Beneficial Use Permitting Guidelines

I. Introduction

In 2021, NOAA added a new definition for "beneficial use of dredged material" to Monterey Bay National Marine Sanctuary (MBNMS) regulations and clarified NOAA's ability to authorize beneficial use of suitable dredged material for habitat protection and restoration purposes within MBNMS. This regulatory change was conducted so that suitable harbor dredge material from the four local harbors can be used for habitat protection and restoration projects. For the purposes of the "beneficial use of dredged material" definition, "habitat protection" means placing sediment at sites in the sanctuary to protect against habitat degradation and reduce the need for future habitat restoration. As an example of how habitat protection may proactively reduce the need for future habitat restoration, a well-designed project could help minimize coastal erosion by providing a buffer of protection during seasonally dynamic storm cycles that could otherwise remove or replace large volumes of sand. Furthermore, when a coastal beach habitat is restored or protected, the adjacent upland resources such as shoreline infrastructure may also be protected. NOAA amended the sanctuary-wide regulations to add a definition for the phrase "beneficial use of dredged material" at 15 CFR § 922.131:

> *"Beneficial use of dredged material means the use of dredged material removed from any of the four public harbors adjacent to the sanctuary (Pillar Point, Santa Cruz, Moss Landing, and Monterey) that has been determined by the Director to be suitable as a resource for habitat protection or restoration purposes only. Beneficial use of dredged material is not disposal of dredged material."*

In addition, NOAA amended 15 CFR § 922.132(f) by inserting the following sentence immediately before the last sentence in the existing paragraph:

> *"For the purposes of this Subpart, the disposal of dredged material does not include the beneficial use of dredged material as defined by 15 CFR § 922.131."*

This action clarifies NOAA has the authority to review and permit beneficial use of dredged material projects within the sanctuary (i.e., below the mean high water line) for the purposes of habitat protection and restoration.

Suitable dredged material is allowed for beneficial use within MBNMS, provided it complies with U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) standards for grain size and contaminant levels, as defined by the Clean Water Act, as well as MBNMS criteria.

Potential sediment sources include the following. For more information, refer to the [2021 MBNMS Regulations] in the Federal Register.

- (rule III A.2. b) sediment from local harbors adjacent to the sanctuary
- (rule III A.2. c) upland and onshore sediment sources
- (rule III A.2. d) offshore sources within the sanctuary

Potential sediment placement options include within the sanctuary boundaries, outside the sanctuary boundaries such as above mean high water, or along the 12 mile coastline off San Francisco, Daly City, and Pacifica.

The four harbors immediately adjacent to the sanctuary, and no other harbors, are considered eligible sources of material for protecting or restoring habitats for several reasons. First, the four harbors and the sanctuary are in the same local sediment transport cell, which means that the sediments that settle in the four harbor channels generally come from the same sources as those that settle in the sanctuary. Local sediments are not likely a source of an introduced species, which are prohibited from being introduced into the sanctuary by MBNMS regulations (15 CFR 922.131 and 922.132(a)(12)). Second, if the four harbors adjacent to the sanctuary did not exist, sand and other sediment would not settle in the harbors and would thus remain in the coastal transport cell. Therefore, the regulatory clarifications regarding the permitted use of suitable dredged material from the four named harbors for beneficial use projects achieve the intent of helping restore the normal transport of sediment along the coast within the sanctuary.

II. Permitting Process

At least two activities, if they are conducted within the sanctuary, related to beneficial use of dredged material will need to be permitted by MBNMS because they are prohibited activities:

1. Alteration of the submerged lands of the sanctuary or placement of material on or in the submerged lands of the sanctuary (e.g., to collect sediment samples, to place the material and to lay pipelines) (15 CFR § 922.132(a)(4))
2. Discharge of material into the sanctuary (15 CFR § 922.132(a)(2)(i))

Proposed projects involving use of dredged material are eligible for approval by MBNMS if the projects demonstrate a sanctuary habitat protection or restoration purpose under the definition at 15 CFR §§ 922.11 and 922.131, and if the projects otherwise meet the permit or authorization procedures and review criteria described in 15 CFR §§ 922.48, 922.49, 922.133, 922.30, 922.32, and 922.33.

MBNMS uses an established process for approving disposal of dredge material from the four public harbors (Pillar Point, Santa Cruz, Moss Landing, and Monterey) in designated disposal sites (e.g., SF-12 and SF-14) within MBNMS. For example, MBNMS collaborate with other agency staff and MBNMS can authorize other agency permits, such as the California Coastal Commission's Coastal Development Permit. A similar process is used for applicants to place beneficial dredge material from the four public harbors for habitat protection and restoration purposes in locations of the sanctuary other than the designated proposal sites. However, placement of beneficial use material might require two separate permits or authorizations. For example, if the entity performing the beneficial use of dredge material is not the same entity as the one conducting the dredging operations, each entity might have to apply separately for an authorization or permit. Another example occurs when an entity would have to first collect sediment samples within MBNMS prior to designing and conducting the beneficial use project.

III. Information Needed for Permit Application

This section describes the information needed to submit a complete permit application.

Providing up-to-date and detailed information about proposed dredging and beneficial use activities allows MBNMS to determine how to minimize impacts to sanctuary resources while allowing the continued operation of our local harbors. In addition to the standard instructions for the NOAA Office of National Marine Sanctuaries (ONMS) permit application, the following information should be included in an application for dredge beneficial use in MBNMS:

1. Request an U.S. Army Corps of Engineers (USACE) led inter-agency meeting. This meeting is not required, yet provides a venue for USACE, MBNMS, and other agencies to participate and ask questions with the project lead: https://www.spn.usace.army.mil/Missions/Regulatory/Interagency-Meetings/
   a. Information to bring to the meeting includes:
      i. Project purpose
      ii. Any alternatives being considered
      iii. Any known sensitive issues or controversies about the project
2. Submit an ONMS permit application with the following information:
   a. Define the purpose and goals of the project;
   b. Provide a detailed description of the beach segment where the beneficial use will occur;
      i. Length and width of placement area
      ii. Total area of placement of material within the sanctuary (below mean high water)
      iii. Quantity of material
      iv. Habitat(s) in placement area (e.g., sandy beach)

v. Map of area and sediment sample locations
vi. How long the operation will take (e.g., the starting and ending dates for the material to be placed at the site)
vii. Anticipated effects on the sanctuary or sanctuary resources. Effects can be direct and indirect and beneficial or adverse:
    1. Direct effects are those effects caused by the permitted action occurring at the same time and place as a result of this activity. For example, the direct adverse effects of dredge material placement could include burial of flora/fauna, turbidity, and sedimentation of adjacent communities. Describe the anticipated level and scope of disturbance to species, habitats, or maritime heritage resources from sediment movement. Describe effects to individuals or populations from biological sample collection. If geological sample collection is proposed, explain how much of the seafloor will be disturbed and for how long.
    2. Indirect effects are those effects caused by the action later in time, or farther removed in distance, or incidental to other species or habitats as result of the activity, but still reasonably foreseeable. For example, the indirect effects of channel dredging may include increased vessel use to allow for deeper draft vessels. If heavy equipment use is proposed, describe its potential to cause adverse or beneficial impacts to species or habitats later in time.

c. A description of how sediments will be transported to the site (e.g., submerged pipeline, trucks, or by barge);
d. Sampling and Analysis Plan for harbor dredge material, including reference to the following;
    i. Include all sections required by U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), and Regional Water Quality Control Boards per Section 404 of the Clean Water Act. This is based primarily on the USACE/EPA document titled Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. - Testing Manual (aka Inland Testing Manual)
e. Description of sediment sample collection;
    i. Provide detail of sample locations within MBNMS (i.e. beach segment)
    ii. Provide detail of sample collection within the harbor of the material to be dredged
    iii. Include mechanism of collection, treatment of the sample (i.e. composite) and quantity of sample collected
f. Grain size analysis and distribution: gravel (>2.00 mm), very coarse sand (1.0 -2.0 mm), coarse sand (0.5 - 1.0 mm), medium sand (0.25 - 0.50 mm), fine sand (0.125 - 0.25 mm), very fine sand (0.0625 - 0.125 mm), silt (0.0039 - 0.0625

mm), clay (<0.0039 mm), percent fines (silt and clay combined) per method American Society for Testing and Materials D4464 (M);

    i. Grain size must be >80% sand to be eligible for beneficial use on beaches.

g. Additional analysis will be required if there are any exceedances of water quality objectives based on the California Ocean Plan. This may include toxicity analysis or bio-accumulation analysis depending on the characteristics of the chemical in question. Organic compound classes of priority pollutants with the greatest potential to bioaccumulate are polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PABs), pesticides, and some phthalate esters (EPA/USACE 1998). If the water is not fully decanted off the sediment in the harbor, decant water analysis may be required and will be compared with the California Ocean Plan water quality objectives or Central Coast Regional Water Control Board Water Discharge Requirements Program;
h. Additional analysis (similar to g. above) may be required if results exceed background levels of pollutants of concern as compared to the beach reference samples and/or the average ambient samples collected from Monterey Bay or San Francisco Bay;
i. A description of the reports, record-keeping, and any logs, including endangered/threatened species observation logs, must be kept up while conducting the authorized activities;
j. After the Sampling and Analysis Plan is approved by MBNMS, the applicant will provide the Harbor Sediment Quality Evaluation Report or Sampling and Analysis Report for determining whether harbor sediments are suitable for aquatic disposal and/or beneficial use for beach habitat protection and restoration. Additional analysis may be required based on the results of the Sampling and Analysis Report. The Sampling and Analysis Report is developed by the harbor (or the consulting agency hired by the harbor) for each dredging project. The Sampling and Analysis Report includes all analyses listed in the Sampling and Analysis Plan; and
k. A monitoring plan (Section VI) to determine movement of the placed material within the sanctuary.

In addition, copies of the following documents are required as part of the application:

- Public Notice from U.S. Army Corps of Engineers;
- Coastal Development Permit Application;
- Dredging Plan;
- Coastal Development Permit report and exhibits; and/or
- Any other relevant permits such as a U.S. Army Corps of Engineers permit, Regional Water Quality Control Board Water Quality certification, or Air Resources Board permit.

The MBNMS superintendent may request additional information as needed.

IV. National Environmental Policy Act (NEPA) Compliance

The analysis of effects from the beach nourishment projects will be documented in a categorical exclusion memorandum (CE memo), an environmental assessment (EA), or an environmental impact statement (EIS), depending on the anticipated level of impact on the human environment. MBNMS managers will determine if the federal action (i.e., issuing a permit or authorization) qualifies for a CE memo by considering the extraordinary circumstances (see ONMS Environmental Compliance Handbook). To ensure the decision memos provide a sufficient administrative record for the permit decision, they should explain how the proposed project fits within the definitions provided within the final rule (15 CFR 922.131) of "habitat restoration" or "habitat protection."

In reviewing any proposed beneficial use project, NOAA may choose to adopt an existing NEPA analysis (i.e., an EA or EIS) prepared by another federal agency, work to prepare a joint NEPA analysis, or prepare a separate NEPA analysis, as appropriate, to ensure compliance for NOAA's action associated with the beneficial use project. This would also include conducting any required interagency consultations to avoid or minimize adverse effects on protected resources. Programmatic EA or EIS could apply and ONMS could choose to develop a programmatic EA for beneficial use of dredged material in MBNMS if numerous projects are requested or as warranted.

MBNMS managers will work with other agency managers to determine if any NEPA documents were prepared for the project such as environmental assessments (EA), environmental impact statements (EIS), or categorical exclusion determinations. Additional environmental compliance documentation such as biological evaluations or assessments, National Historic Preservation Act (i.e. Section 106 consultations), tribal consultations, National Marine Fisheries Service, and/or U.S. Fish and Wildlife Service biological opinion(s), and/or essential fish habitat assessments prepared as part of consultations will be requested too. If an EA or EIS needs to be developed, a lead agency will be identified and opportunities for cooperating agencies will be assessed. A cooperating agency may adopt a lead agency's NEPA document without recirculating it if it concludes that its NEPA requirements and its comments and suggestions have been satisfied.

The administration record folder will include key decision points and supporting communication from ONMS for consultations. All relevant documents will be uploaded in the ONMS permit database.

V. Follow up Monitoring and Reporting

MBNMS requires a monitoring plan of the area where the beneficial use of suitable dredged material for habitat protection and restoration purposes is placed within MBNMS. Subsequent annual monitoring and permit reports will also be required. Site monitoring is conducted to ensure the environmental integrity of the beneficial use site and the areas adjacent below mean high water. Compliance with beneficial use site criteria and permit requirements is verified via monitoring, as well as tracking movement of the sediment as it travels down current and offshore.

1. The monitoring plan for any location, including surf zone, intertidal or subtidal, will include:
    a. Baseline monitoring to characterize hard/soft bottom habitats and benthic biota, and measure background concentrations of contaminants of concern for both sediment and water quality parameters. This includes photos and video imagery, and mapping the spatial distribution of disposed dredged material on the seafloor
    b. Monitoring goals and objectives to include protection of the marine environment, documentation of beneficial use activities, and site surveys before and after placement
    c. Post monitoring to include sediment material tracking and effects of sediment placement to measure any changes at the site
    d. Post monitoring will include the same parameters as baseline monitoring (see a. above) including benthic biota, sediment, and water quality parameters. This also includes photos and video imagery, and mapping the spatial distribution of disposed dredged material on the seafloor
2. Monitoring reports will need to include:
    a. Baseline and post monitoring results
    b. Monitoring plan deviations
    c. If monitoring plan objectives have been reached
3. Permit reports will need to include:
    a. Final length and width of final placement area
    b. Total area of placement of material within the sanctuary (below mean high water)
    c. Quantity/volume of material placed
    d. Habitat(s) in placement area
    e. Map of final placement area
    f. Changes in the beach profile (before and after placement of the material)

VI. Table of Reference Concentrations for Chemicals of Concern

In almost all situations involving dredge material, the Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. - Testing Manual is used by the U.S. Environmental Protection Agency (EPA) and U.S. Army Corp of Engineers (USACE), also known as the Inland Testing Manual (EPA/USACE. 1998). The Inland Testing Manual provides testing protocols that are intended solely as guidance. There are currently no regulatory sediment quality criteria for the marine environment. Regulatory sediment criteria for beneficial use in MBNMS have not been established. In other similar situations (e.g., Elkhorn Slough National Estuarine Research Reserve), the Central Coast Regional Water Quality Control Board and EPA determined projects may reasonably base sediment suitability criteria on ambient concentrations at the material placement site. Current available data which may be used for additional comparison is sediment chemistry collected in Monterey Bay by the Central Coast Long-term Environmental Assessment Network (CCLEAN) and ambient values collected in San Francisco Bay.

The table below provides background concentrations of constituents of concern in Monterey Bay and San Francisco Bay sediment. These are two locations that have years of sediment sampling results that provide a comparison of conditions. Note that the grain size is very different between CCLEAN ambient averages in Monterey Bay and those of San Francisco Bay ambient values. The CCLEAN sites contain predominantly fine material which are more likely to bind to chemicals of concern. The San Francisco Bay samples contain less than 40% fines which are more representative of the type of material suitable for beach nourishment but may not be exactly representative of Monterey Bay background concentrations. San Francisco Bay and Monterey Bay have many different inputs of chemicals of concern and are listed as impaired for dichlorodiphenyltrichloroethane (DDTs), chlordane, dieldrin, and polychlorinated biphenyls (PABs) so those values should not be considered as a benchmark for acceptability for those compounds. As of March 2024, Monterey Bay was added to the Federal Clean Water Act 303(d) list of impaired water bodies. In addition, it is important to note that grain size must be greater than 80% sand to be eligible for beach nourishment projects (see Section III.2.f). The values in this table will be used as a comparison for chemical concentrations in the proposed material for beach nourishment, taking grain size into account, and recognizing that chemical concentrations will likely be higher in samples with smaller grain size (i.e., CCLEAN samples). In addition, there are data gaps in the table as indicated by the empty boxes. NOAA's Effects Range Low (ERL) is defined as the concentration below which effects are rarely observed or predicted among sensitive life stages. NOAA's Effects Range Medium (ERM) is the concentration above which effects are frequently or always observed among most species. The ERL, ERM, and San Francisco Bay Ambient Values were considered by the Elkhorn Slough National Estuarine Research Reserve for the Minhoto-Hester Marsh restoration project.

Analyte	CCLEAN Ambient Average Values (>80% fines)	ERL	ERM	SF Bay Ambient Values (<40% fines)
Metals (mg/kg)				
Arsenic		8.2	70	13.5
Cadmium		1.2	9.6	0.25
Chromium		81	370	91.4
Copper		34	270	31.7
Lead		46.7	218	20.3
Mercury		0.15	0.71	0.25
Nickel		20.9	51.6	92.9
Selenium				0.59
Silver		1	3.7	0.31
Zinc		150	410	97.8
Organochlorine Pesticides/PCBs (ug/kg)				
DDTs, sum	4.66	1.58	46.1	2.8
Chlordanes, sum	0.05	0.5	6	0.42
Dieldrin	0.02	0.02	8	0.18
Hexachlorocyclohexane, sum	0.04			0.31
Hexachlorobenzene	0.03			
PCBs, sum	0.44	22.7	180	8.6
Polycyclic Aromatic Hydrocarbons (ug/kg)				
PAHs, total	110.96	4,022	44,792	211
Low molecular weight PAHs, sum		552	3,160	37.9
High molecular weight PAHs, sum		1,700	9,600	256
1-Methylnaphthalene				6.8
1-Methylphenanthrene				4.5
2,3,5-Trimethylnaphthalene				3.3
2,6-Dimethylnaphthalene				5
2-Methylnaphthalene	6.30	70	670	9.4
2-Methylphenanthrene				11.3
3-Methylphenanthrene				
Acenaphthene	0.44	16	500	2.2
Acenaphthylene	1.02	44	640	11.3
Anthracene	1.25	85.3	1,100	9.3
Benz(a)anthracene	4.28	261	1,600	16
Benxo(a)pyrene	4.68	430	1,600	18
Benzo(e)pyrene				17.3
Benzo(b)fluoranthene				32.1
Benzo(g,h,i)perylene				22.9
Benzo(k)fluoranthene				29.2
Biphenyl				6.5
Chrysene	5.89	384	2,800	19.4
Dibenz(a,h)anthracene	0.75	63.4	260	3
Fluoranthene	8.52	600	5,100	78.7
Fluorene	0.80	19	540	4
Indeno(1,2,3-c.d)pyrene				19
Naphthalene	5.96	160	2,100	8.8
Perylene				24
Phenanthrene	9.10	240	1,500	17.8
Pyrene	10.91	665	2,600	64.6

Table 1: Background concentrations of constituents of concern in Monterey Bay (CCLEAN) and San Francisco Bay sediment.

VII. References

1) Environmental Protection Agency/U.S. Army Corps of Engineers. 1998. Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual (aka Inland Testing Manual). EPA-823 -B-98 -O04, Washington, D.C.
    a) Table 9-1 is contained in this manual and includes a list of contaminant classes to be considered for monitoring. Table 13 is an example of the list of constituents recently required for the Moss Landing Harbor dredge project.
2) Environmental Protection Agency/U.S. Army Corps of Engineers. 1977. Environmental Protection Agency/U.S. Army Corps of Engineers Technical Committee on Criteria for Dredged and Fill Material, Ecological Evaluation of Proposed Discharge of Dredged Material into Ocean Waters. Implementation Manual for Section 103 of Public Law 92-532 (Marine Protection, Research, and Sanctuaries Act of 1972). July 1977 (2nd printing April 1978). Environmental Effects Laboratory, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
3) Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual (aka Green Book)
4) Final Environmental Assessment of Monterey Bay National Marine Sanctuary Management Plan. 2021; 36-38.
5) San Francisco Bay Regional Water Quality Control Board. 2000. Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines. San Francisco Bay Regional Water Quality Control Board Draft Staff Report, 35 pp.
6) Foley, M. M., Christian E., Goeden, B., Ross, B. 2020. Expert review of the sediment screen guidelines for the beneficial reuse of dredged material in San Francisco Bay. SFEI Contribution No. 978. San Francisco Estuary Institute, Richmond, CA.
7) Environmental Science Associates memo titled “Elkhorn Slough Restoration Design Criteria”
8) USFWS Biological Opinion for Moss Landing Harbor District Maintenance Dredging Project Monterey County, California (Corps File Number: 002-26356S) and Amendment (includes beach replenishment activities)
9) Bay Protection and Toxic Clean-up Program
10) Federal Register for 2021 MBNMS Regulations