



US Army Corps
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San Francisco District

SAN FRANCISCO DISTRICT

Regulatory Division
1455 Market Street, 16th Floor
San Francisco, CA 94103-1398

PUBLIC NOTICE

PROJECT: San Francisco-Oakland Bay Bridge East Span Seismic Safety Project
Permit Modification – Pilot/Demonstration Project for Pier E3 Demolition

PUBLIC NOTICE NUMBER: SPN-1997-230130

PUBLIC NOTICE DATE: May 15, 2015

COMMENTS DUE DATE: June 14, 2015

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1. **INTRODUCTION:** The California Department of Transportation (CalTrans) (POC: Stefan Galvez-Abadia, (510) 867-6785), 111 Grand Avenue, Post Office Box 23660, Oakland, California 94623-0660, has applied to the U.S. Army Corps of Engineers (USACE), San Francisco District, for a modification to a Department of the Army Individual Permit to replace the original east span of the San Francisco-Oakland Bay Bridge (SFOBB) with a new bridge immediately to the north. The modification is a pilot/demonstration project for the demolition of Pier E3 of the original bridge. The original Department of the Army permit authorization was issued on December 4, 2001, pursuant to the provisions of Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*) and Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*).

2. PROPOSED PROJECT:

Project Site Location: The east span of the SFOBB is located in San Francisco Bay and spans Yerba Buena Island and the City of Oakland (Figure 1). The original east span was supported by 21 in-water bridge piers, Piers E2 through E22, along with land based piers at Yerba Buena Island and Oakland. The pilot project would be the demolition of Pier E3, which is located 1,535 feet east of Yerba Buena Island and on the east side of the 50-foot deep navigation channel (Latitude 37°48'56.75"N and Longitude 122°21'14.75"W) (Figure 2).

Project Site Description: As shown on Figure 3, Pier E3 is a cellular concrete caisson approximately 268 feet tall containing 28 total chambers (24 rectangular and 4 irregularly shaped). The mudline at Pier E3 ranges in elevation from -43 to -51 feet (Reference to the 1929 National Geodetic Vertical Datum [NGVD 29]). Fourteen

of the chambers occur only below an elevation of approximately -51 feet and occur in two separate rows of seven chambers on each length side. The four irregular shaped chambers occur at the terminal end of the lower chamber rows. Exterior walls of the caisson are four feet wide, while the interior walls comprising the chamber are three feet wide. The structure has 12 angled buttress walls, six on each side, that are approximately 51 feet tall that begin at -51 feet and run up the caisson to 0 feet. Weep holes in the foundation located at an approximate elevation of -5 feet have allowed the caisson chambers to fill with water. Nearly 175 feet of the pier is buried in bay mud.

Pier E3 also contains a pier cap, which is 80 feet by 167 feet, excluding the fender apron. The pier cap, fender apron, and upper most portion of the caisson extend above the water line and support the steel superstructure of the bridge and are visible from the Bay.

Project Description: The applicant proposes to use Pier E3 as a pilot/demonstration project for the effective use of controlled charges to remove the marine foundations of the original SFOBB. The original authorization covered the dismantling of the piers via mechanical means such as saw cutting, flame cutting, mechanical splitting or pulverizing, and hydro-cutting, but did not cover the use of controlled implosion. Dismantling of Pier E3 using controlled charges would be completed in four phases: 1) mechanical dismantling of pier cap and fender system, 2) drilling of bore holes into caisson and buttress walls and installing a blast attenuation system (BAS), 3) installing charges, activating the BAS and imploding the pier, and 4) management and removal of remaining dismantling pier debris. When completed, the pier would be removed to -51 feet.

Phase 1 of the demonstration project is authorized by the original permit, dated December 4, 2001. Support barges would be used to move hydraulic excavators (equipped with hoe rams and shearing attachments along with other equipment needed for mechanical dismantling), cutting lances and torches to Pier E3. The barges would be anchored and remain in place for the duration of Phase 1. The concrete pedestals and pier cap would be removed to expose the inner cells, and the concrete rubble would be placed into exposed cells of the caisson. A debris catchment system would be in place to prevent material from discharging into the Bay.

Phase 2 entails installation of access platforms to support drilling equipment while exposing the top of the interior cells and outside walls (Figure 4). Borehole drill locations would be marked on the caisson walls, and an overhanging template system would be installed to guide the drill below the waterline. Divers would be required to assist in drilling of underwater boreholes. A concrete drill rig would be used consistent with an approved blast plan. In addition, the BAS would be installed during drilling activities. The BAS would be a system of pipe manifold frames lowered to the bay bottom by barge mounted cranes with assistance from divers that would be fed by air compressors to create a curtain of air bubbles around the pier during the controlled implosion (Figure 5). Each frame would be fed by an individual compressor on a barge (Figure 6). Once the controlled implosion is completed, the BAS would be removed.

The drilled bore holes completed in Phase 2 would be loaded with charges, as described in the approved blast plan, in Phase 3. Individual cartridge charges, rather than pumpable liquid blasting agents, have been chosen to provide greater accuracy in estimating individual and total charge weights. All charges would be transported by boat, and security would be required for transporting, handling, and processing of the charges. Charges would be arranged in different levels and separated in the bore holes by stemming to allow for more efficient transfer of energy into the structural concrete for fracture and reduce the energy that enters the adjacent water column. Public safety measures would be implemented prior to and during the implosion event, and includes the creation of safety zones in conjunction with the United States Coast Guard and rolling traffic stops on the new east span of the SFOBB. The BAS would be activated then the controlled implosion sequence would be initiated. The time lapse between when the first and last charge are detonated is approximately 5.3 seconds.

Following the implosion, Phase 4 would begin with confirmation that the area is safe to work in. The debris material will consist of concrete and rebar. Most of the rubble is expected to fall within the cells below the mudline. However, an unknown quantity is expected to mound on top of the caisson, or fall on the bay floor immediately adjacent to the caisson and would need to be managed. Rubble that does not fall into the caisson and below the mudline would be removed from the bay using a barge mounted crane with clamshell bucket. If necessary, it would be placed on support barges where rebar and concrete would be sorted, and if there is remaining space in the caisson, placed into the voids. Remaining material that does not fit in the caisson would be removed from the site and disposed in an appropriate location outside of USACE jurisdiction.

Purpose of Modification Request: The purpose of the modification request is to complete a pilot/demonstration project at Pier E3 in a more expedient manner and with less environmental impact than the original pier dismantling method. If successful, it is possible that CalTrans would request additional piers be dismantled with similar or slightly modified methods.

Project Impacts: The proposed demonstration project would result in no additional permanent or temporary fill subject to Section 404 of the Clean Water Act compared to the original authorization. Temporary structures and work in the bay subject to Section 10 of the Rivers and Harbors Act would also be reduced under the demonstration project. Mechanical dismantling would have required the installation of a cofferdam around Pier E3, which would have required 394 piles of various types. Pile driving alone would take approximately four years, while the four phases of the demonstration project would occur within six months.

Proposed Mitigation: No additional compensatory mitigation for the demonstration project has been proposed. However, additional hydrographic, marine mammal, fish, bird, eelgrass, water quality, and hydro-acoustic monitoring has been proposed.

3. STATE AND LOCAL APPROVALS:

Water Quality Certification: State water quality certification or a waiver is a prerequisite for the issuance of a Department of the Army Permit to conduct any activity which may result in a fill or pollutant discharge into waters of the United States, pursuant to Section 401

of the Clean Water Act of 1972, as amended (33 U.S.C. § 1341 *et seq.*). The applicant has recently submitted an application to the California Regional Water Quality Control Board (RWQCB) to obtain water quality certification amendment for the project. No Department of the Army Permit modification will be issued until the applicant obtains the required certification amendment.

Water quality issues should be directed to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, California 94612, by the close of the comment period.

Coastal Zone Management: Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1456(c) *et seq.*), requires a non-Federal applicant seeking a federal license or permit to conduct any activity occurring in or affecting the coastal zone to obtain a Consistency Certification that indicates the activity conforms with the State's coastal zone management program. Generally, no federal license or permit will be granted until the appropriate State agency has issued a Consistency Certification or has waived its right to do so. Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1456(c) *et seq.*), requires a Federal applicant seeking a federal license or permit to conduct any activity occurring in or affecting the coastal zone to obtain a Consistency Determination that indicates the activity conforms with the State's coastal zone management program. Generally, no federal license, permit, or permit modification will be granted until the appropriate State agency has issued a Consistency Determination or has waived its right to do so. Since the project occurs in the coastal zone or may affect coastal zone resources, the applicant has applied for a Consistency Determination and/or a Consistency Determination amendment from the San Francisco Bay Conservation and Development Commission to comply with this requirement.

Coastal zone management issues should be directed to the Executive Director, San Francisco Bay Conservation and Development Commission, 50 California Street, Suite 2600, San Francisco, California 94111, by the close of the comment period.

4. COMPLIANCE WITH VARIOUS FEDERAL LAWS:

National Environmental Policy Act (NEPA): Upon

review of the Department of the Army permit modification request and other supporting documentation, and at the conclusion of the public comment period, USACE will assess the environmental impacts of the proposed project modification in accordance with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347), the Council on Environmental Quality's Regulations at 40 C.F.R. Parts 1500-1508, and USACE Regulations at 33 C.F.R. Part 325. The final NEPA analysis will normally address the direct, indirect, and cumulative impacts that result from regulated activities within the jurisdiction of USACE and other non-regulated activities USACE determines to be within its purview of Federal control and responsibility to justify an expanded scope of analysis for NEPA purposes. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying the permit modification for this Department of the Army Permit. The final NEPA analysis and supporting documentation will be on file with the San Francisco District, Regulatory Division.

Endangered Species Act (ESA): Section 7(a)(2) of the ESA of 1973, as amended (16 U.S.C. § 1531 *et seq.*), requires Federal agencies to consult with either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) to ensure actions authorized, funded, or undertaken by the agency are not likely to jeopardize the continued existence of any Federally-listed species or result in the adverse modification of designated critical habitat. As the Federal lead agency for this project, the applicant will be responsible for determining the presence or absence of Federally-listed species and designated critical habitat, and the need to conduct consultation. To complete the administrative record and the decision on whether to modify a Department of the Army Permit for the project, USACE will obtain all necessary supporting documentation from the applicant concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit modification for the project.

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA): Section 305(b)(2) of the MSFCMA of 1966, as amended (16 U.S.C. § 1801 *et seq.*), requires Federal agencies to consult with the NMFS on all proposed actions authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH). EFH is defined as those waters and substrate necessary to fish for spawning, breeding,

feeding, or growth to maturity. EFH is designated only for those species managed under a Federal Fisheries Management Plan (FMP), such as the *Pacific Groundfish FMP*, the *Coastal Pelagics FMP*, and the *Pacific Coast Salmon FMP*. As the Federal lead agency for this project, the applicant will be responsible for determining the presence or absence of EFH, and the need to conduct consultation. To complete the administrative record and the decision on whether to issue a Department of the Army Permit modification for the project, USACE will obtain all necessary supporting documentation from the applicant concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit modification for the project.

Marine Protection, Research, and Sanctuaries Act (MPRSA): Section 302 of the MPRS of 1972, as amended (16 U.S.C. § 1432 *et seq.*), authorizes the Secretary of Commerce, in part, to designate areas of ocean waters, such as the Cordell Bank, Gulf of the Farallones, and Monterey Bay, as National Marine Sanctuaries for the purpose of preserving or restoring such areas for their conservation, recreational, ecological, or aesthetic values. After such designation, activities in sanctuary waters authorized under other authorities are valid only if the Secretary of Commerce certifies that the activities are consistent with Title III of the Act. No Department of the Army Permit will be issued until the applicant obtains the required certification or permit. The project does not occur in sanctuary waters, and a *preliminary* review by USACE indicates the project would not likely affect sanctuary resources. This presumption of effect, however, remains subject to a final determination by the Secretary of Commerce, or his designee.

National Historic Preservation Act (NHPA): Section 106 of the NHPA of 1966, as amended (16 U.S.C. § 470 *et seq.*), requires Federal agencies to consult with the appropriate State Historic Preservation Officer to take into account the effects of their undertakings on historic properties listed in or eligible for listing in the *National Register of Historic Places*. Section 106 of the Act further requires Federal agencies to consult with the appropriate Tribal Historic Preservation Officer or any Indian tribe to take into account the effects of their undertakings on historic properties, including traditional cultural properties, trust resources, and sacred sites, to which Indian tribes attach historic, religious, and cultural significance. As the Federal lead agency for this project, the applicant will be responsible for determining the

presence or absence of historic properties or archaeological resources, and the need to conduct consultation. To complete the administrative record and the decision on whether to issue a Department of the Army Permit modification for the project, USACE will obtain all necessary supporting documentation from the applicant concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit modification for the project. If unrecorded archaeological resources are discovered during project implementation, those operations affecting such resources will be temporarily suspended until USACE concludes Section 106 consultation with the State Historic Preservation Officer or the Tribal Historic Preservation Officer to take into account any project related impacts to those resources.

5. PUBLIC INTEREST EVALUTION: The decision on whether to issue a Department of the Army Permit modification will be based on an evaluation of the probable impacts, including cumulative impacts, of the project and its intended use on the public interest. Evaluation of the probable impacts requires a careful weighing of the public interest factors relevant in each particular case. The benefits that may accrue from the project must be balanced against any reasonably foreseeable detriments of project implementation. The decision on permit issuance will, therefore, reflect the national concern for both protection and utilization of important resources. Public interest factors which may be relevant to the decision process include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

6. CONSIDERATION OF COMMENTS: USACE is soliciting comments from the public; Federal, State and local agencies and officials; Native American Nations or other tribal governments; and other interested parties in order to consider and evaluate the impacts of the project modification. All comments received by USACE will be considered in the decision on whether to issue, modify, condition, or deny a Department of the Army Permit modification for the project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, and other

environmental or public interest factors addressed in a final environmental assessment or environmental impact statement. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the project modification.

7. **SUBMITTING COMMENTS:** During the specified comment period, interested parties may submit written comments to Bryan Matsumoto, San Francisco District, Regulatory Division, 1455 Market Street, 16th Floor, San Francisco, California 94103-1398; comment letters should cite the project name, applicant name, and public notice number to facilitate review by the Regulatory Permit Manager. Comments may include a request for a public hearing on the project prior to a determination on the Department of the Army permit application; such requests shall state, with particularity, the reasons for holding a public hearing. All substantive comments will be forwarded to the applicant for resolution or rebuttal. Additional project information or details on any subsequent project modifications of a minor nature may be obtained from the applicant and/or agent, or by contacting the Regulatory Permit Manager by telephone or e-mail cited in the public notice letterhead. An electronic version of this public notice may be viewed under the *Public Notices* tab on the USACE website:
<http://www.spn.usace.army.mil/Missions/Regulatory>.