



Ventura Harbor
HOME OF THE CHANNEL ISLANDS NATIONAL PARK

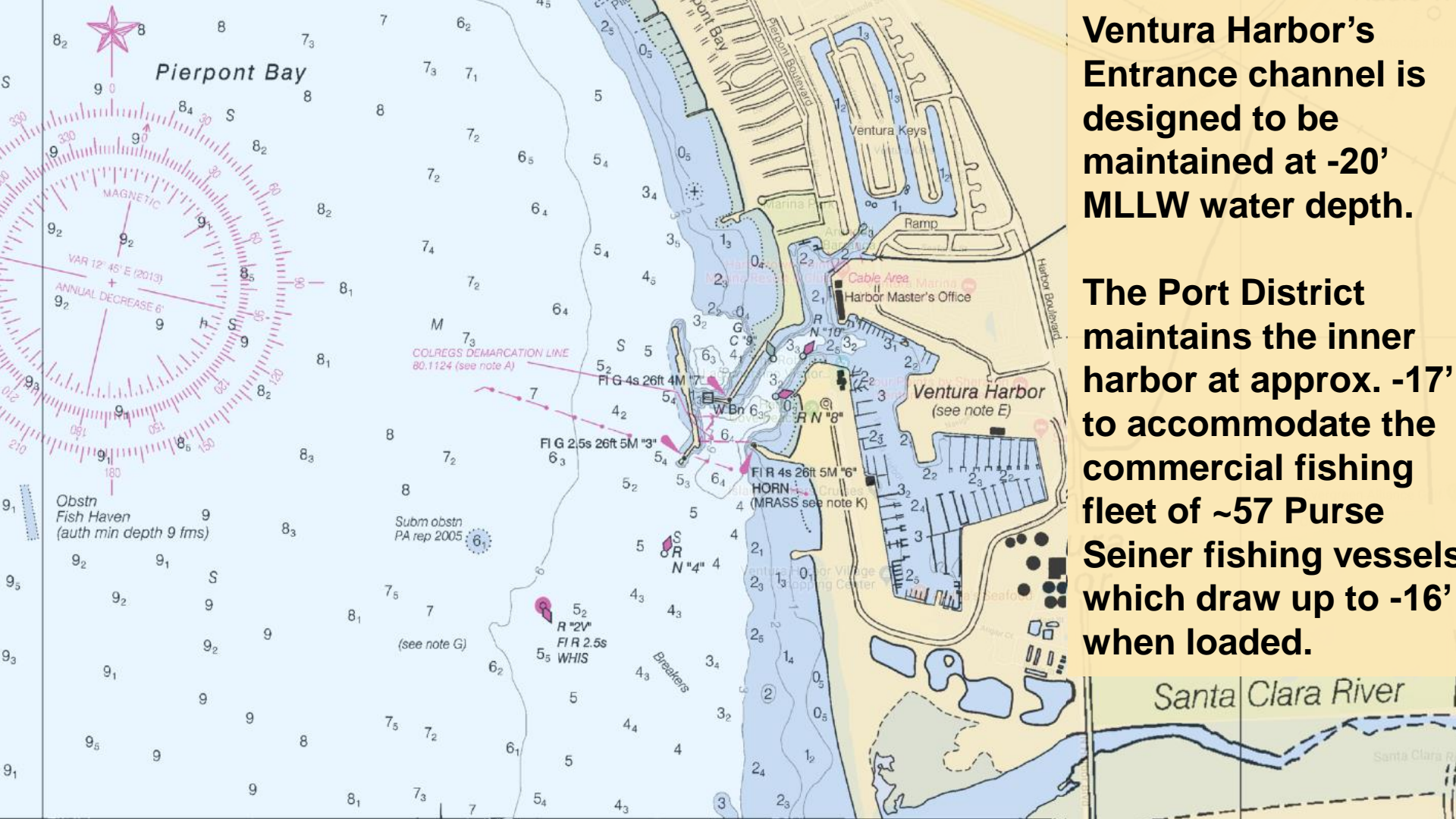
Ventura Harbor Dredging & Beach Nourishment

BEACON Sand Summit
February 18, 2021



Key Points

- Ventura Harbor Map
- Federal Dredging program
- Inner Harbor Dredging
- Beach Erosion
- Dredge Material Placement
- Beach Nourishment
- Summary



Ventura Harbor's Entrance channel is designed to be maintained at -20' MLLW water depth.

The Port District maintains the inner harbor at approx. -17' to accommodate the commercial fishing fleet of ~57 Purse Seiner fishing vessels which draw up to -16' when loaded.



Dredging of the Federal Navigation Channel

- In the 1950's, the state of California was building the Coast highway through Ventura.
- It was agreed that the state would excavate the harbor for highway construction fill material.
- The City of San Buenaventura was responsible for the initial harbor design and maintenance.
- In 1968, Congress directed the Corps of Engineers to take over responsibility for the navigation features of this harbor.



Dredging of the Federal Navigation Channel

- In 1969, when severe flooding of the Santa Clara River damaged the harbor, the Corps of Engineers repaired the damages and reinforced the levy between the Santa Clara River delta and the harbor.
- In 1971, an offshore breakwater was constructed to reduce shoaling at the harbor entrance.
- Currently, the Los Angeles District of the Corps of Engineers maintains the federal channel entrance and navigation features of the harbor and performs periodic (annual) maintenance dredging.



Dredging of the Federal Navigation Channel

- Because Ventura Harbor is not home to a US Coast Guard Station, it is imperative that the Harbor proactively work with federal elected officials and the US Army Corps of Engineers to advocate inclusion in the President's Budget and/or the Corps Work Plan
- Ventura Port District maintains all of the necessary permits to execute the dredging itself in the event that federal funding is not provided
- Annual dredging costs are approximately \$5.8 million per year – but the Ventura Port District's annual revenue is approximately \$9 million per year



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Ventura Harbor



Sand Trap

Arundell Barranca

Federal Channel Entrance

Surfer's Knoll Beach



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Federal Navigation Channel

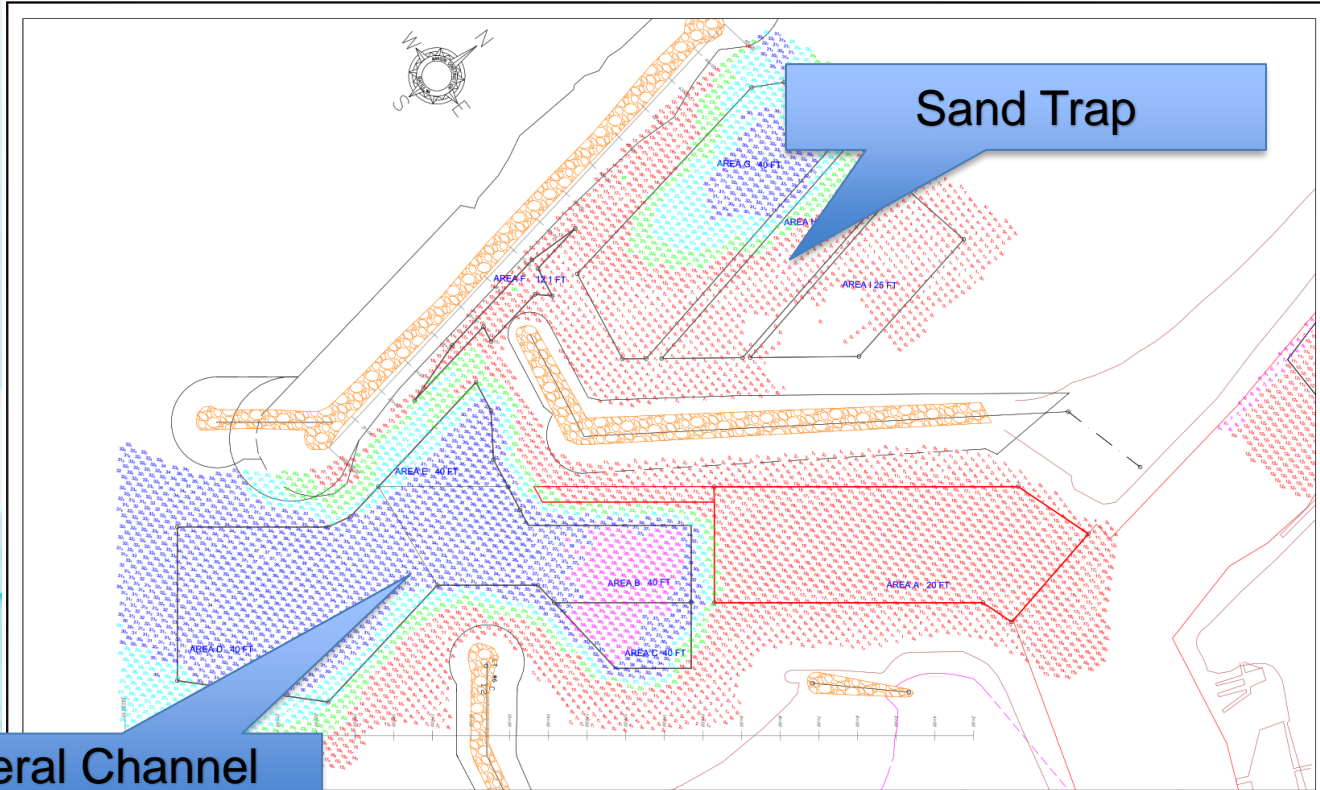


Sand Trap

Federal Channel
Entrance



Federal Navigation Channel



Federal Channel Entrance

Survey Date: 01/31/2021
 Date: 01/31/2021
 Drawn By: A. Slack
 Checked By: BM
 Drawing Name: Ventura Batmap

Equipment:
 Survey Vessel: Rustler
 Vertical: Tide Gauge, Echotrak MKII
 Horizontal: DGPS
 Datum: Horizontal: NAD 83, California Zone 5
 Vertical: MLLW

Red	less than 20.0'	Blue	30' to 37.9'
Green	20.0' to 24.9'	Magenta	38.0' to 39.9'
Cyan	25.0' to 29.9'	Black	40.0' and greater

**Ventura Harbor
 Maintenance Dredging
 2021**





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Dredging of the Inner Harbor

- Because it is not on an estuary, most of the inner harbor of Ventura does not require maintenance dredging.
- However, the Arundell Barranca does feed the channel connecting the Ventura Keys to the harbor entrance and is a major contributor of material that must be removed periodically.
- Typically, inner harbor dredging takes place every 2-5 years and moves an average of 30,000 cubic yards of material
 - ~6% of the federal program
- The Ventura Port District and the City of Ventura retain the obligation to maintain access to the Ventura Keys



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Inner Harbor Stub Channel



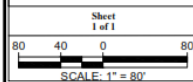
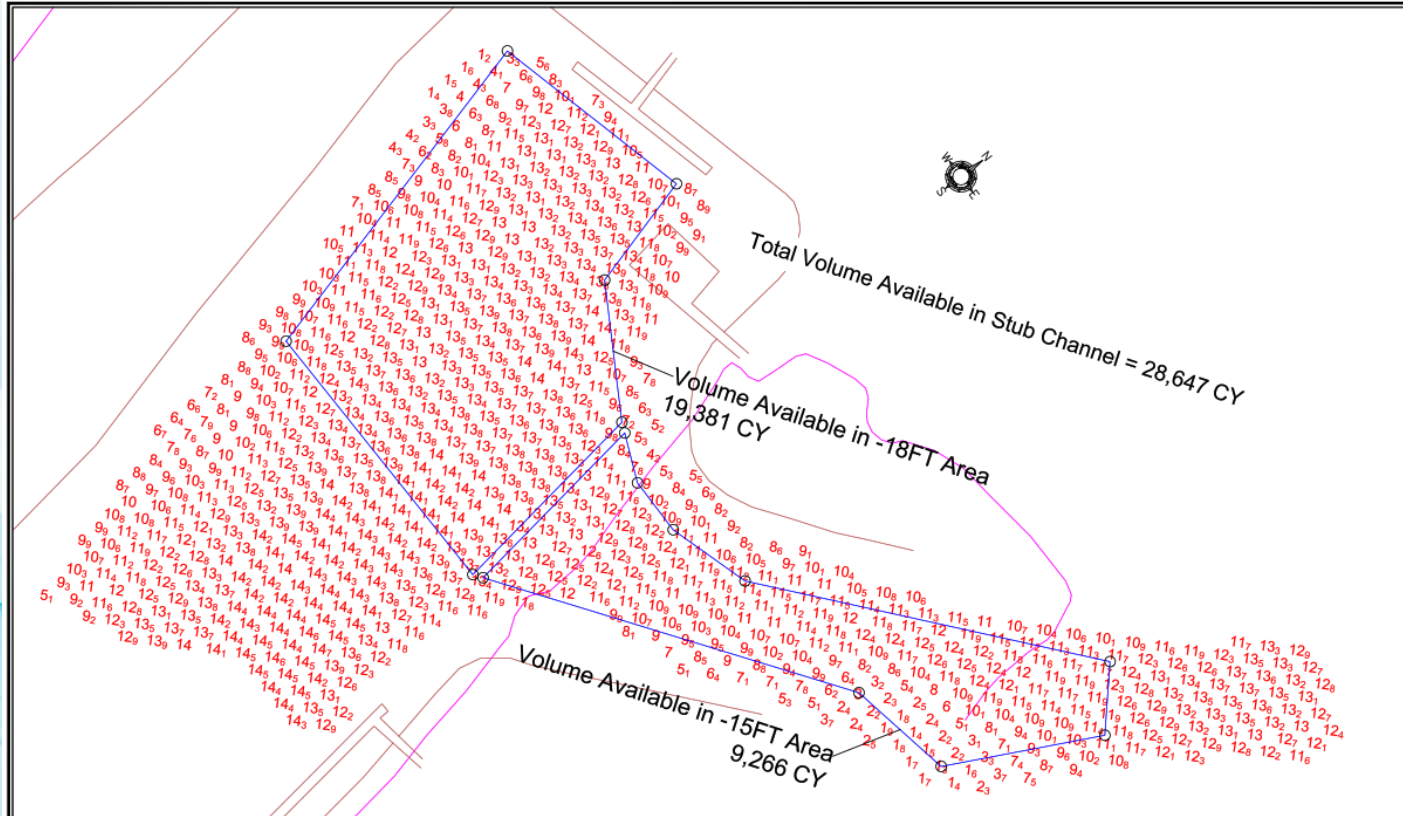
Arundell Barranca

© 2021 Google

Google Earth



Inner Harbor Stub Channel



Dredge H.R. Morris
Pre-Dredge Survey

Notes:
 Surveyed By: NV
 Survey Date: 02/13/2021
 Plan Date: 02/13/2021
 Drawn By: NV
 Checked By: SM
 Drawing Name: Ventura 2021 Monitor Batmap.DWG

Equipment:
 Survey Vessel: Raibler
Date:
 02/13/2021
 NAD 83, California Zone 2
 Vertical
 MSL W

FOR INFORMATIONAL USE ONLY

Batmap Legend:
 Standard Color Scale by Depth
 less than 20'F
 20'F to 25'F
 25'F to 30'F
 30'F to 35'F
 35'F and greater

Ventura Harbor
Maintenance Dredging



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Beach Erosion

- Each year, winter storm events significantly erode the beaches adjacent to Ventura Harbor
- Erosion frequently results in small cliffs on the beaches and erosion can extend to the toe of the dunes



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Beach Erosion (Feb 10, 2021)



Surfer's Knoll Beach



Beach Erosion (Feb 10, 2021)



Surfer's Knoll Beach

Dune Erosion



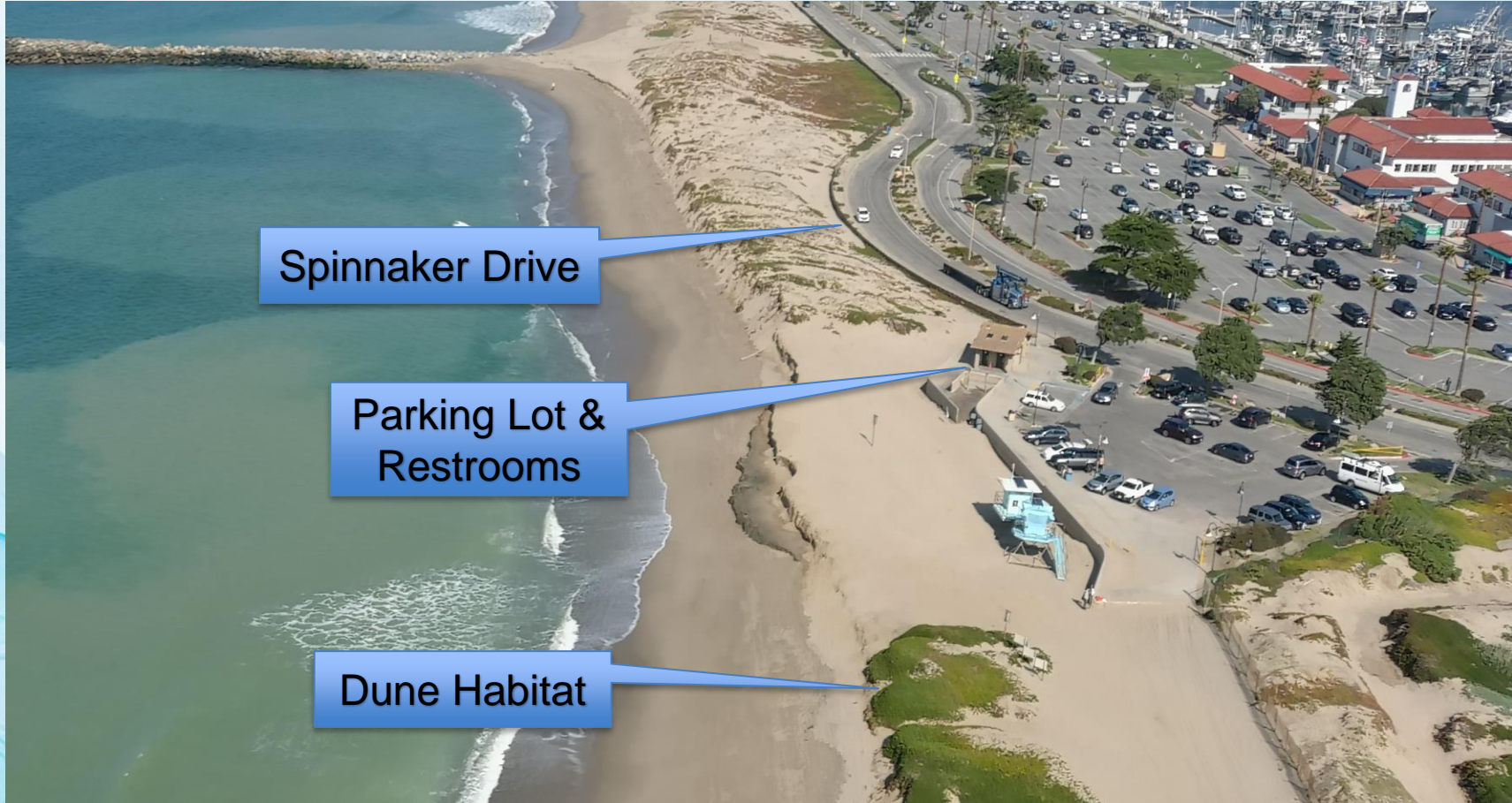
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Dredge Material Placement

- The federal navigation channel and sand trap consist principally of coarse grain sand suitable for beach nourishment.
- On average over the past 20 years, 550,000 cubic yards of material is dredged from the channel and sand trap
- The federal dredge material is placed on the Surfer's Knoll beach southward to the McGrath State Park property line.



Beach Erosion (Feb 10, 2021)





Dredge Material Placement

- The inner harbor dredge material is primarily (~70%) fine grain material and not suitable for beach placement
- The Ventura Port District and City of San Buenaventura have permits to allow the placement of inner harbor dredge material below the high-tide line at the mouth of the Santa Clara River...
...when the river mouth is open and the river is flowing.



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Inner Harbor Material

Wetlands

Santa Clara
River Mouth

Surfer's Knoll
Parking Lot





Beach Nourishment

- The dredge material placement restores Ventura Harbor beaches to provide for recreational use almost all season
- Maintenance of Surfer's Knoll beach is essential to protect the District's beach infrastructure as well as Spinnaker Drive (the only access point to the northwest side of the Harbor)
- Because placement adjacent to Ventura Harbor is consistent with the Federal Standard (meaning the lowest cost alternative), it remains the practical placement location (any more costly alternative must be paid for by a local partner).



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Beach Nourishment

Dredging Operations started on 3/28/19 and finished on 4/17/19. Work was performed by the 27-inch cutter suction dredge H.R. Morris. Approximately 490,000 Cy's of dredge material was placed south of Ventura Harbor. The beach fill commenced at the South Groin and extended southward 1500 ft ending approximately 350 ft south of Surfer's Knoll. The width of the beach fill is 250 ft. The visible footprint is outlined below.

There was 1 weather event that occurred during this dredge cycle. high swell and wind conditions interrupted dredging operations from 4/8/19 to 4/12/19.

Beach Fill Coordinates		
Pt #	Easting	Northing
1	6,178,817	1,913,085
2	6,178,559	1,913,026
3	6,179,047	1,911,640
4	6,178,783	1,911,589

Pipeline Information	
Discharge Diameter	27 inches
Floating Pipe:	1,680 ft.
Submerged Pipe:	1,120 ft.
Shore Pipe:	2,550 ft.



Placement Area:
1500' linear feet of
beach



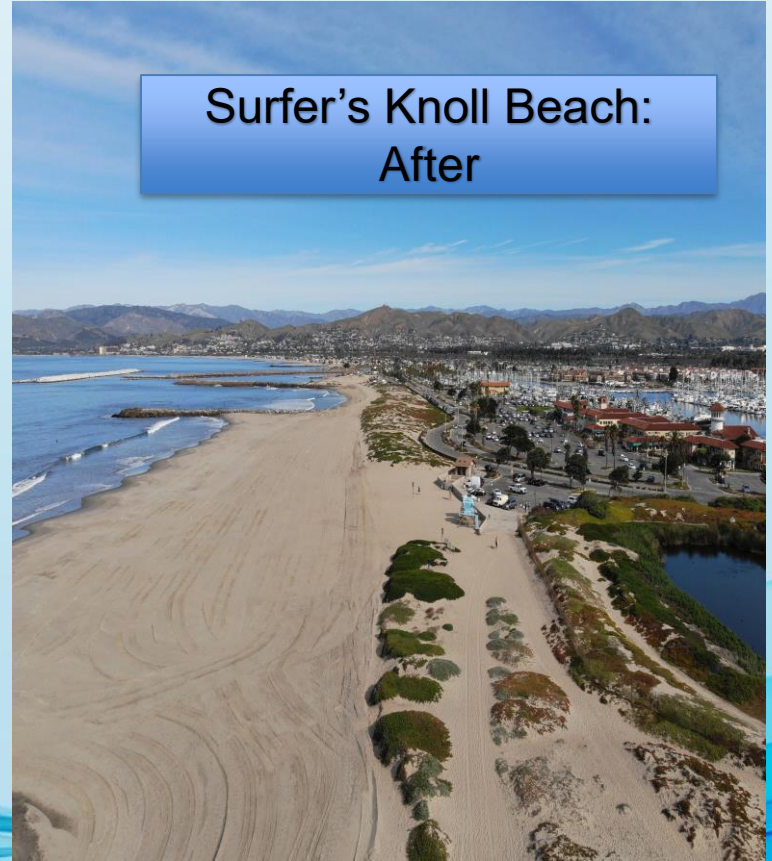
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Beach Nourishment

**Surfer's Knoll Beach:
Before**



**Surfer's Knoll Beach:
After**





Summary

- US Army Corps of Engineers annually maintains the Ventura Harbor Navigation Channel and restores approximately 1500' linear feet of beach with ~550,000 cubic yards of coarse grain sediment (sand)
- Periodically, the Ventura Port District and the City of Ventura cooperatively dredge a small portion of the inner harbor to maintain connectivity for the Ventura Keys to the navigation channel. That material is placed near the Santa Clara River mouth when the river is open.

Dredging is Underway!





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Thank you for your time.

Todd Mitchell

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