

Marine Fisheries Commission; U.S. Coast Guard; U.S. Fish and Wildlife Service; and, the Department of State.

Lastly, the Council will discuss any Other Business items.

—*Meeting Adjourns*—

The timing and order in which agenda items are addressed may change as required to effectively address the issue. The latest version will be posted on the Council's file server, which can be accessed by going to the Council's Web site at <http://www.gulfcouncil.org> and clicking on FTP Server under Quick Links. For meeting materials, select the "Briefing Books/Briefing Book 2016–10" folder on Gulf Council file server. The username and password are both "gulfguest". The meetings will be webcast over the internet. A link to the webcast will be available on the Council's Web site, <http://www.gulfcouncil.org>.

Although other non-emergency issues not contained in this agenda may come before this Council for discussion, those issues may not be the subjects of formal action during this meeting. Council action will be restricted to those issues specifically listed in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Act, provided that the public has been notified of the Council's intent to take final action to address the emergency.

Special Accommodations

This meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Kathy Pereira (see **ADDRESSES**) at least 5 days prior to the meeting date.

Dated: September 27, 2016.

Tracey L. Thompson,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[0648-XE687]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to a Tidal Marsh Restoration Project

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received a request from the California Department of Fish and Wildlife—Central Region (CADFW) for authorization to take marine mammals incidental to construction activities as part of a tidal marsh restoration project within the Minhoto-Hester Marsh in Elkhorn Slough (Monterey, CA). Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to the CADFW to incidentally take marine mammals, by Level B harassment only, during the specified activity.

DATES: Comments and information must be received no later than October 31, 2016.

ADDRESSES: Comments on the applications should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service. Physical comments should be sent to 1315 East-West Highway, Silver Spring, MD 20910 and electronic comments should be sent to ITP.Egger@noaa.gov.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments received electronically, including all attachments, must not exceed a 25-megabyte file size. Attachments to electronic comments will be accepted in Microsoft Word or Excel or Adobe PDF file formats only. All comments received are a part of the public record and will generally be posted online at www.nmfs.noaa.gov/pr/permits/incidental/construction.htm without change. All personal identifying information (e.g., name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Stephanie Egger, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of the CADFW's application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. In case of problems accessing these

documents, please call the contact listed above.

National Environmental Policy Act

In August 2010, NMFS' Office of Habitat Conservation prepared a Targeted Supplemental Environmental Assessment (TSEA) for a similar tidal restoration project in Parson's Slough, a tidal marsh adjacent to the project area (both in Elkhorn Slough). The TSEA assessed the potential adverse environmental impacts of this project specific to marine mammals. Additional potential impacts to other elements of the human environment from this type of project were incorporated by reference in the TSEA. NMFS has reviewed the TSEA and believes it appropriate to write a Supplemental EA (based on the TSEA) in order to assess the impacts to the human environment of issuance of an IHA to CADFW and subsequently sign our own Finding of No Significant Impact. In addition, information in the CADFW's application, CADFW's Initial Study and Mitigated Negative Declaration (prepared June 2015 pursuant to the CA Environmental Quality Act of 1970 (CEQA)), the Elkhorn Slough National Estuarine Research Reserve (ESNERR) Biological Assessment (prepared September 2015), and this notice collectively provide the environmental information related to the proposed issuance of this IHA for public review and comment. All documents are available at the aforementioned Web site. We will review all comments submitted in response to this notice as we complete the National Environmental Policy Act (NEPA) process prior to a final decision on the incidental take authorization request.

Background

Sections 101(a)(5)(D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of

such takings are set forth. NMFS has defined “negligible impact” in 50 CFR 216.103 as “. . . an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.”

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization. Except with respect to certain activities not pertinent here, the MMPA defines “harassment” as “any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].”

Summary of Requests

On June 2, 2016, we received an application from the CADFW for authorization to take marine mammals incidental to construction activities associated with a 47-acre tidal marsh restoration project within the Minhoto-Hester Marsh in Elkhorn Slough (Monterey, CA) (Phase 1). The overall Elkhorn Slough Tidal Marsh Restoration Project would restore a total of 147 acres; however, future phases are not part of this application as they are currently unfunded and present some additional technical challenges. Another IHA request will be made prior to implementation of any proposed future phases. The CADFW submitted revised versions of the application on July 13, 2016, August 2, 2016, August 29, 2016, and a final application on September 6, 2016 which we deemed adequate and complete.

The proposed activity would begin between October 2016 and February 2017 and last approximately 11 months with built in buffers for adverse weather and other conditions when work is not possible. Pacific harbor seal (*Phoca vitulina richardii*) and southern sea otters (*Enhydra lutris nereis*) are expected to be present during the

proposed work. Southern sea otters are managed by the U.S. Fish and Wildlife Service and will not be considered further in this proposed IHA notice. Construction activities are expected to produce noise and visual disturbance that have the potential to result in behavioral harassment of harbor seals. NMFS is proposing to authorize take, by Level B Harassment, of harbor seals as a result of the specified activity.

Description of the Specified Activities

Overview

The CADFW proposes to restore approximately 47 acres of tidal marsh within the Minhoto-Hester Marsh in Elkhorn Slough (Monterey, CA) and additional tidal marsh, upland ecotone, native grasslands restoration within a buffer area (Phase 1). This work would require approximately 170,000 cubic yards (cy) of fill to raise the marsh to an elevation that would allow emergent wetland vegetation to naturally reestablish and persist. The work would also require maintaining or re-excavating existing tidal channels and excavating within the upland buffer area to restore habitat. The slough system has historically faced substantial tidal wetland loss related to prior diking and marsh draining, and is presently facing unprecedented rates of marsh degradation.

The CADFW intends to restore tidal marsh to reduce tidal erosion, improve water quality, provide sea-level rise resilience, increase carbon sequestration, and improve ecosystem function that have been altered by past land use practices.

Dates and Duration

Under the proposed action, 132 days of construction activities and four days of vibratory pile driving (total 136 days of project activities) related to the tidal marsh restoration would occur over an 11-month period. The 11-month period is a conservative estimate and includes ecotone and grassland restoration work as well. Most of the work on the marsh plain would be completed within six to eight months. The construction period assumes that the construction contractors would work between the hours of 5:00 a.m. to 6:00 p.m., Monday through Friday, only during daylight hours. However, some construction activity may also be required during these times on Saturdays. The proposed IHA would be valid for one year from the date of issuance, with project start expected between October 2016 and February 2017.

Specific Geographic Region

The proposed project is located in the Elkhorn Slough estuary, situated 90 miles south of San Francisco and 20 miles north of Monterey, is one of the largest estuaries in CA and contains the State’s largest salt marshes south of San Francisco Bay (see Figure 1–1 of the application). The Elkhorn Slough is a network of intertidal marshes, mudflats, and subtidal channels located at the center of the Monterey Bay shoreline. The restoration will occur specifically in the Minhoto-Hester Marsh (project area) within the Slough, and is a low-lying area consisting of marsh, intertidal mudflats, tidal channels and remnant levees. The project area is on land owned and managed by CADFW as part of the ESNERR (see Figure 1–2 of the application). One Marine Protected Area (MPA), a State Marine Reserve is located within the project area. Two additional MPAs are located within one mile of the project area. The Minhoto-Hester Marsh has multiple cross-levees and both natural and dredged channels with a major dredged channel (100+ feet (ft) wide in some locations) that runs north to south through the remnant marsh.

Over the past 150 years, human activities have altered the tidal, freshwater, and sediment processes which are essential to support and sustain Elkhorn Slough’s estuarine habitats. Fifty percent of the tidal salt marsh in the Slough has been lost during this time period. This habitat loss is primarily a result of two historic land use changes, (1) construction of a harbor at the mouth of the Slough and the related diversion of the Salinas River, which lead to increased tidal flooding (and subsequent drowning of vegetation) and (2) past diking and draining of the marsh for use as pasture land. The act of draining wetlands led to sediment compaction and land subsidence, from one to six feet. Decades later, the dikes began to fail, reintroducing tidal waters to the reclaimed wetlands. Rather than converting back to salt marsh, the areas converted to poor quality, high elevation intertidal mudflat, as the lowered landscape was inundated too frequently to support tidal marsh, and insufficient sediment supply was available in the tidal waters to rebuild elevation. The loss of riverine sediment inputs, continued subsidence of marsh areas, sea level rise, increased salinity, and increased nutrient inputs may also contribute to marsh loss (Watson *et al.*, 2011). Bank and channel erosion in the Elkhorn Slough are leading to deepening and widening tidal creeks, causing salt marshes to collapse into the

channel, and eroding sediments that provide important habitat and support estuarine food webs.

Detailed Description of Activities

The CADFW plans to raise the subsided former marsh plain (currently mostly too low to sustain vegetation) to mid-high marsh plain elevations over an area of approximately 47 acres (see Figure 1–3 of the application). Approximately 167,000 cy of sediment

is required for implementation of the proposed project. The CADFW will use 50,000 cy of imported sediment, along with approximately 117,000 cy of sediment excavated from existing upland areas of the project site, to achieve the requisite 167,000 cy necessary for project implementation. Sediment would be placed to a fill elevation slightly higher than the target marsh plain elevation to allow for settlement and consolidation of the

underlying soils. The average fill depth would be 2.1 ft, including 25 percent overfill.

Table 1, below, presents the acreages and extents of proposed fill within each marsh sub-area, as well as the volume of fill required for each marsh sub-area to be restored. The stockpiled Pajaro Bench soils and onsite borrow would be used as fill sources. The project would rely primarily on natural vegetation recruitment in the restored marsh areas.

TABLE 1—VOLUME OF FILL REQUIRED IN EACH SUB-AREA

Project component/staging area	Area (acres)	Fill area (acres)	Fill volume (range in cubic yards)
Phase 1			
Sub-area M1	12.1	9.5	28,000 to 43,700.
Sub-area M2	5.6	4.5	10,700 to 17,700.
Sub-area M3	11.1	8.3	27,000 to 41,000.
Sub-area H1	17.8	14.1	42,100 to 65,300.
Subtotal Phase 1	47	36	107,900 to 167,800.
Total Phase 1	47	36	107,900 to 167,800.

Note: Volumes in presented in this table are mid-range estimates; actual volumes may be higher or lower.

Source: Environmental Science Associates, 2014 Final Elkhorn Slough Tidal Marsh Restoration Project Restoration Plan, July 1, 2014.

Water Control and Tidal Channels of the Restoration Area—Work areas on the remnant marsh plain would for the most part be isolated from the tides and dewatered to allow construction in non-tidal conditions. Water control structures such as temporary berms would be utilized to isolate the fill placement area during the construction period. Existing berms would be used, where possible. There are a number of potential configurations to isolate the fill placement area which will depend on the workflow of the contractor chosen. For this application, CADFW has identified the water control option with the greatest potential impact to marine mammals would be a sheet pile wall at the mouth of the project area (see Figure 1–3 of the application). If a sheet pile is required to be installed at the tidal entrance to the project area, four days of vibratory pile driving would occur. It is also possible that the mouth of the project area may be closed with an earthen dam or an inflatable dam; therefore, the sheet pile would not be necessary. The isolated work areas would be drained using a combination of gravity and pumps. Water levels within the blocked areas would be managed to keep them mostly free of water (with some ponded areas

remaining) and to allow fill placement at all stages of the tides. To reduce the potential for fish to become entrained in isolated ponded areas, blocking of tidal channels would occur at low tide. When sediment placement is completed, the berms would be lowered to the target marsh elevation, reintroducing tidal inundation.

Remnant historic channels onsite would generally be left in place or filled and re-excavated in the same place. As needed for marsh access, smaller channels would be filled. Avoidance of channel fill, temporary and permanent, is preferred. As much of the existing tidal channel network would be maintained as is feasible, and the post-project channel alignments would be similar to those under existing conditions. The density of channels (length of channel per acre of marsh) after restoration would be comparable to the density in natural reference marshes. Low levees (less than 0.5 ft above the marsh plain) composed of fill material would be constructed along the larger channels to simulate natural channel levees. The project would recreate natural levee features along the sides of the main channel into the Minhoto-Hester Marsh. Fill would be placed as close to the edge of the

channel as possible to simulate the form and function of a natural channel bank. Borrow ditches that date from the times of historical wetland reclamation in these areas would be blocked or filled completely if fill is available after raising the marsh plain. Blocking borrow ditches would route more flow through the natural channels and slightly increase hydraulic resistance, which may achieve benefits from reducing tidal prism and associated scour in the Elkhorn Slough system.

To limit trip distances onto the marsh, the project would employ one or more of the following placement approaches. Temporary channel crossings may be constructed, or tidal channels may be temporarily filled and then re-dug with an excavator or backhoe. If re-excavation of the smaller channels proves infeasible, these channels may be permanently filled, the resulting channel extent consisting of the larger channels only. The resulting channel extent would be sufficient to provide drainage and tidal exchange to support natural marsh functions. The number and locations of channel crossings would depend on the tradeoff between haul distances and the ease of installing and removing the crossings. Where tidal channels were maintained in place,

turbidity control measures (*i.e.*, Best Management Practices (BMPs), such as hay bales or weed free straw wattles) could be staked down in or adjacent to the channels to be preserved. Bulldozers would push fill up to the hay bales and wattles, but not into the channels. Channel crossings and BMPs would be removed at project completion.

Buffer Area—The buffer area would be graded to increase marsh area and create a gently sloping ecotone band along the edge of the restored marsh. Specifically, excavation would widen the existing marsh (by up to 150 ft) and create a band of gentle slope (*e.g.*, 1:30) on the hillside, fostering creation of a wider ecotone habitat. The remaining buffer area would be restored to native grassland habitat. The north end of the buffer area (adjacent to M4 and M6) would be restored in a later phase so this area could be used to stockpile material for future placement on subareas M4, M5, and M6 (see Figure 1–3 of the application).

Construction Sequencing and Equipment—Construction sequencing would begin with water management and/or turbidity control measures constructed around the work areas prior to placing material on the marsh. After fill placement on the marsh, any temporary features, such as water management berms, sheet pile and culverts, would be removed. Construction equipment would include haul trucks, heavy earthmoving equipment, such as dozers, backhoes, loaders, and excavators to transport dry material out onto the marsh. All heavy

equipment used to transport dry material out onto the marsh would be of low ground pressure to prevent sinking in the mud. Mats would be temporarily placed on the marsh, as needed, to spread the weight of the equipment. A conveyor system could also be used to transport dry material from the stockpile out to the marsh, in lieu of dozers pushing the material the full distance. In the latter case, a loader would continuously load the conveyor system with material near the stockpile, and a dozer at the marsh drop off location would spread the material. A conveyor system may increase construction time as it would need to be assembled and taken apart to move it to new areas. A conveyor system is also likely cost prohibitive. At the end of construction in each cell/stage, any elevated haul roads and/or berms constructed to aid in material placement would be excavated to design grades, with the resulting earth used to fill adjacent restoration areas.

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS jurisdiction occurring in the proposed project area is the Pacific harbor seal. In the harbor seal account provided here, we offer a brief introduction to the species and relevant stock as well as available information regarding population trends and threats, and describe any information regarding local occurrence (Table 2). Please also refer to NMFS' Web site (<http://www.fisheries.noaa.gov/pr/species/>

mammals/seals/harbor-seal.html) for the generalized harbor seal account and see NMFS' Stock Assessment Reports (SAR), available at www.nmfs.noaa.gov/pr/sars, for more detailed accounts of the harbor seal stocks' status and abundance. The harbor seal is assessed in the Pacific SAR (Carretta *et al.*, 2016).

Harbor Seal Overview and Regional Status

Harbor seals inhabit coastal and estuarine waters and shoreline areas of the northern hemisphere from temperate to polar regions. The eastern North Pacific subspecies is found from Baja California north to the Aleutian Islands and into the Bering Sea. Multiple lines of evidence support the existence of geographic structure among harbor seal populations from California to Alaska (O'Corry-Crowe *et al.*, 2003; Temte, 1986; Calambokidis *et al.*, 1985; Kelly, 1981; Brown, 1988; Lamont, 1996; Burg, 1996). Harbor seals are generally non-migratory, and analysis of genetic information suggests that genetic differences increase with geographic distance (Westlake and O'Corry-Crowe, 2002). However, because stock boundaries are difficult to meaningfully draw from a biological perspective, three separate harbor seal stocks are recognized for management purposes along the west coast of the continental United States: (1) Inland waters of Washington; (2) outer coast of Oregon and Washington; and (3) California (Carretta *et al.*, 2016). This IHA addresses seals from the California stock only.

TABLE 2—HARBOR SEAL STATUS INFORMATION

Species	Stock	(ES)/MMPA status; strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR ³	Annual M/SI ⁴	Relative occurrence in Elkhorn Slough; season of occurrence
Family Phocidae (earless seals)						
Harbor seal	California	-; N	30,968 (n/a; 27,348; 2012)	1,641	42.8	Common; year-round.

¹ Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR (see footnote 3) or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

² CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable. For certain stocks of pinnipeds, abundance estimates are based upon observations of animals (often pups) ashore multiplied by some correction factor derived from knowledge of the species (or similar species) life history to arrive at a best abundance estimate; therefore, there is no associated CV. In these cases, the minimum abundance may represent actual counts of all animals ashore. The most recent abundance survey that is reflected in the abundance estimate is presented; there may be more recent surveys that have not yet been incorporated into the estimate.

³ Potential biological removal, defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population size (OSP).

⁴ These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value. All values presented here are from the final 2015 Pacific SAR. (<http://www.nmfs.noaa.gov/pr/sars/region.htm>).

Local Abundance and Habitat Use

Harbor seals use Elkhorn Slough for hauling out, resting, socializing,

foraging, molting and reproduction, but mainly use it as a staging area for foraging in the Monterey Bay, as there is a limited amount of foraging in the

Slough (McCarthy, 2010). Harbor seals inhabit Elkhorn Slough year-round and occur individually or in groups, but their abundance may change seasonally

depending on prey availability, molting, and reproduction (McCarthy, 2010). Counts of harbor seals in the greater Elkhorn Slough began in 1975 and at that time averaged about 30 seals (Harvey *et al.*, 1995; Oxman, 1995). Counts conducted by Osborn (1985) in 1984 averaged 35 seals, and during 1991, maximum counts reported by Oxman (1995) were five times greater. Oxman also reported a 20 percent increase between 1990 and 1991, from 150 to 180 seals. Average counts remained comparable from 1994 through 1997, with peaks coinciding with pupping and molting seasons (pupping season is April–June with molting in July following the pupping season) (Oxman 1995). A count of 339 seals was reported in 1997 (Jones, 2002; Richman, 1997). The population in the greater Elkhorn Slough is currently estimated at 300 to 500 seals (McCarthy, 2010). Harbor seal count data as reported were collected from a variety of sources using various methodologies. Data sources included former graduate student research, occasional counts by Dr. Jim Harvey, Director at Moss Landing Marine Laboratories, and ESNER staff observations.

Harbor seals have utilized the Elkhorn Slough as a resting site since the 1970s, but the first births were not recorded until 1991 (Maldini *et al.*, 2010). Harbor seals have used Elkhorn Slough for reproduction for the past two decades. From 1995 to 1997, there was a significant annual increase in pups, from 14 seals in 1995 to 29 seals in 1997 (Richman, 1997). Pupping can occur throughout the year, but generally starts in late March and peaks in May (McCarthy, 2010). Some seals may depart during pupping/breeding season to other breeding areas outside of Elkhorn Slough. Females tend to remove themselves from the group to give birth and return within a week (McCarthy, 2010). In 2010, 50 pups were observed in Elkhorn Slough (J. Harvey unpublished data in McCarthy, 2010). No births have been documented in the project area and it is not likely that neonates will be in the project area as females prefer to keep their pups along the main channel of Elkhorn Slough, which is outside the area expected to be impacted by project activities.

Harbor seals usually occupy areas just beyond the mouth of Elkhorn Slough in the Moss Landing Harbor and in the Salinas River channel south of the Moss Landing bridge and the lower portion of Elkhorn Slough extending up to Parson's Slough and Rubis Creek. They typically use the corridor from the mouth of Elkhorn Slough through the Moss Landing Harbor entrance for

nightly feeding in Monterey Bay (J. Harvey, pers. comm. in McCarthy, 2010). In a diet study conducted between 1995 and 1997, 35 species including topsmelt, white croaker, spotted cusk-eel, night smelt, bocaccio, Pacific herring, a brachyuran crustacean, and four genera of mollusks were consumed by harbor seals (Harvey *et al.*, 1995 in McCarthy, 2010).

Seal Haul Outs Potentially Impacted by Project Activities

In the eastern part of Elkhorn Slough, harbor seals primarily use two sub-areas to haul out, the Minhoto-Hester Marsh Complex (project area and the area just outside the project) and the area in and around Parson's Slough (see Figures 4–4 and 4–3 of the application, respectively). Monitoring was completed in 2013 to document the abundance and distribution of harbor seals utilizing the Minhoto-Hester Marsh Complex to determine potential impacts from the proposed project (Beck, 2014). Eight harbor seal haul out sites were identified in the Minhoto-Hester Marsh Complex, which also included haul-outs in portions of the Yampah Marsh adjacent to Minhoto-Hester Marsh (see Figure 4–5 of the application). Four of these haul out sites are within the footprint of the construction area and will be inaccessible during construction, but available again after construction. To better assess which areas of Minhoto-Hester Marsh were used by seals, haul out sites were categorized as either inside or outside the footprint of the construction area. The four haul out sites within the footprint of the construction area are remnant berms on the interior of the marsh, identified as Small Island, M2 North, M3 North and M3 East (see Figure 4–5 of the application). Four haul out sites, just beyond the footprint of the construction area, are on the edge of the marsh nearest the main channel of Elkhorn Slough, and identified as M5 Northeast, M5 Southeast, Yampah Northwest and Yampah Southwest (see Figure 4–5 of the application). In 2013, the maximum number of seals counted from those eight haul out sites totaled 94 seals (Beck, 2014). In the Parson's Slough Complex, adjacent to the project area, approximately 100 seals use the exposed mudflats during low tide to haul out on six haul out sites. The closest haul out in the Parson's Slough Complex is located 1,300 feet northeast of the project area.

Potential Effects of the Specified Activity on Marine Mammals

This section includes a summary and discussion of the ways that components of the specified activity (*e.g.*, construction inclusive of short term pile driving) may impact marine mammals. This discussion also includes reactions that we consider to rise to the level of a take and those that we do not consider to rise to the level of a take (for example, with acoustics, we may include a discussion of studies that showed animals not reacting at all to sound or exhibiting barely measurable avoidance). This section is intended as a background of potential effects and does not consider either the specific manner in which this activity will be carried out or the mitigation that will be implemented, and how either of those will shape the anticipated impacts from this specific activity.

The Estimated Take by the Incidental Harassment section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis section will include the analysis of how this specific activity will impact marine mammals and will consider the content of this section, the Estimated Take by Incidental Harassment section, the Proposed Mitigation section, and the Anticipated Potential Effects on Marine Mammal Habitat section to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

Description of Sound Sources

Harbor seals that use the four haul out sites, just beyond the footprint of the construction, area (M5 Northeast, M5 Southeast, Yampah Northwest and Yampah Southwest) (described in the previous of section, Description of Marine Mammals in the Area of the Specified Activity) and in other nearby areas may potentially experience behavioral disruption rising to the level of harassment from construction activities, which may include visual disturbance due to the presence and activity of heavy equipment and construction workers, airborne noise from the equipment, and from underwater noise during the brief period of sheet pile installation. Disturbed seals are likely to experience any or all of these stimuli, and take may occur due to any of these in isolation or in combination with the others.

A significant body of past monitoring evidence indicates that activities, such

as construction, conducted in close proximity to hauled out harbor seals, have the potential to disturb seals that are present. Some or all of the seals present would be expected to move or flush in response to the presence of crew and equipment, though some may remain hauled out. Seals typically exhibit a continuum of responses, beginning with alert movements (*e.g.*, raising the head), which may then escalate to movement away from the stimulus and possible flushing into the water. Flushed seals typically re-occupy the haul out within minutes to hours of the stimulus. In a previous study at Elkhorn Slough, harassment by humans (from recreational boating and fishermen) within 100 meter (m) was documented for harbor seals (Osborn, 1985b in Oxman 1995). Allen *et al.* (1984 in McCarthy, 2010) reported a similar distance for disturbance (mostly by non-powered boats) in Bolinas Lagoon (a similar tidal estuary in Bolinas, CA). During the Parson's Slough project, most of the harbor seal disturbances were land-based and occurred at distances of approximately 150 m or more and involved head raises or body repositioning. Some seals showed no disturbance reactions at all. Movement of vessels associated with the project was the construction activity most frequently associated with disturbance (38 percent), followed by vibratory driving of sheet piles (13 percent) and other construction activities (13 percent) (ESNERR, 2011). The disparity between the disturbance distances of the studies within Elkhorn Slough may be due to the fact that the Osborn (1985) was monitoring seals

near Seal Bend, and seals in this area are likely more exposed to vessel traffic as the haul out is along the edge of the main channel and more habituated to that type of disturbance. Seals monitored during the Parson's Slough project (ESNERR, 2011) are not likely exposed as frequently to vessel traffic as their haul outs are within areas that are more sheltered and where watercraft is not allowed. During that project, seals showed disturbance to vessel movement at further distances (150 m or greater) and were more frequently disturbed from moving vessels than from pile driving activities. These seals may be habituated to some anthropogenic sounds (*e.g.*, Union Pacific Railroad trains (UPRR)), but not to disturbance from moving vessels and therefore exhibited behavioral reactions at a greater distance away. There may also be seasonal variability in disturbance reactions, such as during the pupping season, as well as variation within different populations (Gunvalson, 2011). Airborne background sound (anthropogenic) of Elkhorn Slough is likely dominated by recreational vessel activities, UPRR trains, and other human activity in the area. Recreational vessels are restricted to the main channel of Elkhorn Slough (just outside the project area). Trains along the UPRR likely generate fairly high noise levels in the vicinity of Minhoto-Hester Marsh within the eastern portion of the project area. Approximately 15 to 20 trains pass along the UPRR each day, which is located 400 ft from the furthest eastern portion of the project area (Vinnedge Environmental Consulting, 2010). Noise levels from the UPRR trains were

monitored during the construction of the Parson's Slough project, adjacent to the Minhoto-Hester Marsh, and estimated at 108 dBC Lmax (dBC can be defined as decibel (dB) with C-weighting which is a standard weighting of the audible frequencies commonly used for the measurement of peak sound pressure Level (SPL) and Lmax is defined as the maximum sound level during a single noise event). Noise is also generated from the Pick-n-Pull, a vehicle dismantling and recycling yard, and located approximately 300 ft from the project area. Agricultural equipment is operated occasionally within the existing uplands, including haul trucks that regularly travel across adjacent agricultural lands and may produce other back ground noise. Noise levels from the previous Parson's Slough project were monitored in 2010 and 2011. Background noise during that project was approximately 57dBC Lmax measured at 20 and 40 m northeast of the pile installation site and approximately 1.5 m above the ground (ESNERR, 2011). Although no specific measurements have been made at the proposed project area, it is reasonable to believe that levels may generally be similar to the previous project at Parson's Slough as there is a similar type and degree of activity within the same type of environment (tidal salt marsh). Known sound levels and frequency ranges associated with anthropogenic sources similar to those associated to this project are summarized in Table 3. Details of the source types are described in the following table.

TABLE 3—REPRESENTATIVE AIRBORNE SOUND LEVELS OF ANTHROPOGENIC SOURCES—dB re: 20µPa

Sound source	Airborne sound level	Reference
Vibratory driving of steel sheet piles	97 dBA at 10 m 90 dBA at 30 m	ESNERR, 2011 (Parson's Slough). FHWA, 2015.
Heavy Earth Moving Equipment (<i>i.e.</i> , excavators, backhoes, and front loaders).	80–90 dB at 15.24 m	
UPRR trains	108 dBC Lmax at 20m and 40 m (northeast of the pile installation).	ESNERR, 2011 (Parson's Slough).

Airborne noise associated with this project includes noise from construction activities (including vibratory pile driving) during the restoration of the tidal marsh. Airborne noise produced from earth moving equipment (*i.e.*, backhoes, front end loaders) for construction, may produce sound levels at 80–90 dB at 15.24 m (FHWA, 2015) (Table 3). The construction activity may generate noise above ambient levels or create a visual disturbance for a period of 11 months. Although the exact

distance of disturbance from noise is unknown, it is anticipated that the disturbance area would be smaller than the sheet pile installation impact area since construction equipment does not generate as much noise as pile driving. Trains along the UPRR likely generate fairly high noise levels in the eastern portion of the project area, so earth moving equipment operated in this area may not elevate ambient noise levels when trains are present. For this project, vibratory pile driving will only occur

over four days of the 136 total days of construction and conducted at low tide, to the extent practicable, when minimal water is present to minimize underwater sound impacts.

Acoustic Effects

Marine mammals that occur in the project area could be exposed to airborne or underwater sounds associated with construction activities that have the potential to cause harassment, depending on their distance

from construction activities. Although there is some potential that seals in the water could be exposed to underwater sound during the proposed four days of vibratory sheet pile driving, the underwater footprint of acoustic effect would likely be very small due to acoustic shadowing within the sinuous marsh area at the project site and the low source level, and seals would likely be disturbed by other stimuli associated with the project activities. Therefore, we do not separately consider underwater sound and do not discuss it further in this document.

Anthropogenic airborne sound could cause hauled out pinnipeds to exhibit changes in their normal behavior, such as reduction in vocalizations, or cause them to temporarily abandon their habitat and move further from the source. Studies by Blackwell *et al.* (2004) and Moulton *et al.* (2005) indicate a tolerance or lack of response to unweighted airborne sounds as high as 112 dB peak and 96 dB root mean square (rms).

Visual Disturbance

Visual stimuli due to the presence of construction activities during the project have the potential to result in take of harbor seals at nearby haul out sites through behavioral disturbance. Harbor seals can exhibit a behavioral response to visual stimuli (*e.g.*, including alert behavior, movement, vocalizing, or flushing). NMFS does not consider the lesser reactions (*e.g.*, alert behavior) to constitute harassment. Upon the occurrence of low-severity disturbance (*i.e.*, the approach of a vessel or person as opposed to an explosion or sonic boom), pinnipeds typically exhibit a continuum of responses, beginning with alert movements (*e.g.*, raising the head), which may then escalate to movement away from the stimulus and possible flushing into the water. Flushed pinnipeds typically re-occupy the haul out within minutes to hours of the stimulus.

Due to the likely constant combination of visual and acoustic stimuli resulting from the presence and use of heavy equipment and work crews, we assume that harbor seals present in the areas adjacent to the footprint of the construction area may be disturbed and do not consider acoustic effects separately from the effects of potential disturbance due to visual stimuli.

Anticipated Potential Effects on Marine Mammal Habitat

The primary potential impact to marine mammal habitat associated with

the construction activity is the exclusion from the accustomed haul out areas. However, other potential impacts to the surrounding habitat from physical disturbance are also possible.

Physical Impacts to Haul Out Habitat

Eight harbor seal haul out sites were identified in the Minhoto-Hester Marsh Complex, which also included haul outs in portions of Yampah Marsh adjacent to Minhoto-Hester Marsh (see Figure 4–5 of the application). Four of the eight haul out sites are within the footprint of the construction area and identified as Small Island, M2 North, M3 North and M3 East. Only the edge of the M2 North haul out site will be converted back to tidal marsh as it borders a borrow ditch that was previously excavated to create a berm (straight north south ditch) and is not a natural or historical marsh feature. The haul out sites of Small Island, M3 North and M3 East will remain intact. These four haul out sites will be temporarily unavailable to harbor seals, but once construction is complete, those sites will be available again (see Figure 4–4 of the application). During the restoration, the inability of seals to use suitable habitat within the footprint of the construction area would temporarily remove less than two percent of the potential haul out areas in the Slough (see Figure 4–4 of the application). Although the proposed action would permanently alter habitat within the footprint of the construction area, harbor seals haul out in many locations throughout the estuary, and the proposed activities are not expected to have any habitat-related effects that could cause significant or long-term consequences for individual harbor seals or their population. The restoration of the marsh habitat will have no adverse effect on marine mammal habitat, but possibly a long-term beneficial effect on harbor seals by improving ecological function of the slough, inclusive of higher species diversity, increased species abundance, larger fish, and improved habitat.

Pile Driving Effects on Potential Foraging Habitat

The area likely impacted by the project is relatively small compared to the available habitat in estuary waters in the Elkhorn Slough and the region. Avoidance by potential prey (*i.e.*, fish) of the immediate area due to the temporary loss of this foraging habitat is also possible. The duration of fish avoidance of this area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution and behavior is anticipated. Any impact would be short term and site-specific,

and habitat conditions would return to their pre-disturbance state shortly after the cessation of in-water construction activities. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity.

In addition, primary foraging habitat for harbor seals may be mostly outside of the project area as they primarily use the Minhoto-Hester Marsh Complex for hauling out. Research by Oxman (1995) and Harvey *et al.* (1995) compared catch rates from trawls conducted in the Elkhorn Slough to species detected in seal scat and found that seals primarily feed between Seal Bend and the oceanic nearshore shelf in Monterey Bay. Oxman (1995) also radio-tagged seals and found that they all spent their nights diving within 0.5 to 7 km of shore, most (88 percent) 1.25 km south of the Elkhorn Slough entrance, with the others (12 percent) either 4 km north at the Pajaro River mouth, or 7.25 km north at Sunset Beach, Santa Cruz.

In summary, given the short daily duration of sound associated with individual pile driving events (four days) and the relatively small areas being affected, pile driving activities associated with the proposed action are not likely to have a permanent, adverse effect on the foraging habitat. Harbor seals may forage mostly in the nearshore oceanic shelf; therefore, NMFS does not expect the proposed action to have habitat-related effects on harbor seal foraging success that could cause significant long-term consequences for individual harbor seals or their population.

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

The primary purposes of these mitigation measures are to minimize disturbance from construction activities and to monitor marine mammal behavioral response to any potential sound and visual disturbances.

Here we provide a description of the mitigation measures we propose to require as part of the proposed Authorization.

Timing Restrictions

Construction work shall occur only during daylight hours when visual monitoring of marine mammals can be implemented. No in-water work will be conducted at night.

Construction Activities

After sheet piles are installed, harbor seals would no longer be able to access the project area and would temporarily be displaced from using those four haul outs. It would be unlikely for seals to enter the construction area as they would need to traverse a minimum 7ft high berm into an area without water. However, if a seal did enter the project area, CADFW shall notify NMFS immediately and further action would be determined. In addition, to reduce the risk of potentially startling marine mammals with a sudden intensive sound, the contractor shall begin construction activities gradually each day by moving around the project area and starting tractor one at a time.

Pupping Season

While CADFW does not anticipate any pupping within the project area, should a pup less than one week old (neonate) come within 20 m of where heavy machinery is working, construction activities in that area would be delayed until the pup has left the area. In the event that a pup less than one week old remains within those 20 m, NMFS would be consulted to determine the appropriate course of action.

Vibratory Pile Driving

An exclusion zone of 15 m shall be established during the four days of pile driving to prevent the unlikely potential for physical injury of harbor seals due to close approach to construction equipment. Pile extraction or driving shall not commence (or re-commence following a shutdown) until marine mammals are not sighted within the exclusion zone for a 15-minute period. If a marine mammal enters the exclusion zone during sheet pile work, work shall stop until the animal leaves the exclusion zone or is not observed for a minimum of 15 minutes.

Based on our evaluation of the proposed measures, as well as any other potential measures that may be relevant to the specified activity, we have preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Any monitoring requirement we prescribe should improve our understanding of one or more of the following:

- Occurrence of marine mammal species in the action area (*e.g.*, presence, abundance, distribution, density).
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) Action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) Affected species (*e.g.*, life history, dive patterns); (3) Co-occurrence of marine mammal species with the action; or (4) Biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas).
- Individual responses to acute stressors, or impacts of chronic exposures (behavioral or physiological).
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of an individual; or (2) Population, species, or stock.
- Effects on marine mammal habitat and resultant impacts to marine mammals.
- Mitigation and monitoring effectiveness.

Proposed Monitoring—Visual Marine Mammal Observations

Qualified Protected Species Observer (PSO) (a NMFS approved biologist) shall be used to detect, document, and minimize impacts to marine mammals. Monitoring would be conducted before, during, and after construction activities. In addition, PSOs shall record all incidents of marine mammal occurrence, regardless of distance from activity, and document any behavioral reactions in concert with distance from construction activities.

Important qualifications for PSOs for visual monitoring include:

- Visual acuity in both eyes (correction is permissible) sufficient for

discernment of harbor seals on land or in the water with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

- Advanced education in biological science or related field (undergraduate degree or higher required);
- Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when construction activities were conducted; dates and times when construction activities were suspended, if necessary; and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

PSOs shall be placed at the best vantage point(s) (*e.g.*, Yampah Island, see Figure 2 of the monitoring plan in the application) practicable to monitor for marine mammals. PSOs shall also conduct mandatory biological resources awareness training for construction personnel. The awareness training shall be provided to brief construction personnel on marine mammals (inclusive of identification as needed, *e.g.*, neonates) and the need to avoid and minimize impacts to marine mammals. If new construction personnel are added to the project, the contractor shall ensure that the personnel receive the mandatory training before starting work. The PSO would have authority to stop construction if marine mammals appear distressed (evasive maneuvers, rapid breathing, inability to flush) or in danger of injury.

The CADFW has developed a monitoring plan based on discussions between the CADFW and NMFS. The CADFW will collect sighting data and behavioral responses to construction activities for marine mammal species observed in the region of activity during the period of activity. All PSOs will be trained in marine mammal identification and behaviors and are required to have no other construction-

related tasks while conducting monitoring.

The monitoring plan involves PSOs surveying and conducting visual counts beginning prior to construction activities (beginning at least 30 minutes prior to construction activities), hourly monitoring during construction activities, and post-activity monitoring (continuing for at least 30 minutes after construction activities have ended). PSOs will conduct monitoring from a vantage point in the marsh (e.g., Yampah Island) such that all seal haul outs (see Figure 2 of the monitoring plan in the application) are in full view. During construction activities, monitoring shall assess behavior and potential behavioral responses to noise and visual disturbance due to the proposed activities. To document

disturbance and possible incidental take during construction activities, the monitoring protocols will be implemented at *all times* when work is occurring (1) in-water, (2) north of a line starting at 36°48'38.91 N., 121°45'08.03 W., and ending 36°48'38.91 N., 121°45'27.11 W., (see Figure 1 of the monitoring plan in the application), and (3) within 30.5 m (100 ft) of tidal waters. When work is occurring in other areas, monitoring will occur for the first three days of construction and anytime there is a significant change in activities or location of construction activities within the project area. If disturbance is noted at any time, then monitoring will continue until there are three successive days of no disturbance. If there is a gap in construction activities of more than one week, the monitoring protocols will

again be implemented for the first three days that construction resumes.

Counts will be performed for harbor seals hauled out and observed in the water. Total counts, sex, and age (adult, juvenile, pup) will be recorded. Behavioral monitoring will be conducted for the duration of the construction activities to document any behavioral responses to visual (or other) disturbance, according to the disturbance scale shown in Table 4 below. When responses are observed, the degree of response (i.e., alert and flush, movement of more than one m, or change in direction of movement) and the assumed cause (whether related to construction activities or not) will be noted. Only responses at Level 2 and 3 are considered to be take under the MMPA.

TABLE 4—SEAL RESPONSE TO DISTURBANCE

Level	Type of response	Definition
1	Alert	Seal head orientation or brief movement in response to disturbance, which may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, changing from a lying to a sitting position, or brief movement of less than twice the animal's body length. Alerts would be recorded, but not counted as a 'take'.
2	Movement	Movements away from the source of disturbance, ranging from short withdrawals at least twice the animal's body length to longer retreats, or if already moving a change of direction of greater than 90 degrees. These movements would be recorded and counted as a 'take'.
3	Flush	All retreats (flushes) to the water. Flushing into the water would be recorded and counted as a 'take'.

Additional parameters will be recorded including: Atmospheric conditions, cloud cover, visibility conditions, air and water temperature, tide height, and any other disturbance (visual or noise) that may be noted. We require that PSOs use approved data forms. Among other pieces of information, CADFW will record detailed information about any implementation of shutdowns, including the distance of animals to construction activities and description of specific actions that ensued and resulting behavior of the animal, if any. In addition, CADFW will attempt to distinguish between the number of individual animals taken and the number of incidents of take. Additional requirements of PSOs include:

(1) The PSO shall be selected prior to construction activities;

(2) The PSO shall attend the project site prior to, during, and after construction activities cease each day that the construction activities occur;

(3) The PSO shall search for marine mammals on the seal haul outs, other suitable haul out habitat, and within the waters of this area from the observation site. PSOs will use binoculars and the

naked eye to search continuously for marine mammals;

(4) The PSO shall be present during construction activities to observe for the presence of marine mammals in the vicinity of the specified activity. All such activity would occur during daylight hours. If inclement weather limits visibility within the area of effect, the PSO would perform visual scans to the extent conditions allow. For pile driving activities, if the 15 m area around the pile driving is obscured by fog or poor lighting conditions, pile driving will not be initiated until that area is visible;

(5) If marine mammals are sighted by the PSO, the PSO shall record the number of marine mammals and the duration of their presence while the construction activity is occurring. The PSO would also note whether the marine mammals appeared to respond to the noise/visual disturbance and, if so, the nature of that response. The PSO shall record the following information: Date and time of initial sighting, tidal stage, weather conditions, species, behavior (activity (e.g., foraging, mating, etc.), group cohesiveness, direction and speed of travel, etc.), number, tagged animals, whether the animal(s) are in

the water or hauled out, group composition, distance between construction activities and marine mammal(s), number of animals impacted, location, construction activities occurring at time of sighting (earth moving equipment, construction personnel walking/talking, pile driving etc.), and monitoring and mitigation measures implemented or not implemented). The observations would be reported to NMFS; and

(6) A final report would be submitted summarizing all effects from construction activities and marine mammal monitoring during the time of the authorization.

A written log of dates and times of monitoring activity will be kept. The log shall report the following information:

- Time of PSO arrival on site;
- Time of the commencement of construction activities;
- Distances to all marine mammals relative to the disturbance;
- Observations, notes on marine mammal behavior during construction activities, as described above, and on the number and distribution observed in the project vicinity;
- For observations of all other marine mammals (if observed) the time and

duration of each animal’s presence in the project vicinity; the number of animals observed; the behavior of each animal, including any response to construction activities;

- Time of the cessation of construction activities; and
- Time of PSO departure from site.

Individuals implementing the monitoring protocol will assess its effectiveness using an adaptive approach. PSOs will use their best professional judgment throughout implementation and seek improvements to these methods when deemed appropriate. Any modifications to protocol will be coordinated between NMFS and the CADFW.

Proposed Reporting

A draft report will be submitted to NMFS within 90 days of the completion of marine mammal monitoring, or sixty days prior to the issuance of any subsequent IHA for this project (if required), whichever comes first. The report will include marine mammal observations pre-activity, during-activity, and post-activity of construction, and will also provide descriptions of any behavioral responses by marine mammals due to disturbance from construction activities and a complete description of total take estimate based on the number of marine mammals observed during the course of construction. A final report must be submitted within thirty days following resolution of comments on the draft report.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines

“harassment” as: “. . . Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].”

All anticipated takes would be by Level B harassment resulting from construction activities involving temporary changes in behavior. It is unlikely that injurious or lethal takes would occur even in the absence of the planned mitigation and monitoring measures. Further, the proposed mitigation and monitoring measures are expected to minimize the possibility of take by Level A harassment, such that it is considered discountable.

Given the many uncertainties in predicting the quantity and types of impacts of sound or visual disturbance on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound or visual disturbance. In practice, depending on the amount of information available to characterize daily and seasonal movement and distribution of affected marine mammals, it can be difficult to distinguish between the number of individuals harassed and the instances of harassment and, when duration of the activity is considered, it can result in a take estimate that overestimates the number of individuals harassed. In particular, for stationary activities, it is more likely that some smaller number of

individuals may accrue a number of incidences of harassment per individual than for each incidence to accrue to a new individual, especially if those individuals display some degree of residency or site fidelity and the impetus to use the site (*e.g.*, because of foraging opportunities) is stronger than the deterrence presented by the harassing activity.

In order to estimate the potential incidents of take that may occur incidental to the specified activity, we must first estimate the area subject to the disturbance that may be produced by the construction activities and then consider in combination information about harbor seals present and the number of days animals would be disturbed during the project. We then provide information to estimate potential incidents of take from disturbance as related to construction activities.

Introduction to Acoustic Criteria

We use generic sound exposure thresholds to determine when an activity that produces sound might result in impacts to a marine mammal such that a take by harassment might occur. To date, no studies have been conducted that explicitly examine impacts to marine mammals from pile driving sounds or from which empirical sound thresholds have been established. The generic thresholds described below (Table 5) are used to estimate when harassment may occur (*i.e.*, when an animal is exposed to levels equal to or exceeding the relevant criterion) in specific contexts. However, useful contextual information that may inform our assessment of effects is typically lacking and we consider these thresholds as step functions.

TABLE 5—CURRENT ACOUSTIC EXPOSURE CRITERIA FOR PINNIPEDS

Criterion	Definition	Threshold
Level B harassment (underwater) ...	Behavioral disruption	120 dB (non-impulse, continuous source, <i>i.e.</i> , vibratory pile driving) (rms).
Level B harassment (airborne)	Behavioral disruption	90 dB (harbor seals).

Sound Produced From Construction Activities

Any underwater noise produced during pile driving in Minhoto-Hester Marsh would attenuate according to the shoreline topography. In a narrow and relatively shallow slough, bends and topographic changes in the bottom would act to reflect sound and attenuate sound levels. Seals within the project area, from the sound source (vibratory pile driving) to the north bank of the

main channel of Elkhorn Slough (approximately 525–600 m; see Figure 6–4 in the application), may be impacted by noise and were used as the area to define Level B take estimates. Seals may be exposed to underwater noise that could cause behavioral harassment (*i.e.*, above NMFS’ 120-dB [rms re 1 µPa] behavioral harassment criterion) only within a small area (see Figure 6–4 of the application). This small section of channel defines the

extent of the potential Level B harassment zone for underwater noise.

Restoration activities would produce airborne noise that could potentially harass harbor seals that are hauled out near the activities. For example, airborne noise produced from earth moving equipment (*i.e.*, backhoes, front end loaders) for construction, may produce sound levels at 80–90 dB at 15.24 m (FHWA, 2015) (Table 3). However, disturbance resulting from use

of heavy equipment or other aspects of the proposed work could occur due to visual stimuli or airborne noise, and the likely range within which seals may be disturbed would be larger than the range to the 90-dB airborne noise disturbance criterion. Therefore, we do not evaluate takes specifically due to exposure to airborne noise and do not discuss airborne noise further in this document.

Description of Take Calculation

The following sections are descriptions of how take was determined for impacts to harbor seals from noise and visual disturbance related to construction activities.

Incidental take is calculated for each species by estimating the likelihood of a marine mammal being present within the project area during construction activities. Expected marine mammal presence is determined by past observations and general abundance during the construction window. For this project, the take requests were estimated using local marine mammal data sets, and information from state and federal agencies.

The calculation for marine mammal exposures is estimated by:

Exposure estimate = N (number of animals in the area) * 132 days of construction activities or 4 days of pile driving activity

All estimates proposed by the applicant and accepted by NMFS, are considered conservative. Construction activities will occur in sections, and some sections (e.g., M1) are further away from seal haul outs (approximately 420 m and greater). Noise from construction activities in more southern sections of the footprint of the construction area may cause fewer disturbances to seals. Not all seals that previously used the haul outs within the footprint of the construction area will use the haul outs just outside the project. The channel is small and the available habitat would likely not be able to support all 100 seals of the Minhoto-Hester Marsh Complex. Some seals may seek alternative haul out habitat in other parts of Elkhorn Slough. Pile driving will only occur for a short duration (four days) and would not be continuous during the day (daylight hours only). Using this approach, a summary of estimated takes of harbor seals incidental the project activities are provided in Table 6. Estimates include Level B harassment as a result of exposure to noise and visual disturbance during construction activities.

The best scientific information available was considered for use in the

harbor seal take assessment calculations. It is difficult to estimate the number of harbor seals that could be affected by construction activities because the animals are mainly either in the project area or venture near the project area to haul out during the day when the tide is low. Once the tidal channel is blocked and four haul out sites (Small Island, M2 North, M3 North and M3 East) are inaccessible, some seals will be able to use the alternative four hauls outs (M5 Northeast, M5 Southeast, Yampah Northwest and Yampah Southwest). Seals that use these alternative four haul outs may be potentially impacted from noise and visual disturbance from construction activities of the tidal marsh restoration, but seals that normally use areas in the interior tidal channel may use haul outs that are outside the expected area of influence of the construction activity.

Various types of construction equipment (in addition to pile drivers) would be utilized for project activities such as dozers, loaders, and backhoes that may generate sound that can cause both noise and visual disturbance to harbor seals. Although the exact distance of all noise disturbances from construction activities is unknown, it is anticipated that the disturbance area for airborne noise would be small as earth moving equipment (*i.e.*, backhoes, front end loaders) produce sound levels at 80–90 dB at 15.24 m and vibratory driving of sheet piles at 90 dBA at 30 m (Table 3) (dBA can be defined as dB with A-weighting designed to match the average frequency response of human hearing and enables comparison of the intensity of noise with different frequency characteristics). The closest haul outs that will be available to seals are 43–131 m outside the footprint of the construction area. If seals are in the water near the project or on available haul outs there is a chance that seals could be exposed to noise and/or visual disturbance from the construction activities. Construction activities may impact seals using haul outs M5 Northeast, M5 Southeast, Yampah Northwest and Yampah Southwest.

We assume that an average of 50 harbor seals will potentially occupy the alternate haul outs based on the size of the haul out habitat that is available. Four haul outs (out of eight) will be temporarily inaccessible during the construction; therefore, half of the seals (approximately 50 out of the 100 seals) of the Minhoto-Hester Marsh Complex will likely use the alternate four haul outs and experience disturbance from construction activities. It is presumed that the other half of the seals (50 seals) of the Minhoto-Hester March Complex

will utilize other suitable haul out habitat within Elkhorn Slough and are not considered available to be “taken” during construction activities (Monique Fountain, ESNERR, pers. comm. 2016). We multiply this estimate of the number of harbor seals potentially available to be taken by the total number of days (132 days) the applicant expects construction activities to occur. Therefore, CADFW requests, and NMFS proposes, authorization of 132 instances of takes per seal for 50 harbor seals (total of 6,600 instances) by Level B harassment incidental to construction activities (airborne noise and visual disturbance) over the course of the proposed action if all of the estimated harbor seals present are taken by incidental harassment each day (Table 6).

While the pile driving activities are planned to take place during slack tide to the extent possible (when harbor seals are less likely to be present), and only for a short duration, there may still be animals exposed to disturbance from pile driving even if the number of individual harbor seals expected to be encountered is very low. There are approximately 100 harbor seals that utilize Minhoto-Hester Marsh Complex that may be disturbed during pile driving activities. Additionally, there is some potential that an additional 100 harbor seals that occur in the adjacent Parson’s Slough Complex and Yampah Marsh and 50 harbor seals that may be present in the main channel of Elkhorn Slough could also be disturbed. CADFW requests, and NMFS proposes, authorization of four instances of take per seal for 250 harbor seals (total of 1,000 instances) by Level B harassment incidental to pile driving activities over the course of the proposed action if all of the estimated harbor seals present are taken by incidental harassment each day. This is an estimate based on the average number of harbor seals that potentially occupy the project area (and surrounding areas) (250 seals) multiplied by the total number of days (four days) the applicant expects pile driving activities to occur (Table 6). This is a very conservative estimate, as not all the seals are likely in or near the project area at the same time, some of which are due to environmental variables such as tide level and the time of day. In the Minhoto-Hester Marsh Complex, a maximum daily average of 40 seals were present in the project area (on Small Island, M2 North, M3 North, and M3 East haul out sites) and 41 seals outside the project area (on M5 Northeast, M5 Southeast, Yampah Northwest and Yampah Southwest haul

out sites) during the 2013 surveys, which is slightly less than the proposed 100 seals that may be taken. In addition, noise attenuates quickly due to shallow water, tidal influence and sinewy channels of Elkhorn Slough. NMFS considers this to be an conservative estimate by the applicant for the following reasons: (1) It would be unlikely that all 250 individual seals would be in the vicinity of the project area daily as there are other areas of the Slough that they likely use to haul out

(see Figure 4–4 of the application); (2) as mentioned above, the haul out sites within the footprint of the construction area would be inaccessible to harbor seals and NMFS would not expect harbor seals to be affected by pile driving activities during the days/times when pile driving and high tide events co-occur; (3) harbor seals begin to leave the project area at night when they are likely foraging in Monterey Bay and will not be exposed to sound generated during pile driving that may take place

during early evening hours; and, (4) based on previous survey effort conducted for the adjacent Parson’s Slough project, some harbor seals moved out of the disturbance area when construction activities were initiated and moved west (downstream) towards Seal Bend or other areas of suitable habitat along the main channel of Elkhorn Slough (see Figure 4–4 of the application).

TABLE 6—SUMMARY OF THE PROPOSED AUTHORIZED INCIDENTAL TAKE BY LEVEL B HARASSMENT OF HARBOR SEALS FROM PILE DRIVING AND CONSTRUCTION ACTIVITIES

Species	Estimated number of individuals taken per day of activity (seals)	Proposed take authorization (number of exposures from construction activities—132 days)	Abundance	Approximate percentage of estimated stock (takes authorized/population) (%)	Population trend
Pacific harbor seal	50	6,600	30,968—California stock ..	19.37	Increased in California 1981 to 2004. Population Trend.
Species		Proposed Take Authorization (Number of Exposures from Pile Driving—4 days).	Abundance	
Pacific harbor seal	250	1,000	30,968—California stock ..	3.2	Increased in California 1981 to 2004.
Total	300	7,600	24.54	

No takes by Level A harassment, serious injury, or mortality are expected from the disturbance associated with the construction activities. It is unlikely a stampede (a potentially dangerous occurrence in which large numbers of animals succumb to mass panic and rush away from a stimulus) would occur or abandonment of pups. There is no pupping expected within the footprint of the construction area and most pups are along the main channel of Elkhorn Slough. Pacific harbor seals have been hauling out in the project area and within the greater Elkhorn Slough throughout the year for many years (including during pupping season and while females are pregnant) while being exposed to anthropogenic sound sources such as recreational vessel traffic, UPRR, and other stimuli from human presence. The number of harbor seals disturbed would likely also fluctuate depending on time day and tidal stage. Fewer harbor seals will be present in the early morning and approaching evening hours as seals leave the haul out site to feed and they are also not present when the tide is high and the haul out is inundated.

The following assumptions are made when estimating potential incidences of take:

- All marine mammal individuals potentially available are assumed to be present within the relevant area, and thus incidentally taken;
- An individual can only be taken once during a 24-h period;
- There will be 136 total days of activity for project (four days of pile driving and 132 construction activities); and
- Exposures to sound levels at or above the relevant thresholds equate to take, as defined by the MMPA.

Analyses and Preliminary Determinations

Negligible Impact Analysis

NMFS has defined “negligible impact” in 50 CFR 216.103 as “. . . an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.” A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of Level B harassment takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of

marine mammals that might be “taken” through behavioral harassment, we consider other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

Construction activities associated with this project have the potential to disturb or displace marine mammals. No serious injury or mortality would be expected at all, and with mitigation we expect to avoid any potential for Level A harassment as a result of the Minhoto-Hester Marsh construction activities, and none are proposed for authorization by NMFS. The specified activities may result in take, in the form of Level B harassment (behavioral disturbance) only, from visual disturbance and/or noise from construction activities. The project area is within a portion of the local habitat for harbor seals of the greater Elkhorn Slough and seals are present year-round. Behavioral disturbances that could result from anthropogenic sound or visual disturbance associated with these activities are expected to affect only a small amount of the total population

(i.e., likely maximum of 250 individual seals), although those effects could be recurring over the life of the project if the same individuals remain in the project vicinity. Harbor seals may avoid the area or halt any behaviors (e.g., resting) when exposed to anthropogenic noise or visual disturbance. Due to the abundance of suitable haul out habitat available in the greater Elkhorn Slough, the short-term displacement of resting harbor seals is not expected to affect the overall fitness of any individual animal.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as displacement from the area or disturbance during resting. The construction activities analyzed here are similar to, or less impactful than for Parson's Slough (and other projects) which have taken place with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment. Repeated exposures of individuals to levels of noise or visual disturbance that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (i.e., 24 hour cycle). Behavioral reactions (such as disruption of critical life functions, displacement, or avoidance of important habitat) are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.*, 2007). However, Pacific harbor seals have been hauling out at Elkhorn Slough during the year for many years (including during pupping season and while females are pregnant) while being exposed to anthropogenic sound and visual sources such as vessel traffic, UPRR trains, and human voices from kayaking. Harbor seals have repeatedly hauled out to rest (inside and outside the project area) or pup (outside of the project area) despite these potential stimuli. The proposed activities are not expected to result in the alteration of reproductive or feeding behaviors. No births have been documented in the project area and it is not likely that neonates will be in the project area as females prefer to keep their pups along the main channel of Elkhorn Slough, which is outside the area expected to be impacted by project activities. Seals are primarily foraging outside of Elkhorn Slough and at night in Monterey Bay, outside the project area, and during

times when construction activities are not occurring.

Pacific harbor seals, as the potentially affected marine mammal species under NMFS jurisdiction in the action area, are not listed as threatened or endangered under the ESA and NMFS SARs for this stock have shown that the population is increasing and is considered stable (Carretta *et al.*, 2016). Even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. The restoration of the marsh habitat will have no adverse effect on marine mammal habitat, but possibly a long-term beneficial effect on harbor seals by improving ecological function of the slough, inclusive of higher species diversity, increased species abundance, larger fish, and improved habitat.

In summary, this negligible impact analysis is founded on the following factors: (1) The possibility of injury, serious injury, or mortality may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior; (3) primary foraging and reproductive habitat are outside of the project area and the construction activities are not expected to result in the alteration of habitat important to these behaviors or substantially impact the behaviors themselves (4) there is alternative haul out habitat just outside the footprint of the construction area, along the main channel of Elkhorn Slough, and in Parson's Slough that would be available for seals while some of the haul outs are inaccessible; (5) restoration of the marsh habitat will have no adverse effect on marine mammal habitat, but possibly a long-term beneficial effect (6) and the presumed efficacy of the proposed mitigation measures in reducing the effects of the specified activity to the level of least practicable impact. In addition, these stocks are not listed under the ESA or considered depleted under the MMPA. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals

and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, we preliminarily find that the total marine mammal take from the construction activities will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers Analyses

The number of incidents of take proposed for authorization for harbor seals would be considered small relative to the relevant stock and populations (see Table 6) even if each estimated taking occurred to a new individual. This is an extremely unlikely scenario as, for pinnipeds in estuarine/inland waters, there is likely to be some overlap in individuals present day-to-day. As noted above, we assume that a maximum of 250 individual seals would be impacted during the course of this specified activity. We preliminarily find that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by these actions. Therefore, we have determined that the total taking of harbor seals would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

No ESA-listed species under NMFS' jurisdiction are expected to be affected by these activities. Therefore, NMFS has determined that a section 7 consultation under the ESA is not required.

National Environmental Policy Act

Pursuant to NEPA, NMFS is currently conducting an analysis to determine whether or not this proposed IHA may have a significant effect on the quality of the human environment. This analysis will be completed prior to the issuance or denial of the final IHA.

Proposed Authorization

As a result of these preliminary determinations, we propose to issue an IHA to the CADFW for conducting the described tidal restoration activities in the Minhoto-Hester Marsh of Elkhorn Slough, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

1. This IHA is valid for one year from the date of issuance, with the project

start date expected between October 2016 and February 2017.

2. This IHA is valid only for construction activities (inclusive of vibratory pile driving) for tidal marsh restoration associated within the Minhoto-Hester Marsh Restoration Project (Phase 1) in Elkhorn Slough (Monterey, CA).

3. General Conditions

(a) A copy of this IHA must be in the possession of, its designees, and work crew personnel operating under the authority of this IHA.

(b) The species authorized for taking is the Pacific harbor seal (*Phoca vitulina richardii*).

(c) The taking, by Level B harassment only, is limited to the species listed in condition 3(b). See Table 6 (above) for numbers of take authorized.

(d) The taking by injury (Level A harassment), serious injury, or death of the species listed in condition 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.

(e) The taking of any marine mammal in a manner prohibited under this IHA must be reported immediately to the Office of Protected Resources, NMFS.

(f) CADFW shall conduct briefings between construction supervisors and crews, marine mammal monitoring team, and CADFW staff prior to the start of all construction activities for tidal marsh restoration, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

4. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures:

(a) *Timing Restrictions:* Construction work shall occur only during daylight hours.

(b) *Construction Activities:* If a seal enters the project area after installation of barriers, CADFW shall notify NMFS immediately. In addition, the construction contractor shall begin construction activities gradually each day (e.g., by moving around the project area and starting equipment sequentially).

(c) *Pupping Season:* If a pup less than one week old (neonate) comes within 20 m of where heavy machinery is working, construction activities in that area would be delayed until the pup has left the area. In the event that a pup less than one week old remains within those 20 m, NMFS would be consulted to determine the appropriate course of action.

(d) *Vibratory Pile Driving:* An exclusion zone (shutdown zone) of 15 m shall be established during pile driving. Pile extraction or driving shall not commence (or re-commence following a shutdown) until marine mammals are not sighted within the exclusion zone for a 15-minute period. If a marine mammal enters the exclusion zone during sheet pile work, work shall stop until the animal leaves the exclusion zone or until 15 minutes has elapsed without observation of the animal within the zone.

5. Monitoring

The holder of this Authorization is required to abide by the following monitoring conditions:

(a) Visual Monitoring

Qualified Protected Species Observer (PSO) (a NMFS approved biologist) shall be used to detect, document, and minimize impacts to marine mammals. Qualifications for PSOs for visual monitoring include:

(i) Visual acuity in both eyes (correction is permissible) sufficient for discernment of harbor seals on land or in the water with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

(ii) Advanced education in biological science or related field (undergraduate degree or higher required);

(iii) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(iv) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(v) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

(vi) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when construction activities were conducted; dates and times when construction activities were suspended to avoid potential incidental injury from construction sound or visual disturbance of marine mammals observed; and marine mammal behavior; and

(vii) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

(b) PSO Monitoring and Data Collection

Monitoring shall be conducted before, during, and after construction activities. In addition, PSOs shall record all

incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from construction activities. PSOs will be placed at the best vantage point(s) practicable to monitor for marine mammals.

The PSO shall also conduct biological resources awareness training for construction personnel. The awareness training will be provided to brief construction personnel on identification of marine mammals (including neonates) and the need to avoid and minimize impacts to marine mammals. If new construction personnel are added to the project, the contractor shall ensure that the personnel receive the mandatory training before starting work. The PSO would have authority to stop construction if marine mammals appear distressed (evasive maneuvers, rapid breathing, inability to flush) or in danger of injury. Monitoring requirements also include:

(i) The holder of this Authorization must designate at least one biologically-trained, on-site individual(s), approved in advance by NMFS, to monitor marine mammal species. The PSO will be trained in marine mammal identification and behaviors and are required to have no other construction-related tasks while conducting monitoring.

(ii) PSOs shall be provided with the equipment necessary to effectively monitor for marine mammals in order to record species, behaviors, and responses to construction activities.

(iii) *Pre-activity Monitoring:* At least 30 minutes prior to the start of all construction activities, the PSO(s) must conduct observations on the number, type(s), location(s), and behavior(s) of marine mammals.

(iv) *Monitoring during Construction Activity:* To document disturbance and possible incidental take during construction activities, the monitoring protocols shall be implemented at *all times* when work is occurring (1) in-water, (2) north of a line starting at 36°48'38.91 N., 121°45'08.03 W., and ending 36°48'38.91 N., 121°45'27.11 W., (see Figure 1 of the monitoring plan in the application), and (3) within 30.5 m (100 feet) of tidal waters. When work is occurring in other areas, the monitoring protocols shall be implemented for the first three days of construction and anytime there is a significant change in activities or location of construction activities within the project area. If disturbance is noted at any time, then monitoring shall continue until there are three successive days of no disturbance. If there is a gap in

construction activities of more than one week the monitoring protocols shall again be implemented for the first three days that construction resumes.

Data collection during marine mammal monitoring shall consist of hourly counts of all marine mammals by species, number, sex, age class, a description of behavior (if possible), location, direction of movement, type of construction that is occurring, time construction activities starts and ends, any noise or visual disturbance, and time of the observation. When responses are observed, the type of take (*i.e.*, alert and flush, movement of more than one m, or change in direction of movement) and the assumed cause (whether related to construction activities or not) shall be noted. Environmental conditions such as weather, visibility, temperature, tide level, current, and sea state shall also be recorded. A written log of dates and times of monitoring activity will be kept. The log shall report the following information:

- Time of PSO arrival on site;
- Time of the commencement of construction activities;
- Distances to all marine mammals relative to the disturbance;
- Observations, notes on marine mammal behavior during construction activities, as described above, and on the number and distribution observed in the project vicinity;
- For observations of all other marine mammals (if observed) the time and duration of each animal's presence in the project vicinity; the number of animals observed; the behavior of each animal, including any response to construction activities;
- Time of the cessation of construction activities;
- Time of PSO departure from site; and
- An estimate of the number (by species) of marine mammals that are known to have been disturbed by construction activities (based on visual observation) with a discussion of any specific behaviors those individuals exhibited. Disturbance must be recorded according to NMFS' three-point scale.

Individuals implementing the monitoring protocol will assess its effectiveness using an adaptive approach. PSOs will use their best professional judgment throughout implementation and seek improvements to these methods when deemed appropriate. Any modifications to protocol will be coordinated between NMFS and the CADFW.

(v) *Post-activity Monitoring:* At least 30 minutes following the cessation of all construction activities, the PSO(s) must conduct observations on the number,

type(s), location(s), and behavior(s) of marine mammals.

6. Reporting

(a) The CADFW shall submit a draft report to NMFS within 90 days of the completion of marine mammal monitoring, or sixty days prior to the issuance of any subsequent IHA for this project (if required), whichever comes first. The report shall include marine mammal observations pre-activity, during-activity, and post-activity of construction, and shall also provide descriptions of any behavioral responses by marine mammals due to disturbance from construction activities and a complete description of total take estimate based on the number of marine mammals observed during the course of construction. If comments are received from the NMFS Office of Protected Resources on the draft report, a final report shall be submitted to NMFS within 30 days thereafter following resolution of comments on the draft report from NMFS. If no comments are received from NMFS, the draft report will be considered to be the final report. This report must contain the informational elements described above and in the monitoring plan of the application and at minimum shall also include:

(b) Reporting injured or dead marine mammals:

(i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury (Level A harassment), serious injury, or mortality, CADFW shall immediately cease the specified activities and report the incident to the NMFS' Office of Protected Resources and the West Coast Regional Stranding Coordinator. The report must include the following information:

1. Time and date of the incident;
2. Description of the incident;
3. Environmental conditions (*e.g.*, wind speed and direction, tidal conditions, cloud cover, and visibility);
4. Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
5. Species identification or description of the animal(s) involved;
6. Fate of the animal(s); and
7. Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with CADFW to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA

compliance. CADFW may not resume their activities until notified by NMFS.

(ii) In the event that CADFW discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), CADFW shall immediately report the incident to the NMFS' Office of Protected Resources and the West Coast Regional Stranding Coordinator.

The report must include the same information identified in 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with the CADFW to determine whether additional mitigation measures or modifications to the activities are appropriate.

(iii) In the event that the CADFW discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the CADFW shall report the incident to the NMFS' Office of Protected Resources and the West Coast Regional Stranding Coordinator within 24 hours of the discovery. CADFW shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.

Request for Public Comments

We request comment on our analysis, the draft authorization, and any other aspect of this Notice of Proposed IHA for CADFW's tidal marsh restoration activities. Please include with your comments any supporting data or literature citations to help inform our final decision on the CADFW's request for an MMPA authorization.

Dated: September 26, 2016.

Donna S. Wieting,

*Director, Office of Protected Resources,
National Marine Fisheries Service.*

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