

■ The Matilija Dam Ecosystem Restoration Project (Project) is the result of more than 5 years of collaboration with stakeholders and experts. Components of the Project were developed during the Feasibility Study process co-sponsored by the U.S. Army Corps of Engineers (USACE) and the Ventura County Watershed Protection District (VCWPD). Ecosystem restoration elements include restoration of southern steelhead (*Oncorhynchus mykiss*) habitat, removal of invasive giant reed, removal of a major southern steelhead migration barrier (Matilija Dam), restoration of natural hydrologic and sediment transport processes from the upper watershed to the Pacific Ocean, and restoration of habitat for 25 additional special status species. The Project results in the long-term substantial increase in ecological value with short-term adverse impacts associated with Project construction. The preferred alternative for ecosystem restoration includes 12 Project components, including two components described in this proposal: (1) giant reed (*Arundo donax*) removal within about half of the overall Project area, and (2) installation of two wells at Foster Park to address sedimentation effects on the City of Ventura's (City) municipal water supply during and after dam removal (Map 1). Project components that will be implemented at a later date and with other funding sources include: the remainder of giant reed removal, augmentation of existing levees and construction of one new levee to protect residential areas adjacent to the Ventura River, construction of an off-line sediment basin to improve the water quality of municipal water in Lake Casitas, construction of recreational trail system along a temporary slurry line to dispose of fine sediment in upland areas, temporary stockpiles to contain fine sediment from the slurry line, temporary bank stabilization in former Matilija reservoir area control the release of sediment, and removal of Matilija Dam (the final Project component).

Giant reed is a highly invasive grass recognized by the California Invasive Plant Council as a widespread, invasive wildland pest (List A-1). Approximately 250 acres of giant reed patches occur from above Matilija Dam downstream to the Pacific Ocean along the Ventura River. This proposal covers removal of approximately 140 acres of giant reed from 931 acres of the 2,000-acre Project area. The 2,000-acre Project area includes roughly the 100-year floodplain of the Ventura River and some adjacent lands. Hereafter, the "Project area" refers to the 931-acre giant reed control area.

Activities associated with this component include: preparation of plans and specifications for a qualified contractor, application and receipt of regulatory agency permits, systematic removal/treatment of giant reed using one or more approved methods, biological resources protection and monitoring, water quality monitoring, repeat treatment to address resprouts or new giant reed recruits, and reporting to regulatory agencies and funding entities. Removal methods may include use of a hydroax or flail mower, herbicide application (e.g., Aquamaster, Habitat), or other methods approved by the Matilija Environmental Working Group (EWG, a consortium of federal, state and local agency staff and biologists, non-governmental organizations, interested parties).

Approximately one-third of the water supplied to City customers comes from its Foster Park production facilities. Since 1984 production has averaged 6,700 acre-feet per year (AFY). Production varies from 540 AFY in very dry years (1987) to more than 9,000 AFY in very wet years (1993). Approximately 70 percent of this production is from four shallow wells with the balance from a combination of surface diversions and a subsurface collection system. High levels of sediment impair the City's ability to divert and treat water from the Ventura River through existing facilities. A Bureau of Reclamation analysis determined that increases in sediment resulting from dam removal adversely affects two existing wells (i.e., equivalent to 470 AFY). Therefore, the VCWPD and USACE scheduled construction of the wells as the first of the ecosystem restoration tasks.

■ For this grant proposal, giant reed removal will occur from upstream of Matilija Dam downstream to the Highway 150 bridge (Baldwin Road) within approximately 931 acres of the river and floodplain near the communities of Ojai and Meiners Oaks (Map 2). Giant reed removal downstream of Hwy. 150 will be completed with other funding at a later date along the Ventura River in the communities of Oak View, Casitas Springs, the City of Ventura, and Emma Wood State Park. The locations of the wells in Foster Park are shown on Map 3. Water obtained from the wells at Foster Park will offset losses due to facility damage or inoperable conditions resulting from dam removal. No additional water diversion or pumping

capacity will occur. The western City of Ventura is considered a disadvantaged community as shown on Map 4 (Census 2000).

■ The goals of the Project components are ecosystem restoration and water supply reliability. The objective of giant reed removal is to substantially reduce the abundance and distribution of invasive plants which consume large quantities of water, displace native vegetation and wildlife, disperse readily during floods, and exacerbate flooding, erosion, and fire intensity. The outcome is restoration of native habitats and recolonization of native vegetation.

The objective of well installation is to provide additional production facility to offset capacity losses during periods of increased sediment loading following the removal of Matilija Dam. The wells will be located on floodplain terraces outside of the active river channel to reduce potential flood damage and clogging by fine sediment. The outcome is a continuous supply of safe and reliable drinking water at current levels for City residents throughout the life of the overall Project and thereafter.

■ Ecological processes in the Ventura River are defined by extreme and episodic fluvial/hydraulic processes that occur during high flow events. The Ventura River is intermittent and Matilija Creek is nearly perennial; both have large cobble, gravel, and sand substrates. The Ventura River estuary substrate comprises small cobble, sand and silt. High flow events occur approximately every 5 to 7 years, transport large quantities of sediment that scour riverine habitats and transport beach-building cobble and sand to the river mouth. Following high flow events, early successional vegetation species, aquatic invertebrates and other species recolonize scoured riverine and riparian habitats. The extent of scouring and propensity for natural recruitment has resulted in development of early successional habitats in the active channel (e.g., mulefat scrub), mid-successional habitats along the channel margins (willow and California black walnut riparian scrub), and late successional habitat in the upper floodplain (western sycamore and black cottonwood woodland). The Ventura River and Matilija Creek provide migration, breeding/spawning/nesting and rearing habitats for 26 special status species including southern steelhead, California red-legged frog and least Bell's vireo. Recently, portions of the Project area were designated as critical habitat for the southern steelhead (Federal Register Vol. 70, No. 170, 52488) and California red-legged frog (Federal Register Vol. 71, no. 71, 19244). The Project area also provides invertebrate food chain support for common and special-status species, and is a critical migratory corridor for mammals from the lower Ventura River watershed to the Los Padres National Forest.

■ The Los Angeles Regional Water Quality Control Board Basin Plan (RWQCB 4, Basin Plan) identified 24 beneficial uses and water quality objectives in the Ventura River watershed. The Project area supports 20 of the 24 identified beneficial uses; many will be enhanced by the proposed Project components. Well installation improves municipal, domestic and agricultural water supply, and industrial process supply by providing a back-up source of water when river conditions prevent operation of existing facilities. Giant reed removal enhances ground water supply, freshwater replenishment, warm and cold freshwater habitat, improved estuarine, wetland and marine habitats, special-status species habitat, and spawning and migration of aquatic organisms. It will also allow native plant recruitment, which reduces water consumption and improves habitat for aquatic and terrestrial species.

■ The pollutants of concern for future Total Maximum Daily Load (TMDL) development in the Ventura River watershed are nutrients and sediment. Nutrient sources are generated from agricultural land uses and wastewater discharges. Sediment loads in this river system are typically high during moderate and high flow events, even in the absence of soil disturbance. The Projects described in this proposal indirectly target pollutants. Native vegetation is more likely to take up excessive nutrients; however removal of giant reed may disturb sediment resulting in short term increases in turbidity. Removal of giant reed from this ecosystem is expected to improve the overall condition of the water resources in the Project area because groundwater and surface water presently consumed by giant reed will be available to native species and wildlife. Data from similar Projects show that stream and riparian habitats will recolonize areas cleared of giant reed. The Foster Park wells will enable the City to provide adequate quantities of water in full compliance with state and federal drinking water standards to its customers.