



Mitigation Monitoring/ Reporting Program

(MMRP)

HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT

This Mitigation Monitoring/Reporting Program (MMRP) has been prepared for the project described below in conformance with Section 21081.6 of the California Environmental Quality Act (CEQA) and Section 15097 of the CEQA Guidelines and was adopted by the Humboldt Bay Harbor, Recreation and Conservation District Board of Commissioners on November 15, 2018.

PROJECT TITLE: Humboldt Bay Mariculture Pre-Permitting Program

STATE CLEARINGHOUSE NUMBER: 2013062068

LEAD AGENCY: Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD), 601 Startare Drive, Eureka, CA 95501

PROJECT LOCATION: Humboldt Bay, California.

GENERAL PLAN LAND USE DESIGNATION: Industrial / Coastal Dependent

ZONING: Industrial / Coastal Dependent (Combining Zone: Archaeological Resource Area)

PROJECT DESCRIPTION: The Project's objective and purpose is to: allow for an expansion of commercial mariculture activities in Humboldt Bay; create jobs and improve the local economy; and increase local and sustainable seafood production. The approved Project consists of three subtidal sites where culture of Kumamoto oysters (*Crassostrea sikamea*), Pacific oysters (*C. gigas*), Manila clams (*Tapes philippinarum*), and native red macroalgae (for example, *Chondracanthus*, *Gracilaria*, *Palmaria* and *Porphyra*) could occur.

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INTRODUCTION: The purpose of this MMRP is to ensure the mitigation measures approved in connection with project approval are effectively implemented. This MMRP establishes the framework that HBHRCD and others will use to implement the approved mitigation measures and the monitoring and reporting of such implementation.

ENFORCEMENT: In accordance with CEQA, the primary responsibility for making a determination with respect to potential environmental effects rests with HBHRCD. As such, HBHRCD is identified as the primary enforcement agency for this MMRP. The District shall ensure that compliance language shall be incorporated into design and contract documents prepared for the project.

PROGRAM MODIFICATION: After adoption of this MMRP, minor changes to this MMRP are permitted but can only be made by HBHRCD. The Harbor District Planner, after consultation with affected Departments or Agencies, may make minor modifications to this MMRP. If, for any reason, any mitigation measure specified in this MMRP cannot be implemented due to factors beyond the control of HBHRCD, at a

noticed public hearing before the HBHRCD Board of Commissioners, substitution of another mitigation measure may be approved. In no case shall deviations from this MMRP be permitted unless the deviation continues to satisfy the requirements of Section 21081.6 of CEQA, as determined by HBHRCD.

MMRP FEE SCHEDULE: To offset the costs incurred by HBHRCD for permit compliance monitoring, an initial lease-up monitoring fee and then an annual routine compliance monitoring fee will be charged to each mariculture lessee. These fees will be set by the HBHRCD Fee Schedule and adopted annually by the Board of Commissioners.

MMRP IMPLEMENTATION TABLE: To ensure this MMRP is effectively implemented, the table on the following pages establishes the framework that HBHRCD and others will use to implement the adopted migration measures and the monitoring and reporting of such implementation.

Mitigation Measure	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
<p>AQ-1: Compliance with air quality regulations. Lessees shall consult with AQMD with respect to the requirements of adopted AQMD regulatory plans and shall comply with the requirements of all adopted air quality plans, including plans covering particulate emissions, and shall implement all actions required by AQMD. This mitigation measure will be incorporated into the District’s lease requirements for Lessees.</p>	Lessee	Duration of project	HBHRCD
<p>BIO-1: Educational meetings. The District will require farmers to hold annual educational meetings with their personnel (which will be described in annual reports) where the following procedures relating to marine mammals will be described. These meetings will describe that when marine mammals are encountered, personnel shall:</p> <ul style="list-style-type: none"> • Reduce speed and remain at least 100 yards from the animal(s), whether on land or in the water. • Provide a safe path of travel for marine mammals that avoids encirclement or entrapment of the animal(s) between the vessel and the shore. • If approached closely by a marine mammal while underway, the operator shall reduce speed, place the vessel in neutral and wait until the animal is observed clear of the vessel before making way. • Avoid sudden direction or speed changes when near marine mammals. • Never approach, touch or feed a marine mammal. <p>During these meetings, farmers will also be directed to properly stow any gear and remove any trash or debris from the bay (including on raft structures) so as to avoid potential entanglement of fish or marine mammal species that may be on or near culture equipment.</p>	Lessee	Duration of project	HBHRCD
<p>BIO-2: Shielding of light fixtures. Only lighting fixtures that are fully shielded and designed to minimize off site glare and avoid on water light spillage will be utilized at night. Motion-sensing lighting will be used to the extent feasible to reduce the amount of time lights are on. Where motion-sensing lighting is not feasible, but lights do not need to be on continuously, timers will be installed to</p>	Lessee	Duration of project	HBHRCD

Mitigation Measure	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
reduce the amount of unnecessary lighting.			
BIO-3: Eelgrass avoidance by boats. Boat traffic will be routed around eelgrass beds to minimize the potential for damage to eelgrass from propellers and hulls. Site descriptions will be prepared for each culture site and will describe boat routes that shellfish farm workers will use to avoid eelgrass.	Lessee	Duration of project	HBHRCD
BIO-4: Eelgrass avoidance of culture equipment. Prior to placement of shellfish culture equipment, eelgrass will be mapped and a 1-meter buffer will be placed around eelgrass plants. Shellfish culture will not occur within these areas. Aquaculture gear will only be placed in unvegetated areas during the months of July and August, when eelgrass is at its maximum extent to ensure avoidance of eelgrass habitat.	Lessee	Duration of project	HBHRCD
BIO-5: Deposition of shells. Shellfish farm operators will not intentionally deposit shells or any other material on the bay floor. Natural deposition of shells and other materials will be minimized to the maximum extent feasible.	Lessee	Duration of project	HBHRCD
<p>BIO-6: Screening criteria. CDFW has developed screening criteria to protect juvenile longfin smelt in bays and estuaries from impingement or entrainment by water intakes. These criteria also allow for protection of juvenile salmonids, as based on criteria developed by NMFS (2008). These criteria, which all water intakes under the Project will maintain, are as follows:</p> <ol style="list-style-type: none"> 1. Round or square (measured diagonally) openings in intake screens shall not exceed 2.38 millimeters (mm) (3/32 in). 2. Slotted opening in the screen shall not exceed 1.75 mm (0.0689 in). 3. Approach velocity shall not exceed 0.2 ft per second for self-cleaning screens or 0.05 ft per second for non-self-cleaning screens. Self-cleaning screens must achieve full clearance of the entire screen at least once every five minutes. 4. Overall screen porosity shall be a minimum of 27%. 	Lessee	Duration of project	HBHRCD

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<p>BIO-7: Spawning herring avoidance. During the herring spawning season (December, January and February) shellfish farmers will visually inspect shellfish culture equipment to be worked on prior to harvesting, planting or maintenance to determine if herring have spawned. If herring spawning has occurred then the harvesting, planting or maintenance will be postponed for two weeks on the beds where spawning occurred in order to allow for successful reproduction.</p>	Lessee	Duration of project	HBHRCD
<p>BIO-8: Discard clam culls outside of bay. During washing of seed and equipment, screens will be used to contain all clams regardless of size and any culls will be discarded in locations where they cannot reach coastal waters.</p>	Lessee	Duration of project	HBHRCD
<p>BIO-9: Remove mature clams from bay. All clam seed will be removed from Humboldt Bay prior to reaching 12 mm shell size, at which size they are not yet sexually mature.</p>	Lessee	Duration of project	HBHRCD
<p>BIO-10: Sound threshold criteria. This mitigation measure will allow for consistency with noise criteria developed by the Fisheries Hydroacoustic Working Group (FHWG 2008) to protect fish from injury. To achieve these criteria, vibratory pile installation, noise attenuation devices, limits on daily activity and other Project components will be used.</p> <p>Criteria to protect fish from injury are as follows, these are the thresholds established for fish injury by the Fisheries Hydroacoustic Working Group (FHWG 2008):</p> <ul style="list-style-type: none"> • A cumulative sound exposure level of 183 dB re: 1uPa²*sec as measured 10 m from the source shall not be exceeded, and • Peak sound pressure of 206 dB re: 1uPapeak as measured 10 m from the source shall not be exceeded. 	HBHRCD/Lessee	During construction	HBHRCD
<p>BIO-11: Biological monitor. A biological monitor shall be on-site during pile installation to determine if special status bird and/or marine mammal species are displaying avoidance behavior or other signs of</p>	Qualified biologist hired	During construction	HBHRCD

Mitigation Measure	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
<p>being negatively affected by the pile installation activities. If this occurs then pile installation shall cease until the bird or marine mammal species are no longer in close enough proximity to the operations to be effected.</p> <p>Additionally, to insure injury or harassment does not occur to marine mammals, hydroacoustic monitoring of the first five piles installed will be conducted to determine the distance from pile installation at which underwater sound levels caused by installation reach 120 dBrms (if vibratory installation methods are used) or 160 dBrms (if driving installation methods are used). These are the thresholds for disturbance to marine mammals established by NMFS (2012). A biological monitor will be onsite and if a marine mammal comes within the distance that would cause disturbance based on these thresholds, then pile installation will cease until the animal moves to a distance where disturbance would not occur.</p> <p>Additionally, based on the work of Lucke (2009), harbor porpoises may have higher sensitivity to sound disturbance than other marine mammals. Lucke (2009) suggests that harbor porpoises may swim away from sound at lower levels than the thresholds described above. The implications of moving away from a sound differ depending on site specific information (e.g., location of food sources). For the Project, a precautionary approach will be taken and pile installation activities will not occur while a harbor porpoise is in the line of sight of the biological monitor. However, further analysis is necessary to determine if this is an appropriate or necessary mitigation measure for other pile installation activities.</p>	by HBHRCD		
<p>BIO-12: Bio-fouling organism removal. All bio-fouling organism removal operations shall be carried out onshore or on a vessel. All bio-fouling organisms removed during these cleaning operations shall be disposed of at an appropriate upland facility.</p>	Lessee	Duration of project	HBHRCD
<p>CR-1: Protocols for inadvertent discovery of any cultural or archeological resource. The following protocol shall be implemented if a cultural or archeological resource is discovered.</p>	HBHRCD/Lessee	Duration of project	HBHRCD

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<ol style="list-style-type: none"> 1. The party who made the discovery shall be responsible for immediately contacting by telephone the District. 2. Ground-disturbing activities shall be immediately stopped at the find locality if potentially significant historic or archaeological materials are discovered. Examples include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, groundstone mortars and pestles), culturally altered ash-stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials, and historic structure remains such as stone-lined building foundations, wells or privy pits. Ground-disturbing Project activities may continue in other areas that are outside the discovery locale. 3. An “exclusion zone” where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the District, or party who made the discovery. 4. The discovery locale shall be secured (e.g., 24-hour surveillance) as directed by the District if considered prudent to avoid further disturbances. 5. Upon learning about a discovery, the District shall be responsible for immediately contacting by telephone the contacts listed below to initiate the consultation process for its treatment and disposition: <ol style="list-style-type: none"> a. Tribal Historic Preservation Officers (THPOs) with Blue Lake Rancheria, Bear River Band and Wiyot Tribe; and b. Other applicable agencies involved in Project permitting (e.g., U.S. Army Corps of Engineers [USACE], California Coastal Commission, etc.). 6. In cases where a known or suspected Native American burial or human remains are uncovered, the Humboldt County Coroner (707-445-7242) shall <u>also</u> be notified immediately. 7. Ground-disturbing Project work at the find locality shall be suspended temporarily while the District, THPOs, a consulting archaeologist and other applicable parties consult about appropriate treatment and disposition of the find. Ideally, a treatment plan may be decided within three working days of discovery notification and the field phase of a treatment plan may be accomplished within five days after its approval, however, circumstances may require 			

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<p>longer periods for data recovery. Where a project can be modified to avoid disturbing the find, this may be the preferred option.</p> <p>8. Any and all inadvertent discoveries shall be considered strictly confidential, with information about their location and nature being disclosed only to those with a need to know. The District shall be responsible for coordinating any requests by or contacts to the media about a discovery.</p> <p>9. Ground-disturbing work at a discovery locale may not be resumed until authorized in writing by the District.</p> <p>10. Final disposition of all collected archaeological materials shall be documented in a data recovery report and its disposition decided in consultation with Tribal representatives.</p> <p>These protocols shall be requirements contained within District leases to Lessees.</p>			
<p>CR-2. Protocols for inadvertent discovery of Native American remains and grave goods. In the event of a discovery of Native American remains or grave goods, the following protocol would be followed, in addition to the protocol described under Mitigation CR-1.</p> <ol style="list-style-type: none"> 1. If human remains are encountered, they shall be treated with dignity and respect. Discovery of Native American remains is a very sensitive issue and serious concern of affiliated Native Americans. Information about such a discovery shall be held in confidence by all Project personnel on a need-to-know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld. The preference of the Wiyot area tribes is to leave ancestral burials and remains in-situ, and that no photographs or analyses will be made. 2. The Coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American, the Coroner has 24 hours to notify the NAHC at (916) 653-4082. 3. The NAHC is responsible for identifying and immediately notifying the most likely descendant (MLD) of the deceased Native American. 4. Within 48 hours of their notification by the NAHC, the MLD may recommend the means for 	HBHRCD/Lessee	Duration of project	HBHRCD

Mitigation Measure	Responsibility for Implementation	Timing of Implementation	Responsibility for Confirming Completion
<p>treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses (if any) recommended by the MLD may be considered and carried out.</p> <p>5. Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the District rejects the recommendation of the MLD and mediation between the parties by NAHC fails to provide measures acceptable to the District, the District shall cause the re-burial of the human remains and associated grave offerings with appropriate dignity at an appropriate nearby location not subject to further subsurface disturbance.</p> <p>6. These protocols shall be requirements contained within District leases to Lessees.</p>			
<p>CR-3. Training for Lessees operating at Intertidal Sites 3 and 4. Intertidal Sites 3 and 4 have the greatest possibility for inadvertent discovery of archeological and historic resources. Hence, prior to initiating mariculture at these sites, Lessees will meet with the Wiyot Tribe THPO in order to gain an understanding of the resources that may be disturbed and practical steps for minimizing disturbance.</p>	Lessees/HBHRCD	Prior to initiating culture activities	HBHRCD
<p>WQ-1: Minimize fuel and petroleum spill risks. As part of the District’s lease requirements, Lessees will be required to ensure equipment is appropriately maintained to minimize the potential for spills and to be prepared to manage spills, including by maintaining cleanup materials (e.g., absorbent pads) on all vessels. The District will reserve the right to inspect the vessels to ensure compliance with this mitigation measure.</p>	Lessee	Duration of project	HBHRCD

References

- [FHWG] Fisheries Hydroacoustic Working Group. 2008. Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities. Memorandum of Agreement between NOAA Fisheries' Northwest and Southwest Regions; USFWS Regions 1 and 8; California, Washington and Oregon Departments of Transportation; California Department of Fish and Game; and Federal Highways Administration. 12 June 2008.
- Lucke. 2009. Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli. *Journal of the Acoustic Society of America* 125(6).
- [NMFS] National Marine Fisheries Service. 2008. Anadromous Passage Facility Design Criteria. National Marine Fisheries Service, Northwest Region.
- [NMFS] National Marine Fisheries Service. 2012. Guidance Document: Sound Propagation Modeling to Characterize Pile Driving Sounds Relevant to Marine Mammals. Memorandum: NMFS Northwest Fisheries Science Center–Conservation Biology Division and Northwest Regional Office–Protected Resources Division. 31 January 2012.