



Caring for Our Coast

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March 7, 2024

TO: Each Supervisor

FROM: Gary Jones, Director

SUBJECT: **REPORT BACK ON PROTECTING L.A. COUNTY'S BEACHES FROM COASTAL EROSION THROUGH BENEFICIAL REUSE OF SEDIMENT AND BY DEPLOYING LIVING SHORELINES (MOTION) – 120-DAY REPORT (ITEM 18, AGENDA OF NOVEMBER 7, 2023)**

On November 7, 2023, your Board instructed the Director of Department of Beaches and Harbors (DBH), with the assistance of the Chief Sustainability Officer, to report back in writing in 120 days with a strategy for beneficial reuse of dredged marina and ocean sediment and of the feasibility, permitting requirements, and other considerations for reusing sediment – regardless of source – on beaches and for departmental uses; and instructed the Director of DBH to report back within 120 days on any staffing or other resources needed to implement these strategies.

This report describes DBH's strategy to use dredged marina and ocean sediment as a sand source for beach nourishment. In addition, staffing and other resources needed to implement the coastal resilience strategies are outlined in this report.

Summary of Recommendations

DBH recommends pursuit of strategic partnerships to maximize the beneficial reuse of dredged marina and ocean sediment including the following:

- Assistance of the U.S. Army Corps of Engineers for transportation of future sediment dredged from Marina del Rey for Redondo Beach re-nourishment;
- Partnership with USACE towards a potential Federal project to mitigate the impacts of extreme coastal erosion on the Los Angeles County shoreline to include support of future re-nourishment efforts; and
- Investigation of known offshore sediment sources in the Santa Monica Bay for potential use in future re-nourishment of Zuma Beach.



DBH also recommends creation of a trust account for implementation of the coastal resilience strategy with multi-year funding to support efforts such as:

- Development of a Sand Compatibility and Opportunistic Use Program and other regional/Countywide efforts;
- Advancement of pre-construction activities for the recommended Living Shoreline demonstration projects; and
- Deployment of emergency repairs and/or replacement of public improvements e.g., in the event of extreme erosion caused by high tides, tall surf, and/or storms.

Funding for the recommended trust account would be secured through the annual County budgeting process – specifically, a share of net County cost (NCC) that is generated by DBH operating budget surplus monies. And while substantial efforts and funding are needed, in the immediate term, DBH recommends utilization of existing County staff and consultant contracts with aforementioned NCC along with grants to advance the coastal resilience strategies.

Overview of Beneficial Reuse Opportunities for Dredged Marina and Ocean Sediments

On February 7, 2024, as directed by your Board, DBH submitted a funding and outreach strategy to implement the coastal resilience adaptations, including three demonstration projects. Two of the projects, Zuma/Point Dume and Redondo, involve widening of the sandy beach by placing sand from elsewhere.

Beach widening, also known as nourishment, is commonly accomplished through dredging of material from the open ocean as well as ports and harbors. In general, sand traps are created when ports and harbors are located along ocean sediment transport pathways. For this reason, harbor maintenance dredging is required at varying frequency depending on location and other factors. Two small-craft harbors are located along L.A. County's mainland coastline: Marina del Rey (MdR) and Redondo Beach – King Harbor.

At MdR, sediment accumulates in both the north and south entrances from the Pacific ocean. Sediment trapped in the north entrance is transported by ocean currents and waves from the northwest and is comprised of beach-quality sand moving through the natural system. Conversely, the source of sediment trapped in the south entrance channel is Ballona Creek. Sediments discharged at the mouth of Ballona Creek are generally too fine for direct beach (onshore) placement and may contain contaminants carried by urban stormwater runoff.

MdR dredging is conducted by the US Army Corps of Engineers (USACE) under its mission to provide and maintain the nation's waterborne transportation systems. MdR dredge material has been beneficially reused for beach nourishment at Dockweiler Beach

(nearshore) and Redondo Beach (nearshore and onshore). MdR maintenance dredging is expected to continue producing sediment for future beneficial reuse for the foreseeable future. Here is an excerpt of past MdR maintenance dredging including beneficial reuse placement locations and volumes:

Table 1. History of Beneficial Reuse of Dredge Material from MdR.

Year	Dredge Material Placement Site	Approx. Quantity (Cubic Yards)
2000	POLB – Slip 2 ¹	390,000
2000	Redondo Beach (nearshore)	282,000
2007	Dockweiler State Beach (nearshore)	327,000
2012	POLA - Middle Harbor - Slip 1 ¹	471,000
2012	Dockweiler State Beach (nearshore)	150,000
2012	Redondo Beach (onshore)	75,000
2012	Redondo Beach (nearshore)	83,000
2017	Dockweiler State Beach (nearshore)	388,000
2024	Dockweiler State Beach (nearshore)	324,000 ²

¹ Port of Long Beach (POLB) and Port of Los Angeles (POLA) received material unsuitable for ocean or beach placement. ² Estimate as of February 2024. Additional removal of 150,000 cy pending federal appropriation in April 2024.

The typical processes for beneficial reuse of MdR and King Harbor material are described below:

- Dockweiler Beach: Beach quality sediment from the MdR entrance is removed, typically via clamshell dredge, and transported via bottom-dump barges and placed in nearshore placement area off Dockweiler Beach. The sand placement area is close enough to shore to allow the sand to be transported by wave action and nourish the adjacent beaches.
- Redondo Beach: Similar to Dockweiler, sand dredged from the MdR entrance is transported and placed in a temporary nearshore placement area off Redondo Beach. The nearshore placement area off Redondo Beach is a temporary deeper water storage area to provide source material for beach nourishment via future hopper dredging to pump the sand directly onto the beach. This same nearshore placement area can be used for beach quality material from King Harbor maintenance dredging to nourish Redondo Beach.
- Zuma Beach: Sand from MdR could be beneficially re-used at beach sites farther west, such as Zuma Beach, using the same procedure as for Redondo Beach.

As for ocean sediment, significant offshore sand sources exist within Santa Monica Bay to nourish County beaches. Previous assessments conducted in 1973 and 1978 estimated that 26 million cubic yards of suitable beach sand was available (L.A. County Coastal Regional Sediment Management Plan, 2017). Further investigation of the offshore sand sources is required to quantify the compatible beach quality sand. Beach nourishment using open-ocean offshore sand deposits is typically conducted via hopper dredge. Self-contained vessel pumps vacuum sand from the offshore borrow area into hopper storage on the vessel. The vessel then moves to the location off the receiver beach area where it attaches to a pipeline and pumps the sand onto the beach for spreading by earthmoving equipment. This sand source could be applied at receiver sites further west e.g., Zuma Beach.

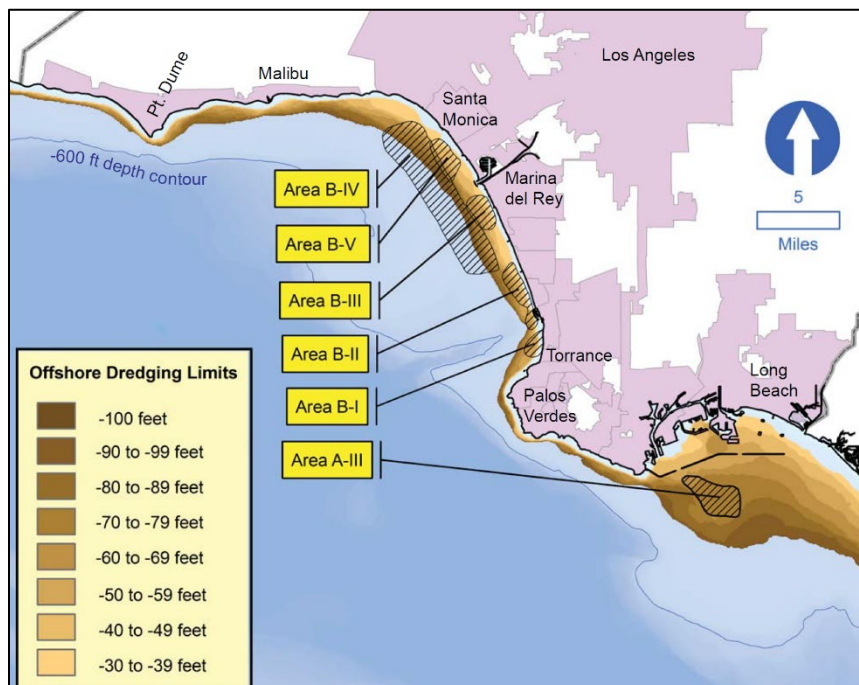


Figure 1. Location of offshore sediment deposits as determined from past reconnaissance field studies. The black hatched areas are the locations believed to contain the largest reserves of beach compatible sand that may be utilized for beach nourishment. The quality and suitability of the remaining off shore deposits is less known. The brown color bands shows the extent of bottom depths between -30 and -100 feet Mean Lower Low Water where sand could be mined if available. [Credit: Los Angeles County Coastal Regional Sediment Management Plan (CRSMP), 2017].

Strategy for beneficial reuse of dredged marina and ocean sediment

Dredge material from MdR was beneficially reused for Redondo Beach nourishment in 2000 and 2012. At this site, sand dredged from the harbor entrance channel was placed in a temporary nearshore placement area and pumped onshore via hopper dredge later. DBH entered into a Memorandum of Agreement with the USACE and contributed \$3.5

million and \$5.3 million to the respective 2000 and 2012 nourishment projects. Recent amendment to Section 125(a)(2)(C) of the Water Resources Development Act (WRDA) of 2020, which amends Section 204(d) of WRDA 1992 (33 U.S.C. 2326(d)), encourages beneficial use placement of dredged material during a Federal Navigation Project and authorizes USACE to share in the incremental cost with non-Federal sponsors, such as Los Angeles County, through the Dredged Material Management Plan.

DBH recommends that the County request USACE's assistance with beneficial use (BU) of MdR sand for Redondo Beach nourishment during the next dredging cycle (tentatively Federal Fiscal Year 2027/2028). According to USACE's current policy, the non-federal sponsor will fund 35% of the incremental cost of BU placement that is above the Federal standard (base plan) costs. USACE will be responsible for obtaining necessary permits for dredging and transportation, and securing dredging contractor, and the County will be responsible for preparation of the receiving site, including design, permitting and environmental documentation. In addition, DBH recommends establishing a regular Redondo Beach nourishment interval with USACE for coordination of subsequent renourishment efforts to occur approximately every 15 years. DBH will continue alternating placement of MdR sediment nearshore at Dockweiler between Redondo renourishment events. DBH will monitor and assess the effectiveness of Redondo Beach renourishment for potential future adaptive management of the renourishment strategy.

As a cost saving strategy, DBH will work collaboratively with USACE towards alignment and leveraging of multiple beach nourishment projects on the west coast. Due to the the high fixed costs of oceangoing hopper dredge mobilization, it is advantageous to coordinate future Los Angeles County beach nourishment activities to align with multi-year beach fill Federal projects currently under way in southern California, which utilize offshore borrow sites and oceangoing hopper dredges. With the expanded application of ocean-going hopper dredges on the west coast for said projects, the incremental cost to pump the sand stored in the temporary nearshore placement areas should be low compared to other sand sources. This cost sharing opportunity would also apply to offshore sand sources.

Regulatory permit and approval process

Placement of sand on beaches requires permits and approval from several jurisdictional agencies. The first step is to develop the "Project Description" pursuant to the California Environmental Quality Act (CEQA) and possibly the National Environmental Policy Act (NEPA). The Project Description provides the basis for environmental review and impact analyses, and includes the project objectives, locations of the borrow sites and receiver beaches, limits on sediment quantity and quality, staging and access locations, placement methods, construction timing, project duration, and identification of required agency permits and approvals.

Once the Project Description is developed, a CEQA Initial Study (IS) is prepared. The IS may determine that an Environmental Impact Report is required. Los Angeles County will

serve as the CEQA Lead Agency. Mitigation measures may be identified to avoid, minimize, or reduce potential impacts.

Following approval of the Final CEQA document, DBH will submit permit applications to various federal, state, and regional agencies. Agencies with jurisdiction over beach nourishment projects in Southern California and their roles are described in Attachment 1. Permits/approvals issued by each agency are specified where applicable.

Resources Needed for Implementation

DBH anticipates that substantial efforts and funding are needed to implement its coastal resiliency strategies. Table 2 summarizes the resource needs. DBH staff will continue leading the efforts as a program/project manager responsible for managing consultant contracts using the existing DBH As-Needed Master Agreements. Technical support for grant writing and partnerships will be funded by the DBH operating budget while the demonstration projects themselves will be funded by County's Measure A Annual Allocation to DBH as well as external grants. DBH will also initiate a coastal resiliency implementation planning effort to address L.A. County's entire mainland coastline. To this end, A USACE feasibility study will be pursued for potential future Federal project as well. And as the coastal resilience strategies are implemented, data will be collected, and resource levels evaluated and assessed for potential future resource requests (e.g., staffing positions) with a focus on long-term sustainability. Board approval will be sought for project delivery authority e.g., DPW, USACE.

In support of the above, DBH recommends creation of a trust account with multi-year funding to advance efforts such as:

- Completion of a Sand Compatibility and Opportunistic Use Program and other regional/Countywide planning efforts;
- Advancement of individual projects through pre-construction (feasibility, design, environmental, jurisdictional permitting, fundraising) prior to creation and funding of individual capital project accounts; and
- Implementation of emergency mitigation measures e.g., Point Dume/Westward Beach Road rock revetment and Redondo Beach upper walkway reconstruction.

Funding for the recommended trust account would be secured through the annual County budgeting process – specifically, a share of net County cost (NCC) that is generated by DBH operating budget surplus monies.

Lastly, here is a table listing expected upcoming strategies and resources needed to advance coastal resilience:

Table 2. Resources needed for Coastal Resiliency Implementation.

Task	Approximate Cost	Funding Source
Technical Support for Grant Writing and Partnerships	Up to \$200,000 per year for 5 years	DBH operating budget/coastal resilience fund
Dockweiler Project: Planning, engineering, design, permitting and construction	\$2.8 million	Measure A Annual Allocation
Zuma/Point Dume Project: Planning, engineering, design, permitting	\$1 million	Measure A Annual Allocation
Redondo Project: Planning, engineering, design, permitting	\$1 million	Measure A Annual Allocation
Zuma/Point Dume Project: Construction	\$36 million	Federal/State/local grants; potential cost-share with USACE
Redondo Project: Construction	\$26 million	Federal/State/local grants; potential cost-share with USACE
Sand Compatibility and Opportunistic Use Program Development	\$600,000	DBH operating budget/coastal resilience fund
County-wide Coastal Implementation Planning/Coordination Effort	To Be Determined	DBH operating budget/coastal resilience fund; Federal/State grants
Emergency Contracts	To Be Determined	DBH operating budget/coastal resilience fund

Please let me know if you have any questions or concerns.

GJ:WRO:ei

c: Beach Board Deputies
Executive Office of the Board of Supervisors
Chief Executive Officer
Chief Sustainability Officer
Department of Public Works

Attachment

Attachment 1. Jurisdictional Agencies, Roles and Permits.

Agency	Role	Permit	Notes
United States Army Corps of Engineers (USACE)	The primary federal permitting agency responsible for navigation and protection of aquatic resources under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.	Section 10 and 404 Permits	Issuance requires USACE to consult with the National Oceanic Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), and United States Environmental Protection Agency (USEPA). If the action may have effects on a threatened or endangered species, an Incidental Take Statement will be required from the USFWS and/or NMFS as part of a Biological Opinion. The action will be reviewed pursuant to Section 106 and 110 of the National Historic Preservation Act. As part of this process the USACE will consider the effects of the proposed undertakings on historic properties/structures.
United States Environmental Protection Agency (USEPA)	Advises the USACE on compliance with Clean Water Act Section 404(b)(1) guidelines and sediment or water quality impacts to habitat and biological resources. Concurs on Marine Protection, Research and Sanctuaries Act (MPRSA) issues and has joint enforcement authority for the federal Clean Water Act with the USACE	None	
National Marine Fisheries Service (NMFS)	Advises the USACE on issues related to fisheries, such as essential fish habitat protected under the MPRSA and selected endangered species protected under the federal Endangered Species Act (ESA).	If the action may have effects on ESA-listed species and/or designated critical habitat, a Biological Opinion will be issued.	
United States Fish and Wildlife Service (USFWS)	Advises the USACE on issues related to wildlife and fisheries protected by the federal ESA (Section 7 Consultation).	If the action may have effects on ESA-listed species and/or designated critical habitat, a Biological Opinion will be issued.	

Agency	Role	Permit	Notes
California Coastal Commission (CCC)	Enforces consistency with the California Coastal Act and federal Coastal Zone Management Act. Areas of concern include compliance with Certified Local Coastal Program (LCP) policies/regulations, public access, parking and recreation, habitat and biological resources, sediment transport, and water quality.	Coastal Development Permit (CDP), CDP Waiver or Exemption	
California State Lands Commission (CSLC)	State agency with jurisdiction over ungranted submerged lands and tidelands seaward of the Mean High Tide Line (MHTL). Agency concerns are similar to the CCC and include habitat and biological resources, public access and recreation, sediment transport, and water quality.	Lease of State Lands	Only required if placement is on ungranted tidelands at or below the MHTL. A MHTL survey must be performed prior to lease approval.
Regional Water Quality Control Board (RWQCB)	State agency tasked with protection of water quality and evaluation of beneficial reuses of sediment.	Clean Water Act Section 401 Water Quality Certification	Waste Discharge Requirements (WDRs) may be required when discharging fluidized dredge material.
California State Department of Parks and Recreation (State Parks)	Issues permits for projects located within California State Parks. Primary areas of concern are access and recreation, water quality, sediment transport, habitat, and biological resources.	Encroachment Permit or Right of Entry Permit	Required if the receiver site or staging area is located within a State Park or State Beach.