ASCENT

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE

California State University Maritime Academy Waterfront Master Plan

Prepared for:

CAL MARITIME

California State University Maritime Academy

July 2024

MITIGATION AND MONITORING REPORTING PROGRAM FOR THE

California State University Maritime Academy Waterfront Master Plan

Prepared for:

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MITIGATION MONITORING AND REPORTING PROGRAM

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), California Polytechnic State University, California State Maritime Academy (Cal Maritime) prepared an environmental impact report (EIR) (State Clearinghouse No. 2022120009) for the proposed Cal Maritime Waterfront Master Plan Project (Waterfront Master Plan or project) that identified significant impacts related to archaeological, historical, and tribal cultural resources; biological resources; geology, soils, and mineral resources; hazards and hazardous materials; and hydrology and water quality. Significant cumulative impacts related to archaeological, historical, and tribal cultural resources would occur under the project.

CEQA Section 21081.6(a)(1) and the State CEQA Guidelines Sections 15091(d) and 15097 require public agencies to adopt a reporting and monitoring program for changes made to the project that it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment. A mitigation monitoring and reporting program (MMRP) has been prepared for the project because the EIR identifies significant adverse impacts related to project implementation, and mitigation measures have been identified to reduce those impacts. The MMRP would be adopted in conjunction with the project EIR.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner before and during project construction and operation, as applicable.

Table 1 presented below has been prepared to assist the responsible parties in implementing the mitigation measures. It identifies the impact, individual mitigation measures associated with each impact, monitoring responsibility, and mitigation timing. The table also provides space to confirm implementation of the mitigation measures after project approval. The numbering of mitigation measures follows the numbering sequence found in the EIR. Mitigation measures that are referenced more than once in the EIR are not duplicated in the MMRP table.

ROLES AND RESPONSIBILITIES

Unless otherwise specified, Cal Maritime is responsible for taking all the actions necessary to implement the mitigation measures under its jurisdiction according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. Cal Maritime, at its discretion, may delegate implementation responsibility or portions of it to a licensed contractor or other designated agent.

CEQA Section 21081.6 requires the lead agency to identify the "custodian of documents or other material" that constitutes the "record of proceedings" on which its decision is based. Cal Maritime is the custodian of the documents associated with the project EIR. Inquiries regarding these documents should be directed to:

Kevin Motschall
Senior Project Manager
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The location of this information is:

California State University Maritime Academy
200 Maritime Academy Drive
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Cal Maritime is responsible for overall administration of this MMRP and for verifying that Cal Maritime staff, the construction contractor, and other designated parties have completed the necessary actions for each measure. The parties responsible for implementing each measure are responsible for identifying, coordinating with, and reporting to designated Cal Maritime staff monitoring implementation of the MMRP.

REPORTING

Cal Maritime shall require contractor(s) to maintain records documenting compliance with the required mitigation measures. Information regarding inspections and other requirements shall be compiled and explained in monthly reports. The reports shall be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report shall identify the mitigation measures or conditions to be monitored for implementation, how and when compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required.

MITIGATION MONITORING AND REPORTING PROGRAM TABLE

The categories identified in the attached MMRP table are described below.

- Impact – This column provides the title of the identified impact.
- Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.
- Monitoring and Reporting Procedure – This column identifies discrete actions to be implemented as part of the broader mitigation measure.
- Timing – This column identifies the time frame in which the mitigation will be implemented.
- Verification – This column identifies the party responsible for verifying compliance and is to be dated and signed by that party.

Table 1 Cal Maritime Waterfront Master Plan Final EIR Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
3.3 Biological Resources					
Impact 3.3-1: Result in Disturbance or Loss of Special-Status Plant Species	**Mitigation Measure 3.3-1: Conduct Special-Status Plant Surveys, Implement Avoidance Measures and No-Net-Loss Strategies** Prior to implementation of project activities within the approximately 0.5-acre vegetated hillside on the project site and during the blooming period for the special-status plant species with potential to occur in the project site, a qualified botanist shall conduct protocol-level surveys for special-status plants within this portion of the project site using survey methods from CDFW's Protocols for Surveying and Evaluating Impacts on Special Status Native Plant Populations and Natural Communities (CDFW 2018 or most recent version). The qualified botanist shall: 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the San Francisco Bay Area region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW 2018, 4) be familiar with the *California Manual of Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/), and 5) be familiar with federal and state statutes and regulations related to plants and plant collecting. ▶ If special-status plants are not found, the botanist shall document the findings in a letter report to Cal Maritime, and no further mitigation will be required. ▶ If special-status plant species are found, the plant shall be avoided completely, to the maximum extent feasible (i.e., if a majority of project objectives can still be met). Avoidance may be achieved by establishing a no-disturbance buffer around the plants and demarcation of this buffer by a qualified biologist or botanist using flagging or high-visibility construction fencing, or through other established, professionally accepted methods. The size of the buffer shall be determined by the qualified biologist or botanist and will be large enough to avoid direct or indirect impacts on the plant. ▶ If special-status plants are found during special-status plant surveys and cannot be avoided, Cal Maritime in coordination with CDFW shall develop and implement a site-specific strategy to achieve no net loss of occupied habitat or individuals. Measures shall be developed by a qualified biologist and include, at a minimum, preserving and enhancing existing populations, establishing populations through seed collection or transplantation, and/or restoring or creating habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. Potential mitigation sites could include suitable locations within or outside of the project site. Habitat and individual plants lost shall be	Ensure that special-status plant surveys are conducted during the specified period indicated, and findings documented, by qualified biologist. Qualified biologist or botanist establishes avoidance measures if special-status species are found. If special-status plants cannot be avoided, develop and implement a site-specific strategy with on-site and/or off-site mitigation measures in coordination with CDFW.	SS, DE, CO	Conduct surveys during appropriate season, as specified in measure, prior to final project design approval and prior to construction. Implement avoidance measures during construction. Development site-specific strategy prior to construction. Implement on-site mitigation prior to construction. Implement off-site mitigation, if required, prior to and	Cal Maritime Facilities Planning, Design & Construction

[1] Project stage at which implementation of the measure is required - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=prior to or during construction; OC=prior to occupancy; OP=prior to or during operation

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	mitigated at a minimum 1:1 ratio, taking into account acreage as well as function and value. Success criteria for preserved and compensatory populations shall include: ▪ The extent of occupied area and plant density (number of plants per unit area) in compensatory populations shall be equal to or greater than the affected occupied habitat. ▪ Compensatory and preserved populations shall be self-producing. Populations shall be considered self-producing when: • plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and • reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity. • If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long-term viable populations.			during construction.	
Impact 3.3-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat	**Mitigation Measure 3.3-2a: Conduct Focused Surveys for Special-Status Birds, Nesting Raptors, and Other Native Nesting Birds and Implement Protective Buffers** To minimize the potential for loss of special-status bird species, raptors, and other native birds, project activities (e.g., tree removal, other vegetation removal, ground disturbance, staging) shall be conducted during the nonbreeding season (approximately September 1–January 31, as determined by a qualified biologist), if feasible. If project activities are conducted during the nonbreeding season, no further mitigation shall be required. For project activities that occur during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), within 14 days prior to starting activities, a qualified biologist familiar with birds of California and with experience conducting nesting bird surveys shall conduct focused surveys for special-status birds, other nesting raptors, and other native birds and shall identify active nests within 500 feet of the project site. These surveys shall be repeated if there is a break in activities longer than 14 days, which could allow birds to initiate new nests. The biologist shall document the survey results in a written memo, report, or email communication to Cal Maritime.	Conduct project activities during the nonbreeding season, if feasible For project activities that occur during the breeding season, retain a qualified biologist to conduct focused surveys. Surveys report and mapping will be provided to Cal Maritime.	SS, DE, CO	If project activities occur during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), within 14 days prior to ground disturbance activities.	Cal Maritime Facilities Planning, Design & Construction

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	In the event nesting birds are identified on the project site, impacts on nesting birds shall be avoided by establishing appropriate buffers around active nest sites identified during focused surveys to prevent disturbance of the nest. A qualified biologist shall determine the size of the buffer after a site- and nest-specific analysis. Buffers typically will be 500 feet for raptors and 100 feet for non-raptor special-status species. Factors to be considered for determining buffer size include presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, species sensitivity, and proposed project activities. The size of the buffer may be adjusted if a qualified biologist determines that such an adjustment would not be likely to adversely affect the nest. Project activities shall not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the nest is no longer active, or reducing the buffer will not likely result in nest abandonment. Any buffer reduction for a special-status species shall require consultation with CDFW. Periodic monitoring of the nest by a qualified biologist during project activities shall be required if the activity has potential to adversely affect the nest, the buffer has been reduced, or if birds within active nests are showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during project activities, as determined by the qualified biologist.	If nesting birds are identified, the qualified biologist shall establish buffers and conduct periodic monitoring.	CO	Conduct periodic monitoring during construction, as determined by the qualified biologist.	Cal Maritime Facilities Planning, Design & Construction
	Mitigation Measure 3.3-2b: Implement Invasive Species Management Procedures For all phases of the project, Cal Maritime shall require all vessels brought to the project site from ports outside of San Francisco Bay and Delta for aquatic construction or during operations to follow all applicable maritime regulations relating to the exchange of ballast water to prevent the spread of invasive species from outside ports. Additionally, any in-water fill materials shall not be salvaged from areas outside of San Francisco Bay (e.g., piles shall be new, rock shall be freshly quarried and not previously in a marine environment). Any pumps that may be needed during construction shall be cleaned and dried for at least 72 hours prior to being used on the project. Implementation of this measure shall be required in the contract Cal Maritime establishes with its construction contractors.	All vessels follow applicable maritime regulations regarding prevention of the spread of invasive species. Ensure all in-water fill materials are new and clean. Ensure all pumps are cleaned and dried for at least 72 hours.	CO	During construction	Cal Maritime Facilities Planning, Design & Construction Shall be a requirement in the contract Cal Maritime establishes with its construction contractors
	Mitigation Measure 3.3-2c: Implement In-Water Work Window To minimize impacts on special-status fish, Cal Maritime shall require all in-water work, including pile driving and similar activities that require placing materials below the water's surface, to be completed between July 1 and November 30. Work may occur above the waterline year-round, including use of necessary in-water support vessels, so long as spill prevention measures are employed as described in Mitigation Measure 3.3-2d. This in-water work window may be modified and extended if regulatory agencies determine during the	Ensure all in-water work occur during July 1 and November 30.	CO	During all in-water construction activities	Cal Maritime Facilities Planning, Design & Construction Shall be a requirement in the

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	permitting process that work outside of this window may occur without significant risk to fish. Implementation of this measure shall be required in the contract Cal Maritime establishes with its construction contractors.				contract Cal Maritime establishes with its construction contractors
	Mitigation Measure 3.3-2d: Implement Spill Prevention and Control Prior to commencement of construction activities, a spill prevention and control plan shall be developed and implemented for the proposed project throughout all phases of construction. This plan shall at minimum include the following parameters to reduce potential effects from spills to less than significant levels: ▶ Identification of any hazardous materials used by the project. ▶ Storage locations and procedures for such materials. ▶ Spill prevention practices as well as best management practices employed for various activities. ▶ Requirements to inspect equipment daily such that it is maintained free of leaks. ▶ Spill kit location, cleanup, and notification procedures.	Prepare and implement spill prevention and control plan.	DE, CO	Prepare plan prior to construction and implement plan during construction	Cal Maritime Facilities Planning, Design & Construction
	Mitigation Measure 3.3-2e: Implement Environmental Awareness Training A project-specific environmental awareness training for construction personnel shall be prepared and conducted or administered by a qualified biologist before commencement of construction activities for each phase of the project and as needed when new personnel begin work on the proposed project. The training shall inform all construction personnel about the presence of sensitive habitat types; potential for occurrence of special status fish and wildlife species; the need to avoid damage to suitable habitat and species harm, injury, or mortality; measures to avoid and minimize impacts to species and associated habitats; the conditions of relevant regulatory permits, and the possible penalties for not complying with these requirements. The training may consist of a pre-recorded presentation to be played for new personnel, a script prepared by the biologist and given by construction personnel trained by the biologist, or training administered by on-site biological monitors. The training shall include: ▶ Applicable State and federal laws, environmental regulations, proposed project permit conditions, and penalties for non-compliance. A physical description of special-status species with potential to occur on or in the vicinity of the project site, avoidance and mitigation measures, and protocol for encountering such species including communication chain; ▶ Best management practices enacted for habitat protection and their location on the project site including the implementation of any Spill or Leak Prevention Programs.	Conduct environmental awareness training and maintain training record	CO	Once prior to construction for each phase of the project and as needed during construction when new personnel begin work on the project	Cal Maritime Facilities Planning, Design & Construction A record of this training shall be maintained on the project site and shall be made available to agencies upon request

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	▶ Contractors shall be required to sign documentation stating that they have read, agree to, and understand the required avoidance measures. If they do not understand, they shall withhold their signature until the qualified biologist addresses their question. The contractor may not begin work until they have signed the documentation. ▶ Field identification of any project site boundaries, egress points and routes to be used for work. Work shall not be conducted outside of the project site. A record of this training shall be maintained on the project site and shall be made available to agencies upon request.				
	Mitigation Measure 3.3-2f: Implement Dust and Debris Control During all phases of the project, Cal Maritime and its construction contractors shall employ debris, dust, and garbage control measures to ensure disturbances to any upland areas, as well as overwater work does not result in turbidity, or debris being placed in the Bay. Dust control measures shall include all of the following: ▶ In areas within the boat basin where waters are less affected by high velocity currents, a debris boom or silt curtain shall be deployed around demolition sites, in addition to vessels or catchments used to catch demolition debris before it falls into the water. ▶ In areas outside the boat basin that are affected by high velocity currents, a debris boom or silt curtain may not be feasible during demolition and a work skiff or similar craft may be used instead of a debris boom to corral any debris that may accidentally fall into waters during demolition. Debris shall be retrieved immediately and will not be allowed to drift away from the worksite. ▶ Where cast-in-place concrete is required in over-water areas, the contractor shall use forms and catchments that will prevent concrete from falling into the water. Cast-in-place forms shall remain in place until concrete has completely cured and shall be removed using means that minimizes dust and freshly cured concrete from falling into the water. ▶ Within upland areas, any disturbed soils shall be managed to prevent dust from becoming airborne or silt laden runoff from being introduced to the aquatic environment. ▶ All incidental construction-related refuse will be collected in sealed containers and removed regularly.	Implement debris, dust, and garbage control measures	CO	During construction	Cal Maritime Facilities Planning, Design & Construction
	Mitigation Measure 3.3-2g: Implement Sediment Testing and Dredging Controls Prior to dredging in any phase of the project, an assessment shall be conducted according to DMMO sediment sampling requirements to sample and analyze sediments within areas proposed for dredging. The assessment shall be reviewed and approved by the DMMO according to current RWQCB and EPA standards and procedures and sediment shall be	Conduct dredging assessment and obtain Dredged Material Management Office (DMMO) approval. Implement best management practices.	CO	Conduct assessment and obtain approval prior to dredging activities.	Cal Maritime Facilities Planning, Design & Construction, DMMO

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	placed, beneficially re-used, or disposed of in accordance with standard DMMO requirements. In addition, dredging activities shall implement the following best management practices: ▶ Materials shall only be dredged and disposed of in accordance with procedures approved by the DMMO. ▶ If concentrations are too high for beneficial reuse in upland restoration or other standard dredge material disposal method, materials may be hauled to an approved hazardous waste disposal facility. ▶ Dredging shall be limited to the specified areas, depths, and quantities. ▶ No overflow or decant water shall be discharged from any barge at any time. ▶ During transportation from the dredging site to the disposal site, no dredged material shall be permitted to overflow, leak, or spill from barges, bins, or dump scows. ▶ Prior to dredging in areas of contaminated sediment, a Dredge Operations Plan shall be prepared based on the results of DMMO-required sediment sampling, and shall include all necessary measures to contain, dispose of, and/or remediate contaminated sediments, including: ▪ Containment of turbidity during dredging, including BMPs, such as a silt curtain. ▪ Identification of measures to contain or treat areas of contaminated sediments to prevent the potential for contaminated sediment dispersal following dredging. ▪ Identification of methods for handling, transporting, and disposing of contaminated sediment and methods for handling contaminated sediment.			Implement best management practices during dredging activities	
	Mitigation Measure 3.3-2h: Use Appropriate Creosote Pile Removal and Disposal Methods During construction activities involving removal of creosote piles, Cal Maritime and its construction contractors shall implement the following measures to ensure the appropriate removal and disposal of creosote piles: ▶ When removing creosote piles the contractor shall either fully remove the pile/structure, or piles may be cut off at least 1 foot below the mudline. ▶ Any fragments of wood that break off during the removal process will be collected immediately even if within the limits of a turbidity curtain. ▶ Any treated timber removed in this manner shall be hauled to an upland landfill that accepts treated timber waste for disposal.	Ensure the appropriate removal and disposal of creosote piles.	CO	During creosote piles removal.	Cal Maritime Facilities Planning, Design & Construction

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	Mitigation Measure 3.3-2i: Implement Methods to Reduce Sound Attenuation from Pile Installation Prior to initiation of construction, the CSU shall consult with regulatory agencies with jurisdiction over the project activities, including but not limited to CDFW, NMFS, and USFWS, to obtain appropriate permits, and shall follow the required permit conditions. If permit requirements conflict with requirements below, the permit requirements shall take precedence. During all phases of the project, the following measures shall be implemented during the driving of all piles to reduce any effects from pile driving to less than significant levels: ▶ In water work shall be limited to the work window as stated in Mitigation Measure 3.3-2c. ▶ Any wildlife encountered within the work area shall be allowed to leave the area unharmed. The following measures shall also be included for times when work involves driving steel piles. ▶ To the extent possible, pile driving of steel piles shall be conducted with a vibratory hammer. ▶ When installation with an impact hammer is required for steel piles, the following additional measures shall be employed: ▪ Use of a bubble curtain around steel piles. ▪ Use of a slow start (gradually increasing energy and frequency) at the start of driving, or after a cessation of driving for more than 1 hour. ▪ Underwater sound monitoring shall be performed during pile driving activities. Sound monitoring shall be completed for a minimum of 5 percent of the piles driven of each size and type utilized during construction to verify consistency with sound measurements of similar pile types and sizes documented for other projects. If sound measurements exceed those taken from similar pile types and sizes for other projects, additional sound attenuation measures, enhanced bubble curtains, or limiting pile strikes shall be implemented, and sound measurements shall be tested again to achieve sound levels similar to other projects.	Obtain appropriate permits. Implement permit requirements and sound attenuation reduction measures.	DE, CO	Consult agencies and obtain permits prior to construction. Implement permit requirements and measures during pile installation.	Cal Maritime Facilities Planning, Design & Construction, CDFW, NMFS, USFWS
	Mitigation Measure 3.3-2j: Reduce or Compensate for Shading of Open Waters and Other Special-status Species Impacts Where possible, the project shall install light-transmitting surfaces allowing for a minimum of 40 percent light transmission to the waters below. In the event light-transmitting surfaces cannot be installed for safety and accessibility reasons, the project shall mitigate for shading and lost aquatic resource function by one of the following means: ▶ Removing equivalent shaded coverage over open water at a nearby site,	Install light-transmitting surfaces or implement shading mitigation measures as outlined in the measure.	CO	During construction	Cal Maritime Facilities Planning, Design & Construction CDFW, NMFS, USFWS

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	▶ With the purchase of appropriate mitigation credits from an approved mitigation bank at a (1:1 ratio), or ▶ By other similar actions approved by regulatory agencies with jurisdiction over the project activities, such as CDFW, NMFS, and USFWS, during the consultation process, so long as those alternative actions achieve a similar effect as described above (e.g., construction of a restoration project which causes ecological uplift of habitat quality).				
	Mitigation Measure 3.3-2k: Implement Limited Operating Period or Conduct Focused Surveys for Crotch Bumble Bee Initial ground-disturbing work (e.g., grading, vegetation removal, staging) within the approximately 0.5-acre vegetated hillside portion of the project site shall take place between August 15 and March 15, if feasible, to avoid impacts on Crotch's bumble bees potentially nesting in this area. If completing all initial ground-disturbing work between August 15 and March 15 is not feasible, then a qualified biologist approved by CDFW, familiar with bumble bees of California, with experience using survey methods for bumble bees shall conduct a habitat assessment and focused survey for Crotch's bumble bee within the vegetated hillside portion of the project site prior to the start of any ground-disturbing activities, following the methods in *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023). ▶ Cal Maritime shall submit a survey report to CDFW within one month of survey completion and shall notify CDFW within 24 hours if Crotch's bumble bees are detected. ▶ If Crotch's bumble bees are detected during the focused survey, appropriate avoidance measures shall be implemented. Avoidance measures may include, but not be limited to the following: ▶ Protective buffers shall be implemented around active nesting colonies or overwintering queens until these sites are no longer active. ▶ If impacts on Crotch's bumble bee cannot be avoided, Cal Maritime shall obtain an Incidental Take Permit (ITP) from CDFW and shall implement all avoidance measures included in the ITP.	Within the approximately 0.5-acre vegetated hillside portion of the project site, ensure ground-disturbing activities occur between August 15 and March 15 or retain a qualified biologist to conduct habitat assessment and focused survey for Crotch's bumble bee. Submit survey report to CDFW, obtain ITP, and implement avoidance measures, if required.	DE, CO	Prior to construction	Cal Maritime Facilities Planning, Design & Construction, CDFW
	Mitigation Measure 3.3-2l: Reduce Construction Impacts on Marine Mammals In addition to implementation of Mitigation Measure 3.3-2h: Pile Driving Methods and Monitoring, the project shall implement the following additional measures to reduce impacts to marine mammals from in-water construction.	Implement additional measures to protect marine mammals	CO	During in-water construction	Cal Maritime Facilities Planning, Design & Construction, NMFS

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	▶ Cal Maritime shall consult with NMFS to obtain a marine mammal harassment authorization for any potential project related harassment of marine mammals. ▶ During all construction work where materials are being actively placed below the water line, a marine mammal monitor shall be present to observe and document marine mammal presence. ▶ During pile driving, if a marine mammal is within the buffer distances specified for the various installation scenarios (pile size and hammer size) shown in Table 3.3-4 in Section 3.3, "Biological Resources," or within distances determined by NMFS based on future updated construction drawings and contractor input, the marine mammal monitor shall inform the construction crew and work shall temporarily halt until the animal has passed outside of the disturbance buffer.				
	Mitigation Measure 3.3-2m: Reduce Impacts from Hydrokinetic Barge Prior to installation and operation of the barge, a qualified biologist shall review the proposed design and operation of the hydrokinetic barge to determine if operation of the barge is likely to cause take of fish or if the operation will impact sensitive habitats. The qualified biologist shall compose a memo outlining anticipated operational procedures and shall review any potential impacts to fish and habitats, along with recommendations to modify the proposed operation to minimize any such impacts to less than significant levels (if necessary). Such recommendations may include: ▶ Take permits under California Fish and Game Code and the federal Endangered Species Act shall be obtained prior to installation and operation of any hydrokinetic barge system with the potential to harass, injure or kill listed fish or other listed aquatic species. ▶ Measures to isolate the turbine and other moving parts from the aquatic environment (such screening) shall be required to avoid and minimize potential impacts to listed species. ▶ Noise modeling shall be completed for hydrokinetic barge operation and the results compared to thresholds for noise effects to fish and marine mammals described in Table 3 and Table 7. Measures to minimize significant noise impacts to listed species and marine mammals shall be incorporated into the hydrokinetic barge design. ▶ Stationing the barge over water of sufficient depth that it is unlikely to support eelgrass or other submerged aquatic vegetation. ▶ Obtaining additional mitigation credits for shading open waters and eelgrass. ▶ Seasonal operation of the barge to limit the potential for special-status fish to be injured.	Retain a qualified biologist to review the design and operation of the hydrokinetic barge. The qualified biologist shall prepare a memo outlining operational procedures and providing recommendations to minimize impacts to sensitive habitats and fish. Ensure memo is approved by CDFW, USFW, and NMFS	CO	Prior to installation and operation of the barge	Cal Maritime Facilities Planning, Design & Construction, CDFW, USFW, NMFS

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	▶ During the design phase, specifications on the barge including any components for fish exclusion will be provided to the regulatory agencies including CDFW, NMFS and the USFWS for review and comment. After a review and any recommendations are compiled, the report shall be submitted to CDFW, USFWS, and NMFS for review to ensure that installation and operation of the barge with any adaptive recommendations shall sufficiently reduce effects of installation and operation of the barge to less than significant levels.				
Impact 3.3-3: Result in Disturbance to or Loss of Aquatic Sensitive Natural Communities and other Sensitive Habitat	**Mitigation Measure 3.3-3: Conduct Focused Surveys and Compensate for Loss of Eelgrass** For the protection and mitigation of impacts to eelgrass, surveys and assessments as well as mitigation prescribed in the California Eelgrass Mitigation Policy (CEMP) (NMFS 2014) (or its subsequent replacement document) shall be implemented by Cal Maritime for the proposed project. As stated in the CEMP, Cal Maritime shall be required to perform the following series of pre- and post-construction surveys and assessments to minimize and compensate for (as necessary) potential impacts to eelgrass. ▶ No more than 60 days before implementation of any in-water construction, a pre-construction eelgrass survey shall be conducted by a qualified biologist. The pre-construction survey shall assess all subtidal areas where in-water work will occur plus a 150-foot buffer, excluding any subtidal areas that are deeper than -12 feet mean lower low water (MLLW) as these depths are considered unsuitable for eelgrass in San Francisco Bay. If any eelgrass is detected within the survey area during the pre-construction survey, a reference site shall also be surveyed as part of the pre-construction eelgrass survey as recommended by the CEMP. The size and location of the selected reference site will be determined by the qualified biologist following the recommendations provided in the CEMP. The reference site will be used to differentiate between project-related and non-project-related impacts to eelgrass following the completion of post-construction eelgrass surveys, described below. The pre-construction eelgrass survey shall occur during the growth period for eelgrass within San Francisco Bay as defined by the CEMP (April 1 – October 31). ▶ A new pre-construction eelgrass survey shall be performed for each year that in-water work will occur to account for the high amount of variability in eelgrass extent in San Francisco Bay (up to one pre-construction eelgrass survey per year). ▶ If eelgrass is detected during any pre-construction eelgrass survey, following the completion of in-water construction, the project site and reference site shall be resurveyed annually for three years as described below: ▪ The first post-construction eelgrass survey shall occur within 30 days following the completion of in-water construction unless work is completed outside the eelgrass growing season in San Francisco Bay; if in-water work concludes outside the eelgrass	Conduct focused surveys for eelgrass on-site and at a reference site if eelgrass is detected within survey area. Submit all survey results to NMFS. Compare pre- and post-construction eelgrass results at the project site against the results at the reference site. Prepare and implement NMFS approved eelgrass mitigation plan if it is determined that permanent impacts to eelgrass have occurred.	CO, OC, OP	Conduct survey once a year, during April 1 and October 31 and no more than 60 days prior to in-water construction. If eelgrass is detected, conduct post-construction surveys annually for three years. Implement eelgrass mitigation plan after construction or earlier with consultation with NMFS.	Cal Maritime Facilities Planning, Design & Construction, NMFS

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	growing season, the first post-construction eelgrass survey shall be conducted within the first 30 days of the start of next eelgrass growth period. ▪ The second post-construction eelgrass survey shall be performed approximately one year after the first post-construction survey. ▪ The third post-construction eelgrass survey shall be performed approximately two years after the first post-construction survey. ▶ All pre- and post-construction eelgrass survey results shall be provided to National Marine Fisheries Service (NMFS) and CDFW. ▶ Once all eelgrass surveys are completed, a comparison of pre- and post-construction eelgrass results at the project site shall be assessed relative to the reference site to determine if project-related impacts to eelgrass occurred. The findings shall be provided to NMFS and CDFW to make a final determination regarding the actual impact and amount of mitigation needed, if any, to offset impacts to eelgrass. If in-water work results in permanent impacts to eelgrass, the project proponent will prepare and implement an eelgrass mitigation plan approved by NMFS and CDFW that will result in a no net loss of habitat function or services, generate services similar to that of eelgrass habitat, or will improve conditions for establishment of eelgrass. The mitigation plan shall follow one or a combination of mitigation options described in the CEMP, detailed below: ▪ *Option 1: Comprehensive Management Plan.* As described in the CEMP, a Comprehensive Management Plan (CMP) may be an appropriate eelgrass compensatory mitigation strategy in situations where a project or collection of similar projects will result in incremental but recurrent impacts to a small portion of local eelgrass populations through time (e.g., lagoon mouth maintenance dredging, maintenance dredging of channels and slips within established marinas, navigational hazard removal of recurrent shoals, shellfish farming, and restoration or enhancement actions). Specifically, CMPs allow for the development of region or system-specific framework for achieving the objectives of the CEMP instead of the preparation of individual mitigation plans for each discrete action. If prepared, the CMP would need to be approved by NMFS. ▪ *Option 2: In-kind mitigation.* In-kind compensatory mitigation is defined as the creation, restoration, or enhancement of habitat to compensate for adverse impacts to the same type of habitat. Under the CEMP, eelgrass mitigation plans which propose in-kind mitigation for eelgrass impacts in the San Francisco Bay are required to achieve a final mitigation ratio of 1.2:1 (mitigation: impact) unless otherwise stated by NMFS during consultation. In addition, because of the relatively low success rate of eelgrass restoration projects implemented in San Francisco Bay, the CEMP recommends an initial eelgrass restoration site size that is 3.01-times larger than the target mitigation				

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	size to account for substantial losses. NMFS may increase the required eelgrass mitigation ratio if there is a significant delay between when impacts occurred and when mitigation commences to account for temporal losses in eelgrass habitat. After initial eelgrass planting, the CEMP recommends five years of monitoring of the mitigation site and a reference site. Specifically, the CEMP recommends mapping of eelgrass extent and monitoring of eelgrass density 0, 12, 24, 36, 48, and 60 months after installation of mitigation plantings. Success criteria (such as eelgrass density) are typically assessed relative to the reference site. Actual success criteria, monitoring periods, and site selection shall be determined in coordination with and approved by NMFS. ▪ *Option 3: Mitigation banks and in-lieu-fee programs.* Under the CEMP, NMFS supports the use of mitigation bank and in-lieu fee programs to compensate for impacts to eelgrass habitat where such instruments are available and where such programs are appropriate to the statutory structure under which mitigation is recommended. If this mitigation option is selected, credits shall be used at a ratio of 1:1 if those credits have been established for a full three-year period prior to use. If the bank credits have been in place for a period less than three years, credits shall be used at a ratio determined through application of the wetland mitigation calculator. ▪ *Option 4: Out-of-kind mitigation.* Out-of-kind compensatory mitigation means the adverse impacts to one habitat type are mitigated through the creation, restoration, or enhancement of another habitat type. In most cases, out-of-kind mitigation is discouraged for eelgrass because eelgrass is a rare, special-status habitat in California. There may be some scenarios, however, where out-of-kind mitigation for eelgrass impacts is ecologically desirable or when in-kind mitigation is not feasible. No recommended eelgrass mitigation ratios are provided in the CEMP for out-of-kind mitigation, however the ratio is likely to be greater than that required for in-kind mitigation. If pursued, an out-of-kind mitigation plan would need to be developed and approved by NMFS prior to implementation. Per the CEMP, the out-of-kind mitigation plan must demonstrate that the proposed mitigation will compensate for the loss of eelgrass habitat function within the ecosystem and should evaluate mitigation options that generates services similar to that of eelgrass habitat or improve conditions for establishment of eelgrass. If permanent impacts to eelgrass are evident following analysis of post-construction eelgrass survey, ahead of the final Year 3 post-construction eelgrass survey, Cal Maritime may proceed with developing and implementing an eelgrass mitigation plan in consultation with NMFS and CDFW via any of the above options. Commencing with the eelgrass mitigation process as soon as impacts are realized may help avoid increased mitigation ratios as described above.				

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Impact 3.3-4: Wildlife Movement Corridors and Native Wildlife Nursery Sites (Aquatic)	**Mitigation Measure 3.3-4: Design In-Water Structures to be Permeable to Fish Movement** Prior to approval of final design and construction plans, Cal Maritime shall require and ensure breakwaters and other in-water structures shall be designed to be permeable in such a way that the final design of the Waterfront Master Plan does not form a fully enclosed area which might trap or impede fish movement. Design plans provide multiple exit routes at all tides such that fish moving through the vicinity can enter or exit the waterfront facilities at will, through multiple locations thereby minimizing the potential to be affected by marina operations.	Ensure breakwaters and in-water structures are designed to be permeable.	DE	Once prior to final design approval	Cal Maritime Facilities Planning, Design & Construction
3.4 Archaeological, Historical, and Tribal Cultural Resources					
Impact 3.4-1: Cause a Substantial Adverse Change in the Significance of a Historical Resource	**Mitigation Measure 3.4-1: Comply with the Secretary of the Interior's Standards for Rehabilitation** Prior to implementation of any modifications to the boathouse, Cal Maritime shall consult with SHPO under PRC 5024.5. This consultation shall confirm that alterations to the boathouse comply with the *Secretary of the Interior's Standards for Rehabilitation*.	Consult with SHOP regarding the alterations to the boathouse	CO	Once prior to modifications to the boathouse	Cal Maritime Facilities Planning, Design & Construction, SHPO
Impact 3.4-2: Cause a Substantial Adverse Change in the Significance of a Known Historic Era Archaeological Resource (Shipwreck)	**Mitigation Measure 3.4-2: SHPO Consultation and Programmatic Agreement** Prior to implementation of Phase 2 activities, Cal Maritime shall consult with SHPO under PRC 5024.5 related to the *Contra Costa*, because it is a state-owned historic property. Through SHPO consultation under PRC 5024.5, a programmatic agreement shall be developed, outlining preservation/recovery options for the shipwreck. Based on the finalized dredging boundaries and identification of the portions of the *Contra Costa* to be removed, these preservation/recovery options are expected to include: documentation of the shipwreck through a data recovery plan in coordination with the Research Center of the San Francisco Maritime National Historical Park; salvaging portions of the shipwreck, possibly in coordination with the Maritime Museum at the San Francisco Maritime National Historical Park; or development of an interpretive display at a publicly accessible portion of Cal Maritime.	Consult with SHPO regarding the *Contra Costa* and development a programmatic agreement	CO	Once prior to commencement of Phase Two activities	Cal Maritime Facilities Planning, Design & Construction, SHPO
Impact 3.4-3: Cause a Substantial Adverse Change in the Significance of Previously Undiscovered Archaeological Resources	**Mitigation Measure 3.4-3: Halt Ground-Disturbing Activity upon Discovery of Subsurface Archaeological Features** Prior to the start of any ground-disturbing activities, a qualified archaeologist meeting the US Secretary of the Interior guidelines for professional archaeologists shall be retained to develop a construction worker awareness brochure. This brochure shall be distributed to all construction personnel and supervisors who may have the potential to encounter cultural	Retain a qualified archaeologist to develop a construction worker awareness brochure.	CO	Once prior to construction to develop and distribute construction worker awareness brochure.	Cal Maritime Facilities Planning, Design & Construction, qualified archaeologist,

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	resources. The topics to be addressed in the Worker Environmental Awareness Program shall include, at a minimum: ▶ types of cultural resources expected in the project area; ▶ what to do if a worker encounters a possible resource; ▶ what to do if a worker encounters bones or possible bones; and ▶ penalties for removing or intentionally disturbing cultural resources, such as those identified in the Archaeological Resources Protection Act. If any precontact or historic-era subsurface archaeological features or deposits (e.g., ceramic shard, trash scatters), including locally darkened soil ("midden"), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted, and a qualified professional archaeologist shall be retained to assess the significance of the find. If the qualified archaeologist determines the archaeological material to be Native American in nature, Cal Maritime shall contact the appropriate California Native American tribes. A tribal representative from a California Native American tribe that is traditionally and culturally affiliated with the project area may make recommendations for further evaluation and treatment as necessary and provide input on the preferred treatment of the find. If the find is determined to be significant by the archaeologist or the tribal representative (i.e., because it is determined to constitute a unique archaeological resource or a tribal cultural resource, as appropriate), the archaeologist and tribal representative, as appropriate, shall develop, and Cal Maritime shall implement, appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures may include but would not necessarily be limited to preservation in place (which shall be the preferred manner of mitigating impacts on archaeological and tribal sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan). No work at the discovery location (i.e., within 100 feet of the discovered resource[s] unless a lesser buffer distance is determined appropriate by a qualified professional archaeologist) shall resume until necessary investigation, evaluation, and protection of the resource has been conducted.	Distribute the brochure to all construction personnel. Halt ground-disturbing activities within 100 feet of the find. Qualified archaeologist evaluates the find and Cal Maritime contacts the appropriate tribes if the find is to be native American in nature. Develop and implement appropriate procedures to protect the find if it is determined to be significant by the archaeologist or the tribal representative.		Distribute brochures as needed during construction. Halt ground-disturbing activities and implement appropriate procedures to evaluate found resources on a as-needed base during construction.	tribal representatives (as necessary)
Impact 3.4-4: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	**Mitigation Measure 3.4-4a: Worker Environmental Awareness Program for Tribal Cultural Resources** Prior to initiating landside construction-related ground-disturbing activities, representatives of either of the two tribes that participated in formal consultation under AB 52 shall have the opportunity to train construction contractors engaged in ground disturbance activities regarding tribal cultural values and tribal cultural resource potential as those relate to the project site, and of the regulatory protections afforded those resources under CEQA.	Provide tribal representatives with the opportunity to train construction contractors about tribal cultural values and resources and about procedures in the event	CO	Once prior to commencement of landside ground-disturbing activities, as needed during construction.	Cal Maritime Facilities Planning, Design & Construction, tribal representatives/monitors

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	The initial training shall be conducted by the on-site Native American monitor and can be incorporated into the project's construction safety training or in conjunction with the Worker Environmental Awareness Program for Archaeological Resources in accordance with Mitigation Measure AR-C. A supplemental briefing shall be provided to all new construction personnel that are engaged in ground-disturbing activities and may consist of reviewing presentation slides or viewing a recording. Construction contractors shall also be informed of the required procedures to be undertaken in the event of discovery of unanticipated resources that require evaluation as potential tribal cultural resources, such leaving artifacts in situ, informing a construction supervisor, the Native American monitor(s), and the university in the event that tribal cultural resources are discovered during ground-disturbing activities. Examples of ground-disturbing activities include: ▶ Clearing ▶ Excavating, digging, trenching, and grading ▶ Land leveling ▶ Equipment and materials staging and laydown ▶ Soil stockpiling ▶ Landside placement of temporary structures including construction trailers	of discovery of a resource.			
	Mitigation Measure 3.4-4b: Native American Construction Monitoring Construction monitoring shall be conducted by a qualified Native American monitor representing either of the two tribes that participated in formal consultation under AB 52. Archaeological monitoring shall be provided by an entity separate and distinct from that providing Native American monitoring. The tribal cultural monitor shall observe ground-disturbing activities, maintain logs of all activities monitored, and make documentation available to the university and any consulting Native American tribal representatives who request a record of the logs. The log shall contain at a minimum: a brief description of the locations and activities monitored; a description of tribal cultural resources encountered; and a description of the treatment of those resources. The logs shall be submitted to the university within 4 weeks of the completion of monitoring.	Tribal cultural monitor conduct construction monitoring and maintain monitored activities logs. Tribal cultural monitor provides monitoring documentation to Cal Maritime and any consulting Native American tribes.	CO	During ground-disturbing activities Logs on monitoring activities shall be submitted within 4 weeks of completion of monitoring	Cal Maritime, tribal cultural monitor, consulting Native American tribes
	Mitigation Measure 3.4-4c: Treatment of Tribal Cultural Resources Avoidance and preservation in place are the preferred treatment for tribal cultural resources, should such resources be discovered. In the event of discovery, the university shall attempt avoidance, if possible, through such measures such as restricting work to disturbed soil or limiting the depth of excavations to avoid potential tribal cultural resources. If a significant tribal cultural resource as defined by PRC Section 21074 is identified within the project site,	Avoid and preserve discovered tribal cultural resources. Prepare a treatment plan and submit to the	CO	During ground-disturbing activities	Cal Maritime Facilities Planning, Design & Construction,

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
	the university shall prepare a treatment plan and share it for review and comment by the Native American tribe(s) engaged in consultation prior to the beginning of the ground-disturbing activities within the boundaries of the resource.	consulting Native American tribes if discovery is determined to be a significant tribal cultural resource			consulting Native American tribes.
3.6 Geology, Soils, and Mineral Resources					
Impact 3.6-3: Loss of a Unique Paleontological Resource	**Mitigation Measure 3.6-3a: Paleontological Sensitivity Training for Construction Personnel** Prior to construction commencing on the Marine Programs Multi-Use Building under Phase Three and before initiating earthmoving activities, Cal Maritime shall provide training for construction personnel involved with earthwork at the site of excavations. The training will educate construction workers about the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and the proper stop-work and CSU-approved notification procedures to follow if fossils are encountered.	Provide paleontological sensitivity training to all construction personnel involved with earthwork at the Marine Programs Multi-Use Building	CO	Once prior to construction commencing on the Marine Programs Multi-Use Building. As needed during construction on the Marine Programs Multi-Use Building.	Cal Maritime Facilities Planning, Design & Construction,
	Mitigation Measure 3.6-3b: Inadvertent Discovery of Potential Paleontological Resources During construction of the Marine Programs Multi-Use Building under Phase Three, if a paleontological resource is inadvertently discovered during project-related soil disturbance, regardless of the depth of work or location, work must be halted within 30 feet of the find and a qualified paleontologist notified immediately so that an assessment of its potential significance can be undertaken. Coordination with experts on resource recovery and curation of specimens and/or other measures will be considered, as appropriate, after assessment and consultation with the qualified paleontologist.	Halt work within 30 feet of the find and notify qualified paleontologist to assess significance of the find.	CO	As needed during construction on the Marine Programs Multi-Use Building	Cal Maritime Facilities Planning, Design & Construction, qualified paleontologist
3.9 Hydrology and Water Quality					
Impact 3.9-3: Substantially alter the existing drainage pattern of the site or area, including through the	**Mitigation Measure 3.9-1: Coastal Evaluation Study and Implementation of Design Control Measures** Prior to construction of in-water elements as part of Phases Two and Three, a Coastal Evaluation Study shall be prepared by a qualified coastal engineer. The study shall evaluate whether or not proposed in-water elements, such as piers, docks, breakwaters and other	Retain a qualified coastal engineer to prepare a Coastal Evaluation Study.	CO	Prepare study prior to in-water construction	Cal Maritime Facilities Planning, Design & Construction,

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing[1] /Frequency		Verification
alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation or flooding on- or off-site; create or contribute runoff water that would exceed the capacity of existing or planned stormwater-drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.	similar permanent structures will result in changes to sediment dynamics, currents, and wave patterns such that erosion or siltation of on-site or off-site shoreline areas and navigational channels would occur. The study will include recommendations regarding design control measures to address potential adverse effects resulting from changes to sediment dynamics, currents, and wave patterns which may affect shoreline areas and navigational channels. If the Coastal Evaluation Study finds that proposed in-water elements could result in changes to sediment dynamics, currents, and wave patterns such that erosion or siltation of on-site or off-site shoreline areas and navigational channels would occur, the project shall implement design control measures to avoid and minimize those adverse effects, such as: ▶ Erosion control measures such as rip rap or bioengineered methods to control shoreline erosion. Project design modifications such as reconfiguration of in-water elements to lessen the adverse effects, or inclusion of additional elements such as breakwaters or similar structures to control, avoid and minimize potential adverse shoreline or navigational channel erosion or siltation.	The Coastal Evaluation Study shall include recommendations for design control measures addressing adverse effect to sediment dynamics, currents, and wave patterns. Implement recommended design control measures if required.		during Phases Two and Three. Implement control measures during Phases Two and Three in-water construction.	qualified coastal engineer
Impact 3.9-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	**Mitigation Measure 3.9-2: Hazardous Material Storage Facilities** For all phases of the project, all permanent storage facilities for potentially hazardous materials shall be located on land and shall be designed to be resilient to flood events through incorporation of measures such as secondary containment, stable foundations that avoid buoyancy of storage facilities during floods, and access and entry ways that can be securely locked and secured.	Ensure that all hazardous materials permanent storage facilities are located on land and designed to be resilient to flood events.	CO, OC, OP	During construction and during operation	Cal Maritime Facilities Planning, Design & Construction

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