

## MEMORANDUM

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**To:** Jim Campbell, City of Newport Beach  
**From:** John Davis IV, Dudek  
**Subject:** City of Newport Bay's Mooring Field Optimization Initiative – C Field Pilot Project  
Eelgrass Impact Analysis  
**Date:** May 4, 2023  
**cc:** Matt Valerio, Dudek  
Laura Masterson, Dudek  
Andrea Dransfield, Dudek  
**Attachment:** Figure 1

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This memorandum documents the results of eelgrass surveys and provides an impact analysis and conclusions regarding potential impacts to eelgrass beds that may result from the implementation of the City of Newport Bay's "C" Field Pilot Mooring Reconfiguration Project (project), Newport Bay, California. This project proposes to replace the existing single-row mooring system within the Mooring "C" Field with a double-row mooring system. The purpose of this project is to evaluate the current mooring fields and provide recommendations for new guidelines. As per the March 8, 2023 Harbor Commission Staff Report, the objective of this project is threefold: 1) to more clearly define rows and fairways to improve navigation and safety for all mariners; 2) to optimize the space within the mooring fields; and 3) to add additional City moorings within the current mooring fields and provide guidance for mooring size exchange requests (City of Newport Beach 2023).

### 1 Proposed Project

The Pilot Project area consists of the C Field, which measures approximately 5.5 acres within the inner harbor. The Field C Pilot mooring reconfiguration proposes double-row moorings. To allow for testing of the new layout and for making any necessary adjustments, only one or two rows may be initially reconfigured. The reconfiguration will include regular inspections from harbor patrol boats as well as interviews with affected permittees and other stakeholders. The relocation of moorings and permittees for the first one or two rows is estimated to take two weeks. Completing the reconfiguration for the rest of C Field is estimated to take 30 days.

The new mooring system would be in the same location and serve the same purpose as the one being replaced. The reconfiguration would result in a negligible increase in capacity of the mooring field and would employ the same number of buoys as the original design. The use of a Categorical Exemption is precluded where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances (Section 15300.2 (c)). The project is within an area where eelgrass is known to be present. As such, an eelgrass impact assessment was conducted in 2022 to show that the project would not have a significant effect on eelgrass habitat (Marine Taxonomic Services Ltd. 2023). Typical moorings cause scarring that destroys eelgrass beds. This pilot

project will use conservation moorings that will keep the chain mostly off of the sea floor, allowing for normal growth of eelgrass beds. Conservation moorings are equipped with floating, flexible rodes that are designed to minimize or eliminate drag on the seafloor by floating throughout the tidal cycle. Eelgrass provides important foraging areas and shelter to young fish and invertebrates, food for migratory waterfowl and sea turtles, and spawning surfaces for invertebrates and fish (NOAA Fisheries 2014). By protecting eelgrass beds, this project will help restore marine life in the harbor.

## 2 Regulations

### 2.1 Federal Laws and Regulations

#### 2.1.1 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801–1884) of 1976, as amended in 1996 and reauthorized in 2007 (Magnuson-Stevens Act), is intended to protect fisheries resources and fishing activities within 200 miles of shore. The amended law, also known as the Sustainable Fisheries Act (Public Law 104-297), requires all federal agencies to consult with the Secretary of Commerce on proposed projects authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat (EFH). The main purpose of the EFH provisions is to avoid loss of fisheries due to disturbance and degradation of habitat. EFH is regulated under the Magnuson-Stevens Act, protecting waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC 1801 et seq.). Substrates that are considered include sediment, hard bottom, structures underlying waters, and associated biological communities. Congress defined EFH to mean those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. In 2002, NMFS further clarified EFH with the following definitions (50 CFR 600.05–600.930):

- “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate.
- “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

#### Habitat Areas of Particular Concern

Habitat Areas of Particular Concern (HAPCs) are considered high priority areas for conservation, management, or research because they are rare, sensitive, stressed by development, or important to ecosystem function. The HAPC designation does not necessarily mean that additional protections or restrictions are required for an area, but the designation helps to prioritize and focus conservation efforts. EFH guidelines identify HAPCs as types or areas of habitat that are identified based on one or more of the following considerations:

- The importance of the ecological function provided by the habitat
- The extent to which the habitat is sensitive to human-induced environmental degradation
- Whether, and to what extent, development activities are or will be stressing the habitat type
- The rarity of the habitat type

These areas are detailed in EFH sections of FMPs and are summarized within the Regional Council Approaches to the Identification and Protection of Habitat Areas of Particular Concern (NMFS 2001). Current HAPC types are estuaries, canopy kelp, seagrass, rocky reefs, and marine protected areas or areas of interest (such as banks, seamounts, and canyons). No marine protected areas occur in or adjacent to the project site; therefore, they would not be affected by the proposed project and are not analyzed in this report.

## Seagrass

Seagrasses are one of the only flowering plants, or angiosperms, that can grow in a marine environment. These plants support a diversity of life and can form extensive beds in shallow, protected, estuarine, or other nearshore environments. Two common seagrasses that occur in the west coast region are eelgrass (genus *Zostera*) and surfgrass (genus *Phyllospadix*), with eelgrass being the most prevalent in California. Eelgrass (*Zostera marina* and *Z. pacifica*) beds are located in soft, sandy, sheltered seafloor environments, typically in shallow bays and estuaries. Eelgrass beds function as nursery grounds and provide habitat for juvenile fish, snails, sea stars, anemones, crabs, and clams, and further serve as potential foraging habitat for sea turtles. Surfgrass beds are located in the rocky intertidal and subtidal zones with turbulent surf. Surfgrass beds are habitat for several species of invertebrates, juvenile fish, and epiphytic algae. Eelgrass beds are recognized by federal and state statutes as highly valuable and sensitive habitats. Eelgrass has been designated as EFH for various fish species managed under the Magnuson-Stevens Act, and has been listed as a HAPC, identifying it as rare, especially vulnerable to human impacts, particularly important ecologically, and/or located in environmentally stressed areas.

### 2.1.2 California Eelgrass Mitigation Policy and Implementing Guidelines

As described in the CEMP (NOAA Fisheries 2014), when impacts to eelgrass would occur, an Eelgrass and Marine Habitat Mitigation and Monitoring Plan (Mitigation Plan) to achieve no net loss in eelgrass function should be developed. The CEMP provides options for mitigation, including (1) comprehensive management plans (CMPs), (2) in-kind mitigation, (3) mitigation banks and in-lieu-fee programs, and (4) out-of-kind mitigation. CMPs protect eelgrass resources within the context of broader ecosystem needs and management objectives (NOAA Fisheries 2014). CMPs may be employed when a project will result in incremental but recurrent impacts to a small portion of local eelgrass populations through time (e.g., lagoon mouth maintenance dredging, maintenance dredging of channels and slips within established marinas, etc.). Existing CMPs are considered to provide adequate population-level and local resource distribution protections to eelgrass, such as the City of Newport Beach Eelgrass Protection Mitigation Plan for Shallow Water in Lower Newport Bay: An Ecosystem Based Management Plan.

## 2.2 State Laws and Regulations

### 2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. The CEQA Guidelines define endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15380[b][1]). A rare animal or plant is defined in the CEQA Guidelines as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if

its environment worsens; or ... [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act" (14 CCR 15380[b][2]). Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guideline 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

## 2.2.1 California Coastal Act

In 1972, voters concerned about coastal development, including impacts to public access and coastal resources, passed the California Coastal Zone Conservation Initiative (Proposition 20), in turn creating CCC. This initiative declared the California Coastal Zone (Coastal Zone) as a distinct and valuable natural resource belonging to all people and existing as a delicately balanced ecosystem, requiring conservation and protection of remaining natural and scenic resources for the Coastal Zone. As a result, it was determined that, to promote public safety, health, and welfare and to protect public and private property, wildlife, marine fisheries, other ocean resources, and the natural environment, it was necessary to preserve the ecological balance of the Coastal Zone and prevent its further deterioration and destruction. The initiative also determined that it is the policy of the state to preserve, protect, and where possible restore the resources of the Coastal Zone for the enjoyment of the current and succeeding generations. In 1976, the California State Legislature enacted the California Coastal Act, which is the primary law governing the decisions of CCC. The California Coastal Act guides new development in an effort to improve public access to coastal areas. The Coastal Zone encompasses 1.5 million acres of land, stretching from 3 miles at sea to an inland boundary that varies from several blocks in urban areas to as many as 5 miles in less developed areas. The Coastal Zone extends into federal waters under the federal Coastal Zone Management Act, covering approximately 1,100 miles of California coastline from Oregon to Mexico, including 287 miles of shoreline surrounding nine offshore islands.

## 2.3 Regional and Local Plans

### 2.3.1 City of Newport Beach General Plan

The City of Newport Beach General Plan is intended to provide protection and preservation for existing neighborhoods. The subjects of the Conservation and Open Space Element have been merged into the Natural Resources Element Chapter 10. The primary objective of the Natural Resources Element is to provide direction regarding the conservation, development, and utilization of natural resources. It identifies Newport Beach's natural resources and policies for their preservation, development, and wise use. This element addresses: water supply (as a resource) and water quality (includes bay and ocean quality, and potable drinking water), air quality, terrestrial and marine biological resources, open space, archaeological and paleontological resources, mineral resources, visual resources, and energy (City of Newport Beach 2006).

**Goal NR 11:** Protection of environmental resources in Newport Harbor while preserving and enhancing public recreational boating activities.

*Policies:*

**NR 11.1 Harbor Area Management Plan.** Develop a Harbor Area Management Plan that will provide a comprehensive approach to the management of the resources of Newport Bay, such as protection of eelgrass and other natural resources, dredging for navigation, and continued use of private piers.

**NR 11.2 Joint City/County Study.** Prepare and fund a joint City/County study that would (a) identify the respective services provided by the City and County in Newport Harbor, (b) determine the cost of these services, (c) identify opportunities if any, for the City and County to realign resources to provide services at reduced costs, (d) identify the sources of revenue available to defray the cost of those services, and (e) identify potential feasible methods of providing those services other than with public agency personnel such as volunteers.

**NR 11.3 Eelgrass Protection.** Avoid impacts to eelgrass (*Zostera marina*) to the extent feasible. Mitigate losses of eelgrass in accordance with the Southern California Eelgrass Mitigation Policy. Encourage the restoration of eelgrass in Newport Harbor at appropriate sites, where feasible.

**NR 11.4 Interagency Coordination on Establishing Eelgrass Restoration Sites.** Cooperate with the County of Orange, the U.S. Army Corps of Engineers, and resource agencies to establish eelgrass restoration sites.

**NR 11.5 Eelgrass Mitigation.** Allow successful eelgrass restoration sites to serve as mitigation sites for City projects and as a mitigation bank from which eelgrass mitigation credits will be issued to private property owners for eelgrass removal resulting from dock and channel dredging projects.

## 2.3.2 City of Newport Beach Local Coastal Program

This document establishes the Coastal Land Use Plan of the Local Coastal Program of the City of Newport Beach, prepared in accordance with the California Coastal Act of 1976 (City of Newport 2018). The Coastal Land Use Plan sets forth goals, objectives, and policies that govern the use of land and water in the coastal zone within the City of Newport Beach and its sphere of influence, with the exception of Newport Coast and Banning Ranch.

*Policies:*

### Biological Resources

**4.1.4-1.** Continue to protect eelgrass meadows for their important ecological function as a nursery and foraging habitat within the Newport Bay ecosystem.

**4.1.4-2.** Implement eelgrass restoration and enhancement programs in Newport Harbor.

**4.1.4-3.** Site and design boardwalks, docks, piers, and other structures that extend over the water to avoid impacts to eelgrass meadows. Encourage the use of materials that allow sunlight penetration and the growth of eelgrass.

**4.1.4-4.** Provide for the protection of eelgrass meadows and mitigation of impacts to eelgrass meadows in a comprehensive harbor area management plan for Newport Bay.

**4.1.4-5.** Where applicable require eelgrass and *Caulerpa taxifolia* surveys to be conducted as a condition of City approval for projects in Newport Bay in accordance with operative protocols of the Southern California Eelgrass Mitigation Policy and *Caulerpa taxifolia* Survey protocols.

### **Eelgrass Protection and Restoration**

**4.2.5-1.** Avoid impacts to eelgrass (*Zostera marina*) to the greatest extent possible. Mitigate losses of eelgrass at a 1.2 to 1 mitigation ratio and in accordance with the Southern California Eelgrass Mitigation Policy. Encourage the restoration of eelgrass throughout Newport Harbor where feasible.

**4.2.5-2.** Continue to cooperate with the County of Orange, the U.S. Army Corps of Engineers, and resource agencies to establish eelgrass restoration sites.

**4.2.5-3.** Conduct studies to establish an eelgrass acreage baseline for Newport Harbor based on the distribution, density, and productivity, necessary for eelgrass meadows to fulfill their ecological function.

**4.2.5-4.** Cooperate with the National Marine Fisheries Service to incorporate a provision into the Southern California Eelgrass Mitigation Policy that would allow exemptions to mitigation requirements for harbor maintenance projects for provided the eelgrass acreage baseline is maintained.

**4.2.5-5.** Cooperate with the U.S. Army Corps of Engineers, the Coastal Commission, and the Santa Ana Regional Water Quality Control Board to incorporate the eelgrass acreage baseline exemption provision into the City's Regional General Permit and into any individual property owner's dredging or dock construction permit that qualifies under future applications.

**4.2.5-6.** Perform periodic surveys of the distribution of eelgrass in Newport Bay in cooperation with the National Marine Fisheries Services to ensure that the eelgrass baseline is maintained.

**4.2.5-7.** Cooperate with resource agencies to conduct a comprehensive evaluation of biological, recreational, commercial and aquatic resources of Newport Harbor and to develop a Harbor Area Management Plan (HAMP) that will maintain all of the intended beneficial uses of the harbor.

### **2.3.3 Newport Bay Eelgrass Mitigation Plan**

The City adopted a Bay-specific eelgrass mitigation plan in 2015. The plan was entitled "Eelgrass Protection and Mitigation Plan for Shallow Waters in Lower Newport Bay: An Ecosystem Based Management Program" (Plan) (City of Newport Beach 2015). The Plan is an outcome of the City of Newport Beach HAMP, as issued in April 2010 and approved by City Council in November 2010 (City of Newport Beach 2010). The HAMP was established to set goals and best management practices (BMPs) in order to ensure a healthy eelgrass population within Lower Newport Bay. The Plan seeks to protect and promote a long-term sustainable eelgrass population while serving Lower Newport Bay's navigational and recreational beneficial uses. The goal of the Plan is an ecosystem-based approach that works by protecting a sustainable eelgrass population in the Lower Newport Bay and enforcing BMPs that will promote eelgrass growth. Particular attention is placed on maintenance dredging activity associated with minor maintenance dredging under and adjacent to private, public, and commercial docks, floats, and piers currently authorized under the City's RGP 54 from USACE, RWQCB, and CCC. The Plan is an integral component of the authorized RGP 54. Exceptions include demolition, repair, and in-kind replacement of docks (including piers, gangways, floats, and piles), bulkheads, and piles with similar structures that are excluded from the current approved RGP 54 program. Eelgrass impacts as a result of beach replenishment or disposal of dredged material in



front of an existing bulkhead are not covered. The California Eelgrass Mitigation Policy governs all other activities that affect eelgrass.

### 3 Impact Analysis

The proposed “pilot” project reconfigures 55 moorings in Mooring Field C in the southwest portion of lower Newport Bay. Eelgrass (*Zostera marina* and *Z. pacific*) is not currently present in Mooring Field C and this pilot project is not expected to directly or indirectly impact eelgrass based on 2022 eelgrass surveys and implementation of recommended measures (See Table 1 and Section 4.1 below). Eelgrass distribution has increased considerably in Newport Bay since the 2009-2010 survey, and it continued to expand throughout Newport Bay between 2020 and 2022 and in “regions” adjacent to Mooring Field C (MTS and CRM 2023). Specifically, there are three eelgrass “regions” adjacent to Mooring Field C: Region 3 (East Balboa Peninsula), 6 (Bay Island), and Region 23 (Deep Water Eelgrass Habitat). Region 3 is to the south/southwest of Mooring Field C and increased by 2.52 acres between 2020 and 2022. Region 6 is to the north/northeast of Mooring Field C and increased by 0.28 acre between 2020 and 2022; and Region 23 is to the southwest of Mooring Field C and did not increase in acreage but is a considerable eelgrass bed (62.20 acres) (MTS and CRM 2023). Additionally, Dudek used NOAA Fisheries’ (2014) eelgrass habitat definition and included a 5-meter buffer around the mooring locations in the impact analysis to account for the potential expansion of eelgrass from these regions towards Mooring Field C. Currently, Mooring Field C avoids eelgrass beds by 5-meters or more.

**Figure 1. Impacts to Eelgrass from the Mooring Fields Optimization Initiative**

Mooring Field <sup>1</sup>	Eelgrass Present <sup>2</sup>	Number of Moorings (In Eelgrass/Total)	Area Impacted (SQFT/Acre)
C	No	0 / 55	0

Note: <sup>1</sup> Moorings currently exist within the mooring field.  
<sup>2</sup> 2022 Eelgrass Survey (MTS and CRM 2023)

### 4 Conclusion

Direct and indirect impacts are unlikely to occur from implementation of the proposed “pilot” mooring project in Mooring Field C. The distance of the eelgrass beds from Mooring Field C, while in close proximity, have able distance to avoid direct impacts even if the eelgrass beds expand in 2023. However, while it is unlikely that the eelgrass beds of the adjacent regions will expand within the 2023 growing season into Mooring Field C, pre-construction surveys are recommended per NOAA Fisheries guideline on potential project impacts to eelgrass or “implementation guidelines for California” (2014). Additionally, Section 10 Rivers and Harbors Act permitting under the jurisdiction of the U.S. Army Corps of Engineer for in water projects within the bay typically require a pre-construction survey for eelgrass. Turbidity poses the primarily indirect impact to neighboring eelgrass beds. The techniques employed for removal of the existing moorings and installation of the new moorings will determine the level of protection between the moorings and eelgrass beds or regions. Please refer to Section 4.1 for recommended measures to avoid potential impacts to eelgrass within Newport Bay.

## 4.1 Recommended Measures

**Eelgrass Survey.** A pre-construction survey of Mooring Field C including a buffer to account for indirect impacts (i.e., action area) and an appropriate reference site(s) should be completed within 60 days before start of construction. Copies of all surveys should be provided to the lead federal agency, NOAA Fisheries, USACE, and other interested regulatory and/or resource agencies within 30 days of completing the survey. The recommended timing of surveys is intended to minimize changes in eelgrass habitat distribution and abundance during the period between survey completion and construction initiation and completion. This survey must include both aerial and density characterization of the beds. If eelgrass is found during the pre-construction survey, a post-construction survey must be performed by a qualified biologist within 30 days following project completion to quantify any unanticipated losses to eelgrass habitat. Impacts must then be determined from a comparison of pre- and post- construction survey results. Impacts to eelgrass, if any, must be mitigated through conformance with the Eelgrass Protection and Mitigation Plan (City of Newport Beach 2015), which defines the mitigation ratio and other requirements to achieve mitigation for significant eelgrass impacts.

**Turbidity.** Where proposed turbidity generating activities must occur in proximity to eelgrass and increased turbidity will occur at a magnitude and duration that may affect eelgrass habitat, measures to control turbidity levels should be employed when practical considering physical and biological constraints and impacts. Measures may include the use of turbidity curtains where appropriate and feasible, and the use of low impact equipment and methods. Turbidity curtains must be kept a minimum of 30 feet away from eelgrass beds in order to prevent damage to eelgrass beds from curtain drag or movement.

## 4 References

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MEMORANDUM

SUBJECT: CITY OF NEWPORT BAY'S MOORING C FIELD PILOT PROJECT EELGRASS IMPACT ANALYSIS

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<https://www.newportbeachca.gov/home/showpublisheddocument/73188/638167971564230000>

NOAA Fisheries. 2014. *National Marine Fisheries Service's California Eelgrass Mitigation Policy and Implementing Guidelines*. NMFS, West Coast Region. October 2014. Accessed April 2023. [https://media.fisheries.noaa.gov/dam-migration/cemp\\_oct\\_2014\\_final.pdf](https://media.fisheries.noaa.gov/dam-migration/cemp_oct_2014_final.pdf)



SOURCE: Source: SCAG Aerials 2020

Figure 1: Moorings and Eelgrass  
City of Newport Beach