

**Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives**

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Land Use	No impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Visual Resources and Aesthetics	No impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Population, Employment, and Housing	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Cultural Resources	No impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><u>Impact: Incompatible new construction from Marina Development could result in indirect impacts to significant historical resources.</u> Elements of the proposed Clipper Cove Marina could adversely affect the historic setting of historic resources on Treasure Island. As delineated in Tables 4-5 and 4-6, incompatible construction could result in indirect impacts to buildings that have been determined to be historical resources owing to changes to their settings, under the Maximum Development Marina Alternative. Development of the marina project may impact the areas immediately adjacent to Buildings 1, 2, and 3 in several ways. Incompatible new construction could constitute a potentially significant indirect impact to historical resources.</p> <p>The expansion of the marina is proposed throughout the length of Clipper Cove's northern shoreline on Treasure Island. The proposed marina would change the character of the cove through expansion of the number of slips and services available. The cove originally was conceived as a terminal for large amphibian passenger aircraft that were to use the island airport after the exposition closed. Changes during the Navy years obscured this connection, and the cove itself thus is not considered an historical resource or historic property. The installation of additional floats and slips to expand the existing marina, and expanded or developed walkways along the shoreline, would not be visually prominent features, would not diminish the historic setting or affect the characteristics that make Buildings 1, 2 and 3 eligible for the National Register. The buildings were considered significant for their association with the exposition and for their achievement in Art Deco and Moderne design,</p>	<p>Significant and Mitigable Impacts</p> <p>Like the marina development under the Maximum Development Marina Alternative, implementation of the Medium Development Marina Alternative could result in significant and mitigable impacts. Development of the marina project may impact the areas immediately adjacent to Buildings 1, 2, and 3 in several ways. Incompatible new construction could constitute a potentially significant indirect impact to historical resources. Most development would take place within the waters of Clipper Cove and along the Treasure Island shores and could result in significant impacts related to the loss of potentially significant archaeological resources. The mitigation measures for potential significant impacts to historical and archaeological impacts would be the same as those described for the Maximum Development Marina Alternative. Implementing the mitigation measures would reduce these impacts to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p>Like the marina development under the Maximum and Medium Development Marina Alternatives, implementation of the marina development under the Minimum Development Marina Alternative could result in significant and mitigable impacts. Development of the marina project may impact the areas immediately adjacent to Buildings 1, 2, and 3 in several ways. Incompatible new construction could constitute a potentially significant indirect impact to historical resources. Most development would take place within the waters of Clipper Cove and along the Treasure Island shores and could result in significant impacts related to the loss of potentially significant archaeological resources. The mitigation measures for potential significant impacts to historical and archaeological impacts would be the same as those described for the Maximum Development Alternative. Implementing the mitigation measures would reduce these impacts to a less-than-significant level.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cultural Resources (cont'd)		<p>neither of which would be significantly impacted by the marina development. The Clipper Cove Marina waterside development therefore would not result in significant indirect impacts to these buildings or their setting.</p> <p>The proposed development of the Clipper Cove Marina includes construction of modern buildings and parking that could be incompatible in appearance and scale with adjacent historic buildings. This could result in indirect visual impacts to the buildings and their historic setting. The final development plan for the proposed marina calls for construction of three buildings (restaurant, marina operations, and restrooms) on the north side of the proposed promenade (see Figure 2-5, and Figures 2-5b and 2-5c). Building 180, located between Building 1 and Building 2, a non-historic building, would be demolished as part of the reuse alternatives. The current rendering suggests that the proposed buildings are sympathetic to the design, colors and massing of Buildings 1, 2 and 3 (see rendering provided in Figure 4-4a). The proposed buildings are lower and substantially smaller than historic Buildings 1, 2 and 3, would not be visually intrusive, would be located in an area where other modern buildings have been constructed, and would have no direct construction impact on them. Proposed parking areas around the historic buildings would not result in a significant impact to the existing setting because the buildings are already surrounded by hard surfaced areas. These areas, while not listed as contributing elements to the buildings they surround, were meant to provide room for amphibian airliners to maneuver. However, if the parking areas were heavily landscaped with large trees or substantial intervening vegetation, which could be inconsistent with the historic setting of these buildings, there may be visual impacts on the historic buildings' setting. Implementing the following mitigation measure will reduce this impact to a less-than-significant level.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Any project, such as a building, structure, parking, or landscaping, associated with the proposed Clipper Cove Marina 		

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cultural Resources (cont'd)		<p>Development that would be located within 240 feet of Building 1, 2, or 3 shall be evaluated by an architectural historian meeting the professional standards for Architectural History or Historic Architecture of the Secretary of the Interior's Standards and Guidelines. The architectural historian will submit a copy of the draft evaluation of consistency report to the Landmarks Preservation Advisory Board (LPAB) and the Environmental Review Officer (ERO). The LPAB may provide comments on the report to the ERO. Following the determination of the evaluation of consistency report that the project is consistent with the Secretary of the Interior's Standards, the ERO shall accept the report as final.</p> <p>Implementation of this mitigation measure would reduce the potential for new construction associated with the Clipper Cove Marina Development to have indirect adverse effects on historical resources (Building 1, 2, or 3) to a less-than-significant level.</p> <p><u>Impact: Incompatible construction for Marina promenade could result in indirect impacts to significant historical resources.</u> The Maximum Development Marina Alternative includes construction of a promenade along the north side of Clipper Cove, including palm trees and other large landscape features. The promenade would be one of the most prominent aspects of the project. The final plan calls for landscaped parking (trees) with a landscaped area of rolling surface, and a palm-lined pedestrian and bicycle path along the waterfront. There is no such avenue or open way at the location as currently configured. The proposed promenade would have no direct impact on the historic buildings, but would alter the visual setting of the area. The proposed palm tree promenade would be similar to the Avenue of Palms on the west side of Treasure Island. This might falsely suggest to the public that the new trees are contemporaneous to the Exposition, and were part of the original plan, and thus would alter the integrity of the historic setting</p>		

Table 2-3
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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cultural Resources (cont'd)		<p>of the Exposition. Implementing the following mitigation measure would reduce this impact to a less-than-significant level.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> The promenade's effect on the setting of the historic buildings can be mitigated through the installation of informational signage or plaques that explain the history of the Golden Gate International Exposition, the original configuration of the area along the southern edge of Treasure Island, and inform the public that the current design and condition of the promenade is meant to suggest the feeling of the exposition era. The plaques would explain which structures or design features are new, which are original, and how the new promenade was meant to reflect the original Avenue of Palms on the west side of the island. <p><u>Impact: Loss of potentially significant archaeological resources.</u> The Clipper Cove Marina development under the Maximum Development Marina Alternative is considered here as project-level development, as specific project level plans have been developed. Most development would take place within the waters of Clipper Cove and along the Treasure Island shores. Maritime archaeological remote sensing survey of the waters of Clipper Cove identified two potential archaeological features, as described in Section 3.4. Both features were assessed as not eligible to the CRHR based on lack of historic significance or lack of integrity. Any impacts to these historic archaeological features would be less-than-significant impacts of the project. Because the cove has been subject to underwater archaeological survey and investigation and no historical resources have been identified, the archaeological mitigation measure below shall apply to development within the waters of Clipper Cove. Implementation of the following mitigation measure would reduce the potential effects of projects proposed within Treasure Island or associated with the proposed Clipper Cove Marina development on significant</p>		

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cultural Resources (cont'd)		<p>archaeological resources to a less-than-significant-level.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> The following mitigation measure is required to avoid any potential adverse effect from the project on accidentally discovered buried or submerged historical resources as defined in <i>CEQA Guidelines</i> Section 15064.5(a)(c). The project sponsor shall distribute the Planning Department archeological resource “ALERT” sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils or Bay bottom–disturbing activities within the project site. Prior to any soils or Bay bottom–disturbing activities being undertaken each contractor is responsible for ensuring that the “ALERT” sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, supervisory personnel, etc. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the Alert Sheet. <p>Should any indication of an archaeological resource be encountered during any soils or Bay bottom–disturbing activity of the project, the project Head Forman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils or Bay bottom–disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.</p> <p>If the ERO determines that an archaeological resource may be present within the project site, the project sponsor shall retain the services of a qualified archaeological consultant. The archaeological consultant shall advise the ERO as to whether the discovery is an archaeological</p>		
Cultural Resources		resource, retains sufficient integrity, and is of		

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
(cont'd)		<p>potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the project sponsor.</p> <p>Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological testing program. If an archaeological monitoring program or archaeological testing program is required, it shall be consistent with the Major Environmental Analysis (MEA) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archaeological resource is at risk from vandalism, looting, or other damaging actions.</p> <p>The project archaeological consultant shall submit a Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describing the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.</p> <p>Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Major Environmental Analysis division of the Planning Department shall receive three</p>		

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cultural Resources (cont'd)		copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.		
Transportation, Circulation, and Parking	No significant impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><u>Impact: Increased volumes on SFOBB Yerba Buena Island eastbound on-ramp (east side).</u> During the weekend mid-day peak hour, the Maximum Development Marina Alternative would contribute 27 new trips to the eastbound on-ramp. This would not be considered a significant impact for the Maximum Development Marina Alternative, but would represent six percent of the total ramp volumes under the Maximum Development Alternative. The marina contribution would be considered a substantial contribution to a cumulatively significant impact.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> In the event the marina project is approved prior to the adoption of a TMP for Treasure Island, the Marina shall implement measures to ensure as high a level of public transit ridership as feasible and shall in no event contribute more than five percent (5%) to the total vehicle volumes on the mainline SFOBB during the weekday AM and PM peak period and the weekend midday peak period of traffic impacts discussed and identified in this EIR. The Marina shall implement some or all of the following transportation systems management (TSM) measures included in the mitigation measures identified for the maximum development alternative of Treasure Island: <ul style="list-style-type: none"> • Restrict visitor and employee parking • Provide incentives to employees to reduce vehicular demand • Establish parking restrictions 	<p>Significant and Unavoidable Impacts</p> <p><u>Impact: Increased volumes on SFOBB Yerba Buena Island westbound on-ramp (west side).</u> During the weekend mid-day peak hour, the Medium Development Marina Alternative would contribute 42 new trips to the on-ramp. The total ramp volumes would be less than the ramp capacity. While this would not constitute a significant transportation impact when just the marina development is taken into account, it would represent approximately 19 percent of the total new trips generated under the Medium Development Alternative and would therefore constitute a substantial contribution to a cumulatively significant impact generated by the total Treasure Island development under the Medium Development Alternative.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> In the event the marina project is approved prior to the adoption of a TMP for Treasure Island, the Marina shall implement measures to ensure as high a level of public transit ridership as feasible and shall in no event contribute more than five percent (5%) to the total vehicle volumes on the mainline SFOBB during the weekday AM and PM peak period and the weekend midday peak period of traffic impacts discussed and identified in this EIR. The Marina shall implement some or all of the following transportation systems management (TSM) measures included in the mitigation measures identified for the maximum development alternative of Treasure Island: 	No significant impacts are expected.

Table 2-3
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and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Transportation, Circulation, and Parking (cont'd)		<ul style="list-style-type: none"> • Prohibit free parking for employees and visitors • Make parking costs visible by charging for parking • Establish goals for vehicle trip reduction • Designate an on-site transportation coordinator • Provide van or shuttle bus service to supplement Muni and AC Transit service • Provide subsidized transit passes for employees and users • Evaluate the use of remote parking facilities off-island • Require facilities for bicycles in structures and any van or shuttle services <p>In addition, in recognition of the critical and on-going need for transportation services to meet demand generated by development on NSTI, the Marina shall be required to pay its pro rata share of costs to implement the TMP by contributing to a newly created assessment district or other similar funding mechanism once it is formed. Such funding mechanism(s) could include, without limitation, an assessment district, imposition of reasonable and appropriate fees to fund necessary transportation services, or provision of transportation services directly for NSTI. The Marina shall be obligated to participate in such funding mechanism as NSTI is developed, the TMP is implemented and the effectiveness of the TMP and transportation services is assessed by the TCC and TIDA.</p> <p>The mitigation measures would need to be put in place prior to development occurring on Treasure Island to mitigate the impacts to a less-than-significant level.</p>	<ul style="list-style-type: none"> • Restrict visitor and employee parking • Provide incentives to employees to reduce vehicular demand • Establish parking restrictions • Prohibit free parking for employees and visitors • Make parking costs visible by charging for parking • Establish goals for vehicle trip reduction • Designate an on-site transportation coordinator • Provide van or shuttle bus service to supplement Muni and AC Transit service • Provide subsidized transit passes for employees and users • Evaluate the use of remote parking facilities off-island • Require facilities for bicycles in structures and any van or shuttle services <p>In addition, in recognition of the critical and on-going need for transportation services to meet demand generated by development on NSTI, the Marina shall be required to pay its pro rata share of costs to implement the TMP by contributing to a newly created assessment district or other similar funding mechanism once it is formed. Such funding mechanism(s) could include, without limitation, an assessment district, imposition of reasonable and appropriate fees to fund necessary transportation services, or provision of transportation services directly for NSTI. The Marina shall be obligated to participate in such funding mechanism as NSTI is developed, the TMP is implemented and the effectiveness of the TMP and transportation services is assessed by the TCC and TIDA.</p> <p>The mitigation measures would need to be put in place prior to development occurring on Treasure Island to ensure that alternative modes of travel are</p>	

Table 2-3
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and Marina Development Alternatives (continued)

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Transportation, Circulation, and Parking (cont'd)			<p>promoted and available. These measures would reduce the projects' contribution to the significant impacts, but not to a less-than-significant level.</p> <p><u>Impact: Increased volumes on SFOBB Yerba Buena Island eastbound off-ramp (west side).</u> During the PM peak hour, the Medium Development Marina Alternative would contribute approximately three new trips to the eastbound off-ramp, which does not constitute a substantial increase. The marina development would contribute approximately seven percent of the total Medium Development Alternative trips on the eastbound off-ramp during the PM peak hour. This would result in a substantial contribution by the marina development to the cumulatively significant impact associated with the Medium Development Alternative.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> In the event the marina project is approved prior to the adoption of a TMP for Treasure Island, the Marina shall implement measures to ensure as high a level of public transit ridership as feasible and shall in no event contribute more than five percent (5%) to the total vehicle volumes on the mainline SFOBB during the weekday AM and PM peak period and the weekend midday peak period of traffic impacts discussed and identified in this EIR. The Marina shall implement some or all of the following transportation systems management (TSM) measures included in the mitigation measures identified for the maximum development alternative of Treasure Island: <ul style="list-style-type: none"> • Restrict visitor and employee parking • Provide incentives to employees to reduce vehicular demand • Establish parking restrictions • Prohibit free parking for employees and visitors • Make parking costs visible by charging for parking • Establish goals for vehicle trip reduction 	
Transportation, Circulation, and			<ul style="list-style-type: none"> • Designate an on-site transportation coordinator 	

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Parking (cont'd)			<ul style="list-style-type: none"> • Provide van or shuttle bus service to supplement Muni and AC Transit service • Provide subsidized transit passes for employees and users • Evaluate the use of remote parking facilities off-island • Require facilities for bicycles in structures and any van or shuttle services <p>In addition, in recognition of the critical and on-going need for transportation services to meet demand generated by development on NSTI, the Marina shall be required to pay its pro rata share of costs to implement the TMP by contributing to a newly created assessment district or other similar funding mechanism once it is formed. Such funding mechanism(s) could include, without limitation, an assessment district, imposition of reasonable and appropriate fees to fund necessary transportation services, or provision of transportation services directly for NSTI. The Marina shall be obligated to participate in such funding mechanism as NSTI is developed, the TMP is implemented and the effectiveness of the TMP and transportation services is assessed by the TCC and TIDA.</p> <p>These measures would reduce the impacts but not to a less-than-significant level.</p> <p>Significant and Mitigable Impacts</p> <p><u>Impact: Increased volumes on SFOBB Yerba Buena Island eastbound on-ramp (east side).</u> During the weekend mid-day peak hour, the Medium Development Marina Alternative would contribute 41 new trips to the eastbound on-ramp. This would not be considered a substantial increase for the Medium Marina Development Alternative, but would represent 14 percent of the total traffic under the Medium Development Alternative for all</p>	
Transportation, Circulation, and Parking (cont'd)			of Treasure Island. The Marina contribution would be considered a substantial contribution to a cumulatively significant impact caused by total	

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and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
			<p>Treasure Island development under the Medium Development Alternative.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> In the event the marina project is approved prior to the adoption of a TMP for Treasure Island, the Marina shall implement measures to ensure as high a level of public transit ridership as feasible and shall in no event contribute more than five percent (5%) to the total vehicle volumes on the mainline SFOBB during the weekday AM and PM peak period and the weekend midday peak period of traffic impacts discussed and identified in this EIR. The Marina shall implement some or all of the following transportation systems management (TSM) measures included in the mitigation measures identified for the maximum development alternative of Treasure Island: <ul style="list-style-type: none"> • Restrict visitor and employee parking • Provide incentives to employees to reduce vehicular demand • Establish parking restrictions • Prohibit free parking for employees and visitors • Make parking costs visible by charging for parking • Establish goals for vehicle trip reduction • Designate an on-site transportation coordinator • Provide van or shuttle bus service to supplement Muni and AC Transit service • Provide subsidized transit passes for employees and users • Evaluate the use of remote parking facilities off-island • Require facilities for bicycles in structures and any van or shuttle services 	
Transportation, Circulation, and Parking (cont'd)			<p>In addition, in recognition of the critical and on-going need for transportation services to meet demand generated by development on NSTI, the Marina shall be required to pay its pro rata share of costs to implement the TMP by</p>	

Table 2-3
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and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
			<p>contributing to a newly created assessment district or other similar funding mechanism once it is formed. Such funding mechanism(s) could include, without limitation, an assessment district, imposition of reasonable and appropriate fees to fund necessary transportation services, or provision of transportation services directly for NSTI. The Marina shall be obligated to participate in such funding mechanism as NSTI is developed, the TMP is implemented and the effectiveness of the TMP and transportation services is assessed by the TCC and TIDA.</p> <p>The mitigation measures would mitigate the impact to a less-than-significant level.</p> <p><u>Impact: Increased volumes on SFOBB Yerba Buena Island westbound on-ramp (east side).</u> During the weekend mid-day peak hour, the Medium Development Marina alternative would generate an additional 14 new trips at the westbound on-ramp. These trips would not cause the ramp volumes to exceed the capacity and would not be considered a substantial increase. The marina development would generate approximately 16 percent of the total new trips generated by the Medium Development Alternative; therefore the marina contribution would be considered a substantial contribution to the significant impact caused by total Treasure Island development under the Medium Development Alternative.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> In the event the marina project is approved prior to the adoption of a TMP for Treasure Island, the Marina shall implement measures to ensure as high a level of public transit ridership as feasible and shall in no event contribute more than five percent (5%) to the total vehicle volumes on the mainline SFOBB 	
Transportation, Circulation, and Parking (cont'd)			<p>during the weekday AM and PM peak period and the weekend midday peak period of traffic impacts discussed and identified in this EIR. The Marina shall implement some or all of the following transportation systems management (TSM) measures included in the mitigation</p>	

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Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
			<p>measures identified for the maximum development alternative of Treasure Island:</p> <ul style="list-style-type: none"> • Restrict visitor and employee parking • Provide incentives to employees to reduce vehicular demand • Establish parking restrictions • Prohibit free parking for employees and visitors • Make parking costs visible by charging for parking • Establish goals for vehicle trip reduction • Designate an on-site transportation coordinator • Provide van or shuttle bus service to supplement Muni and AC Transit service • Provide subsidized transit passes for employees and users • Evaluate the use of remote parking facilities off-island • Require facilities for bicycles in structures and any van or shuttle services <p>In addition, in recognition of the critical and on-going need for transportation services to meet demand generated by development on NSTI, the Marina shall be required to pay its pro rata share of costs to implement the TMP by contributing to a newly created assessment district or other similar funding mechanism once it is formed. Such funding mechanism(s) could include, without limitation, an assessment district, imposition of reasonable and appropriate fees to fund</p>	
<p>Transportation, Circulation, and Parking (cont'd)</p>			<p>necessary transportation services, or provision of transportation services directly for NSTI. The Marina shall be obligated to participate in such funding mechanism as NSTI is developed, the TMP is implemented and the effectiveness of the TMP and transportation services is assessed by the TCC and TIDA.</p> <p>The mitigation measures would mitigate the impact</p>	

Table 2-3
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			to a less-than-significant level.	
Air Quality	No impacts are expected.	<p>Significant and Unavoidable Impacts</p> <p><u>Impact: Transportation-related air pollutant emissions.</u> Personal vehicle trips generated by the expanded marina would produce emissions of ozone precursors (reactive organic compounds and nitrogen oxides) and PM₁₀ (direct PM₁₀ emissions plus organic compounds and nitrogen oxides, which are precursors of the portion of PM₁₀ formed through chemical reactions).</p> <ul style="list-style-type: none"> <i>Mitigation.</i> Mitigation would be the same as those described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing this mitigation measure may not reduce traffic-related emissions to less than 15 tons per year (BAAQMD impact significance thresholds for projects under CEQA). Thus, ozone and PM₁₀ precursor emissions from the Maximum Development Marina Alternative would be a significant impact that can be reduced but may not be eliminated through mitigation.</p>	<p>Significant and Unavoidable Impacts</p> <p>The Medium Development Marina Alternative would have a significant and unavoidable impact similar to that identified for the Maximum Development Marina Alternative: transportation-related air pollutant emissions. Personal vehicle trips generated by this marina alternative would produce air pollutant emissions; while the waterside component would be 100 to 275 slips larger than under the Maximum Development Marina Alternative, the landside development under this alternative is less intensive, with existing buildings being reused. Air quality impacts would likely be the same as or less than impacts associated with the Maximum Development Marina Alternative. Mitigation would be the same as described for this impact under the Maximum Development Alternative for the Reuse Plan. Implementing this mitigation measure may not reduce traffic-related emissions to less than 15 tons per year. Thus, ozone and PM₁₀ precursor emissions from the Medium Development Marina Alternative would be a significant impact that can be reduced but may not be eliminated through mitigation.</p>	<p>Significant and Unavoidable Impacts</p> <p>The Minimum Development Marina Alternative would have a significant and unavoidable impact similar to that identified for the Maximum Development Marina Alternative: transportation-related air pollutant emissions. Personal vehicle trips generated by this marina alternative would produce air pollutant emissions, but since the development under this alternative is less intensive, the impact would be less than under other marina alternatives. Mitigation would be the same as described for this impact under the Maximum Development Alternative for the Reuse Plan. Implementing this mitigation measure may not reduce traffic-related emissions related to the new yacht club to less than 15 tons per year. Thus, ozone and PM₁₀ precursor emissions from the Minimum Development Marina Alternative would be a significant impact that can be reduced but may not be eliminated through mitigation.</p>

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and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Air Quality (cont'd)		<p>Significant and Mitigable Impacts</p> <p><i>Impact: Construction and demolition.</i> The Maximum Development Marina Alternative proposes the construction of a pedestrian promenade and two new buildings (marina operations and restaurant buildings) as well as two new restroom facilities.</p> <p>Construction, demolition, and remodeling activities associated with the marina expansion would be sources fugitive dust and vehicle emissions. Site preparation for new building construction and the pedestrian promenade and roadway reconstruction would be the primary emission-generating activities. Construction-related emissions would be temporary and limited to the construction period.</p> <p>Construction-related emissions are a potentially significant and mitigable impact that can be reduced to acceptable levels by following proper dust control measures. The BAAQMD (1996) considers implementation of the following types of dust control measures to be adequate mitigation for general construction-related air quality impacts.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as those described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing this mitigation measure would reduce the impact to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p>The Medium Development Marina Alternative would have an air quality impact associated with construction and demolition, similar to that identified for the Maximum Development Marina Alternative. The Medium Development Marina Alternative proposes no new building construction, but proposes the renovation and reuse of an existing facility, and construction of additional slips. Demolition and remodeling activities associated with the marina expansion would be sources fugitive dust and vehicle emissions. Building remodeling and roadway reconstruction would be the primary emission-generating activities. This impact would be less than the Maximum Development Marina Alternative since there is less construction and demolition activity. Mitigation would be the same as described for this impact under the Maximum Development Alternative for the Reuse Plan. Implementing this mitigation measure would reduce the impact to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p>The Minimum Development Marina Alternative would not increase the size of the waterside components of the marina. It proposes the construction of a new 20,000-square-foot building as the major landside component. Construction activities associated with the marina expansion in this alternative would be sources of fugitive dust and vehicle emissions. Roadway reconstruction would be the primary emission-generating activities. The Minimum Development Marina Alternative would have construction and demolition air quality impacts similar to but less intense than the Maximum Development Marina Alternative since there would be less construction and demolition activity.</p> <p>Mitigation would be the same as described for this impact under the Maximum Development Alternative for the Reuse Plan. Implementing this mitigation measure would reduce the impact to a less-than-significant level.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Noise	No impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Construction and demolition noise.</i> The Maximum Development Marina Alternative would require the expansion of the boat slip area to accommodate a total of 403 boat slips and the construction of 5 new buildings and a pedestrian promenade. Construction, demolition, pile-driving, and dredging activities would cause temporary disturbance to adjacent land uses. Construction and demolition activities would occur intermittently over an extended period. Construction noise would become a significant impact only when areas close to noise-sensitive land uses are developed. Construction noise impacts can generally be mitigated by restricting construction activities to daytime periods and by providing temporary noise barriers where necessary.</p> <p>Noise impacts on wildlife would result from temporary changes in noise levels during construction and from possible permanent changes in noise level from increased pedestrian, vehicle, and vessel traffic after the project is implemented. Wildlife in the project area is adapted to this urban setting, but the noise from construction activities may temporarily displace individuals or disrupt behavior patterns near active construction sites. Night herons are active at night and roost during the daytime. Therefore, daytime construction activity and noise could disturb roosting night herons in the project vicinity, causing them to temporarily abandon roosting sites. The marina expansion project may require removal of the trees near the marina that are utilized by roosting night herons. Therefore, noise impacts from construction and demolition activities are significant and mitigable.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> Mitigation would be the same as that described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p>The Medium Development Marina Alternative would require the expansion of the boat slip area to accommodate a range of 500 to 675 boat slips and the reuse of existing facilities. The Medium Development Marina Alternative would result in similar significant and mitigable impacts identified for the Maximum Development Marina Alternative. However, because the development intensity would be less under the Medium Development Marina Alternative, the impacts would be less. Mitigation would be the same as those described for this impact under the Maximum Development Marina Alternative. Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p>The Minimum Development Marina Alternative would require the construction of a new 20,000-square-foot building. The Minimum Development Marina Alternative would result in similar significant and mitigable impacts identified for the Maximum Development Marina Alternative. However, because the development intensity would be less under the Minimum Development Marina Alternative, the impacts would be less. Mitigation would be the same as those described for this impact under the Maximum Development Marina Alternative. Implementing these mitigation measure would reduce the impact to a less-than-significant level.</p>
Biological	No impacts are expected.	Significant and Mitigable Impacts	Significant and Mitigable Impacts	Significant and Mitigable Impacts

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Resources		<p><u>Impact: Mudflat Habitat Disturbance.</u> Significant impacts to mudflat habitat could occur as a result of increased pedestrian and boating activity at the Clipper Cove marina under the Maximum Development Alternative (see Figure 3-14). Mudflats are important foraging habitat for shorebirds. Under the Maximum Development Marina Alternative, the enlarged marina would add approximately 303 new boat slips to the existing 100 slips and would quadruple boat traffic in Clipper Cove. This would increase the potential for mudflat habitat disturbance, especially during low tides when recreational boating traffic could erode nearshore sediment, which could directly affect invertebrate prey species in shallow water. Additionally, the development of the restaurant, marina operations building, and restroom facilities would result in increased pedestrian activity in the Clipper Cove marina. This is likely to result in more people exploring the mudflats during low tide, which could disturb this sensitive habitat.</p> <p>Although the project area is not under BCDC jurisdiction as a Navy facility, conversion to a nonfederal facility would place it within the jurisdiction of BCDC. BCDC would need to approve of any dredging and would need to issue a permit for upland development within 100 feet of the shore. Expanding the marina or constructing a yacht harbor, new docks, or other structures that would cover the surface of the water could impact eelgrass areas. Such activities would constitute "fill," as defined by BCDC, and would require an approval from BCDC and a Section 404 permit from the COE.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as that described for this impact on under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would eliminate or reduce the impact to a less-than-significant level.</p>	<p>The Medium Development Marina Alternative would result in similar significant and mitigable impacts identified as for the Maximum Development Marina Alternative. Biological impacts resulting from increased boat traffic would likely be greater because of the larger number of boat slips that would be available and the associated traffic. This would include increased mudflat disturbance and impacts to sensitive bird species. Mitigation would be the same as those described for this impact under the Maximum Development Marina Alternative. Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p>	<p>The Minimum Development Marina Alternative would result in similar but reduced significant and mitigable impacts identified for the Maximum Development Marina Alternative. Biological impacts resulting from increased boat and pedestrian traffic would be less than that anticipated for the Maximum Development Marina Alternative because of the reduced size of the Minimum Development Marina Alternative. Mitigation would be the same as described for this impact under the Maximum Development Marina Alternative. Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p>
Biological Resources (cont'd)		<p><u>Impact: Pedestrian and Boating Impacts on Wading Shorebirds.</u> Increased pedestrian and boating activity</p>		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
		<p>around Clipper Cove could have a significant impact on shorebirds by affecting mudflats where shorebirds forage. The enlarged marina would quadruple boat traffic in Clipper Cove, increasing the potential for disturbing mudflat habitat and for eroding nearshore sediments, especially during low tides, which could affect invertebrate prey species in shallow water. This effect on invertebrates, which are prey for the shorebirds, could result in a decrease in foraging success and thus an increase to the birds' energy expenditure. This activity, in addition to increased pedestrian activity that could impact mudflats during low tide, could disturb shorebird-breeding areas in Clipper Cove. The combined effect could result in a significant impact to bird species in the Clipper Cove area, such as the black-crowned night heron, Brandt's and pelagic cormorants, and the black oystercatcher. The federally listed western snowy plover is not expected to occur at the project area and therefore would not be affected. Any individual plovers that may be present would be protected by the measures described below.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as those described for this impact on under the Maximum Development Alternative for the Reuse Plan. <p>Implementing this mitigation measure would reduce the impacts on identified avian species to a less-than-significant level. The acquiring entity or entities would be responsible for implementing these mitigation measures, which would reduce the impacts on identified bird species to a less-than-significant level. It is noted that the regional office of the USFWS, in a letter to the Navy (see Appendix A) recommended that a covenant for the protection of birds protected under the Migratory Bird Treaty Act be included in the deed conveying ownership of the property. The Navy, in the absence of statutory authority, is without legal authority to impose such restrictions.</p>		
Soils, Geology, and Seismicity	No impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Seismic shaking.</i> Seismic shaking at Treasure Island would result in a significant and mitigable</p>	<p>Significant and Mitigable Impacts</p> <p>This alternative would result in significant and mitigable impacts similar to those described for the</p>	<p>Significant and Unavoidable Impacts</p> <p><i>Impact: Dike failure, liquefaction and differential settlement.</i> The potential for dike failure, liquefaction, and</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives (continued)

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
		<p>impact on the safety of workers, and visitors at the marina and would present a hazard to structures. A maximum credible earthquake centered on the northern segment of the Hayward Fault (Mercalli scale intensity IX at NSTI, ABAG 1995a) would cause major damage to the marina structures.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as that described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p> <p><u>Impact: Liquefaction and differential settlement.</u> Significant and mitigable impacts on structures and infrastructure would occur from liquefaction and differential settlement in a major earthquake. Treasure Island is designated a SHZ by the CDMG (now known as CGS) because of its high liquefaction potential. During a strong earthquake, liquefaction and differential settlement would be likely throughout Treasure Island. Liquefaction and differential settlement can damage foundations, tilt or buckle structural supports causing catastrophic structural failures, and misalign horizontal features, such as doorways, utility connections, roadways, or other rigid elements. These impacts may affect life safety.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as that described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing the mitigation measures would reduce the impact to a less-than-significant level.</p> <p><u>Impact: Lateral spreading-unsupported structures and infrastructure.</u> The potential for lateral spreading at the perimeter of Treasure Island would result in a significant and mitigable impact on unsupported structures and infrastructure. The proposed perimeter stabilization measures included in</p>	<p>Maximum Development Marina Alternative. However, because there is less construction proposed for this alternative and overall buildout is less, the magnitude of the geologic impacts described for the Maximum Development Marina Alternative would be reduced because a smaller worker and visitor population would be exposed geologic hazards.</p>	<p>differential settlement under the Minimum Development Marina Alternative would be significant, even with dike reinforcement/ stabilization along a portion of the Treasure Island Shoreline in Clipper Cove, because this reinforcement is limited for the reasons described for the reuse alternatives (not likely to be economically feasible given the limited extent of development). The Clipper Cove area would be subject to flooding and other hazards associated with causeway failure, which could also affect the marina.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation measures would be the same as those identified for lateral spreading impacts under the Maximum Development Marina Alternative. • <i>Mitigation.</i> Mitigation measures would be the same as those identified under the Maximum Development Alternative. <p>Due to the limited proposed perimeter stabilization in the Clipper Cove area in this alternative, impacts related to dike failure, liquefaction and differential settlement would be reduced but potentially not to a less-than-significant level. They would therefore remain significant and unavoidable.</p> <p><u>Impact: Lateral spreading – Supported and unsupported structures and infrastructure.</u> For reasons similar to those described under <i>Dike Stability</i>, there would be limited shoreline protection in the Clipper Cove area, an area subject to liquefaction. The Clipper Cove area would therefore be subject to lateral spreading under the Minimum Development Marina Alternative. Absent the more extensive perimeter and seismic stabilization improvement identified for the Maximum and Medium Development Marina Alternatives, this impact would remain significant and unavoidable, even though less new construction is proposed.</p>
Soils, Geology, and Seismicity (cont'd)		<p>Maximum Development Alternative for the Reuse Plan would protect the island from large-scale lateral spreading. Residual lateral spreading could be reduced to less than 1 foot (0.3 m). However,</p>		<p>Significant and Mitigable Impacts</p> <p><u>Impact: Seismic shaking and settlement.</u> This alternative would result in significant and mitigable impacts</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
		<p>this level of lateral spreading could cause significant damage to unsupported structures and infrastructure on the perimeter of Treasure Island. This damage could be mitigated by implementing the measure below.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as those described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p> <p><i>Impact: Settlement.</i> Significant and mitigable impacts would occur from overall settlement due to new construction of the on-site fill sediments or the underlying Bay muds as these materials adjust to new loading from heavy buildings, mat foundations, or other new fills (e.g., as required to eliminate ponding, see Section 4.10.2, Hydrology and Water Quality, ponding impacts from high tides) and drains. Although most of the potential at existing loadings at Treasure Island has already occurred, gradual area-wide settlement could be accelerated and could continue for many more years, resulting in local ponding, increased flooding potential, or water-logging of soils.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as that described for this impact under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p>		<p>related to seismic shaking and settlement similar to those described for the Maximum Development Marina Alternative. No buildings are proposed for reuse; therefore, mitigation measures identified for the Maximum Development Marina Alternative would reduce these impacts to a less-than-significant level. Because less construction is proposed for this alternative and overall buildout is less, the magnitude of the geologic impacts described for the Maximum Development Marina Alternative would be reduced because a smaller worker and visitor population would be exposed to seismic hazards.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives (continued)

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
<p>Hydrology and Water Quality</p>	<p>No significant impacts are expected.</p>	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Flooding from dike overtopping.</i> Flooding caused by dike overtopping during storms could be a significant impact. High tide could reach about 13 to 14 feet NGVD. As the existing perimeter dike is at elevations ranging from about 7.7 to 13.8 feet NGVD, events of this magnitude would result in waves overtopping the dike in some areas.</p> <p>Sea level rise could increase potential flooding problems in the Clipper Cove marina area. Predictions of future accelerated sea level rise due to global warming vary widely. The effect of sea level rise is increased on a land mass that is concurrently subsiding. The US Environmental Protection Agency (EPA) projects a 50 percent likelihood that sea levels would rise about 4 inches (an average of 0.14 inches/year) by 2025 and about 8 inches (an average of 0.16 inches/year) by 2050. Such increases are the middle range of sea level rise estimates, which range from zero to over 18 inches (an average of 0.03 foot/year) by 2050 (US EPA 1995).</p> <p>When the highest current tide (approximately 6.4 feet) is superimposed on the US EPA's estimates for rise in sea level (approximately 8 inches), high tides could reach approximately 7 feet and 1 inch NGVD. Such estimates do not include compounding caused by high storm waves of approximately 7.5 feet occurring simultaneously with high tides. They also do not include the effects of continued settlement of the island, which has been estimated to be on the order of approximately 1 foot over the next 50 years (Treadwell and Rollo 1995). Therefore, significant flooding could still occur, even with raised dikes. This is considered a significant and mitigable impact.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation would be the same as that described for this impact under the Maximum Development Alternative for the Reuse Plan. 	<p>Significant and Mitigable Impacts</p> <p>Significant and mitigable impacts for the Medium Development Marina Alternative would be the same as those described for the Maximum Development Marina Alternative. The level of intensity of impacts from flooding from dike overtopping would likely be similar. However, because the marina expansion for the Medium Development Marina Alternative would include more boat slips requiring a larger area of dredging and potentially disrupting more of the IR 27 site, impacts to groundwater quality would likely be greater than those for the Maximum Development Marina Alternative.</p>	<p>Significant and Mitigable Impacts</p> <p>Significant and mitigable impacts for the Minimum Development Marina Alternative would be the same as those described for the Maximum Development Marina Alternative. The level of intensity of impacts from flooding from dike overtopping would likely be similar. However, because this alternative does not propose to expand the existing marina, it would require a smaller area of dredging. Impacts to groundwater quality would be less since there would be less of a chance of disrupting more of the IR 27 site, impacts to groundwater quality would likely be greater than those for the Maximum Development Marina Alternative. This alternative would dredge approximately 81,000 cubic yards of material, about 65,000 cubic yards less than the Maximum Development Marina Alternative. Dredging operations would still create turbidity that may affect eelgrass beds, though the duration of the impacts would be less. Mitigation would be the same as those described for this impact under the Maximum Development Marina Alternative. Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Hydrology and Water Quality (cont'd)		<p>Implementing this mitigation measure would reduce the impact to a less-than-significant level.</p> <p><i>Impact: Groundwater quality.</i> Most of the Installation Restoration Program (IRP) sites identified in Section 3.12, Hazardous Materials and Waste, have soil and groundwater contaminated with petroleum hydrocarbons due to past activities. The Navy is undertaking remediation actions at NSTI to achieve environmental restoration. Several actions are planned at sites identified with groundwater contamination, including implementing an interim groundwater treatment system, removing floating product from the groundwater, and removing soil to reduce the contaminant source and to remediate the soil.</p> <p>Construction activities could cause residual contaminated groundwater to migrate to the areas where stone columns or piles might be installed. Extensive subsurface excavation may also require dewatering to maintain adequate construction conditions. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated groundwater. These are considered significant and mitigable impacts.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Prior to undertaking any subsurface excavation for seismic stabilization measures, foundation construction, pile driving, dewatering activities, or development activities, obtain groundwater information from testing or other existing data to identify the location and extent of contaminated groundwater and to determine if groundwater contamination would spread during such activities in a manner that could exacerbate existing conditions. If possible groundwater contamination is identified, the owner shall implement preventative measures, such as appropriate dewatering measures and freshwater recharge in the construction zone, or installation of barriers/grouting to minimize migration of contaminated groundwater. Potential methods include containment (to limit the volume of water that could enter an excavation), pumping, or a combination of both. 		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Hydrology and Water Quality (cont'd)		<ul style="list-style-type: none"> <p><i>Mitigation.</i> It is anticipated that most groundwater removed during dewatering activities would be discharged to the on-site wastewater treatment plant. Any contaminated water not treatable by the plant would be disposed of in an appropriately permitted facility. Discharge of the removed groundwater into the on-site system should be allowed only after obtaining a City discharge permit. In reviewing the permit for discharge, the City would ensure that contaminant levels would be reduced to the extent required to be protective of the Bay and in compliance with applicable permits from the RWQCB. If direct discharge to surface water is determined as the appropriate method for disposal of groundwater removed during dewatering, permits issued by the RWQCB under the NPDES program would be required. Therefore, potential effects on the Bay would be reduced to acceptable levels.</p> <p>Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p> <p><i>Impact: Dredging.</i> The Maximum Development Marina Alternative would dredge approximately 146,000 cubic yards of material to accommodate 403 boat slips. Dredging associated with this alternative could disturb and disperse sediments, including any contaminated sediments, into the water column, reducing dissolved oxygen and increasing suspended particulates (COE 1992). Dredging also would cause temporary increases in water column sediment and turbidity as the sediments are raised through the water column. Contaminants released by dredging activities could significantly degrade water quality at or near the dredge sites. As discussed in Section 4.8 (Biological Resources), increased suspended sediments may affect eelgrass located along the shore of Yerba Buena island. The extent of this potential impact would depend on the type of dredges used (e.g., bucket or suction dredges), current patterns during the dredging operations,</p> 		
Hydrology and Water Quality		and whether sediment plumes generated during these operations would impact the shoreline in this		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
(cont'd)		<p>area.</p> <p>If contaminants are identified at concentrations capable of causing adverse water quality effects, precautionary measures would need to be evaluated and adopted prior to undertaking dredging. Dredging contaminated sediments requires use of special dredging equipment, such as environmental or closed buckets, high solids slurry pumps, marine excavators, and silt curtains. The site must be dredged using appropriate dredging technology suitable to the site-specific conditions and in accordance with future permit requirements placed by the appropriate regulatory agencies.</p> <p>Dredging operations typically do not cause significant short- or long-term fluctuations in salinity, temperature, or pH. However, temporary turbidity increases occur when the scow receiving the dredged materials is allowed to overflow with sediment-laden water so that it can be filled to capacity.</p> <p>Sediment sampling conducted in late January through early February 1996 at the former Clipper Cover Skeet Range indicated that there are contaminated sediments in the marina area with high levels of lead and polychlorinated aromatic hydrocarbons (PAHs) (US Navy 1996g). In addition, the Navy conducted limited sampling in the cove near storm drain outfalls. These samples were not determined to be contaminated based on CERCLA standards. In 1992, bioassay testing for maintenance dredging was conducted by Tetra Tech (1992). This sampling was conducted around Navy Pier 503 and areas to the southwest. These tests showed that sediments in these areas were suitable for aquatic disposal at the Alcatraz site. However, for purposes of marina development for the project more recent and appropriate testing would be required as described below.</p> <p>Dredging would require permits/approvals from the San Francisco Bay Conservation and</p>		
Hydrology and Water Quality		Development Commission (BCDC), San Francisco Bay RWQCB, and the US Army Corps of Engineers (COE). Prior to dredging, and in		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
(cont'd)		<p>compliance with Section 404 of the Clean Water Act, 33 U.S.C. §1344, all materials proposed for excavation and dredging must be tested for heavy metals, hydrocarbons, polychlorinated biphenyls (PCBs), tributyltin, pesticides, and any other contaminants of concern to the RWQCB. Careful delineation and segregation of any contaminated material would minimize the volume of contaminated sediments generated.</p> <p>In an attempt to improve efficiency and coordination, the Dredged Material Management Office (DMMO) reviews applications for dredging in San Francisco Bay. This office coordinates requests for dredging with a regulatory committee composed of the primary agencies listed above, and reviews all sediment sampling plans and testing results. All proposed dredging, including the dredging for the Clipper Cove Marina project described in Section 2.4.2, would be submitted to the DMMO for its review and approval.</p> <p>Prior to project implementation, the project sponsor would also be applying for project approval directly from BCDC, the U.S. Army Corps of Engineers and the RWQCB. These agencies would, in turn, receive advice from the California State Lands Commission, California Department of Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency. Based on the results of these reviews, the state and federal authorizations for the proposed dredging would include the appropriate conditions to assure that the project would have no significant, adverse affect on water quality and biology. These conditions commonly include, but are not limited to: (1) the requirement to obtain a water quality certification, after sampling and testing of dredge material in order to prevent resuspension and in-Bay disposal of contaminated materials; (2) restrictions on the timing of dredging and dredged material disposal to prevent adverse</p>		
Hydrology and Water Quality (cont'd)		<p>impacts to fish and other species using the Bay; and (3) strict limitations on the location, depths and quantities of dredging. The project sponsor would</p>		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
		<p>fully carry out the conditions imposed as a part of the project.</p> <p>When dredging in any identified contaminated areas, precautionary regulatory measures would be required to contain resuspended sediments to the area of dredging. These measures could include the use of “environmental” or closed dredge buckets, use of high solids slurry pumps, and silt curtains.</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> As described under Biological Resources, eelgrass could be affected adversely by decreased light and siltation from suspended sediments. Silt curtains should be used to contain turbidity plumes so as to not reach eelgrass beds near Yerba Buena Island. Also as described under biological resources, increased turbidity could affect herring spawning in the Clipper Cove. Mitigation outlined in the biological resources section would include avoidance of the dredging during the spawning season. <p>Implementing the regulatory measures and the above mitigation measure would reduce the impacts to a less-than-significant level.</p>		

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives (continued)

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Public Services and Utilities	No impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Public Services and Utilities impacts.</i> The development of additional marina facilities would likely increase the number of visitors and workers to the Clipper Cove area. The increased number of visitors and workers would increase the need for fire protection, police protection, and emergency medical services to the area. Additionally, construction of the marina facilities would result in increased potable water demand on the order of about 21,000 gallons per day (gpd) and associated wastewater production on the order of 16,800 gpd; disturb ground areas and increase the potential for soil erosion; increase energy and telecommunications demand and the generation of solid waste. Potential adverse effects and mitigation measures would be the same as those listed above for the Maximum Development Alternative for the Reuse Plan.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> Mitigation for impacts to fire protection, police protection, emergency medical services, potable water distribution, wastewater collection and treatment, stormwater collection, energy, telecommunications, and solid waste would be the same as those described under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Public Services and Utilities impacts.</i> Under the Medium Development Marina Alternative, a marina with a range of 500 to 675 boat slips would be constructed. The marina development would also include the reuse of existing facilities for a conference/reception center or bed and breakfast. Like the Maximum Development Marina Alternative, the Medium Development Marina Alternative would increase the need for fire protection, police protection, and emergency medical services to the area since there would be additional visitors and workers at Clipper Cove. Additionally, the expanded marina and new facilities would result in increased potable water demand and associated wastewater production; disturb ground areas and increase the potential for soil erosion; increase energy and telecommunications demand and the generation of solid waste. Potential adverse effects and mitigation measures would be the same as those listed for the Maximum Development Marina Alternative. However, impacts to the public services and utilities would be less for this alternative because it proposes less development.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> Mitigation for impacts to fire protection, police protection, emergency medical services, potable water distribution, wastewater collection and treatment, stormwater collection, energy, telecommunications, and solid waste would be the same as those described under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p>	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Public Services and Utilities impacts.</i> Under the Minimum Development Alternative, the existing marina would be retained, but not expanded. A new building of 20,000 square feet for the yacht club would be constructed. The construction of the new building and the revitalization of the existing marina would likely attract an increased number of visitors and workers to the Clipper Cove area, resulting in an increased need for fire protection, police protection, and emergency medical services to the area. Additionally, the new building and revitalized marina would result in increased potable water demand and associated wastewater production; disturb ground areas and increase the potential for soil erosion; increase energy and telecommunications demand and the generation of solid waste. Potential adverse effects and mitigation measures would be the same as those listed for the Maximum Development Marina Alternative.</p> <ul style="list-style-type: none"> <i>Mitigation.</i> Mitigation for impacts to fire protection, police protection, emergency medical services, potable water distribution, wastewater collection and treatment, stormwater collection, energy, telecommunications, and solid waste would be the same as those described under the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impacts to a less-than-significant level.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives (continued)

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Hazardous Materials and Waste	No impacts are expected.	<p>Significant and Mitigable Impacts</p> <p><i>Impact: Exposure to residual chemical constituents.</i> The Maximum Development Marina Alternative would require construction activities such as foundation excavation, pile installation, and construction dewatering. These types of construction activities could result in both human and ecological exposure to potential residual contaminants in soil and groundwater. After construction, potential human health impacts could occur if marina workers and visitors are exposed to elevated levels of residual constituents in the soil and groundwater.</p> <p>Lead in sediments off-shore from a former skeet range at IR 27 was identified as contaminants of concern. Sediment sampling conducted in late January through early February 1996 at the former Clipper Cove Skeet Range (IR 27) indicates that there are contaminated sediments in the marina area with elevated levels of lead and PAHs. The proposed Treasure Island Marina Development Plan would require dredging, and contaminated sediments may be encountered. During excavation to construct building foundations, workers could encounter contaminated soils and groundwater if construction occurs below remediated zones, in areas not sampled as part of the IRP, in soils not tested under the IRP containing lead from painted structures, or in fill material containing chemicals.</p> <p>Construction workers could be exposed to residual contamination through inhaling airborne contaminated dust or direct contact with contaminated soil or groundwater. Below-grade soil excavation or trenching activities that require dewatering could potentially encounter contaminated groundwater. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated groundwater, exposing construction workers or the public. Further dewatering activities potentially could spread groundwater contamination left in place.</p> <p>Disrupting soil during construction activities also could expose ecological receptors to chemical</p>	<p>Significant and Mitigable Impacts</p> <p>The significant and mitigable impacts would be similar to those described under the Maximum Development Marina Alternative. The total development would be less than that for the Maximum Development Marina Alternative, and combined employee and visitor populations would be less than the Maximum Development Marina Alternative. Overall exposure to residual chemical constituents and previously unidentified subsurface hazards would be approximately the same for this alternative as for the Maximum Development Marina Alternative.</p>	<p>Significant and Mitigable Impacts</p> <p>The significant and mitigable impacts would be similar to those described under the Maximum Development Marina Alternative. The total development would be less than that for the Maximum Development Marina Alternative, and combined employee and visitor populations would be less than the Maximum Development Marina Alternative. Overall exposure to residual chemical constituents and previously unidentified subsurface hazards would be lower for this alternative than for the Maximum Development Marina Alternative due to the lesser amount of construction and smaller boat slip area.</p>

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Hazardous Materials and Waste (cont'd)		<p>constituents. One pathway for the transport of chemicals to the Bay is surface water runoff from construction sites. Runoff that travels over potentially contaminated soil could transport dissolved organic chemicals, inorganic chemicals, and sediment to sensitive ecological receptors. Dredging Clipper Cove to expand the marina also may disturb contaminated sediments in Bay water, increasing suspended sediment and reducing dissolved oxygen.</p> <p>The potential for human and ecological exposure to residual contamination is considered a significant impact that could be mitigated by implementing the following measures:</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation measures for this impact would be the same as those described for the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p> <p><u>Impact: Exposure to previously unidentified subsurface hazards.</u> There is a potential risk associated with unidentified old or abandoned USTs, or buried hazardous debris in the Clipper Cove area. If an unidentified UST (which could contain hazardous materials or vapors) or buried hazardous debris were uncovered or disturbed during or after build-out of the Maximum Development Marina Alternative, workers, visitors, or occupants of nearby buildings could experience adverse health effects. The potential for exposure to unidentified hazards is considered a significant impact that could be mitigated by implementing the following:</p> <ul style="list-style-type: none"> • <i>Mitigation.</i> Mitigation measures for this impact would be the same as those described for the Maximum Development Alternative for the Reuse Plan. <p>Implementing these mitigation measures would reduce the impact to a less-than-significant level.</p>		
Shadow and Wind	No impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Cumulative Impacts				

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cumulative Land Use	No significant impacts are expected.	<i>Impact: Cumulative land use impacts.</i> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Visual Resources and Aesthetics	No significant impacts are expected.	<i>Impact: Cumulative visual resources and aesthetics impacts.</i> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Population, Employment, and Housing	No significant impacts are expected.	<i>Impact: Cumulative employment, population, and housing impacts.</i> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Cultural Resources	No significant impacts are expected.	<i>Impact: Cumulative impact on historic structures and loss of potentially significant archeological resources.</i> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Transportation, Circulation, and Parking	No significant impacts are expected.	<i>Impact: Cumulative traffic impacts associated with the proposed marina.</i> The traffic analysis presented in Section 4.5 takes into account the proposed marina traffic, traffic associated with the reuse alternatives, and traffic associated with cumulative 2020 growth forecasts for San Francisco and the Bay Area. The contribution of the reuse alternatives, including the proposed marina, to significant unavoidable cumulative transportation, circulation and parking impacts has been determined to be a small increment but is nevertheless considered cumulatively considerable. The proposed marina contributes even less traffic to these cumulatively significant impacts. Marina traffic is expected to add 38 new trips to the westbound on-ramp (west side), 27 new trips to the eastbound on-ramp (east side), and 10 trips to the westbound on-ramp (east side) during the weekend midday peak hour. The proposed marina's contribution of traffic would represent approximately 5 percent, 7 percent, and 5 percent of the total new trips generated under the reuse alternatives. The marina's seven percent contribution to significant impacts at the eastbound on-ramp (east side) would be considered a substantial contribution to a significant impact, and therefore the marina's contribution would be cumulatively considerable. The marina's contribution to cumulative traffic	Not required for CEQA analysis.	Not required for CEQA analysis.

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cumulative Transportation, Circulation, and Parking (cont'd)		congestion and increased parking demand at East Bay ferry terminals is currently not known with certainty and this analysis therefore concludes, as does the cumulative impact analysis for the reuse alternatives, that the impact is significant and unavoidable. The marina's contribution to significant impacts could therefore be cumulatively considerable as well. The marina's contribution to cumulative congestion could be reduced but may not be eliminated via the mitigation measures identified in Section 4.5, Transportation, Circulation, and Parking.		
Cumulative Air Quality	No significant impacts are expected.	<u>Impact: Cumulative impact on air quality.</u> The proposed marina would result in an increase in boat and vehicular traffic associated with the expanded marina. This would, in turn, increase traffic-related emissions and contribute to the region's nonattainment problems, which are cumulatively significant. Mitigation identified in Section 4.6 may not reduce this impact to a less than significant level. The marina's contribution to this cumulatively significant impact is not completely mitigable and is considered cumulatively considerable.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Noise	No significant impacts are expected.	<u>Impact: Cumulative impact on noise.</u> Construction activities associated with the proposed marina in combination with SFOBB construction could result in cumulatively significant temporary noise impacts. It is unlikely but possible that the marina's contribution to this noise impact would be cumulatively considerable, depending on the simultaneous construction activity being undertaken (and probably limited to pile driving activities).	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Biological Resources	No significant impacts are expected.	<u>Impact: Cumulative impacts on biological resources.</u> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Hydrology and Water Quality	No significant impacts are expected.	<u>Impact: Cumulative impacts on hydrology and water quality.</u> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.
Cumulative Public Services and Utilities	No significant impacts are expected.	<u>Impact: Cumulative impacts on public services and utilities.</u> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.

Table 2-3
Summary of Significant Environmental Impacts and Mitigations from the Marina No Action
and Marina Development Alternatives *(continued)*

Resource Category	No Action Marina Alternative	Proposed Marina: Maximum Development Marina Alternative	Medium Development Marina Alternative	Minimum Development Marina Alternative
Cumulative Hazardous Materials and Waste	No significant impacts are expected.	<u>Impact: Cumulative impacts on hazardous materials and waste.</u> No significant impacts are expected.	Not required for CEQA analysis.	Not required for CEQA analysis.