Public Notice

US Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Public Notice Number: SPK-2007-01747
Date: October 23, 2008
Comments Due: November 24, 2008
In reply, please refer to the Public Notice Number

SUBJECT: The U.S. Army Corps of Engineers, Sacramento District, (Corps) is evaluating a permit application to construct a new Antlers Bridge and remove the existing Bridge, which would result in impacts to approximately 8 acres of waters of the United States (1.26 acres permanent and 6.73 acres temporary in and adjacent to Shasta Lake). This notice is to inform interested parties of the proposed activity and to solicit comments. This notice may also be viewed at the Corps web site at http://www.spk.usace.army.mil/regulatory.html.

AUTHORITY: This application is being evaluated under Section 404 of the Clean Water Act for the discharge of dredged or fill material in waters of the United States.

APPLICANT: California Department of Transportation (Caltrans)
Eric Akana
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Redding California 96001
530-225-3530

LOCATION: The project site is located on I-5 from Post Mile (PM) 39.0 to PM 41.2 in Shasta Lake, Section 13, Township 35 North, Range 5 West, MDB&M, Shasta County, and can be seen on the Lamoine USGS Topographic Quadrangle.

PROJECT DESCRIPTION: The 1329 foot-long Antlers Bridge was constructed by the Bureau of Reclamation in 1941 to cross the Sacramento River arm of Shasta Lake. The bridge was widened in 1967 to accommodate increased traffic volumes along Interstate 5 and the bridge deck was replaced in 2004. As the existing bridge reaches its design life the California Department of Transportation is proposing to replace the entire structure with a new 5 lane bridge (two north and three south bound lanes each 12 feet-wide) and road shoulders (10 feet-wide). The bridge would be 100 feet-wide and have the capacity for a sixth future lane if necessary. The proposed project would include the realignment of 0.42 miles of I-5 in order to eliminate a series of curves along a steep portion of highway. The proposed bridge would consist of a five span cast-in-place segmental concrete box girder structure supported by four sets of piers placed within Shasta Lake. The proposed bridge would be 1,936 feet-long and constructed east of the existing bridge. Based on the available information, the overall project purpose is to maintain reliable bridge access and Level of Service (LOS) across the Sacramento River arm of Shasta Lake. The applicant believes there is a need to increase the LOS and safety for this portion of Interstate 5.

The proposed bridge project would take approximately 5 years to complete construction, including the removal of the existing bridge structure once traffic is diverted to the new bridge (2009-2015). The project boundary encompasses 150 acres of land managed by the Department of Agriculture, Shasta-Trinity National Forest (STNF). Approximately 14.5 acres of new highway right-of-way would be acquired from the Forest Service to construct the proposed alignment.

Bridge construction would begin with the construction of large concrete abutments at the north and south ends. The bridge deck would be supported by the abutments and 4 sets of pier structures. The 2 outer pier structures (pier 2 and 5) would each have two piles and the 2 inner pier structures (pier 3 and 4) would each have 4 piles. The pier structures would be constructed by driving 12 foot-diameter steel pile shells into the lakebed until an adequate seal is formed at the bottom of the shell. The steel shells would be limited to approximately 30 feet-long to facilitate transport and handling. Additional steel pile shells would be spliced (welded) to the previously driven steel pile shell. An auger would then be inserted into the shell and a hole would be drilled to the appropriate foundation depth, approximately 100 feet-deep. The auger would remove the sediment materials inside each of the 12 foot-diameter steel pile shells. The applicant is proposing to dewater these shells and deposit 3,835 cubic yards of the removed sediment onto 1.2 acres of the lake bed.

After the steel shell pier structures are driven to the appropriate elevation and the sediment materials are removed, reinforcing steel would be installed in the shells and 7,480 cubic yards of concrete would then be poured into the shells. The superstructure and bridge deck would be constructed once the construction of the piers and abutments are completed using the balanced cantilever method. The cantilever method would entail forming and constructing the horizontal structure outward from the piers in equal balanced proportions until the superstructure and deck segments meet mid span.

The in-water work would consist of the placement of two temporary trestle structures capable of supporting vehicles and heavy equipment which would extend from the north and south side of the lake shore. The trestle construction would require approximately eighty-four 36 inch-diameter hollow round steel piles to be driven into the lake bottom until firmly seated in rock. The north east side trestle would extend from the top of the bridge access road outward 640 feet into the lake. The trestle would be needed to provide a temporary construction access in order to construct bridge pier supports 4 and 5 (see aerial drawing page 6 and 8) and provide easy barge access to these structures. The south east side trestle would extend 436 feet into the lake from pier 2 to pier 3. The piles and trestle material would be removed after the construction is completed.

When percussion driven pile driving is utilized by the contractor they would be required to use an energy attenuation system to minimize impacts to local fish populations. The bubble curtain attenuation system consists of a network of pipes positioned around the pile being driven underneath the water. The pipe contains small diameter holes and spacing which is fed with compressed air and dissipates the energy sound pressure generated by the driving hammer strikes.

In addition to the impacts created by the construction of the pier structures the project would have temporary impacts to 6.7 acres of Lake Shasta when 89,323 cubic yards of clean fill material (rock from Haycock Peak cut area or commercial sources) would be placed in the lake to create two temporary construction access ramps. The ramps would be constructed during the first year on the northwest (NW) and northeast (NE) sides of the existing bridge and would remain for the duration of construction (2009-2015). The NW ramp construction would require 39,643 cubic yards of fill material. In order to construct the NW ramp approximately 154 steel H-piles would be set in approximately 258 cubic yards with horizontal members between the vertical piles to support the fill material along this steep slope. The NE ramp would require 46227 cubic yards of fill material placed into the lake to construct including the placement of a 138 foot-long 36 inch diameter culvert. The temporary fill material would be removed after construction is completed, except for the portion of H-pile and concrete below grade. The applicant would acquire a permit from the Forest Service to utilize 6 acres of forest land located immediately west of the existing northern bridge abutment as the construction staging area. The area

would be cleared and temporary fencing and signage ESA (Environmental Sensitive Area) would be placed parallel to the stream and wetland area located on the western boundary to prevent impacts to these resources.

The temporary fill material necessary to construct the in-water access ramps would be obtained when the applicant acquires 14.5 acres of new highway right-of-way from the Forest Service to realign 0.42 miles of the southern portion of I-5 as you approach Antlers Bridge. The area southwest of the existing Antlers Bridge approach (aka Haycock Peak) would be cut and 311,292 cubic yards of material would be removed to make way for new highway approach. Clean fill material would be obtained from a commercial source(s). Excess material would be used to restore the temporary construction staging area and the sections of I-5 abandoned as a result of the highway realignment. Caltrans has identified 2 other disposal areas within their right-of-way, which may be used as disposal areas for excess materials. The disposal areas are located adjacent to the northbound lanes of I-5, five miles north of the bridge at post mile 45.0 and adjacent to the south bound lanes between post miles 38.35 and 38.65. If the contractor elects to use other disposal areas then additional regulatory authorizations may be required. The new highway alignment would likely have finish cuts at approximately 1:1.5 (vertical/horizontal) and fills would be from 1:4 to 1:6 depending on the surrounding topography. The new highway alignment and the disposal of excess fill material into the abandoned highway would require the reconstruction of the highway drainage system, which would have impacts to intermittent drainages.

The highway realignment would require the reconstruction of the highway drainage system, including impacts to jurisdictional waters (channels) labeled A, E, F, G, H, I, J, M, and Shasta Lake on attached maps. Drainage systems DS-1, DS-2, DS3, and channels B, C, D, K, L, and the wetland associated with channel L would not be impacted by the project. It is anticipated that streams will be dry when work occurs with the possible exception of channels H, K and L. If dewatering is necessary, flows will be diverted back into the channel immediately downstream of the work area. Temporary construction access will be needed at each channel 10 feet upstream and downstream of the work area for the installation of drainage components such as culverts, rock energy dissipation devices, etc.

The work at DS-1, DS-2 and DS-3 would include the temporary adjustment of drop inlet grates, located within the highway median, to allow traffic detours during construction. The inlet grates are situated on top of vertical pipes extending downward to a horizontal culvert (cross drain), which conveys flows from the west side of the highway to the east side. To provide a traffic detour, the existing concrete median barrier would be removed and the inlet grates would be replaced with traversable grates. The horizontal pipe would not be affected.

The work at channel (A) would involve extending an existing 24-inch diameter culvert approximately 10 feet at the inlet. The existing inlet is comprised of a sediment basin and vertical riser pipe, which would be reconstructed at the new inlet location 10 feet to the west. The purpose of the sediment basin is to detain storm water and allow sediment to settle to the bottom of the basin. The culvert extension and sediment basin installation would result in the permanent placement of fill material within 19 linear feet (43 square feet) of existing channel.

The work at channel (B) would require the temporary adjustment of the drop inlet grate as described for DS-1, DS2, and DS-3. The channels labeled (C) and (D) converge into channel E, which is located parallel to the west side of the highway. The realigned segment of I-5 highway would require that approximately 426 linear feet (494 square feet) of Channel (E) an earthen ditch at the toe of the highway cut would be permanently filled. Channels (C) and (D) would not be impacted by the project because the work would not extend past the upper limits of channel (E) where channels (C) and (D) converge.

Channel (E) would be replaced with an asphalt concrete paved gutter on the west side of the new highway alignment. The paved gutter would convey storm water flows to the north, along the highway approximately 330 feet to an asphalt concrete over-side drain. The over-side drain would discharge to a sediment basin with a 36-inch diameter vertical riser pipe that bisects channel (F). The existing settling basin and riser pipe at channel F would be moved and reconstructed slightly to the west to accommodate the highway realignment. The existing 24-inch diameter cross drain would be replaced with a new 24-inch diameter culvert and down drain situated at a new alignment. The culvert would outlet at the same location as the existing culvert but a rock pad energy dissipater would be constructed at the outlet of the down drain. Channel (F) would be reconfigured which would result in the permanent placement of fill material into 62 linear feet (186 square feet) of these jurisdictional waters.

The existing drainage system at channel (G) would be replaced with a new system to accommodate the new highway alignment. The new drainage system would be extended to the west but outlet at the same existing culvert location. The new drainage system would include a sediment basin with 36-inch diameter inlet riser pipe. A 24-inch diameter horizontal culvert (cross drain and down drain) would convey flows to the east side of the highway. A rock pad energy dissipater would be constructed at the outlet. The reconstruction of the drainage system at channel (G) would result in the permanent placement of fill within 209 linear feet (265 square feet) of existing channel.

The existing drainage system at channel (H) consists of a rock masonry energy dissipater at the culvert inlet and a 24-inch diameter cross drain culvert which outlets on the east side of the highway. The rock masonry energy dissipater at the inlet slows storm water flows descending from the steep rocky channel into the Lake. The existing system would be removed and replaced with a similar configuration which would match the new highway alignment. The new system would include a rock masonry energy dissipater at the culvert inlet and drop inlets on the west side of the highway and in the highway median. A new 24-inch diameter cross drain would convey water to the east side of the highway where it would outlet at the same location as the existing cross drain. A rock pad energy dissipater would be constructed at the outlet of the culvert. The reconstruction of the existing drainage system would result in the permanent placement of fill material into 78 linear feet (337 square feet) of jurisdictional waters.

The existing drainage system at channel (I) has a 24-inch diameter culvert (cross drain) with a rock masonry energy dissipater at the inlet. The drainage system would be modified to accommodate the highway realignment and a new access road for bridge and utility maintenance. A new 24-inch diameter cross drain would be installed on the bridge/utility maintenance access road. A new sediment basin and vertical riser pipe would be constructed at the inlet and a rock pad energy dissipater would be constructed at the outlet. The cross drain and down drain would be rerouted behind the southern abutment of the new bridge to avoid eroding the bridge abutment and pier number 2. The construction of this drainage system would result in the permanent loss of 327 linear feet (654 square feet) of jurisdictional waters. The section of channel from the former culvert inlet to the new inlet, approximately 62 linear feet, would be restored to open stream channel.

The existing drainage system at channel (J) has a 24-inch diameter culvert (cross drain) with a rock energy dissipater at the inlet and a down drain at the outlet. The drainage system would be modified to accommodate the highway realignment and a new access road for bridge and utility maintenance. A new 24-inch diameter cross drain and down drain would be installed on the bridge/utility maintenance access road. A flared end section would be installed at the inlet to facilitate the transition from open channel to the culvert. A rock pad energy dissipater would be constructed at the outlet. The modification of this drainage system would result in the permanent loss of 14 linear feet (7) square feet

of jurisdictional waters. The section of channel from the former culvert inlet to the new inlet, approximately 106 linear feet, will be restored to open stream channel.

The proposed work at channel (K) would include the placement of temporary culverts below the full pool elevation of Shasta Lake to construct a temporary lake access ramp. The existing section of channel below the full pool elevation of the lake has been eroded by flows cascading from the streambed. The ramp would cross the stream at a right angle just below the full pool elevation of the lake. The culverts would be removed when bridge construction is complete.

The proposed work on channel (L) would include the replacement of a 58 foot section of a 42-inch diameter culvert (cross drain) between the median of Interstate 5 and the westerly edge of pavement. The culvert extends several hundred feet beyond the edge of pavement and outlets to a wetland and channel L. No work would occur at the outlet. A new section of cross drain would be installed and would include a drop inlet with a sand trap in the highway median and road shoulder.

The current alignment of Channel (M), which is parallel to the existing highway and 1,096 feet-long (548 square feet) would be permanently filled by the new I-5 alignment. An asphalt concrete paved gutter, approximately 1,675 feet in length, would be constructed on the east side of the new alignment to take the place of channel M. Three drop inlets with sand traps would be placed within this gutter system. The sand traps collect winter traction sand, sediment, and other solids contained in highway storm water runoff. The gutter would convey flows to the north into a down drain that would combine the flows of channels I and M. The down drain would outlet at a rock energy dissipater located above the full pool elevation of Shasta Lake.

After traffic has been transferred to the new bridge structure, Caltrans will be required to demolish the existing bridge structure. The existing bridge is a continuous span steel truss structure supported by six concrete piers. The piers are approximately 10 feet-thick, 40 feet-wide, and 150 feet-in-height. The piers were designed as hollow cells and contain a substantial amount reinforcing steel throughout. The concrete deck and steel structure would be removed and disposed at an appropriate upland site. Each pier would be removed to an elevation below the mud line of the lake and the remaining portions would be left in place.

Caltrans has indicated they would allow the contractor to choose the method of demolition for both the steel structure and the concrete piers. The methods of demolition include the use of explosives, diamond –wire saw cutting, stitch drilling, toppling, chemical demolition agents, mechanical splitters, hydro demolition (water blasting), and thermal lance (flame cutting). Demolition of the piers would generate approximately 3,453 cubic yards of material.

The Corps of Engineers' has not determined which demolition method would have the least amount of impacts to jurisdictional waters.

The attached drawings provide additional project details.

ADDITIONAL INFORMATION:

Environmental Setting: The entire project area is 150 acres and there are approximately 45 acres of waters of the United States, including wetlands within the project area. Specifically, there are 0.56 acres of intermittent waters, 44.3 acres of Shasta Lake, and 0.014 acres of wetlands within the project area. The proposed project would have impacts to approximately 8 acres of waters of the United States (1.26 acres permanent and 6.73 acres temporary in and adjacent to Shasta Lake).

The rural community of Lakehead is located at the north side of Antlers bridge. The surrounding area has several public campgrounds and a boat ramp which are managed by the Forest Service. The surrounding area consists of mountainous forested terrain. Shasta Lake supports cold and warm water fisheries including trout, salmon, bass, crappie, sunfish, and catfish. The Lake has a large bald eagle and osprey population. These bird species nest near the existing Antlers bridge structure. Cliff swallows and bats utilize the bridge structure for nesting and roosting purposes.

Alternatives: The applicant has provided information concerning project alternatives. Each alternative presented has the same impacts to jurisdictional waters. The Corps will evaluate these alternatives to ensure compliance with the 404 (b)(1) guidelines and determine if a positive permit decision could be made.

Additional information concerning project alternatives may be available from the applicant. Other alternatives may develop during the review process for this permit application. All reasonable project alternatives, in particular those which may be less damaging to the aquatic environment, will be considered.

Mitigation: The Corps requires that applicants consider and use all reasonable and practical measures to avoid and minimize impacts to aquatic resources. If the applicant is unable to avoid or minimize all impacts, the Corps may require compensatory mitigation. The applicant has proposed to offset impacts to water quality and fisheries by providing Shasta-Trinity National Forest $50,000 to improve warm water fisheries within Shasta Lake and provide the California Department of Fish and Game $30,000 for a program to improve angling opportunities within Shasta Lake.

The applicant proposes to offset the loss of 2,231 feet (0.06 acres) of waters by funding a stream habitat restoration project through the Western Shasta County Resources Conservation District. A restoration plan has not been provided to the Corps at this time. The final mitigation plan would be approved prior to issuing a Department of Army Permit.

OTHER GOVERNMENTAL AUTHORIZATIONS: A Water Quality Certification, as required under Section 401 of the Clean Water Act from the California Regional Water Quality Control Board Central Valley Region was issued on July 8, 2008.

HISTORIC PROPERTIES: The California Department of Transportation through its Section 106 Programmatic Agreement consulted with the State Historic Preservation Officer under Section 106 of the National Historic Preservation Act.

ENDANGERED SPECIES: The proposed activity may affect the Federally-listed bald eagle *(Haliaeetus leucocuphalus)* a threatened species. The applicant consulted with the U.S. Fish and Wildlife Service, pursuant to Section 7 of the Endangered Species Act, as appropriate and obtained a not likely to adversely affect determination.

ESSENTIAL FISH HABITAT: The proposed project will not adversely affect Essential Fish Habitat (EFH) as defined in the Magnuson-Stevens Fishery Conservation and Management Act.

The above determinations are based on information provided by the applicant and our preliminary review.

EVALUATION FACTORS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the described activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the described activity, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the described activity will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. The activity's impact on the public interest will include application of the Section 404(b)(1) guidelines promulgated by the Administrator, Environmental Protection Agency (40 CFR Part 230).

The Corps is soliciting comments from the public, Federal, State, and local agencies and officials, Indian tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SUBMITTING COMMENTS: Written comments, referencing Public Notice SPK-200701747 must be submitted to the office listed below on or before November 24, 2008

Paul Maniccia, Project Manager
US Army Corps of Engineers, Sacramento District
Sacramento Office
1325 J Street, Room 1480
Sacramento, California 95814 2922
Email: paul.m.maniccia@usace.army.mil

The Corps is particularly interested in receiving comments related to the proposal's probable impacts on the affected aquatic environment and the secondary and cumulative effects. Anyone may request, in writing, that a public hearing be held to consider this application. Requests shall specifically state, with particularity, the reason(s) for holding a public hearing. If the Corps determines that the information received in response to this notice is inadequate for thorough evaluation, a public hearing may be warranted. If a public hearing is warranted, interested parties will be notified of the time, date, and location. Please note that all comment letters received are subject to release to the public through the Freedom of Information Act. If you have questions or need additional information please contact the applicant or the Corps' project manager Paul Maniccia, 916-557-6704, paul.m.maniccia@usace.army.mil.

Attachments: 16 drawings