

Section 1

Summary

1.1 PROJECT OVERVIEW AND PROJECT LOCATION

The project site consists of Aquatic Park (Park), located on the western edge of the City of Berkeley, adjacent to Interstate 80 (I-80) between Ashby Avenue and University Avenue. Aquatic Park encompasses 102 acres and includes three separate lagoons, which support a variety of wildlife, including fish, invertebrates, and birds. The Park consists of 68 acres of open water in the three lagoons, 0.7 acre of salt/brackish wetland, 1.1 acres of freshwater wetland, 11 acres of lawn, 7 acres of roads and trails, and 14 acres of buildings and uplands. The three lagoons consist of the Main Lagoon, the Model Yacht Basin, and the Radio Tower Pond, from the north to the south, respectively.

Efforts to improve Aquatic Park began in 1990, when the City of Berkeley completed a Draft Master Plan for Aquatic Park identifying the enhancement of natural resources and improvement of water quality as major goals for the park. In 2003, the Aquatic Park Natural Resource Management Study (NRMS) was prepared to evaluate the hydrological features, habitat extent and recreational uses in Aquatic Park, with a primary focus on improving water quality. The NRMS identified a range of alternatives for water quality and habitat improvements and recommended improving water quality in the three lagoons by increasing water circulation, primarily through better tidal exchange, and improving wetland habitat areas. In 2006, the City prepared the Aquatic Park Improvement Program (APIP), which included concept-level designs for the major recommendations in the NRMS. The APIP analyzed and modeled 14 potential scenarios for achieving the goals identified in the NRMS. Based on the data collection, concept design, constraints and opportunities analysis, and model analysis, APIP Alternative 4B (No Additional Stormwater) was identified as the best alternative for the hydrologic component of the APIP.¹

However, in response to concern that *any* volume of stormwater entering the Aquatic Park lagoons would prevent the City from meeting its goals of improved water quality and biological resources, when the City's Parks and Recreation Commission (P&RC) considered the APIP, it recommended to the City Council that the hydrologic component be modified to eliminate any stormwater inflow into the lagoon system from the Strawberry and Potter streets storm drain connections. Accordingly, the Draft EIR analyzes the APIP with the hydrologic component as modified by the P&RC as the "Preferred Project" and referred to as "No Stormwater-Unsealed Manholes" (No SW-Unsealed).

¹ The Natural Resource Management Study (NRMS) and the Aquatic Park Improvement Program (APIP) Technical Report are available for review Monday through Friday between the hours of 8:30 am and 4:00 p.m. at the City of Berkeley, Parks Recreation and Waterfront Administration Office, 2180 Milvia Street, 3rd Floor, and the City of Berkeley, Recreation Offices, 1947 Center Street, 1st Floor. The documents are also available online by clicking the APIP link on the City's Parks Recreation and Waterfront website: <http://www.ci.berkeley.ca.us/parks>.

This Draft EIR analyzes three alternatives to the Preferred Project, which are summarized in Section 1.3, below, and described in more detail in Section 5, Alternatives:

- No Stormwater-Sealed Manholes (No SW-Sealed) – This is the same as the Preferred Project except that the manholes along the stormwater drainage line are sealed to prevent stormwater overflow.
- No Additional Stormwater (No Additional SW) – This is the original APIP Alternative 4B, prior to modification of its hydrologic component by the P&RC.
- No Project – This is the CEQA-mandated alternative of taking no action.

All alternatives other than “No Project” share the following primary project components identified in APIP:

- Enlarging the connection between the Potter Street storm drain and the Model Yacht Basin and improving tidal and stormwater flow control capability;
- Constructing an open channel connection between the Model Yacht Basin and the Main Lagoon;
- Installing new slide gates and enlarging the connection on the Strawberry storm drain;
- Repairing the five tide tubes that connect the Main Lagoon to the Bay to the extent feasible; and
- Connecting the Radio Tower Pond to the Potter Street storm drain.

In addition to the components listed above, the Preferred Project and each of the alternatives except the No Project alternative would involve identical habitat restoration within the Aquatic Park lagoons, shoreline, and upland areas.

1.2 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123 specifies that the Draft EIR summary identify “areas of controversy” known to the lead agency, including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. The Notice of Preparation (NOP) was initially released for the Preferred Project on June 24, 2009, for a 35-day public review period. The first public scoping meeting was held on July 9, 2009, by the lead agency. The NOP noted that the Preferred Project may have a significant effect on the environment and that an EIR would be prepared for the Preferred Project.

The NOP was then recirculated on October 19, 2011, in order to solicit additional comments that may have arisen since circulation of the initial NOP. The recirculated NOP was released for a 33-day public review period. During the second public review period, two additional public scoping meetings were held to solicit comments on the scope of the Draft EIR. The first meeting was held on October 24,

2011, before the P&RC, and the second public meeting was held on November 16, 2011. The following list is based on written comments received and comments stated during the public scoping meeting. The topics that would result in physical impacts under CEQA are addressed in the EIR analysis. Major areas of controversy include, but are not limited to:

- Hydrology and Water Quality:
 - Issues related to stormwater overflow in West Berkeley and into the Aquatic Park lagoons;
 - Concern that the Preferred Project would increase the amount of stormwater flow into Aquatic Park;
 - Issues related to water quality in the Aquatic Park lagoons and how tidal exchange between the lagoons and the Bay would be achieved;
 - Potential for construction-related impacts on water quality in the Aquatic Park lagoons; and
 - Effects related to sea level rise and lagoon water levels.
- Biological Resources:
 - Effect of stormwater runoff on aquatic and wetland habitat, vegetation, and fish and wildlife species.

1.3 ALTERNATIVES

Section 5 of this Draft EIR analyzes a range of reasonable alternatives to the Preferred Project. Alternatives to the Preferred Project that are analyzed include:

- **Alternative 1: No Stormwater-Sealed Manholes (No SW-Sealed).** The No SW-Sealed alternative is identical to the Preferred Project with respect to the proposed circulatory infrastructure improvements to the Aquatic Park lagoons and the storm drain modifications and management regime. However, the No SW-Sealed alternative would seal the manholes along the Potter Street storm drain line in order to prevent stormwater overflows in the lower portion of the Aquatic Park watershed.
- **Alternative 2: No Additional Stormwater (No Additional SW).** The APIP Technical Report Alternative 4B is evaluated as the No Additional SW alternative. The No Additional SW alternative would include the same circulatory infrastructure improvements to the Aquatic Park lagoons and storm drain modifications as the project; however, this alternative proposes a different stormwater management regime. Under the No Additional SW alternative the slide gates on the storm drains would remain open during dry periods to facilitate tidal exchange, and close upon initiation of flow in the upstream storm drain network. However, the gates to the lagoons would re-open during large storm events equal to or larger than the 2-year storm that would threaten to cause increased flooding upstream.
- **Alternative 3: No Project Alternative.** Under the No Project Alternative, Aquatic Park would remain unchanged. The existing infrastructure that allows inter-lagoon circulation, exchange with the Bay, and inflow and outflow through the Potter Street and Strawberry storm drain

lines would remain as-is. In addition, no wetland or habitat restoration would take place under this alternative.

1.4 IMPACTS AND MITIGATION MEASURES

Table S-1 presents a summary of the impacts of the Preferred Project, proposed mitigation, and each impact's level of significance after mitigation. The environmental impacts are identified and classified as "Significant," "Potentially Significant," "Less Than Significant," or "No Impact." According to the CEQA Guidelines Section 15382, a significant impact is "... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project ..." CEQA Guidelines Section 15126.4(a)(1) also states that an EIR "... shall describe feasible mitigation measures which could minimize significant adverse impacts ..." All feasible mitigation measures have been included.

1.5 DRAFT EIR CONCLUSIONS

In accordance with CEQA Guidelines Section 15123(b)(3), this Summary must identify issues to be resolved including whether or how to mitigate the significant effects and the choice among alternatives. Section 4 of the Draft EIR presents mitigation measures to reduce or avoid significant impacts identified for the Preferred Project. In some instances, the Draft EIR identifies mitigation options to address specific impacts. During the CEQA environmental review process, the City will need to resolve which mitigation measures are suitable and whether they can effectively reduce impacts to a less-than-significant level. A Mitigation Monitoring and Reporting Program (MMRP) will be prepared to define the timing of implementation of the measures, parties responsible for implementation, and parties responsible for reporting and verifying implementation.

The Draft EIR identifies impacts that would remain significant and unavoidable even after implementation of the proposed mitigation measures. Consequently, the City will need to determine whether to approve the Preferred Project as proposed and, if so, provide its rationale in a Statement of Overriding Considerations.

Finally, Section 5 of this Draft EIR presents the alternatives for the Preferred Project, as outlined above. The City will need to resolve whether these alternatives are preferable from an environmental and community perspective, compared to the Preferred Project.

Table S-1
Summary of Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
4.2 Biological Resources			
BR-1 Construction of the Preferred Project could have a substantial adverse effect, either directly, or indirectly, through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.	LTS	No Mitigation Required	N/A
BR-2 Operation of the Preferred Project would not have a substantial adverse effect, either directly, or indirectly, through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.	LTS	No Mitigation Required	N/A
BR-3 Construction of the Preferred Project could have a substantial adverse effect on wetland habitat.	PS	<i>BR-3.1 Wetland Habitat Protection.</i> Implement Mitigation Measures HYD-1.1, HYD-1.2, HYD-1.3, HYD-1.4, and HYD-4.1.	LTS
BR-4 Operation of the Preferred Project would not have a substantial adverse effect on wetland habitat.	LTS	No Mitigation Required	N/A
BR-5 The Preferred Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	No Mitigation Required	N/A

SU = Significant and Unavoidable PS = Potentially Significant LTS = Less than Significant NI = No Impact

**Table S-1
Summary of Impacts and Mitigation Measures**

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
BR-6 The Preferred Project has the potential to impact nesting birds.	PS	<p><i>BR-6.1 Identify and Protect Nesting Migratory Birds at the Project Site.</i> The City shall implement the following measures to reduce impacts to nesting migratory birds:</p> <ul style="list-style-type: none"> a. To facilitate compliance with State and federal law (Fish and Game Code and the MBTA) and prevent impacts to nesting birds, the City shall avoid the removal of trees, shrubs, or weedy vegetation February 1 through August 31 during the bird nesting period. If no vegetation or tree removal is proposed during the nesting period, no surveys are required. If it is not feasible to avoid the nesting period, a survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than seven days prior to the removal of trees, shrubs, weedy vegetation, buildings, or other construction activity. b. Survey results shall be valid for the tree removals for 21 days following the survey. If the trees are not removed within the 21-day period, then a new survey shall be conducted. The area surveyed shall include all construction areas as well as areas within 150 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. c. In the event that an active nest for a protected species of bird is discovered in the areas to be cleared, or in other habitats within 150 feet of construction boundaries, clearing and construction shall be postponed for at least two weeks or until the biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts. <p><i>BR-6.2 Precautions during Restoration of Bird Island.</i> The City shall adhere to the following requirements during the restoration of Bird Island.</p> <ul style="list-style-type: none"> a. Ground-nesting bird species (various wading birds, gulls, and ducks) could potentially nest on Bird Island. All Bird Island restoration activities, including the placement of riprap and fill material, shall occur outside of the bird nesting season (February 1 	LTS

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Summary of Impacts and Mitigation Measures**

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
BR-7 Construction of the Preferred Project has the potential to impact overwintering Monarch butterflies.	PS	<p>through August 31).</p> <p>b. If Bird Island restoration activities, including the placement of riprap and fill material, cannot be avoided during the bird nesting season (February 1 through August 31), then nesting bird surveys (BR-6.1) shall be completed by a qualified biologist (See Mitigation Measure BR-4.1 for detailed mitigation measures for nesting birds).</p> <p>c. Implement Mitigation Measure BR-3.1.</p> <p>BR-7.1 Identify and Protect Trees supporting overwintering Monarch butterflies at the project site. The City shall implement the following measures to reduce impacts to overwintering Monarch butterflies.</p> <p>a. Avoid removal of any trees (native or non-native) known to support overwintering Monarch butterflies.</p> <p>b. If eucalyptus trees known to support overwintering Monarch butterflies are to be removed, removal shall occur when Monarch butterflies are not present (typically late March through late August).</p> <p>c. If possible, any eucalyptus trees removed known to support overwintering Monarch butterflies shall be replaced with relatively large, evergreen native species such as California bay or Monterey pine.</p>	LTS
BR-8 Conflicts with any Local Policies or Ordinances Protecting Biological Resources. The Preferred Project would not conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	No Mitigation Required	N/A

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Summary of Impacts and Mitigation Measures**

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
4.3 Hydrology and Water Quality			
HYD-1 Construction of the Preferred Project could violate water quality standards or waste discharge requirements (i.e., as established by the San Francisco Bay RWQCB).	PS	<p><i>HYD-1.1 Soil Management Plan.</i> Prior to construction, soils and sediment at sites where soil or sediment could be disturbed by project activities or otherwise enter the environment shall be characterized using appropriate methodologies. As part of the application to the Bay Conservation and Development Commission (BCDC) and Dredged Material Management Office (DMMO) for construction of the tide tube headwall, the City shall include a Sampling and Analysis Plan (SAP) to evaluate suitability of dredge material for disposal or beneficial re-use according to protocols set forth in the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (Corps) Public Notice 01-01, the Inland Testing Manual (ITM).² The local guidance for applying the ITM in the San Francisco Bay region³ states that sediment quality will be primarily assessed through physical and chemical analyses. The DMMO may also require water column toxicity tests, benthic toxicity tests and/or benthic bioaccumulation tests on pre-project, pre-excavation sediment samples. The local guidance states that the DMMO has considerable flexibility to approve on a case-by-case basis, as described below, testing methods which differ from those described in the ITM.</p> <p>Applications to the Corps and RWQCB for dredge permits under Sections 401 and 404 of the CWA must include a work plan prepared by a qualified professional in accordance with the Multiple Lines of Evidence (MLOE) methodology set forth in the State Water Resources Control Board Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality (August 2009), or in accordance with a work plan prepared in accordance with USEPA Guidelines for</p>	LTS

² USEPA and Army Corps of Engineers, Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual, EPA-823-B-98-004, February 1998, 176 p. + appendices.

³ Dredged Material Management Office, Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region, Sept. 2001, 18 p.

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		<p>Ecological Risk Assessment (EPA/630/F-95/002F). Prior to developing the work plan, the City shall consult with these two agencies and the DMMO, as to the appropriate sediment testing and evaluation protocol to address agency concerns regarding potential water quality and/or wetlands effects.</p> <p>For both the DMMO and CWA Section 404/401 permits, based on the results of implementing the work plan, suitability of soils and sediments shall be compared with applicable sediment quality guidelines for beneficial re-use or disposal, such as the sediment quality objectives currently under development by the State Water Resources Control Board (State Water Resources Control Board Proposed Amendments to the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality for the Protection of Fish and Wildlife January 11, 2011), or risk levels estimated in the ecological risk assessment. If it is determined that soil or sediment contains contaminants that would pose a water quality or biotic risk as a result of construction and operation, the affected soil/sediment shall not be re-used onsite and shall be removed and disposed of following applicable regulations. If it is determined soil/sediment can be beneficially reused on-site, the project sponsor shall implement Mitigation Measure HYD-1.4 (Construction Dredging) and HYD-4.1 (Sediment Deposition Monitoring and Dredging Plan) to ensure sediment quality is monitored over the long-term, and, corrective action is implemented if water quality impairment has been identified as a result of project operation.</p> <p><i>HYD-1.2 Erosion and Sediment Control Plan (ESCP).</i> Prior to construction, the City shall prepare and submit an ESCP for review and approval by the Public Works Department prior to issuance of a grading permit. The construction phase controls outlined in the ESCP would include components for erosion control, such as phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff or run-on away from disturbed areas, protective measures for sensitive areas, outlet protection, and provision for re-</p>	

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		<p>vegetation or mulching. The plans would also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catchment. For ground-disturbing construction activities necessary under Preferred Project, these measures might include inlet protection, straw bale barriers, straw mulching, straw wattles, and silt fencing. As described above, the components of the ESCP shall be identical to those included in the SWPPP, required by adherence to the NPDES Construction General Permit.</p> <p>The project shall be required to fully implement the ESCP, and the City Public Works Department shall monitor these measures during project construction.</p> <p><i>HYD-1.3 Stormwater Pollution Prevention Plan.</i> Prior to construction, the City shall submit an NOI to SWRCB for coverage under the NPDES Construction General Permit and prepare and submit a SWPPP for review and approval by the Public Works Department (City Engineer) prior to issuance of a Final Map. The SWPPP shall incorporate the erosion and sediment control measures described in the project ESCP. BMPs such as sediment traps, storm drain inlet protection, vegetated swales, and media filtration systems, shall be designed based on specific criteria from recognized BMP design guidance manuals. The SWPPP shall also describe construction-phase housekeeping measures to be implemented, such as use of water-tight dumpsters to store solid wastes; storage of construction materials in designated areas, covered and with secondary containment, as appropriate; and practices to prevent pollutant discharge from vehicle and equipment fueling and cleaning.</p> <p>The project shall be required to fully implement the SWPPP and the City Public Works Department shall monitor these measures during project construction.</p> <p><i>HYD-1.4 Construction Dredging.</i> Prior to construction, the City</p>	

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		shall apply to BCDC, the DMMO, the Army Corps and the Regional Board for permits to fill and dredge within the lagoons and at the tide tube outlet into the Bay. The applications must contain an Operation Plan for the project implementation stage that includes water quality protection to prevent exceedance of water quality objectives, including objectives for turbidity, total dissolved solids, dissolved oxygen, pH, oil and grease, and toxicity. In addition to specific BMPs stipulated by a dredging permit, the operation plan must provide for (a) use of machinery that has been power-washed and cleaned of all debris, oils, etc. prior to entry into the lagoons, (b) curtain-type floating barriers or similar means to prevent release of disturbed materials from the dredging zone and into lagoon areas not being dredged, (c) appropriately engineered dredged-sediment temporary dewatering facilities which prevent the release of dredged material effluent (decant water) collected during dewatering from entering the lagoons, Bay or City storm drainage infrastructure, and (d) a plan to re-use or dispose of dredged sediments and water consistent with their quality.	
HYD-2 Operation of the Preferred Project would not violate water quality standards or waste discharge requirements (i.e., as established by the San Francisco Bay RWQCB).	LTS	No Mitigation Required	N/A
HYD-3 The Preferred Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been	NI	No Mitigation Required	N/A

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Summary of Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
granted).			
HYD-4 The Preferred Project would alter the existing drainage pattern of the project site and surrounding area, and would increase the amount of circulation within the Aquatic Park lagoon system, which could result in erosion or siltation on- or off-site.	PS	<i>HYD-4.1 Sediment Deposition Monitoring and Dredging Plan.</i> As part of the application for dredging permits, the City shall include a sediment deposition monitoring and dredging plan (plan) to manage the lagoons consistently with the habitat and resource management goals set forth in the Project Description. Post-construction sediment deposition monitoring could be as simple as establishing several monitoring points where depth to sediment would be measured on a pre-determined schedule. The monitoring plan shall be consistent with the dredging management permit conditions resulting from implementation of Mitigation Measure HYD-1.4 (Construction Dredging). A performance standard/threshold for determining the need for further dredging shall be established as part of the plan. If further dredging is required, then the City shall first apply for coverage as a “small dredger” through the Small Dredger Programmatic Alternatives Analysis program ⁴ specifically established by state and federal agencies to expedite permitting of routine, small maintenance dredging at waterfront sites in San Francisco Bay.	LTS
HYD-5 The Preferred Project could result in flooding on- or off-site.	PS	<i>HYD-5.1 Tidal Flooding Control.</i> As the project develops further, additional modeling shall be completed to assess how other tidal events (e.g., the 100-year tide) and refinements to design features (i.e. expanded gate controls) would affect water surface elevations across all of the basins. The tidal modeling results will provide the City of Berkeley with operational-scale detail on how best to operate the slide gates to prevent flooding from high-tide events. The City shall operate the slide gates based on the results of this tidal modeling and shall monitor the automated system water surface elevation data to ensure	LTS

⁴ U.S Army Corps of Engineers, U.S. Environmental Protection Agency, San Francisco Bay Conservation and Development Commission, San Francisco Bay Regional Water Quality Control Board, 2004, Small Dredger Programmatic Alternatives Analysis (SDPAA) for Disposal of Maintenance Dredged Material in the San Francisco Bay Region, Oct. 28, 2004, 14 p.

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		operational parameters are being achieved to verify that that the Preferred Project is being operated in a manner that does not worsen tidal flooding in Aquatic Park as a result of tidal conditions in the Bay.	
HYD-6 The Preferred Project would have the potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.	PS	<i>HYD-6.1 Watershed Management Plan:</i> Potter Watershed Improvements. Implement the Potter watershed improvement projects identified in the City's Watershed Management Plan. [The feasibility of this mitigation measure is addressed in Impact HYD-6.]	SU
HYD-7 The Preferred Project would not otherwise degrade water quality.	NI	No Mitigation Required	N/A
HYD-8 The Preferred Project would not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map.	NI	No Mitigation Required	N/A
HYD-9 The Preferred Project would not place within a 100-year flood hazard area structures that would impede or redirect flood flows.	LTS	No Mitigation Required	N/A
HYD-10 The Preferred Project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	NI	No Mitigation Required	N/A
HYD-11 The Preferred Project could expose people or structures to substantial risk of inundation by sea level rise.	PS	<i>HYD-11.1</i> Implement Mitigation Measure 5.1 (Tidal Flooding Control).	LTS

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HYD-12 The Preferred Project would not expose people or structures to substantial risk of inundation seiche, tsunami or mudflow.	LTS	No Mitigation Required	N/A

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