

The Kopta Slough Flood Protection and Habitat Restoration Project
Draft Project Description for Feasibility Study
11/09/2007

Project Goals and Elements

The Kopta Slough Flood Damage Reduction and Habitat Restoration Project is located on the Sacramento River between River Mile 218 and 223. The Highway A9 Bridge (Woodson Bridge) bisects the lower portion of the project area (see attached maps). The goal of the project is to 1) provide ecosystem benefits through the restoration of river and floodplain process, 2) provide flood damage reduction benefits through reduced erosion to protect public resources, and 3) establish long term public ownership of the Kopta Slough property to protect public trust resources. These goals would be accomplished through implementation of the project elements described below. The cost/benefit of these elements would be assessed in a feasibility study to be prepared by the Department of Water Resources. The feasibility study would build on the feasibility work that was started by the US Army Corps of Engineers (ACOE) for this project. Results from the ACOE's reconnaissance level study are shown below to help demonstrate the alternatives to be considered and the cost associated with them.

Elements of the Kopta Slough Flood Damage Reduction and Habitat Restoration Project include:

- 1) Protect the west abutment of Woodson Bridge and the City of Corning sewer outfall.
- 2) Transfer the 708-acre Kopta Slough property from the California State Controller Environmental Trust to the State of California for management by California State Parks (State Parks).
- 3) Remove unnecessary revetment along 5,600 feet of the east bank of the Kopta Slough property.
- 4) Reduce the erosion rate along the east bank of the Woodson Bridge State Recreation Area.
- 5) Restore 175 acres of habitat at Kopta Slough as mitigation for DWR levee repair projects.

Under the first element, the Woodson Bridge abutment and land downstream from the bridge adjoining the City of Corning sewer outfall would be protected from erosion. A total 2,600 feet of bank protection would be needed – 1,900 feet of bank protection to stabilize the Woodson Bridge abutment and 700 feet of bank protection to protect the City of Corning sewer outfall. Several options were analyzed during the 2003-2004 ACOE reconnaissance study; the options analyzed are presented in Table 1 with costs based on 2004 estimates.

Table 1. Options for bank protection at Woodson Bridge and City of Corning sewer outfall.

| Protection Option | Woodson Bridge Western Abutment | | City of Corning Sewer Line Outfall | |
|-------------------------------|---------------------------------|-------------|------------------------------------|-----------|
| | Volume (yd3) | Cost | Volume (yd3) | Cost |
| 1. Bank Rock | 9,820 | \$1,275,100 | 2,600 | \$357,300 |
| 2. Low Berm / Rock** | 13,900 | \$1,725,950 | 5,350 | \$661,200 |
| 3. Spur Dikes / Bendway Weirs | 5,035 | \$746,400 | 1,770 | \$265,600 |

**preferred alternative

Under the second element, State Parks would incorporate the transferred Kopta Slough property into the existing Woodson Bridge State Recreation Area (see attached maps). State Parks would develop a recreation management plan for the area that would describe recreation uses and opportunities for the property. The property will include mitigation areas and habitats of high conservation value; therefore, the extent and type of recreation uses will have to be designed such that they do not conflict with the objectives to be defined for these areas.

Under the third element, different alternatives for the removal of rock along the east bank of the Kopta Slough property will be analyzed for their cost/benefit through the feasibility analysis. In concept, removal of this revetment would restore natural channel processes and promote the process of forest succession that would lead to the regeneration of a diverse mosaic of forest types on the floodplain. Restoration of these elements will increase aquatic habitat diversity as well through the creation of channel features such as side channels, mid channel bars, and in channel large woody debris (LWD). Alternatives to be considered include partial removal of the rock, notching the rock at intervals along its length, and full removal of the rock. Several options were identified in the 2003-2004 ACOE reconnaissance study, quantities of rock that could be removed and their associated costs are outlined in Table 2. Costs are based on 2004 estimates.

Table 2. Options for rock removal at Kopta Slough.

| Vertical Removal Option | Options for Kopta Slough Rock Removal | | | |
|---|---------------------------------------|---------------------------|--|---------------------------------------|
| | Partial Length (2,910 ft) | Full Length (5,660 ft) | Notching Partial Length (1,500 ft) | Notching Full Length (2,500 ft) |
| 1. Partial Vertical (1.48 yd3/Ln ft) | 4,306 yd3 \$279,900 | 8,377 yd3 \$544,500 | 2,220 yd3 \$144,300 | 3,700 yd3 \$240,500 |
| 2. Full Vertical (2.8 yd3/Ln ft)** | 8,148 yd3 \$529,600 | 15,848 yd3 \$1,030,120 | 4,200 yd3 \$273,000 | 7,000 yd3 \$455,000 |

** preferred alternative

Under the fourth element, no physical structures are proposed to protect the east bank of the Woodson Bridge State Recreation Area. Rather, this will be an important objective to achieve as part of the removal of rock from the east bank of the Kopta Slough property. Erosion is causing the loss of park property and valuable heritage oaks at this site and has been exacerbated by the stabilization of the opposite upstream bank along the Kopta Slough property. The Palisades project was constructed at this site to stop erosion in 1986. The Palisades failed and was later removed in 1997.

Under the fifth element, 175 acres of riparian forest would be restored on land within the Kopta Slough property that is currently supporting row crop agriculture. This would provide mitigation for DWR Flood Management projects within the region.

Feasibility Study

The results of the feasibility study will be used to decide whether to proceed with the project based on cost/benefit. The study will include assessment of impacts related to flood; geomorphology; sensitive threatened, endangered, and sensitive species; sensitive habitats; existing infrastructure; land use; cultural resources; and recreation. The study will also provide an accurate cost for construction and recommend the best alternative. The study will build upon the work already completed by the ACOE for this project.