SAN FRANCISCO - OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

Land Use Issues Associated with the
SFOBB East Span Seismic Safety Project and the
Naval Station Treasure Island Draft Reuse Plan

January 2000

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1.0 INTRODUCTION

1.1 Purpose
The purpose of this report is to provide an overview of the City and County of San Francisco’s (CCSF) proposed development on the eastern side of Yerba Buena Island (YBI) as outlined in the CCSF "Naval Station Treasure Island (TI) Draft Reuse Plan" (July 1996) in relation to the proposed alternatives for the San Francisco – Oakland Bay Bridge East Span Seismic Safety Project. This report was prepared in response to a request by the Federal Highway Administration (FHWA) to assist decision-makers in the resolution of conflicts over land use impacts on YBI prior to FHWA identification of a preferred alternative for the East Span Seismic Safety Project.

This report is based on a comparison of the conceptual development plan (see page 2-2) shown in the CCSF July 1996 Draft Reuse Plan with the proposed East Span Seismic Safety Project alternatives. Potential significant land use effects of the alternatives on the United States Coast Guard facility are not discussed in this report. The July 1996 Draft Reuse Plan is CCSF’s most current public document addressing development on YBI, and is assumed to represent the goals of CCSF in redeveloping YBI.

The comparison of the July 1996 Draft Reuse Plan with the SFOBB East Span Seismic Safety Project alternatives looks at physical factors as well as environmental, regulatory, and market factors which will shape the final development scenario for the eastern portion of YBI. While physical factors can readily be identified, it is more difficult to predict uncontrolled factors such as community input, regional economic conditions, population dynamics and lifestyle decisions. Each of these factors will have a bearing on what is developed on YBI after the East Span Seismic Safety Project is completed.

1.2 SFOBB East Span Seismic Safety Project

1.2.1 Project History
The SFOBB is historically important in the Bay Area and worldwide. Construction of this structure began in 1933 and was completed and opened to traffic in 1936. At the time of its construction, the bridge was the world’s longest vehicular bridge, and the Yerba Buena Island Tunnel, a double-decked structure, was the largest bore tunnel of its time. The foundations for the majority of the East Span are supported on Douglas Fir timber piles that extend 21 meters (70 feet) into the Bay mud sediments. The SFOBB provides regional access between San Francisco, the Peninsula and the East Bay. Currently, approximately 350,000 people in 274,000 vehicles use the bridge each day. As a component of Interstate 80 (I-80), it is also a critical link in the Interstate Defense Highway System. The SFOBB East Span, which carries vehicles between YBI and Oakland, is a double-deck structure 12,127 feet in length with five traffic lanes in each direction, east- and westbound.
View of Eastern End of Yerba Buena Island

Building 262 (Torpedo Building)

Approximate Location of Bay Fill (Showing U.S.N. Property only)

Building 213

Parade Grounds

Officers Quarters Historic District

Building 1 (Nimitz House)

Macalla Road

South Gate Road

U.S. Coast Guard Facilities
On October 17, 1989, the Loma Prieta earthquake (magnitude 7.1) struck the San Francisco Bay Area, causing 62 deaths and $5.6 billion in property damage, and leaving 8,000 people homeless. The epicenter of the Loma Prieta earthquake was 60 miles away from the San Francisco-Oakland Bay Bridge.

On the SFOBB, the Loma Prieta earthquake caused the failure of the upper and lower spans at Pier E9 (shown below). A truss broke free from its support causing the upper span to fall down on the lower span.

In addition, all 1-inch diameter bolts attaching the north and south fixed shoes to their supports sheared off at each of the Piers E18 through E22. These shear failures allowed the shoes to slip back and forth in the east-west direction. However, the displacements were not great enough to result in collapse of additional spans.

The East Span was closed for four weeks while the damage was repaired. The closure of the bridge had tremendous impact to commuters who had to be rerouted to other Bay crossings, including other modes of transportation such as ferries or BART. It also had an effect on the overall quality of life in the region.

No analyses have been conducted to quantify the economic impact specific to the closure of the SFOBB. However, the Association of Bay Area Governments (ABAG) did conduct an assessment of the regional macroeconomic impacts of the Loma Prieta Earthquake. ABAG concluded that the maximum loss to the Gross Regional Product was in the range of $181 to $725 million. ABAG noted that San Francisco suffered a significant loss ($73 million) in taxable sales activity, and that “a major portion of the loss in economic activity in San Francisco may have been due to a loss in transportation access” (“Macroeconomic Effects of the Loma Prieta Earthquake”, ABAG, 1991).

1.2.2 Project Purpose and Need

The purpose of the East Span Seismic Safety Project is to provide a seismically upgraded vehicular crossing for current and future users between YBI and Oakland. This Project seeks to provide a “lifeline” connection between YBI and Oakland. A “lifeline” connection provides for post-earthquake emergency relief access linking major population centers, emergency relief routes, emergency supply and staging centers, and intermodal links to major distribution centers. Additionally, the bridge will be upgraded to meet current operational and safety standards to the greatest extent possible. The existing East Span must be replaced or retrofitted because:

- The East Span is not expected to withstand a maximum credible earthquake (MCE)* on the San Andreas fault (an earthquake of magnitude 8 on

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* A maximum credible earthquake (MCE) was referred to in the DEIS, which reflects a deterministic approach to describing earthquakes. Based on recommendations from the Metropolitan Transportation Commission’s (MTC’s) Seismic Advisory Board and Engineering Advisory Panel, the earthquake discussions in the FEIS have been changed to reflect a probabilistic approach (i.e., describing earthquakes in terms of their return period).
cause more damage than a MCE on the San Andreas Fault. On the existing SFOBB East Span, a MCE could cause multi-span collapse, potentially resulting in numerous immediate casualties and requiring many months to reopen the bridge or years to build a replacement. As a result, immediate emergency response and more long-term economic recovery would be delayed. According to a report by the USGS, the Bay Area faces a 70 percent probability of an earthquake over the next 30 years causing damage equal to or greater than the $20 billion Northridge earthquake (magnitude 6.7) of 1994. The Bay Area faces an 80 percent probability of an earthquake of magnitude 6.0 to 6.7 over the same period. Therefore, it is imperative that the SFOBB East Span Seismic Safety Project be completed as soon as possible.

1.2.3 Project Alternatives
Caltrans has considered and performed preliminary engineering on a range of possible project alternatives for the SFOBB East Span Seismic Safety Project. The following alternatives were considered in the Draft Environmental Impact Statement:

- No-Build
- Retrofit Existing Structure
- Replacement Alternative N-2
- Replacement Alternative N-6
- Replacement Alternative S-4

No-Build Alternative
The No-Build Alternative would retain the existing SFOBB East Span. The No-Build Alternative assumes that the interim retrofitting of the East Span has been completed as a prior project. The Interim Retrofit Project is currently underway to strengthen bents and columns on the viaduct section on YBI and strengthen piers, bents, and trusses at selected locations on the structure, so that the existing East Span would be able to withstand a moderate earthquake. The No-Build Alternative was evaluated primarily as a basis for comparison with the alternatives. The No-Build Alternative does not satisfy the Project purpose and need.

Retrofit Existing Structure Alternative
The Retrofit Existing Structure Alternative would retrofit the existing bridge to withstand a MCE. The seismic retrofit strategy is based on strengthening and stiffening of the substructure (below deck, towers, and foundations). This work would include additional large diameter piles and new pile caps around the existing foundations, isolator bearings at the top of the towers, and new piers and trusses. Two new large deepwater piers would be added to the cantilever span. A space frame to
restrict deformation would extend from the base of the lower deck to the bottom of the upper deck on the outside of the cantilever section. However, the bridge would still experience substantial damage in the event of a MCE, likely rendering it unusable for post-earthquake recovery efforts, therefore not meeting the “lifeline” criteria. Also, this alternative would not provide for improved lane widths and emergency roadway shoulder areas on the existing bridge; therefore, current highway design standards could not be attained. Due to these limitations of the Retrofit Existing Structure Alternative, it does not fully satisfy the Project purpose and need.

N-2 Alternative
Replacement Alternative N-2 would construct a new bridge (two-side-by-side bridge decks, each deck consisting of five lanes) north of the existing alignment and would dismantle the existing structure. The alignment has been designed to minimize the length of the new bridge by closely following the alignment of the existing East Span. East of the YBI tunnel, the alignment would transition from a double-deck viaduct structure to two parallel structures. The 11,759 foot long span would reach the Oakland shore along the northern edge of the existing Oakland Touchdown area and conform to the existing traffic lanes to the west of the SFOBB Toll Plaza. Alternative N-2 would include a pedestrian/bicycle path on the south side of the eastbound structure. The path would be 15.5 feet wide and 1 foot higher than adjacent lanes. This alternative would meet the Project purpose and need.

N-6 Alternative
Replacement Alternative N-6 is similar to N-2, but the proposed bridge would be aligned north of the existing structure and Replacement Alternative N-2. This alignment has been designed to maximize views to the north of YBI while minimizing intrusion into portions of the Bay where geologic conditions increase the complexity and cost of constructing bridge piers. The overall length of Alternative N-6 is approximately 11,877 feet. The alignment approaching the Oakland Touchdown area is similar to Replacement Alternative N-2. Alternative N-6 would include a pedestrian/bicycle path on the south side of the eastbound structure. The path would be 15.5 feet wide and 1 foot higher than adjacent traffic lanes. This alternative would meet the Project purpose and need.

S-4 Alternative
Replacement Alternative S-4 would be located south of the existing East Span. The alignment would exit the YBI Tunnel on a double-deck viaduct and transition to two parallel structures. The 11,644 foot long span would reach the Oakland shore south of the existing East Span and transition to the existing roadway west of the toll plaza. Alternative S-4 has been developed to avoid offshore conflicts with the alignment of the existing East Bay Municipal Utility District (EBMUD) sewer outfall, which parallels the existing East Span to the south. Alternative S-4 would include a pedestrian/bicycle path on the south side of the eastbound structure. The path would be 15.5 feet wide and 1 foot

Photosimulation of Replacement Alternative N-6 as Viewed from the Oakland Touchdown toward YBI
higher than adjacent traffic lanes. This alternative would meet the Project purpose and need.

1.2.4 Other Alternatives
Caltrans considered several other project alternatives that were ultimately withdrawn from further consideration. The alternative alignments and the reasons for withdrawal are identified in the Draft Environmental Impact Statement and are summarized here.

N-1 Alternative
Replacement Alternative N-1 is a 12,087-foot long replacement alternative located to the north of Alternative N-6. However, based on geologic data, it was determined that approximately one-half of the N-1 alignment would fall within areas of deep young Bay mud, increasing the complexity, schedule, and cost of constructing the bridge substructure while potentially reducing seismic performance. Therefore, Alternative N-1 was withdrawn from further consideration.

N-3 Alternative
Replacement Alternative N-3 would place the main span tower close to YBI, where geologic conditions are most favorable for the tower footing, thus facilitating the construction schedule by reducing the amount of in-Bay excavation. Alternative N-3 is located to the south of Alternative N-6. However, the tower location would require the roadway horizontal and vertical alignments to be modified to less than optimum configurations, resulting in restricted sight distances, which affect driver response, and therefore safety. Therefore,
Alternative N-3 was withdrawn from further consideration.

N-4 Alternative
Replacement Alternative N-4, a modification of the N-3 alignment, provides for a 591-foot tangent (straight) roadway section at the YBI tunnel approach on the westbound alignment. This alternative was designed to satisfy design standards by preventing westbound traffic from entering the tunnel portal on a curve. However, because of the deep water location of the main span tower, resulting in increased project cost and lengthened construction schedule, Alternative N-4 was withdrawn from further consideration.

N-5 Alternative
Replacement Alternative N-5, a modification of Alternative N-3, consists of a larger curve radius for the westbound alignment entering the YBI tunnel portal, reducing or eliminating sight distance concerns. However, based on the desire to place a tangent roadway section at the westbound alignment approach to the YBI tunnel portal and the need to place and maintain the main span tower as close to YBI as possible, Alternative N-5 was withdrawn from further consideration.

S-1 Alternative
Replacement Alternative S-1 was defined as the most direct alignment between YBI and the Oakland Touchdown. However, this alignment would not meet superelevation design standards for curves at the YBI tunnel approach, requiring a mandatory design exception and affecting roadway safety. Furthermore, this alignment would create significant conflicts with the EBMUD outfall. Therefore, Alternative S-1 was withdrawn from further consideration.

S-2 Alternative
Replacement Alternative S-2 provides broader radius curves than the S-1 alternative at the YBI Tunnel approaches, avoiding the need for design exceptions. Furthermore, this alignment would avoid offshore conflicts with the EBMUD outfall. However, construction staging to maintain five lanes of traffic in each direction would require construction of temporary detour structures out to the cantilever section of the existing East Span. Further investigation indicated that the tie-in of the temporary detour structures to the cantilever section would be complex and potentially could compromise structural integrity of the existing structure. Therefore, Alternative S-2 was withdrawn from further consideration.

S-3 Alternative
Replacement Alternative S-3 is a refinement of S-1, which would also eliminate the need for design exceptions for superelevation of roadway curves. However, this alignment would require construction of detour structures similar to those described for Alternative S-2, raising concerns for the structural integrity of the existing East Span cantilever section. Therefore, Alternative S-3 was withdrawn from further consideration.

1.2.5 Regional Preferences
In February 1997, due to the high cost and complexity of seismically retrofitting the existing east span of the San Francisco-Oakland Bay Bridge, then-Governor Pete Wilson announced that replacement alternatives should be considered. Due to the regional significance of the project, Caltrans asked Metropolitan Transportation Commission (MTC) to provide leadership in establishing regional consensus on alignment, design and bridge amenities.

The MTC is the transportation planning, coordinating and financing agency for the
nine-county San Francisco Bay Area. Created by the State Legislature in 1970 (California Government Code § 66500 et seq.), MTC functions as both the regional transportation planning agency -- a state designation -- and for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The Commission also screens requests from local agencies for state and federal grants for transportation projects to determine their compatibility with the plan.

The commission consists of 19 commissioners representing the cities and counties in the nine-county Bay Area as well as certain state and federal interests. Federal representation includes the Department of Transportation and the Department of Housing and Urban Development. Two members represent regional agencies -- the Association of Bay Area Governments (ABAG) and the Bay Conservation and Development Commission (BCDC).

Following Caltrans request for regional input, MTC organized the Bay Bridge Design Task Force (Task Force) in early 1997 to consider replacement bridge alternatives. The Task Force mandate was to develop a consensus recommendation on a design option and alignment for a new eastern span of the SFOBB and recommend any additional features that might be included in the design of the replacement bridge. The Task Force is composed of seven MTC commissioners with two representatives each from Contra Costa, San Francisco, and Alameda Counties, and one representative from BCDC.

The MTC Task Force formed an Engineering and Design Advisory Panel (EDAP) to advise the Task Force on issues of cost, engineering feasibility, design factors, and seismic safety. The EDAP is comprised of technical experts in structural, geotechnical, seismic and civil engineering, and architecture. EDAP deliberations included meetings and workshops open to the public for presentation of design concepts from interested parties. Beginning with the first of four formal public hearings on March 27, 1997, the Task Force began the process to consider different types of replacement bridge structures and alignment issues.

In his letter of July 21, 1997 (copy of letter attached in Appendix A), Mayor Willie L. Brown, Jr. of San Francisco endorsed the proposed northern alignment stating, "The arguments of a southern alignment versus a northern alignment have to be weighed with the impact each alignment has on either Yerba Buena Island or the Port of Oakland. It is my feeling that the economic development opportunities to the Port of Oakland outweigh the economic opportunities to San Francisco at Yerba Buena Island."

The MTC Task Force, with advice from its EDAP, and citizen and agency input, adopted seventeen recommendations for the design and alignment of a replacement alternative on July 23, 1997, including a recommendation for a northern alignment. Recommendations of the Task Force were transmitted to Caltrans along with a request for additional analysis needed to determine cost and feasibility of design components and features.

In a letter dated September 5, 1997 (copy of letter attached in Appendix A), Mayor Brown offered to convey any property
needed on YBI for the East Span Seismic Safety Project to the State at no cost to the State.

In August 1997, then-Governor Pete Wilson signed into State law Senate Bill 60 (SB 60). SB 60 provides additional funding for a replacement east span bridge by increasing the tolls for all State-owned toll bridges in the Bay Area and identified the MTC as the responsible regional agency for disbursement of the funds. SB 60 also gave the MTC authority to fund, at its discretion, three additional features, or amenities, for a replacement east span including a “signature” bridge structure, a pedestrian/bicycle path, and a new Transbay Transit Terminal in San Francisco. The authority to fund these amenities is constrained by the amount of revenue that could be generated by a three year extension of the bridge toll increase.

In response to Task Force recommendations and the mandates of SB 60, Caltrans initiated preliminary engineering studies as requested by the Task Force and EDAP. These studies were used to determine the seismic performance, cost, and aesthetics of the bridge types recommended by the Task Force and the cost and feasibility of including design amenities such as “signature” bridge structures and a pedestrian/bicycle path. The EDAP reviewed the results of the studies in a series of public meetings and made specific recommendations to the Task Force.

On June 24, 1998, following extensive public comment, the Task Force forwarded a recommendation to MTC that the replacement structure be a concrete skyway structure on a northern alignment with an asymmetrical self-anchored suspension main span supported by a single steel tower. A 15.5-foot wide pedestrian/bicycle path 1 foot higher than the traffic lanes located on the south side of the eastbound structure was also recommended by the Task Force. The Task Force recommendations were adopted by the MTC on June 24, 1998.

The MTC recommendations are considered advisory and represent locally preferred options. Caltrans and the FHWA have considered and performed preliminary engineering on a range of possible project alternatives in accordance with NEPA requirements and in consultation with permitting and regulatory agencies. Five alternatives (No-Build, Retrofit Existing Structure, two northern and one southern replacement alternatives) were considered in the Draft EIS for the East Span Seismic Safety Project.

On November 23, 1998, San Francisco Mayor Brown sent a letter to Caltrans that commented on the Draft Environmental Impact Statement on the East Span Seismic Safety Project (Appendix A). In that letter, the CCSF reversed the earlier endorsement of a northern alignment, and instead, submitted an economic analysis supporting a modified version of the southern alignment known as the “S-1 Modified” alignment. Caltrans will prepare a response to the comments raised by CCSF as part of the Final Environmental Impact Statement (FEIS).

In December 1998, Caltrans identified Alternative N-6 as the preferred alternative following circulation of the Draft EIS and consideration of public and agency comments on the document.
2.0 TREASURE ISLAND DRAFT REUSE PLAN

2.1 Plan Summary
The July 1996 Draft Reuse Plan, prepared by the City and County of San Francisco (acting as the local reuse authority), is a proposed land use plan prior to the environmental process. The July 1996 Draft Reuse Plan describes the land uses planned for the former 516 acre Naval Station Treasure Island when it is transferred from federal to local jurisdiction. Caltrans requires 20 acres on eastern YBI for bridge construction activities for all alternatives. Of that acreage, about 7.8 acres are developable (i.e. with slopes of less than 30 percent) and comprise the area discussed in the July 1996 Draft Reuse Plan for eastern YBI.

The Base Realignment and Conversion (BRAC) laws and regulations require the U.S. Navy to obtain a reuse plan from the local authority as part of the economic development conveyance (EDC) process. The July 1996 Draft Reuse Plan satisfies that requirement; however, it does not constitute compliance with the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA).

Recent amendments to BRAC now provide for EDCs at no cost to the local community. Therefore, when the BRAC process is completed, the City and County of San Francisco will receive the 516-acre former Naval Station property at no cost.

The Naval Station Treasure Island Draft Reuse Plan was adopted by the San Francisco Planning Commission and Board of Supervisors in July 1996 after public review. The plan serves as the basis for the environmental analysis (CEQA/NEPA compliance) of civilian reuse which is currently being prepared by the U.S. Navy and is scheduled to be released in early 2000.

In August 1999, the San Francisco Planning Commission adopted a Preliminary Plan that sets forth the boundaries for a proposed Treasure Island/Yerba Buena Island Redevelopment Project Area for which a redevelopment plan will be prepared. The redevelopment plan will identify specific financial assistance strategies, revitalization, conservation and development strategies for development on TI/YBI. The redevelopment plan must also include provisions for affordable housing, employment, and economic development opportunities for the homeless and economically disadvantaged and must be approved by the Secretary of the federal Department of Housing and Urban Development (HUD). The redevelopment plan will be subject to environmental review under CEQA during the local approval process.

The July 1996 Draft Reuse Plan contains chapters on the Planning Process; Site and Context; Land Use; and Homeless Needs and Services. The Land Use Chapter contains policies that address development potential on the eastern end of YBI. The plan states: "On Yerba Buena Island, new development would include residential uses, with visitor-oriented attractions tied to Treasure Island or the potential for conference and retreat facilities as well as hotel or lodging in the hillside area" (July 1996 Draft Reuse Plan, p. 37).

Pertinent July 1996 Draft Reuse Plan Land Use Policies. The following is a list of Land Use Policies that pertain to development on YBI:

- "Provide for new civilian uses that contribute to the economic well being of the Islands and San Francisco by generating jobs and revenues."
- "Limit uses to those which can be accommodated primarily by ferry."
- "Allow flexibility to respond to market opportunities and changes in technology over time."
  - "Attract initial uses and users that facilitate and are compatible with the development of desired long-term uses."
  - "At Yerba Buena Island, there are two sites where visitor-oriented uses are envisioned. They include: (1) the easterly tip of the island where a portion of the property could be developed as an attraction that is tied by boat to activities taking place at Treasure Island; and (2) Quarters 1-7, which could be used for conference (60,000 square feet) and limited lodging..."
- "Provide for the opportunity for public oriented uses at Yerba Buena Island."
- "Allow for the expansion of public oriented uses."
  - "If the publicly oriented uses require a larger 'footprint' and if circumstances make other properties available, then the expansion of publicly oriented uses should be accommodated."
- "In certain cases, areas are shown with multiple land use designations, providing the opportunity at Treasure Island and Yerba Buena Island to retain some flexibility and create an opportunity for a broader range of potential activities."
- "Publicly oriented uses are a possibility at Yerba Buena Island as well, in the flatter areas on the easterly tip of the island (including Quarters 1-7)...."
- "Focus public open space on the natural features and amenities of the island setting."
  - "Protect hillside and shoreline open space at Yerba Buena Island."
  - "Maintain and expand waterfront recreational and transportation facilities to enliven the water's edge and improve access."
    - "The opportunity for ferry facilities should be developed (where possible) along Yerba Buena Island. In addition, the opportunity for berths and floats to serve smaller craft (such as water taxis) as well as ferries should be provided."
    - "Provide a range of institutional uses that can satisfy a broad range of public purposes. Encourage collaboration between users to reduce costs for facilities and services."
  - "Provide for existing and new housing at Yerba Buena Island."
  - "For Yerba Buena Island, residential uses may include single-family attached and detached as well as live/work studios and artisan cottages. A maximum of 300 units* would be allowed at Yerba Buena Island and would be distributed in both the hillside and flat land areas."

*Note: As a general land use policy, the 300 housing unit figure is given by the July 1996 Draft Reuse Plan to establish an upper limit of housing density on the island.
2.2 Conceptual Land Use Plan

2.2.1 Eastern YBI
The conceptual land use plan for development on the eastern side of YBI (shown below) calls for a mixture of residential and visitor-serving uses. As noted in the "Implementation Strategy" section of the July 1996 Draft Reuse Plan, proposed residential uses include construction of 13 artisan cottages and 75 live-work units in 4 buildings with a total area of 75,000 square feet. Visitor-serving uses include a 60,000 square foot conference center that would be associated with Buildings 1 through 7. A height limit of 40 feet for eastern YBI is shown in the Plan (July 1996 Draft Reuse Plan, p. 72.). The plan also proposed reuse of the Torpedo Building (Building 262) for uses such as art studios, a community center, additional live/work space, or a restaurant. (July 1996 Draft Reuse Plan, p. 174.)

Caltrans estimates that the amount of developable area under the July 1996 Draft Reuse Plan is 7.8 acres, which includes 0.6 acre of land spanned by the existing bridge. As shown in the photo above, development under structures is permitted, subject to review and approval by Caltrans. (Note: The estimated developable area represents raw land with a slope of less than 30 percent which is considered a standard in planning and engineering practice. Other environmental

Source: Draft Treasure Island Reuse Plan, 1996
factors which might further reduce the buildable area, such as soil and geological conditions, were not factored into this estimate.)

As noted on page 2-1, the 7.8 acres of developable land is part of the 20 acres of land required by Caltrans during the bridge construction period. During construction, all of the build alternatives (retrofit, N-2, N-6 and S-4) would affect potential development of the 7.8 acres to the same degree. Post-construction impacts to this area vary among alternatives, requiring varying amounts of the total acreage. These differences between alternatives are discussed in Section 4.0.

Table 1 provides a summary of existing development quantities outlined in the July 1996 Draft Reuse Plan for the eastern side of YBI:

<table>
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<th>Buildable Area</th>
<th>Acres</th>
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<tr>
<td>Un-Spanned</td>
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</tr>
<tr>
<td>Spanned</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>7.8</td>
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Source: Caltrans

2.3 Plan Implementation
The July 1996 Draft Reuse Plan envisions that development of Treasure Island/Yerba Buena Island will occur in five phases. Each phase will build on the previous phase in order to generate the revenue necessary to make needed infrastructure improvements which, in turn, will allow for more intensive development in subsequent phases. The phased implementation process is projected to extend over a period of 35 years.

Development on YBI is envisioned to occur within the first three phases of plan implementation, which is projected to occur over a 15-year period. To the extent the implementation plan was premised on release of a final NEPA/CEQA document several years ago, the phasing schedule described below appears to be approximately two years behind schedule, as the U.S. Navy and CCSF have not released the NEPA/CEQA document. Development near the bridge on YBI, including the conference center, artisan cottages and live/work units, is included in Phase 3, and is scheduled to begin in 2007. This date is after completion of the East Span Seismic Safety Project in any event. The three implementation phases affecting YBI are summarized on the following pages:

2.2.2 Western YBI
The conceptual development plan for the west side of YBI calls for immediate utilization of the existing housing stock for market rate and homeless housing programs. The plan envisions phased demolition and redevelopment of the housing stock on western YBI to develop higher density residential units (90 units), with either a hotel (150 rooms) and condominium development (100 units) or lower density single-family development of 65 lots (July 1996 Draft Reuse Plan, p. 172).
Phase 1
Phase 1 (see figure to the right) was anticipated to begin in 1997 and continue through 2001 as closure of the base occurred. In this phase, limited interim uses of the existing facilities are planned. On YBI, Phase 1 assumes that all of the existing buildings will continue in civilian uses including provision of housing for the homeless and use of Buildings 1 through 7 for use as a conference/meeting center.

Phase 2
Phase 2 improvements (shown below) are listed in the July 1996 Draft Reuse Plan as scheduled to occur between 2002 and 2006. Phase 2 envisions the beginning of improvements to the TI shoreline, including causeway reinforcement between TI and YBI, and creating a secure land link to the SFOBB and the proposed ferry terminal on TI. After infrastructure improvements are made, a theme park, sports complex, maritime administration and expansion of the film studios on TI are proposed as part of Phase 2.

On YBI, Phase 2 includes redevelopment of the existing housing on the west side of the island for housing and hotel development.

According to the July 1996 Draft Reuse Plan, expansion of the Treasure Island Marina was originally scheduled for Phase 2 development. Since the plan was written, the marina project has been accelerated and is currently in the planning stage. The conceptual marina development plan, shown at right, has been approved by the Treasure Island Development Authority. Approval of the final marina development plan will
require certification of an environmental document in compliance with CEQA and NEPA.

Construction of the Treasure Island Marina is scheduled to begin in mid-to-late-2001, after approval of the final plan and environmental document, and Bay Conservation and Development Commission approval (Steven Proud, Director of Development, Treasure Island, December 8, 1999).

Phase 3
Phase 3 improvements, shown below, are listed in the July 1996 Draft Reuse Plan as scheduled to occur between 2007 and 2011, which is after completion of the East Span Seismic Safety Project (2006). Consequently, there will be no construction conflicts between the two projects. In Phase 3, improvements would be made to stabilize the eastern shoreline on TI, which will allow completion of the theme park. Development of a hotel/retail area is also envisioned in this phase. On YBI, Phase 3 improvements would include development of the conference center and artisan cottages on the eastern end of the island.
3.0 FACTORS INFLUENCING DRAFT REUSE PLAN IMPLEMENTATION

For purposes of this report, the conceptual development plan shown in the City and County of San Francisco (CCSF) Draft Reuse Plan was assumed to represent CCSF goals in redeveloping YBI. The draft plan is subject to a number of environmental, regulatory, and market constraints that would affect the amount and location of development on the eastern end of YBI. The major factors affecting implementation of the July 1996 Draft Reuse Plan on YBI are discussed below.

Bay Conservation and Development Commission (BCDC) Jurisdiction

The San Francisco Bay Conservation and Development Commission (BCDC) is a State agency and was created by the State McAteer-Petris Act: to regulate development in and around the San Francisco Bay. After its creation, BCDC was designated as the Federal Coastal Zone Management Agency for the San Francisco Bay in accordance with the Federal Coastal Zone Management Act (CZMA). The purpose of CZMA was similar to the purpose of the McAteer-Petris Act - to regulate development in coastal areas so as to protect the unique resources in such areas. BCDC has jurisdiction under both the McAteer-Petris Act and the CZMA over the entire Bay as well as a shoreline band 100 feet shoreward of the mean high tide line.

BCDC is composed of 27 appointed commissioners and staff. Two of the commissioners are appointed by CCSF. As part of its statutory mandate under the McAteer-Petris Act, BCDC has adopted the San Francisco Bay Plan as its master planning document for the San Francisco Bay. Certain areas within the Bay are designated as "priority use areas" for particular uses. In such areas, the only permitted uses are the designated priority uses. The Bay Plan designates the entirety of BCDC jurisdiction on YBI as a park and recreation priority use area.

Any development on YBI within the area of BCDC jurisdiction will require a permit from BCDC as required by the McAteer-Petris Act. Additionally, the U.S. Navy will also have to prepare a consistency certification for both the transfer of YBI from the U.S. Navy to CCSF and the associated proposed redevelopment, as required by the CZMA. BCDC will have to concur with the consistency certification before the U.S. Navy can undertake the transfer. Both the required development permit and the consistency certification must establish that the proposed development is consistent with the Bay Plan. The consistency certification is slightly different from the BCDC permit in one significant respect: the BCDC permit will only regulate
development 100 feet shoreward of the mean high tide line while the consistency certification will regulate development on all of YBI. The U.S. Navy must consider whether the proposed redevelopment outside of BCDC jurisdiction affects the area within BCDC jurisdiction, and if it does, the U.S. Navy must then establish that all of the proposed redevelopment is consistent with the Bay Plan (15 Code of Federal Regulations sections 930.21, 930.33, and 930.39).

The proposed redevelopment on YBI set forth in the July 1996 Draft Reuse Plan appears to be inconsistent with the Bay Plan. The Bay Plan would have to be amended prior to BCDC concurrence with the U.S. Navy’s consistency certification and prior to the issuance of a development permit by BCDC for the proposed redevelopment. (BCDC correspondence regarding this issue is attached as Appendix A.) An amendment of the Bay Plan would require a 2/3 vote of the BCDC Commissioners. Since the Bay Plan was adopted in 1969, the Commission has approved a total of 13 major amendments to the Bay Plan.

Environmental Constraints
A number of environmental constraints will affect development potential on YBI. Constraints include topography, slope stability, access, infrastructure, hazardous wastes, aesthetics, historic properties and an archaeological site. Design considerations or mitigation measures addressing these constraints will influence the ultimate reuse plan.

The density and location of development on YBI cannot be determined until completion of the Final EIS/R that is being prepared for the base closure. (Note: The Draft EIS/R, originally scheduled for release in 1997, is currently scheduled for public circulation in early 2000.) The ability of the island to support varying densities of development and for proposed transportation infrastructure to provide access to development is typically assessed in the EIS/R. The redevelopment plan shown in CCSF July 1996 Draft Reuse Plan may not be the selected alternative. A lower or higher density development may be possible.

Final Redevelopment Plan / Environmental Compliance Process
The Reuse Authority’s adoption of the Final Redevelopment Plan will include preparation of a National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) Environmental Impact Statement / Environmental Impact Report (EIS/R). The EIS/R will address the potential impacts on physical, natural, historic and socioeconomic resources (see “Environmental Constraints” discussion above).

The EIS/R will address the potential impacts of a set of redevelopment alternatives. The environmental review process will include preparation of environmental technical studies addressing physical, natural and socioeconomic categories. When the technical studies are completed, the results will be disclosed in a Draft EIS/R. The Draft EIS/R will be published and distributed for public and agency comment. The Draft EIS/R is scheduled for publication in early 2000 (see “Environmental Constraints” discussion above). The comment period will be open for at least 45 days. Following consideration of public and agency comments, CCSF and the U.S. Navy will identify a preferred alternative and publish a Final EIS/R. Following publication of the Final EIS/R, the U.S.
Navy will publish a NEPA Record of Decision and CCSF will certify the EIR.

Completion of the NEPA/CEQA review process will provide the necessary environmental review for CCSF to adopt the Final Redevelopment Plan and implement redevelopment actions addressed in the Final Redevelopment Plan. Adoption of the Final Redevelopment Plan is scheduled for August 2000.

As noted in Section 2, implementation of the reuse plan is anticipated to occur over a 35-year period, with development of new facilities on eastern YBI listed in the July 1996 Draft Reuse Plan scheduled to occur between 2007 and 2011.

**Potential demand for proposed uses on YBI**

No usage information is currently available to determine the potential demand for continued leasing of existing structures, particularly Buildings 1 through 7. CCSF does not have leasing trend data that can be used to estimate potential future demand for rental of Buildings 1 through 7. “Second, a log showing frequency of use and the revenue derived from such usage at the Nimitz Mansion would not reflect the true demand for use nor revenue potential. This is because, as you know, the Historic District is undergoing lead paint and asbestos abatement. Thus, both revenues and usage are understated. In addition, since construction of a new bridge may take place in the next few years, plans to renovate, upgrade or to add additional facilities have been postponed until either the existing span is retrofitted or a new one is constructed. Thus, existing income is no reflection of any realistic income projections.” (Letter to Mara Melandry, Caltrans from Joan Rummelsburg, Office of the May, San Francisco, Treasure Island Project, September 24, 1999. See letter in Appendix A.)

Long-term potential for reuse of existing buildings or redevelopment of sites on YBI has not yet been established. However, potential developers have expressed interest per information provided by the Treasure Island Project Office. “Despite these constraints, the Project Office has received more than 50 unsolicited inquiries since July 1999 from those wanting to lease facilities or to develop other types of projects.

Numerous other inquiries and proposals had been received prior to last July, even though the Authority has not yet solicited developer interest in this area. We anticipate that if the Treasure Island Authority decides to issue a Request for Proposal for all or portions of the two islands that inquiries will increase exponentially,” (Letter to Mara Melandry from Joan Rummelsburg, September 24, 1999, See letter Appendix A).

CCSF’s final redevelopment plan for YBI will respond to the anticipated demand for reuse of existing structures and sites. Technical studies assessing the economic benefits and impacts of CCSF TI/YBI redevelopment alternatives have not yet been published.

**Planning Inconsistencies**

There is a controversy that may hinder redevelopment of YBI. The primary economic consultant involved in the preparation of the July 1996 Draft Reuse Plan was Sedway and Associates. After the preparation of the Draft Reuse Plan in 1996, CCSF and the U.S. Navy retained the services of the Urban Land Institute (ULI), a preeminent non-profit land use research and education organization, to prepare a report reviewing the conclusions of the July 1996 Draft Reuse Plan. As part of its program, ULI provides advisory services “to bring the
finest expertise in the real estate field to bear on complex land use planning and development projects ...” (Treasure Island Naval Station, San Francisco, California - An Evaluation of Reuse Opportunities and a Strategy for Development and Implementation, ULI, September 1996, page 3). Sedway and Associates (also known as the Sedway Group and/or Sedway Kotin Mouchly Group) provided the briefing material to the ULI panel that prepared the analysis of the July 1996 Draft Reuse Plan. Lynn Sedway, a Principal of Sedway and Associates, is also a member of the Board of Trustees of ULI.

The ULI Report differs with the July 1996 Draft Reuse Plan in several areas, including redevelopment of YBI. The ULI Report proposed very limited development on YBI. Use of YBI was to consist of reuse of existing housing as well as development of a restaurant at Building 262 (the Torpedo Factory) and development of a bed and breakfast facility on western YBI. The ULI Report recommended that YBI be maintained largely as a “natural habitat” rather than developed as a conference center, live-work units and artisan cottages.

Although CCSF has indicated that it is continuing to pursue the development set forth in the July 1996 Draft Reuse Plan (CCSF comments to the DEIS for the East Span Seismic Safety Project were based on the redevelopment proposed in the July 1996 Draft Reuse Plan), the environmental process for development of YBI remains in early stages (the Draft Environmental Impact Report and Statement for the transfer and redevelopment has not been released to the public). It is unknown how or if this controversy will be resolved.


It should be noted that the Sedway analysis is founded on several incorrect assumptions as follows:

- The analysis assumes that Building 262 could not be leased for safety and noise reasons. The basis for the assumption is not stated nor is the nature of the safety reasons. The associated losses are designated as “permanent” so it appears that the assumption is based upon the fact that the bridge passes over Building 262. This assumption is incorrect. As noted elsewhere in this report, there are examples of commercial/retail development existing adjacent to or underneath bridge structures, including structures owned and operated by Caltrans. Noise levels with a northern replacement alternative will be slightly lower than with a southern replacement alternative or retrofit of the existing bridge.

- The analysis assumes that several of the Buildings 1 through 7 would not be leasable or would be less desirable “given the location of the ramps”. The analysis also assumes that residential development will be reduced from 45 units per acre to 0 units per acre, and that the number of hotel rooms would be reduced, both due to the location of a
northern replacement alternative and the ramps. Given Exhibit 1 attached to the analysis, this appears to presume that new ramps are being constructed as part of the East Span Seismic Safety Project. This is incorrect. The East Span Seismic Safety Project does not involve the construction of new ramps on YBI. Existing ramps, if affected, will be reconstructed in their present location. The ramps are owned by the U.S. Navy and will be transferred to CCSF. Any subsequent construction of new ramps will be at the discretion of CCSF. Caltrans has taken care to insure that construction of a replacement bridge on either a northern or southern replacement alternative will not limit ramp options available to CCSF or require the construction of ramps over Buildings 1 through 7 or new development on YBI, should CCSF decide to construct new ramps.

- It is unclear whether the losses stated in the analysis have been offset by the reduction in investment costs/infrastructure improvement associated with the stated losses so as to provide a fair statement of loss (i.e., if lease of Building 262 requires substantial infrastructure investment such as road improvements, utility lines, etc., as well as building improvements that will not have to be made if the building is rendered unleaseable, these should be offset against the projected loss in the revenue stream).
4.0. IMPACTS TO PROPOSED USES IN THE CONCEPTUAL DRAFT REUSE PLAN

The following section describes project-related impacts to the conceptual development described in the July 1996 Draft Reuse Plan. For purposes of assessment, an alternate land use scenario has been developed in an attempt to accurately assess net impacts from a northern replacement alternative (i.e., can some of the proposed development still be accommodated with a northern replacement alternative). The alternate land use scenario is based on the following assumptions and relies on the basic concept and assumptions contained in the July 1996 Draft Reuse Plan.

4.1. Assumptions

The following section describes the assumptions used in formulating the alternative land use scenario which was used in assessing the impacts to the conceptual land uses in the July 1996 Draft Reuse Plan.

- The shoreline area on the south-facing side of the island is not developable due to environmental and geologic conditions including areas with unstable fill (shown on page 1-2) and areas with slopes greater than 30 percent. Reuse of Building 262 (Torpedo Building) is presumed feasible.

- Steep slopes (exceeding 30 percent) are generally presumed to remain as open space. Exceptions may be made for small areas with slopes over 30 percent that connect larger flat building sites.

- For purposes of this report, most types of development proposed by CCSF under a replacement bridge for uses including but not limited to restaurants, parking and storage facilities, etc., are presumed to be possible, subject to review and approval by Caltrans. As shown on pages 4-3 and 4-4, Caltrans has allowed for construction of office buildings and parking garages under the SFOBB in the vicinity of the West Approach and Rincon Anchorage in San Francisco. A minimum vertical clearance of 50 feet would need to be maintained between the bottom of the bridge and the top of any structure placed under the bridge (see figure above). With existing vertical clearances ranging from 141 feet from the top of Building 262, 123 feet for the top of Building 213, and 112 feet at the top of the knoll on the east end of YBI, there would be sufficient clearance to develop buildings under the existing bridge and replacement alternatives.

- The access road to Building 262 (Torpedo Building) after construction of a replacement bridge is presumed to generally follow the existing road, although some realignment would be required to accommodate the bridge footings for the N-2, N-6 and S-4 Replacement Alternatives.

- The N-2 and N-6 Replacement Alternatives presume demolition of Building 213 adjacent to the Parade Grounds. (Note: For these alternatives, a functional replacement will be provided...
for Building 213. Function is defined at the time of acquisition; it is not based on future proposed uses of the building.)

- Site plan comparisons focused on development feasibility under Replacement Alternative N-6, since it would reduce developable area at the east end of the island to a greater extent than the other alternatives.

- Determination of parking areas was based on available space only. No parking need ratios were applied.

- The 60,000 square foot conference center, referenced in the July 1996 Reuse Plan, is separate from Buildings 1 through 7. These buildings would provide complementary meeting or lodging space in support of the conference center.

- Since new development on eastern YBI is not scheduled to begin until 2007, construction of any of the East Span Seismic Safety Project alternatives, scheduled to be completed in 2006, will not conflict with implementation of development on YBI.

4.2 Reuse Options: Impacts on Developable Land Supply

4.2.1 Retrofit Existing Structure Alternative
The area suitable for development under this alternative is estimated by Caltrans to be 7.8 acres. This includes 0.6 acres under the existing bridge which would be available for development subject to review and approval by Caltrans. For example, the office building shown on pages 4-3 and 4-4 was constructed adjacent to a freeway, with parking and entrance features located under the freeway structure. Since the July 1996 Draft Reuse Plan was developed with the bridge in its current location, the conceptual land uses proposed in the plan could be developed under the Retrofit Existing Structure Alternative. In addition, Building 213 would not need to be removed.

4.2.2 N-6 and N-2 Replacement Alternatives
The area suitable for development under these alternatives is estimated by Caltrans to be 7.8 acres. This includes 2.9 acres under a replacement bridge that would be available for development subject to review and approval by Caltrans.

A conceptual land use scenario was developed in this report for eastern YBI under the N-6 and N-2 Replacement Alternatives (see figure on page 4-5). The conceptual land use scenario was developed to replicate the building footprints shown in the July 1996 Reuse Plan to the greatest extent possible while providing comparable building square footages, and unit totals. Other development scenarios, such as building a larger conference center and fewer live/work units, while maintaining the basic development footprints, are possible.

The northern replacement alternatives would result in a smaller conference center and smaller cottages if building heights and circulation are maintained as noted in the July 1996 Draft Reuse Plan.

The conceptual land use scenario includes the following components:
San Francisco-Oakland Bay Bridge
Office Building
Condominium Parking

Portside Condominium Development,
San Francisco, California

San Francisco-Oakland Bay Bridge East Span Seismic Safety Project
40,000 square foot conference center (2 story building)

Three live-work buildings providing 41 units

The buildings described above would be oriented in a “campus” on the Parade Grounds

13 artisan cottages

Retain conceptual building heights and preserve views

Removal of Building 213 and development of a functional replacement elsewhere on YBI

Renovation and reuse of Building 262, which would be spanned by the N-2 and N-6 Replacement Alternatives as shown above and on page 4-9

7.8 acres of developable area. Most of the Parade Grounds (the open area east of Buildings 1 through 7) would remain developable.

The 2.9 acres beneath the structures of these replacement alternatives could be used for development, subject to review and approval by Caltrans. As shown on pages 4-6, 4-7 and 4-8, bridges can provide scenic backdrops for entertainment and uses of historic buildings.

A small section of land (0.2 acre) on the south side of the N-6 Replacement Alternative has slopes that are less than 30 percent and could be considered developable. Because it is isolated from the remaining developable land, it was not included in the estimate of developable area.
Top: Commercial Development on Granville Island
Vancouver, British Columbia

Bottom: The Cafe below the Brooklyn Bridge
Brooklyn, New York
View of Building 262 with the Existing Structure

Simulated view of Building 262 with the N-6 Replacement Alternative

Existing View and Simulated View of Building 262 with the N-6 Replacement Alternative
View from the Nimitz House of the Existing Structure

View from the Nimitz House with the Retrofit Existing Structure Alternative

Note: Conference Center Location is as Shown on the Draft Naval Station Treasure Island Reuse Plan. 1996.
View from the Nimitz House with the Conceptual S-4 Alignment

View from the Nimitz House with the Conceptual N-6 Alignment

Note: Conference Center Location is as Shown on the Draft Naval Station Treasure Island Reuse Plan, 1996.

Simulated View from the Nimitz House with The N-6 and S-4 Replacement Alternatives
Elements Consistent with the July 1996 Draft Reuse Plan:

- Creates hillside residential community, as envisioned by Reuse Plan
- Maintains a strong functional relationship between the proposed conference center and Buildings 1 through 7, in the event the historic buildings are converted to lodging for conference attendees, or used as additional conference space
- Renovation of Building 262 for uses proposed in the July 1996 Draft Reuse Plan such as a community center, artist’s studios or restaurant

Differences from the July 1996 Draft Reuse Plan:

- Conference center not oriented toward Clipper Cove
- Live-work units reduced from 75 by 25 for a total of 50 units
- Placement of the live-work buildings on the Parade Grounds rather than hillside area
- Some of the artisan cottages could not be located directly on the easterly bluff as they are in the July 1996 Reuse Plan
- Depending on architectural design, one of the live-work buildings could have minimal bay/cove views because another live-work building would block the views

Table 2 compares the July 1996 Reuse Plan and the conceptual redevelopment quantities:

<table>
<thead>
<tr>
<th>Buildable Area</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Un-Spanned</td>
<td>7.2</td>
</tr>
<tr>
<td>Spanned</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Table 2—Existing Development Quantities

Source: Caltrans

4.2.3 S-4 Replacement Alternative

The area suitable for development is 9.1 acres, including 1.4 acres of spanned area available for development subject to review and approval by Caltrans. By comparison, the July 1996 Draft Reuse Plan would provide 7.8 acres of developable land. The S-4 Replacement Alternative would increase the amount of unconstrained developable land (i.e. with slopes less than 30 percent) at the east end of the island by locating a portion of the bridge over the 24-hour USCG search and rescue facility on YBI.

The S-4 Replacement Alternative would provide an additional 1.4 acres of developable area compared to the N-2 and N-6 Replacement Alternatives. As shown above, the upland (top of bluff) area at the eastern edge of the island would not be spanned under this alternative. Although removal of the existing bridge would actually free up about two acres of U.S. Navy land in total, roughly 75 percent of the area gained (under the existing bridge) is either steeply sloping (greater than 30 percent) or consists of unengineered fill below the bluff that is not suitable for development.

The S-4 Replacement Alternative would accommodate the July 1996 Reuse Plan building layout and would avoid the need to remove Building 213. The additional 1.4 acres of developable land would provide greater flexibility for the final plan design.
by providing additional space to increase the size of the live-work buildings or additional parking, as warranted.

4.3 Alternative Comparison Summary

4.3.1 Noise
Under the Retrofit Existing Structure Alternative, noise levels would be higher in the area near the proposed residential development [74_{Leq} (dBA)] than with the Replacement Alternatives N-2 and N-6 [60_{Leq} (dBA)], and S-4 [62_{Leq} (dBA)]. Construction-related noise impacts (discussed in Section 5.0), would be the same for all the build alternatives.

4.3.2 Aesthetics
Under the Retrofit Existing Structure Alternative, views of the East Bay from the Nimitz House would be partially obstructed by shear walls on the bridge foundation structure (see photo simulation on page 4-10).

For the N-2 and N-6 Replacement Alternatives, the view from the Nimitz House would be somewhat changed by the closer proximity of the bridge, as illustrated by the photo simulation on page 4-11.

As shown on page 4-11, views of the East Bay from the Nimitz House would be obstructed to a greater degree with the S-4 Replacement Alternative than with the Retrofit Existing Structure or N-2 and N-6 Replacement Alternatives. Under the S-4 Replacement Alternative, other views would open up by removal of the existing bridge.
5.0. CONSTRUCTION PERIOD ACTIVITY

Construction activity and impacts on Yerba Buena Island would be similar regardless of the alternative (retrofit or replacement) or alignment (north or south) for the SFOBB East Span Seismic Safety Project. Given the restricted access and limited contractor laydown area in the vicinity of bridge construction, all open space areas in the eastern end of Yerba Buena Island, except Buildings 1 through 7, will be needed to accommodate construction equipment and activities.

Caltrans will establish construction limits on the eastern end of YBI to preserve as much of the existing vegetation as possible, and will develop and implement a revegetation plan for affected areas. The revegetation plan will include the planting of mature trees, monitoring, and replanting as necessary to ensure success of the plan in restoring affected areas to a natural appearance and to establish visual screening of the bridge comparable to the existing condition.

5.1 Construction Needs Summary

The eastern end of the island will be used as the primary site for construction activities on YBI. Activities that would utilize portions of YBI include constructing the temporary detour structures (see next page), removing a portion of the existing bridge, and constructing the new bridge. The following is a list of likely construction activities and equipment that would affect the use of the land on the eastern portion of YBI:

- Water and vehicular access to YBI
- Concrete batch plant (about 1 acre)
- Storage of material
- Contractor site office
- Maintenance shop
- Space for large equipment to move about
- Equipment storage
- Loading/unloading area (to load and off-load equipment and material from barges)
- Docking area for barges

While the construction activities for the Retrofit Existing Structure Alternative would not require construction of temporary detour structures or dismantling of the existing bridge, the space requirements on YBI would be similar to the N-2, N-6, and S-4 Replacement Alternatives due to the restrictive topography of the project site.

5.2 Construction Period Effects -- Access

Bridge access to and from YBI will be provided during the construction period of any build alternative. There will be a limited number of short-term (estimated 4 hours) full closures of the Bay Bridge to accommodate construction of detour roadways and structures. These bridge closures would occur during the late evening or early morning hours when bridge traffic use is low. Even during these limited bridge closures, access to YBI/TI can be maintained from the West Span.

For Replacement Alternatives N-2, N-6 and S-4, Macalla Road (the primary access route to eastern YBI) will be realigned, lowered approximately 3.3 feet near the Southgate Road intersection, and its hairpin turn shifted about 16.4 feet. The road will remain open at all times as required by the USCG; however, there will be short periods when flaggers will block vehicular traffic while oversized vehicles are using the road. There may also be periods when only one lane will be open and traffic will be directed by flaggers.
North Alignment (N-6 & N-2)

South Alignment (S-4)

Simulated Aerial View of Detour Structures for the Conceptual N-6, N-2 and S-4 Alignments
None of the alternatives will require the closure of the causeway connecting Yerba Buena Island to Treasure Island.

5.3 Impacts to Treasure Island
Redevelopment activity on TI would not be impeded by East Span construction activities with the exception of the following temporary construction effects:

- Visual—View of detour structures, cranes, barges, and glare from night lighting.
- Noise—Pile driving is expected to increase noise levels. However, noise levels decrease over distance. Empirical data from the San Mateo-Hayward West Approach Retrofit Project show a reduction in noise levels from 98 dBA to 62 dBA over a distance of 1000 feet. Noise levels were measured during installation of a 96 inch diameter pile. Pile driving activities for a northern alignment will be a minimum of 2,000 feet from the southern shoreline of TI. Other construction activities will have a nominal effect on noise levels. There would be no vibration effects to TI land use as a result of pile-driving on YBI.
- Access—Vehicular access to TI will be maintained throughout construction except during a limited number of short-term full bridge closures. None of the alternatives will require the closure of the causeway connecting Yerba Buena Island to Treasure Island. Marine access to Clipper Cove will be maintained throughout construction.

Redevelopment of the Treasure Island Marina, (scheduled to begin in mid- to late-2001) would not be affected by project construction because the site is accessed by land from Treasure Island. The 1600-foot width of Clipper Cove allows for unimpeded water access to the marina and simultaneous construction barge movements to and from YBI (see figure on page 5-4).

Construction vessels would be present in Clipper Cove only in the construction zone adjoining the northeast portion of YBI. General marine traffic restrictions would be in effect only within the YBI construction zone and within the construction zone for the bridge. Construction restrictions within Clipper Cove and the overall bridge construction zone would be similar for all alternatives.

5.4 Impacts to Yerba Buena Island
Proposed use of Buildings 1 through 7 during bridge construction would be compromised due to the following:

- Access will be affected by construction traffic including oversize vehicle movements, local road detours, and general construction activity.
- Construction noise (especially nighttime noise) will affect desirability of Buildings 1 through 7.
- Lighting for night construction will affect the desirability of Buildings 1 through 7.
- Visual effect of detour structures and construction activity will reduce desirability of Buildings 1 through 7. (See photo simulation page 5-5.)
- The use of the Parade Grounds and upper bluff area for construction yards, together with the columns for the temporary detours, will occupy most of the usable open space within the area, thereby reducing parking space availability.

Building 262 (Torpedo Building) located at the eastern tip of Yerba Buena Island will not be usable during construction due to high levels of construction activity and the
restricted access through the construction zone. Following construction, access to Building 262 will be restored and the building will be available for reuse.

During the construction period, Caltrans will reimburse CCSF for documented loss of rental revenues for Buildings 1 through 7. A pre- and post-construction survey of the buildings will be conducted and construction-related damage to the buildings repaired as necessary.

It is likely that East Span Seismic Safety Project construction activity would not inhibit the land transfer process, nor would bridge construction affect CCSF’s redevelopment planning and permitting processes that require participation of federal, state and regional agencies. Major redevelopment actions by CCSF cannot begin until the planning and permitting actions have been completed.
Top: Simulated View from the Nimitz House of Detour Structures with Conceptual N-6 and N-2 Alignment
Bottom: Simulated View from the Nimitz House of Detour Structures with Conceptual S-4 Alignment
6.0. CONCLUSION

The redevelopment concept represented in the July 1996 Draft Reuse Plan remains conceptual and may be modified during the process of preparing a Final Redevelopment Plan and NEPA/CEQA EIS/R for the Final Redevelopment Plan. Factors that will influence the Final Reuse Plan include the apparent need to obtain an amendment to the Bay Plan from BCDC, completion of the redevelopment planning process (including the preparation of the NEPA/CEQA EIS/R), the potential demand for reuse of the eastern portion of YBI and the resolution of competing views regarding redevelopment.

Additionally, significant measures will be taken by Caltrans to minimize or avoid impacts to CCSF redevelopment efforts:

- Buildings 1 through 7 will be excluded from the construction zone on YBI.
- Rental losses for Buildings 1 through 7 due to the State's project construction that are documented by CCSF will be reimbursed by the State of California.
- Construction of retrofit or replacement alternatives will require the removal of some existing vegetation on YBI. Caltrans will establish construction limits on the eastern end of YBI to preserve as much existing vegetation as possible. A revegetation plan will be developed. Trees removed will be replaced with mature vegetation.
- Existing noise levels are loud in the developable area east of Buildings 1 through 7. The Retrofit Existing Structure Alternative will not change existing noise levels. All replacement alternatives will noticeably reduce noise, though levels will still remain high.

With the construction of any East Span Seismic Safety Project alternative, CCSF will retain redevelopment potential on the eastern end of YBI. Any ultimate redevelopment will benefit from access to a lifeline structure serving the nine Bay Area counties including Treasure Island and Yerba Buena Island.
APPENDIX A

Correspondence from
Mayor Willie L. Brown, Jr.
APPENDIX B

Correspondence between
Bay Conservation and Development Commission
and
Office of the Mayor, San Francisco,
Treasure Island Project
APPENDIX C

Other Correspondence
APPENDIX E

References/Technical Consultant
REFERENCES


TECHNICAL CONSULTANTS

Parsons Brinckerhoff
- Ken Jong (Consultant Team Manager, Civil / Environmental)
- Mike Davis (Environmental Manager)
- Steve Noack (Environmental Task Manager)

Barry Miller, AICP (Planning Consultant)
EXECUTIVE SUMMARY

Introduction
The purpose of this report is to provide an overview of the City and County of San Francisco's (CCSF) proposed development on the eastern side of Yerba Buena Island (YBI) as outlined in the CCSF "Naval Station Treasure Island (TI) Draft Reuse Plan" (July 1996) in relation to the proposed alternatives for the San Francisco – Oakland Bay Bridge East Span Seismic Safety Project. This report was prepared in response to a request by the Federal Highway Administration (FHWA) to assist decision-makers in the resolution of conflicts over land use impacts on YBI prior to FHWA identification of a preferred alternative for the East Span Seismic Safety Project.

The purpose of the East Span Seismic Safety Project is to provide a seismically upgraded vehicular crossing for current and future users between Yerba Buena Island (YBI) and Oakland. This project seeks to provide a “lifeline”, providing emergency relief access following a maximum credible earthquake (MCE). It is imperative that the East Span Seismic Safety Project be completed as quickly as possible as the present structure is vulnerable and the United States Geological Survey (USGS) has concluded that the Bay Area faces a 70-80 percent probability of experiencing a major earthquake in the next 30 years.

Treasure Island Draft Reuse Plan
The July 1996 Draft Reuse Plan, prepared by the City and County of San Francisco (acting as the local reuse authority), is a proposed land use plan prior to the environmental process. The July 1996 Draft Reuse Plan describes the land uses planned for the former 516-acre Naval Station Treasure Island. Approximately 113 acres of the total 516-acre Naval Station are on Yerba Buena Island. Regardless of alternative (retrofit, northern replacement, southern replacement), Caltrans requires the same 20 acres on the eastern end of YBI for construction. Of that acreage, about 7.8 acres (Caltrans estimate) comprise the area of eastern YBI identified for redevelopment in the July 1996 Draft Reuse Plan; the plan assumes no change in bridge alignment. These 7.8 acres constitute the land with slopes less than 30 percent.

<table>
<thead>
<tr>
<th>Area</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naval Station Treasure Island (NSTI)</td>
<td>516</td>
</tr>
<tr>
<td>Portion of NSTI on YBI</td>
<td>113</td>
</tr>
<tr>
<td>East Span Seismic Safety Project</td>
<td></td>
</tr>
<tr>
<td>Temporary Construction Zone</td>
<td>20</td>
</tr>
<tr>
<td>July 1996 Draft Reuse Plan</td>
<td></td>
</tr>
<tr>
<td>Redevelopment on Eastern YBI</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Source: Caltrans

The Base Realignment and Conversion (BRAC) laws and regulations require the U.S. Navy to obtain a reuse plan from the local authority as part of the economic development conveyance (EDC) process. The July 1996 Draft Reuse Plan satisfies that requirement; however, it does not constitute compliance with the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA). Recent amendments to BRAC now provide for EDCs at no cost to the local community. Therefore, when the BRAC process is completed, the City and County of San Francisco will receive the 516-acre former Naval Station property at no cost.

The July 1996 Draft Reuse Plan contains chapters on the Planning Process; Site and Context; Land Use; and Homeless Needs and Services. The Land Use Chapter contains policies that address development potential on the eastern end of YBI. The
plan states: "On Yerba Buena Island, new development would include residential uses, with visitor-oriented attractions tied to Treasure Island or the potential for conference and retreat facilities as well as hotel or lodging in the hillside area".

Development on YBI is envisioned to occur in three phases over a projected 15-year period. Development near the bridge on YBI including the conference center, artisan cottages and live/work units, is included in Phase 3, and is scheduled to begin in 2007. This date is after the scheduled completion of the East Span Seismic Safety Project.

In response to the East Span Seismic Safety Project DEIS, CCSF commissioned a preliminary analysis of potential economic losses to CCSF resulting from East Span Seismic Safety Project northern replacement alternatives. Some of the assumptions on which this preliminary analysis was based are incorrect. Major assumptions that are incorrect are as follows:

- The assumption that Building 262 could not be redeveloped for safety reasons. Examples are included in this study of successful developments underneath or adjacent to bridge structures.

- Losses related to construction of new on- and off-ramps from replacement alternatives including location of ramps in relation to Buildings 1 through 7, area for new residential development and number and potential value of hotel rooms. The existing ramps are owned by the Navy. Any improvements to ramps on YBI would be initiated by the Navy or CCSF. The ramps assumed in the preliminary analysis are not part of the East Span Seismic Safety Project.

- It is unclear whether the projected income from land uses included in the preliminary economic analysis have been offset against the infrastructure improvement/investment costs (e.g. roadway, utility improvements, etc.) required to implement the uses.

- The assumption that movie studios on TI would close due to East Span Seismic Safety Project construction activities is not supported by technical analysis. There are no noise and vibration impacts to the movie studios from construction and operation of the East Span Seismic Safety Project alternatives.

**Factors Influencing Draft Reuse Plan Implementation**

The draft plan is subject to a number of environmental, regulatory, and market constraints that would affect the amount and location of development on the eastern end of YBI. The major factors affecting implementation of the July 1996 Draft Reuse Plan on YBI include:

**BCDC Bay Plan consistency determination**

Development proposed in the July 1996 Draft Reuse Plan appears to be inconsistent with the San Francisco Bay Plan of the San Francisco Bay Conservation and Development Commission (BCDC). Prior to the transfer of the property by the U.S. Navy and the development of YBI by CCSF, BCDC will have to concur with a consistency certification submitted by the Navy and approve a development permit submitted by CCSF. Both actions will require BCDC to find that the proposed development is consistent with the Bay Plan and is therefore likely to require an amendment to the Bay Plan.

**Environmental constraints**

Factors such as slope stability, access, infrastructure, hazardous wastes, aesthetics, historic properties and an archaeological site may influence the density and location of development on the eastern tip of YBI.
Potential demand for proposed uses on YBI
No recent trend data are available to determine the demand for rental use and income for Buildings 1-7 due to recent renovation activities to the structures. Unsolicited inquiries for rental of the buildings and redevelopment ideas for other areas on YBI indicate that demand exists for redevelopment on YBI.

Planning Inconsistency
There is a planning inconsistency regarding redevelopment of YBI. The July 1996 Draft Reuse Plan and a subsequent report authored by the Urban Land Institute (ULI) for CCSF are in conflict regarding development on YBI. The ULI Report recommended that YBI be maintained largely as a “natural habitat” rather than developed as a conference center, live-work units and artisan cottages. It is unknown how or if this controversy will be resolved in the Draft EIS for the transfer and redevelopment of YBI.

Environmental Analysis
Adoption of the Final Redevelopment Plan consists of a number of steps. Each of these steps, in prescribed sequence, must be taken prior to implementing proposed redevelopment projects. Critical steps include publication of a National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) Draft EIS/R currently scheduled for early 2000. This document will assess the potential impacts of redevelopment alternatives. Following circulation of this document for a minimum of 45 days, CCSF and the Navy will publish a Final EIS/R. The Final EIS/R, that will address the preferred redevelopment alternative and respond to comments on the Draft EIS/R, will be distributed to commenters. CCSF will certify the EIR and the Navy will publish a Record of Decision. When these tasks are complete, CCSF can adopt the Final Redevelopment Plan. CCSF has scheduled adoption of the Final Redevelopment Plan for August 2000.

Impacts to Proposed Uses in Conceptual Draft Reuse Plan
The following section describes impacts of the East Span Seismic Safety Project alternatives to the conceptual development described in the July 1996 Draft Reuse Plan.

Developable Area
For comparison, the July 1996 Draft Reuse Plan would provide 7.8 acres of developable land, as calculated by Caltrans.

The proposed conceptual land uses could be developed under the Retrofit Existing Structure Alternative since the July 1996 Draft Reuse Plan was developed with the bridge in its current location.

The area suitable for development with a northern replacement alternative is estimated by Caltrans to be 7.8 acres. While the total acreage is equal to the area needed for the reuse plan, there is a greater area, 2.9 acres, that will be spanned by a replacement bridge. Development can be accommodated under a replacement bridge. It is subject to review and approval by Caltrans.

The area suitable for development with a southern replacement alternative is 9.1 acres, including 1.4 acres of spanned area available for development subject to review and approval by Caltrans. The increase of developable area is created by locating a portion of a replacement bridge over the 24-hour USCG search and rescue facility on YBI.

A summary of the developable land is presented in Table S-2 on the following page.
Table S-2 – Development Quantities Comparison

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Unspanned (Acres)</th>
<th>Spanned (Acres)</th>
<th>Total (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing East Span Footprint</td>
<td>7.2</td>
<td>0.6</td>
<td>7.8</td>
</tr>
<tr>
<td>Retrofit Alternative</td>
<td>7.2</td>
<td>0.6</td>
<td>7.8</td>
</tr>
<tr>
<td>N-2/N-6 Alternatives</td>
<td>4.9</td>
<td>2.9</td>
<td>7.8</td>
</tr>
<tr>
<td>S-4 Alternative</td>
<td>7.7</td>
<td>1.4</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: Caltrans

Building Layout

The conceptual land uses and building layout proposed in the July 1996 Draft Reuse Plan could be developed under the Retrofit Existing Structure Alternative.

The northern replacement alternatives would result in a smaller conference center and smaller cottages if building heights and circulation are maintained as noted in the July 1996 Draft Reuse Plan.

The southern replacement alternative would accommodate the July 1996 Draft Reuse Plan building layout.

Noise

Existing noise levels are loud in the developable area east of Buildings 1 through 7. The Retrofit Existing Structure Alternative will not change existing noise levels. All replacement alternatives will noticeably reduce noise, though levels will still remain high.

Construction Period Activity

Construction activity and impacts on Yerba Buena Island would be similar regardless of the alternative (retrofit or replacement) or alignment (north or south) for the SFOBB East Span Seismic Safety Project. Given the restricted access and limited contractor laydown area in the vicinity of bridge construction, all open space areas in the eastern end of Yerba Buena Island, except Buildings 1 through 7, will be needed to accommodate construction equipment and activities.
It is not likely that East Span Seismic Safety Project construction activity would inhibit the land transfer process, nor would bridge construction affect CCSF’s redevelopment planning and permitting processes that require participation of federal, state and regional agencies.

Construction Easements
Caltrans has concluded that any of the alternatives would require use of eastern YBI during construction. Regardless of alternative (retrofit, northern replacement, southern replacement), Caltrans requires temporary use of the same 20 acres on the eastern end of YBI for construction. These 20 acres are part of the total 516-acre Naval Station Treasure Island that will be transferred from the Navy to CCSF.

Existing Vegetation
Construction of retrofit or replacement alternatives will require the removal of some existing vegetation on YBI. Caltrans will establish construction limits on the eastern end of YBI to preserve as much of the existing vegetation as possible, and will develop and implement a revegetation plan for affected areas. The revegetation plan will include the planting of mature trees, monitoring, and replanting as necessary to ensure success of the plan in restoring affected areas to a natural appearance and to establish visual screening of the bridge comparable to the existing condition.

Access
Any of the East Span Seismic Safety Project alternatives will require use of the eastern tip of YBI for a construction staging and access area. Access to Ti/YBI will be maintained throughout the construction period. There will be a limited number of short-term (estimated 4 hours) full closures of the Bay Bridge to accommodate construction of detour roadways and structures. These bridge closures would occur during the late evening or early morning hours when bridge traffic use is low.

None of the alternatives will require the closure of the causeway connecting Yerba Buena Island to Treasure Island.

Marine access to Clipper Cove will be maintained throughout construction.

Noise and Vibration
East Span Seismic Safety Project noise and vibration impacts to movie studios on Ti have been assessed in the project’s Draft EIS. Pile driving is expected to increase noise levels, however there are no impacts to the movie studios as a result of pile driving activities. Other construction activities will have a nominal effect on noise levels. There would be no vibration effects to Ti land use as a result of pile-driving on YBI.

A distance of nearly 2,000 feet separates the northernmost replacement alternative from the Ti buildings used for movie studios. The studios may be more concerned about the construction of the CCSF Treasure Island Marina expansion, which may require pile driving immediately adjacent to the movie studios.

Existing Buildings
A pre- and post-construction survey of the buildings will be conducted and construction-related damage to the buildings repaired as necessary.

Caltrans will reimburse CCSF or the U.S. Navy for documented losses in rental income from Buildings 1 through 7. Building 262 will be within the construction zone. Caltrans will provide protective measures during construction.
Conclusion
The redevelopment concept represented in the July 1996 Draft Reuse Plan remains conceptual and may be modified during the process of preparing a Final Redevelopment Plan and NEPA/CEQA EIS/R for the Final Redevelopment Plan. Factors that will influence the Final Reuse Plan include the apparent need to obtain an amendment to the Bay Plan from BCDC, completion of the redevelopment planning process (including the preparation of the NEPA/CEQA EIS/R), the potential demand for reuse of the eastern portion of YBI and the resolution of competing views regarding redevelopment.

All East Span Seismic Safety Project alternatives (retrofit, northern replacement, southern replacement) will have the same temporary effects on YBI during project construction. The East Span Seismic Safety Project alternatives all affect the same 20 acres on the eastern end of YBI (out of the total 516-acre Naval Station Treasure Island).


The redevelopment concept described in the Draft Reuse Plan can be generally accommodated with any of the East Span Seismic Safety Project alternatives. The general development pattern of reuse of Buildings 1 through 7, redevelopment of Building 262, development of a conference center, live/work units and artisan cottages can co-exist with the Retrofit Existing Structure, N-2, N-6 or S-4 Replacement Alternatives.

Additionally, significant measures will be taken by Caltrans to minimize or avoid impacts to CCSF redevelopment efforts:

- Buildings 1 through 7 will be excluded from the construction zone on YBI.
- Rental losses for Buildings 1 through 7 due to the State’s project construction that are documented by CCSF will be reimbursed by the State of California.
- Construction of retrofit or replacement alternatives will require the removal of some existing vegetation on YBI. Caltrans will establish construction limits on the eastern end of YBI to preserve as much existing vegetation as possible. A revegetation plan will be developed. Trees removed will be replaced with mature vegetation.
- Existing noise levels are loud in the developable area east of Buildings 1 through 7. The Retrofit Existing Structure Alternative will not change existing noise levels. All replacement alternatives will noticeably reduce noise, though levels will still remain high.

With the construction of any East Span Seismic Safety Project alternative, CCSF will retain redevelopment potential on the eastern end of YBI. Any ultimate redevelopment will benefit from access to a lifeline structure serving the nine Bay Area counties including Treasure Island and Yerba Buena Island.
Box 2, Folder 7

Item 2

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