



**San
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THE SPANISH VILLAGE BY THE SEA



Nature-Based Coastal Project Feasibility Study

Community Meeting #3

Thursday, July 18th, 2024



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Welcome & Introductions

- Leslea Meyerhoff, AICP, Coastal Administrator
- Chris Webb, Principal Coastal Scientist, Moffatt & Nichol
- Justin Peglow, Coastal Scientist, Moffatt & Nichol



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Nature Based Study Objectives

- Identify locally appropriate opportunities to retain sand & widen beach
- Complement existing & planned beach sand replenishment projects
 - ✓ USACE 50-year beach sand replenishment project
 - ✓ SANDAG RBSP III
 - ✓ OCTA Sand Placement Project
 - ✓ SCOUP Projects
 - ✓ South Orange County Collaborative Beach Sand Project
- Design for co-benefits: widen beach, enhance recreation & natural resources



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Purpose of Community Meeting #3

- Share revised design concepts
- Receive community input
 - Revise and /or fine tune designs
- Present draft design report in late 2024 for public review



moffatt & nichol

San Clemente Nature- Based Coastal Resiliency Project Feasibility Study

Revised Alternative Conceptual Schematics for Draft Feasibility Report

M&N – Justin Peglow & Chris Webb

July 2024



Design Concept Criteria

Design Components Include:

1. Community Resilience Benefit
2. Recreational Preservation or Enhancement
3. Ecological Benefit
4. Proof of Concept
5. Transferability / Scalability Beyond the Funded Project



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Phased Approach

The Entire Effort Depends on Wide Beaches to Succeed.

- Current Phase (Phase 0) – Large-Scale Beach Sand Nourishment
- Phase 1 – Sand Retention with Beach Sand Nourishment
- Phase 2 – Living Shorelines After Wide Beaches Exist



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Current Phase (0) –Beach Nourishment Efforts in 2024+

1. U.S. Army Corps of Engineers 50-Year Project. (251,000 cy every 5-6 yrs)
2. SANDAG RBSP III with Orange County Parks and Dana Point (TBD but City likely to request 300k cy or more)
3. OCTA Planning to deliver 540,000 cubic yards this year (2024)
4. Sand Compatibility and Opportunistic Use Program (SCOUP) (30k cy at North Beach this July)
5. OC Parks – 20,000 cy upcoast in Capo Beach July 2024

Phase 0 Project Locations





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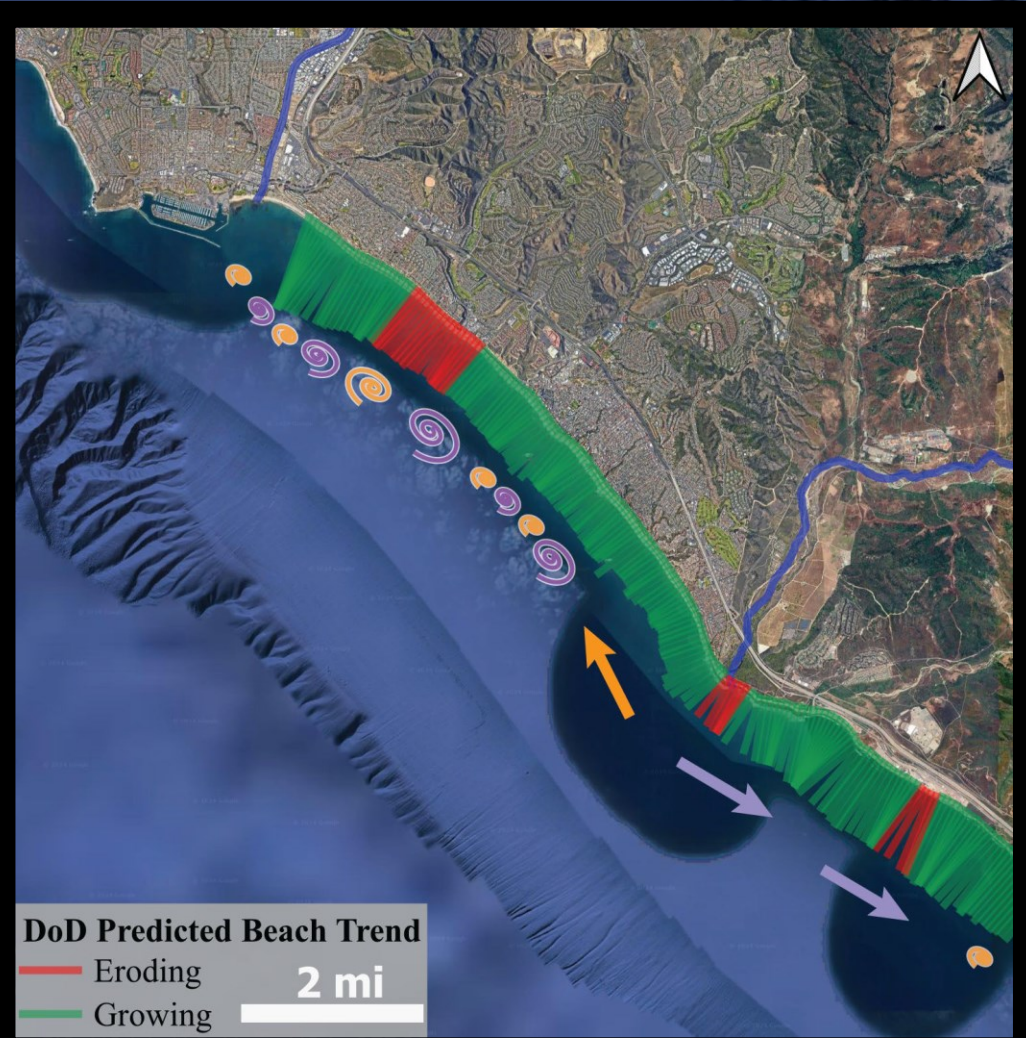
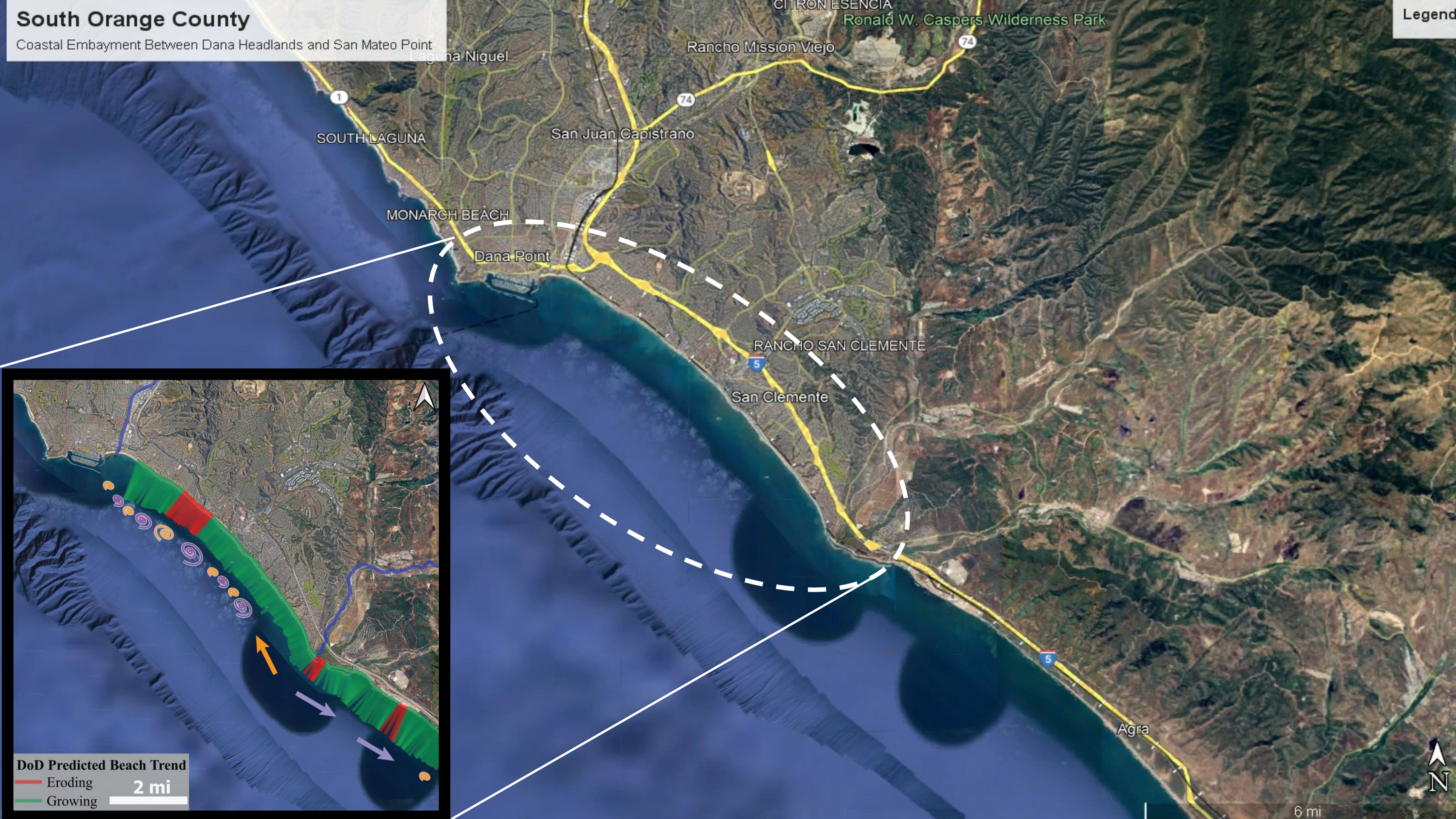
Sand Volume Needed Over 50 Years:~7 Million CY

- Assumes 250-foot-wide beach.
- Based on 1.5 cy of sand = 1 sqft of new beach.
- Soft goal of 140,000 cy per year => or 700,000 cy every 5 years.

South Orange County

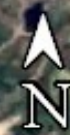
Coastal Embayment Between Dana Headlands and San Mateo Point

Legend



DoD Predicted Beach Trend
— Eroding
— Growing
2 mi

6 mi





San Clemente Conditions

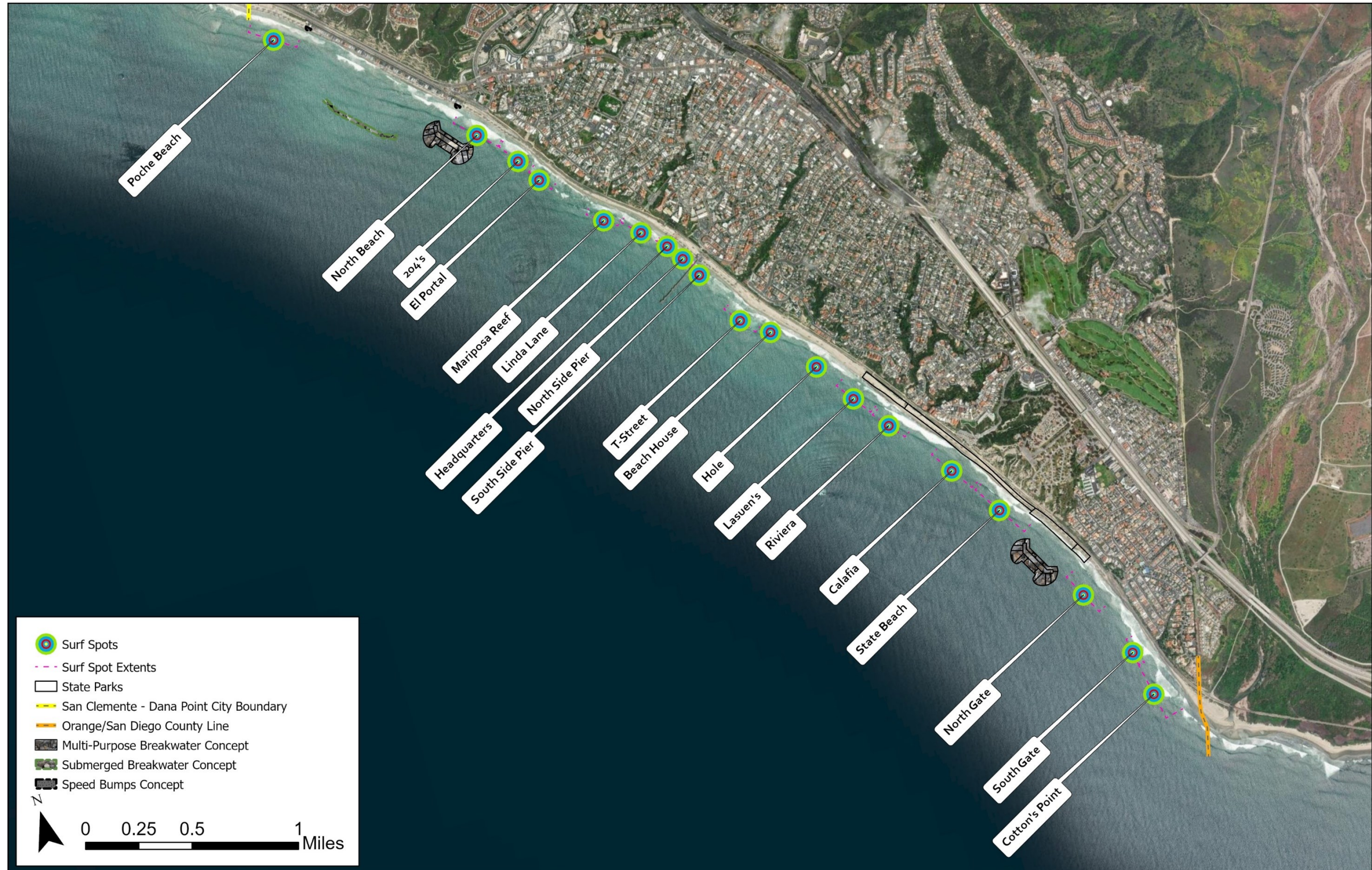
- Sand moves in both north and south directions depending on swell.
- Breakwaters would have the best effect and create the largest beaches.
- Reefs would also create beaches but smaller than those behind breakwaters.
- Small headlands could create additional beach width, slow sand movement.
- Impermeable groins would not work as well as breakwaters.
- Consider breakwaters with surfable edges (hybrid breakwater + reef).



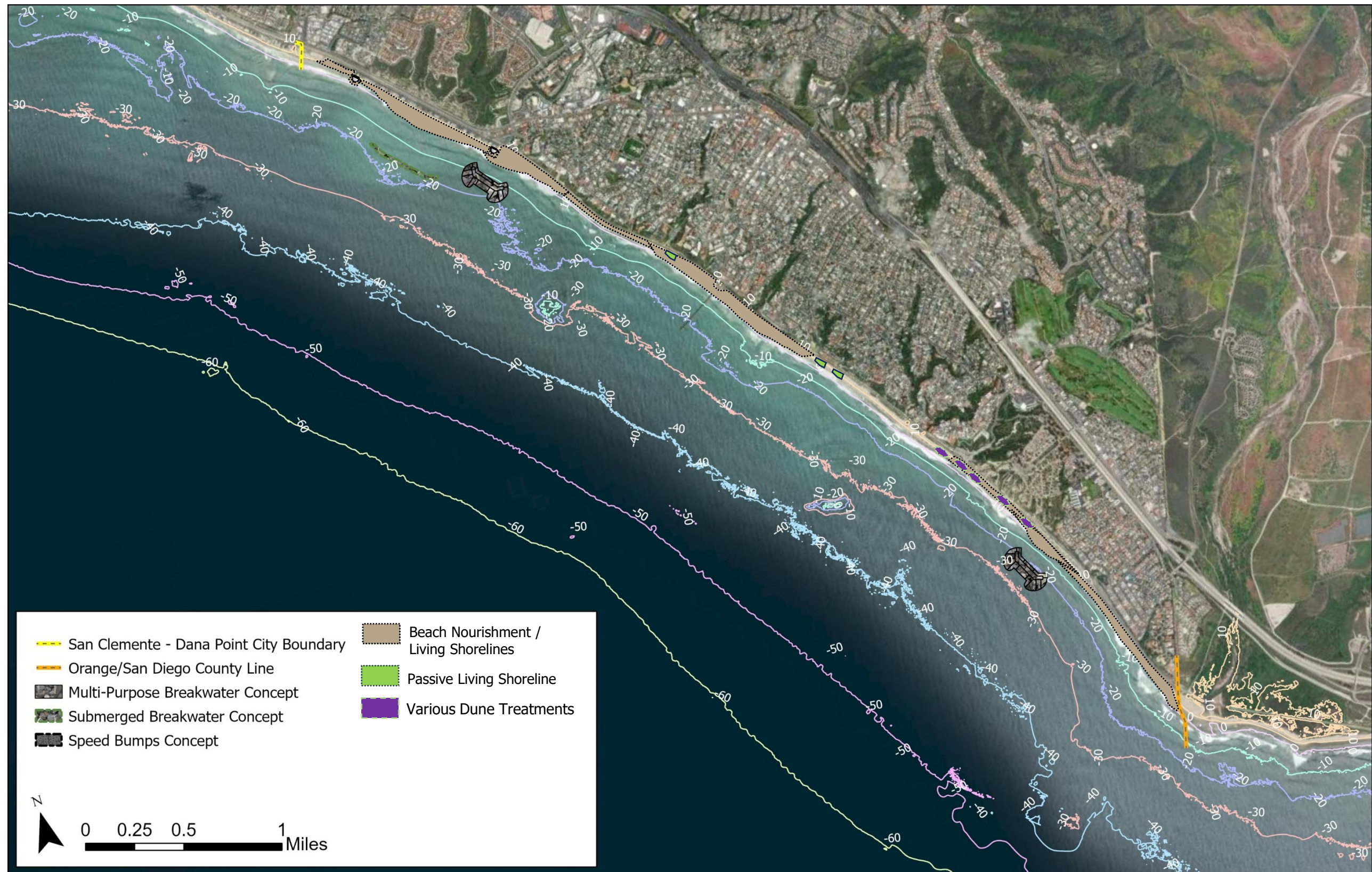
Phase 1: Sand Retention with Nourishment

- Install Breakwater Systems to Retain Beach Sand.
- Target Locations for Breakwaters: North End and South End of City.
- Determine Priority of Breakwaters at Capistrano Shores, North Beach, and State Beaches South.
- Likely Implement One as a Pilot for Monitoring, then Implement More if Monitoring Shows Positive Results.

City Surf Map and Proposed Phase I Projects






Proposed Phase 0, I, and II Project Locations



Capistrano Shores Living Breakwater + Sand "Speed Bumps"

Phase I

Phase 1 Project Concept

1. "Speed Bump" (Mini-headland) 
2. Pre-filled sand nourishment and eventual shoreline 
3. Submerged Vegetated Habitat Breakwater 



Capistrano Shores Reach

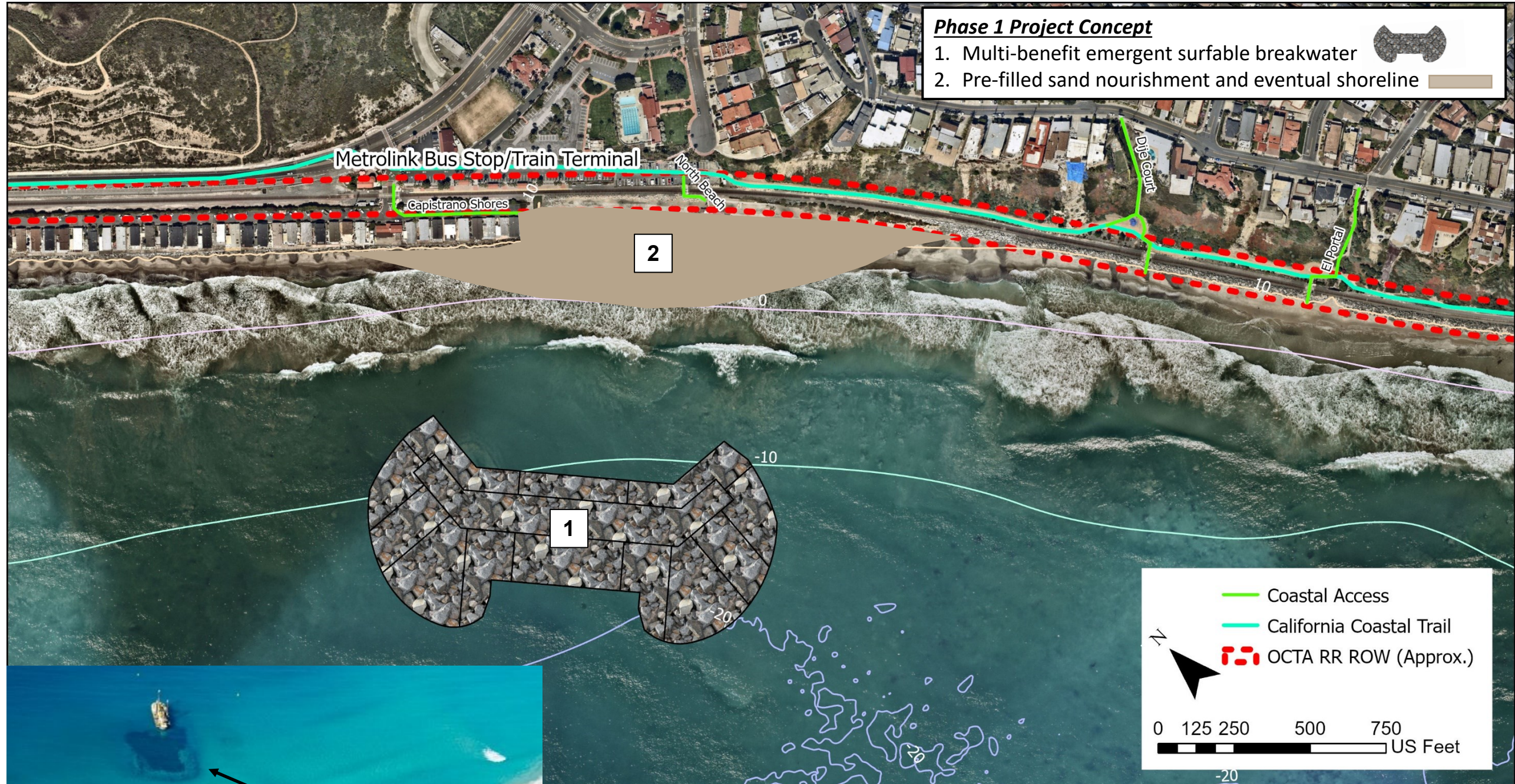
Real-world concept example: Salt Creek Mini-Headland (CA)

Real-world concept example: Santa Monica Breakwater (CA)

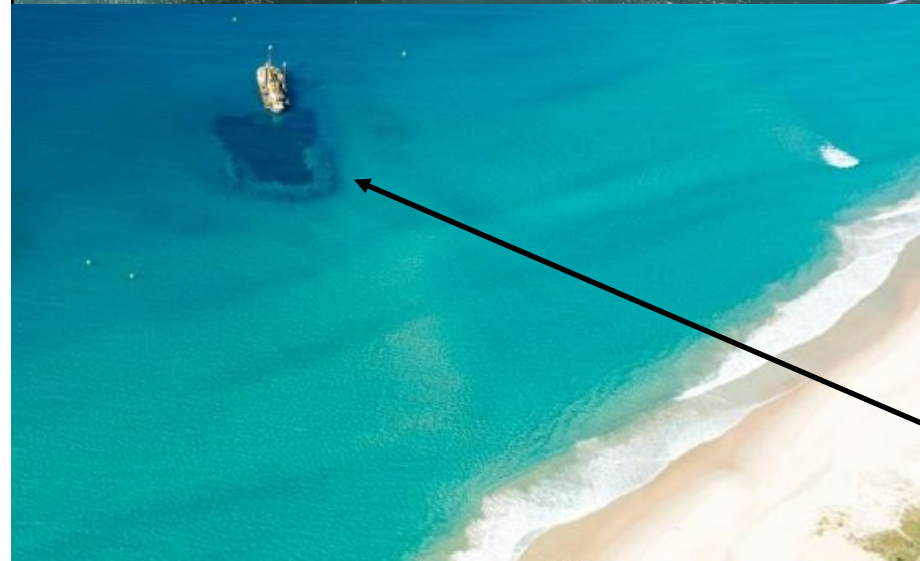


North Beach Multi-Benefit Breakwater

Phase I



North Beach Reach



Real-world concept example: Palm Beach Reef (AUS)

State Beach Multi-Benefit Breakwater

Phase I



State Beach Reach

Real-world concept example: Palm Beach Reef (AUS)





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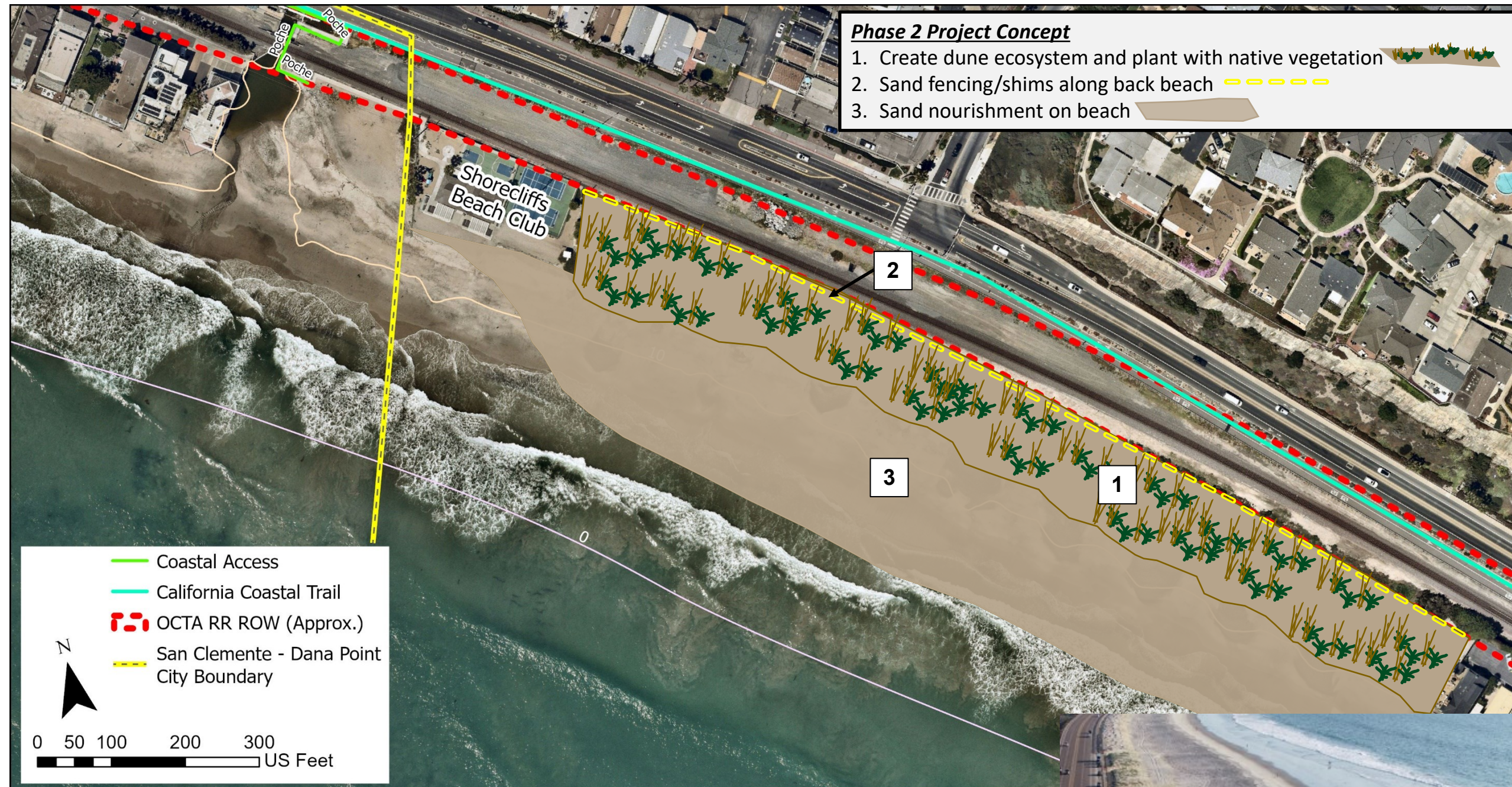


Phase 2 – Living Shorelines and Additional Beach Sand Nourishment After Wide Beaches Establish

- Install Various Treatments of Living Shorelines (Dune Habitat) as Beaches Grow.
- These Serve as Sand Reservoirs for Coastal Storm Event Protection and Create Important Habitat.
- Design Dunes to Not Conflict With Recreational Beach Use (Rear of the Beach After it is Widened).
- Target Locations for Dunes are throughout the City.

Shorecliffs Living Shoreline

Phase II Project Example



Shorecliffs Reach

Real-world concept example: Cardiff Living Shoreline (CA)



Phases and Timing

PHASES	TIMING
Phase 0 - Large-Scale Beach Sand Nourishment	Initiated in 2024 and will be ongoing as part of shoreline management and coastal resiliency strategy in the City long-term
Phase 1 – Sand Retention with Beach Sand Nourishment	5 to 10 years – Depends on Funding, Public Support, and Monitoring Results
Phase 2 – Living Shorelines with Beach Sand Nourishment After Wide Beaches Established	10+ years - Depends on Success of Nourishment and Rate of Beach Widening; Can be Concurrent with Sand Retention Projects



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Public Input

The City & Team would like to hear from you!

- Have you had a chance to review exhibits in the room?
- What do you think of the updated draft design concepts?
- Did we get the locations right?
- Did we miss any concepts?
- Community feedback is important to this process.



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Draft Nature Based Design Concept Memo

- Published Late July 2024
- Please submit comments online to the QR Code or web address →
- Comment period open through September 6, 2024
- Community input will be incorporated into Draft Feasibility Study published in late 2024



www.san-clemente.org/LCP



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Join the Project Mailing List
LCP@San-Clemente.org

All deliverables available on City Webpage
<https://www.san-clemente.org/LCP>



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Thank you for your time!