



West Trail Living Shoreline

→ Construction & Post-Construction
Phase Services



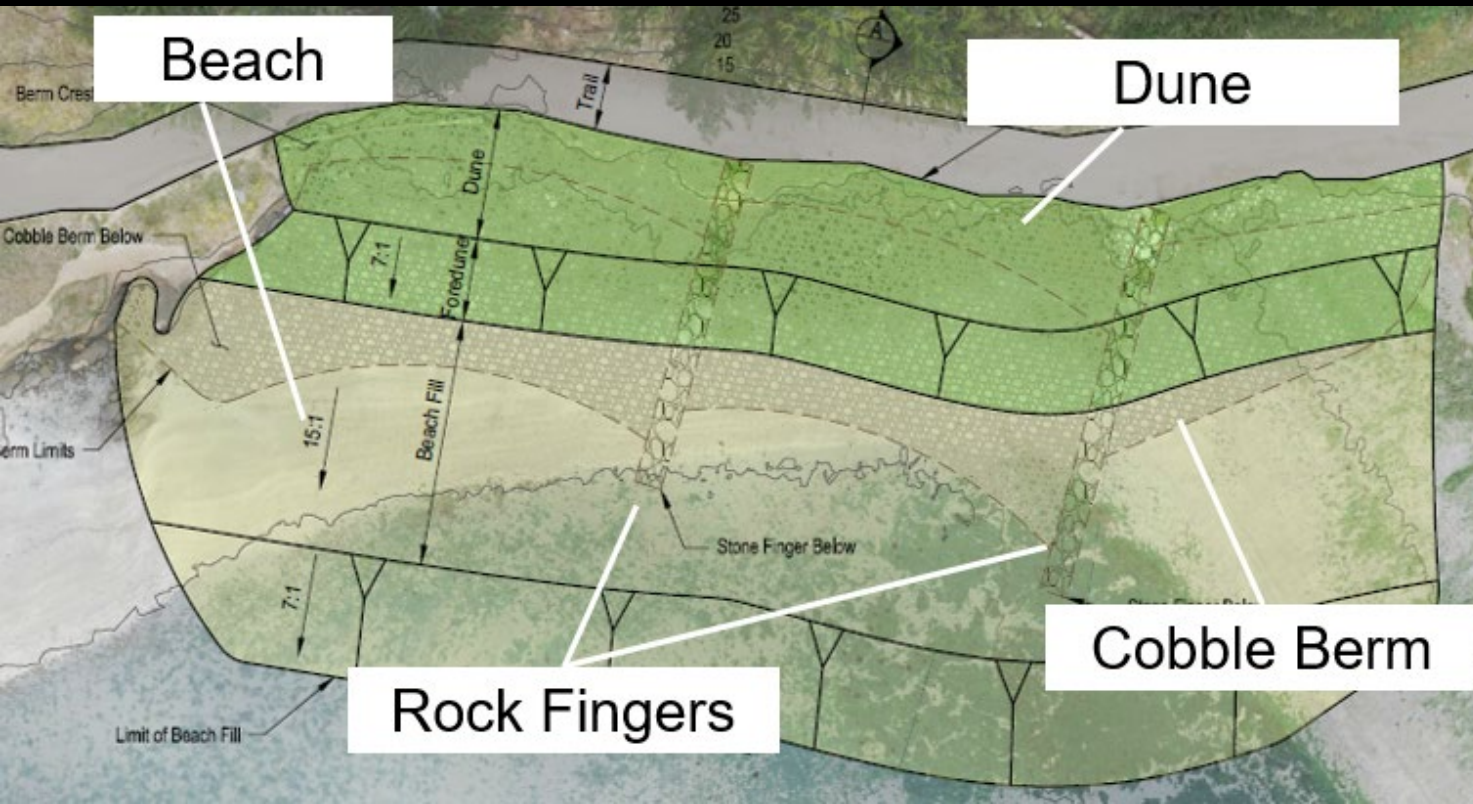
**San Mateo County Harbor District
Board of Harbor Commissioners Meeting**

September 2021

Project Overview

→ Living Shoreline

- 1. Shoreline Protection:** Protect the trail from chronic erosion using multi-benefit, nature-based design technique.
- 2. Stormwater Improvements:** Improve the aesthetics, function and maintenance needs of the existing storm drain system.



Project Status

→ Construction

- 1. **Construction Phase (Sept. 21 – Jan. 22):**
 - a. Contract awarded to MRC
 - b. CM Services, Permit Compliance, Biological Monitoring, & Native Planting

- 2. **Post-construction Phase (5 years):**
 - a. 5-year monitoring & reporting
 - b. Maintenance



Construction Phase Services

1. Environmental Compliance
2. Development of Interpretative & Habitat Protection Signage
3. Construction Management & Inspection
4. Biological Monitoring
5. Engineering Support
6. Native Plants for Dune & Biofiltration Basin



Construction Management & Inspection



1. Contractor procurement support
2. Pre-Construction
3. Construction Project Management
4. Full-time onsite inspection and monitoring
5. Contract conformance (construct per the contract & design intent)
6. Contract administration
7. Problem Solving
8. Construction project closeout

Environmental Compliance

Permits :

- U.S. Army Corps of Engineers
 - *Individual Permit CWA Section 404; RHA Section 10.*
- Regional Water Quality Control Board
 - *Section 401 Water Quality Certification/Waste Discharge Requirement.*
- Coastal Commission/County
 - *Consolidated Coastal Development Permit.*
- County of San Mateo
 - *Encroachment Permit, Airport Stockpile Agreement*

Consultations:

- U.S. EPA
- NOAA Fisheries
- U.S. Fish and Wildlife Service
- Cal Department of Fish and Wildlife.



Environmental Compliance – Long Term Monitoring

- Monitor the Project over 10-year period
 - Physical Performance – Adaptive Management and Monitoring Plan
 - Biological Performance – Habitat Restoration and Monitoring Plan
- Annual reports to Coastal Commission, USACE, Water Board
- Monitoring after severe weather activity
- Adaptive management could be required



Environmental Compliance – Construction Monitoring

Numerous permit conditions, BMPs, and mitigation measures required:

- Permit compliance matrix (8 pages)
- Mitigation Monitoring and Reporting Program (11 pages)
- Permit reporting requirements
- Site visits with permitting agencies
- Coordination with construction contractor and biological monitor



SF Garter Snake

8 Photo Credit: Shelia Larsen / USFWS



CA Red Legged Frog

Photo Credit: USFWS

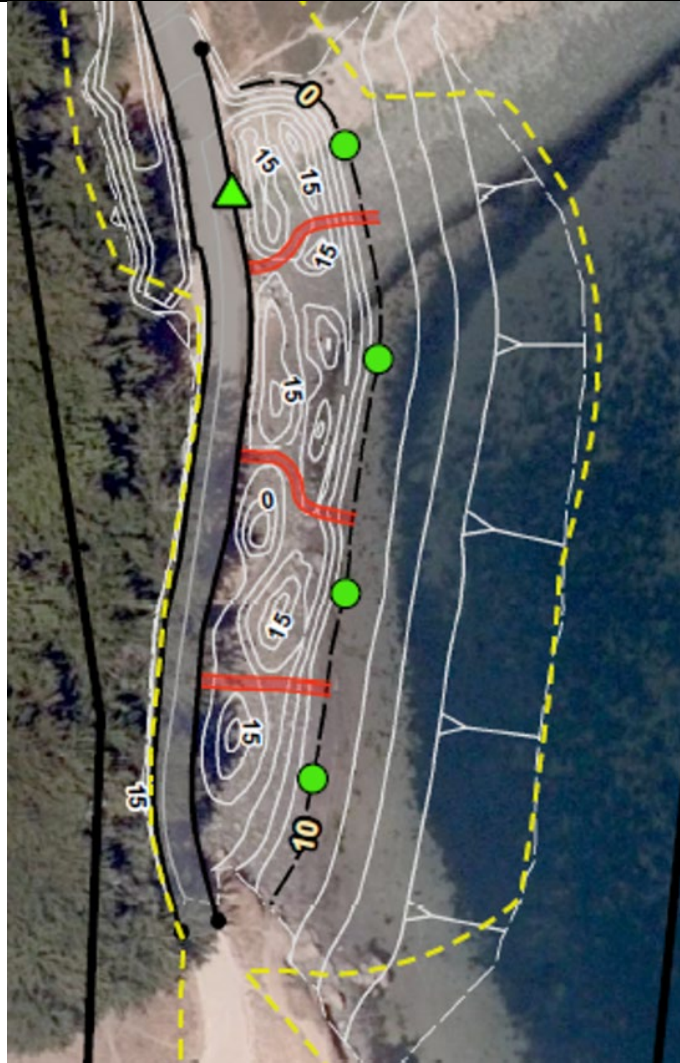
Pillar Point Harbor West Trail Permit Compliance Matrix				
Source	Category	No.	Condition	Responsible Party(ies)
California Coastal Commission – Consolidated Coastal Development Permit				
CDP	Construction Plan	2	PRIO TO ASSURE: Submit 2 copies of a Construction Plan for review and written approval. Must include: Construction Areas; Construction Methods; Construction Timing; Construction BMPs (CDP includes minimum BMP requirements); Restoration; Construction Site Documents; Construction Coordinator; Construction Specifications; and Notifications. See 20(1) - 20(11).	Construction Contractor to provide to District Consultants for submittal.
	Additional Construction Habitat BMPs (Edge/Grass)	30(1)	A pre-construction edge/grass clearance survey for the project area shall be completed no more than 60 days prior to the beginning of construction and shall be used until the end of annual edge/grass growth (usually April/October). The Permittee shall submit the pre-construction edge/grass survey for review and approval by the Executive Director within five business days of completion of each edge/grass survey and, in any event, no later than 30 business days prior to commencement of any construction activities.	District Consultants
CDP	Additional Construction Habitat BMPs (Nesting Birds)	30(2)	Nesting Birds Surveys for any construction work that would occur during the avian breeding season (i.e., January 23 to September 23), pre-construction surveys will be completed by a qualified wildlife biologist with experience in observing reproductive and nesting behavior to identify displays of nesting behavior and/or active nests (i.e., as occupied by eggs or nestlings) in the proposed construction areas. The following shall apply: (a) Surveys must occur no more than 30 days prior to construction and weekly thereafter; (b) contain specific requirements and should be reviewed by selected biologists prior to conducting surveys. Also, if needed see 30(1) & 3 for Buffer and Disturbance protocols.	District Consultants
CDP	Additional Construction Habitat BMPs (Nesting Birds)	30(4)	A Nesting Birds Monitoring Report shall be provided to the Executive Director within 30 days of construction completion and shall include: all survey results and associated maps, along with a brief narrative describing the survey methods and observations of the species; tolerances to noise, vibration, and visual disturbance cases; if any incidents have resulted in a need for further consultation with the project biologist and/or the Executive Director, these will also be noted and discussed.	District Consultants
CDP	Additional Construction Habitat BMPs (Av-Built Plans)	4	Submit Av-Built Plans within 3 months of completion of construction. The Permittee shall submit two copies of Av-Built Plans to the Executive Director for review and written approval showing all elements of the approved project. The Av-Built Plans shall be substantially consistent with the approved project identified in Special Condition 1 and shall include color photographs. Contractor should review this CDP condition (4) for specifics.	District Consultants in coordination with Contractor
CDP	Additional Construction Habitat BMPs (Habitat Creation Plan)	5	PRIO TO ASSURE: The Permittee shall submit a final Habitat Creation Plan to the Executive Director for review and written approval. This should include a detailed planting plan, monitoring and adaptive management plan and other elements described in the CDP. Consultant responsible for report should review this CDP condition (5) for specifics.	District Consultants
CDP	Additional Construction Habitat BMPs (Habitat Creation Plan)	5(1)	Invasive Species Removal: All invasive plant species (as listed by the California Invasive Plant Council) shall be removed from the project area prior to habitat creation, and their establishment and encroachment from adjacent areas shall be addressed on an as-needed basis to ensure that absolute cover be maintained below 5%.	Construction Contractor
CDP	Additional Construction Habitat BMPs (Habitat Creation Plan)	5(4)	Fencing and Signage: Fencing and informational signs shall be installed around the dune area to identify and protect them from activities that could harm the habitat. All signage and fencing details shall be provided, which shall be sized and designed to protect the habitat establishment and to protect public views as much as possible (e.g., materials that are made of natural materials and colors that blend with the environment, such as rope and post) while allowing for continued public access to the beach and water through designated kiosk(s) consistent with Special Condition 1.	Construction Contractor and District Consultants
CDP	Additional Construction Habitat BMPs (Habitat Creation Plan)	5(6)	Monitoring reports shall be submitted according to the Executive Director for review and approval by December 31st of every year for 5 years or for as adjusted time period dependent on habitat creation success, as required in subsection (1) above. The reports shall identify the location of all revegetation plantings or seedlings conducted in the habitat creation areas, present monitoring results, assessment of progress toward meeting success criteria, and any adaptive management recommendations. Review CDP language for full requirements.	District Consultants

Permit Compliance Matrix

Signage



➔ Example Interpretive Sign



➔ Signage & Access Plan



➔ Example Dune Restoration Sign

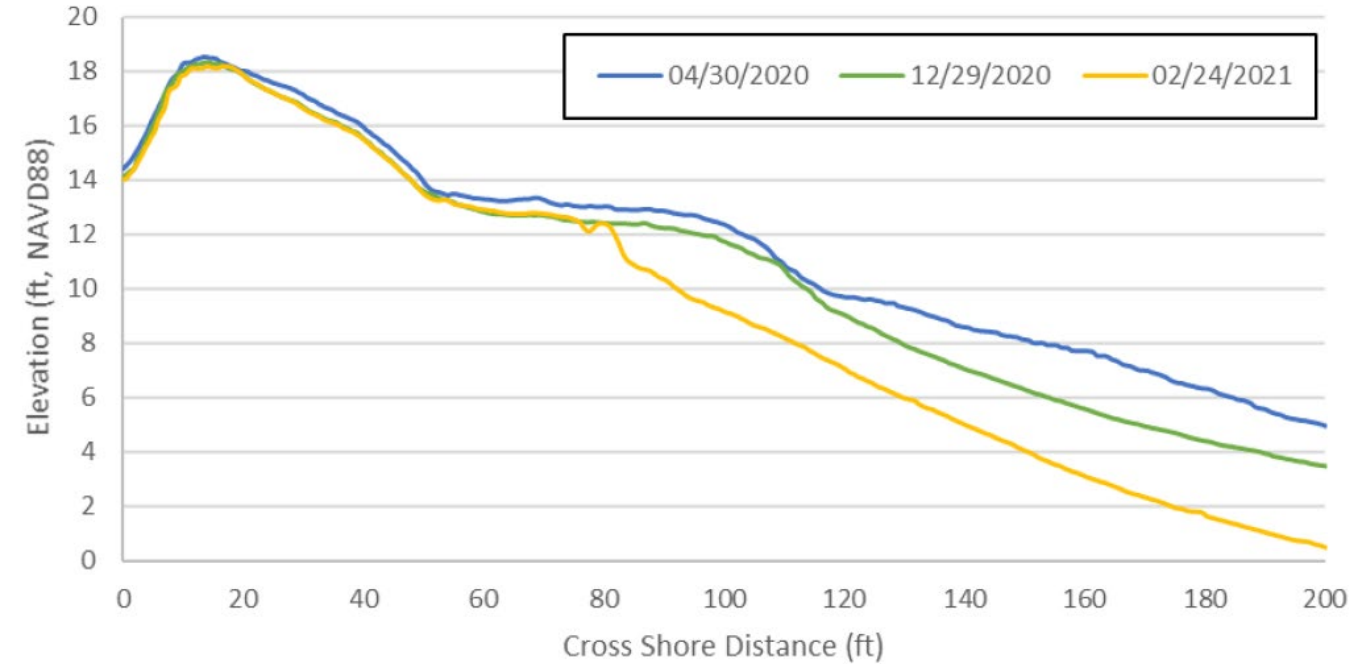
Native Planting

- Ecological Goal:
 - Re-establish a resilient, dynamic native beach and foredune plant community typical of the San Mateo – Santa Cruz coast
- Ecological objectives:
 - Geomorphic stabilization & resilience
 - Inhibit wind erosion / promote sand deposition on dune
 - Facilitate rapid recolonization
 - Allow for dune sand volume release during erosion events
 - Enhanced biological diversity:
 - Restore high native sp. diversity for beach & dune
 - Reduce pressure from invasives
 - Support invertebrate sp. diversity
 - Dry beach roosting habitat for shorebirds



Post-Construction Phase Services

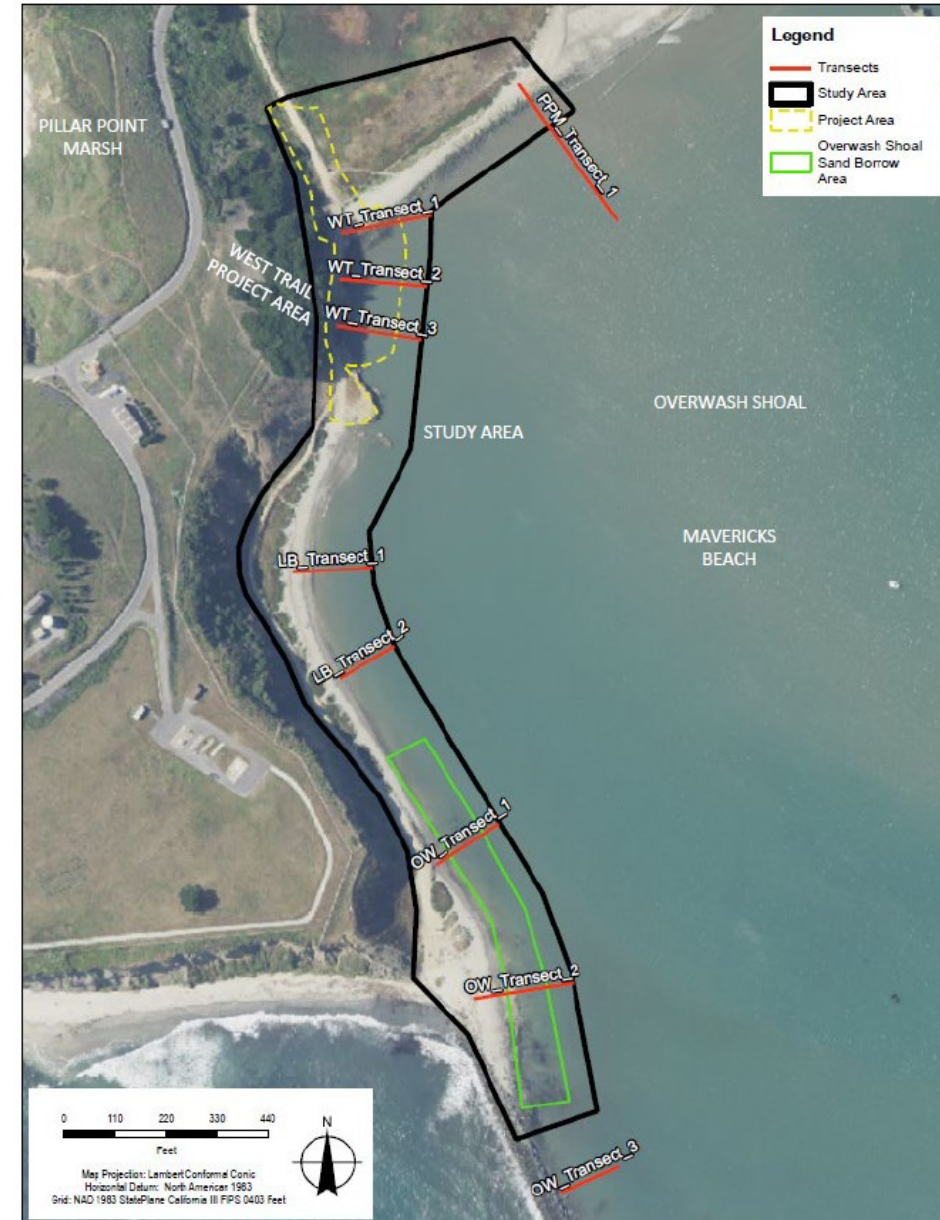
Northern Transects - Beach Changes



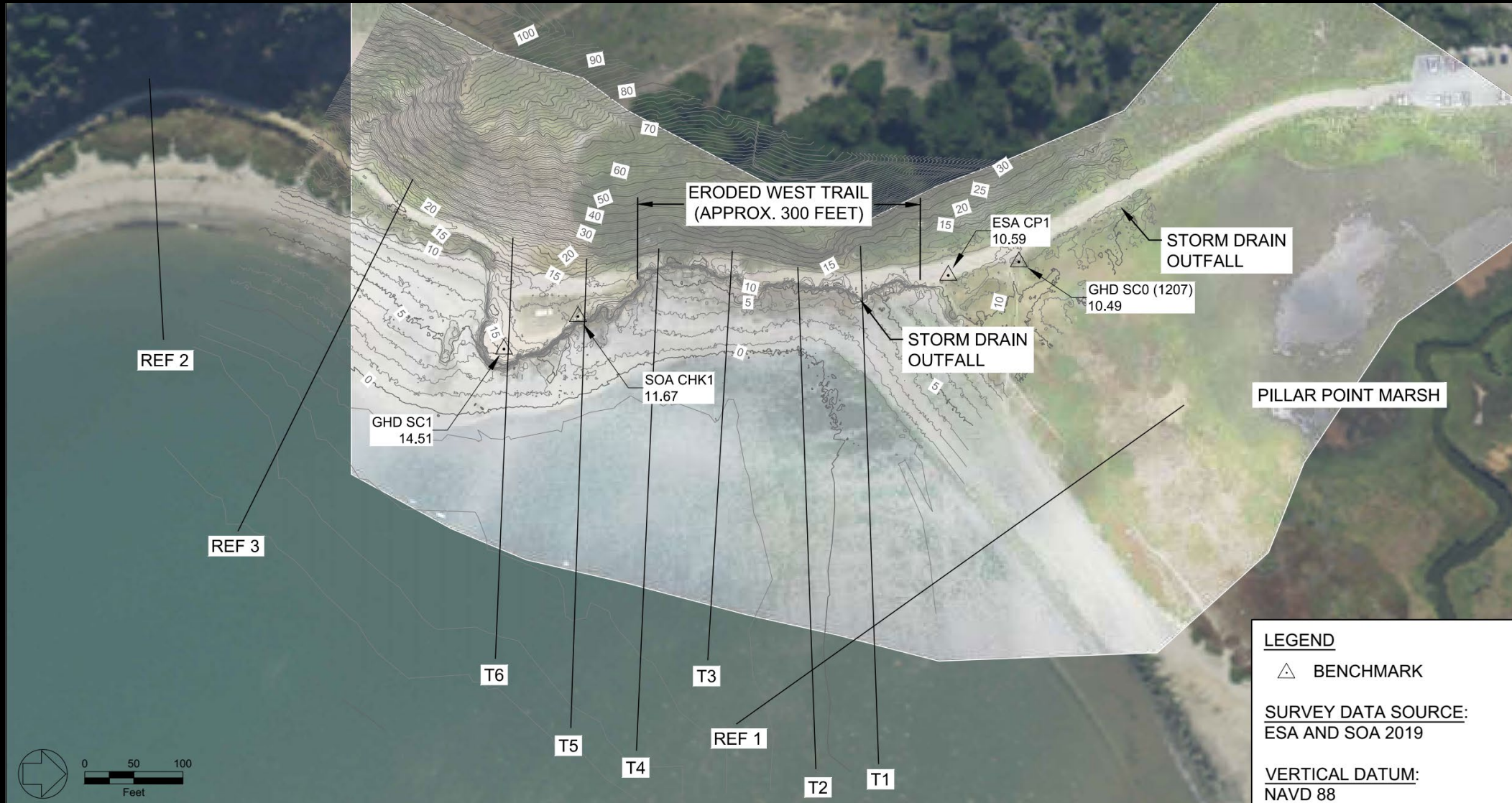
1. Physical Monitoring & Reporting
2. Biological Monitoring & Reporting
3. Dune Maintenance

Physical Monitoring Program – Annual Data Collection Methods

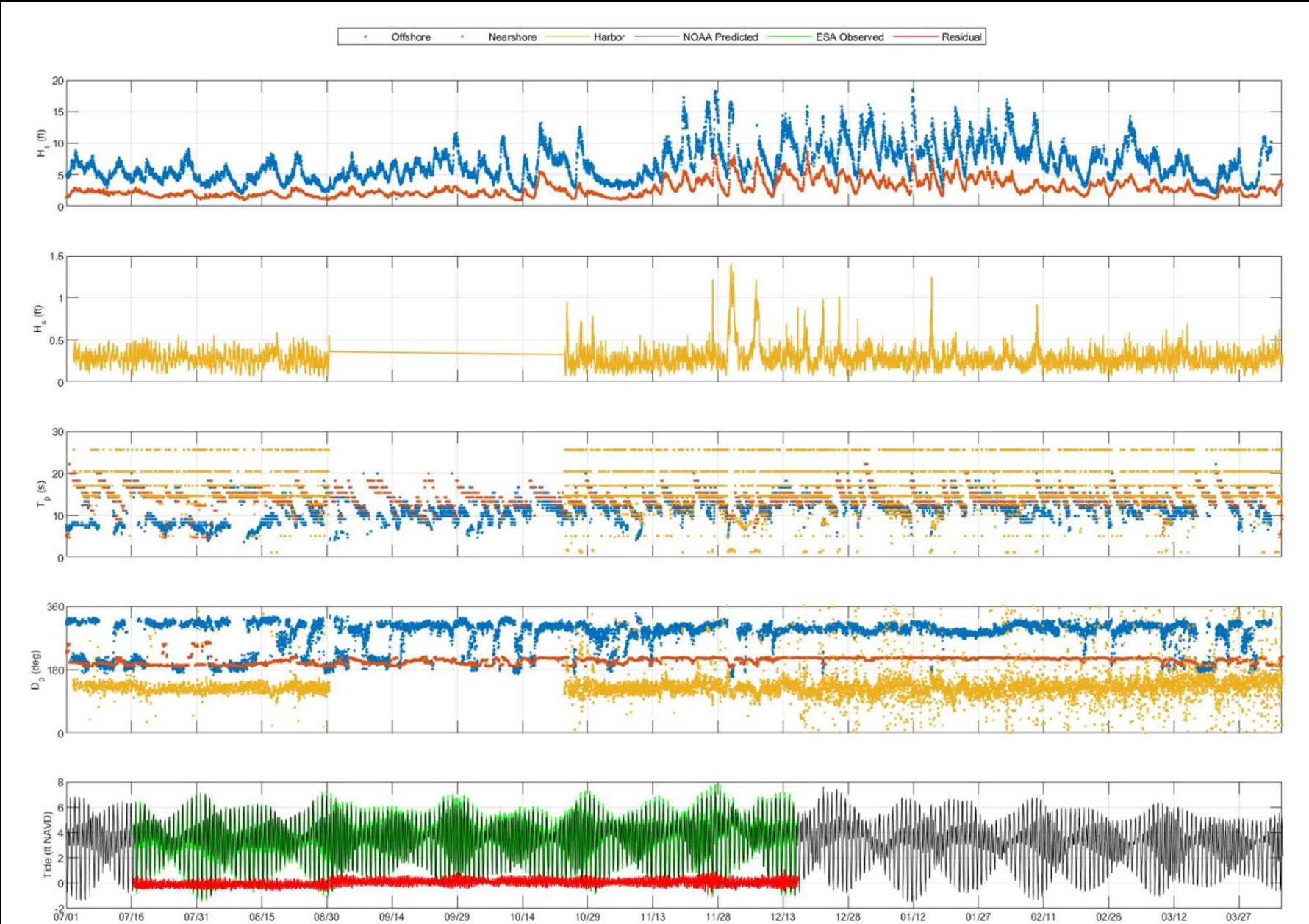
1. Topography – trail and beach changes (e.g. erosion)
2. Regional data gathering: publicly available (wind, waves, tides)
3. Photo documentation
4. Extreme event documentation
5. Data analysis and reporting



Topography Example – Pre-Construction



Example of Data Gathered



Example of Photo Documentation: Surfers Pt., Ventura)

Extreme Storm Event Dec 2015



Extreme Storm Event Dec 2015



March 2016



November 2017



Biological Monitoring & Maintenance Summary



1. Biological Monitoring Objectives:
 - Native vegetation establishment
 - Non-native vegetation control
 - Qualitative indicators of wildlife habitat

2. Bi-annual Maintenance:
 - a. Weeding - invasive Removal
 - b. Removal of trash
 - c. Other misc. activities, as needed



Next Steps

- **Construction (Sept. 2021 – Jan. 2022)**
- **Native Planting (Winter 2021)**
- **Monitoring (2022 to 2026)**

Questions?

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*** Thank You**