UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Finding of No Significant Impact on Issuance of an Incidental Harassment Authorization to Caltrans for the Antioch Bridge Seismic Retrofit Project.

National Marine Fisheries Service

BACKGROUND

On March 25, 2009, NMFS received a request from the California Department of Transportation (Caltrans) to take[1], by Level B harassment[2] only, small numbers of marine mammals incidental to the Antioch Bridge Seismic Retrofit Project. In accordance with the National Environmental Policy Act, NMFS has prepared an Environmental Assessment (EA) analyzing the impacts on the human environment associated with IHA issuance for the Antioch Bridge Seismic Retrofit Project. The analyses in the EA support the findings and determination below.

ANALYSIS

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

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1 Under the MMPA, "take" is defined as to "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect." [16 U.S.C. 1362(18)(A)] The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term "harm" is further defined by regulations (50 CFR §222.102) as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding, or sheltering."

2 "Harass" is defined by regulation (50 CFR §216.3) 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 a disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment)."

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Issuance of the IHA is not expected to cause substantial damage to ocean and coastal habitats or any designated EFH. NMFS concluded EFH consultation with Caltrans on August 13, 2009, and determined that temporary adverse impacts to EFH for Pacific salmon would occur; however, in total, the project would result in a permanent net increase in riverine habitat. The short term adverse impacts to EFH would not affect future generations of Pacific salmon beyond the construction period.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Issuance of the IHA is not expected to substantially impact biodiversity or ecosystem function. Noise from pile driving may result in the take of harbor seals and California sea lions, by Level B behavioral harassment, and the take of Central California Coast (CCC) steelhead and green sturgeon in the form of mortality, injury, harassment, or disturbance through temporary impacts associated with pile driving, dewatering, and fish relocation. However, NMFS concluded in a 2009 Biological Opinion (BiOp) on the Antioch Bridge Seismic Retrofit Project, issued August 13, 2009, that the project is not likely to jeopardize the continued existence of endangered Sacramento River Winter-run Chinook salmon, threatened Central Valley (CV) Spring-run Chinook salmon, threatened CV steelhead, or threatened Southern DPS of North American green sturgeon, and is not likely to destroy or adversely modify designated or proposed critical habitat for these species. Avoidance, minimization, and mitigation measures imposed by Caltrans would offset any negative impacts.

Marine mammals may exhibit temporary avoidance of the area due to pile driving. Any alteration in marine mammal foraging (food-web interactions) is expected to be minimized as the measures set forth in NMFS BiOp are designed to reduce impacts to fish, which serve as marine mammal prey.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Issuance of the IHA is not expected to impact public health or safety as it solely authorizes harassment to marine mammals. Caltrans' issued an Environmental Assessment (EA) on its proposed action in August 2009. That EA analyses effects to public health and safety. As described in Caltrans' EA, Best Management Practices (BMPs) will be incorporated to reduce the discharge of pollutants during construction, as well as permanently, to the maximum extent practicable. In summary, there will be no cultural resources, air quality, hazardous materials, water quality, or community impacts resulting from the Antioch Bridge Seismic Retrofit project.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Issuance of the IHA is not expected to adversely affect marine mammal species listed as threatened or endangered under the ESA or any critical habitat designated for such species, as none are present within the action area. However, there are ESA-listed salmonids and green sturgeon located within the action area that could be affected by the project itself. NMFS concluded in the aforementioned BiOp that impacts from the project will not jeopardize the continued existence of these species and is not likely to result in the destruction of adverse modification of designated critical habitat given implementation of the proposed avoidance, minimization, and mitigation measures. In addition, any temporary adverse impacts to Essential Fish Habitat (EFH) would be offset by implementing the Terms and Conditions in the BiOp.

Current NMFS practice regarding exposure of marine mammals to anthropogenic noise is that in order to avoid the Level A (i.e., injurious) harassment of marine mammals, cetaceans and pinnipeds should not be exposed to impulsive sounds of 180 and 190 dB rms or above, respectively. Caltrans has not performed any sound source verification (SSV) tests in the area, as construction is not set to begin until August 2010 at the earliest. Therefore, Caltrans reviewed acoustic study results of four projects using similar hammers and piles. Due to water depth and substrate, a practical spreading loss model (15logR) was used to estimate distances to the thresholds discussed above. No injury or death is anticipated as a result of the proposed activity due to the nature of the activity (vibratory hammer source levels do not exceed the threshold where injury may occur- 190 dB) and implementation of monitoring and mitigation measures (e.g., establishing conservative 150 m shut down zone).

Seals and sea lions exposed to Level B harassment threshold level sounds in water (160 dB for pulse sounds (e.g., impact pile driving) or 120 dB for non-pulse sounds (e.g., vibratory pile driving) may elicit temporary avoidance behavior around the bridge, which may affect the routes of seals under the bridge or temporarily inhibit them from foraging near the bridge. However, the location of the Antioch Bridge is on the fringe of harbor seal and sea lion habitat; therefore, pinniped presence is limited. Further, limiting pile driving to two hours per day would allow for minimal disruption of harbor seal foraging or dispersal habitat under or near the bridge.

Based on the analysis within the EA and summarized here, NMFS has determined that pile driving may result in the take, by Level B harassment only, of pinnipeds around the bridge; however, any impacts on the affected species and stocks would be negligible.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

There are no social or economic impacts directly related to potential physical impacts of IHA issuance. IHAs solely authorize harassment to marine mammals. No marine mammal viewing tours operate in the area, as marine mammal presence is not reliable; therefore, none would be affected should animals avoid the area temporarily.

Caltrans' EA addressed impacts to social and economical environment due to project itself. Most environmental impacts are anticipated to be short-term (e.g., increased sedimentation from construction, harassment to marine mammals). Caltrans will require on-site or nearby restoration to wetlands to offset any permanent impacts.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Issuance of the IHA is not expected to be controversial based on potential environmental impacts. NMFS has issued numerous IHAs for pile driving activities, including ones for similar Caltrans' projects, impacting the same resources (e.g., harbor seals) with no controversy. Public comments received on those previous proposed IHAs have been considered for this action, including establishment of safety zones and "no boat zones." Additionally, there has no substantial scientific controversy about the likely effects of short-term behavioral harassment and temporary displacement of pinnipeds related to similar actions. NMFS made the application and proposed IHA available for public review and received no comments, suggesting issuance of this particular IHA is controversial.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

Issuance of the IHA is not expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas as it only authorizes harassment to marine mammals.

In its 2009 EA, Caltrans concluded that no substantial impacts to unique areas such as those listed above would occur.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The potential risks of IHA issuance for pile driving are not unique or unknown, nor is there significant uncertainty about impacts. As discussed above, NMFS has

issued numerous IHAs for pile driving which involve behavioral disturbance to pinnipeds in San Francisco Bay. As a condition of issuance of previous IHAs to Caltrans, they have conducted numerous acoustic and marine mammal behavior studies in the Bay. In review of those reports, and additional scientific information, NMFS does not expect significant adverse impacts given the limited number of animals that would be affected and the small geographic and short temporal scale of the project.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Issuance of the IHA is not related to other actions with individually insignificant, but cumulatively significant impacts. Currently, Caltrans holds two IHAs authorizing harassment to marine mammals from pile driving in San Francisco Bay. One is for repairs at the San Francisco Bay-Oakland Bay Bridge and the other is temporary trestle construction at the Dumbarton Bridge located in the southern portion of the Bay. While some individual harbor seals may frequent both the Antioch Bridge and SF-OB Bridge, the distance between the two bridges (50+ miles) and the fact that only a maximum of 2 hours of pile driving would occur daily at the Antioch Bridge, any temporary harassment from exposure to either bridge construction is not anticipated to result in significant cumulative impacts. Similarly, the Antioch and Dumbarton Bridge are approximately 70+ miles from each other. Therefore, exposure to pile driving at any of the locations in addition to exposure at the Antioch Bridge would not lead to cumulative significant impacts as there would be adequate recovery time between exposures.

There are numerous coastal development projects occurring in the Bay at any given time. Marine mammals are likely habituated and tolerant to a certain degree of anthropogenic disturbance. The Antioch Bridge project is not likely to add an increment of disturbance that would cumulatively make it and other actions significant with respect to marine mammals.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Issuance of the IHA is not expected to affect any such sites or cause loss or destruction of any such resources. There are no Historic Places within or adjacent to the action area. Further, the proposed activity is not expected to substantially affect the physical environment. There are no resources within the action area that would reasonably be considered significant for scientific, cultural, or historic purposes.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

The San Francisco Estuary can now be recognized as the most invaded aquatic ecosystem in North America with over 212 introduced species: 69 percent of these are invertebrates, 15 percent are fish and other vertebrates, 12 percent are vascular plants, and 4 percent are protists (Cohen and Carlton, 1995). Species may be introduced into an aquatic environment via ballast water uptake or attaching on to hulls and then transported or released in a different water body. Introduction of non-indigenous species to an environment through these methods usually occurs via transoceanic vessels, which require great amounts of ballast water and are slow moving. The support vessels proposed for use during the Antioch Bridge Retrofit Project (e.g., tugs, barges, small work craft) are neither transoceanic nor require large amounts of ballast water. As such, operation of these types of vessels is not associated with any known mechanism of transporting or introducing non-indigenous species. Therefore, issuance of the IHA is not expected to result in the introduction or spread of non-indigenous species.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

Issuance of the IHA would not set a precedent for future actions or represent a decision in principle. NMFS has been issuing IHAs pursuant to section 101(a)(5)(D) of the MMPA since 1994. Nothing about NMFS' decision-making process pursuant to the statutory and regulatory criteria is unique to this IHA. Issuance of this IHA does not involve any irreversible or irretrievable commitments of resources.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Issuance of the IHA is not expected to violate any Federal, State, or local laws or requirements related to environmental protection. NMFS has sole jurisdiction for issuance of IHAs for cetaceans and pinnipeds (except walrus) and has determined that the proposed seismic retrofit project will result in the incidental take of small numbers of marine mammals, by Level B harassment only, and that the total taking will have a negligible impact on the affected species or stocks. There are no other laws or requirements related to conduct the issuance of the IHA. No ESA-listed marine mammals are present within the action area; therefore, the ESA does not apply.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

No target species are part of the proposed action. As discussed in response to question 9, marine mammals incidentally exposed to noise from the Antioch Bridge Project may also be exposed to noise from the SF-OB Bridge and Dumbarton Bridge pile driving operations (but not simultaneously). There is a 50+ mile and 70+ distance between the bridges, respectively. Marine mammal monitoring reports from the SF-OB Bridge project reveal very limited numbers of harassment observations. In general, pinnipeds, on haulouts or in water, near the bridge did not respond to bridge construction (Caltrans 2005, 2006). In addition, in-water pile driving for the Antioch Bridge is not expected to last more than 2 hours per day and all pile driving would be vibratory (which emits lower source levels than impact hammers), with the exception of the occasional (10-20 second) use of an impact hammer to conduct load bearing tests. Therefore, the chance of seals being exposed to noise from bridge projects without adequate recovery time is discountable. Although other sources of anthropogenic noise are present within San Francisco Bay (e.g., recreational and commercial boat traffic (including kayakers), coastal development, etc.), any short-term harassment caused by exposure to the project, when combined with these actions, is not expected to result in cumulative adverse effects.

DETERMINATION

In view of the information presented in this document, and the analyses contained in the EA prepared for issuance of an IHA to Caltrans, it is hereby determined that IHA issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

APR 0 1 2010

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Date