

**A. Benefits, Outcomes, & Impacts**

■ The recipients of the Project benefits include the residents of the City of Ventura, City of Ojai, and Ventura County. The general public, including those who live outside Ventura County, will benefit from use of the restored river ecosystem for various passive recreational activities such as hiking, bird watching, beach activities, and swimming. Project benefits (i.e., ecosystem restoration) will also affect resident and migratory wildlife species. Removal of giant reed will improve steelhead habitat by reducing property erosion and restoring natural hydrologic and sediment transport functions in the Ventura River and Matilija Creek. City of Ventura residents will benefit from protection of their water supply from potential impacts resulting from dam removal. The existing wells and diversion facilities are located in and immediately adjacent to the Ventura River and are subject to elevated levels of sediment and turbidity during high flow events, producing water which cannot be treated to meet drinking water standards. The removal of Matilija Dam will increase the intensity and duration of sediment flows for several years after dam removal. The proposed wells would be located further from the river channel and water drawn would not be impacted by increased turbidity, providing water production capacity equivalent to existing conditions.

■ The outcomes of the giant reed removal and well installation are directly related to the work items identified in this proposal. The work items described in Attachments E, F, and G are specific to these two Projects. Giant reed removal and well installation are two of 12 Project components described in the EIS/EIR (attached). Giant reed removal and well installation are important to the overall success of the ecosystem restoration Project and are the first components leading dam removal. Giant reed removal is essential to maximizing the habitat improvement benefits of dam removal for sensitive and common species. The schedule for giant reed removal and well installation has been accelerated by the availability of 2005-06 Consolidated Grant Program funding. Giant reed removal and well installation were selected for this proposal because the NEPA/CEQA process is complete, these Projects require minimal engineering and design, are expected to be permitted quickly by existing Clean Water Act Regional General Permits for invasive vegetation removal or are located outside of regulatory agency jurisdictional areas.

■ Giant reed removal and well installation will result in several significant environmental benefits and improvements and will also address several beneficial uses described in the RWQCB 4 Basin Plan and in Attachment A. As proposed for this grant, giant reed will be removed from approximately 140 acres within the 931 acres of the 2000-acre Project area. Giant reed makes up a substantial portion of the existing vegetation in the former Matilija Reservoir area. Giant reed is defined by the California Invasive Plant Council as a widespread, most invasive wildland pest (List A-1). It disperses during high flow events that dislodge individual plants and large stands, and spreads aggressively because it develops viable roots from the nodes of plants and plant fragments. Populations of giant reed are expected to increase in the Matilija Reservoir as it continues to fill with sediment over the next decade. The giant reed population in the Matilija Reservoir is a source of giant reed propagules for the lower watershed as plant material is washed downstream during large storm events. Controlling giant reed in the upper watershed reduces giant reed dispersal to the lower river reaches and minimizes reestablishment.

Water well installation will allow the City to maintain current production levels without shifting production from periods of highest flows (which coincide with periods of highest sediment load) to periods of lower flow when the relative habitat impacts of water production may be greater.

■ Similar to a chemical pollutant in the water, giant reed negatively affects physical and biological processes in wetlands and streams. The anticipated environmental benefits of giant reed removal may be quantified as follows. Biomass production has been estimated at 8.3 dry tons per acre (Perdue 1958) and can be as high as 20 dry tons per acre with irrigation (<http://www.sosun.com/phytoremed.html>, Southern Sun Biosystems, Inc.). The Project area upstream of the Highway 150 bridge is currently infested with approximately 140 acres of giant reed. With an estimated (low) biomass of 8.3 tons per acre and 140 infested acres, this equates to about 1162 dry tons of giant reed in the Project area. Removal of this biomass under this grant proposal will facilitate recruitment and spread of native riparian and wetland

plants and wildlife in the Project area. Removal of this biomass will also substantially reduce the source of this material to other watersheds and coastal areas in Ventura County and downcoast. Water available to the ecosystem would increase over existing conditions following giant reed removal because approximately 3,360 AFY is currently being consumed by the 140 acres of giant reed in the upstream Project areas (see also Attachment K). The well installation Project is not anticipated to affect (positively or negatively) existing pollutant loads in surface water or groundwater, but does increase water quality of diverted water for municipal use.

■ Beneficial uses that will be improved by the removal of giant reed from the Ventura River and Matilija Creek are described in Attachment A (Project Description). Removal of giant reed will allow native plants to recolonize the Project area and allow more water to be available to plants and wildlife in the ecosystem. The overall Ecosystem Restoration Project includes a long-term commitment by VCWPD and USACE with a 10-year monitoring and adaptive management period to track ecosystem improvements. As stated above, native riparian vegetation consumes less water than giant reed and supports native aquatic and terrestrial species. Giant reed removal will contribute to the long-term attainment and maintenance of RWQCB 4 Basin Plan water quality objectives including regional objectives to reduce the spread of exotic vegetation (e.g., giant reed) and maintaining high quality wetland habitat. These two water quality objectives are integrally linked and not mutually exclusive in the Project area. By removing giant reed from the Project area and directly addressing the exotic vegetation objective, the quality of the wetland habitat is improved. In the absence of invasive vegetation, displacement of native species is reduced. Well installation is not anticipated to adversely affect water quality objectives as described in the Basin Plan.

■ Giant reed control is a first step toward ecosystem restoration in the Ventura River, which is heavily infested with this invasive plant. Well installation will maintain and improve municipal water supply reliability for the City of Ventura. Multiple benefits provided by the giant reed removal and well installation include the following Beneficial Uses described in the Basin Plan: ground water supply, freshwater replenishment, warm and cold freshwater habitat, improved estuarine, wetland and marine habitats, special-status species habitat, spawning and migration of aquatic organisms, municipal, domestic and agricultural water supply, and industrial process supply.

■ Giant reed removal will benefit areas beyond the immediate Project area because this effort will greatly reduce the amount of plant material that could otherwise disperse during high flow events and with tidal action. In addition to Ventura County rivers and streams, giant reed has also established on County beaches, affecting high intertidal habitat. In 2005, Ventura County experienced record high rainfall and runoff events. Following these events, fishermen and other boaters observed large rafts of giant reed debris floating offshore. Beach goers also were unable to use large portions of upper beach throughout Ventura County because tons of giant reed debris had washed onto the beaches during high tides and storm surges. The giant reed debris was removed after several months using heavy equipment and disposed in landfills; an impact on both the beach habitat and landfill capacity in Ventura County. Such invasive vegetation debris and disposal problems will be reduced following giant reed removal from the Project area.

The wells will provide both regional and statewide benefits for water supply. The City will continue to have sufficient sources of supply to avoid calling on its currently unused 10,000 AFY State Water entitlement, thus benefiting the Bay-Delta and other State Water Project facilities or placing any greater burden on purchased supplies from the Casitas Municipal Water District, thereby avoiding additional pressure on diversion from the Ventura River. In addition, improved reliability of the City supply will benefit the City of Oxnard and potentially other nearby communities when the system interconnection between Ventura and Oxnard is completed.

■ Potential negative impacts associated with Project implementation will occur but are anticipated to be temporary and short-term. Giant reed removal will occur using various methods, including but not limited to the use of mechanized equipment, hand tools and laborers, herbicides approved for aquatic use, or a combination thereof. The removal and disposal methods selected will depend on the size of the patch, site

conditions, presence/absence of sensitive species, ease of access, disposal method, and distance from the disposal site. Because giant reed is often interspersed with native vegetation, all removal and disposal methods have the potential to disturb native habitats, temporarily displace wildlife, cause mortality of ground dwelling or burrowing wildlife, introduce herbicides into the Ventura river system, and create noise. These impacts will occur during removal activities and would cease upon completion of work in an area. Giant reed removal may temporarily destabilize soil and result in increased turbidity during subsequent flow events. Existing turbidity during high flow events would be incrementally exacerbated. The impact to native habitat by removing large stands of giant reed is generally a function of the recovery time. Mitigation site records kept by the VCWPD show that native habitats will recover with and without active revegetation in the absence of giant reed; however, recovery period may be several few years. The length of the recovery period can also be affected by high flow events, which wash out vegetation in this system every five to seven years.

Installation of wells at Foster Park will have short-term temporary impacts during the construction period. This Project will create noise and disturb park users and local wildlife. Temporary ground disturbances will potentially affect common wildlife, such as rodents, that live in the park. This Project is not expected to result in removal of any native habitat or displacement or mortality of wildlife. The wells may alter the visual quality of the park from adjacent roads and the Ojai bike trail, but will be located in an area not currently available for public use and may be screened or housed to reduce visual impacts. Over the long-term, the wells will be used, only as needed, when storm events result in high sediment loads and shut down of other production facilities. In the future, the wells may be usable as part of a program to allow the operational flexibility to produce the same overall quantities of water from Foster Park while shifting water production from periods of low flow and potentially greater habitat impacts to periods of highest flow when habitat impacts are substantially reduced. The details of this potential future operational program are dependent on the outcome of ongoing studies and concurrence by NMFS, USFWS, and the DFG. The proposed wells will not allow the City to exceed its existing water right allowance for surface water or groundwater diversion, nor is this project component expected to alter existing diversion rates.

■ Mitigation measures to address negative impacts are included in the EIS/EIR (attached) and are briefly summarized below. These will be incorporated into the Project components described in this proposal, as appropriate. As described in the EIS/EIR, resources that could be negatively impacted by implementation of Project components include: earth, biological, cultural, aesthetics, air quality, transportation, and recreation.

#### **Earth Resources**

- Implement Best Management Practices during construction/implementation to control erosion.
- Reduce off-site erosion.
- Monitor exposed soil for groundwater seepage or contamination.
- Control use of hazardous materials and prepare/implement hazardous substance control plan.

#### **Biological Resources**

- Conduct pre-construction surveys, including protocol surveys for some wildlife species.
- Conduct pre-construction plant surveys.
- Capture and relocate wildlife.
- Coordinate with jurisdictional agencies.
- Restrict initial clearing.
- Control equipment fueling.
- Monitor construction.
- Monitor downstream of construction area.
- Complete worker training program and implement Best Management Practices.
- Remove trash.
- Eradicate giant reed.
- Prepared a plan for the removal of nonnative predators.
- Prepare a restoration plan.
- Conduct pre-construction bat surveys.
- Develop an Operations and Maintenance program (for Projects other than the two described in this proposal).

#### **Cultural Resources**

- Survey for historic or prehistoric resources.

- Complete a National Register of Historic Places Evaluation.
- Develop a discovery plan for previously unknown resources.
- Consult with Native American Tribes.

**Aesthetics/Visual Resources** (Note: the Project components described below are not being proposed at this time).

- Adjust alignment of levees and floodwalls to allow vegetative screening of flood control improvements.
- Screen levees and floodwalls with vegetation planting.
- Create trails over the Rice Road slurry disposal site following re-vegetation of the site.
- Reduce visibility of Project activities and equipment.

**Air Quality**

- Limit engine idling.
- Use low emission diesel engines.
- Limit use of internal combustion engines.
- Use low emission vehicles.
- Water areas to reduce dust.
- Control fugitive dust.
- Dust stabilization.
- Install traffic speed limit signs.
- Excessive winds.
- Street sweeping.
- Respiratory protection.
- Valley Fever mitigation.
- NOx emissions offsets.

**Noise**

- Limit hours of hand-held equipment use.
- Limit hours of heavy-duty equipment use.
- Use muffler equipment.
- Locate haul routes away from sensitive receptors.
- Use of electric motors.
- Controlled blasts.
- Use of hearing protection.
- Public notice of construction.
- Monitor noise.

**Transportation**

- Prepare and implement a traffic management plan.
- Road repair from construction activities.

**Recreation** (Note: Construction activities that result in the measures below are not being proposed at this time).

- Coordinate with Parks agency, provide notification, and signs.
- Construct a ramp to provide access over the Meiners Oaks flood protection.

■ As described above, the California Invasive Plant Council identified giant reed as a widespread, and invasive wildland pest (List A-1). Similar to a chemical pollutant in the water, giant reed negatively affects physical and biological processes in wetlands and streams. Removal of this biomass will substantially reduce the source of this plant material to other watersheds and coastal beaches in Ventura County, and downcoast. Native plants that recolonize the giant reed removal area are expected to take up nutrients. The well installation Project is not anticipated to affect (positively or negatively) existing pollutant loads in surface water or groundwater.

■ Below is a brief summary of impacts/benefits to other resources as described in the EIS/EIR.

<b>Resource and Impact</b>	<b>Adverse</b>	<b>Beneficial</b>
<b>EARTH RESOURCES</b>		
Erosion during construction.	Short term, potentially significant	
Restore natural topography in Matilija Canyon; replenish sediment in Ventura River.		Long term
Undiscovered soil or groundwater contamination.	Short term, potentially significant	

Hazardous materials spills during construction.	Short term, potentially significant	
<b>HYDROLOGY AND WATER RESOURCES</b>		
Violate WQ standards or WDRs.	Short term, less than significant	
Lateral erosion, streambed scour, long term deposition/aggradation, property damage.	Short term, less than significant	Long term
Increase flood hazards.	Short term, less than significant	
Deplete groundwater or surface water supply or interfere w/ flow or recharge.	Short term, less than significant	
<b>BIOLOGICAL RESOURCES</b>		
Disruption of wildlife movement during construction.	Short term, unavoidable	
Loss of riverine and wetland habitats at Matilija Dam.	Potentially significant (permanent loss); less than significant (temporary loss)	
Loss of sensitive vegetation communities at slurry disposal site.	Long term, potentially significant	
Degradation of riparian habitats and sensitive species impacts w/ flood control improvements.	Long term, potentially significant	
Downstream sedimentation and associated loss of sensitive species or habitats.	Short term, less than significant	
Restoration of ecosystem functions, restored wildlife corridors and watershed connectivity.		Long term.
<b>CULTURAL RESOURCES</b>		
Affects on National Register of Historic Places sites or structures.	Long term, potentially significant	
Erosion related damage to cultural sites or deposits.	Long term, potentially significant	
Exposure of undiscovered cultural or historic resources behind Matilija Dam.	Long term, potentially significant	
<b>AESTHETICS</b>		
Improved scenic quality of Matilija Canyon; more natural.		Long term.
Degradation of ridgeline views from existing trails w/ flood control improvements.	Long term, less than significant	
Degradation of views of the Ventura River w/ flood control improvements.	Long term, unavoidable	
Enhancement of unique and historical landmarks (Hanging Rock in Matilija Canyon)		Long term
Obstructed views to the Ventura River during construction.	Short term, potentially significant	
<b>AIR QUALITY</b>		
Conflict with VCAPCD Air Quality Management Plan.	Short term, less than significant	
Violate or contribute to existing NAAQS/CAAQS violation.	Short term, unavoidable	

Exceed existing NOx/ROC emissions thresholds in Project areas.	Short term, potentially significant	
Expose sensitive receptors or others to concentrated pollutants or objectionable odors.	Short term, potentially significant	
Result in non-conformance with the General Conformity Rule.	Short term, potentially significant	
<b>NOISE</b>		
Construction or operation and maintenance related noise.	Short term, unavoidable	
<b>SOCIOECONOMICS</b>		
Labor needs spur unintended growth.	Short term, less than significant	
Labor needs result in additional housing.	Short term, less than significant	
Benefit local workers and the economy.		Long term
Displace businesses.	Short term, less than significant	
Unduly burden disadvantaged communities.	Short term, less than significant	
<b>TRANSPORTATION</b>		
Level-of-service impacts from laborers.	Short term, less than significant	
Level-of-service impacts from haul trucks.	Short term, unavoidable	
Damage roadway infrastructure.	Short term, potentially significant	
<b>LAND USE</b>		
Purchase and relocate affected businesses and residents.	Long term, less than significant	
Disrupt or divide communities during construction or by flood control improvements.	Long term, less than significant	
Convert one orchard to non-agricultural use.	Long term, less than significant	
<b>RECREATION</b>		
Degrade or displace existing facilities.		Long term
Impair safety of recreational users.	Short term, potentially significant	
Close a facility for extended periods.	Long term, potentially significant	

■ As described above, giant reed removal will benefit areas beyond the immediate Project area because this effort will greatly reduce the amount of plant material that could otherwise disperse to downcoast and downstream wetlands and streams during high flow events and with tidal action. Giant reed is most abundant in Ventura County rivers and streams. However, it has also established on County beaches as a result of propagules dispersing on the tides. In 2005, Ventura County experienced record rainfall and runoff events. Following these events, fishermen observed large rafts of giant reed debris floating offshore. Beach goers also were unable to use large portions of upper beach throughout Ventura County because tons of giant reed debris had washed onto the beaches during high tides and storm surges. The giant reed debris was removed after several months using heavy equipment and was disposed in landfills causing an impact on beach habitat and landfill capacity in Ventura County. Such invasive vegetation debris and disposal issues are not anticipated to occur as frequently following giant reed removal from the Project area.

Wildlife populations that live in the Project area or migrate through Ventura County (e.g., southern steelhead, least Bell's vireo, southwestern willow flycatcher, and California red legged frog) are expected to benefit from the recovery of native habitats following the removal of giant reed.

The Foster Park wells will provide both regional and statewide benefits for water supply through improved local and regional supply reliability and avoidance of additional demands on the State Water Project.

#### **B. Plan Consistency & Relation to Local Planning**

■ The Project components described in this proposal are components of Alternative 4b, the environmentally superior and locally preferred alternative in the EIS/EIR (attached). The EIS/EIR is considered the watershed plan for the Project area, and was adopted by the Ventura County Board of Supervisors on December 14, 2004. The Project components in the EIS/EIR, including giant reed removal and well installation, will be included in the Watersheds Coalition of Ventura County Integrated Regional Water Management Plan and adopted by stakeholders before January 1, 2007.

■ Giant reed removal and well installation at Foster Park are two of 12 Project components described in the EIS/EIR Alternative 4b. While these components were not expected to be conducted early in the Project schedule, funding and implementation of these components within the timeframe of this grant process is appropriate because the NEPA/CEQA process is complete, these Projects require minimal engineering and design, are expected to be permitted quickly by existing Clean Water Act Section 404/401 Regional General Permits for invasive vegetation removal or are located outside of regulatory agency jurisdictional areas.

■ The Ventura County Board of Supervisors is the principal land-use planning and decision-making body for the Matilija Ecosystem Restoration Project. Other land-use decision-makers who have been involved with stakeholder meetings and working groups include the City of Ojai and the City of Ventura; the California Coastal Commission also has jurisdiction over actions that occur in or affect the Coastal Zone. These jurisdictions have supported and participated in the Feasibility Phase and support the Design Phase of the Project, which began in July 2005. In addition, the City of Ventura recently included a policy in the General Plan update (August 2005) that specifically addresses their support for the Project and its various components that affect City resources (water, beach sand supply, etc.).

#### **C. Technical & Scientific Merit**

■ As stated in the EIS/EIR, the Environmental Working Group (EWG) proposed several goals and objectives for this ecosystem restoration Project. Attachment C describes the stakeholders involved with preparation of the goals and objectives. A primary goal is to restore natural processes that maintain aquatic and riparian ecosystems along Matilija Creek and the Ventura River and to restore the natural dynamics of the native fish and wildlife communities, especially for the endangered southern steelhead. Stated objectives include removal and control invasive exotic plants (especially giant reed) from the riparian ecosystem of the Project area and restoration of steelhead migration along Matilija Creek and restoration of aquatic habitat to facilitate steelhead migration, spawning, and rearing. The consensus of the EWG was that the riparian ecosystem should be evaluated by assessing the quality of the three riparian ecosystem components: 1) steelhead habitat, 2) riparian habitat, and 3) natural processes. Within the EWG, the Habitat Evaluation sub-group included DFG, NMFS, USFWS, UC Cooperative Extension, Casitas Municipal Water District, the Matilija Coalition, Southern California Wetlands Recovery Project, VCWPD, and USACE. A modified Habitat Evaluation Procedure (HEP) analysis was conducted and reviewed by this subgroup. HEP is a habitat-based evaluation procedure used to give a quantitative, numerical value to biological resources of concern. This method was developed by the USFWS as a formal process whereby calibrated habitat suitability models for certain species are used to measure habitat variable for the selected species (e.g., percent canopy cover, number of snag trees, stream temperature, percent ground cover, etc.) to obtain a Habitat Suitability Index (HSI). The HSI is then used to obtain a numerical rating of the Habitat Units for the selected species (i.e., Habitat Units = HSI x acres of habitat). A modified HEP tailors the HEP process to a particular application and/or to a certain level of effort desired by the user (Wakeley and O'Neill 1988). The modified HEP performed for the EIS/EIR utilized portions of the Draft Guidebook for South Coast Santa Barbara County (Lee et al. 2001) and best professional judgment to quantify habitat values. A numerical rating or value between 0.0 and 1.0 (lowest to highest value) was determined to identify the quality of habitats (i.e., Habitat Value, HV). The habitat

value was then multiplied by the area of the habitat to obtain the Habitat Units for each habitat type. Vegetation surveys were conducted in the study area and like habitat communities were delineated into “polygons.” For the evaluation of some ecosystem components, habitat was evaluated on a polygon-by-polygon basis; for other ecosystem components, habitat was evaluated on a river reach-by-reach basis. The modified HEP analysis was used to evaluate the habitat quality of giant reed cover under the No Project alternative. This analysis projected habitat quality of riparian habitat over time with and without the Project. Based on the modified HEP analysis, giant reed is expected to continue to spread and eventually dominate the Project area and substantially lower the habitat value of the ecosystem above and below Matilija Dam.

- Several technical appendices were prepared to scope the Project components, evaluate the feasibility of Project components individually and overall, and support the analyses in the EIS/EIR. These include: (A) Civil Design, (B) Structural Evaluation, (C) Geotechnical Report, (D) Hydrologic, Hydraulic and Sediment Studies, (E) Economics, (F) Cost Estimates, (G) Real Estate Plan.
- The methods used to prepare the technical studies are described in the EIS/EIR (attached) and/or in each technical appendix. The technical studies were prepared using current hydrologic, hydraulic and sediment transport (HEC-RAS) models, HEP analysis, and GIS.
- Members of the Project team (see Attachment B), and members of the EWG prepared many of the technical appendices for the EIS/EIR. Staff of the VCWPD and USACE also managed the EIS/EIR consultant during the Feasibility Study phase and will be responsible for Project implementation.
- As described above a HEP and modified HEP analysis was completed to characterize the site and evaluate habitat quality (value) under Alternative 4b and the No Project alternative. In addition, giant reed colonization rates were determined by reviewing aerial photos between 1969 and 2001. GIS was used to determine the size of the Project area, the percent cover of infestation and the infestation rate. This effort showed that the colonization rate is exponential. Aerial photo analysis and GIS will continue to be used to monitor the effectiveness and progress of giant reed removal. Well construction technology is standardized and reflects the most current engineering, site selection, drilling, control, and efficiency.
- The EIS/EIR includes provisions for a monitoring and adaptive management. Adaptive management provides a mechanism to evaluate the effectiveness of each ecosystem restoration measure, to determine if Project objectives are being met, and to ascertain whether adjustments are needed due to unforeseen circumstances. Giant reed removal will occur systematically working from the upstream to downstream ends of the Project area. Habitat and water quality monitoring will occur in accordance with the Giant Reed Control and Monitoring Plan (described in Attachment G). Following completion of this Project component, monitoring and reporting will be done period of at least five years, continuing past the grant period. Thereafter, monitoring will take place every other year, as described in the EIS/EIR. Areas of reinfestation will be treated with other funding sources after the end of the grant period. Currently, there are no adaptive management measures associated with well installation; however wells will only be operated during periods of high flow and high turbidity as determined by the City of Ventura.
- Prior to implementation of giant reed removal, recent aerial photos will be reviewed and biological surveys will be completed to determine the extent of giant reed and sensitive species in the Project area since the initial mapping and survey efforts.

#### **D. Monitoring & Data Collection**

- The Giant Reed Control and Monitoring Plan will describe the extent and frequency of vegetation and water quality monitoring parameters and data collection methodology. Protocols for water quality monitoring will be consistent with existing Ventura County NPDES Municipal Stormwater Permit requirements and Ventura River Stream Team protocols and QAPP. Water quality monitoring for this Project will begin in 2006, before initiation of giant reed removal. Data will be collected with matching funds in 2006 (before), and with grant funds in 2007 (during), and 2008 (after) giant reed removal.
- The proposed monitoring activities for the giant reed removal Project will document the water quality impacts of giant reed removal and the effectiveness of the methods used. Specifically, the monitoring and data collection program will measure the response of native habitats and water quality to the disturbance.

- As will be described in the Giant Reed Control and Monitoring Plan, parameters to be measured will include: temperature, conductivity, turbidity, dissolved oxygen, pH, and benthic macroinvertebrates. The frequency of water quality monitoring will be quarterly, and will occur at existing monitoring stations consistent with the Ventura River Stream Team (Stream Team). Habitat parameters to be measured will include vegetation cover and species diversity, and potentially wildlife use. The frequency of habitat monitoring will be annually (or twice during the grant period) in treated and reference areas.
- The proposed water quality monitoring activities will be covered under the existing Ventura River Stream Team Quality Assurance Project Plan (QAPP). This QAPP will be reviewed and modified, if needed, prior to implementation of giant reed removal.
- The water quality monitoring effort for the giant reed removal Project will be consistent with existing Ventura River Stream Team (Stream Team) monitoring protocols. Ventura River Stream Team QAPP is consistent with and was prepared in accordance with the Surface Water Ambient Monitoring Program (SWAMP) guidelines set forth by the U.S. EPA, the SWRCB and the RWQCB 4. VCWPD and Stream Team staff (and volunteers) are qualified to conduct water quality monitoring and have more than five years of experience implementing a large-scale water quality monitoring program. Water quality samples are tested, as appropriate, by certified laboratories.
- Water quality monitoring will be completed quarterly and concurrent with Stream Team monitoring efforts. The data collected for the Ventura River by the VCWPD and the Stream Team over the past five years has established baseline water quality conditions and bioassessment of the Ventura River watershed. These data have been reported annually in the VCSWQMP Annual Monitoring Reports and in annual Stream Team reports. Water quality data collected and analyzed for the giant reed removal project will be compared to past monitoring efforts to assess trends in water quality degradation or improvement. Analyses of these data will assist in our understanding of the magnitude and extent of the impact of large-scale giant reed removal on water quality and ecosystem indicators (i.e., aquatic invertebrates). Bioassessment sampling is a tool which measures biological responses to point-source discharges. This will produce biological and physical/habitat data that can be used to measure differences between sites and help diagnose response to ecosystem stressors.
- Existing VCWPD bioassessment and water quality sampling data and Stream Team data has been collected and evaluated over the past five years. For the purpose of the giant reed removal Project, these data will be interpreted as the baseline conditions. These ongoing efforts are expected to continue during and after the giant reed removal Project and supplement the monitoring described in the Giant Reed Control and Monitoring Plan. The combined data set will provide a long-term comprehensive evaluation of the Ventura River ecosystem and giant reed removal Project's effectiveness as it relates to the ecosystem restoration objective.

#### **E. Data Management & Analysis**

- The VCWPD has developed an Access database which allows direct input of water quality data from the certified laboratories. The VCWPD continues to develop tools to incorporate the toxicity and macroinvertebrate (i.e., bioassessment) data into the database. The database includes an evaluation component which allows data to be compared with the California Ocean Plan, the Water Quality Control Plan of the Los Angeles Region (RWQCB 4 Basin Plan), and EPA Water Quality Standards (Part III, 40 CFR 131; aka California Toxic Rule). Specifically, the database compares exceedences of water quality standards and generates a report of the findings. Analyses of water quality and bioassessment data will be completed by comparing water quality and bioassessment data collected above and below the giant reed removal project area with existing VCWPD and Ventura River Stream Team baseline data.
- Water quality data will be collected in accordance with existing EPA and SWRCB/RWQCB 4 protocols, and the Stream Team QAPP. These protocols and the Stream Team QAPP are consistent with the SWRCB's Surface Water Ambient Monitoring Program (SWAMP). Further, the RWQCB 4 has determined VCWPD and Stream Team databases are compatible with the SWAMP database, and data integration is feasible.

■ All water quality data will be entered, evaluated, and stored in the VCWPD water quality database. Data are easily transferred through the County's FTP site, via CD, and through the existing VCWPD Stormwater Program and Matilija Project websites. Before and after GIS maps of giant reed control areas may be available through existing websites and the FTP site or by individual requests. Local watershed groups, including the EWG, Matilija Coalition, and the Stream Team will be included in the evaluation of the water quality and will be asked to provide input to the VCWPD and USACE regarding adaptive management needs and Project performance.

■ The Giant Reed Control and Monitoring Plan will include water quality monitoring. This effort will be modeled after existing monitoring programs currently being implemented by VCWPD and the Ventura River Stream Team. The VCWPD and Stream Team have been collecting and analyzing water quality and benthic macroinvertebrate (bioassessment) data for five years. The water quality monitoring and analysis to be described in the Giant Reed Control and Monitoring Plan will contribute to the data set established by these other programs and contribute to the long-term evaluation of water quality in the Ventura River ecosystem.

#### **F. Assessment & Performance Measures**

■ The performance measures are described in the attached Performance Measures table. Project outcome were based on the tasks described in Attachment G and the analysis of the EIS/EIR (attached).

■ The goal of the Matilija Dam Ecosystem Restoration Project is ecosystem improvement with a focus on natural hydrologic and sediment transport processes, and increased habitat value for steelhead and other sensitive species. Specific indicators/measures of effectiveness include: substantial net decrease in giant reed cover throughout the Project area, net increase in native vegetation cover in giant reed removal areas (e.g., in areas not subject to regular scouring), more widespread distribution of sensitive species, long-term stability of water production capacity at Foster Park and continued compliance with drinking water standards, improved water quality.

■ Water quality and habitat data collected in accordance with the Giant Reed Control and Monitoring Plan will be evaluated to determine whether Project objectives and outcomes are addressed.

■ Pollutant load reduction will be evaluated through water quality data analyses. Monitoring will track and document impacts and benefits associated with the giant reed removal Project.

■ Pollutant loads will be measured in water quality samples. Additionally, reduction of giant reed debris during high flow storm events is anticipated and may be assessed qualitatively.

■ As described above, water quality data will be evaluated to determine whether Project objectives and outcomes are being met. These data, combined with existing data and information collected, synthesized and analyzed in the EIS/EIR, is expected to provide sufficient documentation of the Project effects and outcomes.

■ A Project Performance Measures Table (attached) has been prepared for each Project component. This table will serve as the basis of the Project Assessment and Evaluation Plan (PAEP) and will be used to track the effectiveness of the Project. The PAEP will be refined, if needed, prior to encumbrance of funds in the event the scope of work (see Attachment G) changes during the grant proposal review process.