 inch	1000 feet
Vessel	Boom Boat		2
Staff	Staff to Deploy		8
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	9

.2 - Exclude oil from entering interior of Cogswell Marshes. Should oil enter the marshes, contain oil to the smallest possible area.

Equipment	Sub-Type	Size/Unit	QTY/Unit
Vessel	Boom Boat		1
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	8
Staff	Staff to Deploy		6
Vessel	Skiff or Punt		2
Boom	Harbor	9x9 inch	1400 feet

.3 - Exclude oil from Johnson's Landing marshes

Equipment	Sub-Type	Size/Unit	QTY/Unit
Anchor	Danforth	22 lbs	4
Vessel	Skiff or Punt		2
Staff	Staff to Deploy		4
Boom	Swamp	6x6 inch	600 feet
Staff	Staff to Tend		2

Site Site Name

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-325 Eden Landing Ecological Reserve -Alameda Creek			
.1 - Primary: Exclude oil from entry channels by booming and closing tide gates at bay front.			
Boom	Sorbent	6x6	1600 feet
Anchor	Danforth	22 lbs	15
Staff	Staff to Deploy		7
Vessel	Boom Boat		2
Vessel	Skiff or Punt		1
Staff	staff to tend		2
Boom	Harbor	9x9	2400 feet
.2 - Protective booming of Whale's Tail Marsh and pocket marsh south of HWY 92.			
Anchor	Danforth	22 lbs	25
Vessel	Boom Boat		4
Staff	stsff to tend		2
Vessel	Skiff or Punt		3
Boom	Harbor	9x9 inch	11300 feet
Staff	Staff to Deploy		16
Boom	Sorbent	6x6 inch	10000 feet
.3 - Collection - develop or enhance skimming at mouth of old Alameda Creek when substantial oil is present.			
Staff	Staff to Deploy		4
Boom	Harbor	9x9 inch	300 feet
Boom	Sorbent	6x6 inch	50 feet
Anchor	Danforth	15 lbs	5
Vessel	Skiff or Punt		1
skimmer	shoreside		1
Staff	Staff to Tend		2
.4 - For inland spills from upstream Old Alameda Creek, collect oil at east creek crossing.			
Staff	Staff to Deploy		4
skimmer	shoreside		2
Anchor	Danforth	15lb lbs	4
Boom	Sorbent	6x6 inch	500 feet
Staff	Staff to Tend		

Site Site Name

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-326 Coyote Hills Slough -Alameda Flood Control Channel			
.1 - Primary: Exclusion booming when oil threat is from bay.			
Vessel	Skiff or Punt		2
anchors	Danforth	22 lbs	8
Boom	Sorbent	6x6 inch	500 feet
Staff	Staff to Deploy		8
Vessel	Boom Boat		1
Staff	Staff to Tend		2
Boom	Swamp	9x9 inch	2700 feet
.2 - Backup primary bay exclusion: secondary layer of exclusion booming for oil threat from bay under windy conditions or major oil threat. This is a repeat of primary strategy minus sorbent boom.			
Vessel	Boom Boat		1
Boom	Sorbent	6x6 inch	2700 feet
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	7
Staff	Staff to Deploy		7
Vessel	Skiff or Punt		2
.3 - Skimming operations at this site. Natural skim pocket with access just south of mouth.			
Boom	Sorbent		400 feet
Boom	Oil Snare (pom-pom)		100 feet
Staff	Staff to Deploy		3
Boom	Swamp	6x6 inch	600 feet
Anchor	Stakes		10
Vessel	Skiff or Punt		1
Vac truck			1
skimmer	shoreside		1
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	2
.4 - Inland oil threats: exclusion, deflection, collection.			
Boom	Sorbent		700 feet
Staff	Staff to Tend		2
Staff	Staff to Deploy		3
skimmer	shoreside		1
Vessel	Skiff or Punt		1
Boom	Oil Snare (pom-pom)		100 feet
Anchor	Danforth	22 lbs	5
Boom	Swamp	6x6 inch	700 feet
Anchor	Stakes		10

Site Site Name

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-328 *Ideal and USFWS N-5 Marshes*			
.1 - Deflection booming. Deployment of this strategy should be followed by strategy 2 or 3, as time and resources permit.			
Boom	Sorbent		100 feet
Boom	Harbor	9x9 inch	2000 feet
Boom	Oil Snare (pom-pom)		50 feet
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	6
Vessel	Boom Boat		1
Staff	Staff to Deploy		6
Vessel	Skiff or Punt		2
.2 - Exclude oil from entering Ideal Marsh. Should oil enter the marsh, contain oil to the smallest possible area of the marsh.			
Anchor	Danforth	22 lbs	22
Staff	Staff to Deploy		10
Vessel	Boom Boat		2
Boom	Swamp	6x6 inch	1000 feet
Boom	Harbor	9x9 inch	6500 feet
Vessel	Skiff or Punt		2
Staff	Staff to Tend		2
.3 - Oil Recovery by Shoreside skimming			
skimmer	shoreside		1
Staff	Staff to Deploy		3
Vac truck			1
Staff	Staff to Tend		2
2-340 *Dumbarton Point Marsh/Mudflat*			
.1 - Exclude oil from entering marsh front, mudflat, and small channels to the marsh interior.			
Boom	Swamp	6x6 inch	2000 feet
Vessel	Skiff or Punt		2
Vessel	Boom Boat		1
Boom	Sorbent		2000 feet
Staff	Staff to Tend		2
Staff	Staff to Deploy		6
.2 - Deflection Booming			
Vessel	Boom Boat		1
Anchor	Danforth	22 lbs	12
Boom	Harbor	9x9 inch	3000 feet
Vessel	Skiff or Punt		1
Staff	Staff to Tend		2
Staff	Staff to Deploy		6
.3 - Protection booming of shoreline			
Staff	Staff to Tend		2
Boom	Sorbent		8000 feet
Vessel	Boom Boat		1
Vessel	Skiff or Punt		2
Staff	Staff to Deploy		4
2-342 *Newark/Plummer Creek*			
.1 - Exclusion/Diversion boom to prevent oil from entering channel between bay and site.			
Vessel	Skiff or Punt		2
Boom	Harbor	9x9 inch	8000 feet
Boom	Swamp	6x6 inch	1000 feet
Boom	Sorbent		5000 feet
Staff	Staff to Deploy		12
Vessel	Boom Boat		3
skimmer	shoreside		1
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	25

Site	Site Name

Sub-Strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT			
	Equipment	**Sub-Type**	**Size/Unit**	**QTY/Unit**
2-344	***Mowry Slough***			
.1 -	**Deflect oil from marshes to be recovered on-water by skimmers. Prevent oil from entering the slough.**			
	Vessel	Skiff or Punt		3
	Boom	Harbor	9x9 inch	10000 feet
	Boom	Swamp	6x6 inch	10000 feet
	Vessel	Boom Boat		4
	Staff	Staff to Deploy		18
	Staff	Staff to Tend		2
	Anchor	Danforth	22 lbs	50
2-346	***Coyote Creek***			
.1 -	**Deflect oil away from marshes, keep oil in deep water channel & skim**			
	Boom	Harbor	9x9 inch	8000 feet
	Boom	Swamp	6x6 inch	200 feet
	Anchor	Danforth	22 lbs	30
	Vessel	Boom Boat		4
	Vessel	Skiff or Punt		3
	Staff	Staff to Deploy		10
	Staff	Staff to Tend		4
.2 -	**Exclusion of mouths of small tidal channels to inner marshes.**			
	Anchor	Danforth	22 lbs	4
	Staff	Staff to Tend		2
	Staff	Staff to Deploy		4
	Boom	Sorbent		400 feet
	Boom	Swamp	6x6 inch	400 feet
.3 -	**Protective booming of windward shores to prevent oil from being carried into marshes by wave and tidal action**			
	Staff	Staff to Tend		2
	Boom	Swamp	6x6 inch	4000 feet
	Boom	Sorbent		4000 feet
	Anchor	Danforth	22 lbs	10
	Vessel	Boom Boat		2
	Staff	Staff to Deploy		8
	Vessel	Skiff or Punt		2
2-350	***San Francisco South Collection Strategies***			
.1 -	**Deflection to Collection at Pier 70 for shoreside collection**			
	Vessel	Boom Boat		1
	Anchor	Danforth	22 lbs	4
	Staff	Staff to Tend		2
	Staff	Staff to Deploy		5
	Boom	Harbor	9x9 inch	600 feet
	Vessel	Skiff or Punt		1
	Boom	Sorbent		100 feet
.2 -	**Deflection to Collection at Pier 80 for shoreside collection**			
	Anchor	Danforth	22 lbs	6
	Boom	Harbor	9x9 inch	1500 feet
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		4
	Staff	Staff to Tend		2
2-351	***Yerba Buena Island***			
.1 -	**Protective booming of beach and rocks used by seals.**			
	Staff	Staff to Tend		2
	Boom	Harbor	9x9 inch	3000 feet
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		8
	Anchor	Danforth	22 lbs	7

Site	Site Name

Sub-Strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT			
	Equipment	**Sub-Type**	**Size/Unit**	**QTY/Unit**
2-352	***South Basin, Hunters Point***			
.1 -	**Exclusion/protection booming to prevent oil from reaching marsh in South Basin or beaches at Candlestick Point.**			
	skimmer	self propelled		1
	Vessel	Skiff or Punt		1
	Vessel	Boom Boat		2
	Anchor	Danforth	22 lbs	7
	Staff	Staff to Deploy		8
	Boom	Harbor	9x9 inch	3500 feet
	Staff	Staff to Tend		2
.2 -	**Deflect oil away and past site.**			
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		4
	Vessel	Boom Boat		1
	Boom	Harbor	9x9 inch	500 feet
	Staff	Staff to Tend		2
	Anchor	Danforth	22 lbs	3
2-353	***Heron's Head Park - India Basin***			
.1 -	**Exclude oil from entering small tidal inlets to inner ponds and lagoons.**			
	Boom	Sorbent		200 feet
	Staff	Staff to Tend		2
	Staff	Staff to Deploy		2
	Anchor	Stakes		12
	Boom	Swamp	6x6 inch	200 feet
.2 -	**Deflect when oil is likely to enter India Basin, such as easterly winds, deflect oil away from site to south shore. Protect emergent marsh located on the south shore of Indian Basin.**			
	Staff	Staff to Deploy		8
	Anchor	Danforth	22 lbs	7
	Boom	Harbor	9x9 inch	2300 feet
	Vessel	Boom Boat		2
	Staff	Staff to Tend		2
	Vessel	Skiff or Punt		1
2-354	***Islais Creek - Pier 94 Saltmarsh***			
.1 -	**Exclude oil from entering inlet and protect site from oil.**			
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		4
	Boom	Harbor	9x9 inch	1300 feet
	Boom	Swamp	6x6 inch	600 feet
	Boom	Sorbent		50 feet
	Staff	Staff to Tend		2
	Anchor	Danforth	22 lbs	5
	Anchor	Stakes		6
	Vessel	Boom Boat		1
2-361	***Airport Mudflat***			
.1 -	**Exclude oil from entering slough openings and cove. Contact SFO Airport Security for access to shoreline or deployment of strategy 361.1a**			
	Boom	Harbor	9x9 inch	8200 feet
	Staff	Staff to Tend		2
	Anchor	Danforth	22 lbs	25
	Staff	Staff to Deploy		12
	Vessel	Boom Boat		3
	Vessel	Skiff or Punt		2

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-362 Belmont Slough			
.1 - Exclude/collection oil fom entering Belmont Slough.			
Boom	Harbor	9x9 inch	4000 feet
Staff	Staff to Tend		2
Vessel	Skiff or Punt		1
Boom	Swamp	6x6 inch	200 feet
Anchor	Danforth	22 lbs	18
Vessel	Boom Boat		2
Staff	Staff to Deploy		8
.2 - Protective booming of bayfront tidal marsh			
Vessel	Skiff or Punt		2
Vessel	Boom Boat		2
Boom	Harbor	9x9 inch	6000
Staff	Staff to Deploy		10
Staff	Staff to Tend		2
Anchor	Danforth	22 lbs	18
.3 - For Collectible oil quantities oil use SPS skimmer			
skimmer	self propelled		1
Staff	Staff to Deploy		2
2-363 Steinberger Slough			
.1 - Exclude/collect oil from entering Steinberger Slough			
Boom	Harbor	9x9	3900 feet
boom	Oil Snare (pom-pom)		50 feet
Vessel	boomboat		2
Vessel	Skiff		1
Staff	Staff to Deploy		12
Staff	Staff to Tend		2
Anchor		22	16
Boom	Swamp	6x6	500 feet
Boom	Sorbent		50 feet
.2 - For Collectible oil quantities, use SPS skimmer			
skimmer	self propelled		1
Staff	Staff to Deploy		3
2-364 Bair Island			
.1 - Exclude oil from entering Bair Island interior marshes.			
Staff	Staff to Deploy		7
Staff	Staff to Tend		2
Vessel	Skiff or Punt		1
Vessel	Boom Boat		2
Anchor	Danforth	22 lb	12
Boom	Harbor	9x9 inch	3300 feet
Boom	Sorbent		200 feet
.2 - Protective booming of exposed marsh frontage.			
Staff	Staff to Deploy		10
Anchor	Danforth	22 lb	17
Vessel	Skiff or Punt		1
Boom	Harbor	9x9 inch	4000 feet
Staff	Staff to Tend		2
Vessel	Boom Boat		2

Site	Site Name			
Sub-Strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT			
	Equipment	Sub-Type	Size/Unit	QTY/Unit
2-365	***Redwood Creek***			
.1 -	**Deflect past, Deflect to collection, Protective boom shoreline.**			
	Anchor	Danforth	22 lb	35
	Staff			25
	Vessel	Skiff or Punt		3
	Anchor	Danforth	40 lb	15
	Boom	Sorbent		2000 feet
	Boom	Swamp	6x6 inch	8000 feet
	Boom	Harbor	9x9 inch	3000 feet
	Vessel	Boom Boat		6
.2 -	**For Collectible oil quantities, use SPS skimmer**			
	skimmer	self propelled		1
	Staff	Staff to Deploy		3
.3 -	**Draft Interior Redwood Creek Strategy. Prevent oil from Port of Redwood City from reaching interior marshes.**			
	Vessel	Boom Boat		1
	Boom	Harbor	9x9 inch	1500 feet
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		5
	Staff	Staff to Tend		2
	Anchor	Danforth		1
2-366	***Corkscrew Slough***			
.1 -	**Exclude oil from entering Corkscrew Slough. Corkscrew Slough is an interior Slough between Steinberger Slough and Redwood Creek**			
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	Staff	Staff to Tend		2
	Anchor	Danforth	22 lb	5
	Boom	Sorbent		800 feet
	Boom	Harbor	9x9 inch	1200 feet
	Staff	Staff to Deploy		5
2-367	***Greco Island/Ravenswood Slough***			
.1 -	**Exclude oil from entering main sloughs and outer margin bay approach booming.**			
	Vessel	Skiff or Punt		5
	Staff	Staff to Deploy		25
	Vessel	Boom Boat		6
	Anchor	Danforth	22 lb	24
	Boom	Sorbent		2000 feet
	Boom	Swamp	6x6 inch	2000 feet
	Boom	Harbor	9x9 inch	8000 feet
.2 -	**Exclusion/protection of bay marsh front of Greco Island and Ravenswood Slough.**			
	Anchor	Stakes		50
	Vessel	Boom Boat		6
	Vessel	Skiff or Punt		2
	Staff	Staff to Deploy		24
	Boom	Harbor Boom		10000 feet
2-369	***Ravenswood SF-2***			
. -				

Site	Site Name			
Sub-Strategy	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT			
	Equipment	Sub-Type	Size/Unit	QTY/Unit
2-370	***Palo Alto Marsh***			
.1 -	**Exclude oil from entering the entrances to Palo Alto Marsh and San Francisquito Creek, if time to impact does not permit its deployment or if tidal barrier boom (strategy 2-370.2) should fail.**			
	Boom	Sorbent		500 feet
	Vessel	Skiff or Punt		1
	Vessel	Boom Boat		1
	Staff	Staff to Deploy		5
	Boom	Swamp	6x6 inch	500 feet
	Boom	Harbor	9x9 inch	500 feet
	Anchor	Danforth	22 lb	8
	Anchor	Stakes		5
.2 -	**Protective booming of marsh front to keep oil from impacting marsh and mudflats.**			
	Vessel	Skiff or Punt		3
	Staff	Staff to Deploy		20
	Vessel	Boom Boat		5
	Anchor	Danforth	22 lb	50
	Boom	Sorbent		1000 feet
	Boom	Swamp	6x6 inch	1000 feet
	Boom	Harbor	9x9 inch	10000 feet
2-372	***Charleston and Mayfield Sloughs***			
.1 -	**Deflect oil away from marshes to skimmers.**			
	Anchor	Danforth	22 lb	7
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	skimmer	shoreside		2
	Staff	Staff to Deploy		12
	Boom	Harbor	9x9 inch	2500 feet
.2 -	**Exclude oil from entering Charleston Slough**			
	Boom	Swamp	6x6 inch	1200 feet
	Staff	Staff to Deploy		6
	Vessel	Skiff or Punt		1
	Boom	Sorbent		1200 feet
	Anchor	Danforth	22 lb	6
	Vessel	Boom Boat		1
.3 -	**Close all tide gates and salt pond intake structures to exclude oil from expanding to inner marshes and impoundments.**			
	Staff	Staff to Deploy		2
2-373	***Mountain View Slough***			
.1 -	**Exclude oil from entering Slough and small marsh channels.**			
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	Anchor	Danforth	22 lb	12
	Boom	Sorbent		2000 feet
	Boom	Swamp	6x6 inch	2000 feet
	Staff	Staff to Deploy		7
.2 -	**Shore line protection booming.**			
	Boom	Swamp	6x6 inch	3800 feet
	Anchor	Danforth	22 lb	8
	Vessel	Boom Boat		1
	Vessel	Skiff or Punt		1
	Staff	Staff to Deploy		6

Site *Site Name*

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-374 *Stevens Creek*			
.1 - Exclude oil from entering the creek. Deflect oil down-coast.			
Vessel	Skiff or Punt		1
Staff	Staff to Deploy		4
Anchor	Danforth	22 lb	4
Boom	Swamp	6x6 inch	400 feet
Boom	Sorbent		800 feet
Anchor	stake		8
.2 - Protective booming of marsh front			
Anchor	Stakes		70
Vessel	Skiff or Punt		2
Anchor	Danforth	22 lb	14
Boom	Pom-pom		7000 feet
Boom	Sorbent		7000 feet
Staff	Staff to Deploy		6
2-375 *Guadalupe Slough*			
.1 - Exclude oil from entering Guadalupe Slough and adjacent marshes.			
Anchor	Danforth	22 lb	25
Staff	Staff to Deploy		12
skimmer	self propelled		1
Vessel	Boom Boat		2
Boom	Swamp	6x6 inch	7500 feet
Boom	Harbor	9x9 inch	2500 feet
Vessel	Skiff or Punt		2
.2 - Protective booming of bayfrontage marshes from oiling and oil intrusion.			
Staff	Staff to Deploy		4
Boom	Swamp	6x6 inch	1000 feet
Boom	Sorbent		1000 feet
Anchor	Danforth	22 lb	4
Vessel	Boom Boat		1
Vessel	Skiff or Punt		1
2-376 *Alviso Slough*			
.1 - Collection booming to prevent oil from entering Alviso Slough.			
Boom	Swamp	6x6 inch	2000 feet
Vessel	Boom Boat		2
Boom	Harbor	9x9 inch	1000 feet
Staff	Staff to Deploy		10
Anchor	Danforth	22 lb	10
skimmer	self propelled		1
Vessel	Skiff or Punt		1
Boom	Sorbent		2000 feet
.2 - Deflect oil past slough and keep oil in Coyote Creek for skimming.			
Boom	Harbor	9x9 inch	400 feet
Anchor	Danforth	22 lb	4
Vessel	Skiff or Punt		1
skimmer	self propelled		1
Staff	Staff to Deploy		4
.3 - Protective booming of marsh front near mouth.			
Vessel	Skiff or Punt		1
Anchor	Stakes		20
Boom	Sorbent		2000 feet
Staff	Staff to Deploy		1
anchors	Danforth	22	5
Boom	Swamp Boom	6x6	2000 feet

Site	*Site Name*

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
2-378	***Mallard Slough***		
.1 -	**Exclusion booming at mouth Coyote Creek. Collect oil at Coyote Creek/Alviso Slough.**		
Anchor	Danforth	22 lb	9
Staff	Staff to Deploy		12
skimmer	self propelled		1
Vessel	Boom Boat		2
Boom	Harbor	9x9 inch	3500 feet
Vessel	Skiff or Punt		2

9816.3 Lists of Economic Resources Susceptible to Oiling

A summary of Human Health and Safety Sites and Economic Resources is listed by GRA next. Refer to Section 9804 for more information.

Economic Sites - GRA 3

Site Information	Site Number & Location	Lat/Long & Priority
USCG Support Center Phone: **Site Description:** Commander Rescue Coordination Center Marine Safety Office Pacific	Site Number: 2-3-AL-100-D Operational Division:	First Responders' On Water Facilities **HHS** Lat/Long: 37.78 -122.25
Robert Crown Memorial State Beach 8th St Alameda CA 94501 Phone: 510-544-3175 **Site Description:**	Site Number: 2-3-AL-105-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.76 -122.22
San Francisco Bay National Wildlife Refuge 2 Marshlands Rd Fremont CA 94555 Phone: 510-792-0222 **Site Description:**	Site Number: 2-3-AL-110-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.52 -122.09
Hayward Regional Shoreline 3010 Winton Ave Hayward CA 94545 Phone: 510-783-1066 **Site Description:**	Site Number: 2-3-AL-120-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.62 -122.15
Oyster Bay Regional Shoreline 1600 Neptune Dr San Leandro CA 94577 Phone: 888-327-2757 **Site Description:**	Site Number: 2-3-AL-125-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.74 -122.21
Berkeley Marina and Yacht Club 1 Seawall Dr Berkeley CA 94710 Phone: 510-843-9292 **Site Description:**	Site Number: 2-3-AL-130-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.87 -122.31
Emery Cove Yacht Harbor 3300 Powell St #203 Emeryville CA 94608 Phone: 510-428-0505 **Site Description:**	Site Number: 2-3-AL-135-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.84 -122.31
Emeryville City Marina Park 3310 Powell St Emeryville CA 94608 Phone: 510-596-4353 **Site Description:**	Site Number: 2-3-AL-140-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.84 -122.31
Coyote Hlls Regional Park 8000 Patterson Ranch Rd Fremont CA 94555 Phone: 510-544-3220 **Site Description:**	Site Number: 2-3-AL-115-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.55 -122.08
China Basin Phone: **Site Description:** boat launches	Site Number: 2-3-SF-100-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.78 -122.38

Economic Sites - GRA 3

Site Information	Site Number & Location	Lat/Long & Priority
Brisbane Marina 400 Sierra Point Pkwy Brisbane CA 94000 Phone: 650-583-6975 **Site Description:**	Site Number: 2-3-SM-100-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.67 -122.39
Oyster Cove Marina 389 Oyster Point Blvd South San Francisco CA 94080 Phone: 650-952-5540 **Site Description:**	Site Number: 2-3-SM-105-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.67 -122.39
Oyster Point Marina 95 Harbor Master Rd South San Francisco CA 94080 Phone: 650-952-0808 **Site Description:**	Site Number: 2-3-SM-110-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.66 -122.38
Coyote Point Marina 1900 Coyote Point Dr San Mateo CA 94401 Phone: 650-573-2594 **Site Description:**	Site Number: 2-3-SM-115-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.59 -122.32
Redwood City Marina Redwood City CA 94063 Phone: 650-306-4150 **Site Description:** part of the Port of Redwood City	Site Number: 2-3-SM-120-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.5 -122.21
Docktown Marina 1548 Maple St Redwood City CA 94063 Phone: 650-771-1945 **Site Description:**	Site Number: 2-3-SM-125-D Operational Division:	Public Marinas and Harbors **D** Lat/Long: 37.49 -122.22
Ravenswood Open Space Preserve and Coo Bay Rd East Palo Alto CA 94303 Phone: 650-691-1200 **Site Description:**	Site Number: 2-3-SM-130-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.5 -122.12
SF Bay National Wildlife Refuge- Alviso Uni 1751 Grand Blvd San Jose CA 95002 Phone: 408-262-5513 **Site Description:**	Site Number: 2-3-SM-135-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.45 -121.99
Alviso Marina County Park 1195 Hope St Alviso CA 95002 Phone: 408-262-6980 **Site Description:** boat launch	Site Number: 2-3-SM-140-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.42 -121.98
Stevens Creek Shoreline Nature Study Are Mountain View CA 94043 Phone: **Site Description:**	Site Number: 2-3-SM-145-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.43 -122.07

Economic Sites - GRA 3

Site Information	Site Number & Location	Lat/Long & Priority
Byxbee Park 2375 Embarcadero Rd Palo Alto CA 94303 Phone: 650-617-3156 **Site Description:**	Site Number: 2-3-SM-150-D Operational Division:	Parks, Beaches, Recreational Areas **D** Lat/Long: 37.45 -122.11