San Diego County Shoreline (Oceanside) Mitigation Study

Draft Integrated Feasibility Report and Environmental Assessment Public Meeting

Los Angeles District

16 June 2026

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Agenda and Objectives

Agenda:

1. Orientation & Opening Remarks
2. Study Overview
3. Comment Opportunities
4. Public Comment Forum
5. Close

Meeting Objectives:

- Provide overview of the Draft Integrated Feasibility Report and Environmental Assessment (IFR) and the Tentatively Selected Plan.
- Hear from the public, stakeholders, and others, and highlight opportunities for comment on the Draft IFR.

This public meeting is part of the 30-day public comment period running May 31 through June 30

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Project Delivery Team (PDT)

Project Manager	Doland Cheung
Lead Planner	Jonathan Hallemeier
Engineering Technical Lead	Matt Wesley
Coastal Engineer	Caleb Lodge
Project Biologist	Kym Lyons
Environmental Manager	Thomas Sentner
Real Estate Specialist	Erin Burns
Cultural Specialist	Daniel Grijalva
Economist	Joe Lamb
Office of Counsel	Tiffany Troxel, Amy Thornton
Geologist	Luis Sepulveda
Cost Engineer	Juan Dominguez

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BLUF: Bottom Line Up Front

Tentatively Selected Plan: Sand Nourishment Only with 10-year Renourishment Cycle Over 50 years

Draft IFR: May 2026

Final IFR: Spring 2027

Report from Chief of Engineers: Fall 2027

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NEPA Scoping Meeting and Alternatives Milestone
Comments Considered to Inform Alternatives Development
Completed March 2003 and March 2016

Pre-Tentatively Selected Plan (TSP) Milestone
Re-Engage Public, Comments Considered to Inform Alternatives Evaluation
September 2024

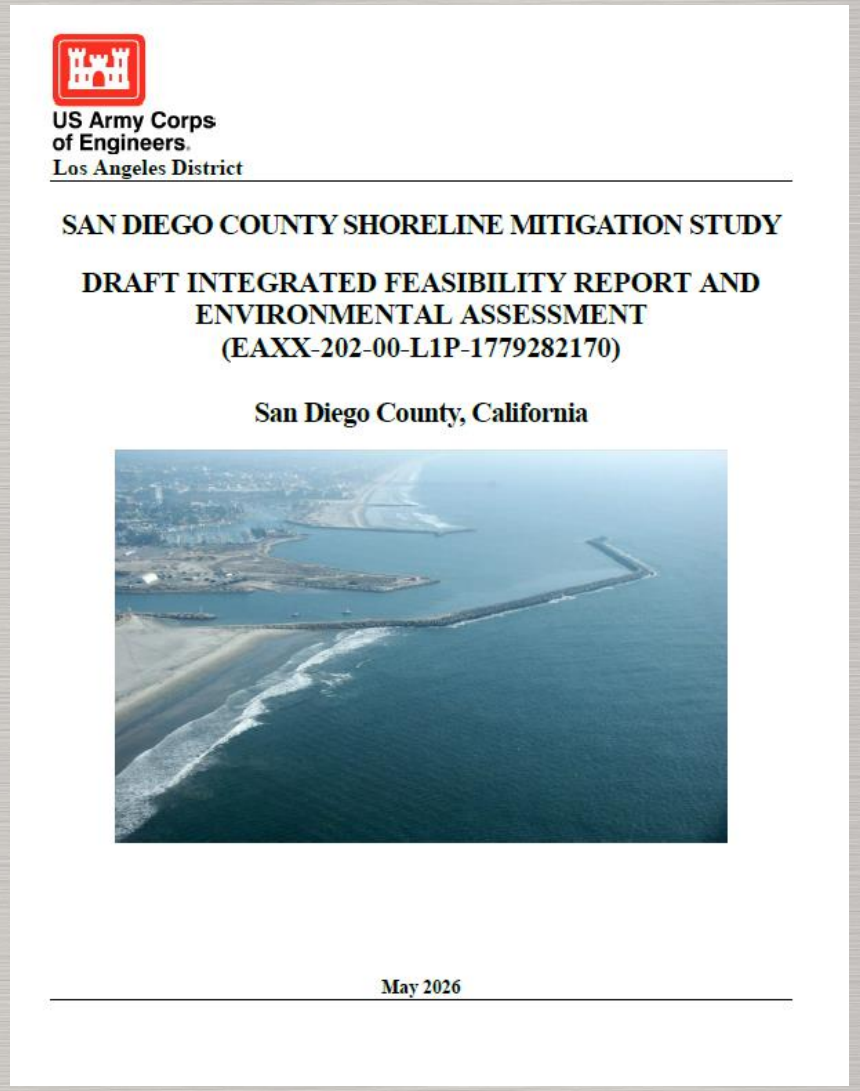
NEPA Public Comment Period
Comments on Draft Report to Inform Recommended Plan / Final Report
30-day comment period
May 31 through June 30

Draft Integrated Feasibility Report and Environmental Assessment (IFR)

Available at https://www.spl.usace.army.mil/Missions/Civil-Works/Projects-and-Studies/San-Diego-County-Shoreline-Oceanside-Mitigation-Study/

Draft IFR Contents

- Executive Summary
- Introduction – Authority, Background, and Scope
- Existing and Future Without Project Conditions
- Plan Formulation – Formulation and Evaluation of Alternatives
- Reasonably Foreseeable Effects of Alternatives
- Plan Comparison and Selection
- Tentatively Selected Plan
- Environmental Compliance
- Technical Appendices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SAN DIEGO COUNTY SHORELINE MITIGATION STUDY

DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT (EAXX-202-00-L1P-1779282170)

San Diego County, California

May 2026

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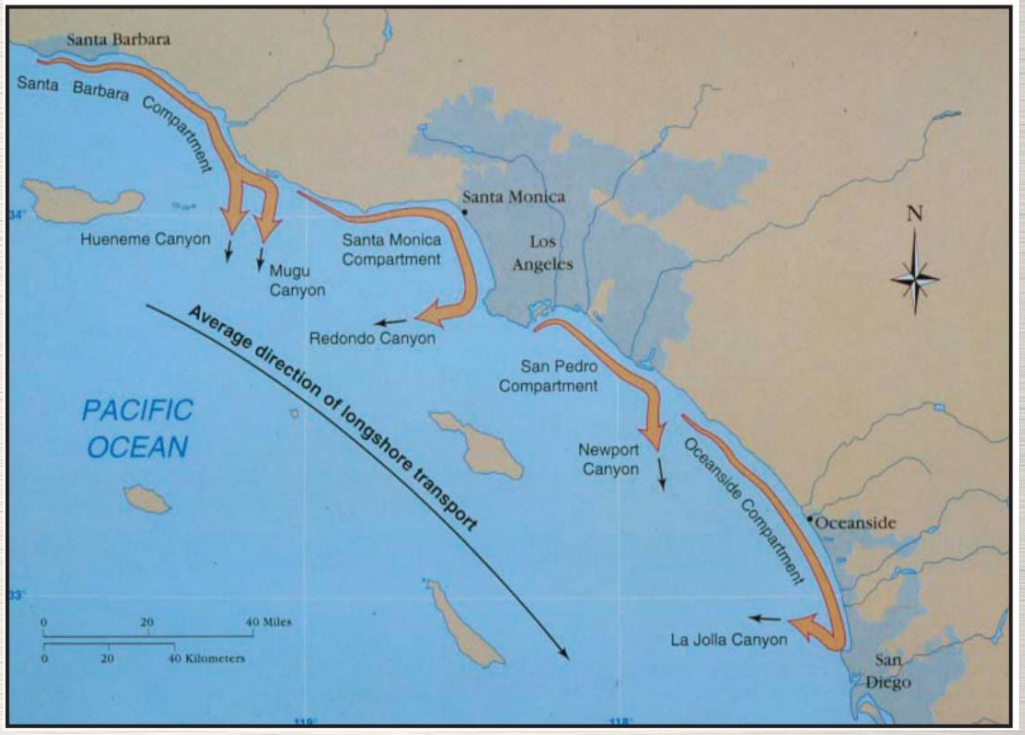
Study Background and Authorization

- Despite beach nourishment and sediment bypassing efforts, Oceanside Harbor has interrupted sediment transport, contributing to erosion of beaches south of the harbor.
- The loss of beach sand has implications for environmental resources, recreation and access, and resiliency to coastal flood risk.



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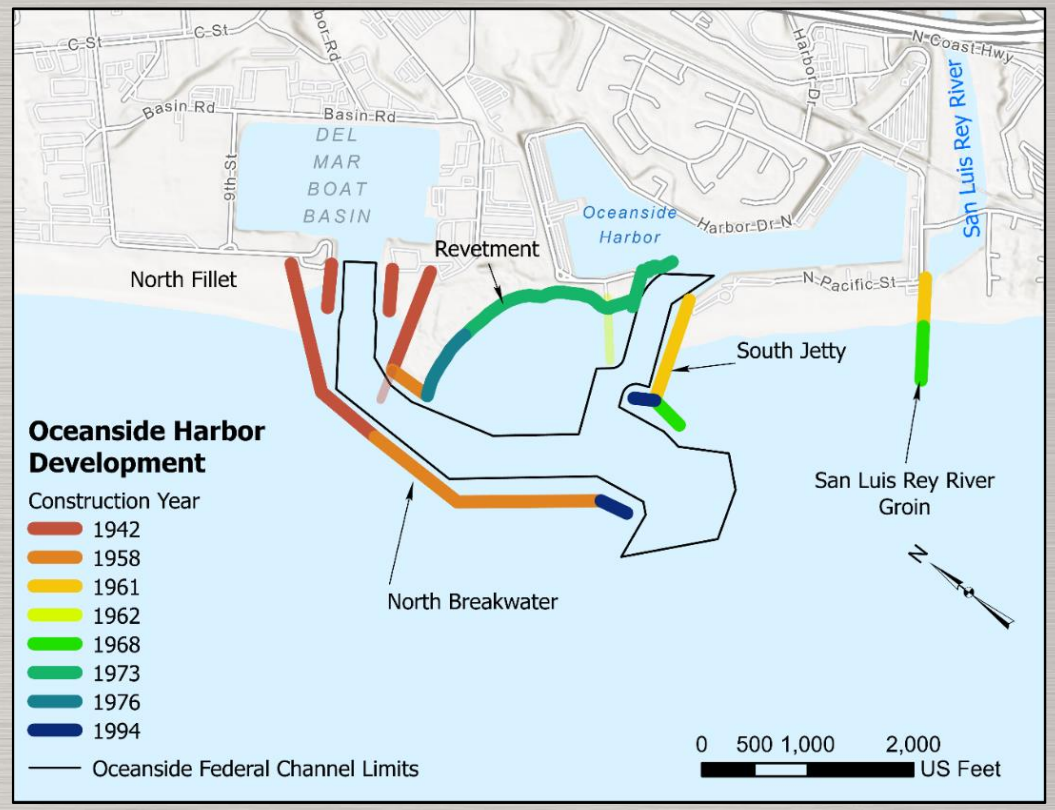
Study Background and Authorization

- **1942**: Navy established Del Mar Boat Basin for national defense
- **1940s-1990s**: Oceanside Harbor development
- **1965**: U.S. Army Corps of Engineers (USACE) began maintenance dredging
- **1980s-1990s**: USACE fixed bypass system pilot project, removed due to ineffectiveness and costs
- **2000**: USACE started 100% Federally funded feasibility study under Water Resources Development Act (WRDA) 2000
- **2003**: National Environmental Policy Act (NEPA) scoping meeting
- **2007-2014**: Funding gap
- **2016**: NEPA scoping and Alternatives Milestone
- **2017-2022**: Study inactive
- **2022**: Study funded by Congress under the Infrastructure Investment and Jobs Act



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Study Background and Authorization

Water Resources Development Act (WRDA) 2000 Section 414 authorized study at full federal expense to:

- Mitigate for erosion and other impacts resulting from Camp Pendleton Harbor construction as a wartime measure
- Restore beach conditions along the affected public and private shores to pre-harbor conditions.

WRDA 2024 Section 1210 directs the Corps to:

- Expedite the completion of the study
- Produce a report of the Chief of Engineers with a recommended plan based on updated sediment sampling and analysis
- On discretion of the Secretary, proceed directly to preconstruction planning, engineering, and design of the mitigation and beach restoration work.

2024 Study Specific Guidance directs the PDT to:

- Assume the conclusions reached at the Alternatives Milestone are still valid and continue to the Tentatively Selected Plan Milestone.
- Evaluate alternatives based on environmental impact, estimated cost and technical considerations, rather than economic benefits.

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Project Area and Scope

Project Area

- 6 miles of Oceanside shoreline from Camp Pendleton to Carlsbad divided into 8 reaches

Study Scope

- Develop and screen an array of alternatives
- Assess environmental impacts
- Perform a least cost analysis
- Identify a mitigation plan that is technically sound, environmentally acceptable, and meets the study objectives

- **Reach A**: Agua Hedionda Lagoon to Buena Vista Lagoon
- **Reach B**: Buena Vista Lagoon to Loma Alta Creek
- **Reach C**: Loma Alta Creek to Wisconsin Avenue
- **Reach D**: Wisconsin Avenue to Tyson Street
- **Reach E**: Tyson Street to Breakwater Way
- **Reach F**: N. Coast Village to the San Luis Rey
- **Reach G**:San Luis Rey Groin to the South Jetty
- **Reach H**: Oceanside Harbor

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USACE STUDY AND RE:BEACH INITIATIVE

USACE Oceanside Mitigation Study

- Focus on sand restoration in 6-mile project area
- Federally led and funded
- Mitigation and restoration focus based on Congressional authorization
- Recommended Plan based on least cost and environmental impacts
- Designed to meet study objectives through a 50-year project horizon

City of Oceanside RE:BEACH Initiative

- Focus on beach restoration and sand retention south of the Oceanside Pier
- Locally led, looking for funding partners
- Multi-benefit focus, including improved access in addition to beach restoration
- Concept design is an artificial reef, two artificial headlands, and beach and nearshore nourishment
- Pilot project with a 20 to 30-year design life and monitoring and maintenance program

Coordination between the Oceanside Study and RE:BEACH is critical as these efforts continue through their individual processes.

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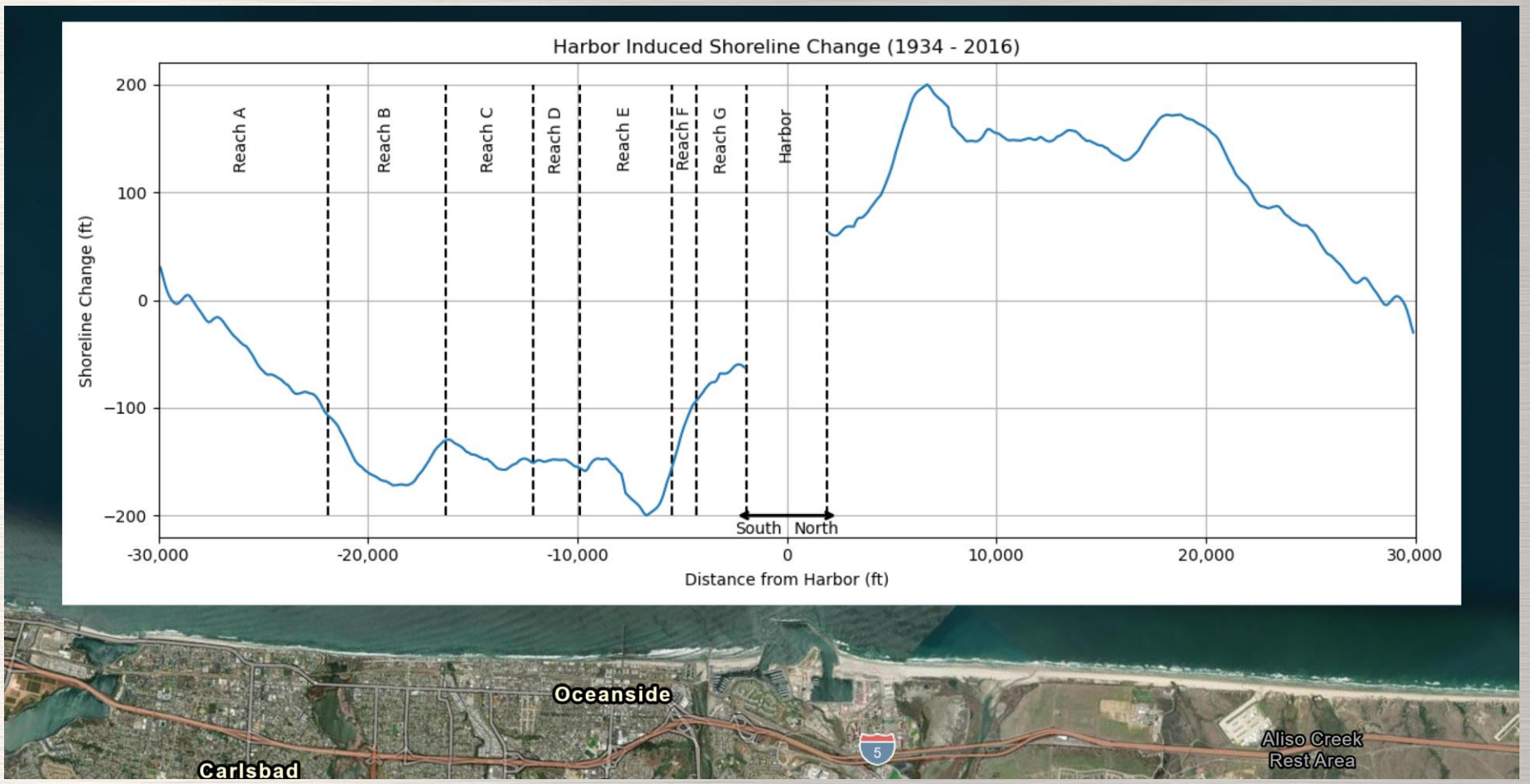
Historic Harbor Induced Shoreline Effects

- Even-Odd Analysis: Separates shoreline changes from background processes and induced changes
  - Assumes shoreline is symmetric about a point (Oceanside Harbor)
- From 1934 - 2016



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Existing & Future Without Project Conditions




	Existing Conditions	Future Without Project Conditions
Infrastructure and Risk from Storm-driven Waves	• Annual Operations and Maintenance dredging beneficially places sand downshore in Reaches E and F • Coastal storms damage public and private property, revetments in south Oceanside	• Harbor/jetty structures and annual Operation and Maintenance dredging assumed for perpetuity • Potential for increased storm damage
Environmental	• Threatened and Endangered Species: California least tern and Western snowy plover, green sea turtle and its proposed critical habitat • Essential fish habitat – surfgrass and canopy kelp • Lagoon/wetland habitats, rocky reef – acreage/quality reduced in past century	• Sea level change leads to reduced habitat • Existing reef habitat persists, resource for fisheries
Recreation and Access	• Beach, surf, and ocean recreation central to local economies • Many areas with limited dry beach • Oceanside transit hub facilitates accessibility	• Regional growth and increased recreation demand, reduction of available beach • Reduced accessibility for local and transit hub users to beach recreation

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Problems, Opportunities, Objectives, Constraints and Considerations

Problems

Interruption of sediment transport resulting in beach erosion

Opportunities

- Provide or improve habitat
- Reduce risk from storm-driven waves
- Increase accessible recreational opportunities
- Contribute to regional sediment management

Objectives

- Mitigate for erosion and other impacts caused by construction of Camp Pendleton Harbor
- Restore beach to pre-Camp Pendleton Harbor conditions

Constraints and Considerations

- Do not negatively impact national security (cannot remove Camp Pendleton Harbor)
- Avoid or mitigate impacts to:
  - Vessel operations in the harbor
  - San Luis Rey flood control project
  - Down drift beaches
- Consider local and regional sediment management plans and activities (RE:BEACH)
- Consider availability and compatibility of sediment

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Alternative Formulation and Screening Alternative Milestone Meeting (AMM)

Measure	Screening	Rationale
	Non-Structural	
Managed Retreat	Screened as alternative.	Costs/efficiency and acceptability
Flood proofing structures	Screened as alternative.	Completeness and acceptability
	Structural	
Beach Nourishment*	Carried forward.	
Coastal Storm Risk Beach Nourishment*	Screened as alternative.	Effectiveness
Revetment or Seawall	Screened as alternative.	Costs/efficiency and acceptability
Shore-Parallel Offshore Reef*	Screened as measure.	Costs/efficiency and effectiveness.
Shore-Parallel Emergent Breakwater	Screened as measure.	Costs/efficiency and acceptability.
Groin Field	Carried forward.	
Alteration of Harbor Structures	Screened as a measure.	National security and commercial importance of harbor.
Harbor Bypass	Screened as alternative.	Costs/efficiency and effectiveness.
Use of O&M Dredged Material	Screened as alternative.	Effectiveness
Alterations Within Watershed	Screened as measure.	Costs/efficiency and viability.

*Natural / nature-based feature

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Alternative Formulation and Screening

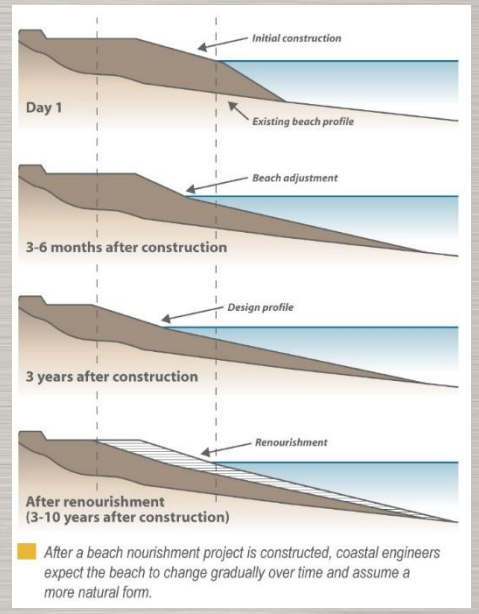
- Action Alternatives divided into 5-, 7-, 10-, 15-, and 20-year renourishment cycles to analyze technical performance and environmental acceptability
- Nourishment cycles are frequency of nourishment over 50-year project (e.g., every 10 years)
- Additional screening conducted after modeling performed for completeness, efficiency, effectiveness, and acceptability.

Action Alternative	Renourishment Cycle	Carried Forward	Screening Rationale
Beach Nourishment Only	5-year cycle	No	Not cost efficient
	7-year cycle	No	Not cost efficient
	10-year cycle	Yes	
	15-year cycle	No	Not effective
	20-year cycle	No	Not effective
Beach Nourishment + Groins	5-year cycle	No	Not cost efficient
	7-year cycle	No	Not cost efficient
	10-year cycle	Yes	
	15-year cycle	No	Not cost efficient
	20-year cycle	No	Not cost efficient

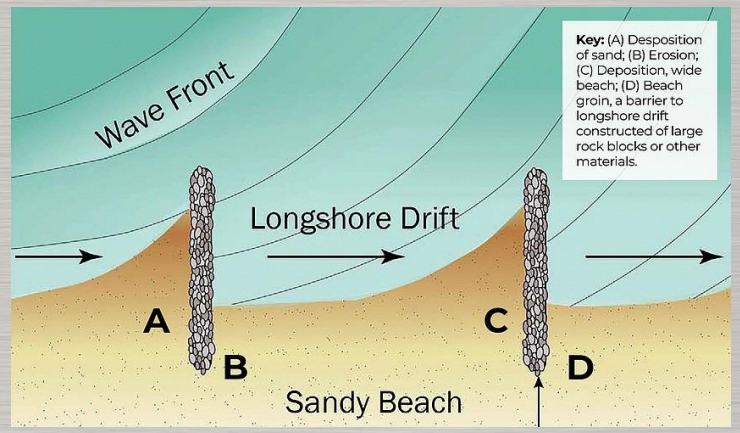
Final Array of Alternatives

	Alternatives
1	Beach Nourishment Only, 10-year renourishment cycle
2	Beach Nourishment and Groins, 10-year renourishment cycle
3	No Action Alternative

Beach nourishment measure



Groin measure



Groin measure retains placed sand longer

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Evaluation Criteria

- ❑ **Estimated Cost**
- ❑ **Technical Considerations**
  - ❑ Mitigate erosion impacts
  - ❑ Restore beach to pre-harbor conditions
- ❑ **Environmental Impact**
  - ❑ Biological Impacts
  - ❑ Air Quality and Traffic
  - ❑ Recreation and Access

- ❑ **Comprehensive Benefits**
  - ❑ National Economic Development (NED): Coastal Storm Risk, Recreation
  - ❑ Regional Economic Development (RED)
  - ❑ Environmental Quality (EQ)
  - ❑ Other Social Effects (OSE)
- ❑ **Stakeholder Perspectives**

Study Guidance:

- Formulate plans to address the erosion and other impacts resulting from harbor construction
- Evaluate alternatives based on environmental impacts, estimated cost, and technical considerations
- The study will not include a benefit-cost ratio analysis

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Estimated Cost

- Beach nourishment and groins alternative includes high up-front costs that are not discounted, resulting in higher net present value and total average annual costs
- Beach nourishment only alternative costs are distributed over the 50-year project period and have lower net present value and total average annual costs

Cost Analysis for Alternatives (Fiscal Year 2025 Price Levels*)

Alternative		*First Costs, Current Year*	Total Average Annual Costs
Beach Nourishment Only	10 Year Cycle	*$243,540,000*	**$12,598,000**
Beach Nourishment and Groins	10 Year Cycle	*$207,792,000*	**$12,644,000**

* Price level for TSP selection and will be updated for further progression of TSP estimate towards certification.

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Technical Considerations (Effectiveness)

"To **mitigate for the erosion** and other impacts resulting from the construction of Camp Pendleton Harbor, Oceanside, California, as a wartime measure"

"To **restore beach conditions** along the affected public and private shores **to the conditions that existed before the construction** of Camp Pendleton Harbor."

Mitigation Objective

- Target sand volume to meet shoreline position if the harbor did not exist, accounting for active littoral system and other changes
- All alternatives meet erosion mitigation objective – beach nourishment only mitigates impacts across reaches, beach nourishment and groins retains sand in area of largest impact

Restoration Objective

- Restoration of beach condition includes structure and process.
- Beach nourishment only alternative better meets objective overall
- Beach nourishment and groins alternative falls short on some process and function but still meets the objective

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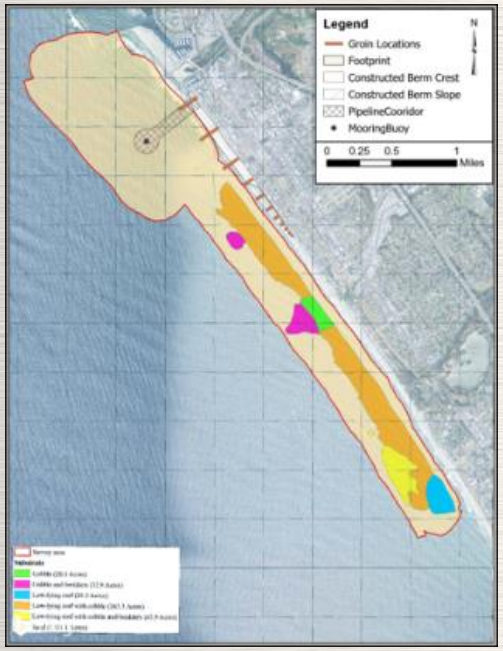
Environmental Impacts

Biological Impacts

- All construction: short term disruption to shorebird foraging & roosting
- *Nourishment and groins*: permanently reduces beach habitat, disrupts intertidal communities & forage resources, and creates line of sight obstructions for shorebirds
- *Nourishment only*: temporary sediment inundation risk to rocky reef, lagoon inlet infill



Air Quality and Traffic

- *Nourishment only*: Overall higher emissions, minimal traffic impacts
- *Nourishment and groins*: Overall lower emissions, higher traffic impacts

Recreation and Access

- Recreation key economic driver of local economy
- *Nourishment only*: Temporary construction impacts
- *Nourishment and groins*: Temporary construction impacts. Permanent groin impacts to lateral beach access (for users, maintenance, and lifeguards), aesthetics, and surfing, including at iconic Oceanside Pier

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Comprehensive Benefits

*Coastal Storm Risk (CSR) was not analyzed for this study

National Economic Development: Coastal Storm Risk*

- Beaches are sacrificial buffer to reduce damage, inundation, and erosion
- Nourishment only creates wider downcoast beaches that provide coastal storm risk benefits
- Potential to reduce damage to public and private property and infrastructure, decrease

National Economic Development: Recreation

- Both alternatives support wider beaches that will have recreation benefits
- Nourishment only provides incidental recreation benefits downcoast

Other Social Effects

- Both alternatives provide transit-accessible beach recreation
- Nourishment only provides additional beach for aesthetics/identity and lateral beach access

Regional Economic Development

- Both alternatives involve investments from project construction

Environmental Quality

- Nourishment only creates additional sandy beach habitat
- Potential for optimization of groins for habitat benefits

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Stakeholder Perspectives

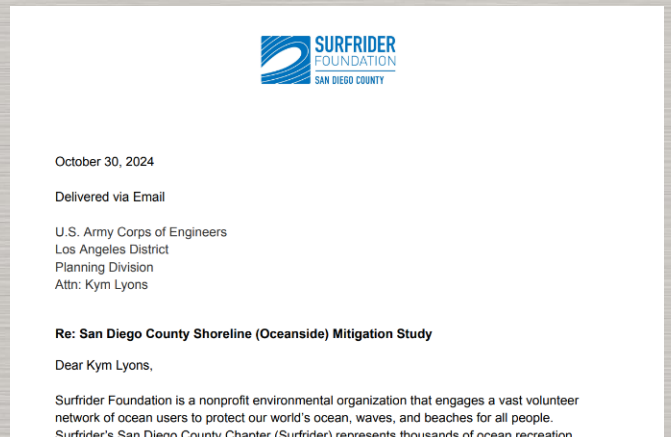
Study Engagement:

- Public meetings in 2003, 2016, 2024
- Tribal invitations and coordination
- Agency coordination with US Fish and Wildlife Service, National Marine Fisheries Service, Environmental Protection Agency, California Coastal Commission, City of Oceanside, and US Marine Corps Base Camp Pendleton
- Other stakeholders include Rep. Levin, local governments, and organizations such as Save Oceanside Sand and Surfrider

What We Heard:

- Study support and urgency
- Importance of key resources, such as beach recreation, surfing, aesthetics, and nearshore natural resources and ecosystems
- Concerns regarding hardened structures such as groins and potential impacts, such as erosion downcoast, impacts on iconic surf breaks and local economy, and conflict with the City of Oceanside's RE:BEACH pilot project
- Suggestions to consider alternatives such as a fixed harbor bypass

Your perspectives and insights have informed the team and improved the study



SURFRIDER FOUNDATION
SAN DIEGO COUNTY

October 30, 2024

Delivered via Email

U.S. Army Corps of Engineers
Los Angeles District
Planning Division
Attn: Kym Lyons

Re: San Diego County Shoreline (Oceanside) Mitigation Study

Dear Kym Lyons,

Surfrider Foundation is a nonprofit environmental organization that engages a vast volunteer network of ocean users to protect our world's ocean, waves, and beaches for all people.

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Alternative Comparison Summary and Tentatively Selected Plan (TSP)

TSP

		Estimated Cost	Technical Considerations		Environmental Impact			Additional Comprehensive Benefits		Stakeholder Perspectives
		Cost (1,000s)	*Erosion Mitigation Objective*	*Restoration Objective*	*Biological Impacts*	*Air Quality and Traffic*	*Recreation and Access Impacts*	*NED: Costal Storm Risk*	*NED: Recreation*	
Beach Nourishment Only	**10 Year Cycle**	$12,598	Mitigates harbor impacts across reaches	Good on structure and process	Temporary beach, reef, and lagoon impacts	Overall higher emissions, minimal traffic impacts	Temporary construction impacts	Incidental downdrift benefits	Beach width in footprint, downdrift benefits	General preference over groins
Beach Nourishment and Groins	**10 Year Cycle**	$12,644	Retains sand in area of largest impact	Good on structure, marginal on process	Permanent sandy beach/ intertidal habitat loss, shorebird impacts	Overall lower emissions, higher traffic impacts	Temporary construction, permanent impacts to lateral beach access, aesthetics, and surfing	Benefits in footprint, no downdrift benefits	Beach width in footprint, no downdrift benefits	Anti-groin resolutions, letters, comments
No Action		-	Continued erosion	Beach condition unrestored	No construction impacts, erosion of beach	No air quality or traffic impacts	Continued loss of beach and related recreation opportunities	-	-	Action needed

Proposed TSP: Sand Nourishment Only with 10-year Renourishment Cycle

- Sand nourishment only with renourishment every 10 years over the 50-year project period is the least cost, technically sound, environmentally acceptable alternative that meets study objectives

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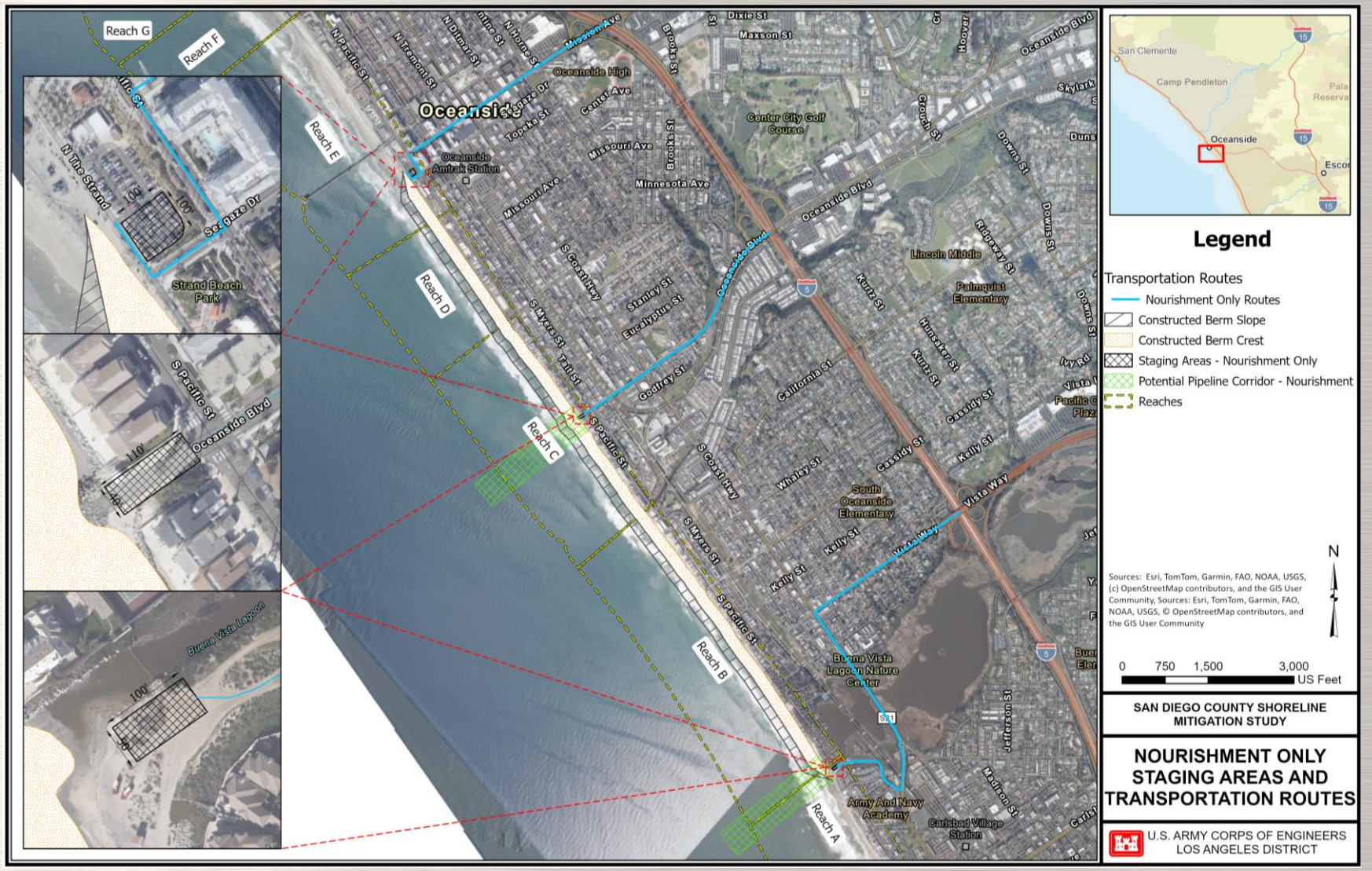
Beach Nourishment with 10-Year Renourishment Cycle

- Three staging areas identified for renourishment activities.
- Nourishment most effective if conducted starting in the south and moving northward up the coast.

Year	Nourishment Only 10-yr Cycle
2030	1,405,000
2040	1,155,000
2050	1,255,000
2060	1,105,000
2070	955,000
Cumulative	**5,875,000**

Cubic yards of sediment placed per nourishment cycle



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Beach Nourishment with 10-Year Renourishment Cycle

Credit: Whitlock Surf Experience, 2026

Plan Benefits

- Mitigation of erosion caused by Camp Pendleton Harbor and restoration of beach conditions.
- Increase in dry beach with benefits for coastal storm risk management.
- Creation of sandy beach habitat.
- Expanded economically valuable beach areas for local recreation and tourism.
- Enhanced aesthetics and community cohesion through additional beach area for recreation and gathering.
- Improvement of lateral beach access.

Plan Impacts

- Plan impacts were not found to be significant.
- Temporary disruption of beach access, recreation, and marine habitats from construction and addition of sediment.
- Air quality impacts from emissions would not equal or exceed applicability rates for criteria pollutants.

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Environmental Coordination

Tribal Nations Consultation
Request for Consultation in March 2023

National Environmental Policy Act (NEPA)
Environmental Assessment (EA)

Endangered Species Act (ESA)
Formal Consultation (NMFS),
Informal Consultation (USFWS)

National Historic Preservation Act (NHPA)
Letter of Concurrence

Fish and Wildlife Coordination Act (FWCA)
Coordination Act Reports - National Marine Fisheries Service & US Fish and Wildlife Service

Clean Water Act
Section 404(b)(1) Analysis has been drafted, Section 401 Water Quality Certification to be obtained

Clean Air Act
Emissions Analysis

Coastal Zone Management Act
Consistency Determination

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Study Process & Public Involvement Opportunities

Scoping & Alternative Formulation → **Alternative Evaluation & Analysis** → **Analysis of Recommended plan** → **Report to Congress**

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THANK YOU FOR YOUR PARTICIPATION!

ADDITIONAL WAYS TO COMMENT

Email (Must be received by Tuesday, June 30, 2026): San Diego County Shoreline Mitigation Study Email Address - SDCS@usace.army.mil

Mail (Must be postmarked by Tuesday, June 30, 2026)

U.S. Army Corps of Engineers
Los Angeles District
Planning Division
Attn: SD County Shoreline Mitigation Draft IFR Comments
915 Wilshire Blvd., Suite 1109
Los Angeles, CA 90017

FOR ADDITIONAL INFORMATION

Email list – send an email to SDCS@usace.army.mil with subject line "Email List" to be added to the distribution list for this project.

Website – visit the project website at https://www.spl.usace.army.mil/Missions/Civil-Works/Projects-and-Studies/San-Diego-County-Shoreline-Oceanside-Mitigation-Study/

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