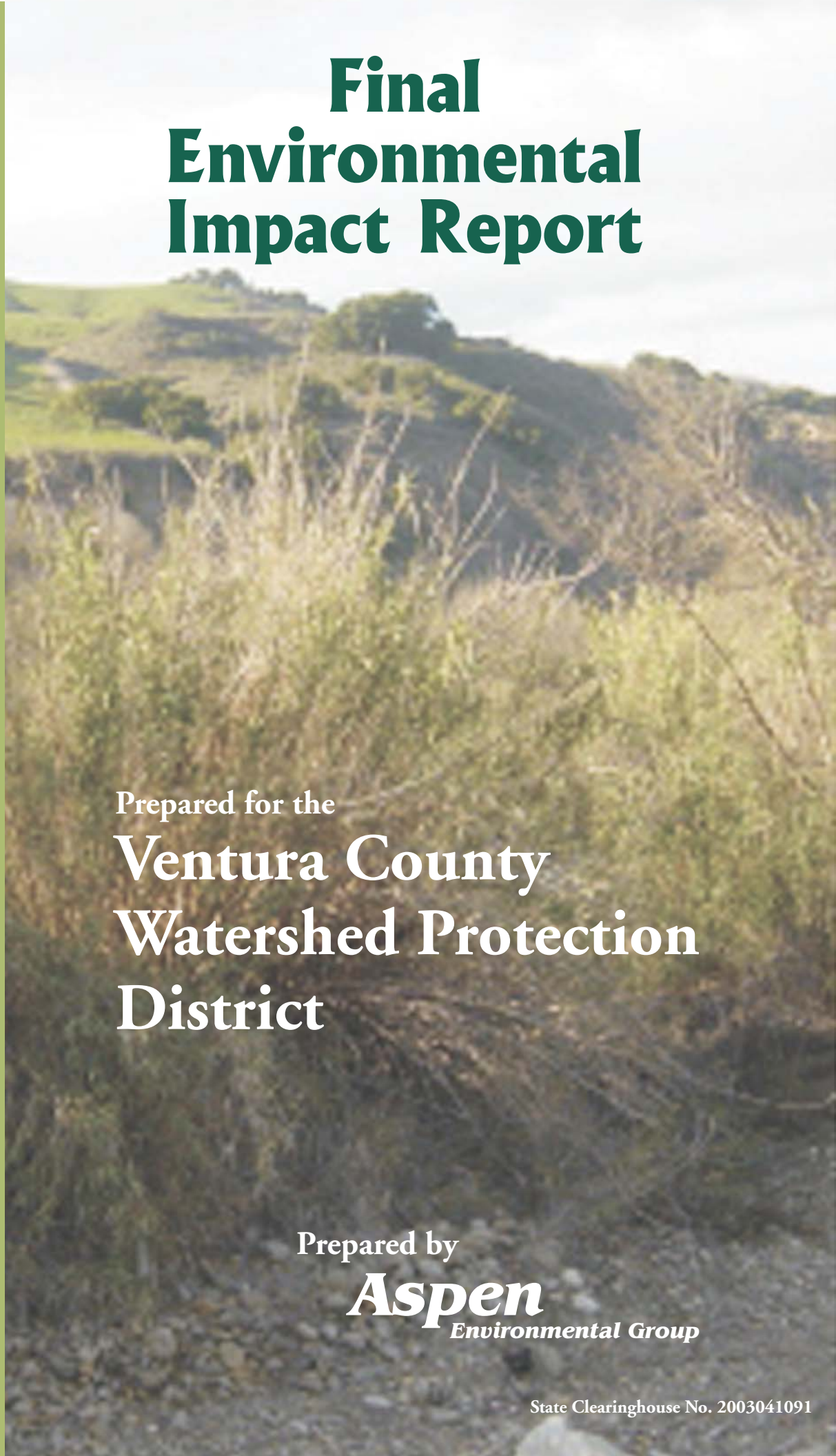
Final Environmental Impact Report



Prepared for the

Ventura County Watershed Protection District

Prepared by

Aspen *Environmental Group*

Ventura River *Arundo* Removal Demonstration Project

August 2003

State Clearinghouse No. 2003041091

VENTURA COUNTY WATERSHED PROTECTION DISTICT

FINAL
ENVIRONMENTAL IMPACT REPORT

for the

VENTURA RIVER *ARUNDO* REMOVAL DEMONSTRATION PROJECT

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The Environmental Report Committee recommends that the Ventura County Watershed Protection District Board of Supervisors find that this document has been prepared in compliance with the California Environmental Quality Act.

for Bruce Smith, Chair
Environmental Review Committee

8-12-03
Date

ENVIRONMENTAL IMPACT REPORT
for the
VENTURA RIVER *ARUNDO* REMOVAL DEMONSTRATION PROJECT

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This Final Environmental Impact Report (EIR) has been prepared to assess the potential environmental impacts of the proposed Ventura River *Arundo* Removal Demonstration Project (project) and its alternatives. *Arundo donax* (sometimes referred to as "giant cane" or "giant reed," and referenced herein as "*Arundo*") is a highly invasive, non-native plant species that has substantially degraded the natural habitat and riparian qualities of rivers throughout California, including the Ventura River.

The project's environmental review under the California Environmental Quality Act (CEQA) was initiated on April 11, 2003 with the distribution of a Notice of Preparation (NOP) for a Draft EIR on the proposed project and its alternatives. The NOP was distributed to all interested parties and the California State Clearinghouse. The Draft EIR was made available for public and agency review on June 16, 2003. The public and agency review period on the Draft EIR extended from June 16, 2003 through July 30, 2003.

This document represents the Final EIR necessary for the Ventura County Watershed Protection District Board of Supervisors to consider for approval of the proposed project. It includes: the comments and responses to all comments that were submitted regarding the project's Draft EIR (Appendix A); modifications to the text of the Draft EIR, as appropriate, to address comments received; and, a Mitigation Monitoring Plan (Appendix B). Modifications to the document's text that have changed between the Draft and Final EIR are indicated by vertical lines placed in the right-hand margin of the pages of this Final EIR.

The project is being sponsored by the Ventura County Arundo Task Force (ATF), a consortium of federal, state and local agencies, publicly elected officials, and public and private interest groups. Members and affiliates of the ATF include:

- Natural Resources Conservation Service
- Ventura County Resource Conservation District
- Ventura County Watershed Protection District
- U.S. Army Corps of Engineers
- California Department of Fish and Game
- U.S. Fish and Wildlife Service
- California Exotic Pest Plant Council
- U.S. Congressman Elton Gallegly
- Ventura County Fire Department
- California State Parks Department
- Channel Islands Parks
- City of Ventura
- City of Thousand Oaks
- California South-Central Coast Watersheds Restoration Program.
- Ojai Valley Land Conservancy
- Surfrider Foundation
- California Conservation Corps
- Hill Canyon Conservancy
- California Coastal Conservancy
- National Park Service, Santa Monica Mountains
- Friends of the Santa Clara River
- Valley View Ranch
- U.S. Forest Service
- U.C. Cooperative Extension
- U.S. Navy, Pt. Mugu Naval Air Station
- California Nature Conservancy
- MESA Project (Matilija Environmental Science Area Society and Ventura County Superintendent of Schools Office)
- Ventura County Environmental & Energy Resources Department

The proposed demonstration site is a five-acre site located along the east bank of the Ventura River, near the community of Casitas Springs. The site is approximately 50 feet wide, 4,500 feet long, and ranges in elevation from 260 to 280 feet above sea level. The Ventura County Watershed Protection District (VCWPD) and the City of Ventura own the site. For the purposes of the project's review under

the California Environmental Quality Act (CEQA), the VCWPD is acting as the Lead Agency. A summary of the project is provided below. Details regarding the project are provided in Section 4 of this EIR.

Project Description. The purpose of the project is to evaluate four different types of *Arundo* eradication techniques. Real cost and methodology data generated by the project would allow for effective planning and implementation of future *Arundo* removal projects within the Ventura River watershed, and, ultimately, throughout other watersheds within Ventura County. In addition to assessing eradication techniques, six different riparian revegetation treatments with native plant species would be tested. The project also includes a public outreach and education program to heighten awareness regarding the ecological benefits of *Arundo* removal.

The proposed project is a seven-year program that includes initial *Arundo* removal followed by repeat removal treatments, native plant re-establishment, and revegetation monitoring. Throughout the life of the project, no physical activities within the project area would typically be undertaken between November 1st and April 15th of any given year. However, if physical activities within the site are needed during this period, the ATF would ensure that such activities do not coincide with flowing water within the site, and that planned activities occur within a five-day clear-weather forecast. Additionally, the ATF would ensure that all appropriate agencies are notified of, and would allow proposed site activities.

The demonstration site would be separated into four areas and four different types of removal methods would be implemented to evaluate their effectiveness. The removal methods proposed for the site are anticipated to occur in the autumn of 2003 and would include:

1. Mechanical removal of the *Arundo* biomass immediately followed by the painting of the remaining stems with herbicide at appropriate cut-stump concentrations (50 percent to 100 percent volume-to-volume [v/v]) ("cut and paint")
2. A foliar spray application of the *Arundo* biomass at a concentration of approximately 1.5 percent to 6 percent v/v and then letting the biomass remain on site until it is dead. The dead materials would then be removed mechanically the following spring with hand held equipment
3. Removal of the above-ground *Arundo* biomass mechanically with hand held equipment without applying any herbicide and subsequently treating regrowth with an herbicide, as appropriate, as it emerges
4. Mechanical removal of the *Arundo* biomass, including excavation of the root mass, followed by monitoring and hand removal of regrowth, including root mass removal.

For removal method Number 1 (cut and paint), an approximate half-acre area of the site would be used. For removal method Number 2 (foliar spray), an estimated one-quarter acre area of the site would be used. For removal method Numbers 3 (cut, resprout, spray) and 4 (total excavation), an estimated 4-acre area and one-quarter acre area of the site would be used, respectively.

During Project Year 1, the mechanical removal of the *Arundo* would be accomplished by hand clearing the aboveground biomass to allow for the separation of the *Arundo* from native vegetation species. The *Arundo* stems would be cut off to approximately 12 inches above ground level using hand held

equipment such as loppers, chain saws, and power brush cutters. The material would be chipped using standard wood chipping equipment. The chipped materials would be less than approximately two inches in size and would be spread to a depth of approximately 12 to 18 inches for drying. Chipping and drying would occur outside and upland of the riverbed, within the project's construction staging area. The chipped material would then be offered at no charge to persons or organizations that wish to recycle the material in such a way that would preclude the reestablishment of the *Arundo*. Stockpiled materials that are not recycled would be removed from the site within 12 to 18 months of the initial chipping.

For those eradication techniques that would involve the use of herbicide treatments, a glyphosate-based herbicide would be applied. For the cut and paint technique (removal method Number 1), the herbicide would be applied immediately following the *Arundo* biomass removal. For the other methods that involve herbicide treatments (removal method Numbers 2 and 3), the herbicide applications would occur after all of the site's *Arundo* biomass has been removed. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water. Surfactants to be used in conjunction with any herbicide applications would be of the non-ionic formulation approved for use in water. None of the methods that involve herbicide applications would involve the use of a "R-11" surfactant. Examples of surfactants that may be used are Agri-Dex® and/or Activator-90®.

During Project Year 2, reapplication of a glyphosate-based herbicide would be completed within those areas of the demonstration site that are designated for either spraying or painting. The decision as to whether spraying or painting would implemented would be dependent upon the density of *Arundo* regrowth. For the area of the demonstration site designated for full *Arundo* removal, all regrowth would be removed using hand held tools. No heavy construction equipment would be used. Depending on the degree of regrowth, this activity may be necessary on a monthly, or possibly weekly basis during the peak-growing season.

During Project Year 2, the project's revegetation effort would also be initiated and native plant species would be propagated. The proposed revegetation pallet for the project includes: Freemont cottonwood (*Populus fremonti*); black cottonwood (*Populus trichocarpa*); western sycamore (*Platanus racemosa*); mexican elderberry (*Sambucus mexicana*); coyote bush (*Baccharis pilularis*); mulefat (*Baccharis salicifolia*); arroyo willow (*Salix lasiolepis*); red willow (*Salix laevigata*); sandbar willow (*Salix interi*), and various native grasses. The specific combinations and placement of this vegetation would be determined following an assessment of site conditions after the *Arundo* removal is completed. Annual monitoring efforts and reports would start during Project Year 2, and would continue throughout the restoration period.

During Project Year 3, *Arundo* removal activities would continue (mechanical removal and herbicide applications), and the proposed project's revegetation effort would be physically implemented. The revegetation effort would include placement of a temporary irrigation system by hand.

During Project Years 4, 5, and 6, project maintenance (i.e., re-spraying, re-painting, mechanical removal) would continue, as would irrigation operation and activities associated with maintaining the revegetated areas. At the end of Project Year 6, the irrigation system used for establishment of the revegetation effort would be removed by hand.

During Project Year 7, monitoring, reporting and public outreach and education would continue; however, there would be no physical alterations or activities associated with the project site.

As indicated above, starting in Project Year 2, the site would be monitored annually with annual reports submitted to the appropriate regulatory agencies. The key evaluation topics that would be addressed as part of the monitoring program include:

- Planting date(s)
- Planting methods
- Pounds per acre of seed or spacing
- Seedbed conditions at time of planting
- Adequate moisture
- Weed competition
- Applied irrigation
- Dates of spraying
- Plant vigor and recovery
- Plant survival
- Foliage height
- Resistance to drought
- Amount of resprouting per method
- Amount of retreatment per method
- Number of retreatments per method
- Amount and concentration of herbicide used for initial treatment and retreatments per method
- Pests
- Erosion control/ground cover density
- Sediment trapping ability
- Ability to control wind erosion
- Ability to control sheet and rill erosion
- Ability to control gully erosion
- Plant adaptation to site
- Clipping dates
- Produced biomass
- Purpose achieved
- Plant failure/anticipated failure
- Recommendations
- Costs per method (labor and equipment)
- Impacts noted per method
- "Lessons learned" and adaptations made to approach

Alternatives. For the purposes of the project's review under CEQA, three project alternatives have been identified. They include mechanical removal (Alternative 1), foliar spray applications with no mechanical removal (Alternative 2), and a No Project Alternative (Alternative 3).

Alternative 1 would involve mechanical cutting of targeted colonies and extensive stands of *Arundo* within the demonstration site. Due to the labor-intensive nature of this type of removal, the entire demonstration site would not be used. Selected stands would be cut to approximately ground level using hand tools and the cut stalks would be transported to the chipping area for chipping, drying and removal or donation to interested parties. The remaining *Arundo* rhizome root masses would then be entirely removed using hand shovels and picks. The next cutting would be in the spring, and it would be anticipated that repeat cuttings would have to occur a minimum of once a month, and potentially weekly during the active growing season to ensure that no leaf mass re-sprouts. This process would be repeated for Project Years 1 through 6, as with the proposed project, and would not involve biomass removal within the riverbed itself. Alternative 1 would result in several beneficial impacts, including decreased flood and fire hazard potential and limited revegetation with native plant species. However, Alternative 1 would not fully meet the intent of the proposed project to evaluate the effectiveness of

multiple *Arundo* removal techniques, and would also result in substantial earth disturbing activities and the greatest significant adverse noise impacts to the surrounding area. Section 6 of this EIR provides a summary of the advantages and disadvantages of the proposed project and its alternatives.

Under Alternative 2, the *Arundo* would be thoroughly sprayed without any cutting or vegetation removal. As for the proposed project, a glyphosate-based herbicide would be used. The dead *Arundo* biomass would be left in place and no mechanical cutting or chipping would occur. Re-sprouting materials would then be sprayed up to four times within any given year's monitoring period, as warranted by site-specific conditions, over the course of Project Years 2 through 6. This alternative would not include any revegetation with native plant species. Alternative 2 would not result in a significant adverse noise impact, and would additionally result in limited earth disturbing activities. However, as with Alternative 1, this alternative would neither meet the primary objective of the project to evaluate multiple *Arundo* eradication techniques, nor provide for the benefits of revegetating the site with native plant species. This alternative would also result in increased flood and fire hazards due to leaving the dead *Arundo* plant materials in place. As noted above, Section 6 of this EIR provides a summary of the advantages and disadvantages of the proposed project and its alternatives.

Under Alternative 3, no project-related activities would be undertaken and the *Arundo* would continue to proliferate within the project area. *Arundo* would continue to expand throughout the general project area, thereby excluding native riparian habitat and native wildlife, including many special status species. Additional detrimental effects would include degradation of water quality, competition with native plant species for light, water and space, increased erosion, and increased flood and fire hazards.

Summary of Impacts and Mitigations. The proposed project would result in potentially adverse impacts to air quality, biological resources, water resources, noise, and transportation. With the exception of noise related impacts, all adverse impacts associated with the proposed project can be mitigated to a level of less than significant.

The unavoidable significant impacts associated with noise are related to Project Year 1, during which time the number and operating time of hand held equipment for the cutting of *Arundo* in conjunction with chipping activities would exceed the County's noise-related significance criteria of 55 dBA L_{eq} at residential areas adjacent to the project site. However, it is noted that this activity would only occur for an estimated 30 days during Project Year 1. During project Years 2 through 6 there would be a substantial reduction in the number and operating time of the hand held equipment needed for the removal of resprouting *Arundo* material, and there would be no chipping activities; impacts associated with noise would thus be substantially reduced during these years. During Project Year 7 there would be no physical activities within the demonstration site and no impacts associated with noise would occur.

The proposed project would additionally result in beneficial impacts to biological resources, the adopted environmental goals and policies of Ventura County, visual resources, flood hazards, fire hazards and recreation.

Table ES-1 provides a summary of the potentially adverse impacts associated with the proposed project and the proposed mitigation measures to reduce their effects to less than significant. Section 6 of this EIR provides a comparison of the impacts associated with the proposed project and its alternatives.

Areas of Known Controversy. At the time of publication of this Final EIR, no known areas of controversy associated with the proposed project had been identified.

Issues to be Resolved. At the time of publication of this Final EIR, there were no unresolved issues associated with the proposed project.

ES-1 Summary of Potentially Significant Impacts and Mitigation Measures

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
Air Quality	Short-term emissions due to construction-related equipment and vehicles.	**A-1:** The construction contractor shall ensure that the following measures are implemented to reduce short-term construction-related emissions: • Minimize equipment idling time. • Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications. • Use alternatively fueled construction equipment, such as compressed natural gas, or electric, as feasible. • The engine size of construction equipment shall be the minimum practical size. • Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) shall be utilized wherever feasible. • The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time.	Less than significant.	Construction.
	PM_{10} emissions due to fugitive dust.	**A-2:** The construction contractor shall ensure that the following measures are implemented to reduce PM_{10} emissions due to fugitive dust: • The area disturbed by clearing should be minimized to prevent excessive amounts of dust. • Regular ground wetting of disturbed soils and unpaved areas should be conducted to control fugitive dust emissions. Reclaimed water, environmentally safe soil stabilization materials, or roll-compaction should be used whenever possible. • On-site vehicle speed should be limited to 15 miles per hour in unpaved areas. • During periods of high winds (i.e., wind speeds sufficient to cause fugitive dust to impact adjacent properties), all clearing operations should be curtailed to the degree necessary to prevent fugitive dust from being a hazard or a nuisance, either on-site or off-site. • Roadways in the vicinity of site access points should be swept as necessary to prevent the accumulation of silt. • Facilities shall be operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, "*Nuisance*," which states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."	Less than significant.	Construction.

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
Biological Resources	Potential direct impact to wetlands and riparian habitat due to vegetation removal.	**BR-1:** The ATF shall avoid and/or minimize for damage and/or loss of wetland and riparian vegetation types due to *Arundo* removal activities by completing the following: • Maximum avoidance of wetlands and riparian by identifying these areas and appropriate buffer zones • Maximum avoidance of riparian tree species by flagging trees with a Diameter at Breast Height (DBH) of 3 inches or greater • Implementation of the project's Revegetation Plan • Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator Once the delineated wetlands have been verified by the USACE, avoidance and impact minimization measures will be finalized. Avoidance will consist of identifying and flagging the adjacent wetland areas and riparian tree species with a DBH of 3 inches or greater to minimize impacts to wetland vegetation types. The ATF shall ensure the acquisition of all required State and Federal regulatory permits and approvals. The ATF shall additionally ensure implementation of the requirements of these permits and approvals to minimize potential impacts to wetland and riparian vegetation to the extent feasible.	Less than significant	Construction.
	Potential indirect impacts to wetlands due to altered hydrology.	**BR-2:** The purpose of this measure is to prevent temporary hydrologic alteration to wetlands and associated sensitive vegetation from soil disturbance activities associated with the project by requiring: • Appropriately timing work so that soil disturbance does not occur during the wet season (when surface water is present). Typically, the wet season extends from approximately November 1st through April 15th • Supervision and verification of the implementation of this measure by the VCWPD's Restoration Coordinator	Less than significant	Prior to and during construction.
	Potential indirect impacts to wetlands due to erosion, sedimentation and/or contamination.	Implementation of Best Management Practices (BMPs) for erosion/sedimentation and the Spill Prevention, Containment and Countermeasures Plan required by Mitigation Measure **WR-1**.	Less than significant impact.	Construction.
	Potential indirect impacts due to herbicide use.	**BR-3:** The purpose of this measure is to prevent permanent or temporary impacts to wetlands and associated sensitive vegetation and fauna during herbicide treatments of *Arundo*. All activities requiring herbicide treatment would: • Appropriately time work so that herbicides are not applied during the wet season to avoid potential impacts to downstream vegetation where feasible, and to avoid impacts to fish and wildlife species. Typically, the wet season extends from approximately November 1st through April 15th • Ensure that appropriate water-safe herbicides are used. Treatments will use a glyphosate-based herbicide including Rodeo® and/or Aquamaster®, both of which are labeled for use within water • Ensure that herbicides are applied at concentrations that are considered safe for biological resources within and adjacent to the project area. • Ensure that herbicides are mixed with a water soluble dye of low toxicity that highlights treated areas	Less than significant.	Construction and operation.

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
		• Minimize overspray of herbicides onto non-target species by disallowing spraying when wind velocities exceed 6 mph • Minimize trampling of native vegetation by establishing marked trails • Remove dead *Arundo* material that was foliar treated and left in place to avoid fire hazard potential prior to the start of the fire season. • Have a licensed professional conduct or oversee herbicides applications • Supervise and verify of the implementation of these measures by the VCWPD's Restoration Coordinator.		
	Potential direct impacts to Special Status Plant Species.	**BR-4:** The ATF shall avoid impacts to special status plant species by: • Conducting pre-construction surveys for special status plant species • Mapping and flagging any special status plant species within or adjacent to the proposed project area during construction to protect them • Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator. Prior to construction, the location of special status plant species will be determined through appropriately-timed surveys according to California Native Plant Society (CNPS) protocol; this shall apply to all areas of the proposed project including: the five acre demonstration site, the staging area, and the access road. Determination of potential habitat for rare species, and surveys conducted for presence of rare plant species will be performed by a qualified botanist or biologist. These surveys will be appropriately timed to cover the blooming periods of the special status plant species with the potential to occur in the area. Any rare plant species within the proposed project area (including a 50-foot wide buffer zone on each side of the project's work areas) will be flagged and accurately mapped on construction plans to protect the area occupied by the species during construction. Flagging shall be supervised by the VCWPD's Restoration Coordinator, and appropriate buffer distances from the rare plant population shall be determined by him or her. The VCWPD's Restoration Coordinator shall have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where potential erosion may impact a special status plant species or its habitat. Compliance with these measures prior to and during construction will be supervised and verified by the VCWPD's Restoration Coordinator.	Less than significant	Construction.
	Potential impacts due to wildlife habitat removal.	**BR-5:** The ATF shall ensure pre-construction biological resource surveys to identify the location of sensitive biological resources. Pre-construction surveys will be consistent with all survey protocols and requirements stipulated by resource agencies as a condition of project approval. Sensitive resources shall be clearly mapped and marked on construction drawings or project maps before construction in these areas.	Less than significant.	Prior to and during construction.
		BR-6: The VCWPD's Restoration Coordinator shall ensure the staking and flagging of identified sensitive resources before construction activities begin. The VCWPD's Restoration Coordinator shall also inspect all areas with sensitive resources prior to construction to ensure that staking and flagging (i.e., native riparian with a DBH of 3 inches or greater), and required setback buffers are maintained. Avoidance measures and buffer distances vary for each species and are specified for some species in Mitigation Measures BR-11, BR-12, and BR-13. The specific buffer zone distance will be determined by the appropriate resource agencies (CDFG and USFWS).	Less than significant.	Prior to and during construction.

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
		BR-7: The ATF shall acquire all permits and authorizations required by Federal, State, regional and local jurisdictions to proceed with the proposed project.		
	Wildlife mortality.	See **BR-5** above. See **BR-6** above. **BR-8:** The ATF or its construction contractor shall ensure that all construction personnel comply with the following: • Litter or other debris that may attract animals shall be removed from the project area on a daily basis • No pets will be allowed in the construction area **BR-9:** The ATF shall use qualified inspectors, biologists, and/or resource specialists to monitor construction activities. A biological resource monitor or the VCWPD's Restoration Coordinator shall be present as needed for *Arundo* removal efforts requiring mechanical removal. The VCWPD's Restoration Coordinator or his/her designated monitor(s) shall be responsible for pre-construction surveys, staking sensitive resources, on-site monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. All personnel undertaking these activities shall be familiar with the wildlife species and other sensitive biological resources in the general project area and qualified to recognize potential construction effects to these resources, and shall ensure that State and/or Federal wetland/riparian and special status species protection guidelines are followed. **BR-10:** Where construction would occur within or near known or potential special status species habitat, as defined below, the ATF shall perform the actions defined in the following paragraphs. • **Southern Steelhead Trout and Arroyo Chub.** Potential impacts to southern steelhead trout and arroyo chub can be mitigated by limiting *Arundo* removal and ongoing control activities to periods where surface water is not present within the project site (Mitigation Measures BR-2 and BR-14). • **California Red-Legged Frog.** The ATF shall ensure completion of pre-construction surveys (Mitigation Measure BR-5) to determine if this species is present within or immediately adjacent to the project area. If pre-construction surveys identify red-legged frogs within or adjacent to the project, then no more than one week prior to the start of construction, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored and appropriate measures taken during construction to ensure that any relocated animals do not move back into the construction corridor. To further minimize impacts to California red-legged frogs and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods when surface water is not present near the site. • **Western Spadefoot Toad.** To minimize impacts to western spadefoot toad and other aquatic species, *Arundo* removal and ongoing control activities shall be limited to outside	Less than significant.	Prior to and during construction.

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
		the breeding period and/or when surface water is not present within the project site. This species, however, could be impacted in burrows that may occur within the project area. In order to minimize impacts to this species, the ATF shall ensure pre-construction surveys to determine if this species is present. If pre-construction surveys identify western spadefoot within or adjacent to the project, then no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety. • **Two-Striped Garter Snake.** In areas within the project that are known to or potentially could support two-striped garter snake habitat (i.e., aquatic habitat), the ATF shall ensure pre-construction surveys (Mitigation Measure BR-5) to determine if this species occurs in the project area. If pre-construction surveys have identified two-striped garter snake within or adjacent to the project, then, no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the wildlife biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored during construction to ensure that any relocated animals do not move back into the project area. The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals of relocated species do not move into the construction corridor. To further minimize impacts to two-striped garter snake and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within the project site (Mitigation Measures BR-6 and BR-14). • **Southwestern Pond Turtle.** Where construction is to occur near known or potential habitat for southwestern pond turtle (i.e., near ponded water), pre-construction surveys shall be conducted to determine the presence or absence of this species (Mitigation Measure BR-5). If pond turtles are observed, a determination shall be made in consultation with CDFG as to whether or not construction will adversely impact this species and what measures shall be implemented. To further minimize impacts to southwestern pond turtle and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within or near the project site (Mitigation Measures BR-2 and BR-14). **BR-11:** *Arundo* removal and ongoing control activities shall be limited to periods outside the respective breeding season of the potentially affected species. All construction-related and ongoing *Arundo* control activities shall be limited to a period outside the known breeding period for great blue heron, great egret, western yellow-billed cuckoo, southwestern willow flycatcher, olive-sided flycatcher, least Bell's vireo, yellow-breasted chat, yellow warbler, tricolored blackbird, and Lawrence's goldfinch where feasible (October 1 through March 1). (No pre-construction surveys will be required for activities that occur within this period. If construction is required outside this period, the ATF will consult with CDFG and the USFWS to determine appropriate mitigation to avoid impacts to these species.)		

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
		BR-12: The ATF shall avoid disturbance to active raptor nests within or near the project. No pre-construction surveys shall be required if construction activities are to occur only during the non-breeding season for raptors (September 1 through January 31). If, however, construction activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys of all potentially active nest sites within 500 feet of the construction corridor shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species such as northern harrier and short-eared owl. If surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required. If active nests are found, a 500-foot no-disturbance buffer shall be established around the active nest(s). The size of individual buffers can be adjusted, following a site evaluation by a qualified biologist, which shall depend upon the presence of topographical features that obstruct the line of sight from the construction activities to the nest and the observed sensitivity of the birds. Site evaluations and buffer adjustments shall be made in consultation with the local CDFG representative. The portion of the project that is within the designated buffer shall be identified in the field by staking and flagging (Mitigation Measure BR-6).		
	Wildlife disturbance from increased human presence.	See **BR-4** through **BR-6** above. See **BR-10** through **BR-12** above.	Less than significant.	Prior to and during construction.
	Habitat removal or disturbance of special status wildlife species.	See **BR-5** through **BR-12** above. **BR-13:** No construction activity shall be permitted until the applicable resource agencies determine that the proposed mitigation will result in less than significant impacts to the affected species.	Less than significant.	Prior to and during construction.
	Construction impacts on aquatic biota.	**BR-14:** To avoid or minimize potential impacts to special status aquatic species, the ATF shall limit all *Arundo* removal activities and ongoing control activities to periods outside the wet season where feasible, and when areas within the project site do not support surface water. The allowable distance between the project activities and surface water shall be determined in consultation with the USFWS, NOAA Fisheries Service, and the CDFG.	Less than Significant.	Construction and operation.
Noise	Construction-related noise levels in exceedance of the County's significance criteria of 55 dBA L_{eq} adjacent to residential areas.	**N-1:** Use of loud hand held construction equipment such as chain saws or heavy-duty construction equipment or trucks shall not occur between the hours of 7 p.m. and 7 a.m., and equipment engine covers should be in place and mufflers shall be in proper working condition.	Unavoidable significant impact.	Construction.
Transportation & Circulation	Frequent truck/vehicle crossings of the Ojai Valley Trail during construction.	**T-1:** Signs shall be posted on the Ojai Valley Trail warning bicyclists of heavy-duty truck crossings. The signs shall be posted approximately 100 feet north and south of the of the active construction access road, at least one week prior to the use of the trail crossing. The signs shall be maintained for the entire period when trail crossing is used.	Less than Significant.	Prior to and during construction.
Water Resources	Water quality surface impacts	**WR-1** The designated contractor shall develop and be prepared to implement a Spill Prevention, Containment and Countermeasures Plan that specifies construction equipment fueling procedures, equipment maintenance procedures, herbicide mixing and application procedures and containment and cleanup measures to be followed in the event of a spill. The Plan, at a minimum shall include: • The handling and storage of construction equipment and maintenance fluids (oils, fuels,	Less than Significant.	Prior to and during construction.

Environmental Resource Area	Potentially Significant Impact	Proposed Mitigation Measure	Residual Impact	Implementation Phase
		etc.) shall be undertaken outside of the riverbed within the project's staging area. Fluids shall be stored within the staging area in closed containers and disposed of promptly and properly away from permeable areas to prevent potential contamination of the project area. The re-filling of herbicide tanks for foliar spray applications shall also occur outside of the riverbed within the project's staging area. • Immediate control, containment, and cleanup of fluids and herbicides due to spills or equipment failure (broken hose, punctured tank, etc.). All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills, the refueling of portable equipment shall occur within a contained area. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Refueling activities shall ensure that the potential for spillage from overfilling, nozzle removal, or other action is minimized to the extent feasible. • All on-site workers will be briefed on environmental concerns regarding the project, including the use of herbicides, and appropriate work practices (including spill prevention and response measures). The construction contractor shall monitor all construction-related activities to ensure that all of the environmental protection measures are followed throughout initial project activities and subsequent activities. • **WR-2:** The ATF or its construction contractor shall ensure that no project activity occurs in the wet season (November 1st through April 15th) or when surface water is present where feasible.		

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Arundo donax (sometimes referred to as "giant cane" or "giant reed," and herein referenced as "*Arundo*") is an invasive, non-native perennial plant that has become established and is spreading widely in riparian ecosystems throughout California. The invasiveness of *Arundo* can substantially affect native biological resources, water conservation, flood control, and fire risk. Once introduced, *Arundo* forms extensive rhizome systems that require human intervention to remove. Several techniques have been identified for the removal. However, the cost and effectiveness of these techniques varies considerably, and a major impediment to the establishment of effective removal management strategies is a lack of experience-specific biological information (Holt, 2001).

Within the Ventura River watershed, *Arundo* has severely impacted native vegetation and wildlife habitat. Negative effects associated with the establishment of *Arundo* within the watershed have included:

- Displacement of riparian habitat through monopolization of soil moisture
- Displacement of riparian habitat due to shading
- Reduction in the food supply (particularly insects) of riparian dependent wildlife
- Reduction in the shading of surface water, thereby resulting in higher water temperatures and lower dissolved oxygen content
- Reduction in groundwater availability through rapid transpiration
- Alterations in channel morphology by retaining sediments and constricting flows
- Increased fire fuel loads, thereby encouraging wild fires
- Increased bank erosion due to shallow root systems.

Several special status wildlife species, including, but not limited to, the southern steelhead trout (*Oncorhynchus mykiss*) would greatly benefit from the removal of *Arundo* and the restoration of native riparian habitat.

The Ventura County (County) Arundo Task Force (ATF), as detailed below, was formed to address issues associated with reducing or eliminating *Arundo*. Ultimately, the goal of the ATF is to reduce or eliminate *Arundo* throughout the entire Ventura River watershed, as well as other watersheds within the County. As a preliminary step toward this goal, the ATF proposes to implement a five-acre demonstration site to evaluate the effectiveness and practibility of four different methods of *Arundo* removal, evaluate six different types of native plant revegetation treatments, and increase public awareness regarding the benefits of *Arundo* removal. Details regarding the proposed project are provided in Section 4 of this Environmental Impact Report (EIR).

1.2 PROJECT OBJECTIVES

The primary objective of the proposed project is to generate real cost and removal methodology data of *Arundo* for effective planning and implementation of future *Arundo* removal projects within the Ventura River watershed, as well as other watersheds within the County. Other key objectives of the proposed

project are to provide local land owners and land managers with recommendations for feasible *Arundo* removal approaches, and to educate the public regarding the various benefits associated with establishing healthy and functional watersheds within the County. The proposed project would also establish the ATF as an entity that can provide various forms of technical and monitory aide for future *Arundo* removal projects.

In addition to the above, implementation of the proposed project's various revegetation techniques would allow the ATF to develop recommendations for land owners, land managers, special interest groups and the general public regarding optimum native plant spacing, selection, establishment, and maintenance.

Lastly, the proposed project is intended to establish "on the ground" data in tandem with other habitat improvement projects and studies within the Ventura River watershed, such as the Matilija Dam Removal Project and the Ventura River Habitat Conservation Plan.

1.3 PROJECT PROPONENTS AND SPONSORS

The ATF is a consortium of federal, state and local agencies, property owners, and local special interest groups. Members and affiliates of the ATF include:

- Natural Resources Conservation Service
- Ventura County Resource Conservation District
- Ventura County Watershed Protection District
- U.S. Army Corps of Engineers
- California Department of Fish and Game
- U.S. Fish and Wildlife Service
- California Exotic Pest Plant Council
- U.S. Congressman Elton Gallegly
- Ventura County Fire Department
- California State Parks Department
- Channel Islands Parks
- City of Ventura
- City of Thousand Oaks
- California South-Central Coast Watersheds Restoration Program.
- Ojai Valley Land Conservancy
- Surfrider Foundation
- California Conservation Corps
- Hill Canyon Conservancy
- California Coastal Conservancy
- National Park Service, Santa Monica Mountains
- Friends of the Santa Clara River
- Valley View Ranch
- U.S. Forest Service
- U.C. Cooperative Extension
- U.S. Navy, Pt. Mugu Naval Air Station
- California Nature Conservancy
- MESA Project (Matilija Environmental Science Area Society and Ventura County Superintendent of Schools Office)
- Ventura County Environmental & Energy Resources Department

Within the ATF, the Ventura County Resource Conservation District, the Ventura County Watershed Protection District (VCWPD), and the Natural Resources Conservation Service are the primary agencies that would oversee the proposed project under the ATF's direction.

2. LEGAL AUTHORITY AND ENVIRONMENTAL REVIEW PROCESS

The proposed Ventura River *Arundo* Removal Demonstration Project is located along the east bank of the Ventura River in the County of Ventura, California (Figure 2-1). The proposed project is a seven-year program that includes initial *Arundo* removal using four different techniques, followed by repeat removal treatments, native plant re-establishment, and revegetation monitoring. The project additionally includes public outreach and education. Details regarding the proposed project, including regional and site-specific location maps, are provided in Section 4.

The following sections provide a summary of the project's legal authority under the California Environmental Quality Act (CEQA), the purpose and scope of this EIR, the project's Responsible and Trustee Agencies under CEQA, information regarding the project's Mitigation Monitoring Plan, and a summary of the various regulatory approvals and permit requirements that would be necessary for implementation of the proposed project.

2.1 LEGAL AUTHORITY

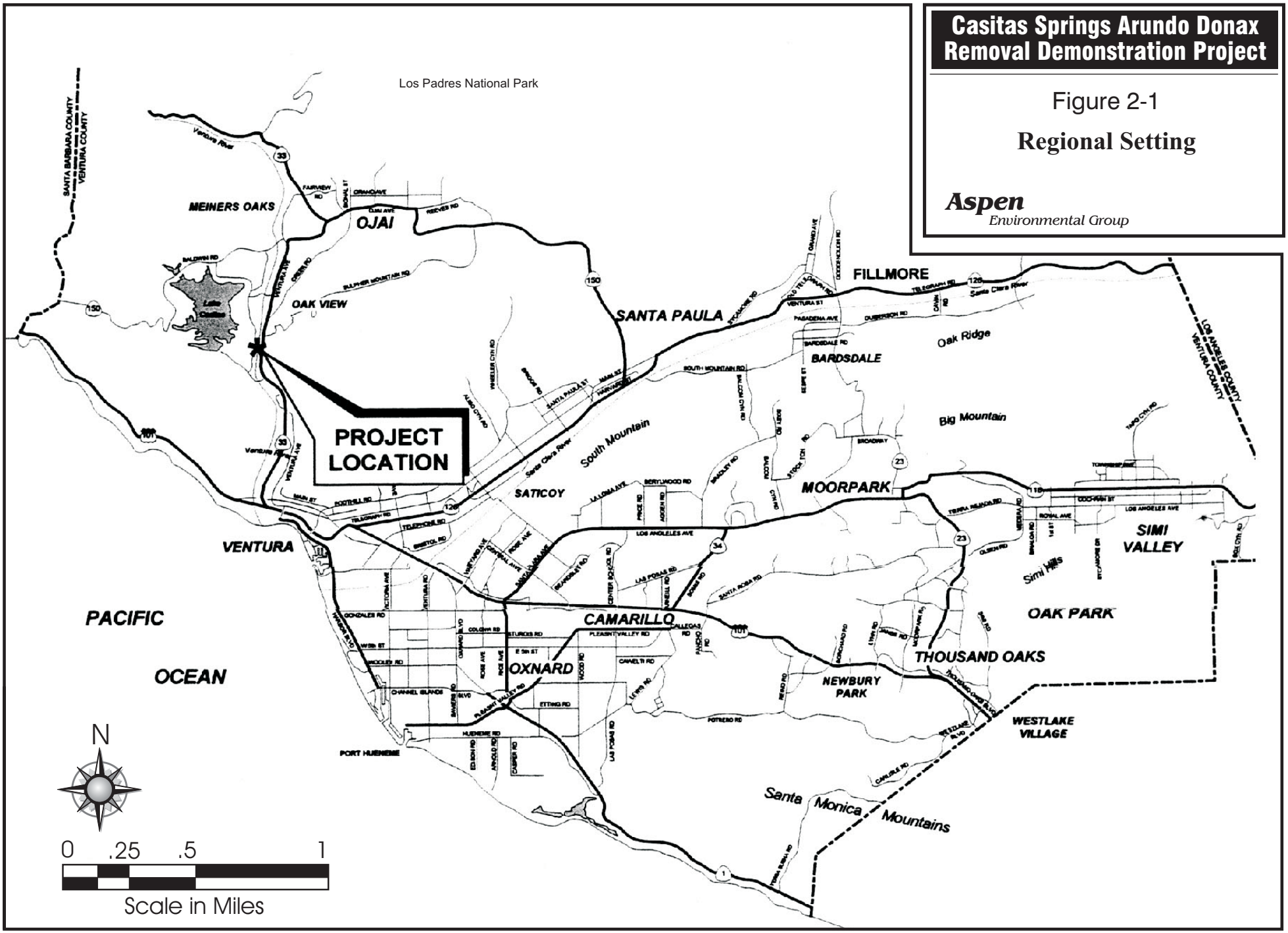
CEQA requires State, regional, and local agencies, including special purpose "Districts," to prepare an environmental review document for any discretionary action that may have the potential to significantly affect the quality of the environment. Under CEQA, a Lead Agency is the governmental agency that has the principal responsibility for carrying out or approving a proposed project, and therefore, the principal responsibility for preparing, or causing the preparation of, CEQA-related documents. The proposed project area is located within the Ventura River, which is primarily managed by the VCWPD. Consequently, for the purposes of CEQA, the VCWPD is acting as the Lead Agency.

2.2 DOCUMENT PURPOSE AND SCOPE

To satisfy the requirements of CEQA, the VCWPD has prepared this EIR to evaluate the proposed project and its alternatives. The primary purposes of the EIR are to:

- Disclose the project's potential environmental impacts (including both detrimental and beneficial effects) to the VCWPD Board of Supervisors and the public
- Identify ways to avoid or reduce environmental damage (referred to as mitigation)
- Prevent environmental damage by requiring either the implementation of a feasible alternative (if warranted), or implementation of identified mitigation measures
- Foster interagency coordination in the review and approval of the project
- Encourage public participation in the planning process.

Based upon a preliminary environmental analysis for the proposed project, as well as a preliminary draft environmental review for proposed flood control improvements immediately adjacent to the proposed demonstration site (Padre, 2003), the VCWPD and ATF determined that preparation of an EIR for the proposed project was warranted due to potentially significant impacts associated with biological resources, water resources and noise. As a consequence, an Initial Study for the proposed project was not prepared. Section 15063 of the CEQA Guidelines allows a Lead Agency to bypass the


Casitas Springs Arundo Donax Removal Demonstration Project
Figure 2-1
Regional Setting
Aspen Environmental Group
Los Padres National Park
PROJECT LOCATION
MEINERS OAKS
OJAI
OAK VIEW
SANTA PAULA
FILLMORE
BARDSDALE
Oak Ridge
Big Mountain
South Mountain
SATICOY
MOORPARK
SIMI VALLEY
VENTURA
CAMARILLO
OXNARD
PACIFIC OCEAN
OAK PARK
THOUSAND OAKS
NEWBURY PARK
WESTLAKE VILLAGE
PORT HUENEME
Santa Monica Mountains
Simi Hills
Lake Casitas
Ventura River
Santa Clara River
SANTA BARBARA COUNTY
VENTURA COUNTY
LOS ANGELES COUNTY
VENTURA COUNTY
N
0 .25 .5 1
Scale in Miles

preparation of an Initial Study if it determines at the outset of a project's environmental review process that a potentially significant impact may occur.

Based upon the above, the primary focus of this EIR is on biological resources, water resources and noise. However, to ensure that potential impacts to all environmental resources are adequately evaluated, this EIR additionally evaluates those issue areas and resources that are typically assessed within the context of an Initial Study pursuant to Ventura County's "Initial Study Assessment Guidelines" (County of Ventura, 2000), including:

- General Plan Environmental Goals and Policies
- Land Use
- Air Quality
- Mineral Resources
- Agricultural Resources
- Visual Resources
- Cultural and Paleontological Resources
- Coastal Beaches and Sand Dunes
- Energy Resources
- Seismic Hazards
- Geologic Hazards
- Hydraulic Hazards
- Aviation Hazards
- Fire Hazards
- Hazardous Materials and Waste
- Public Health
- Transportation and Circulation
- Water Supply
- Waste Treatment and Disposal
- Utilities
- Flood Control and Drainage Facilities
- Law Enforcement and Emergency Services
- Fire Protection
- Education
- Recreation

The evaluation of these issues/resources is found in Section 10 of this EIR.

In addition to the above, growth-inducing impacts, cumulative impacts, and irreversible environmental changes have been evaluated as well (Section 11).

2.3 RESPONSIBLE AND TRUSTEE AGENCIES

A Responsible Agency is an agency other than the Lead Agency that has a legal responsibility for carrying out or approving a proposed project. Responsible Agencies must actively participate in the Lead Agency's CEQA process, review the Lead Agency's CEQA document, and use the CEQA document when making a decision on the proposed project. A Trustee Agency is an agency that has jurisdiction over certain environmental resources held in trust for the people of California, but does not have legal authority over approving or carrying out a proposed project. Trustee Agencies are typically notified regarding CEQA related documents germane to their jurisdiction, although they may not have actual permitting authority or approval power over a proposed project.

Pursuant to CEQA Guidelines Section 15082, the VCWPD transmitted a Notice of Preparation (NOP) to prepare an EIR for the proposed project to all relevant Responsible and Trustee Agencies on April 11, 2003. All Responsible and Trustee Agency comments on the scope and content of the EIR were requested by no later than May 11, 2003. A copy of the NOP is provided in Appendix C. Only one comment letter was received on the NOP. This letter was received from the California Department of Transportation, District 7, Regional Planning. The letter requested that issues associated with storm water runoff, potential traffic impacts to State Route 33, existing traffic volume Levels of Service

(LOS), appropriate traffic-related mitigation measures, and limiting the transportation of heavy equipment to off-peak hours be addressed in the EIR.

A Draft EIR for the proposed project and its alternatives was made available for public and agency review on June 16, 2003. A copy of the Notice of Availability for the Draft EIR is also found in Appendix C. The public and agency review and comment period for the Draft EIR extended from June 16, 2003 through July 30, 2003. In addition, the Ventura County Environmental Report Review Committee (ERRC) discussed the project and the Draft EIR on August 6, 2003. The general public and regulatory agency representatives were additionally provided with the opportunity to comment on the proposed project at that time.

Four comment letters were received on the Draft EIR, including correspondence from the California Department of Transportation, the California State Coastal Conservancy, the Ventura County Air Pollution Control District, and City of San Buenaventura. These comment letters and their corresponding responses are provided in Appendix A of this Final EIR. No interested parties other than members of the ERRC commented on the Draft EIR at the August 6th ERRC hearing. Modifications to the text of the Draft EIR that have been made in response to agency and ERRC comments are indicated in this Final EIR by vertical lines placed in the right-hand margin of the document's pages. No modifications to the document's overall impact conclusions have occurred as a result of the comment and response process or its finalization.

2.4 MITIGATION MONITORING PLAN

Sections 15091(d) and 15097 of the CEQA Guidelines require a Lead Agency to adopt a Mitigation Monitoring Plan (or Program) when it adopts an environmental review document that contains mitigation measures as part of a proposed project's approval process. The Mitigation Monitoring Plan is implemented to ensure that the mitigation measures identified in the environmental review document are appropriately implemented to reduce or eliminate potential environmental impacts. A Mitigation Monitoring Plan for the proposed project is included as Appendix B of this Final EIR for adoption by the Ventura County Watershed Protection District Board of Supervisors when it certifies the Final EIR.

3.1 FEDERAL REGULATORY SETTING AND PROJECT APPROVALS

Regulatory Setting

Endangered Species Act of 1973, As Amended (16 USC 1531 et seq.). The Federal Endangered Species Act (ESA) of 1973, and Title 16 (implementing regulations) of the United States Code of Federal Regulations (CFR) 17.1 et seq., designate and provide for protection of threatened and endangered plants and animals and their critical habitat. Procedures for addressing federally listed species and critical habitat follow two principal pathways, both of which require consultation with the USFWS (which administers the Act for all terrestrial species) or National Oceanic and Atmospheric Administration (NOAA) Fisheries Service (which administers the Act for listed anadromous fish species, such as southern steelhead). The first ESA pathway applies in situations where a non-federal party must resolve potential adverse impacts to species or critical habitat protected under the Act. These cases typically require the preparation of a Habitat Conservation Plan (HCP), pursuant to Section 10 of the Act. The second ESA pathway is specified in Section 7 of the Act and involves projects with a federal nexus; typically these are projects where a federal agency is sponsoring or permitting the proposed activity. In these instances, the federal Lead Agency initiates and coordinates the following steps:

- Informal consultation with USFWS and NOAA Fisheries Service to establish a list of target species
- Preparation of a Biological Assessment assessing potential for the project to adversely affect federally listed species or adversely modify critical habitat
- Coordination between state and federal biological resource agencies to assess impacts/proposed mitigation
- Development of appropriate mitigation for all significant impacts on federally listed species.

In some cases, the U.S. Fish and Wildlife Service (USFWS) or NOAA Fisheries Service concurs with the federal lead that the proposed activity is not likely to adversely affect a federally listed species or to adversely modify designated critical habitat. This concurrence closes the Section 7 consultation process, unless additional information comes to light warranting re-initiation of consultation. More often, full formal Section 7 consultation is required, culminating in the USFWS or NOAA Fisheries Service issuing a Biological Opinion (BO) on whether the project will jeopardize the continued existence of a federally listed species and/or adversely modify designated critical habitat. If a jeopardy BO is anticipated, the USFWS and/or NOAA Fisheries Service must identify a Reasonable and Prudent Alternative (RPA) in their draft BO that would avoid jeopardy of the species or adverse modification of designated critical habitat. A conference BO may be issued in those instances in which species or critical habitat proposed for federal listing or designation, respectively, would likely be adversely affected or might be adversely modified. In the more typical non-jeopardy and non-adverse modification cases, the BO typically provides an Incidental Take Permit for the "taking" of a federally listed species that is incidental to the lawful operation of a project. To qualify for this exemption from Section 9 of the Act, the permittee must adhere to any terms and conditions specified in the BO.

Critical Habitat Designation. Under Section 7(a)(2) of the Endangered Species Act, the USFWS or NOAA Fisheries Service must, in most cases, officially designate specific areas as critical habitat for a federally listed threatened or endangered species. Federal agencies must then ensure that any action they authorize, fund, or carry out is not likely to result in habitat destruction or adverse modification of the designated areas.

The Ventura River is designated critical habitat for the southern steelhead (Federal Register Vol. 65, No. 32). Removal of an invasive species, such as *Arundo*, would be expected to enhance riparian habitat and thereby provide some benefit to southern steelhead over the long term; however, it is expected that consultation or coordination with NOAA Fisheries Service would still be required to address the effects of the proposed action.

Clean Water Act of 1972, As Amended. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the U.S. Army Corps of Engineers (USACE). The definition of waters of the United States includes wetland areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may veto a USACE permit. Substantial impacts to wetlands or other waters of the U.S. may require a Standard Permit, which is a type of USACE Individual Permit (Letters of Permission are the other type). Projects that only minimally affect wetlands and other waters of the U.S. may be eligible for a General Permit, either a Nationwide Permit or a Regional General Permit.

Regional General Permit No. 41, issued August 15, 1996 and reissued August 17, 1998 for a five-year term, authorizes invasive, exotic plant control projects in the Los Angeles District involving mechanized removal from waters of the U.S. The State Water Resources Control Board issued Section 401 Water Quality Certification for RGP 41 on August 18, 1998. Projects intended to enhance habitat are authorized, whether or not there would be a flood control benefit; projects solely intended to provide a flood control benefit are not authorized. In addition, eligible projects are 0.5-acre or larger partially infested stands (50 percent or more infested by exotic species) or fully infested stands (80 percent or more infested by exotic species). The size of the project area (approximately 5 acres) and the level of infestation (substantially higher than 50 percent) indicate that this project would qualify for authorization under RGP No. 41.

Executive Order 11990, Section 1(a) established a policy of "no net loss" of wetlands. Compensation for wetland impacts may include restoration, creation, or enhancement. In rare cases, preservation of high quality wetlands is considered in compensating wetland impacts. In most cases, the USACE seeks to compensate for wetlands impacts at a 1:1 or higher ratio. Executive Order 11990 would apply if the project would result in a net loss of wetlands. However, it is anticipated that the proposed project would be exempt since it would not result in a loss of wetlands and would ultimately increase the functions and values of the area's existing wetlands.

Section 106 of the National Historic Preservation Act. When project activities would adversely affect historic properties and there is federal involvement (funding, authorization, etc.) on the project, the lead federal agency undertakes consultation pursuant to Section 106 of the National Historic Preservation Act of 1966. Consultation is only required for those historic properties listed or eligible for listing on the National Register of Historic Places (NRHP). Historic properties include any prehistoric or historic structure, district, site, building, or object included on or eligible for inclusion on the NRHP. Listing eligibility is determined by the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) and the federal lead agency, using the criteria listed in 36 CFR 60.4 (e.g., the site yielded, or may be likely to yield, information important to prehistory or history). If the USACE is the federal lead agency and the proposed work in the USACE's permit area would affect a historic property, the USACE would coordinate with in-house archaeological staff and the SHPO/THPO to determine whether the site is eligible for listing (if it is not already listed). If the site is listed or is eligible, consultation for the effects on the historic property would begin, culminating in a Memorandum of Agreement (MOA) that specifies the measures the federal lead would take to avoid or reduce effects on the historic property. These MOAs are normally signed by the Federal lead, SHPO/THPO, and the Advisory Council on Historic Preservation. As outlined in Section 10.7 of this EIR, no historic properties or resources listed or eligible for listing under the NRHP have been identified and no impacts to cultural or paleontological resources are anticipated to occur. Therefore, a Section 106 consultation for the proposed project and its alternatives would not be necessary.

Federal Project Approvals

U.S. Army Corps of Engineers. The project will require a Notice to Proceed from the USACE to use Regional General Permit (RGP) Number 41 for the removal of invasive, exotic plants. The USACE will probably informally consult with the NOAA Fisheries Service and, if required, the USFWS, to satisfy the requirements of the Federal Endangered Species Act. The State Water Resources Control Board issued Water Quality Certification (WQC) for RGP No. 41 on August 13, 1998. Consistent with this WQC, the State Water Resources Control Board, Water Quality Certification Program will be notified in writing of the proposed project and the use of RGP No. 41 at least 30 days prior to the anticipated start of project activities.

3.2 STATE REGULATORY SETTING AND PROJECT APPROVALS

Regulatory Setting

California Environmental Quality Act (CEQA) of 1970 (Public Resources Code Section 21000-21177; Guidelines at Section 15000 et seq.). CEQA establishes requirements and procedures for State and local-agency review of the environmental effects of projects proposed within their jurisdictions. CEQA requires the preparation of an EIR for projects that may significantly affect the environment. CEQA Guidelines also stipulate that a plant or animal that is not listed but can be shown to meet criteria for listing under the Endangered Species Act shall be given the same consideration as a listed species. The ATF has prepared this Draft EIR for the proposed project as a result of potentially significant impacts to biological resources, water resources, and noise.

California Endangered Species Act. Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the authority of the California Endangered Species Act of 1984. The Native Plant Protection Act of 1977, Fish and Game Code Section 1900 et seq., gives the California Department of Fish and Game authority to designate state Endangered, Threatened, and Rare plants and provides specific protection measures for identified populations.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. Guidelines for Implementation of the California Environmental Quality Act of 1970 (CEQA Guidelines), Title 14, CCR Section 15065 ("Mandatory Findings of Significance") requires that a reduction in numbers of a rare or endangered species be considered a significant effect. Section 15380 ("Rare or endangered species") provides definitions and provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society's Lists 1A, 1B, and 2 would typically be considered under CEQA.

California Streambed/Lake Alteration Agreements. Sections 1601-1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The Department may also regulate the removal of vegetation along a stream. The Department reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the Department and the applicant is the Streambed (or Lake) Alteration Agreement. Often, projects that require a Streambed/Lake Alteration Agreement also require a permit from USACE under Section 404 of the Clean Water Act. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

Section 1603 requires that private entities obtain a Streambed or Lake Alteration Agreement from the Department of Fish and Game prior to undertaking any construction activity within streambeds, including all intermittent as well as perennial streams, or lake, respectively. Section 1601 imposes similar requirements on State and local government agencies. Through these agreements, the Department attempts to ensure that any approved construction activity is protective of stream or lake resources through design, construction planning, and specific mitigation measures. The proposed project would require a Section 1601 permit for implementation (see below).

Section 401 Water Quality Certification. Section 401 of the Clean Water Act grants each state the right to ensure that the State's interests are protected on any federally permitted activity occurring in or adjacent to Waters of the State. In California, the authority to protect the State's waters is administered by the Regional Water Quality Control Boards. If a proposed project requires a USACE Section 404 permit, falls under other federal jurisdiction, and has the potential to impact Waters of the State, the applicable Regional Water Quality Control Board will regulate the project and associated activities

through a Water Quality Certification (WQC) (Section 401), which verifies that the project activities will comply with State water quality standards. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the Regional Board has the option to regulate the project under its state authority (Porter-Cologne Act) in the form of Waste Discharge Requirements or a Waiver of Waste Discharge Requirements. As discussed above, if USACE authorization is required, the project would likely qualify for RGP No. 41, which received WQC on August 18, 1998.

Section 402 National Pollution Discharge Elimination System (NPDES). Section 402 of the Clean Water Act (CWA) authorization can be required for projects not requiring Section 404, Section 401, or Section 1601/1603 authorization (e.g., cutting an access road in a totally upland area). Under Section 402 of the CWA, construction projects involving the disturbance of 1 (reduced from 5 acres as of March 10, 2003) or more acres of soil are prohibited unless the discharge is in compliance with an NPDES permit. The State Water Resources Control Board (SWRCB) has issued a statewide General Permit (Water Quality Order 99-08-DWQ) that applies to all storm-water discharges associated with construction activity. All discharges, where construction activity disturbs one or more acres, must notify the SWRCB and prepare and implement an approved Storm Water Pollution Prevention Plan (SWPPP), specifying Best Management Practices (BMPs) that will prevent construction pollutants from contacting storm water, including measures to ensure that all products of erosion are kept from moving off site into receiving waters.

The SWRCB has also issued a statewide General Permit (General Permit No. CAG990003) authorizing the discharges of aquatic pesticides to waters of the United States by public entities (federal government or state, county, city and county, city, district, public authority, or public agency) engaged in resource or pest management activities. This General Permit applies in those cases where the aquatic pesticide is applied directly to the water body (i.e., standing or flowing water) and/or directly to organisms (e.g., *Arundo*) in the water or on the water surface with the purpose and intent of killing the target aquatic organisms. These dischargers must notify the SWRCB of their intent to discharge, follow all pesticide label instructions and any Use Permits issued by the County Agricultural Commissioner, implement BMPs, and comply with monitoring requirements. For the proposed project, it is highly unlikely that herbicides would be applied to standing or flowing water bodies or directly to invasive plants in the water or on the water surface; in which case, General Permit No. CAG990003 would not be required.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515. Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles and amphibians, and fish. Species that are fully protected by these Sections may not be taken or possessed at any time. The Department cannot issue permits or licenses that authorize the “take” of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. Specific sections of the California Fish and Game Code pertinent to the proposed project include:

- Section 3503 (which prohibits the taking, possession, or needless destruction of the nest or eggs of any bird)
- Section 3503.5 (which prohibits the taking, possession, or destruction of any bird in the order Falconiformes or Strigiformes [birds-of-prey] or the taking, possession, or destruction of the nest or eggs of any such bird)
- Section 3513 (which prohibits the taking or possession of any migratory non-game bird as designated in the Migratory Bird Treaty Act).

Project Approvals

Regional Water Quality Control Board. Authorization pursuant to the State Water Resources Control Board's Section 402 General Permit (99-08-DWQ) for Storm Water Discharges Associated with Construction Activity may be required for the proposed project. This authorization is required for projects involving one or more acres of ground disturbance. Authorization pursuant to the State Water Resources Control Board's Section 402 General Permit Number CAG990003 for Discharges of Aquatic Pesticides to Waters of the United States would not be required, unless pesticide is applied directly to a water body (i.e., flowing or standing water in the Ventura River) and/or directly to pest plants in flowing or standing water. As discussed above, Section 401 WQC has already been issued for activities qualifying for authorization under RGP No. 41.

California Fish and Game Code Sections 1601. Section 1601 of the California Fish and Game Code requires notification to the CDFG for any proposed project that would create a substantial change to the bed, channel, or bank of any river, stream, or lake, or the use of material from a streambed, river channel or lake. Upon notification, the CDFG determines if a substantially adverse affect to fish or wildlife species may occur. If the CDFG determines a substantial affect may occur, application for and issuance of a Section 1601 permit is required. The issued permit may include conditions of approval that mitigate potential impacts to fish and wildlife species and habitat. The proposed project would require a Section 1601 permit for its implementation.

3.3 LOCAL REGULATORY SETTING AND PROJECT APPROVALS

Regulatory Setting

General Plan and Zoning Ordinances. The project area consists of two parcels of land owned by the County of Ventura and City of Ventura. The County's General Plan land use designation and zoning for the project site is Open Space (County of Ventura, 1995a, 2003a); the County's General Plan land use designations and zoning for lands immediately adjacent to the site are Open Space and Urban Residential. The City of Ventura's zoning within the project area is R-1-1AC (single family residential on one-acre lots) (City of Ventura, 2003). As of May 2003 the City had not yet established a General Plan land use designation for the property falling under its jurisdiction (City of Ventura, 2003). The ATF has secured an agreement with the City to use that portion of the project site that is under its jurisdiction. Implementation of the proposed project would not conflict with the project vicinity's existing General Plan land use designations or zoning designations and no land use permits would be required.

Project Approvals

The Ventura County Board of Supervisors would provide local approval for the proposed project through approval and certification of the project's Final EIR. This Draft EIR will be circulated for public and agency review and comment for a 45-day period. Following closure of the public and agency comment period, responses to all comments received on the document will be prepared and modifications to the document's text will be made, as appropriate, to reflect comments received. The comments and responses will be included in the Final EIR, along with the project's Mitigation Monitoring Plan (see Section 2.4). At the time the project's Final EIR is approved, the VCWPD Board of Supervisors will adopt the mandated CEQA findings and above-referenced Mitigation Monitoring Plan.

Ventura County Air Pollution Control District. The proposed project falls under the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD). Implementation of the proposed project may require a permit for use of the proposed chipper. Prior to the start of construction the VCWPD will contact VCAPCD to determine if a permit is required, and will acquire the permit if needed. In addition, the recommendations of the VCAPCD have been incorporated into the project's proposed mitigation measures for air quality (Mitigation Measures A-1 and A-2) as part of finalization of this EIR (see Appendix A for the VCAPCD's comments on the Draft EIR).

Ventura County Environmental Health Division. A permit may be required from the Ventura County Environmental Health Division for the chipping of *Arundo* materials. Prior to the start of construction the VCWPD will contact the Ventura County Environmental Health Division to establish if a permit is required, and will acquire the permit if needed.

City of San Buenaventura. As reviewed in Section 4 of this EIR, the proposed demonstration site is located on land that is partially owned by the City of San Buenaventura ("Ventura," or "City"). Acting as a Responsible Agency under CEQA, the City must approve a License Agreement for use of its property for the project following the Ventura County Watershed Protection District Board of Supervisor's certification of this Final EIR. The ATF has maintained regular contact with the City since the initial planning stages of the project, and the City is fully anticipated to approve the project's needed License Agreement.

4. PROJECT DESCRIPTION

The proposed project is located along the east bank of the Ventura River in Casitas Springs, Ventura County, California. The area proposed for the demonstration site is an estimated five-acre linear swath approximately 20 feet west of an existing flood control levee. The site is approximately 50 feet wide, 4,500 feet long, and ranges in elevation from 260 to 280 feet above sea level. The VCWPD and the City of Ventura own parcels making up the site. Figures 4-1 and 4-2 provide a site map and aerial photograph of the project area, respectively.

The main branch of the Ventura River flanks the west side of the project area. This portion of the river supports patches of mule fat scrub and willow-dominated riparian scrub within the broad river bottom. Upper floodplain terraces outside of the riverbanks support alluvial scrub vegetation accented by large sycamore and eucalyptus trees. The river substrate is primarily cobble and sand. The site itself has relatively uniform physical and biological conditions, as detailed in Section 7. As noted above, an existing flood control levee flanks the east side of the project area; the Ojai Valley Trail generally parallels the eastern side of the levee. The community of Casitas Springs lies further to the east of the southern portion of the project area; Fresno Canyon converges with the Ventura River at the southern-most end of the project area. Undeveloped land and a mobile park are located along the east side of the northern segment of the project area.

The proposed project is a seven-year program that includes initial *Arundo* removal followed by repeat removal treatments, native plant re-establishment, and revegetation monitoring. Public outreach and education is another key feature of the project. The demonstration site would be separated into four areas and four different types of *Arundo* removal methods would be implemented to evaluate their effectiveness. The removal methods proposed for the site include:

1. Mechanical removal of the *Arundo* biomass immediately followed by the painting of the remaining stems with herbicide at appropriate cut-stump concentrations (50 percent to 100 percent volume-to-volume [v/v]) ("cut and paint")
2. A foliar spray application of the *Arundo* biomass at a concentration of approximately 1.5 percent to 6 percent v/v and then letting the biomass remain on site until it is dead. The dead materials would then be removed mechanically the following spring with hand held equipment
3. Removal of the above-ground *Arundo* biomass mechanically with hand held equipment without applying any herbicide and subsequently treating regrowth with an herbicide, as appropriate, as it emerges
4. Mechanical removal of the *Arundo* biomass, including excavation of the root mass, followed by monitoring and hand removal of regrowth, including root mass removal.

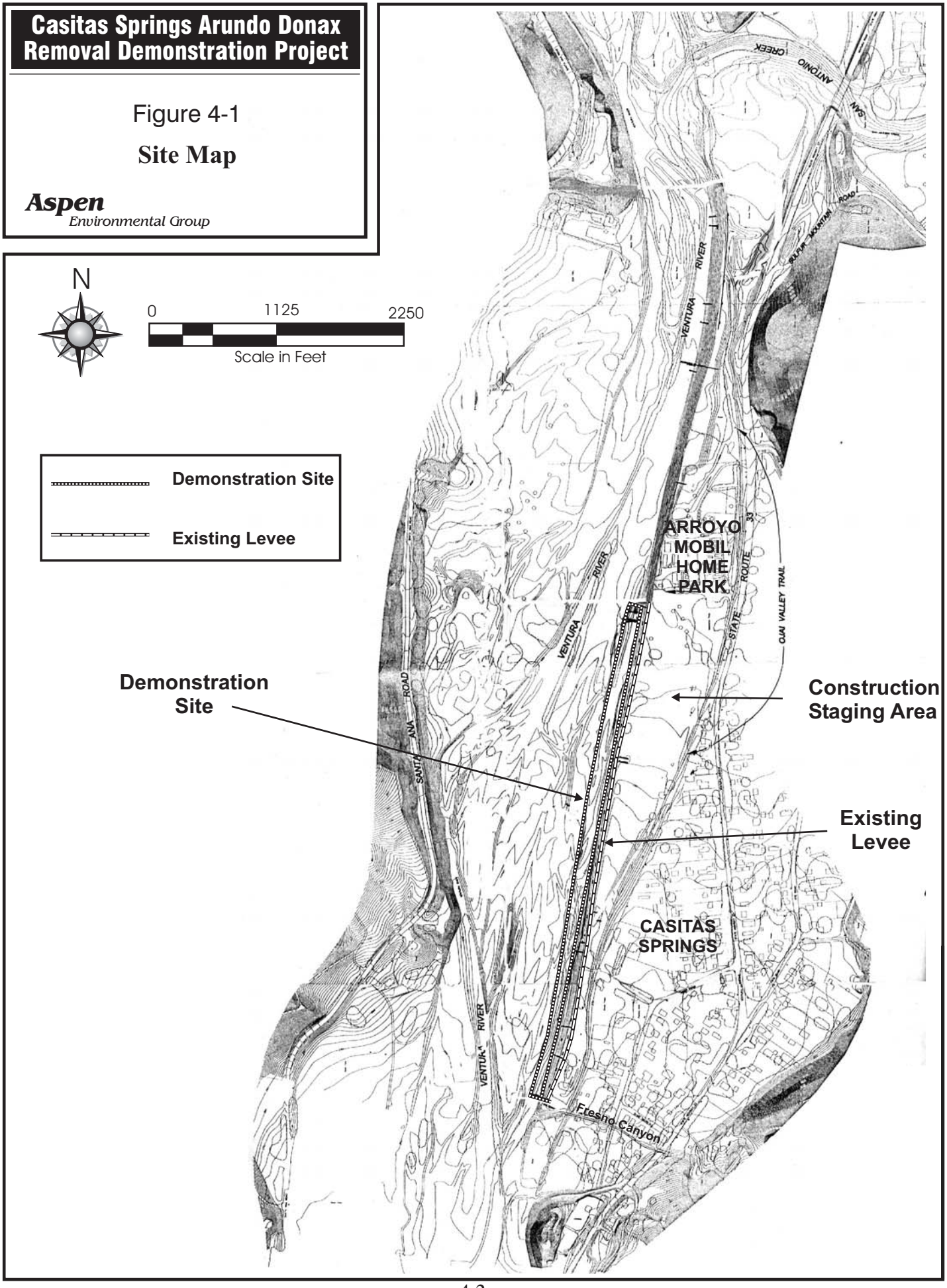
For removal method Number 1 (cut and paint), an approximate half-acre area of the site would be used. For removal method Number 2 (foliar spray), an estimated one-quarter acre area of the site would be used. For removal method Numbers 3 (cut, resprout, spray) and 4 (total excavation), an estimated 4-acre area and one-quarter acre area of the site would be used, respectively.

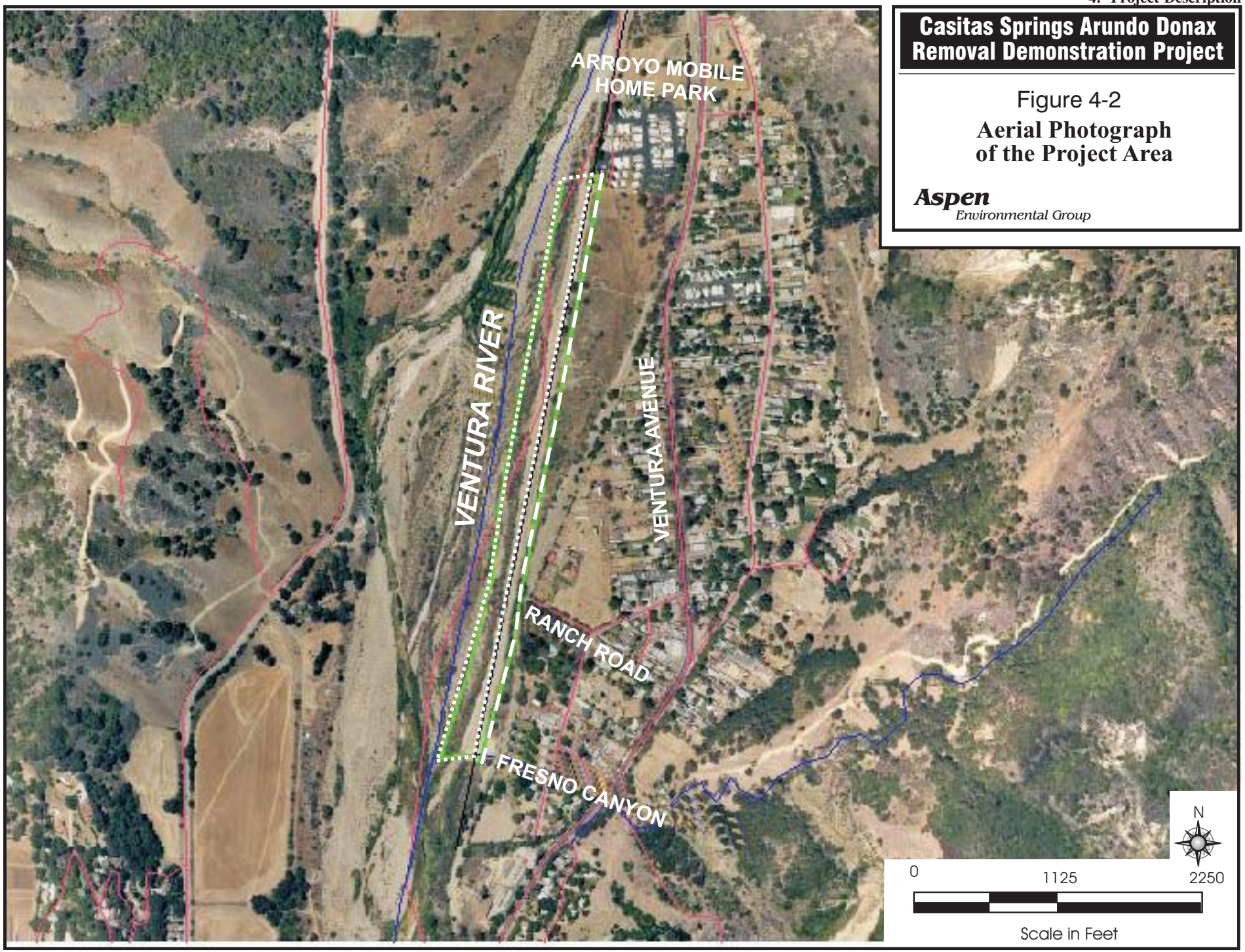
Casitas Springs Arundo Donax Removal Demonstration Project

Figure 4-1

Site Map

Aspen Environmental Group





Casitas Springs Arundo Donax Removal Demonstration Project

Figure 4-2

Aerial Photograph of the Project Area

Aspen Environmental Group

For those methods that would involve the use of herbicide treatments, a glyphosate-based herbicide would be used. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water. None of the methods that involve herbicide applications would involve the use of a R-11 surfactant.

Table 4-1 summarizes the various annual components of the project.

Table 4-1 Annual Components of the Proposed Project

Project Year	Project Task/Component
Project Initiation (Year 1)	• Conduct Initial *Arundo* Removal • Baseline Report
2	• Year 1 Repeat Removal Treatment (spraying, painting, or hand removal) • Native Plant Propagation • Public Outreach and Education • Annual Report
3	• Year 2 Repeat Removal Treatment (spraying, painting, or hand removal) • Year 1 Revegetation Monitoring • Native Plant Installation • Irrigation Set-Up • Irrigation Operation • Public Outreach and Education • Annual Report
4	• Year 3 Repeat Removal Treatment (spraying, painting, or hand removal) • Year 2 Revegetation Monitoring • Irrigation Operation • Public Outreach and Education • Annual Report
5	• Year 4 Repeat Removal Treatment (spraying, painting, or hand removal) • Year 3 Revegetation Monitoring • Irrigation Operation • Public Outreach and Education • Annual Report
6	• Year 5 Repeat Removal Treatment (spraying, painting, or hand removal) • Year 4 Revegetation Monitoring • Irrigation Operation and Disassembly • Public Outreach and Education • Annual Report
7	• Year 5 Revegetation Monitoring • Public Outreach and Education • Annual Report

Project Year 1

In any given year, physical activities within the project site would occur between April 15th and November 1st to avoid the wet season. However, there may be instances where project activities need to occur between November 1st and April 15th. In these instances the ATF would ensure that such activities do not coincide with flowing water within the site, and that planned activities occur within a five-day clear-weather forecast. Additionally, the ATF would ensure that all appropriate agencies are notified of, and would allow proposed site activities.

During Project Year 1, the mechanical removal of the *Arundo* would be accomplished by hand clearing the aboveground biomass to allow for the separation of the *Arundo* from native vegetation species. The *Arundo* stems would be cut off to approximately 12 inches above ground level using hand held

equipment such as loppers, chain saws, and power brush cutters. The material would be chipped using standard wood chipping equipment. The chipped materials would be less than approximately two inches in size, and would be spread to a depth of approximately 12 to 18 inches for drying. Chipping and drying would occur outside and upland of the riverbed, within the project's construction staging area. The chipped material would then be offered at no charge to persons or organizations that wish to recycle the material in such a way that would preclude the reestablishment of the *Arundo*. Some materials may be used to pad the existing Ojai Valley Trail equestrian trail and some materials may be used as part of the Ojai Sanitation District's compost bio-composition experiment. Other parties and organizations that may benefit from use of the cut stalks will continue to be investigated by the ATF prior to and during construction. Materials not recycled would be disposed of properly at a landfill. The dried materials may remain at the site for up to 12 to 18 months.

For those eradication techniques that would involve the use of herbicide treatments (removal method Numbers 1, 2 and 3), a glyphosate-based herbicide would be applied. For the cut and paint technique (removal method Number 1), the herbicide would be applied immediately following the *Arundo* biomass removal. For the other methods that involve herbicide treatments (removal method Numbers 2 and 3), the herbicide applications would occur after all of the site's *Arundo* biomass has been removed. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water. Surfactants to be used in conjunction with any herbicide applications would be of the non-ionic formulation approved for use in water. None of the methods that involve herbicide applications would involve the use of a R-11 surfactant. Examples of surfactants that may be used are Agri-Dex® and/or Activator-90®.

Herbicide applications would be completed or supervised by a licensed professional to ensure that specific safety measures, including containment and clean-up plans in the event of an accidental spill or leak of the herbicide, are followed. These measures would include the use of appropriate protective clothing, and the availability of clean water and soap or the purposes of emergency washing.

To minimize the public's potential exposure during clearing and spraying/painting activities, active work areas would be clearly posted along all access points to the demonstration site and construction staging area. Signs would be posted to warn the general public of the activities that are underway. These signs would discourage plant gathering or other unauthorized use of the demonstration site for a minimum of two weeks after any herbicide application. Prior to any project activities, work crews would survey the demonstration site to ensure that no unauthorized persons are present.

For the area designated for full *Arundo* removal (removal method Number 4), the above-ground vegetation to the root mass would be removed and hauled to the construction staging area for chipping. The root systems of the vegetation would then be removed by hand-held equipment. No heavy construction equipment would be used.

An existing maintenance road located immediately south of the Arroyo Mobile Home Park would be used for site access. From this road the existing maintenance road on top of the levee would be used. The construction staging area for the initial eradication phase would be located on vacant property owned by the City of Ventura; it is located south of the Arroyo Mobile Home Park (see Figure 4-1). The ATF has secured an agreement to use that portion of the project area that is owned by the City. The staging area would be placed as far from the mobile home park as possible to minimize project related disturbances to its residents. This area would be used for equipment storage and materials, chipping, and the drying of chipped biomass. Signs would be clearly posted around the staging area to discourage the public from entering the area. No more than 25 workers would be needed to hand cut, chip, and treat the *Arundo* over an estimated 30-day period. Hand cutting and chipping activities would occur concurrently.

Project Year 2

During the second year, the prescribed herbicide would be reapplied to those areas of the demonstration site that are used for either spraying or painting. It is estimated that approximately 6 gallons of the prescribed herbicide would be needed for reapplication. Depending on site specific conditions, reapplication would occur up to four times annually. The workforce needed for this re-application would require no more than five persons, and would take approximately two days to complete. As with the initial phase, all re-application activities would adhere to all manufacturer specifications, be completed or supervised by a licensed professional, and follow the safety precautions described above. Public posting of these activities would be undertaken as well.

For the area of the demonstration site designated for full *Arundo* removal (removal method Number 4), all re-sprouts and re-emerging root systems would be removed using hand held tools. No heavy construction equipment would be used. Depending on the degree of re-sprouting, this activity may be necessary on a monthly, or possibly weekly basis during the peak growing season.

During Project Year 2 the project's revegetation effort would also be initiated and native plant species would be propagated. The area of revegetation would be limited to those areas of the demonstration site where the *Arundo* is removed. The proposed revegetation pallet for the project includes: freemont cottonwood (*Populus fremonti*); black cottonwood (*Populus trichocarpa*); western sycamore (*Platanus racemosa*); mexican elderberry (*Sambucus mexicana*); coyote bush (*Baccharis pilularis*); mulefat (*Baccharis salicifolia*); arroyo willow (*Salix lasiolepis*); red willow (*Salix laevigata*); sandbar willow (*Salix interi*), and various native grasses. The specific combination and placement of this vegetation would not be determined until after an assessment of site conditions once the *Arundo* removal is completed; however, the selected plant species used in the revegetation effort would be selected from this pallet.

Project Year 3

The project's third year would commence with re-application of the prescribed herbicide for those areas of the demonstration site that require either spraying or painting (removal method Numbers 1, 2, and

3); re-sprouts and re-emerging root systems in the area used for full *Arundo* removal (removal method Number 4) would be removed by hand. As for Project Year 2, the herbicide re-application and mechanical removal of biomass would be anticipated to require the same number of workers and time. However, slight variations may occur due to specific site conditions as they relate to such variables as rainfall, eradication success rates, etc. Mechanical removal of re-sprouts within the area where total *Arundo* removal is being evaluated would be completed as well.

In addition to this activity, a temporary irrigation system would be installed for the revegetation effort. This system would require either one or two connection points to the top of the levee from a nearby water supply source. A sleeved pipeline would then be placed down the levee and into the demonstration site. Standard irrigation tubing would be distributed within the demonstration site as appropriate. The tubing would be placed on the surface of the site, and would be maintained as needed until its removal in Project Year 6. Depending on the specific conditions of the site in any given year due to surface water flow rates and velocities due to rainfall, the irrigation system may be removed during the rainy season and subsequently re-installed after peak rainfall and surface water flow rates have ended.

Following installation of the irrigation system, native plant species would be planted within the area according to the project's revegetation pallet (above). The revegetation effort would be anticipated to occur over a one-month period. The revegetation effort would be done by hand.

Project Years 4, 5 and 6

During Project Years 4, 5, and 6 project maintenance (i.e., re-spraying, re-painting, mechanical re-sprout removal) would continue, as would irrigation operation and activities associated with maintaining revegetated areas.

At the end of Project Year 6, the irrigation system used for revegetation would be removed by hand.

Project Year 7

During the project's final year, monitoring, reporting and public outreach and education would continue; however, there would be no physical alterations/activities associated with the project site.

Project Monitoring and Annual Reports

Starting in Project Year 2, the proposed project would be monitored on an annual basis. The Natural Resources Conservation Service (NRCS) would be the primary party responsible for revegetation monitoring and maintenance. The VCWPD would be the primary party responsible for *Arundo* herbicide treatments and re-sprout removals. The key evaluation topics that would be addressed as part of the monitoring program include:

- Planting date(s)
- Planting methods
- Pounds per acre of seed or spacing
- Seedbed conditions at time of planting
- Pests
- Erosion control/ground cover density
- Sediment trapping ability
- Ability to control wind erosion

- Adequate moisture
- Weed competition
- Applied irrigation
- Dates of spraying
- Plant vigor and recovery
- Plant survival
- Foliage height
- Resistance to drought
- Amount of resprouting per method
- Amount of retreatment per method
- Number of retreatments per method
- Amount and concentration of herbicide used for initial treatment and retreatments per method
- Ability to control sheet and rill erosion
- Ability to control gully erosion
- Plant adaptation to site
- Clipping dates
- Produced biomass
- Purpose achieved
- Plant failure/anticipated failure
- Recommendations
- Costs per method (labor and equipment)
- Impacts noted per method
- "Lessons learned" and adaptations made to approach

Following completion of the annual monitoring program cycles, an annual report would be prepared. These reports would include a summary of all project activities, photo-documentation, recommendations, observations, data collected, and other relevant information. For Project Year 1, a "baseline" report would be prepared; the report would be primarily focused on the initial *Arundo* removal effort.

Public Outreach and Education

A long-term goal of the ATF is to implement similar *Arundo* removal projects throughout the entire Ventura River watershed, and ultimately, throughout the entire County. However, such removal projects cannot be undertaken without the cooperation and support of landowners and local special interest groups. To raise public awareness regarding the ecological benefits of such projects, public education is considered to be a key component of the proposed project. Activities and findings from the proposed project would be announced each year to promote the benefits of *Arundo* removal. Informational pamphlets, posters for fairs and educational seminars, newspaper stories, website postings, and other media would be used for public education and to draw funds for future *Arundo* removal projects.

CEQA Guidelines Sections 15126(d) and 15126.6(a) require an EIR to identify and evaluate a reasonable range of feasible alternatives to a proposed project. These alternatives, including a no project alternative, must attain the most basic objectives of the proposed project and strive to lessen any of the potentially significant environmental impacts. The range of alternatives required within an EIR is governed by a "rule of reason" and does not need to be exhaustive in nature. The range of alternatives need only examine the ones that the Lead Agency has determined meet the most basic objectives of the proposed project. In selecting alternatives, a Lead Agency is generally guided by CEQA's definition of feasible, as follows: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors" (CEQA Guidelines Section 15364).

Section 1.2 of this EIR provides the key objectives of the proposed project. For the purposes of this EIR, the VCWPD, in consultation with the ATF, have identified three project alternatives, including the no project alternative. Descriptions of these alternatives are provided in the following sections. The environmentally superior alternative is provided in Section 6.

5.1 ALTERNATIVE 1: MECHANICAL REMOVAL

Alternative 1 would involve mechanical cutting of targeted colonies and extensive stands of *Arundo* within the demonstration site. All of the *Arundo* within the demonstration site would not be removed under this alternative because such an effort would be highly labor intensive, and thus, cost prohibitive.

Selected stands would be cut to approximately ground level using hand tools and the cut stalks would be transported to the chipping area for chipping, drying and removal or donation to interested parties. No herbicides would be used. Under this alternative, it is anticipated that the majority of *Arundo* removal would occur prior to November 1st. However, if physical activities within the site were to be needed past November 1st, the ATF would ensure that no flowing surface water is present and that the needed activities would be completed within a five day all clear weather forecast. Appropriate regulatory agencies would also be notified of proposed activities. The next cutting would be in the spring, and it would be anticipated that repeat cutting would have to occur a minimum of once a month, and potentially weekly during the active growing season to ensure that no leaf mass re-sprouts. This process would be repeated for Project Years 1 through 6, as with the proposed project. This alternative assumes that repeat cuttings during the active growing season would eventually deplete nutrient reserves by preventing recharge of reserves through photosynthesis. The same access and construction staging area would be used as for the proposed project. It is estimated that no more than 25 workers would be needed for a 30-day period. The same hand held equipment and chipping needs as described for the proposed project would be necessary for this alternative.

This alternative would require repeated disturbances within the demonstration site. However, designating specific paths to the targeted work areas and reusing these paths each time cutting is undertaken could potentially reduce impacts to surrounding habitat. Minimizing the number of workers within the demonstration site could also minimize cutting disturbances.

To minimize potential dangers to the general public, prior to any clearing activities areas surrounding the demonstration site and staging area would be clearly posted. The signs would warn the public that removal activities are underway and that the area should be avoided. Work crews would be supervised to ensure that safety practices are followed and that appropriate protective clothing and safety equipment are used.

Following Project Year 1, the same revegetation effort as described for the proposed project would be initiated, including an appropriate irrigation system that would be removed at the end of Project Year 6. Public education and outreach would also be a key component of this alternative.

A summary of the advantages and disadvantages of this alternative in comparison to the proposed project and Alternatives 2 and 3 is provided in Section 6.

5.2 ALTERNATIVE 2: FOLIAR SPRAY WITH NO MECHANICAL REMOVAL

Under this alternative, the *Arundo* within the demonstration site would be thoroughly sprayed without any cutting or vegetation removal. A glyphosate-based herbicide would be used using the same technique as described above under the proposed project (Section 4). The dead *Arundo* biomass would be left in place and no mechanical cutting or chipping would occur. Re-sprouting materials would then be sprayed up to four times within the maintenance period of any given year, as warranted by site-specific conditions. Prior to any project activity, access points to the demonstration site would be clearly posted to warn the public of project-related activity and the dangers of herbicide use. All spraying activity would be either completed or supervised by a licensed professional and all manufacturer instructions would be followed. Contingency plans for accidental over-sprays or spills would be followed in the event that such an accident occurs.

This alternative would use the same access and staging area as the proposed project. It is assumed that initial efforts under this alternative would require one to three spray trucks and no more than 20 workers over a two to four week period. Depending on site-specific conditions, the subsequent spraying of the re-sprouts in Project Years 2 through 6 would require approximately five workers and one to two spray trucks over an estimated one to two week period.

Because this alternative does not propose to remove vegetation, no revegetation efforts would be undertaken. However, the proposed project's public education and outreach program would be implemented, as would monitoring activities.

A summary of the advantages and disadvantages of this alternative in comparison to the proposed project and Alternatives 1 and 3 is provided in Section 6.

5.3 ALTERNATIVE 3: NO PROJECT ALTERNATIVE

Under the No Project Alternative, no activities related to either *Arundo* removal or the re-establishment of native vegetation would occur. *Arundo* would continue to expand throughout the general project area, thereby excluding native riparian habitat and native wildlife, including many special status

species. Additional detrimental effects would include degradation of water quality, competition with native plant species for light, water and space, increased erosion, increased flooding, and fire hazard.

As with Alternatives 1 and 2, a summary of the advantages and disadvantages of this alternative in comparison to the proposed project and Alternatives 1 and 2 is provided in Section 6.

6. COMPARISON OF ALTERNATIVES AND THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

As outlined in Section 1.2, the primary objective of the proposed project is to evaluate the effectiveness of multiple types of *Arundo* eradication techniques. Additional objectives of the project are to evaluate the success of different types of revegetation techniques and to promote *Arundo* removal projects through public outreach and education.

Implementation of either the proposed project or one of its alternatives would result in environmental effects, as discussed in Sections 8 through 10 of this EIR. These effects range from beneficial impacts to adverse, significant impacts that cannot be mitigated to a level of less than significant. A summary and comparison of the impacts associated with the proposed project and its alternatives is provided in Table 6-1.

As illustrated in Table 6-1, the proposed alternative would result in one adverse significant impact that cannot be mitigated to a level of less than significant. This impact relates to construction-related noise that would exceed the County's adopted thresholds for an estimated 30-day period. The proposed project would additionally generate three potentially significant impacts that can be mitigated to less than significant, eight impacts that are considered less than significant, and six beneficial impacts.

Project Alternative 1 (mechanical removal only) would also result in construction-related noise that would exceed the County's adopted thresholds for construction-related noise for an estimated 30-day period, thereby creating an adverse significant impact that cannot be mitigated to a level of less than significant. The noise of this alternative would be greater than that for the proposed project because the number of chain saws and the volume of chipping activities needed for this alternative would be greater. This alternative would additionally generate four potentially significant impacts that can be mitigated to a level of less than significant, eight impacts that are considered less than significant, and six beneficial impacts. Although this alternative would include an evaluation of different types of revegetation techniques, it does not fully meet the objectives of the project, as only one type of *Arundo* removal methodology would be tested. Additionally, it is assumed that the entire demonstration site would not be revegetated because removal of all of the *Arundo* under this alternative would not be economically feasible. This alternative would additionally result in substantial earth disturbance.

Project Alternative 2 (foliar spray only with no mechanical removal) would not result in a noise-related impact that would be considered an adverse significant impact. It would, however, potentially result in four other adverse significant impacts that cannot be mitigated to a level of less than significant. These impacts generally relate to flood and fire related issues associated with leaving the *Arundo* in place. This alternative would also result in three potentially significant impacts that can be mitigated to less than significant, eight impacts that are considered less than significant, and no beneficial impacts. This alternative would not meet the proposed project's objective of revegetating the demonstration site with native plant species, and as with Alternative 1, would only evaluate one method of *Arundo* removal.

Table 6-1 Impact Comparison of the Proposed Project and its Alternatives

	Proposed Project					Alternative 1 (Mechanical Removal)					Alternative 2 (Foliar Spray)					Alternative 3 (No Project)				
Level of Impact*	I	II	III	IV	NI	I	II	III	IV	NI	I+	II	III	IV	NI	I+	II	III	IV	NI
Environmental Issue Area																				
Biological Resources		✓	✓	✓			✓	✓	✓			✓	✓			✓++				
Water Resources		✓	✓		✓		✓	✓		✓		✓	✓		✓	✓++				
Noise	✓					✓									✓					✓
General Plan Goals & Policies				✓					✓											✓
Land Use					✓					✓					✓					✓
Air Quality		✓					✓					✓								✓
Mineral Resources					✓					✓					✓					✓
Agricultural Resources					✓					✓					✓					✓
Visual Resources				✓					✓				✓							✓
Cultural Resources					✓					✓					✓					✓
Paleontological Resources					✓					✓					✓					✓
Energy Resources			✓					✓					✓							✓
Coastal Beaches & Sand Dunes					✓					✓					✓					✓
Seismic Hazards					✓					✓					✓					✓
Geologic Hazards					✓					✓					✓					✓
Hydraulic Hazards			✓					✓			✓					✓				
Aviation Hazards					✓					✓					✓					✓
Fire Hazards				✓					✓		✓					✓				
Hazardous Materials and Waste			✓					✓					✓							✓
Public Health			✓					✓					✓			✓				
Transportation and Circulation							✓													✓
Water Supply					✓					✓					✓					✓
Waste Treatment and Disposal			✓					✓					✓							✓
Utilities					✓					✓					✓					✓
Flood Control and Drainage				✓					✓		✓					✓				
Law /Emergency Services					✓					✓					✓					✓
Fire Protection					✓					✓	✓					✓				
Education					✓					✓					✓					✓
Recreation			✓	✓				✓	✓				✓							✓

*Level of Impact:

I Potentially significant impact than cannot be mitigated to a level of less than significant
II Potentially significant impact that can be mitigated to a level of less than significant
III Less than significant impact
IV Beneficial impact
NI No impact

+ Potentially adverse significant impacts could occur unless the VCWPD or Ventura County Fire Department would be able to identify and implement other means of minimizing these impacts. Please refer to Section 10 of the EIR for additional information on these potential impacts.

++ The long-term impacts to the biological and water resources of the Ventura River watershed are considered potentially significant adverse impacts that may not be mitigable to a level of less than significant unless some means of *Arundo* removal is implemented.

Project Alternative 3 (the No Project Alternative) would potentially result in seven adverse significant impacts that cannot be mitigated to a level of less than significant. These impacts relate to the long-term effects of allowing *Arundo* to continue infesting the Ventura River watershed, and the potential flood and fire related issues that are also associated with Alternative 2. This alternative would not result in any potentially significant impacts that require mitigation, any impacts that are considered less than significant, or any beneficial impacts.

Table 6-2 provides a summary of the most salient advantages and disadvantages of the proposed project and its alternatives. As illustrated in Table 6-2, the proposed project has the greatest number of advantages and least number of disadvantages in comparison to its alternatives. Additionally the proposed project has the fewest number of impacts (12) in comparison to Alternative 1 (13 impacts) and Alternative 2 (15 impacts). Therefore, the proposed project is considered to be the environmentally preferred alternative.

Table 6-2 Primary Advantages and Disadvantages of the Proposed Project and its Alternatives

Alternative	Advantages	Disadvantages
Proposed Project~~Alternative~~	• Evaluates multiple *Arundo* eradication techniques. • Provides for greatest area of revegetation with native plant species. • Decreases flood and fire potential. • Six beneficial impacts (see Table 6-1). • Greatest volume of *Arundo* removed from the demonstration site. • Greatest support of the County's environmental goals and policies for environmental enhancement and restoration.	• Adverse significant noise impacts due to *Arundo* removal and chipping activity. • Moderate volume of herbicides used. • Moderate earth disturbance.
Alternative 1~~2~~: Mechanical Removal Only	• No herbicides used. • Limited revegetation of native plant species feasible. • Decreases flood and fire potential. • Six beneficial impacts (see Table 6-1).	• Does not meet the intent of the proposed demonstration project to evaluate multiple eradication techniques. • Does not remove all *Arundo* from the demonstration site. • Requires intensive monitoring and maintenance. • Substantial earth disturbing activity. • Greatest significant adverse noise impacts due to *Arundo* removal and chipping activity.
Alternative 2~~3~~: Foliar Spray Only with No Mechanical Removal	• Low to no earth disturbing activity. • Short duration of labor each year. • No noise impacts due to *Arundo* removal and chipping activity.	• Does not meet the intent of the proposed demonstration project to evaluate multiple eradication techniques. • Potential flood or fire hazard due to dead biomass left in place. • Greatest volume of herbicides used. • Greatest risk from drift to non-targeted plants and over-spraying. • No revegetation of native plant species. • Second greatest number of potentially adverse significant impacts that cannot be mitigated to less than significant.

Alternative	Advantages	Disadvantages
Alternative 3: No Project	• No earth disturbing activity. • No physical impacts due to *Arundo* removal and chipping activity. • No herbicides used.	• Does not meet the intent of the proposed demonstration project to evaluate multiple eradication techniques. • Continued long-term degradation of watershed. • No beneficial impacts. • Potential flood or fire hazard from continued *Arundo* growth and infestation. • Greatest number of potentially adverse significant impacts that cannot be mitigated to less than significant.

The proposed project area is located along the east bank of the Ventura River. The area is an estimated five-acre linear swath approximately 20 feet west of an existing flood control levee. The site is approximately 50 feet wide, 4,500 feet long, and ranges in elevation from 260 to 280 feet above sea level. Figure 2-1 provides a regional map of the project vicinity and Figure 4-1 is a site map of the project area. The project area consists of two parcels of land that are owned by the County of Ventura and City of Ventura. The County's General Plan land use designation and zoning for the project site is Open Space (County of Ventura, 1995a and 2003); the County's General Plan land use designations and zoning for lands immediately adjacent to the site are Open Space and Urban Residential.

The main branch of the Ventura River flanks the west side of the project area. This portion of the river supports patches of mule fat scrub and willow-dominated riparian scrub within the broad river bottom. Upper floodplain terraces outside of the riverbanks support alluvial scrub vegetation accented by large sycamore and eucalyptus trees. The river substrate is primarily cobble and sand. The site itself has relatively uniform physical and biological conditions, as detailed in Section 7.1, below. An existing flood control levee flanks the east side of the project area; the Ojai Valley Trail generally parallels the eastern side of the levee. The community of Casitas Springs is located to the east of the southern portion of the project area, and Fresno Canyon converges with the Ventura River at the southern-most end of the project area. Undeveloped land and a mobile park are located along the east side of the northern segment of the project area.

The following sections provide descriptions of the project area's existing conditions as they relate to biological resources, water resources, and noise. The potential impacts on these resources due to implementation of the proposed project are provided in Section 8.

7.1 BIOLOGICAL RESOURCES

The 5-acre proposed project is located along the southern edge of the active floodplain of the Ventura River near the town of Casitas Springs (Figures 4-1 and 4-2). The project area consists of a linear band of instream wetland riparian vegetation that runs parallel to an unvegetated riprap levee. The levee separates the floodplain and the project site from adjacent residential areas, thereby providing a hydraulic barrier between the active floodplain and adjacent upland areas. The alluvial substrate in the project consists of varying sizes of boulder, cobble, gravel, and sand that has been transported during high flow events in the Ventura River.

The natural habitat communities that occur within and near the project area consist of riparian woodland and riparian scrub communities (Figure 7-1). Much of the riparian habitat in the project vicinity, however, is highly infested with *Arundo*. *Arundo*-infested riparian is common throughout the Ventura River watershed and varies from individual plants and small patches to large stands like those that occur within the proposed project. It is estimated that the 5-acre proposed project is only 30 to 40 percent native riparian, with the remaining 60 to 70 percent dominated by *Arundo*.

Natural riparian vegetation communities found in the vicinity of the project are known to support diverse and species-rich flora and fauna. The effect of *Arundo* infestation is that sensitive native

riparian vegetation is being replaced by a tenacious and undesirable exotic species that does not provide the same ecological benefit. This section describes the existing biological conditions for the 5-acre proposed project, and is based on existing literature and recent vegetation and wildlife studies conducted within the vicinity of the project area (Aspen, 2002). The access road and staging locations are not considered in this evaluation, as these areas do not support biological resources that would be impacted by the proposed project.

7.1.1 Vegetation and Wetlands

This description of vegetation and wetland types in the project area are based on comprehensive vegetation community studies that were recently conducted for the Matilija Dam Removal Project (Aspen, 2002). During this study, vegetation communities and plant species observed were delineated and used to generate vegetation community mosaics of the lower Ventura River, including the proposed project area. Vegetation was classified using Cowardin et al. (1979) and Sawyer and Keeler-Wolf (1995), and community descriptions follow the classification system for natural communities developed by Holland (1986).

Vegetation within the proposed project consists of two wetland plant communities including riparian forest and riparian scrub. Brief descriptions of the wetland and vegetation types in the project area are provided below.

7.1.1.1 Wetlands

Wetlands are lands where saturation with water (at least periodically saturated or covered by water) is the dominant factor determining the nature of the soil development and the type of plant and animal communities occupying the land. Water creates severe physiological problems for most plants and animals, except for those adapted for life in water or saturated soil. Wetlands are transitional between terrestrial and aquatic systems, where the water table is at or near the soil surface, or the land is covered by shallow water. To be determined a wetland pursuant to the USACE definition, the following three parameters should be present:

- A majority of dominant vegetation species should be wetland species
- Hydric soils should be present
- Hydrologic conditions should exist that result in periods of flooding, ponding, or saturation during the growing season.

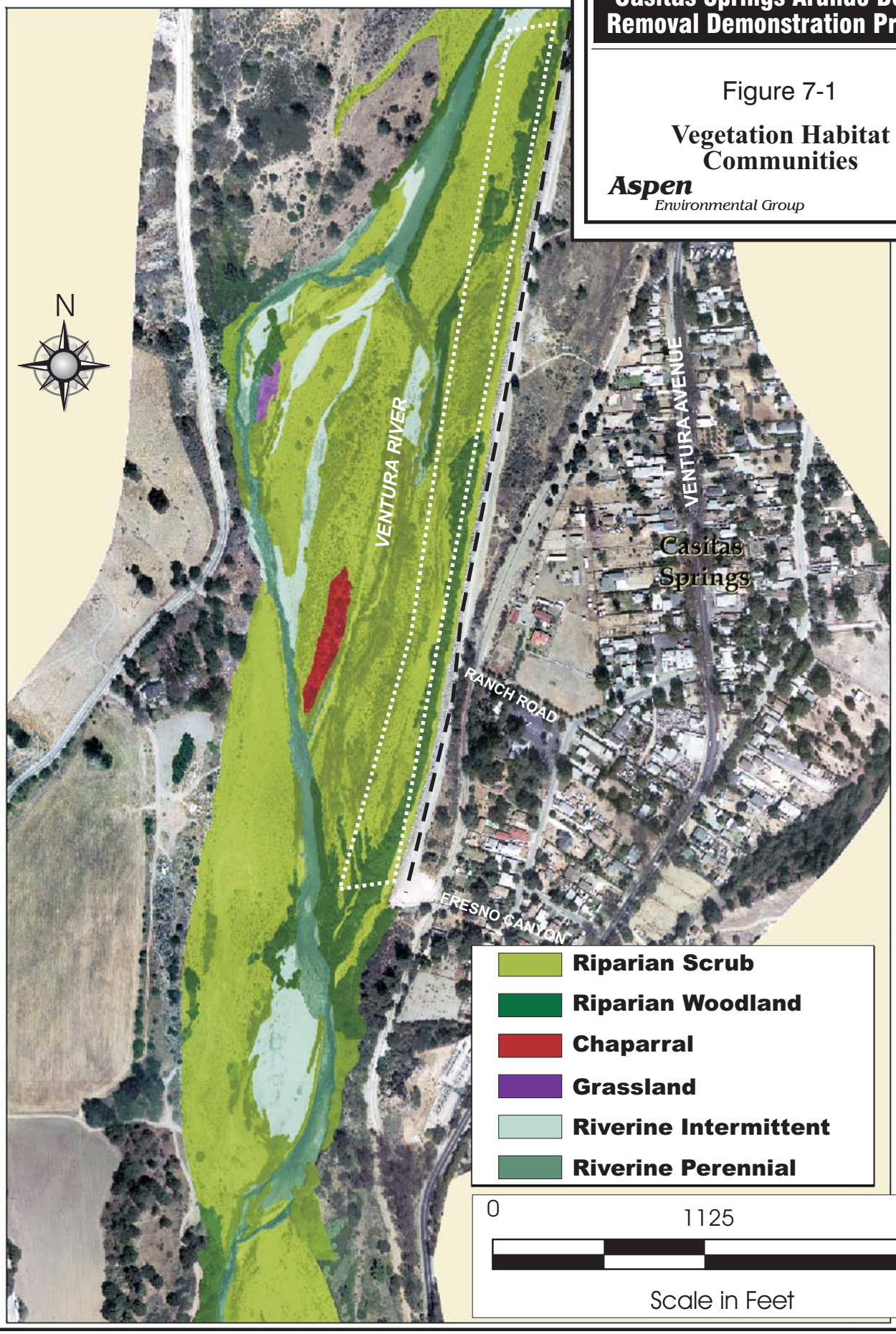
Most of the 5-acre site is not a wetland according to this definition because it lacks wetland hydrology and hydric soils. Approximately 0.52 acre along the toe of the levee, at the downstream end of the project area does meet all three parameters and is therefore, wetland. It is noted, however, that different agencies have different criteria (definitions) for determining wetlands. Under some agencies' criteria, the entire demonstration site could be considered a wetland.

Casitas Springs Arundo Donax Removal Demonstration Project

Figure 7-1

Vegetation Habitat Communities

Aspen Environmental Group



7.1.1.2 *Vegetation Habitats*

Riparian scrub and forest habitat is the predominant natural habitat found at the proposed project site. These areas, however, are infested with dense clumps of *Arundo* that occupy approximately 60 to 70 percent of the vegetative biomass found in these habitats. The following is a description of the natural communities found in the project area followed by a discussion of *Arundo* ecology.

Riparian Scrub. Riparian scrub include true shrubs, young trees, and trees or shrubs that are small or stunted due to environmental conditions. Riparian scrub may represent a successional stage leading to riparian woodland, or may be a relatively stable community. Riparian scrub communities require at least seasonal flooding and are dominated predominantly by shrubs located on bars and banks of river channels and form significant riparian habitat in floodplain areas as well. Plant species known from this habitat in the vicinity of the project area include narrow-leafed willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), and shining willow (*Salix lucida* ssp. *lasiandra*), *Arundo* (*Arundo donax*), mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus mexicanus*), and white nightshade (*Solanum americanum*). Saplings and emergent trees, such as white alder (*Alnus rhombifolia*), and black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) are also known to occur in this habitat.

Riparian Forest. Riparian forests normally possess an overstory of trees, an understory of young trees and shrubs, and an herbaceous layer. Riparian forests are important riparian plant communities as they provides suitable, structurally diverse, and often species-rich habitat for many species of wildlife that frequent and inhabit the Ventura River.

Dominant riparian forest tree species typical of this habitat in the project vicinity include Fremont cottonwood (*Populus fremontii* spp. *fremonti*), *Arundo* (*Arundo donax*), red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*). Shrub and herbaceous species include those typical of riparian scrub habitat.

Arundo. *Arundo* varies in size, but is generally seen as a tall cane-like grass that resembles bamboo. The stems of *Arundo* can reach heights of 3 to 10 meters and have a diameter of 1 to 4 centimeters. The root system of this species is compact and dense with rhizomes that support fibrous roots penetrating deeply into the soil. The main method of spread of *Arundo* is by the regrowth of fragmented rhizomes that are generally dispersed through flood events (Jones and Stokes, 2002).

Arundo is biologically undesirable because it can take over large areas of natural habitat. This species is particularly invasive in sensitive wetland and riparian areas found along watercourses that are known to support diverse and sensitive habitat for a variety of plant and wildlife species. Although *Arundo* can support some wildlife habitat, it does not provide the diversity and complexity of naturally functioning native habitat. Unlike native riparian vegetation, *Arundo* lacks the canopy structure that provides riverine environments with shading, thereby contributing to increased water temperatures and reduced habitat quality for aquatic species (Bell, 1997). In addition, the height and density of established *Arundo* stands presents a fire and flood hazard that could lead to catastrophic impacts to local biological resources.

7.1.1.3 *Sensitive Plant Species*

A record search using the California Natural Diversity Database (CNDDB) was conducted for special status plant species, and vegetation community surveys were conducted for the Matilija Dam Project (Aspen, 2002) that recorded all plant species observed. No special status plant species were observed during the 2002 field studies, and the CNDDB search indicated that only one known plant species population (Sanford's arrowhead, *Sagittaria sanfordii*) had the potential to occur in the project area. The only occurrence of Sanford's arrowhead (*Sagittaria sanfordii*), however, is from a 1983 population that is believed to be extirpated by a subsequent housing development. This species is known to occur in marshes and swamps, and is not considered to potentially occur due to a lack of suitable habitat.

7.1.2 Wildlife

The diversity of aquatic and upland community types that occur within and adjacent to the project area provide habitat for a wide variety of resident and migratory wildlife species, including several special status species. The nearby riverine habitat of the Ventura River and the associated riparian habitats found within and in the vicinity in the proposed project provide sensitive habitat for wildlife. Riparian communities are known to provide wildlife with shade, protection from predators, foraging habitat, and nesting and breeding habitat. The upland vegetation communities that occur adjacent to the project (e.g., annual grassland and oak savannah) also support a wide variety of species, and contribute to the overall wildlife species diversity that can be found within the project area.

Several studies have been conducted that document wildlife species occurrences within the vicinity of the project area. Hunt and Lehman (1992) documented nearly 275 vertebrate species from the Ventura River Estuary and vicinity alone. In addition, wildlife surveys conducted by the U.S. Fish and Wildlife Service (USFWS, 2000) and by Aspen (Aspen, 2002) described over 160 vertebrate species from locations throughout the lower Ventura River.

Birds constitute the most abundant wildlife group within the vicinity of the project area and are represented by a wide variety of aquatic and upland species. Aquatic-associated bird species observed during recent studies include wading birds such as great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and green heron (*Butorides virescens*); waterfowl species including American widgeon (*Anas Americana*), gadwall (*Anas strepera*), and greater scaup (*Aythya marila*); and shorebirds including spotted sandpiper (*Actitus macularia*) and killdeer (*Charadrius vocifierus*).

Other bird species observed during recent studies in the project vicinity (Aspen, 2002) include raptors such as red-tail hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*); upland gamebirds such as California quail (*Callipepla californica*), mountain quail (*Oreortyx pictus*), and mourning dove (*Zenaida macroura);* hummingbirds such as Anna's hummingbird (*Calypte anna*) and Costa's hummingbird (*Calypte costae*); house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polygottos*), European starling (*Sturnus vulgaris*), and goldfinch (*Carduelis psaltria*).

Mammals known or expected to occur in the vicinity of the project include western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotori*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), domestic cat (*Felis cattus*), domestic dog (*Canis domesticus*), coyote (*Canus latrans*), and mule deer (*Odocoileus hemionus*).

Amphibians that have been observed in the project vicinity (Aspen, 2002) include species such as California treefrog (*Hyla cadaverina*), bullfrog (*Rana catesbeiana*), California red-legged frog (*Rana aurora draytonii*), and California toad (*Bufo boreas halphilus*). Herpetofauna present includes species such as southern alligator lizard (*Elgaria multicarinata*), coastal whiptail (*Cnemidophorus tigris multiscutatus*), side-blotched lizard (*Uta stansburiana*), two-striped garter snake (*Thamnophis hammondii*), Southwestern pond turtle (*Clemmy's marmota pallida*), and gopher snake (*Pituophis melanoleucus*).

7.1.2.1 *Protected Species*

Table 7-1 is a list of known sensitive wildlife species that are known or potentially occur in the vicinity of the proposed project. This list of 35 special status wildlife species has been compiled from literature and recent field studies in the project area including the CNDDB (2002), the *USFWS Revised Planning Aid Memorandum* (USFWS, April 2000), the *USFWS Supplemental Planning Aid Report for the Matilija Dam Removal Project-Ventura County, California (*USFWS, October 2000*)*, and recent field studies conducted by Aspen (2002).

Of the 35 special status wildlife species, however, only 15 are considered to be potentially affected by the proposed project (see Section 8.1). The following is a detailed description of these 15 species.

Southern steelhead

Steelhead (*Oncorhynchus mykiss*) are ocean-going forms of rainbow trout that are native to Pacific coast streams from Alaska south to northwestern Mexico (Moyle, 1976). The federally endangered southern steelhead is an evolutionary significant unit (ESU) that has developed to survive the semi-arid climates and the rainfall patterns of southern California. Currently, the southern steelhead range is known from San Luis Obispo County south to Malibu Creek, Los Angeles County (NOAA, 1997). However, recent studies suggest that the southern steelhead's range may extend to San Mateo Creek in northern San Diego County. NOAA has gone through a public review and comment period in its evaluation of whether or not the range should be moved south to this watershed; however, a final ruling has not yet been made.

Once hatched, juvenile steelhead may stay in freshwater for one or two years before migrating to the ocean. This outward migration primarily occurs during the winter and spring months when river flows are relatively high. Steelhead mature at age two to four and migrate back upstream to natal spawning areas. The upstream migration generally occurs from January through March, but is dependent on the intensity of storms and subsequent outflow. After a female steelhead lays her eggs in a gravel nest, a male fertilizes the eggs. After fertilization, the nest is covered by a layer of gravel and the eggs incubate and hatch, repeating the cycle.

Table 7-1 Known and Potentially Occurring Sensitive Wildlife Species Within the Project Vicinity

Common Name	Scientific Name	Status	Known or Potential Occurrence in Project
FISH			
Southern Steelhead	*Oncorhynchus mykiss*	FE	Known throughout the Ventura River, Matilija Creek, and other tributary waters of the Ventura River.
Tidewater goby	*Eucyclogobius newberryi*	FE, CSC	Known from the mouth of the Ventura River to two miles upstream. Not expected to occur in project area.
Arroyo chub	*Gila orcutti*	CSC, FSS	Known throughout the Ventura River
AMPHIBIANS			
California red-legged frog	Rana aurora draytonii	FE, CSC	Known from several locations within the vicinity of the project area.
Western spadefoot toad	*Scaphiopus hammondii*	FSC, CSC, BLMS	Known from the Ventura River near the Oak View area.
REPTILES			
Southwestern pond turtle	*Clemmy's marmorata pallida*	FSC, CSC, FSS, BLMS	Known from several locations within the vicinity of the project area..
Silvery legless lizard	*Anniella pulchra pulchra*	FSC, CSC, FSS	Known from the coastal dunes near the mouth of the Ventura River.
Coastal western whiptail	*Cnemidophorus tigris multiscutatus*	FSC, CSC	Observed within the vicinity of the project area.
Two-striped garter snake	*Thamnophis hammondii*	CSC, FSS	Known from the project vicinity.
BIRDS			
Double-crested cormorant	*Phalacrorax auritis*	CSC	Observed within the vicinity of the project area.
California brown pelican	*Pelecanus occidentalis californicus*	FE, SE	Observed within the vicinity of the project area.
Great blue heron	*Ardea herodias*	CDFS	Observed within the vicinity of the project area.
Great egret	*Ardea alba*	CDFS	Observed within the vicinity of the project area.
White-faced ibis	*Plegadis chihi*	CSC	Observed within the vicinity of the project area.
California Condor	*Gymnogyps californianus*	FE, SE CDFS, DFGFP	Observed within the vicinity of the project area.
Osprey	*Pandion haliaetus*	CSC	Observed within the vicinity of the project area.
White-tailed kite	*Elanus leucurus*	DFGFP	Observed within the vicinity of the project area.
Cooper's hawk	*Accipiter cooperii*	CSC	Observed within the vicinity of the project area.
American peregrine falcon	*Falco peregrinus DFGFP, anatum*	SE, CDFS, DFGFP	Observed within the vicinity of the project area.
Western snowy plover	*Charadrius alexandrinus*	FT, CSC	Observed within the vicinity of the project area.
California least tern	*Sterna antillarum browni*	FE, SE, DFGFP	Observed within the vicinity of the project area.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	SE	Potential nesting and foraging riparian habitat.
Black swift	*Cypseloides niger*	CSC	Observed within the vicinity of the project area.
Vaux's swift	*Chaetura vauxi*	CSC	Observed within the vicinity of the project area.
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE	Potential nesting and foraging riparian habitat.
Olive-sided flycatcher	*Contopus copperi*	FSS, FWSMC	Observed within the vicinity of the project area.
Least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Observed within the vicinity of the project area.

Common Name	Scientific Name	Status	Known or Potential Occurrence in Project
Yellow-breasted chat	*Icteria virens*	CSC	Observed within the vicinity of the project area.
Yellow warbler	*Dendrocia petechia brewsteri*	CSC, FWSMC	Observed within the vicinity of the project area.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	FSC, CSC	Observed within the vicinity of the project area.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	FSC, SE	Observed within the vicinity of the project area.
Tricolored blackbird	*Agelaius tricolor*	FSC, CSC	Observed within the vicinity of the project area.
Lawrence's goldfinch	*Carduelis lawrencei*	FWSMC	Observed within the vicinity of the project area.
MAMMALS			
Pallid bat	*Antrozous pallidus*	CSC, FSS, BLMS	Observed within the vicinity of the project area.
Ringtail	*Bassariscus astutus*	DFGFP	Known from the project area (USFWS 2000).

FT = Federally Threatened Species
FE = Federally Endangered Species
FSC = Federal Species of Special Concern
FSS = U.S. Forest Service Sensitive Species
FWSMC = USFWS-protected migratory species
BLMS = BLM Sensitive Species
SE = State Endangered Species
CSC = California Species of Special of Special Concern
DFGFP = CDFG Fully Protected Species
CDFS = California Dept. of Forestry Sensitive

Southern steelhead are historically known to occur in the Ventura River and several of its tributaries. A recent study conducted for the California Department of Fish and Game captured steelhead in the mainstem Ventura River from below the Robles Diversion Dam downstream to Shell Road. Southern steelhead are also known from the estuary that provides rearing and foraging habitat for migrating juvenile steelhead, and serves as a movement corridor for upstream migrating adult steelhead.

Arroyo chub

Arroyo chub (*Gila orcutti*) is a California-state species of special concern. A small native fish that typically occurs in slow moving portions of warm streams with highly variable stream flows. This species was originally known from the Los Angeles, San Gabriel and Santa Ana River systems, Malibu and San Juan Creeks, and the Santa Margarita River drainage, and has been introduced into several river systems to the north of its native range.

Arroyo chub breed in streams and lake environments, and generally spawn between February and August. Potential habitat for this species occurs in the vicinity of the project, and arroyo chubs are known to be widespread throughout most of the Ventura River watershed (Hunt and Lehman, 1992).

California red-legged frog

The California red-legged frog (*Rana aurora draytonii*) is a Federally threatened and California-state species of special concern. It is a medium-sized frog that historically occurred in coastal mountains from Marin County south to northern Baja California, and along the floor and foothills of the Central Valley from about Shasta County south to Kern County (Jennings, 1994). Currently, this species generally occurs in the coastal portions of its historic range and is extremely rare in most of southern California south of Ventura County.

California red-legged frogs are usually confined to aquatic habitats, such as creeks, streams and ponds, and occur primarily in areas having pools approximately 1 meter deep, with adjacent dense emergent or riparian vegetation (Jennings and Hayes, 1994). Adult frogs move seasonally between their egg-laying sites and foraging habitat, but generally they rarely move large distances from their aquatic habitat. Major predators include wading birds, introduced fish, bullfrogs, and native garter snakes, all of which occur along the Ventura River.

The project area is considered potential habitat for the California red-legged. This species, however, has only been documented in a few locations in the upper portion of the project area (above Matilija Dam) along Matilija Creek and within the San Antonio Creek tributary (USFWS, 2000; URS, 2000).

Western spadefoot toad

The western spadefoot toad (*Scaphiopus hammondii*) is a federal and state species of special concern that is primarily known from the Central Valley and adjacent foothills, and in the Coast Ranges from Redding to northwestern Baja California. This species is found in arid and semi-arid regions in the lowlands and foothills (below 4,500 feet) in washes, river floodplains, alluvial fans, playas, and alkali flats. Breeding and egg laying occurs almost exclusively in shallow temporary pools formed by rainfall,

and grasslands with temporary pools are considered optimal habitat for this species (Zeiner et al.). Western spadefoot toads are now believed to be extirpated from most of southern California.

The river floodplain associated with the project is considered potential habitat for western spadefoot toad, and one occurrence of this species was reported from the Ventura River floodplain near the town of Oak View.

Southwestern pond turtle

The southwestern pond turtle (*Clemmy's marmorata pallida*) is classified as a federal and California state species of special concern, and is the only abundant native turtle in the state (Zeiner et al.). Historically, it occurred in most Pacific slope drainages from the Oregon to the Mexican borders. The current range is similar to the historic range, but populations have become fragmented and reduced by agriculture, urban development, and habitat alteration and degradation. Population numbers have also decreased due to competition with and predation from exotic and introduced species such as bullfrogs, largemouth bass, and sunfish (Holland, 1994; Jennings and Hayes, 1994).

Pond turtles live in rivers, streams, lakes, ponds, vernal pools, seasonal wetlands, and in intermittent streams where permanent pools exist. Although they prefer freshwater, they also seem to have a tolerance for slightly brackish conditions. Adult turtles require slow-moving water and appropriate aerial and aquatic basking sites, such as logs, tree trunks, banks, and ledges. Hatchlings (individuals less than one year old) require shallow water, less than 30cm with adjacent dense submergent or emergent vegetation for refuge (Jennings and Hayes, 1994). Habitat requirements of the southwestern pond turtle also include a terrestrial component. Terrestrial habitats are used for oviposition, over-wintering, occasional seasonal use, and overland dispersal. Turtles are active on a year-round basis in both aquatic and terrestrial habitats (Holland, 1994).

Potentially suitable habitat for southwestern pond turtles occurs near the proposed project, and this species has been observed at several locations along the Ventura River and its tributaries (Hunt and Lehman, 1992; USFWS, 2000; Aspen, 2002).

Two-striped garter snake

The California-state species of special concern two-striped garter snake (*Thamnophis hammondii*) is an aquatic snake that is known from Monterey County south to Baja California, Mexico.

Two-striped garter snakes typically occur within perennial and intermittent streams that have rocky beds and are bordered by willow thickets or other dense vegetation, and may also inhabit shallow rivers and stock ponds bordered by thick riparian vegetation.

Potentially suitable habitat for two-striped garter snakes occurs in the vicinity of the project area. Only three observations, however, have been reported from the project area (Hunt and Lehman, 1992; USFWS, 2000; Aspen, 2002).

Great blue heron

The great blue heron (*Ardea herodias*) is a California Department of Forestry (CDF) sensitive species. These large wading birds are year round residents that are commonly seen in wetlands, estuaries, ponds, lakes, agricultural lands, rivers, and other aquatic environments throughout most of California.

Great blue herons typically breed in colonies in the top of secluded large snags or live trees near shallow water foraging areas (Zeiner et al.). This large predatory bird wades slowly into shallow water waiting patiently for opportunities to strike and capture prey such as fish, crustaceans, and small amphibians and reptiles.

The entire floodplain of the Ventura River, including the project area, is considered potential foraging habitat for great blue herons. Additionally, large riparian and adjacent upland trees in the vicinity of the project provide potentially suitable rookery habitat for this species. No nesting great blue herons have been reported within the project site, but several individuals have been observed during recent studies (USFWS, 2000; Aspen, 2002).

Great egret

The great egret (*Ardea alba*) is a California Department of Forestry (CDF) sensitive species. These large wading birds are year-round residents that are commonly seen in wetlands, estuaries, ponds, lakes, agricultural lands, rivers and other aquatic environments. This species commonly occurs along coastal California and throughout the Central Valley.

Great egrets are colonial breeders that use the sticks and stems of marsh plants to build large nests in secluded trees near water (Zeiner et al., 1990a). Like great blue herons, the great egret is a predatory bird that wades slowly into shallow water waiting patiently for opportunities to strike and capture prey such as fish, crustaceans, and small amphibians and reptiles.

The entire floodplain of the Ventura River, including the project area, is considered potential foraging habitat for great egrets. Additionally, large riparian and adjacent upland trees in the vicinity of the project provide potentially suitable rookery habitat for this species. However, no nesting great egrets have been reported from the project, but several individuals have been observed during recent studies (USFWS, 2000; Aspen, 2002).

Western yellow-billed cuckoo

The California-state endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is an uncommon to rare summer resident in California. Within California, this species is generally found foraging and breeding in desert foothill and valley riparian habitats that support extensive riparian woodlands, especially those dominated by cottonwood and willow.

The extensive riparian vegetation in the project vicinity provides potential foraging and nesting habitat for yellow-billed cuckoos. However, this species, however, has not been reported from the project area.

Southwestern willow flycatcher

The federally and California state-listed endangered southwestern willow flycatcher (*Empidonax trailii extimus*) is a migratory passerine species that breeds in California from late spring through late summer, and migrates to wintering grounds in Central America, and portions of South America during the non-breeding season (Zeiner et al., 1990a). The southwestern willow flycatcher's breeding range includes southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Nevada and Utah, and northwestern Mexico. In southern California, this subspecies is now a very rare and local summer resident.

The southwestern willow flycatcher is a riparian obligate species that breeds along rivers, streams, wetlands, and other aquatic-associated habitats such as extensive riparian woodlands with water-filled creeks, or channels and scattered overgrown clearings.

The riparian habitat in the project area supports potential breeding habitat for this species. No southwestern willow flycatchers, however, have been reported in the CNDDB for this area, and none were observed during recent field surveys of the project (USFWS, 2000; Aspen, 2002).

Least Bell's vireo

The federally and California state endangered least Bell's vireo (*Vireo bellii pusillus*) is a small and secretive migratory bird that is closely associated with dense stands of riparian vegetation along streams and rivers. Least Bell's vireos typically arrive at their breeding grounds in southern California riparian areas by mid-March and depart to their wintering grounds in late August (Zeiner et al., 1990b).

For breeding, least Bell's vireos prefer riparian woodlands that combine a dense understory with a tall canopy. Their small cup-shaped nests are made from plant material and are typically placed on slender branches approximately two or three feet above the ground.

The project area is not considered critical habitat for least Bell's vireo although riparian areas in nearby streams (i.e., the Santa Ynez and Santa Clara Rivers) are considered critical habitat for this species. The extensive riparian areas within and near the project area, however, are considered potential breeding habitat. Jim Greaves observed a single least Bell's vireo breeding pair three consecutive years (1993 to 1995) nesting in a location approximately two miles upriver of the Main Street Bridge, Ventura (URS, 2000). In addition, one historic least Bell's vireo nest was observed near the proposed project in the Foster Park region of the Ventura River (circa 1919), and an individual was observed in a location on the Ventura River approximately two miles upriver from the estuary (CNDDB, 2002a).

Yellow-breasted chat

The yellow-breasted chat (*Icteria virens*), a California-state species of special concern, is a migratory bird species that breeds in coastal California and the Sierra Nevada foothills. This species arrives in California in April and departs for wintering grounds in Mexico and Guatemala following the breeding period (Zeiner et al., 1990b).

Yellow-breasted chats generally inhabit mature riparian plant communities with a dense understory, and nests are usually placed above the ground in thick dense shrubs along watercourses (Zeiner et al.).

The dense riparian habitat within the project vicinity support potentially suitable nesting and foraging habitat for yellow-breasted chat, and this species has been observed in the Ventura River Estuary (Hunt and Lehman 1992).

Yellow warbler

The yellow warbler (*Dendrocia petechia brewsteri*) is a California-state species of special concern. It is an uncommon to common summer resident in northern California, locally common in southern California, and rare but regular in southern California during the winter (Zeiner et al., 1990b). This species usually arrives in California in April and are mostly gone by October, with small numbers regularly overwintering in the lowlands of southern California (Garrett and Dunn, 1981).

Breeding occurs from mid-April to early August, typically in mature riparian woodland, especially where dominated by willows or alders, and nests are usually placed in heavy brush understory in a deciduous sapling or shrub (Zeiner et al., 1990b).

The project area supports suitable foraging and nesting habitat for yellow warbler, and this species has been observed during past and recent wildlife surveys of the project vicinity (Hunt and Lehman, 1992; USFWS, 2000; Aspen, 2002).

Tricolored blackbird

The tricolored blackbird (*Agelaius tricolor*) is a federal and State of California species of concern, and are generally non-migratory, year-long residents of California.

Tricolored blackbirds nest in large colonies in wetlands supporting cattails (*Typha* spp.) or tules (*Scirpus* spp.), and occasionally in riparian thickets with willows (*Salix* spp.), blackberries (*Rubus* spp.), wild roses (*Rosa* spp.), and tall herbs. Highly colonial, tricolored blackbirds require a nesting area large enough to support a minimum colony of about 50 pairs (Grinnell and Miller, 1944). Their nests are located a few feet above, or near, fresh water. Their foraging habitat, which includes croplands, grassy fields, flooded land, and pond edges, may be located up to four miles from the nest sites. The normal breeding period is mid-April to late July, and nesting colonies often relocate from one year to the next (Zeiner et al., 1990b).

The riparian habitat within the project area and vicinity support potential breeding habitat for this species. In 1993, a tricolored blackbird nesting colony (40 individuals) was reported from a location approximately one mile upriver from the Ventura River Estuary (CDFG, 2002a).

Lawrence's goldfinch

The Lawrence's goldfinch (*Carduelis lawrencei*) is a USFWS–protected migratory bird species that breeds in California and winters in other southwestern states and in northern Mexico.

This species generally occurs along the coastal slope of central and southern California, and the foothills of the Central Valley (Zeiner et al., 1990b). Lawrence's goldfinch are present in California mostly from April through September, and occur in a variety of habitat types (e.g., valley-foothill hardwood, valley foothill hardwood-conifer, desert riparian, palm oasis, pinyon-juniper) near a water source (Zeiner et al., 1990b).

The project area provides potentially suitable foraging and nesting habitat for Lawrence's goldfinch, and this species has been observed in the project vicinity (USFWS, 2000).

7.2 WATER RESOURCES

The five-acre demonstration site is located within the active floodplain of the Ventura River near the town of Casitas Springs (Figures 4-1 and 4-2). This area is situated along the southern edge of the floodplain and consists of a linear band of instream wetland riparian vegetation that runs parallel to an unvegetated rip-rap levee. The levee separates the floodplain and the project site from adjacent residential areas, thereby providing a hydraulic barrier between the active floodplain and adjacent upland areas.

7.2.1 Surface Water

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges. From the upper slopes of the Transverse Ranges in the Los Padres National Forest, the surface water system generally flows in a southerly direction past the City of Ojai to its estuary located in the City of Ventura.

The average annual run-off of the Ventura River at the project site is 11,206 acre-feet. Measured surface water flow rates have ranged from 12,500 to 63,000 cubic feet per second during major flood events (Padre, 2003). This section of the Ventura River has perennial flows, even during drought years, due to a natural bedrock barrier that forces subsurface flow to the surface. The river channel occurs as a wide flood plain and is dominated by *Arundo* vegetation.

Beneficial uses established in the Water Quality Control Plan (RWQCB, 1994) for surface water in the "Upper Ventura River Hydrologic Area" include municipal water supply, industrial service water supply, industrial process water supply, agricultural water supply, groundwater recharge, freshwater replenishment, water contact recreation, non-water contact recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, rare species habitat, migratory habitat, spawning habitat, and wetlands.

The California Regional Water Quality Control Board, Los Angeles Region 4 classifies the Ventura River and its tributaries as a Category I (impaired) watershed, under Section 303 (d) of the Clean Water Act (see Section 3). This designation is likely due to the historical use of pesticides in the area, which have impacted beneficial uses to aquatic life.

7.2.2 Groundwater

Beneficial uses established in the Water Quality Control Plan (RWQCB, 1994) for groundwater in the "Upper Ventura Hydrological Area" include municipal water supply, industrial water supply, industrial service water supply, industrial process water supply, and agricultural water supply. The groundwater basins of the Upper Ventura Hydrologic Unit are not considered overdrafted.

In the Ventura River watershed there are two major alluvial groundwater basins: Ojai Valley/Upper Ojai Basin (under the City of Ojai and extending east) and Upper/Lower Ventura River (area north and south of Oak View). The Sulphur Mountain aquifer is a bedrock aquifer located south of Ojai and Upper Ojai (Ventura County, 1994). The water quality of these basins is considered good and is used for agricultural and domestic uses by farmers, homeowners, and two water districts. The groundwaters of the "Upper Ventura River Hydrologic Area" are not considered overdrafted (Padre, 2003).

7.3 NOISE

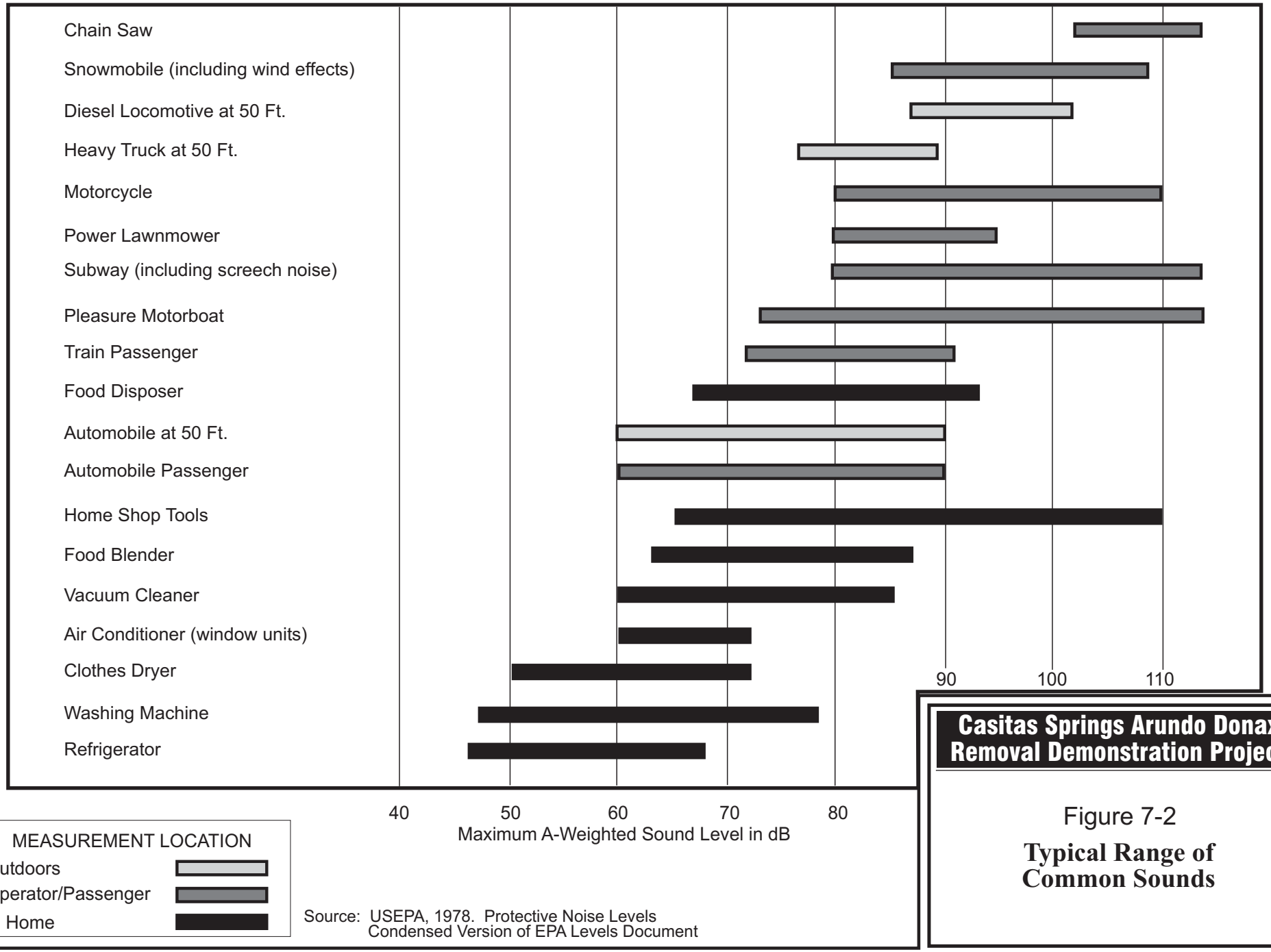
This section describes the existing noise environment of the study area. Section 7.3.1 provides a background on the fundamentals of environmental acoustics. Section 7.3.2 defines the existing noise environment by outlining major noise sources, analyzing noise measurements, and describing the location of sensitive noise receptors.

7.3.1 Environmental Acoustics

A brief background in acoustics is helpful in understanding how humans perceive various sound levels. Some useful definitions include:

1. Acoustics refers to the study of sound wave generation and transmission
2. Sound is the physical oscillation or vibration of a medium, such as air, that can be perceived by an instrument, such as the human ear or a microphone
3. Noise has commonly been categorized as loud, disruptive sounds that can annoy or cause harm to people
4. Background noise is the aggregation of all perceptible, but not necessarily identifiable, sound sources (such as traffic, airplanes, and environmental sounds) that create a static ambient noise baseline.

Although extremely loud noises can cause temporary or permanent damage, the primary environmental impact of noise is annoyance. The objectionable characteristic of noise often refers to its *loudness*. Loudness represents the intensity of the sound wave or the amplitude of the sound wave height (measured in decibels [dB]). Decibels are calculated on a logarithmic scale; thus, a 10 dB increase represents a tenfold increase in intensity, while a 20 dB represents a hundredfold increase in intensity. Decibels are the preferred measurement of environmental sound because of the direct relationship between a sound's intensity and the subjective "noisiness" of it. The A-weighted decibel system (dBA) is a convenient sound measurement technique that weights selected frequencies based on how well humans can perceive them (see Figure 7-2).



Source: USEPA, 1978. Protective Noise Levels
Condensed Version of EPA Levels Document

Casitas Springs Arundo Donax Removal Demonstration Project

Figure 7-2

Typical Range of Common Sounds

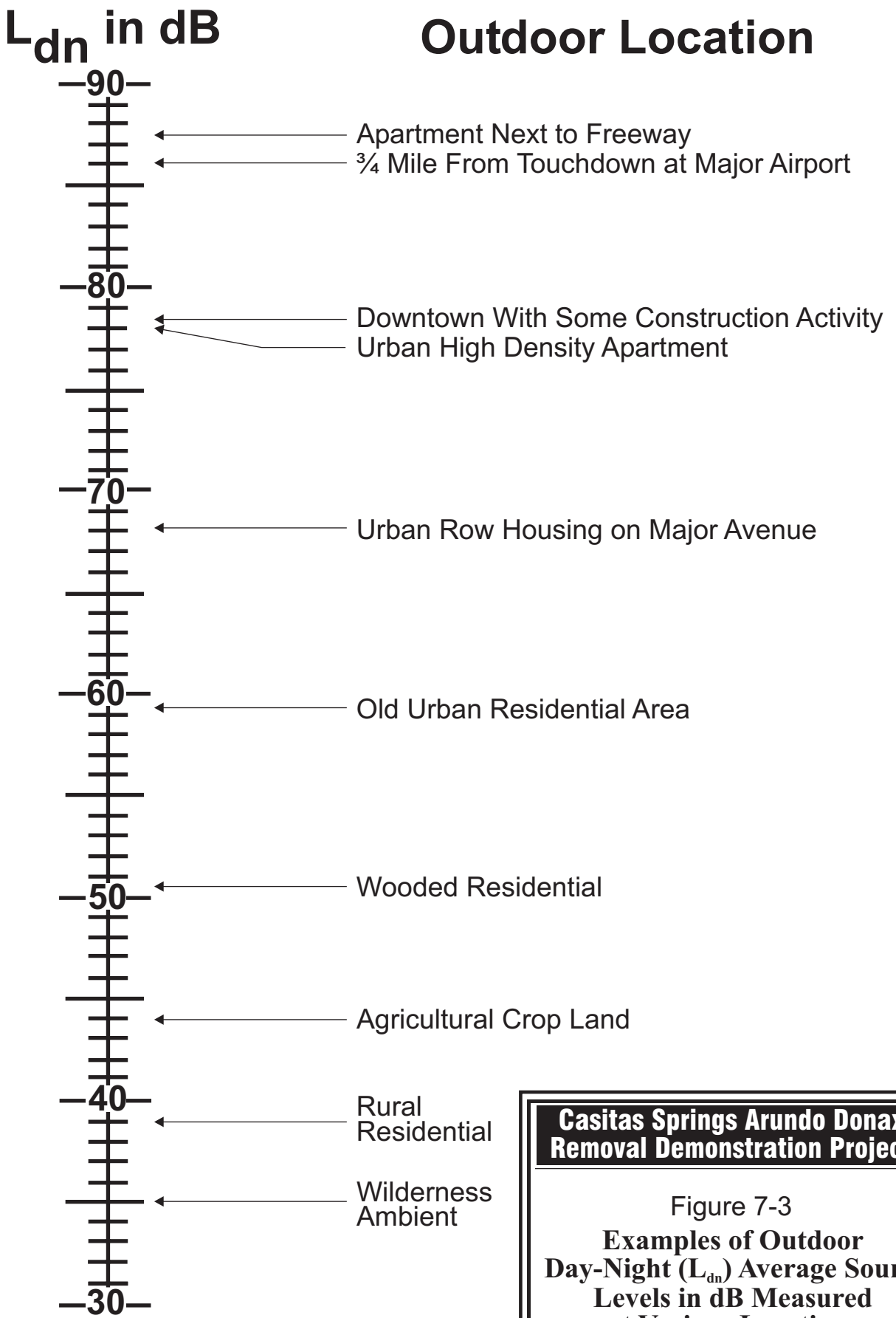
In general, humans will notice a change of sound greater than 3 dBA. Noise levels are generally considered low when they are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss if exposure is sustained for an extended period of time. Examples of low daytime levels are those observed in isolated natural settings, such as the Grand Canyon (20 dBA), and quiet suburban residential streets (43 dBA). Examples of moderate level noise environments are urban residential or semi-commercial areas (55 dBA) and commercial locations (60 dBA). Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones (63 dBA), as well as industrial areas (65 to 70 dBA), the levels are nevertheless considered adverse (U.S. EPA, 1971; Berenek, 1971). Further examples of noises and their associated A-weighted decibels are shown in Figure 7-3.

Ambient environmental noise levels can be characterized by several different descriptors. *Noise Equivalent Level* (L_{eq}) describes the average noise level over a specified period of time. L_{eq} provides a useful measure of the impact of fluctuating noise levels on sensitive receptors over time. Other descriptors of noise incorporate a weighting system that accounts for human's susceptibility to noise irritations at night. *Community Noise Equivalent Level* (CNEL) is a measure of cumulative noise exposure over a 24-hour period, with a 5 dB penalty added to evening hours (7:00 p.m. to 10:00 p.m.) and a 10 dB penalty added to night hours (10:00 p.m. to 7:00 a.m.). *Day/Night Average Noise Level* (L_{dn}) is essentially the same as CNEL, with the exception that the evening penalty is dropped. Further, A-weighted noise levels that are exceeded a selected percentage of time can be classified as L_x, where x is the percentage of time that the noise level is exceeded during a given interval. Sound levels associated with L_{10} typically describe transient or short-term events (these noise levels occur about 10 percent of the time), while L_{90} levels generally describe background noise conditions. L_{dn} and CNEL values rarely differ by more than 1 dB. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, while a change of 5 dB is clearly noticeable. A change of 10 dB is perceived as doubling or halving of sound level.

7.3.2 Existing Noise Environment

Noise Sources and Measurements. Vehicular traffic noise associated with State Route 33 is the primary noise source in the study area. State Route 33 runs parallel to the east side of Ventura River and is located approximately 500 feet east of the northern portion of the study area and approximately 100 feet east of the southern portion of the study area. State Route 33 generates moderate to heavy levels of traffic during normal daytime commute periods and low traffic levels during the night and off-peak hours. Other noise sources in the project area are residential in nature (e.g., music, automobiles at residences, landscaping equipment, barking dogs, etc.) with the occasional light aircraft over flight.

Using an impulse-integrating sound-level meter (Quest Technologies-Model 2800), noise measurements were recorded at three locations (see Figure 7-4 for monitoring locations) in the project area, to quantify existing noise conditions. Table 7-2 provides the recorded ambient noise conditions in the study area. As described in Table 7-2, recorded average ambient noise levels in the vicinity of project area ranged between 45.0 dBA and 54.3 dBA.



Source: USEPA, 1978. Protective Noise Levels Condensed Version of EPA Levels Document

Casitas Springs Arundo Donax Removal Demonstration Project

Figure 7-3

Examples of Outdoor Day-Night (L_{dn}) Average Sound Levels in dB Measured at Various Locations

Casitas Springs Arundo Donax Removal Demonstration Project

Figure 7-4

Noise Monitoring Locations

Aspen Environmental Group

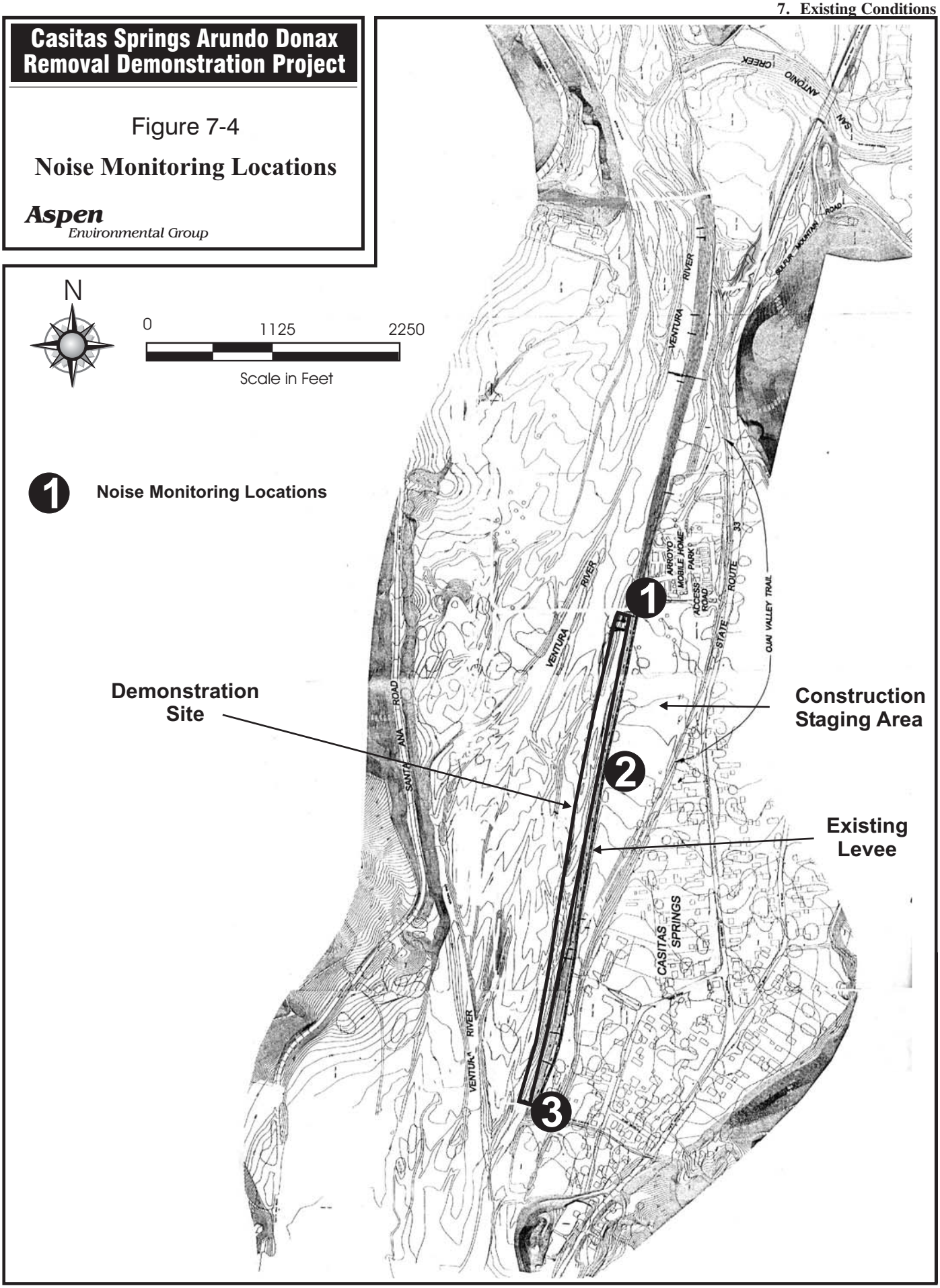


Table 7-2 Ambient Noise Levels Representative of the Project Area

Location #	Location Description	Survey Period	L_{eq}	L_{max}	L_{min}	Notes
1	Adjacent to the northeast corner of the project area, at the southeastern edge of the Arroyo Mobile Home Park	12:30 p.m. to 12:45 p.m.	54.3	62.0	48.5	Traffic along State Route 33, moderate wind blowing through foliage, construction (paving) activity in the mobile home park, garbage collection, birds sounds.
2	Top of the east side of the levee, south of the proposed construction staging area.	1:05 p.m. to 1:20 p.m.	45.2	58.3	38.0	Traffic along State Route 33, moderate wind blowing through foliage, small plane flyby, dogs barking.
3	Southern most portion of the project area, top of the east side of the levee.	1:35 p.m. to 1:50 p.m.	45.0	53.0	36.5	Traffic along State Route 33, wind blowing through foliage, small plane flyby, dogs barking.

Notes: All measurements are in dBA; Measurements were taken on April 11, 2003.
L_{eq} = Equivalent Sound Level, a measurement (in this case 15 minutes) that accounts for the moment-to-moment fluctuations due to all sound sources during the measurement period, combined.
L_{max} = The maximum sound level reached during a sampling period
L_{min} = The minimum sound level reached during a sampling period

Sensitive Receptors. Land uses that the County of Ventura consider to be noise sensitive include residential, educational, and health facilities, research institutions, certain recreational uses, entertainment facilities, and churches (Ventura County, 1988b). Sensitive receptors in the vicinity of the project area are limited to the residences of the Arroyo Mobile Home Park approximately 150 feet northeast of the northern most portion of the project site, and the Casitas Springs neighborhoods; the closest of which are approximately 200 feet east of the southern portion of the project site.

8. ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Environmental impacts are determined by carefully evaluating the most probable future conditions of the site with implementation of the proposed project. Potential project-related impacts have been identified using the following impact classification scheme: (1) adverse impacts that cannot be mitigated to a level of less than significant; (2) adverse impacts that can be mitigated to a level of less than significant; (3) impacts that are considered to be less than significant; and, (4) beneficial impacts.

The focus of this section is on the potential impacts associated with biological resources, water resources, and noise as they relate to the proposed project. Impacts associated with the project's alternatives are provided in Section 9. A summary of the environmental effects that have been found to be less that significant is provided in Section 10. Section 11 provides an evaluation of the project's long-term implications, including growth inducing impacts, cumulative impacts, and irreversible environmental changes.

8.1 BIOLOGICAL RESOURCES

8.1.1 Impact Significance Criteria

Impact significance criteria for impacts to biological resources are based on Section 15065 and Appendix G of the California State CEQA Guidelines and Section 21083 of the Public Resources Code. Section 15065(a) of the Guidelines states that the project may have a significant effect if it has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

These criteria are derived from the Ventura County "Initial Study Assessment Guidelines," which were developed in accordance with the County of Ventura's "Administrative Supplement to the State CEQA Guidelines."

Significance Criteria for Endangered, Threatened, or Rare Species

Adverse impacts on federally or state-listed or other special status species would be considered significant and would require additional mitigation if project construction or operation would:

1. Reduce Species Population:
   - Reduce the abundance of sensitive species, including species under the protection of the Migratory Bird Treaty Act that occur within the project area
   - Result in direct or indirect impacts on candidate or sensitive species populations
   - Create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to special status species populations in the project area
   - Result in a substantial long-term loss or deterioration of existing wildlife or aquatic habitat
   - Change the diversity or substantially alter the numbers of a local population of any wildlife or aquatic species, or interfere with their survival, or growth to a degree that would adversely affect wildlife or aquatic populations.

2. Reduce Species Habitat:
   - Cause a temporary alteration or loss of habitat important for one or more listed species that could result in avoidance by a listed species
   - Result in direct or indirect impacts on candidate or sensitive species habitat
   - Result in the loss of designated or proposed critical habitat for one or more listed species.
3. Restrict Reproductive Capability:
   - Cause a temporary alteration or loss of habitat important for one or more listed species that could result in increased mortality or lowered reproductive success.

Significance Criteria for Wetland Habitat

Adverse impacts on wetlands would be considered significant and would require additional mitigation if project construction or operation would:

- Fill or alter a wetland, resulting in a long-term adverse change in its hydrology, soils, or composition of vegetation or unique, rare, or special concern wetland community;
- Remove or significantly prune overstory tree species in a manner that affects wetland functions related to bank stabilization, stream temperature, insect habitat, etc. Cause short- or long-term violations of Federal or State water quality standards for streams that lead to wetlands measured as in-stream elevated turbidity readings or decreased dissolved oxygen levels.

Significance Criteria for Coastal Habitat

Adverse impacts on coastal habitat would be considered significant and would require additional mitigation if project construction or operation would:

- Substantially increase turbidity and sedimentation.

Significance Criteria for Migration Corridors

Adverse impacts on migration corridors would be considered significant and would require additional mitigation if project construction or operation would:

- Eliminate native vegetation
- Involve the erection of physical barriers.
- Intimidate wildlife due to the introduction of noise, light, and development or increased human presence
- Substantially interfere with the movement or range of migratory birds and other wildlife, or the movement, range, or spawning of any resident or anadromous fish.

Significance Criteria for Locally Important Species/Communities

Adverse impacts on locally important species and communities would be considered significant and would require additional mitigation if project construction or operation would:

- Result in a reduction of a locally important species population or habitat, or restrict reproductive capability of a locally important species
- Result in a long-term reduction or alteration of unique, rare, or special concern vegetation types (e.g., riparian vegetation) or natural communities
- Introduce new, or expand the range of existing non-native plants, noxious weed species or soil pests

- Create substantial barriers for dispersal of native plant species
- Result in a spill or leak that would result in contaminated soil that would eradicate the existing vegetation, inhibit revegetation, and/or migrate to other areas and impact the soil and water ecology via erosion and sedimentation.

8.1.2 Impacts

The effect of *Arundo* invasion within the Ventura River watershed has resulted in the replacement or minimization of native riparian vegetation with an undesirable, highly invasive, exotic plant species. Replacement of the existing riparian ecosystem with *Arundo* reduces the biological diversity of flora and fauna, and may reduce or eliminate habitat used by special status species. Unlike native riparian habitat, *Arundo* lacks the structural elements that provide diverse wildlife habitat.

The proposed project would identify the advantages and disadvantages of multiple methods for removing and controlling the spread of *Arundo* infestation in the Ventura River watershed. By doing so, the proposed project would provide proven mechanisms for restoring, enhancing, and protecting the biological integrity of the native riparian system within the Ventura River watershed. The proposed project would additionally identify those eradication methods that do not effectively remove *Arundo* on a long-term basis. The proposed project's evaluation of multiple eradication techniques, as well as the re-establishment and evaluation of various pallets of native plant species would, overall, result in a significant beneficial impact to biological resources.

In addition to the above, the results of the proposed project would provide highly valuable information to other public and private entities that are interested in implementing *Arundo* removal projects, and would educate the general public as to the benefits of such projects. The following section addresses the potential impacts and recommended mitigation measures for the physical effects of implementing the proposed project. All impacts to biological resources that may potentially result due to implementation of the proposed project can be mitigated to a level of less than significant.

8.1.2.1 *Vegetation and Wetlands*

Impacts to wetland/riparian plant communities and special status plant species due to *Arundo* removal activities are described below, along with any associated mitigation measures. Table 8-1 summarizes the vegetation and wetland impacts and presents the significance conclusions.

Table 8-1 Vegetation and Wetlands Impacts and Significance Conclusions

Impact	Significance
Potential Direct Impact to Wetlands and Riparian Due to Vegetation Removal	Adverse impact that can be mitigated to a level of less than significant
Potential Indirect Impact to Wetlands Due to Altered Hydrology	Adverse impact that can be mitigated to a level of less than significant
Potential Indirect Impact to Wetlands Due to Erosion, Sedimentation and/or Contamination	Adverse impact that can be mitigated to a level of less than significant
Potential Indirect Impact to Wetlands Due to Herbicide Use	Adverse impact that can be mitigated to a level of less than significant
Potential Direct Impacts to Special Status Plant Species.	Adverse impact that can be mitigated to a level of less than significant

Potential Direct Impacts to Wetlands and Riparian Due to Vegetation Removal

Impacts to wetlands and riparian habitat may occur during *Arundo* removal within the 5-acre project site, resulting in a temporary loss of sensitive vegetation. Impacts to wetlands and riparian would be considered potentially significant. Implementation of Mitigation Measure BR-1 (below), requiring flagging of native riparian trees, avoidance of wetlands, and restoration/creation would reduce the impact to wetlands and riparian vegetation to less than significant. Additionally, the act of removing *Arundo* would result in a cumulative benefit to the area as native plant species would have the opportunity to grow and would not have to compete with the *Arundo*.

BR-1 The ATF shall avoid and/or minimize for damage and/or loss of wetland and riparian vegetation types due to *Arundo* removal activities by completing the following:

- Maximum avoidance of wetlands and riparian by identifying these areas and appropriate buffer zones
- Maximum avoidance of riparian tree species by flagging trees with a Diameter at Breast Height (DBH) of 3 inches or greater
- Implementation of the project's Revegetation Plan
- Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator.

Once the delineated wetlands have been verified by the USACE, avoidance and impact minimization measures will be finalized. Avoidance will consist of identifying and flagging wetland areas and riparian tree species with a DBH of 3 inches or greater to minimize impacts to wetland vegetation types.

The ATF shall ensure the acquisition of all required State and Federal regulatory permits and approvals. The ATF shall additionally ensure implementation of the requirements of these permits and approvals to minimize potential impacts to wetland and riparian vegetation to the extent feasible.

Potential Indirect Impacts to Wetlands Due to Altered Hydrology

Arundo removal may result in temporary impacts to wetland hydrology within and adjacent to the project area. Temporary impacts could be caused by interception and detention of groundwater or surface water within the project area, thus reducing the hydrologic input to the adjacent wetland. This impact is only anticipated in the area of the project that will implement mechanical removal of root/rhizome material. Impacts to the hydrologic function of wetlands would be considered potentially significant. Implementation of Mitigation Measure BR-2 (below), requiring native soil/material replacement and proper contour grading, would reduce this impact to less than significant.

BR-2 The purpose of this measure is to prevent temporary hydrologic alteration to wetlands and associated sensitive vegetation from soil disturbance activities associated with the project by requiring:

- Appropriately timing work so that soil disturbance does not occur during the wet season (when surface water is present). Typically, the wet season extends from approximately November 1st though April 15th.

- Supervision and verification of the implementation of this measure by the VCWPD's Restoration Coordinator.

Potential Indirect Impacts to Wetlands Due to Erosion, Sedimentation and/or Contamination

Wetland habitat degradation within and adjacent to the construction areas may occur due to erosion of soils exposed during construction activities. This impact is only anticipated in the portion of the project that will implement mechanical removal of root/rhizome. This impact would be considered potentially significant. With implementation of Best Management Practices (BMPs) for erosion/sedimentation and the Prevention, Spill Containment and Countermeasures Plan required by Mitigation Measure WR-1 (Section 8.2.2), impacts would be reduced to less than significant levels. It is additionally noted that once the native plant revegetation is established, potential erosion of soils would be further minimized.

Potential Indirect Impacts to Wetlands Due to Herbicide Use

The use of herbicides for *Arundo* removal may unintentionally affect non-target native wetland plant species that occur within and adjacent to the project. Impacts to the native wetland vegetation would be considered potentially significant. Implementation of Mitigation Measure BR-3 (below), requiring implementation of safe herbicide methods, would reduce this impact to less than significant. The following is a breakdown of the potential impacts with each removal technique using herbicide control techniques:

Cut and Immediately Paint Stumps. CDFG has proven that cut and daub (painting) with Rodeo® or Aquamaster® has been effective in controlling *Arundo* while not posing a significant toxicity hazard to non-target species (CDFG, 2001). With proper implementation of Mitigation Measure BR-3, below, this method would minimize the possibility of drift or overspray onto non-target native species.

Foliar Application of Herbicide. The foliar application of herbicides would create a possibility that aerial overspray would drift and come into contact with wetland plant species, thereby, causing damage or removal of native, non-target vegetation. In addition, this technique allows vegetation to die and remain in place allowing for an increased risk of fire damage. Potential overspray and increased fire risk will be minimized with implementation of Mitigation Measure BR-3 below.

Cut and Spray Resprouts. Cut and spraying resprouts would require a similar foliar application of herbicides that would create a possibility that aerial overspray would drift and come into contact with wetland plant species, thereby, causing damage or removal of native, non-target vegetation. With implementation of Mitigation Measure BR-3, below, impacts due to potential overspray would be minimized to less than significant.

BR-3 The purpose of this measure is to prevent permanent or temporary impacts to wetlands and associated sensitive vegetation and fauna during herbicide treatments of *Arundo*. All activities requiring herbicide treatment would:

- Appropriately time work so that herbicides are not applied during the wet season to avoid potential impacts to downstream vegetation where feasible, and to avoid impacts to fish and wildlife species. Typically, the wet season extends from approximately November 1st though April 15th.
- Ensure that appropriate water-safe herbicides are used. Treatments will use a glyphosate-based herbicide including Rodeo® and/or Aquamaster®, both of which are labeled for use within water
- Ensure that herbicides are applied at concentrations that are considered safe for biological resources within and adjacent to the project area.
- Ensure that herbicides are mixed with a water soluble dye of low toxicity that highlights treated areas
- Minimize overspray of herbicides onto non-target species by disallowing spraying when wind velocities exceed 6 mph
- Minimize trampling of native vegetation by establishing marked trails
- Remove dead *Arundo* material that was foliar treated and left in place to avoid fire hazard potential prior to the beginning of the fire season.
- Have a licensed professional conduct or oversee herbicides applications
- Supervise and verify of the implementation of these measures by the VCWPD's Restoration Coordinator.

Potential Direct Impacts to Special Status Plant Species

No focused botanical surveys for special status plant species have been conducted within the proposed project area. Construction and related activities could result in direct impacts to special status plant species that may occur within and adjacent to the project and would be considered potentially significant. Implementation of Mitigation Measure BR-4, requiring appropriately timed pre-construction surveys, demarking of sensitive plant locations, and supervision by the VCWPD's Restoration Coordinator would reduce this impact to less than significant.

BR-4 The ATF shall avoid impacts to special status plant species by:

- Conducting pre-construction surveys for special status plant species
- Mapping and flagging any special status plant species within or adjacent to the proposed project area during construction to protect them
- Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator.

Prior to construction, the location of special status plant species will be determined through appropriately-timed surveys according to California Native Plant Society (CNPS) protocol; this shall apply to all areas of the proposed project including: the five acre demonstration site, the staging area, and the access road. Determination of potential habitat for rare species, and surveys conducted for presence of rare plant species will be performed by a qualified botanist or biologist. These surveys will be appropriately timed to cover the blooming periods of the special status plant species with the potential to occur in the area.

Any rare plant species within the proposed project area (including a 50-foot wide buffer zone on each side of the project's work areas) will be flagged and accurately mapped on construction plans to protect the area occupied by the species during construction. Flagging shall be

supervised by the VCWPD's Restoration Coordinator, and appropriate buffer distances from the rare plant population shall be determined by him or her. The VCWPD's Restoration Coordinator shall have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where potential erosion may impact a special status plant species or its habitat.

Compliance with these measures prior to and during construction will be supervised and verified by the VCWPD's Restoration Coordinator.

8.1.2.2 *Wildlife*

This section presents a discussion of impacts to wildlife resources due to the proposed *Arundo* removal project. Table 8-2 summarizes the wildlife impacts and presents the significance conclusions.

Table 8-2 Wildlife Impacts and Significance Conclusions

Impact	Significance
Removal of wildlife habitat	Adverse impact that can be mitigated to a level of less than significant
Wildlife mortality	Less than Significant
Wildlife disturbance from increased human presence	Adverse impact that can be mitigated to a level of less than significant
Habitat removal or disturbance of special status wildlife species	
Construction impacts on aquatic biota	Adverse impact that can be mitigated to a level of less than significant

Impacts to terrestrial wildlife resources as a result of the proposed project include those that could occur as a result of initial *Arundo* removal and ongoing control and maintenance. Potential impacts to federal- and state-listed species, candidate species, and species of special concern are also discussed.

Removal of *Arundo* will temporarily diminish the amount of habitat available for wildlife using the area. Individuals displaced from areas cleared of vegetation could be lost if adjacent habitats are at carrying capacity or if wildlife occupying them are exposed to an increased risk of predation. Direct wildlife mortality may occur during *Arundo* removal. Burrow-dwelling animals; eggs and nestlings of bird species with small, well-hidden nests; and species with limited mobility (e.g., salamanders, frogs and toads, lizards, snakes, ground squirrels, and gophers) are susceptible to death or injury as a result of the proposed *Arundo* removal activities. More mobile species like birds and larger mammals are expected to disperse into adjacent habitat areas during the land clearing, grading, and trenching phases of this project. Local wildlife populations within the project are expected to decline during the construction phase of the project, but are expected to return to their pre-construction levels following successful reclamation and revegetation of the project site. Construction associated with *Arundo* removal activities could interfere with movement patterns for wildlife that use streamside riparian and wetland corridors for dispersal (e.g., black-tailed deer, raccoon, muskrat, bobcat, coyote, and skunks).

Noise, dust, and visual disturbance from increased human activity could result in native habitats within and near the construction zone being temporarily unattractive to wildlife. Construction could also

impact wildlife in adjacent habitats by interfering with breeding or foraging activities, altering movement patterns, or causing animals to temporarily avoid areas adjacent to the project area.

Nocturnally active wildlife (e.g., coyotes, foxes, skunks, bats, nighthawks, poorwills, and owls) would likely be less affected by construction than diurnally active species (e.g., hawks, snakes, lizards, and ground squirrels). Large and medium-sized animals such as coyotes, foxes, bobcats, rabbits, and hawks are expected to temporarily avoid areas immediately adjacent to the project area. Wildlife is most vulnerable to construction-related disturbances during their breeding seasons. Disturbances from construction could result in nest, roost, or territory abandonment and subsequent reproductive failure if these disturbances were to occur during an affected species breeding season.

Most of the wildlife that may be impacted by construction in such areas are common, wide-ranging species, and are expected to quickly recolonize the corridor after construction and subsequent revegetation work is completed. Although local wildlife may be temporarily impacted in the vicinity of the project area, the long-term net benefit of removing *Arundo* and establishing native vegetation will increase habitat availability and productivity for a wider range of common and special status native wildlife species. This is considered a significant beneficial impact.

Each of the five impact categories is described below. Project-related disturbance in each category includes all activities that might occur during the life of the project, including initial construction and ongoing *Arundo* control and maintenance activities.

Wildlife Habitat Removal

Wildlife habitat removal can result from *Arundo* removal activities that unintentionally remove the native wetland plant communities found within and near the project. Activities including mechanical removal and herbicide application could directly or indirectly remove native habitat, thereby reducing its availability to local wildlife populations.

Temporary loss of habitat within the project area could affect some small mammal, reptile, and/or amphibian species with very limited home ranges and mobility. For these species, *Arundo* removal could represent a slight reduction in the carrying capacity of a portion of their home range until a productive vegetation cover is re-established. However, most of these species are common and widely distributed throughout the area and the loss of a few individuals as a result of habitat removal would have a negligible impact on overall populations of the species, either locally or throughout the region. The temporary removal of wildlife habitat in the project, however, would result in loss of wildlife habitat, and is therefore considered a potentially significant impact.

This temporarily affected habitat, however, will be restored to a more productive native habitat type, providing a net benefit to wildlife, and is therefore considered a potentially adverse impact that can be mitigated to a level of less than significant. Implementation of Mitigation Measures BR-5 through BR-7, requiring appropriately timed pre-construction surveys to map and flag locations supporting species to be avoided during construction, establishing buffer zones, and obtaining the appropriate permits

would reduce this impact to less than significant levels. Potential impacts to special status wildlife species are discussed below.

The primary mitigation measures to reduce potential impacts to wildlife habitat are: pre-construction surveys to determine wildlife presence or absence (Mitigation Measure BR-5), appropriate demarking of resources (Mitigation Measure BR-6), and establishing construction exclusion zones (Mitigation Measure BR-7). Implementation of these measures would reduce potentially significant wildlife habitat impacts to less than significant levels.

BR-5 The ATF shall ensure pre-construction biological resource surveys to identify the location of sensitive biological resources. Pre-construction surveys will be consistent with all survey protocols and requirements stipulated by resource agencies as a condition of project approval. Sensitive resources shall be clearly mapped and marked on construction drawings or project maps before construction in these areas.

BR-6 The VCWPD's Restoration Coordinator shall ensure the staking and flagging of identified sensitive resources before construction activities begin. The VCWPD's Restoration Coordinator shall also inspect all areas with sensitive resources prior to construction to ensure that stakes and flagging (i.e., native riparian with a DBH of 3 inches or greater), and required setback buffers are maintained. Avoidance measures and buffer distances vary for each species and are specified for some species in Mitigation Measures BR-11, BR-12, and BR-13. The specific buffer zone distance will be determined by the appropriate resource agencies (CDFG and USFWS).

BR-7 The ATF shall acquire all permits and authorizations required by Federal, State, regional and local jurisdictions to proceed with the proposed project.

Direct Wildlife Mortality

This impact involves the direct loss of wildlife (e.g., small mammals, reptiles, and other less-mobile species) from construction activities associated with *Arundo* removal. Direct mortality may also be associated with increased human activity, particularly involving wildlife habitat removal.

Direct loss of small mammals, reptiles, and other less-mobile species could result from the use of hand tools and trampling during mechanical removal of *Arundo*. Surface ground disturbance during construction of the proposed project could result in a potential loss of less-mobile individual animals and/or ground nests. Clearing vegetation and excavating soil could also lead to mortality of small mammals, reptiles, and nesting birds with eggs or young.

Most of the wildlife that may be impacted by construction are common, wide-ranging species. These common species are expected to quickly recolonize the corridor after construction and subsequent revegetation work is completed. In addition, the use of hand tools rather than heavy equipment minimizes the potential to impact wildlife since most species can escape to adjacent areas in time. Therefore, the proposed project would result in an adverse, but less than significant impact to common wildlife. Potential impacts to special status wildlife species are discussed above.

In addition, the use of herbicides may adversely impact fish and wildlife species. For those methods that would involve the use of herbicide treatments, a glyphosate-based herbicide would be used. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water and are considered safe for wildlife when properly applied. Due to the disturbances associated with mechanical removal and other activities (flagging, establishing pathways, etc.) prior to herbicide application, terrestrial wildlife would not likely be exposed to direct spray. Similarly, fish and other aquatic organisms would not be expected to be directly exposed to herbicides due to mitigation that disallows herbicide treatment during the wet season or when surface water in within or near the project area (Mitigation Measure BR-14).

With implementation of Mitigation Measure BR-4 that requires: (1) the use of approved and water-safe herbicides at concentrations safe for fish and wildlife species; (2) the application of herbicides be conducted by a licensed contractor and trained personnel; (3) disallows herbicide spraying when wind velocities exceed 6 mph; and, Mitigation Measure BR-14, which disallows herbicide spraying when surface water is within or near the site, the proposed herbicide applications would result in less than significant impacts to fish and wildlife species.

Effective application of Mitigation Measures BR-8 and BR-9, along with measures such as pre-construction surveys to determine wildlife presence or absence (Mitigation Measures BR-5, BR-10, BR-11, and BR-12), appropriate demarking of resources (Mitigation Measure BR-6 would result in little mortality among wildlife in the vicinity of the proposed project, thereby minimizing adverse impacts to wildlife.

BR-8 The ATF or its construction contractor shall ensure that all construction personnel comply with the following:

- Litter or other debris that may attract animals shall be removed from the project area on a daily basis
- No pets will be allowed in the construction area

BR-9 The ATF shall use qualified inspectors, biologists, and/or resource specialists to monitor construction activities. A biological resource monitor or the VCWPD's Restoration Coordinator shall be present as needed for *Arundo* removal efforts requiring mechanical removal.

The VCWPD's Restoration Coordinator or his/her designated monitor(s) shall be responsible for pre-construction surveys, staking sensitive resources, on-site monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. All personnel undertaking these activities shall be familiar with the wildlife species and other sensitive biological resources in the general project area and qualified to recognize potential construction effects to these resources, and shall ensure that State and/or Federal wetland/riparian and special status species protection guidelines are followed.

Wildlife Disturbance from Increased Human Presence

Indirect impacts resulting from human disturbance during *Arundo* removal, ongoing *Arundo* control, and revegetation efforts (due to noise, dust, etc.) could cause temporary displacement of some wildlife

habitat that may or may not be able to support additional individuals. Impacts as a result of increased human disturbance may also include avoidance of preferred habitat areas and reduced reproductive success in local wildlife populations, including songbirds, small mammals, reptiles, and special status species.

Project activities are likely to temporarily displace a variety of wildlife from adjacent habitats, lowering the overall habitat availability and value of these areas. The project area and adjacent habitats are not likely to be completely abandoned by wildlife, but the effective use of these areas could be reduced during construction, depending on a number of factors such as the particular wildlife species, time of year, presence of topographic features, and amount of foliage and vegetation present. Since this effect could be potentially detrimental to some wildlife during their critical life stages and could increase competitive pressures among adjacent populations and habitats, the impact could be significant. Indirect impacts resulting from human disturbance during project construction, ongoing *Arundo* control, and reclamation process could therefore cause some wildlife displacement to other habitats, which may or may not be able to support additional animals. Impacts as a result of increased human disturbance may also include reduced reproductive success in local wildlife populations, including songbirds, small mammals, reptiles, and special status species.

Disturbance from increased human presence is therefore considered a potentially significant impact, but mitigable to less than significant levels. Implementation of Mitigation Measures BR-5 and BR-6 would reduce potential impacts to a less than significant level. Potential impacts to special status wildlife species are discussed below.

Mitigation should include effective application of measures to conduct pre-construction surveys to determine wildlife presence or absence (Mitigation Measures BR-5, BR-10, BR-11, and BR-12), establishing habitat setbacks (Mitigation Measure BR-6), appropriate construction timing and measures to limit access to the approved work zone (Mitigation Measures BR-4, BR-10, BR-11, and BR-12), appropriate demarking of resources (Mitigation Measure BR-6) would result in disturbance of wildlife in the vicinity of the proposed project to be at less than significant levels.

Habitat Removal or Disturbance of Special Status Wildlife Species

In general, construction and operational impacts of the proposed project on special status wildlife species and their habitats would be similar to those discussed in the sections for general wildlife. However, similar impacts can have greater effects on special status wildlife species, since the distribution and abundance of many of these species are limited. Construction of the proposed project would result in the temporary loss of wildlife habitat.

Fifteen special status wildlife species were identified as potentially affected by the proposed project; they are presented in Table 8-3. These 15 species are either known to occur or have a high probability of occurring within or near the project area.

The mitigation measures specific to each of the 15 special status wildlife species potentially impacted by the proposed project are presented below. In addition to these species, special status raptors, protected under the U.S. Migratory Bird Treaty Act, may also be impacted if active raptor nests are destroyed or disturbed by project-related actions. Mitigation for impacts to raptor species (Mitigation Measure BR-12) is also presented below.

The purpose of Mitigation Measures BR-10, BR-11, and BR-12 is to define specific actions to reduce potential impacts to special status wildlife species in the vicinity of the project. Effective application of these measures and all other proposed mitigation measures (Mitigation Measures BR-5 through BR-14) would reduce potential impacts to special status wildlife species to less than significant.

BR-10 Where construction would occur within or near known or potential special status species habitat, as defined below, the ATF shall perform the actions defined in the following paragraphs.

- **Southern Steelhead Trout and Arroyo Chub.** Potential impacts to southern steelhead trout and arroyo chub can be mitigated by limiting *Arundo* removal and ongoing control activities to periods where surface water is not present within the project site (Mitigation Measures BR-2 and BR-14).
- **California Red-Legged Frog.** The ATF shall ensure completion of pre-construction surveys (Mitigation Measure BR-5) to determine if this species is present within or immediately adjacent to the project area. If pre-construction surveys identify red-legged frogs within or adjacent to the project, then no more than one week prior to the start of construction, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored and appropriate measures taken during construction to ensure that any relocated animals do not move back into the construction corridor. To further minimize impacts to California red-legged frogs and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods when surface water is not present within the site.

  Western Spadefoot Toad. To minimize impacts to western spadefoot toad and other aquatic species, *Arundo* removal and ongoing control activities shall be limited to outside the breeding period and/or when surface water is not present within the project site. This species, however, could be impacted in burrows that may occur within the project area. In order to minimize impacts to this species, the ATF shall ensure pre-construction surveys to determine if this species is present. If pre-construction surveys identify western spadefoot within or adjacent to the project, then no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety.

Table 8-3 Special Status Wildlife Species Potentially Impacted by the Proposed Project

Common Name	Scientific Name	Status	Known or Potential Occurrence in Project
FISH			
Southern Steelhead	*Oncorhynchus mykiss*	FE	Known throughout the Ventura River, Matilija Creek, and other tributary waters of the Ventura River.
Arroyo chub	*Gila orcutti*	CSC, FSS	Known throughout the Ventura River
AMPHIBIANS			
California red-legged frog	Rana aurora draytonii	FE, CSC	Known from several locations within the Ventura River. Potentially occurs in project area.
Western spadefoot toad	*Scaphiopus hammondii*	FSC, CSC, BLMS	Known from the Ventura River near the Oak View area.
REPTILES			
Southwestern pond turtle	*Clemmy's marmorata pallida*	FSC, CSC, FSS, BLMS	Known from several locations within the vicinity of the project area.
Two-striped garter snake	*Thamnophis hammondii*	CSC, FSS	Observed within the vicinity of the project area.
BIRDS			
Great blue heron	*Ardea herodias*	CDFS	Observed within the vicinity of the project area.
Great egret	*Ardea alba*	CDFS	Observed within the vicinity of the project area.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	SE	Potential nesting and foraging riparian habitat.
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE	Potential nesting and foraging riparian habitat.
Least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Observed within the vicinity of the project area.
Yellow-breasted chat	*Icteria virens*	CSC	Observed within the vicinity of the project area.
Yellow warbler	*Dendrocia petechia brewsteri*	CSC, FWSMC	Observed within the vicinity of the project area.
Tricolored blackbird	*Agelaius tricolor*	FSC, CSC	Observed within the vicinity of the project area.
Lawrence's goldfinch	*Carduelis lawrencei*	FWSMC	Observed within the vicinity of the project area.

FT = Federally Threatened Species
FE = Federally Endangered Species
FSC = Federal Species of Special Concern
FSS = U.S. Forest Service Sensitive Species
FWSMC = USFWS-protected migratory species
BLMS = BLM Sensitive Species
SE = State Endangered Species
CSC = California Species of Special of Special Concern
DFGFP = CDFG Fully Protected Species
CDFS = California Dept. of Forestry Sensitive

- **Two-Striped Garter Snake.** In areas within the project that are known to or potentially could support two-striped garter snake habitat (i.e., aquatic habitat), the ATF shall ensure pre-construction surveys (Mitigation Measure BR-5) to determine if this species occurs in the project area. If pre-construction surveys have identified two-striped garter snake within or adjacent to the project, then, no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the wildlife biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored during construction to ensure that any relocated animals do not move back into the project area. The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals of relocated species do not move into the construction corridor. To further minimize impacts to two-striped garter snake and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within the project site (Mitigation Measures BR-6 and BR-14).
- **Southwestern Pond Turtle.** Where construction is to occur near known or potential habitat for southwestern pond turtle (i.e., near ponded water), pre-construction surveys shall be conducted to determine the presence or absence of this species (Mitigation Measure BR-5). If pond turtles are observed, a determination shall be made in consultation with CDFG as to whether or not construction will adversely impact this species and what measures shall be implemented. To further minimize impacts to southwestern pond turtle and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within or near the project site (Mitigation Measures BR-2 and BR-14).

BR-11 *Arundo* removal and ongoing control activities shall be limited to periods outside the respective breeding season of the potentially affected species. All construction-related and ongoing *Arundo* control activities shall be limited to a period outside the known breeding period for great blue heron, great egret, western yellow-billed cuckoo, southwestern willow flycatcher, olive-sided flycatcher, least Bell's vireo, yellow-breasted chat, yellow warbler, tricolored blackbird, and Lawrence's goldfinch where feasible (October 1 through March 1). No pre-construction surveys will be required for activities that occur within this period. If construction is required outside this period, the ATF will consult with CDFG and the USFWS to determine appropriate mitigation to avoid impacts to these species.

BR-12 The ATF shall avoid disturbance to active raptor nests within or near the project. No pre-construction surveys shall be required if construction activities are to occur only during the non-breeding season for raptors (September 1 through January 31). If, however, construction activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys of all potentially active nest sites within 500 feet of the construction corridor shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species such as northern harrier and short-eared owl. If surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required.

If active nests are found, a 500-foot no-disturbance buffer shall be established around the active nest(s). The size of individual buffers can be adjusted, following a site evaluation by a qualified

biologist, which shall depend upon the presence of topographical features that obstruct the line of sight from the construction activities to the nest and the observed sensitivity of the birds. Site evaluations and buffer adjustments shall be made in consultation with the local CDFG representative. The portion of the project that is within the designated buffer shall be identified in the field by staking and flagging (Mitigation Measure BR-6).

BR-13 No construction activity shall be permitted until the applicable resource agencies determine that the proposed mitigation will result in less than significant impacts to the affected species.

Construction Impacts on Aquatic Biota

Construction of the proposed project would be conducted within the active floodplain of the Ventura River. *Arundo* removal and control methods could adversely affect special status aquatic biota through impacts that adversely affect aquatic habitat within and adjacent to the proposed project. Special status aquatic species that could be adversely impacted by project activities that affect aquatic habitat include fishes (e.g., southern steelhead and arroyo chub), amphibians (e.g., California red-legged frog and spadefoot toad), and reptiles (e.g., two-striped garter snake and western pond turtle).

Specific mitigation to minimize impacts to special status aquatic species are addressed by Mitigation Measure BR-10 and through mitigation limiting construction to periods outside the wet season, addressed by Mitigation Measure BR-14, below.

The purpose of Mitigation Measure BR-14 is to define specific actions to reduce potential impacts to special status aquatic wildlife species in the vicinity of the project. Effective application of this measure would reduce potential impacts to special status aquatic species to less than significant.

BR-14 To avoid or minimize potential impacts to special status aquatic species, the ATF shall limit all *Arundo* removal activities and ongoing control activities to periods outside the wet season where feasible, and when areas within the project site do not support surface water. The allowable distance between the project activities and surface water shall be determined in consultation with the USFWS, NOAA Fisheries Service, and the CDFG.

8.2 WATER RESOURCES

8.2.1 Impact Significance Criteria

Impacts to water resources are considered significant if one or more of the following conditions would result from implementation of the proposed project or alternatives:

- Substantial change in the rate and amount of surface runoff
- Substantial degradation of water quality
- Contamination or substantial reduction of a pubic water supply
- Substantial degradation or depletion of groundwater resources
- Impairment of beneficial uses of water
- Substantial interference with groundwater recharge or direction and rate of groundwater flow

- Lateral erosion, streambed scour, or long-term channel degradation resulting in damage to private property, utility lines, or structures
- Increase in flooding hazards.

8.2.2 Impacts

The proposed project involves four types of *Arundo* removal, including the use of mechanical methods and the use of a glyphosate-based herbicide. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water and have the same formulations: glyphosate (53.8 percent) and water (46.2 percent). For the initial treatment in Project Year 1, it is estimated that no more than 30 gallons of herbicide would be needed for areas that require cut-stump and foliar spray applications (*Arundo* removal method Numbers 1 through 3).

Surfactants are added to some herbicide spray solutions to improve performance, by improving the absorbing properties of liquids. The type of herbicide used, weed species targeted, and environmental conditions affect the surfactant performance. Surfactants are divided into five major classes with respect to their chemical composition: nonionic surfactants, crop oil concentrated, nitrogen-surfactant blends, esterified seed oils, and organo silicone surfactants. It is anticipated that either a crop oil, or esterified seed oil type surfactant would be used for those areas that propose application via foliar spray. The use of an R-11 type surfactant is not proposed for the proposed project.

Depending on site-specific conditions, reapplication would occur up to four times annually in project years 1 through 6. However, slight variations may occur due to specific site conditions as they relate to such variables as rainfall, eradication success rates, etc. It is anticipated that approximately 6 gallons of herbicide would be needed for each reapplication. It would also be anticipated that progressively smaller volumes of herbicides would be needed with each passing year of the project, as smaller and smaller amounts of *Arundo* regrowth would be expected.

Mechanical activities for *Arundo* removal would include motorized equipment such as chainsaws, power brush cutters, standard wood chippers, vehicles for transporting the cut stalks, and a tow truck sprayer for the foliar spray herbicide application.

Surface Water

The possibility of glyphosate entering surface water can occur through three routes: (1) direct application to aquatic vegetation; (2) binding to soil that washes off treated terrestrial sites; or, (3) through drift from treated areas near water. The use of herbicides would take place over short periods of time, and would be applied either by or under the supervision of a licensed professional to ensure that specific safety measures are followed. With the implementation of Mitigation Measures WR-1 and WR-2, below, the effects of the proposed project with respect to surface water would be considered less than significant.

The following Mitigation Measures would avoid substantial degradation of surface water quality due to implementation of the proposed project:

WR-1 The designated contractor shall develop and be prepared to implement a Spill Prevention, Containment and Countermeasures Plan that specifies construction equipment fueling procedures, equipment maintenance procedures, herbicide mixing and application procedures and containment and cleanup measures to be followed in the event of a spill. The Plan, at a minimum shall include:

- The handling and storage of construction equipment and maintenance fluids (oils, fuels, etc.) shall be undertaken outside of the riverbed within the project's staging area. Fluids shall be stored within the staging area in closed containers and disposed of promptly and properly away from permeable areas to prevent potential contamination of the project area. The re-filling of herbicide tanks for foliar spray applications shall also occur outside of the riverbed within the project's staging area.
- Immediate control, containment, and cleanup of fluids and herbicides released due to spills or equipment failure (broken hose, punctured tank, etc.). All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills, the refueling of portable equipment shall occur within a contained area. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Refueling activities shall ensure that the potential for spillage from overfilling, nozzle removal, or other action does is minimized to the extent feasible.
- All on-site workers will be briefed on environmental concerns regarding the project, including the use of herbicides, and appropriate work practices (including spill prevention and response measures). The construction contractor shall monitor all construction-related activities to ensure that all of the environmental protection measures are followed throughout initial project activities and subsequent activities.

WR-2 The ATF or its construction contractor shall ensure that no project activity occurs in the wet season (November 1st through April 15th) or when surface water is present where feasible.

The removal of the *Arundo* vegetation in the project area may result in a temporary increase in the temperature of surface water. This would result from the removal of vegetation that shades surface water. However, this impact would be considered temporary and less than significant because the proposed project involves revegetation with native species, which would ultimately re-shade the area.

In those areas of the project area that would involve the complete removal of the *Arundo* biomass, an increase in turbidity could occur. However, this effect would be considered less than significant because the disturbance would be short term. Implementation of Mitigation Measure BR-2 would additionally reduce potential impacts to less than significant.

Groundwater

In lakes and streams, glyphosate remains attached to soil and sediment particles, where it is degraded over time by microorganisms. Due to its quick adsorption by soil and the fast action of soil microorganisms, the potential for leaching into groundwater is low and would be considered a less than significant impact.

The proposed project does not involve the use of groundwater for any of its activities; therefore there would be no impact on the depletion of groundwater resources. Irrigation water for the revegetation

effort would be from a nearby source from the Casitas Springs Water District, which has the capacity to serve the project.

8.3 NOISE

8.3.1 Impact Significance Criteria

The Ventura County General Plan establishes that noise generators proposed to be located near any noise sensitive use shall incorporate noise control measures so that outdoor noise levels at the noise receptor do not exceed:

- 1 hour L_{eq} of 55 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
- 1 hour L_{eq} of 50 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
- 1 hour L_{eq} of 45 dBA or ambient noise level plus 3 dBA, whichever is greater, during any hour from 10:00 p.m. to 6:00 p.m.

In addition to the impact significance criteria referenced above, Table 8-4 provides a listing of the policies for noise-related issues that have been adopted by the County.

Table 8-4 Ventura County General Plan Noise Policies

Policy Number	Description of Policy
2.16.1	All discretionary development shall be reviewed for noise compatibility with surrounding uses. Noise compatibility shall be determined from a consistent set of criteria based on the standards listed below. An acoustical analysis by a qualified acoustical engineer shall be required of discretionary developments involving noise exposure or noise generation in excess of the established standards. The analysis shall provide documentation of existing and projected noise levels at on-site and off-site receptors, and shall recommend noise control measures for mitigating adverse impacts.
2.16.1(4)	Noise generators proposed to be located near any noise sensitive use shall incorporate noise control measure so that that outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards: L_{eq} 1H of 55 dB(A) or ambient noise level plus 3 dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m. L_{eq} 1H of 55 dB(A) or ambient noise level plus 3 dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m. L_{eq} 1H of 45 dB(A) or ambient noise level plus 3 dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.
2.16.2	Discretionary development which would be impacted by noise or generate project related noise which cannot be reduced to meet the standards prescribed in Policy 2.16.2(1) shall be prohibited. This policy does not apply to noise generated during the construction phase of a project if a statement of overriding considerations is adopted by the decision-making body in conjunction with the certification of a final Environmental Impact Report.
2.16.3	The priorities for noise control shall be as follows: Reduction of noise emissions at the source. Attenuation of sound transmission along its path, using barriers, landforms, modification, dense plantings, and the like. Reflection of noise at the reception point via noise control building construction, hearing protection or other means.

Source: Ventura County General Plan, 1998.

8.3.2 Impacts

The General Plan specifies that the above referenced policies and impact significance criteria would not apply to noise generated during the construction phase of a project if a statement of overriding considerations is issued by the decision-making body in conjunction with the certification of a Final Environmental Impact Report. Construction activities associated with the proposed project would be considered a noise generator under the County's noise policy and, thus, the above thresholds are applicable (Ventura County, 2000).

The highest ambient L_{eq} noise level measured in the vicinity of the project site was 54.3 dBA. However, it is believed that construction activities that were occurring near this measurement location may have slightly elevated the measured sound level over the true ambient conditions at the site. A separate recent noise monitoring analysis conducted at approximately the same location when there were no construction activities occurring nearby indicated a L_{eq} level of 50.7 dBA (Padre, 2003). It is believed that this level more accurately represents the true ambient conditions of the subject monitoring location.

Construction activities associated with the proposed project would involve the use of loud hand held equipment such as chain saws for a period of approximately 30 days to cut the *Arundo* stems during Project Year 1. For the purposes of this noise analysis, it is assumed that eight chain saws would be operating at any one time along the 4,500-foot long project site. It is also assumed that chain saw workers would be divided into two groups that would work in different areas of the project site simultaneously, each group working with four chain saws in relatively close proximity to each other. (Please refer to Appendix D for the assumptions of the noise modeling conducted for the proposed project.) Workers would load the cut *Arundo* stems onto a haul truck located on top of the levee, which would deliver the stems to the project staging area where they would be fed into a chipper.

The concurrent construction activities described above would generate the most noise associated with seven year life span of the proposed project. Noise levels associated with the removal and chipping of the *Arundo* were estimated using a spreadsheet model based on published sound emission levels and an assumed noise attenuation rate of 6 dBA with each doubling of distance (see Appendix D for the noise model spreadsheet).

As noted in Section 7.3.2, the closest sensitive receptors to the project area are located in the Arroyo Mobile Home Park, approximately 150 feet to the northeast of the northern most extent of the project site. Noise modeling indicates that peak noise levels at the mobile park associated with the removal of *Arundo* in the northern portion of the project site would be up to 77 dBA L_{eq}. The staging area where the *Arundo* would be chipped would be located approximately 500 feet south of the mobile home park and would generate noise levels at the mobile home park up to 72 dBA L_{eq}. Although the modeled noise levels are highly conservative in that they do not account for noise reduction factors such as absorption by soft surfaces, and obstructions that block the line of sight between the construction equipment and the receptors, it is estimated that the proposed construction noise levels associated with Project Year 1

would exceed the County's significance criteria of 55 dBA L_{eq} at residential areas adjacent to the project site.

Mitigation Measure N-1 is designed to reduce construction noise levels as much as feasibly possible, thereby minimizing the associated noise impacts.

N-1 Use of loud hand held construction equipment such as chain saws or heavy-duty construction equipment or trucks shall not occur between the hours of 7 p.m. and 7 a.m., and equipment engine covers should be in place and mufflers shall be in proper working condition.

Full implementation of Mitigation Measure N-1 would not reduce impacts to less than significant levels during Project Year 1. Although these impacts would be temporary in nature (no greater than an estimated 30 days) and would only be associated with the first year of the project, residual impacts associated with the implementation of the proposed project during Project Year 1 would remain significant and unavoidable. During project Years 2 through 6 there would be a substantial reduction in the number and operating time of the hand held equipment needed for the removal of resprouting *Arundo* material, and there would be no chipping activities; impacts associated with noise would thus be substantially reduced during these years. During Project Year 7 there would be no physical activities within the demonstration site and no impacts associated with noise would occur. However, due to the noise impacts associated with Project Year 1, a Statement of Overriding Considerations related to noise related issues would need to be made by the Ventura County Watershed Protection District Board of Supervisors at the time of this EIRs adoption and certification (see Section 12).

Impacts associated with the proposed project are presented in Section 8 of this EIR. This section provides a summary of the potential environmental impacts associated with the project's alternatives, including mechanical removal, foliar spray with no mechanical removal, and the No Project Alternative. This section emphasizes impacts associated with biological resources, water resources, and noise. Other environmental effects of the proposed project and its alternatives that have been found to be not significant are summarized in Section 10 of this EIR.

9.1 ALTERNATIVE 1: MECHANICAL REMOVAL

9.1.1 Biological Resources

Biological resources impacts and mitigation associated with Alternative 1 would be similar to those described for the mechanical removal of *Arundo* under the proposed project in Section 8.1. Vegetation and wetland impacts and mitigation associated with Alternative 1 would include: potential direct impacts to wetlands and riparian due to vegetation removal; potential indirect impacts to wetlands due to altered hydrology; potential indirect impacts to wetlands due to erosion sedimentation; and, potential direct impacts to special status plant species.

Similarly, impacts to wildlife resources would be similar to those impacts associated with mechanical removal of *Arundo* described under the proposed project, and would include: removal of wildlife habitat; wildlife mortality; wildlife disturbance from increased human presence; habitat removal or disturbance of special status wildlife species; and, construction impacts on aquatic biota. With implementation of Mitigation Measures BR-1 through BR-14 (Section 8.1.2), impacts would be considered less than significant.

Under Alternative 1, a large percentage of the project area would require repeated entry for mechanical removal and control, thereby increasing the potential to directly impact native riparian plant species caused by trampling or physical removal during *Arundo* control activities. Additionally, increased human presence could increase habitat degradation resulting from trampling and introduction of exotic weedy plant species, and would thus increase the likelihood of wildlife disturbances.

Under Alternative 1, it is estimated that the *Arundo* could re-emerge at an annual rate of as much as 80 percent using the mechanical removal technique (Watson, 2003). Consequently, *Arundo* removal and control by mechanical methods would additionally result in a greater time-frame to effectively control the vegetation than the combined methods of the proposed project and Alternative 2, thereby increasing the likelihood of disturbance to biological resources in the project area. Furthermore, the objective of demonstrating the effectiveness of different *Arundo* removal methods would not be achieved if this alternative were to be selected.

Under Alternative 1, revegetation with native plant species would be undertaken, as with the proposed project. Assuming that the revegetation effort is successful, a net benefit to biological resources would result.

9.1.2 Water Resources

Under Alternative 1, impacts to water resources would be similar to those associated with the proposed project and would primarily include: increased surface water turbidity; increased surface water temperature; and, potential impacts associated with the accidental spill or leaking of construction-related equipment fluids (such as fuels). As with the proposed project, impacts associated with increases in surface water turbidity and temperature would be considered less than significant, as they would be temporary in nature. Impacts associated with the accidental spill or leaking of construction-related equipment fluids would be less than significant with implementation of Mitigation Measure WR-1 (Section 8.2.2).

Under this alternative, no herbicide treatments would be undertaken. As a consequence, no impacts associated with the accidental spill or leaking of herbicides within or adjacent to the project area would occur.

This alternative would require repeated disturbances within the demonstration site to remove re-sprouting *Arundo* vegetation. However, potential impacts due to repeated earth disturbing activities could potentially be reduced by designating specific paths to the targeted work areas, and subsequently reusing these paths each time cutting is undertaken. Cutting disturbances could also be minimized by minimizing the number of workers entering the area.

As with the proposed project, Alternative 1 does not propose the use of groundwater for any of its activities, and therefore would have no impact on the depletion or contamination of groundwater resources. Irrigation water for revegetation would be from a nearby source supplied by the Casitas Springs Municipal Water District, which has the existing water supply needed to accommodate the project. Therefore, no impacts would be anticipated to occur.

9.1.3 NOISE

The same cutting and chipping activities as described above for the proposed project (Section 8.3) would be necessary for Alternative 1. As with proposed project, cutting and chipping activities associated with Alternative 1 would last for approximately 30 days. Similar to modeled construction noise levels associated with the proposed project, it is anticipated that Alternative 1 would also exceed the County's significance criteria of 55 dBA L_{eq} at residential areas adjacent to the project site. Mitigation Measure N-1, as presented in Section 8.3.2, is recommended to reduce construction noise levels associated with Alternative 1 to the extent feasible. Although these impacts would be temporary in nature, full implementation of Mitigation Measure N-1 would not reduce impacts to less than significant levels. Therefore, residual impacts associated with construction of Alternative 1 would remain significant and unavoidable.

Under Alternative 1, it is estimated that the *Arundo* could re-emerge at an annual rate of as much as 80 percent using the mechanical removal technique (Watson, 2003). Although the re-emerging stems would be smaller and less dense than the original plant material removed, re-removal could generate a substantial amount of cut biomass. As a worst case scenario, to remove the re-growth it is has been

assumed that during the first two to three years of re-removal activities, up to four chain saws and a chipper may be needed for two to three days, depending on site-specific conditions. Although temporary in nature, the impacts associated with the use of the chain saws and chipper would periodically exceed the County's thresholds for noise, and thus, would be considered a significant and unavoidable impact. It is noted, however, that the need to use chain saws and a chipper would be anticipated to decline with each progressive year of the project, as the volume of *Arundo* biomass requiring physical removal would be expected to become progressively less and less.

9.2 ALTERNATIVE 2: FOLIAR SPRAY WITH NO MECHANICAL REMOVAL

9.2.1 Biological Resources

Biological resources impacts and mitigation associated with Alternative 2 would be similar to those described for *Arundo* control using foliar spray of herbicides under the proposed project (Section 8.1). Vegetation and wetland impacts and mitigation associated with Alternative 2 would include: potential indirect impacts to wetlands due to herbicide use and, potential direct impacts to special status plant species. Impacts to wildlife resources would be similar to those impacts associated with foliar spray under the proposed project, and would include: removal of wildlife habitat; wildlife mortality; wildlife disturbance from increased human presence; habitat removal or disturbance of special status wildlife species; and, construction impacts on aquatic biota. With implementation of Mitigation Measures BR-1 though BR-14, these impacts would be considered less than significant.

Under Alternative 2, the project would be foliar sprayed with herbicides and the vegetation would be left in place to die. This method would increase the likelihood of impacts to native vegetation due to potential over spraying and drift. The time required and the associated amount of human presence, however, would be less than mechanical removal methods of the proposed project and Alternative 1, thereby reducing the level of habitat degradation and the potential for introducing exotic weedy plant species.

As compared to the proposed project and Alternative 1, this alternative would increase the amount of dead *Arundo* left in place, thus increasing the potential for flood and fire damage, which could have potentially significant adverse impacts on biological resources.

Under this alternative, no revegetation efforts would be undertaken. Consequently this alternative would not result in the net beneficial impacts to biological resources that would be associated with re-establishment of native plant species.

9.2.2 Water Resources

Under this alternative *Arundo* would be thoroughly sprayed without any cutting or vegetation removal. Re-sprouting materials would then be sprayed up to four times within the project's annual maintenance period (April 15th through November 1st), as warranted by site-specific conditions, over the course of Project Years 2 through 6.

Potential impacts to surface water could occur due to the accidental spill or leaking of herbicides. However, with implementation of Mitigation Measure WR-1 (Section 8.2.2), these impacts would be considered less than significant. Because the *Arundo* would be left in place, no impacts to surface water turbidity or temperature would be anticipated to occur.

Under Alternative 2, no groundwater would be used and no sources of existing water supplies that use groundwater reserves would be used. Therefore, no impacts to groundwater would occur.

9.2.3 NOISE

Under Alternative 2, *Arundo* within the project site would be sprayed and the dead plant materials would be left in place. The main noise sources associated with this alternative would be trips associated with up to 20 commuting workers and one to three spray trucks that would operate from the top of the levee for an estimated two to four weeks. Noise impacts on the residences in the project area associated with these noise sources would be temporary and would not exceed the County's significance criteria for noise-related impacts. Therefore, the noise impacts associated with Alternative 3 would be considered less than significant.

9.3 NO PROJECT ALTERNATIVE

9.3.1 Biological Resources

The No Project Alternative would involve no *Arundo* removal and control activities. Under this alternative, *Arundo* would continue to infest the project area, thereby suppressing the native riparian ecosystem of the Ventura River watershed, limiting its native vegetation and associated wildlife, and increasing local and regional flood and fire potential. The long-term impacts associated with these issues would be considered adverse and potentially significant.

Under the No Project Alternative, the net benefits of restoring the project area with native vegetation would not be achieved, and, as with Alternatives 1 and 2, this alternative would not meet the project objective of demonstrating potentially viable *Arundo* removal and control techniques.

9.3.2 Water Resources

Under the No Project Alternative, no activities related to either *Arundo* removal or the re-establishment of native vegetation would occur. The *Arundo* would continue to expand throughout the general project area until the species reached a climax stage. Allowing the continued infestation and spreading of the *Arundo* within the Ventura River watershed would degrade surface water quality, continue to elevate the species' consumption of water, further alter water flow patterns, retain sediments and increase flood potential both locally and within the entire watershed. The long-term impacts associated with these issues would be considered adverse and potentially significant.

In addition to the above, the improvements to the aquatic and riparian habitats related to the proposed project would not occur; consequently the net benefits of the proposed project would not be realized.

9.3.2 Noise

Under the No Project Alternative, no construction activities related to either *Arundo* removal or the establishment of native vegetation would occur. Therefore, there would be no noise sources associated with this alternative and no impact would occur.

The Ventura County "Initial Study Assessment Guidelines" (County of Ventura, 2000a) provides the various environmental resources and related issue-specific items that must be evaluated when it has been determined that a proposed project may have a significant environmental effect. The County's Guidelines additionally specify the significance criteria that must be used in evaluating these effects.

Under CEQA, an EIR must contain a statement that briefly indicates the reasons why certain effects associated with a proposed project have been determined to not be significant, and thus, not discussed in detail in the EIR (Public Resources Code, Division 13, Section 21100[c]). Pursuant to this requirement, the following section summarizes those environmental effects that have been found to not be significant per the County's significance criteria, as referenced above.

10.1 GENERAL PLAN ENVIRONMENTAL GOALS AND POLICIES

Impact Significance Criteria

The County has established the following significance criteria for impacts related to the County's General Plan environmental goals and policies:

- Any project that is inconsistent with a specific environmental policy of the County General Plan is considered as having a significant environmental impact
- Any project that appears to be inconsistent with an environmental goal of the General Plan must be evaluated by the Planning Division in light of the other related goals, policies and programs of the General Plan in order to determine significance.

Environmental Setting

The proposed project area is located along the east bank of the Ventura River. An existing flood control levee flanks the east side of the site and the main branch of the Ventura River flanks the west side of the site. The County's General Plan land use designation and zoning for the project site is Open Space (County of Ventura, 1995a and 2003a); the County's General Plan land use designations and zoning for lands immediately adjacent to the site are Open Space and Urban Residential.

The County has multiple, resource-specific goals, policies and programs for the environmental resources within its jurisdiction, as well as multiple goals, policies and programs for hazards, land use, and public facilities and services (County of Ventura, 1988a). In addition, the County has adopted thresholds of significance for these resource/issue-specific areas, as provided in the Ventura County "Initial Study Assessment Guidelines" (County of Ventura, 2000a).

Impacts

The majority of the County's General Plan and Ojai Valley Area Plan goals, policies, and programs for environmental resources encourage resource protection, preservation, management, conservation, and enhancement. The proposed project, as mitigated through the recommendations of this EIR, would support these goals, policies, and programs by displacing a highly invasive non-native plant species and re-introducing native habitat. This would, in particular, benefit the area's biological resources and water resources, and would additionally help to reduce flood and fire hazards. Consequently, a net beneficial impact would occur.

The proposed project and Alternative 1 would result in a significant adverse impact that cannot be mitigated to a level of less than significant for construction related noise. This would result in an inconsistency with the County's adopted goals, policies and programs, which would be a significant adverse impact unless the VCWPD Board of Supervisors was able to make the findings that the net benefits of the proposed project outweigh its negative environmental effects. Please refer to Section 8.3.2 (proposed project), Section 9.1.3 (Alternative 1), and Section 12 for additional detail and discussion regarding this impact.

10.2 LAND USE

Impact Significance Criteria

The County has identified the following impact significance criteria for land use and planning:

- **Community Character:** A proposed project may potentially have a significant impact on a community if it conflicts with existing zoning and General Plan designations, require a zoning or General Plan change that is not in character with the existing and intended uses of the area, or is inconsistent with the overall uses and structural design/architecture of the surrounding area. A proposed project would also have a potentially significant impact if it physically divided or otherwise disrupted the arrangement an established community.
- **Housing:** Any project that would remove existing housing would have an impact. Any project that forced the removal of four or more dwelling units for moderate-income families in the Coastal Zone or lower-income families throughout the County would have a significant adverse impact.
- **Growth Inducement:** Growth inducing impacts may be significant if a proposed project would (1) substantially remove an impediment to growth thereby setting a precedent for similar actions in the future, (2) be substantially inconsistent with the planned land use of an area, or (3) generate substantial secondary impacts due to its growth.

Environmental Setting

The proposed project area is located along the east bank of the Ventura River. The area is an estimated five-acre linear swath that averages approximately 20 feet west of an existing flood control levee. The site is approximately 50 feet wide and 4,500 feet long (see Figures 4-1 and 4-2). The project area consists of two parcels of land that are owned by the County of Ventura and City of Ventura. The County's General Plan land use designation and zoning for the project site is Open Space (County of Ventura, 1995a, 2003a); the County's General Plan land use designations and zoning for lands immediately adjacent to the site are Open Space and Urban Residential. The City of Ventura's zoning within the project area is R-1-1AC (single family residential on one-acre lots) (City of Ventura, 2003). As of May 2003 the City had not yet established a General Plan land use designation for the property falling under its jurisdiction (City of Ventura, 2003).

The main branch of the Ventura River flanks the west side of the project area. This portion of the river is undeveloped and supports various native and non-native plant species and wildlife. The river substrate is primarily cobble and sand. The Ojai Valley Trail generally parallels the eastern side of the levee. The community of Casitas Springs is located to the east of the southern portion of the project area. Casitas Springs is primarily zoned as urban residential at a density of one to four dwelling units per acre (Padre, 2003). The 2000 U.S. Census Tract data for the Casitas Springs area indicate a

population of approximately 2,663 persons. Approximately 400 residences live within Casitas Springs itself (Padre, 2003). A mobile home park is located near the northern-most segment of the project area.

Impacts

The proposed project does not involve the alteration of either the existing site's use, or the uses of the surrounding area. The proposed project would not physically divide an existing community, and would not remove or cause the construction of any new housing. Although initial implementation of the proposed project would require the in-migration of up to 25 workers for an estimated 30 day period, it is anticipated that these workers would commute to the project site and thus would not likely require temporary housing. Therefore no impacts would be anticipated to occur.

The proposed site is located within an area that has been designated and zoned Open Space by the County (County of Ventura, 1988, 2003). The proposed project would be consistent with the County's goals, policies, programs and ordinances for Open Space, as they would preserve and enhance the intent of this use. Therefore no conflicts or impacts with adopted County zoning regulations or planning guidelines would occur.

The proposed project would involve *Arundo* eradication. Removal of the *Arundo* would not directly or indirectly induce growth within the area because no permanent in-migration of people would be needed to implement or maintain the effort. Therefore, no impact would occur. Please refer to Section 11 of this EIR for additional long-term implications of the project.

10.3 AIR QUALITY

Impact Significance Criteria

The Ventura County Air Pollution Control Board adopted the Air Pollution Control District's Air Quality Assessment Guidelines (Guidelines) on November 14, 2000 (VCAPCD, 2000). Thresholds of impact significance are taken from the Guidelines, and are listed below. An impact would be significant if it would:

- Conflict with or obstruct implementation of the Air Quality Management Plan (AQMP)
- Violate any air quality standard or contribute to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria nonattainment pollutant
- Expose the public (especially schools, day care centers, hospitals, retirement homes convalescent facilities, and residences) to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people.

In the Ojai Planning Area, a considerable net increase of ozone precursors (a nonattainment pollutant) is usually considered to be five pounds per day of reactive organic compounds or gases (ROC or ROG) or oxides of nitrogen (NOx). This VCAPCD significance threshold is not applicable to construction equipment emissions since they are only temporary or short-term in nature. However, construction-related emissions should be mitigated if ROC and NOx emissions would exceed the five pound per day threshold.

Environmental Setting

Factors Affecting Air Quality. Movement of the ambient air in Ventura County and the Ojai Valley is influenced by a persistent sea breeze but constrained by the surrounding topography. Poor vertical and horizontal dispersion can limit the dispersion of emissions and cause increased ambient air pollutant concentrations near the ground surface. A temperature inversion can act as a "ceiling" that prevents pollutants from rising and dispersing. Mountain ranges can act as "walls" that inhibit horizontal dispersion of air pollutants. Persistent temperature inversions affect the project area (VCAPCD, 2000).

The diurnal land/sea breeze pattern common in Ventura County can recirculate air contaminants. Air pollutants are pushed toward the ocean during the early morning by the land breeze, and to the east during the afternoon, by the sea breeze. This can recycle the pollutants through the area for several days rather than dispersing them outside the area. Residual pollutant emissions from previous days can accumulate and may chemically react with new emissions in the presence of sunlight. This diurnal recycling of pollutants occurs most often from May through October. Air temperatures are usually higher and sunlight more intense during this period. Consequently, Ventura County more frequently exceeds the State and Federal ozone standards during the summer season (VCAPCD, 2000).

Air Quality Standards. Ambient air quality is determined by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) at levels determined to be protective of public health and welfare with an adequate margin of safety. National Ambient Air Quality Standards (NAAQS) were first established by the federal Clean Air Act of 1970. California Ambient Air Quality Standards (CAAQS) were established in 1967. An area with air quality continuously below or equal to the standards is designated as an area that attains the standards. California standards are generally more stringent than national standards.

Air quality standards specify the upper limits of concentrations and duration in the ambient air consistent with the management goal of preventing specific harmful effects. There are national and state standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), airborne particulate matter with an aerodynamic diameter of less than ten microns (PM_{10}), and sulfur dioxide (SO_2). These are "criteria pollutants." Federal and State Ambient Air Quality Standards are shown in Table 10-1.

The Ventura County portion of the South Central Coast Air Basin is designated by the EPA and CARB as a nonattainment area for ozone and particulate matter less than ten microns in diameter (PM_{10}). The attainment status for all criteria pollutants is shown in Table 10-2.

Air Quality Plans, Policies, and Regulations. To eventually achieve attainment with all State and Federal ambient air quality standards, the VCAPCD has implemented and periodically updates the AQMP. The AQMP uses projections of population growth and trends in energy and transportation demand to predict the future emissions that could occur within the County. Based on these projections, the AQMP then outlines what additional measures must occur in order to eliminate future violations of

the ambient air quality standards. The additional measures are then either codified into the VCAPCD rules and regulations or otherwise set forth as formal VCAPCD recommendations.

Table 10-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	8-hour	NA	0.08 ppm
	1-hour	0.09 ppm	0.12 ppm
Carbon Monoxide (CO)	8-hour	9.0 ppm	9.0 ppm
	1-hour	20 ppm	35 ppm
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	NA	0.053 ppm
	1-hour	0.25 ppm	NA
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	50 µg/m^3
	24-hour	50 µg/m^3	150 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3
	24-hour	NA	65 µg/m^3
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	NA	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	1-hour	0.25 ppm	NA

Notes: ppm=parts per million; $\mu g/m^3$= micrograms per cubic meter; NA=no applicable standard
Source: CARB, 2003.

Table 10-2 Attainment Status of Ventura County

County	Ozone		CO		NO_2		PM_{10}	
	State	Federal	State	Federal	State	Federal	State	Federal
Ventura County	SN	SN	A	A	A	A	N	A

Notes: A= Attains Standards; SN= Severe Nonattainment; N = Nonattainment
Source: CARB, 2003.

The Ventura County General Plan includes policies that require consistency with the AQMP and specify review according to the recommendations in the VCAPCD guidelines. Other policies are aimed at reducing emissions from transportation demand or from major stationary sources. Because this assessment is prepared according to the recommendations of the VCAPCD Guidelines, consistency with the air quality policies of the Ventura County General Plan is assured.

The VCAPCD rules and regulations contain requirements for certain equipment that could be used by the proposed project and its alternatives. Equipment with small internal combustion engines (under 50 horsepower) are exempt from permitting through VCAPCD Rule 23-D, and dust emissions from mobile equipment on the worksite would also be exempt (Rule 23-B). However, VCAPCD Rule 74-9 contains limitations for any larger, stationary internal combustion engines (greater than 50 horsepower) that would be operated on the site for more than one year. Engines used for mechanical removal or chipping of the biomass material, including portable equipment, may be subject to these requirements. Nuisances from dust or emissions of other contaminants are distinctly prohibited by the VCAPCD in Rule 51. Pesticide and herbicide spraying are not regulated by the VCAPCD, but rather are handled by the Ventura County Agricultural Commissioner's office.

Impacts

Implementing the proposed project would result in short-term emissions generated by heavy equipment (similar to construction equipment) and worker motor vehicles. These emissions include exhaust emissions and fugitive dust.

Emissions would be generated by the short-term activities of mechanical removal, transport of the cut stalks, application of herbicide, chipping, and disposal of the material. These would be fully completed over the course of 12 to 18 months, but the bulk of the activity would occur within 30 days. Mechanical removal and transport of the biomass prior to chipping would involve hand-held equipment such as loppers, chain-saws, and power brush cutters, with haul trucks to bring the material to the staging area. At least one wood chipper would be needed at the staging area. Most of this equipment would cause exhaust emissions. Dust emissions would be caused by truck travel on the levee maintenance road and in the staging area. Additional emissions would be caused by site worker passenger vehicles. Emissions were estimated using factors recommended by the South Coast Air Quality Management District in their CEQA Air Quality Handbook (SCAQMD, 1993). Please refer to Appendix E for the assumptions of the air quality impact analysis.

Peak day emissions during the period of most activity are shown in Table 10-3. Short-term NOx and ROG emissions would exceed the five pound per day threshold established by VCAPCD. However, due to the temporary, short-term nature of the proposed project, the quantitative emissions thresholds do not apply. Dust emissions would only be considered significant if VCAPCD Rule 51 is violated, meaning a nuisance occurs.

Table 10-3 Peak Day Short-Term Emission Estimates

Activity	NOx (lb/day)	ROG (lb/day)	CO (lb/day)	PM10 (lb/day)
Herbicide Application		20		
Fugitive Dust				8
Equipment Operation	12	62	197	1
Worker Commutes	3	5	37	< 1
Total Peak-Day	**15**	**87**	**234**	**9**

Source: Aspen Environmental Group, 2003.

The VCAPCD Air Quality Assessment Guidelines recommend mitigation for the short-term emissions, even though the emissions from equipment would not be considered significant. The measures that should be applied to short-term emissions from equipment are identified in Section 7.4.3 of the Guidelines (VCAPCD, 2000). Implementation of Mitigation Measure A-1 would ensure that the project is consistent with the VCAPCD Air Quality Assessment Guidelines.

A-1 The construction contractor shall ensure that the following measures are implemented to reduce short-term construction-related emissions:

- Minimize equipment idling time

- Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications
- Use alternatively fueled construction equipment, such as compressed natural gas, or electric, as feasible
- The engine size of construction equipment shall be the minimum practical size
- Heavy-duty diesel-powered construction equipment manufactured after 1996 (with Federally mandated clean diesel engines) shall be utilized wherever feasible.
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time.

The project site is located immediately adjacent to a residential neighborhood and fugitive dust may cause harm or annoyance to the nearby residences. Implementing an aggressive dust control plan can reduce the potential for a nuisance to occur. A model fugitive dust mitigation plan is included in Section 7.4.1.1 of the Guidelines (VCAPCD, 2000). Based on the model mitigation plan, the following dust control measures should be implemented to reduce PM_{10} emissions to the extent feasible during construction of the project. These measures augment any dust control requirements that may already be included in project plans and specifications. Implementation of Mitigation Measure A-2 for dust control would reduce this impact to a less than significant level.

A-2 The construction contractor shall ensure that the following measures are implemented to reduce PM_{10} emissions due to fugitive dust:

- The area disturbed by clearing should be minimized to prevent excessive amounts of dust
- Regular ground wetting of disturbed soils and unpaved areas should be conducted to control fugitive dust emissions. Reclaimed water, environmentally safe soil stabilization materials, or roll-compaction should be used whenever possible
- On-site vehicle speed should be limited to 15 miles per hour in unpaved areas
- During periods of high winds (i.e., wind speeds sufficient to cause fugitive dust to impact adjacent properties), all clearing operations should be curtailed to the degree necessary to prevent fugitive dust from being a hazard or a nuisance, either onsite or offsite
- Roadways in the vicinity of site access points should be swept as necessary to prevent the accumulation of silt
- Facilities shall be operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, "*Nuisance*," which states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."

AQMP Consistency. The project area, west of State Highway 33, is within the Ojai Non-Growth Area according to the Air Quality Assessment Guidelines. Projects that cause population growth may be inconsistent with the region's AQMP if project-related population exceeds the growth expected in the air quality plans. The proposed project would not directly or indirectly result in population growth, and therefore would not cause population forecasts in the AQMP to be exceeded.

Substantial Pollutant Concentrations. Certain residents, such as the very young, the elderly, and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered "sensitive receptors." Examples of land uses where significant numbers of sensitive receptors are often found are schools, day care centers, parks, recreational areas, medical facilities, rest homes, and convalescent care facilities. Land use conflicts can arise when sensitive receptors are located next to major sources of air pollutant emissions. The major source of project-related pollution that could affect sensitive receptors would be dust and equipment exhaust during the short-term duration of activity. The Arroyo Mobile Home Park near the staging area could be adversely affected if suitable dust control strategies are not implemented. Mitigation Measure A-2 for dust control, especially at the unpaved staging area, is recommended to reduce this impact to less than significant.

Odors. The proposed project includes mechanical and chemical removal of biomass. Herbicide application may cause a detectible odor during periods of application. The quantity of herbicide used for the project (less than 30 gallons) would be small, and the area of use would be large (roughly five acres). Chipped material may also create odors while drying, until the material is removed and/or recycled (during the first year). Chipped material would not be composted or disposed onsite. The magnitude of any potential odors would be small, and because of the short-term nature of project implementation, odors would not be persistent. No other project-related activities would be likely to generate offensive odors. Project-related activities would not be expected to cause a nuisance related to odors. Impacts would be considered less than significant.

10.4 MINERAL RESOURCES

Impact Significance Criteria

- **Aggregate Resources:** A project would have an impact on the demand for aggregate resources if it would directly or indirectly use aggregate products or by-products. Additionally, any other type of land use which is proposed to be located in or immediately adjacent to any known aggregate resource area, or adjacent to a principal access road to an existing aggregate production facility, could potentially have an impact.
- **Petroleum Resources:** Any project that would directly or indirectly use petroleum products or by-products would have an impact on the demand for petroleum resources. However, according to the Ventura County Initial Study Assessment Guidelines, no individual project would have a significant impact on the demand for petroleum resources. The project would have a significant impact if it were to hamper the extraction of petroleum resources or preclude access to extraction facilities.

Environmental Setting

Aggregate resources are defined as construction grade sand and gravel. According to Ventura County General Plan Resources Appendix, the project site is located in an area designated as MRZ-3a by the State of California Division of Mines and Geology (CDMG). This designation indicates that the area may contain significant aggregate resources. The nearest quarry to the project area is the Ojai Quarry; however, aggregate-size rock is not produced at this quarry (Padre, 2003).

Petroleum resources include oil and gas deposits and are mapped by the State of California Department of Oil, Gas, and Geothermal Resources. The nearest oilfield to the project areas is the Ojai Field,

which is located approximately one mile east of the project site and accessed from Sulfur Mountain Road (Padre, 2003).

Impacts

According to the Ventura County General Plan, no project would have a significant impact on the demand for aggregate resources because a sufficient amount of aggregate resources exist to meet local demand for the next 50 years (County of Ventura, 1988b). No active mineral recovery operations occur in or adjacent to the project area, and no mineral recovery operations would occur as a result of the project. Therefore, the project would not impact aggregate resources.

As indicated above, the project area is not located within, or directly adjacent to, a petroleum resource area or petroleum production facility. Additionally, the project area is not located adjacent to a road used as a principal means of access to a petroleum extraction facility. Based on these criteria, the project would have no impact on petroleum resources.

10.5 AGRICULTURAL RESOURCES

Impact Significance Criteria

- **Soils:** A project that would result in direct and/or indirect loss of soils designated Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance will have an impact. Based on the General Plan land use designation of Open Space, the proposed project would have a significant impact if it would result in the direct and/or indirect loss of 10 acres of Prime Farmland, 15 acres of Unique Farmland, or 20 acres of Local Importance Farmland.
- **Water Supply:** Impacts to agricultural water supply would be considered significant if the project would cause:
  - The quality of agricultural water supply sources (ground water, surface water) to decrease to a level greater than 1200 milligrams per liter (mg/l) of total dissolved solids (TDS), or,
  - A net decrease in the availability of groundwater and imported water supplies currently available to agricultural resources.
- **Air Quality/Microclimate:** Based on the Ventura County "Initial Study Assessment Guidelines," a project may have an impact to agricultural productivity if it altered local air quality/micro-climate. If the project is located within one-half mile of property currently in or suitable for agricultural production, the impact of the project to agricultural productivity would be considered significant if the project caused:
  - A 10 percent or greater increase in dust on adjacent agricultural parcels;
  - A 10 percent or greater decrease in solar energy on adjacent agricultural parcels;
  - The removal of any row(s) of trees;
  - A substantial adverse change in the air quality/micro-climate of adjacent agricultural parcels not related to dust, solar energy, and tree rows.
- **Pests/Diseases:** A project may have an impact if it is located within one-half mile of any property currently in, or suitable for, agricultural production, and would have a significant impact if it would cause a substantial increase in or introduction of pests and/or disease.
- **Land Use Incompatibility:** a project would have a significant impact if it would pose substantial land use incompatibilities with nearby property currently in or suitable for agricultural production.

Environmental Setting

Ventura County is one of the chief agricultural counties in California, ranking tenth in 1987, with a total income of over $610 million and ranked seventeenth in farm earnings out of 3,175 counties nationally (Ventura 1988b).

Agricultural soils are those soils that are utilized or suitable for agricultural crop production. Agricultural soils have been mapped as part of the Ventura County Farmland Mapping and Monitoring Program of the California Resources Agency, where soils have been designated Prime, Statewide Importance, Unique, and Local Importance. Such farmlands are not located in close proximity to the project site (California Department of Resources, 2003).

Lake Casitas is the primary water supply for agricultural uses in the region, although local wells may also be used (Padre, 2003). The nearest agricultural uses within the project vicinity are hay fields, located approximately 800 feet to the west of the project site. Regional and local air quality conditions are described in Section 10.3, above. The project site is located on land that is currently undeveloped and is designated Open Space by the County. The community of Casitas Springs is located to the east of the site.

Impacts

The proposed project and its alternatives would not result in the loss or covering of agricultural soils or farmlands, and would not conflict with the County's General Plan goals and policies for agricultural resources. No impacts would occur.

The proposed project would use water from a nearby supply source, which serves the general community of Casitas Springs. A temporary irrigation system would be used in the third, fourth, fifth, and sixth years of the project to maintain revegetated areas. At the end of the sixth year, the irrigation system would be removed. The amount of water used during the project's revegetation effort is considered to be both temporary and not significant when compared to the area's existing water supply and demand. The proposed project and its alternatives would not conflict with the goals and policies of the Ventura County General Plan. Therefore, no agricultural impacts with respect to water supply are expected to occur.

As indicated in Section 10.3, emissions would be generated by the short-term activities of mechanical *Arundo* removal, transport of the cut stalks, application of herbicide, chipping, and disposal of the material. Fugitive dust would also be generated during the *Arundo* removal process. Some fraction of the dust generated during these activities would be deposited on adjacent hay fields, especially during periods of moderate to high winds. The deposition of dust on crops may impact agricultural productivity. However, dust deposition at these hay fields would be minimal due to the distance involved and the small size of the area of exposed soils. Implementation of Mitigation Measure A-2 would minimize potential impacts to a level of less than significant. In addition, the proposed project and its alternatives would not affect the amount of solar energy reaching agricultural areas; therefore, no impact would occur.

The proposed project and its alternatives would not introduce any new urban structures, permanent resident populations, or non-native plant or animal species into the local area. Therefore, there would be no impact to agricultural areas with respect to pests and/or diseases, and no conflicts with the goals and policies of the Ventura County General Plan would occur.

The project would not require a change in land use designations, zoning or use of the site, and thus would not create an opportunity for incompatible uses in the future. Therefore, the proposed project and its alternatives would not result in any land use incompatibilities with nearby agricultural areas, and would not conflict with the goals and policies of the Ventura County General Plan.

10.6 VISUAL RESOURCES

Impact Significance Criteria

The impact significance criteria established by the County for visual resources include:

- **Scenic Highways:** A significant impact may occur if a proposed project is generally within one-half mile of the viewing area of a designated or eligible scenic highway.
- **Scenic Areas and Features:** A significant impact to a scenic area or feature may occur if a proposed project would degrade visual resources or significantly alter or obscure public views. One example of a scenic area is an area encompassing a lake and the viewshed extending from the lake to the highest ridgeline surrounding the lake.
- **Glare:** The following glare conditions would normally be considered significant:
  - Any light source in excess of 150 watts that directly illuminates adjacent properties
  - Indirect illumination of adjacent properties in excess of 0.5 foot-candles
  - For pedestrian lighting systems, a point of overlap between light patterns greater than seven feet
  - Intensity of lighting within the physical limits of an area required to be lighted that is greater than seven foot-candles.

Environmental Setting

The proposed project and its alternatives are located along the east bank of the Ventura River, near the community of Casitas Springs (Figures 4-1 and 4-2). An exiting flood control levee immediately flanks the eastern side of the project area. With the exception of the community of Casitas Springs and a mobile home trailer park near the northern end of the project area, the proposed site and its surrounding area is undeveloped. The project area is located approximately 2,700 feet east of the eastern perimeter of an area designated as Scenic Resource Protection Overlay Zone for prominent ridgelines (County of Ventura, 1995a). The project area is not located within one-half mile of any existing or proposed scenic highway areas (County of Ventura, 1988). Although not formally designated, the Ventura River corridor is an important scenic feature within the area, providing green vegetation and surface water in contrast to the surrounding dry hillsides (Padre, 2003).

Impacts

The proposed project and its alternatives would temporarily remove the existing vegetation within the project site, which may create a temporary visual contrast within the project vicinity. However, the

proposed project and Alternative 1 would include revegetation of the project area (or a portion thereof) with native plant species, which would be considered a beneficial impact. Alternative 2 would involve leaving the dead *Arundo* material in place, which would create a visual contrast within the area that would be considered a negative visual impact. The No Project Alternative, would not result in any visual change to the project area, and thus no impact would occur. However, this alternative would not provide for the net visual benefits of the proposed project, which provide the greatest visual benefit because it would provide for the greatest volume (area) of revegetation with native plant species.

The proximity of the demonstration site to the eastern perimeter of an area designated as a Scenic Resource Protection Overlay Zone for prominent ridgelines is an estimated 2,700 feet, which is slightly greater than one-half mile (2,640 feet). However, the proposed project and its alternatives do not involve the construction of any structures or utilities, and therefore would not create a visual contrast to the area's existing character. The proposed project would ultimately enhance the visual quality of the area due to the re-establishment of native plant species; this would be considered a beneficial impact.

As noted above, the proposed project and its alternatives do not involve the construction of any structural features or lighting. Therefore, no visual impacts due to light or glare would occur.

10.7 CULTURAL AND PALEONTOLOGICAL RESOURCES

Impact Significance Criteria

- **Paleontological Resources:** The geologic formation in which proposed projects would be located can be used to establish the likelihood of paleontological resources being present and their relative importance. Fossil remains are considered important if they are: (1) well preserved, (2) identifiable, (3) type/topotypic specimens, (4) age diagnostic, (5) useful in environmental reconstruction, (6) represent rare and/or endemic taxa, (7) represent a diverse assemblage, or (8) represent associated marine and non-marine taxa. Vertebrate and megainvertebrate fossils are considered highly important because they are comparatively rare and allow precise age determinations and environmental reconstructions for the strata in which they occur. Microinvertebrate fossils are much more abundant and, for this reason and because of their small size, would not be adversely impacted to the same degree as vertebrate and megainvertebrate fossils. Table 10-1 (page 61) of the County of Ventura's "Initial Study Assessment Guidelines" provides a ranking of geologic formation importance within the County.
- **Archaeological Resources:** CEQA requires protection of unique archaeological resources that may be damaged or destroyed by a development project. For the purposes of CEQA, a unique archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
  - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
  - Has a special and particular quality such as its oldest type or best available example of its type
  - Is directly associated with a scientifically recognized important prehistoric or historic event or person.
- **Historic Resources:** Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historic resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be

"historically significant" if the resource meets the criteria for listing on the California Register of Historic Resources (Public Resources Code Section 5024.1, Title CCR, Section 4852) including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- Embodies the distinctive characteristics of a type, period, region, method of construction, or represent the work of an important, creative individual or possesses high artistic values, or
- Has yielded, or may likely to yield, information important in history or prehistory.

- **Ethnic, Social and Religious Resources:** Definitive, quantitative methods cannot be used to measure or determine significance of impacts to these resources, therefore, impacts and their significance must be evaluated and determined on a case-by-case basis.

Setting

A Phase I cultural resources investigation, including an assessment of paleontological resources, was conducted for the project area by McKenna et al. in April, 2003. The following provides a summary of the Phase I technical report prepared for the proposed project and its alternatives.

The project area is ethnographically associated with the Native American population known as the Ventureño, a subgroup of the wide-ranging and complex Chumash cultural group (Kroeber, 1925; Harrington, 1942; Grant, 1965, 1978; Chartkoff and Chartkoff, 1984; Arnold, 1987). Europeans first encountered the Chumash on October 12, 1542, during Juan Cabrillo's exploration of the California coast in what is believed to be the present-day Ventura County (Grant, 1978). The Portolá expedition of 1769 encountered the Ventureño near present-day Fillmore (Grant, 1978).

By the time of Spanish contact, Chumash culture extended from Morro Bay in northern San Luis Obispo County to Malibu in western Los Angeles County, and included the northern Channel Islands (Kroeber, 1925; Grant, 1978; Moratto, 1984). Recognized among present-day researchers as highly complex, Chumash society featured social stratification that included ascribed status, highly organized production of specialized trade goods (such as shell beads), an extensive trade network, and possibly the highest population densities of any hunter-gatherer group in the world.

Ventureño subsistence was based on gathering and hunting, with an emphasis on fish, shellfish, and marine mammals in coastal areas. The most important single food source was the acorn from California live oaks (Grant, 1978). Other important plant resources included islay, yucca, piñon pine nuts, cattails, and chia sage. Mainland Chumash made extensive use of the bow and arrow for hunting larger game, such as deer, elk, coyote, and fox. "Dead falls" were employed for smaller animals (e.g. birds, rabbits, and rodents).

Food resources diminished further inland (especially in desert areas) and settlement sizes and health declined concomitantly. Portolá noted this variation, describing Chumash he encountered in the Conejo Valley in 1770 as "very poor and thin" (Costanso, 1911). Recent investigations by Mason and Peterson in Orange County have yielded data resulting in a revision of the broad prehistoric chronology for coastal Southern California (Wallace, 1955; Warren, 1968; Koerper and Drover, 1983; McKenna,

1986). Conclusions drawn by Mason and Peterson were based on radiocarbon dates from 326 samples, representing 31 archaeological sites or cultural contexts.

Mason and Peterson (1994) found that the majority of these sites were occupied during the Milling Stone Horizon/Period or the Late Prehistoric Horizon/Period "without much overlap." Only four sites yielded results that suggested occupation during the Intermediate Horizon/Period. Mixtures of dates appeared in limited areas and could be directly associated with areas of modern agricultural disturbance. The frequency distribution of radiocarbon dates from Mason and Peterson's investigations presented a range of dates from 200 B.P. (before present) to 9280 B.P. indicating occupation as early as the Paleo-Coastal Period or Early Man Horizon. Mason and Peterson's conclusions do not fundamentally alter the established regional chronology, but reveal more individualistic episodes of occupation.

Mason and Peterson's chronology illustrates that the definition of sites by artifact assemblage, as used to establish earlier chronologies, is valid. Actual site occupations, however, can be more clearly defined through radiocarbon dating. Such studies suggest that Milling Stone and Late Prehistoric sites are relatively discrete, and variations within these two generalized periods can be explained as brief occupations.

The earliest non-native presence in Southern California came with Spanish maritime explorers Juan Rodríguez Cabrillo in 1542, Sebastián Rodriguez Cermeno in 1595, and Sebastián Vizcaíno in 1602. The overland expeditions of Gaspar de Portolá in 1769-1770 and Juan Bautista de Anza in 1774 and 1776 traversed Southern California also. Following the establishment of the first California Missions, the Spanish realm (and later the Mexican government) practiced the program of granting large tracts of land to encourage European settlements in the areas of Alta California (Avina, 1932).

Historically, the current project area is within the historic Ex-Mission San Buenaventura. This land was once granted to the Mission San Buenaventura, but reclaimed following the Mexican government's initiation of secularization (ca. 1824). The Mission was established in 1782 and is still in existence. Casitas Springs was originally referred to as Arroyo de las Casitas ("creek of the little houses") and was known as early as 1864. Lake Casitas was established in the 1950s (Gudde, 1969).

Impacts

To assess the potential impacts of the proposed project and its alternatives, McKenna et al. completed the following level of investigation:

- **Archaeological Records Check**: McKenna et al. completed a standard archaeological records check through the California State University, Fullerton, South Central Coastal Information Center. This research was designed to provide baseline information on studies completed within the area (one mile radius), site forms for recorded resources, and data pertaining to significant or listed properties in the area. These data were used to place the proposed project area within a context for the preliminary identification and evaluation in accordance with CEQA and Ventura County significance criteria.
- **Native American Consultation**: McKenna et al. conducted the Native American consultation by contacting the Native American Heritage Commission in Sacramento and inquiring into the presence/absence of

significant sites in the general area. McKenna et al. also obtained a listing of Native Americans within Los Angeles County that may have information regarding the area. These communications have resulted in no written comments and no specific concerns with respect to archaeological resources.

- **Supplemental Research**: In addition to the standard archaeological records check, McKenna et al. reviewed previous completed reports, obtained information on the historic development of the area, and assessed the relative level of sensitivity for the project area to yield historic or prehistoric resources.
- **Paleontological Overview**: A paleontological overview was prepared by Dr. Samuel McLeod of the Los Angeles County Museum of Natural History.
- **Field Survey**: McKenna et al. surveyor, R. Charles Ferguson, surveyed the project area on April 23, 2003. The field survey was accomplished by walking two paralleling transects (north and south) along the linear project area. All accessible areas of the project area were examined. The field survey was supplemented by general field notes and a photographic record and the surveyor carried a Magellan GPS hand-held system to record any locational data necessary to relocate a specific artifact or geographical location.
- **Analysis of the Data Compiled**: Upon completion of the field studies and research, McKenna et al. had at least two major data sets available for analysis: 1) the previous research data; and 2) the recently compiled data. McKenna et al. used these two sets of data to address the sensitivity of this area to yield significant cultural resources.
- **Report Preparation**: A Phase I technical report was prepared in a format and with data contents dictated by State guidelines, and augmented slightly to address the issues particular to the project area. A copy of the Phase I technical report is on file with the VCWPD.

Research completed through the California State University, Fullerton, South Central Coastal Information Center, Fullerton, California, showed that the majority of the project area was previously investigated during surveys completed by Singer (1977), Lopez (1979), and Fleagle (1998). Additional studies have been completed in the immediate area, including those of Lopez (1993), Clewlow (1978), Schmidt and Schmidt (1994), Dillon (1990), Singer (1985), Callison (1979), Sanfilippo and Greenwood (1987), and Lopez (1981).

Despite the extent of studies completed within the immediate area, no prehistoric archaeological sites have been recorded for the area and only three historic archaeological sites have been recorded (CA-VEN-482, CA-VEN-929H, and CA-VEN-1109H). A-VEN-482 is a fence line around a tilled field (Capelli, 1976). CA-VEN-929H was described as an historic refuse scatter and structural remains associated with the 1870s Jose Arnez residential complex (Foster and Greenwood, 1988). CA-VEN-1109H is the site of a railroad spur entering Ojai Valley (ca. 1887; Macko, 1993). None of these sites are near the project area.

Paleontological research was completed by Dr. Samuel McLeod of the Natural History Museum of Los Angeles County. Based on his findings, the project area is located within an area associated with Quaternary gravels and alluvial deposits and no fossil specimens have been identified in the area. Deeper deposits of early Miocene Rincon Shale may be found in the area and these deposits have been known to yield fossil specimens. Significant, and relatively deep, subsurface disturbances may result in the identification of such remains.

As a result of the above investigations, McKenna et al. found no evidence of prehistoric archaeological remains, historic archaeological remains, or paleontological specimens. The likelihood of such

resources within the project area is extremely low and McKenna et al. considers the project area to be clear of any such resources.

No cultural or paleontological resources were identified within the project area. No impacts are anticipated to occur and no mitigation is considered necessary for the proposed project or its alternatives. If, however, evidence of prehistoric, historic, or paleontological resources are identified at some future date, a qualified archaeologist or paleontologist should be contacted and permitted to formally evaluate the find(s) in accordance with current State and local guidelines.

10.8 ENERGY RESOURCES

Impact Significance Criteria

According to the County's "Initial Study Assessment Guidelines" (County of Ventura, 2000a), no individual project is considered as having a significant impact on energy sources because solar, wind and hydraulic energy sources are renewable, and impacts associated with petroleum resources are addressed separately (see Mineral Resources, Section 10.4).

Setting

Ventura County primarily relies on an inter-related energy system. Electricity and natural gas are the primary forms of household energy and petroleum fuels are the primary source for most modes of transportation (County of Ventura, 1988c). Alternative sources of energy, such as solar, wind, hydroelectric power are noted and encouraged under the County's energy conservation goals, policies, and programs (County of Ventura, 1988).

Impacts

The proposed project and Alternatives 1 and 2 would require the use of fossil fuels during initial project implementation and subsequent years of continued *Arundo* removal/eradication and revegetation efforts. However, the use of this fuel would not be considered excessive or wasteful, and would be considered negligible in comparison to the overall use/consumption of fossil fuels both locally and regionally. Following the seventh year of the project's lifetime, no energy consumption associated with the proposed project or its alternatives would occur. Impacts to energy resources are therefore considered less than significant.

10.9 COASTAL BEACHES AND SAND DUNES

Impact Significance Criteria

Impacts to coastal beaches and sand dunes would be considered significant if:

- A project causes direct impact (i.e., physical removal or modification of coastal beaches or sand dunes)
- A project causes indirect impact (i.e., creates barriers to sand replenishment or disturbances of dune vegetation).

Setting

The project area lies on the east bank of the Ventura River, approximately seven miles downstream from the Matilija Dam and seven miles upstream from the nearest coastal beaches and sand dunes. Sediment transport in the project area has been reduced because of the Matilija Dam. Sediment transported through the project area from the entire watershed is important to the contribution of sand to local beaches and sand dunes.

Impacts

The proposed project would not create any barriers to sand replenishment. Removal of the *Arundo*, known to alter channel morphology by retaining sediments and altering flow, may create a positive effect on recharging sediments for coastal beaches and sand dunes. No disturbance of sand dune vegetation is expected, and no negative impacts to coastal beaches and sand dunes would be expected.

10.10 SEISMIC HAZARDS

Impact Significance Criteria

- **Fault Rupture:** Impacts would be considered significant if persons or property were placed at risk of loss of life or damage due to fault rupture. In order to determine if a project is potentially at risk with respect to fault rupture, determinations must be made whether the project location is within any of the following areas:
  - A State of California designated Alquist-Priolo Special Fault Study Zone
  - A County of Ventura designated Fault Hazard Area
  - A County of Ventura designated Potential Fault Hazard Area
- **Ground Shaking:** Impacts would be considered significant if persons or property were placed at risk of loss of life or damage due to ground shaking.
- **Tsunami and Seiche:** Impacts would be considered significant if persons or property were placed at risk of loss of life or damage due to tsunami or seiche events. Projects locations are evaluated with respect to mapped areas of tsunami hazard in the General Plan and those identified by the Federal Emergency Management Agency (FEMA). The tsunami hazard zone in the project vicinity encompasses areas up to 50 feet in elevation above sea level. Areas subject to seiche hazards are those located within 10 feet vertical elevation from an enclosed body of water.
- **Liquefaction:** Impacts would be considered significant if persons or property were placed at risk of loss of life or damage due to liquefaction. Liquefaction hazard areas exist wherever there are certain soils, particularly loose sand soils that are constantly or seasonally saturated with water. Criteria for determining whether a project is potentially susceptible to liquefaction involve evaluating the project location with respect to mapped liquefaction-susceptible areas identified in the General Plan. Areas characterized by alluvial material with a water table within 15 feet of the surface are considered high liquefaction hazard zones.

Setting

The nearest fault to the project area as an unnamed fault located about one mile to the northeast. This area has also been designated an Alquist-Priolo Earthquake Fault Zone (Padre, 2003).

The project site is located within ground shaking "Hazard Zone C," as designated by the Ventura County General Plan. Areas designated Hazard Zone C could experience the greatest amplification of

short period ground vibration and are characterized as having an alluvium of less than 50 feet in thickness.

The project area is located at elevations ranging between 260 to 280 feet above sea level, above the tsunami hazard zone, and is not located within 10 feet vertical elevation of any water bodies subject to seiche activity.

The project area is located within a high liquefaction hazard zone due to the presence of alluvial soils and a shallow water table.

Impacts

Fault rupture is not considered a potential hazard because the project area is not within an Alquist-Priolo Earthquake Fault Zone or General Plan designated fault zone. Construction of any habitable structures or other features that would be exposed to fault rupture is not proposed for the proposed project or its alternatives. Therefore, fault rupture is not considered a potential hazard, and no impacts would be anticipated to occur.

The proposed project would not involve the construction of any habitable structures or other features that would be exposed to ground shaking. Therefore, impacts from ground shaking hazards would not be expected to occur.

The project site is not located in a tsunami or seiche hazard zone. Therefore, no impacts would occur.

The project area is located in an area of high liquefaction potential. However, liquefaction has not been a damaging hazard in Ventura County historically. The proposed project and its alternatives would not cause soil instability that could potentially result in liquefaction and do not propose the construction of habitable buildings or structures. Therefore, no impacts from liquefaction hazards would be expected.

10.11 GEOLOGIC HAZARDS

Impact Significance Criteria

- **Subsidence:** Impacts would be considered significant if a project was located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in subsidence.
- **Expansive Soils:** The project would have a significant impact if it were located on expansive soils, soils that are subject to changes in volume with changes in moisture content, creating risks to life or property. Expansive soil hazard is considered to exist where soils with an expansion index greater than 20 are present.
- **Landslides/Mudflows:** Impacts would be considered significant if persons or property were placed at risk of loss of life or damage due to landslides or mudflows. Landslide/mudflow hazards are typically located in areas adjacent to slopes greater than 10 percent.

Setting

As indicated in the County's General Plan, the project area is not within an area of high subsidence potential within the County (Padre, 2003). Additionally, The project site is identified in the General Plan as an area with low soil expansiveness and has little or no landslide/mudflow potential.

Impacts

The proposed project and its alternatives do not involve the extraction of water or petroleum resources and are not located within a subsidence area as identified in the General Plan. The proposed project and its alternatives are unlikely to cause or be subjected to subsidence; therefore, no impacts would be expected to occur.

Soils present in the project area are characteristic of those found in active river channels, and are considered to have low soil expansiveness. The proposed project and its alternatives would not involve the construction of habitable structures or features susceptible to soil expansion hazards. Consequently, substantial risks to life or property would not anticipated and no impacts would be anticipated to occur.

The proposed project and its alternatives do not involve the construction of any habitable structures or other features that would be susceptible to landslide/mudflow hazard. Additionally, the project area is in an area of little or no landslide potential and project-related activities would only be completed during the dry season. Therefore, no impacts related to landslide/mudflow hazards would be anticipated to occur.

10.12 HYDRAULIC HAZARDS

Impact Significance Criteria

- **Erosion/Siltation:** A project would have a significant impact if it would result in substantial erosion or siltation.
- **Flooding:** Impacts with respect to flood hazard would be considered significant if:
  - A project placed housing within a 100-year floodplain as identified on flood delineation maps
  - A project would impede or redirect flows within a 100-year floodplain structure
  - A project would expose people or structures to a significant loss, injury or death, as a result in the failure of a levee or dam.

Setting

The project area is located on the east bank of the Ventura River and is routinely subjected to runoff. The project area is within the 100-year floodplain as delineated on FEMA flood plain maps. The site is immediately adjacent to a VCWPD levee and is located within the flood route for the Matilija and Casitas Dams.

Impacts

The proposed project and Alternatives 1 and 2 would remove quantities of *Arundo* within the project area and may result in some temporary soil instability. However, because the proposed project and Alternative 1 also involve revegetation with native species, any temporary effects of soil instability caused by the removal of *Arundo* are considered to be less than significant because the re-establishment of vegetation would ultimately stabilize the soil. Native riparian vegetation tends to bend rather then break, greatly reducing the amount of debris washed downstream during flood events. This would be considered a beneficial impact to hydraulic hazards.

For those alternatives that do not propose the removal of *Arundo* (Alternative 2 and the No Project Alternative), impacts due to increased flooding potential would be expected to be exacerbated because its large biomass can dislodge during flood events thereby causing damage if it collects around bridges, drain pipes, or other flood control structures. Impacts associated with increased flood hazards would be adverse and potentially significant if the VCWPD could not identify other means of reducing flood hazard potential.

10.13 AVIATION HAZARDS

Impact Significance Criteria

A significant impact due to aviation hazards may occur if a proposed project does not comply with the County's Comprehensive Land Use Plan or pre-established federal criteria set forth in Federal Aviation Regulation Part 77 ("Obstruction Standards"). Special attention is warranted for development within two miles of an airport.

Setting

The project area is located within the Ventura River, west of Casitas Springs. The closest public airport to the project area is the Camarillo Airport, which located more than 10 miles away.

Impacts

The proposed project and its alternatives do not involve the construction of any physical structures that could create a hazard to aviation flight patterns. Additionally, the proposed project area is not located within two miles of an existing airport. Therefore, no impacts associated with aviation hazards would occur.

10.14 FIRE HAZARDS

Impact Significance Criteria

Significant impacts from fire hazard would result if a project exposed people or structures to the risk of loss, injury, or death involving wild fires.

Setting

The project site is within a low to moderate fire hazard area; however the site is dominated by *Arundo*. The large density and tall structure associated with *Arundo* substantially increases the fuel loads in the area, which could encourage wildfires.

Impacts

The proposed project and Alternative 1 involve the removal of the *Arundo* thereby decreasing the existing fuel load level of the project area. This reduced risk with respect to fire hazard would result in a beneficial impact.

Under Alternative 2, the *Arundo* would be treated with a glyphosate-based herbicide and left in place. Risks associated with fire hazards would therefore increase and may be potentially significant unless the

VCWPD and Ventura County Fire Department could identify and implement other measures to minimize this increased fire risk.

Under the No Project Alternative, no *Arundo* eradication activities would occur. Under this scenario it would be anticipated that the *Arundo* would continue to colonize the project area, which would also increase risks associated with wildfires. These impacts would be considered potentially adverse and significant unless the VCWPD and Ventura County Fire Department could identify and implement other measures to minimize this increased fire risk.

10.15 HAZARDOUS MATERIALS AND WASTE

Impact Significance Criteria

The County's General Plan provides the adopted goals and policies for hazardous waste, and outlines the criteria to be evaluated for project impacts on a case-by-case basis, including:

- The individual or cumulative effects due to a physical hazard or hazardous material
- The amount (volume) of hazardous materials onsite (either in use or storage)
- The proximity of hazardous materials to populated areas and the compatibility of such materials with neighboring facilities
- Compliance with Federal, State, and local laws and ordinances governing the storage and use of hazardous materials
- Effects of a potential for spill or release
- The proximity of hazardous materials to receiving waters or other significant environmental resources.

In addition to the above, other criteria used for evaluating the impacts related to hazardous materials associated with a project include:

- Creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creating a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment
- A location listed as a hazardous materials site thereby resulting in a safety hazard for the public or environment.

Setting

The proposed project area is located along the east bank of the Ventura River. The main branch of the Ventura River flanks the west and south sides of project area, and the Arroyo Mobile Home Park is located north/northeast of the project area. A portion of the Ojai Valley Trail and the community of Casitas Springs are located to the east of the project area.

Implementation of the proposed project and Alternative 2 would involve the use of herbicide treatments, using a glyphosate-based herbicide. For the initial treatment in project year 1, it is estimated that no more than 30 gallons of herbicide would be needed for areas that require cut-stump and foliar spray applications. Depending on site-specific conditions, reapplication would occur up to four times annually

in years 1 though 6. However, slight variations may occur due to specific site conditions as they relate to such variables as rainfall, eradication success rates, etc. It is anticipated that approximately 6 gallons of herbicide would be needed for each reapplication.

For the risks associated with glyphosate-based herbicides to people, a dose of 2 milligrams per kilogram per day (mg/kg/day) has been determined by the EPA to be the chronic reference dose (RfD) for glyphosate (U.S. Forest Service, 2002). The RfD means that a person could receive a dose of 2 mg/kg/day throughout everyday of his or her life without an adverse health effect. Short-term or acute exposures above the chronic RfD can occur without any known adverse health effect. The estimated lethal dose of glyphosate in humans is 445 mg/kg/day (U.S. Forest Service, 2002). Thus, a 150-pound (73 kilogram) person would need to be exposed to 32,485 mg of glyphosate in a single day to achieve a lethal dose.

Impacts

A summary of the risks associated with the use of glyphosate-based herbicides is provided in Section 10.16, under the subsection entitled "Background Information on the Public Risks of Glyphosate."

Under the proposed project and Alternative 2, *Arundo* eradication would involve foliar spray applications at concentration of approximately 1.5 percent to 6 percent volume to volume (v/v). A tow truck sprayer with a directional nozzle would travel along the existing levee maintenance road. To minimize drift potential, no foliar spray activities would be allowed if wind velocities exceeded six miles per hour.

Surfactants are added to some herbicide spray solutions to improve performance, by improving the absorbing properties of liquids. The type of herbicide used, weed species targeted, and environmental conditions affect the surfactant performance. Surfactants are divided into five major classes with respect to their chemical composition: nonionic surfactants, crop oil concentrated, nitrogen-surfactant blends, esterified seed oils, and organo silicone surfactants. It is anticipated that either a crop oil, or esterified seed oil type surfactant would be used for those areas that propose application via foliar spray. The use of an R-11 type surfactant is not proposed for the proposed project or alternatives.

As detailed in Section 4 (Project Description) implementation of the proposed project includes, as part of the project's design, several safety precautions for the use of glyphosate-based herbicides. These measures include:

- All herbicide applications would be completed or supervised by a licensed professional to ensure that specific safety measures, including containment and clean-up plans in the event of an accidental spill or leak of the herbicide are followed
- All workers involved with herbicide application would wear appropriate protective clothing and related safety equipment (masks, etc.)
- Clean water and soap will be readily available on site for the purposes of emergency washing
- Prior to and during clearing and herbicide applications, active work areas be marked and signs would be clearly posted along all access points to the demonstration site to minimize the public's potential exposure to

hazardous materials. These signs would discourage public use or other unauthorized use of the demonstration site for a minimum of two weeks after any herbicide application. Prior to any project activities, work crews would survey the demonstration site to ensure that no unauthorized persons are present

- No spraying when wind velocities exceed six mph to minimize potential herbicide drift.

Based upon the exposure risks outlined below under Section 10.16, and with implementation of the above referenced project features, the risks associated with exposures to glyphosate-based herbicides would be considered less than significant.

Implementation of the proposed project and Alternatives 1 and 2 include the use of motorized equipment including chainsaws, power brush cutters, standard wood chippers, vehicles for the transportation of cut the *Arundo* stalks, and tow truck sprayer for the foliar spray herbicide application. Hazardous material associated with the motorized equipment for the project, include fuels (gasoline and diesel). However, these materials are commonly used and present minimal health or safety risks. With implementation of Mitigation Measure WR-1 (preparation and implementation of a Spill Prevention, Containment and Countermeasures Plan), impacts would be considered less than significant.

10.16 PUBLIC HEALTH

Impact Significance Criteria

Significance criteria for public health are determined on a case by case basis by the County, and are related to project type, location and other environmental factors. If it is determined that project-related impacts are significant and can not be mitigated through minor project redesign or adoption of standard conditions, then project specific mitigation shall be identified.

Setting

The proposed project area is located along the east bank of a portion of the main branch of the Ventura River. The project area is undeveloped and adjacent to the community of Casitas Springs and a portion of the Ojai Valley Trail.

The proposed project and its alternatives could affect two groups of the general public: the workers undertaking project-related activities and users of the project vicinity. Work crews associated with the project would be involved with cutting *Arundo* materials and hauling them to the chipping area and/or applying a glyphosate-based herbicide to the *Arundo* material. Herbicide applications would be done by, or under the supervision of, a licensed pesticide applicator.

Users of the project area would generally be anticipated to include plant collectors and other persons exploring the riverbed area. The Ojai Valley Trail and residents of Casitas Springs are located to the east of the project area. Members of the general public within the immediate project vicinity would not be anticipated to remain within it for more than one to two hours. As referenced in Section 4, prior to any project related activities signs would be posted to notify the public of intended activities and discourage its use of the area for a minimum of two weeks after herbicide applications.

As referenced in Section 10.15, above, a dose of 2 mg/kg/day has been determined by the EPA to be the RfD for glyphosate (U.S. Forest Service, 2002). The RfD means that a person could receive a dose of 2 mg/kg/day throughout everyday of his or her life without an adverse health effect. Short-term or acute exposures above the chronic RfD can occur without any known adverse health effect. The estimated lethal dose of glyphosate in humans is 445 mg/kg/day (U.S. Forest Service, 2002). Thus, a 150-pound (73 kilogram) person would need to be exposed to 32,485 mg of glyphosate in a single day to achieve a lethal dose. Please refer to the impacts section of this analysis for additional information on the use and risks of glyphosate.

Impacts

Background Information on the Public Risks of Glyphosate. Implementation of the proposed project and Alternative 2 would involve the use of a glyphosate-based herbicide (Rodeo® or Aquamaster®). Glyphosate is a broad-spectrum, non-selective, post-emergent herbicide that is in relatively wide use within the United States for vegetation control. For the purposes of its vegetation control activities, the U.S. Forest Service prepared a risk assessment in 1996 that included an evaluation of the use of these types of herbicides. A summary of the findings of this risk assessment is provided below. The summary is based upon information presented in the U.S. Forest Service, Angeles National Forest, Environmental Assessment of eradication of Arundo in Big Tujunga Canyon, California (U.S. Forest Service, 2002).

The U.S. Forest Service's risk assessment was primarily focused on Rodeo®. However, it is noted that Aquamaster® and Rodeo® have the same formulations (53.8 percent by weight isopropylamine salt of glyphosate and 46.2 percent by weight water); therefore, the risks associated with the use of either of these two herbicides are considered to be the same (Dow, 2003, Monsanto, 2003).

The U.S. Forest Service evaluated two-types of generalized risk exposure scenarios: (1) job-specific; and, (2) incident specific. The job specific scenarios estimated absorption associated with various work-related activities under which multiple routes of exposure could occur, such as mixing, loading, and applying the herbicide. Incident specific scenarios refer to scenarios such as spills on the skin or wearing contaminated clothing. The major hazard associated with glyphosate involves contact with the skin or eyes, as irritation is likely to result from contact.

The maximum allowable rate of application for either Rodeo® or Aquamaster® is 7.5 pounds of active ingredient per acre, or 5.6 quarts per acre. Assuming a worst-case scenario of 7.5 pounds of active ingredient per acre, ground based applicators would generally be expected to be exposed to a daily dose of 0.006 mg/kg. For those ground workers applying these herbicides by boom spray, the daily dose of exposure would be expected to be approximately 0.013 mg/kg. The level of daily exposure would be anticipated to diminish sharply after the initial application, as progressively less vegetation would need to be treated as the project continues through its six years of planned treatments.

Table 10-4 provides a summary of the risks to work crews due to incidental exposures.

Table 10-4 Work Crews Risks Associated with Incidental Glyphosate Exposure

Activity	Assumption	Dose (mg/kg)	Hazard Quotient[1]
Immersion of hands	One minute	0.00012	0.00006
Wearing contaminated gloves	One hour	0.0069	0.0003
Accidental spill on lower leg.	Effective washing after 1 one hour	0.007 – 0.019	0.004 – 0.01

[1] A hazard quotient is the ratio of the estimated level of exposure to a daily dose level that is not anticipated to cause and adverse effect on a human population over a lifetime of exposure. The daily dose level for glyphosate is 2 mg/kg/day. Hazard quotient values less than 1 imply an acceptable margin of safety.

Source: U.S. Forest Service, 2002.

Members of the general public are typically exposed to very low levels of glyphosate. Glyphosate is moderately biodegradable and is not generally considered to be active in soil. The half-life of glyphosate can range between three to 130 days, depending on site-specific soil structure, moisture, and temperature. The substance dissolves rapidly in water; its half life in water is estimated to be approximately 35 to 63 days, depending on site-specific conditions. Table 10-5 present a summary of several types of exposure risks to the general public.

Table 10-5 Public Risks Associated With Glyphosate Exposure

Activity	Assumption	Dose (mg/kg)	Hazard Quotient
Direct spray	Naked child: exposure to entire body with washing after one hour	0.031 – 0.061	0.002 – 0.03
	Young woman: exposure to feet and legs with washing after one hour	0.0026 – 0.0053	0.001 – 0.003
Walking through a contaminated area	Skin absorption	0.005 – 0.0009	0.000005 – 0.0005
Contaminated water	22 pound (10 kilogram) child consuming 1.06 quarts (1 liter) immediately after spraying	0.0093	0.005
Consumption of fish	Shortly after spraying	0.002	0.001
	Over prolonged periods	0.00009	0.00005
Consumption of vegetation	Berries shortly after spraying	0.032	0.003
	Berries up to 20 days after spraying	0.006	0.06

Source: U.S. Forest Service, 2002.

Under the proposed project and Alternative 2, the project area would be sprayed and/or daubed with either Aquamaster® or Rodeo®. Assuming a worst-case scenario of applying 7.5 pounds (or 5.6 quarts) of active ingredient over the approximate five-acre site, which is the maximum allowable application volume, the hazard quotient would be 0.05. This hazard quotient is substantially below the hazard quotient threshold of 1.0. Therefore, impacts to public health and safety due to the application of either of these two herbicides would be considered less than significant. As noted previously, the total acreage requiring re-application is anticipated to decline sharply after the initial application, and thus impacts would be anticipated to decline as well over the six year period of the project. Given the rapid rate at which glyphosate is eliminated from the environment in conjunction with the relatively small project area, the cumulative effects from exposure would not be anticipated to be significant.

The proposed project and Alternative 1 involve the cutting and removal of the *Arundo*. The cut stumps could potentially present a physical hazard (tripping and falling) to persons accessing the project area; however, this risk is considered to be similar to existing risks within the project area. Impacts would thus be considered less than significant. Chipping activities could additionally present a potential hazard to the public due injuries caused by "fly away" chips exiting the chipper. However, construction crews would be required to use standard safety equipment (such as goggles and gloves) and clothing to minimize injury and the public would not be allowed access to the chipping area during active chipping activities. Therefore, health and safety risk impacts would be less than significant.

Under the No Project Alternative, no *Arundo* eradication activities would occur. Under this scenario it would be anticipated that the *Arundo* would continue to colonize the project area, which would increase risks associated with wildfires and flooding. These impacts would be potentially significant unless the County and City implement other measures to minimize these risks.

10.17 TRANSPORTATION AND CIRCULATION

According to Ventura County (Ventura County, 2000), a project would result in significant transportation related impacts if any one of the following results from the project:

- Add 10 or more peak hour trips to a road segment and cause the level of service (LOS) to become unacceptable (LOS F for State Route 33)
- Add 10 or more peak hour trips to a road segment that is operating at less than acceptable LOS
- Add 10 or more average daily trips (ADTs) or 1 percent of the total project ADTs, whichever is greater, to a road segment that is operating at less than acceptable LOS
- Result in inconsistencies with County standards for public or private road design
- Involve the construction of a public or private road with single access that is over 800 feet in length
- Result in insufficient space for construction parking, or result in parking conditions inconsistent with the parking requirements of the Zoning Ordinance
- Cause actual or potential barriers to existing or planned pedestrian/bicycle facilities.

Setting

The project site is accessed from an existing private VCWPD maintenance road that has controlled access (locked gate). The maintenance road is located immediately south of the Arroyo Mobile Home Park off of State Route 33. State Route 33 originates to the south at the six-lane U.S. 101 (Ventura Freeway) in Ventura and exists as a four-lane freeway until Casitas Vista Road, approximately seven miles north of U.S 101 and one mile south of the project site. This portion of State Route 33 is referred to as the Ojai Freeway. North of Casitas Vista Road and in the vicinity of the project area, State Route 33 is a two-lane highway up to Ojai. North of Ojai, State Route 33 serves as a pass through the rugged Los Padres National Forest to Interstate Highway 5, north of Coalinga in Fresno County.

State Route 33 experienced an estimated average annual daily trip (AADT) volume of 25,000 and an estimated peak hour trip volume of 2,300 during the year 2001 (Caltrans, 2003). State Route 33

currently operates at a level of service (LOS) A to C, but operates at LOS F during peak hours (southbound a.m. and northbound p.m.) (Padre, 2003), which indicates a significant traffic congestion problem associated with the commute patterns to and from the Ventura Freeway.

Impacts

Road and Highway Level of Service. As stated in the project description, no more than 25 workers would be needed to hand cut, chip, and treat the targeted *Arundo* over an estimated 30-day period, which would be the most labor intensive portion of project, requiring the most trips associated with the project. The dried materials may remain at the project staging area for up to 12 to 18 months. Some materials may be used to pad the existing Ojai Valley equestrian trail adjacent to the project site and some materials may be used as part of the Ojai Sanitation District's compost bio-composition experiment. Materials not recycled or used to pad the existing Ojai Valley equestrian trail would be disposed of properly at a nearby landfill. Trips required to haul the remaining material offsite would likely be staggered over the period of several months resulting in an insignificant amount of daily haul trips.

With regard to the 25 worker-commute trips, it is anticipated that at least 10 of the trips could utilize State Route 33 during peak hours. However, it is assumed that the trips would originate from the Ventura area (U.S. 101) so that the a.m. peak hour trips would be northbound and the p.m. peak hour trips would be southbound. The worker-commute patterns would not contribute to an unacceptable LOS. Therefore, impacts to road or highway LOS would be less than significant.

Private Road Design. The project would utilize an existing VCWPD access road and does not include the construction or improvement of any private roads. Therefore, the proposed project would not have an impact associated with constructing a private road.

Parking. Construction workers would park their private and company vehicles at the project staging area and possibly along the VCWPD maintenance road on the levee. Therefore, there would be no impacts associated with the availability of public parking spaces.

Pedestrian/Bicycle Facilities. The proposed project would require a haul truck to frequently cross the Ojai Valley Trail in the area of the service road to access the levee for the duration of the vegetation removal, which would be an approximate 30-day period. The frequent truck trail crossings could potentially impact the normal usage of the trail during the 30-day period. This potentially significant impact would be reduced to less than significant levels with the implementation of Mitigation Measure T-1.

T-1 Signs shall be posted on the Ojai Valley Trail warning bicyclists of heavy-duty truck crossings. The signs shall be posted approximately 100 feet north and south of the of the active construction access road, at least one week prior to the use of the trail crossing. The signs shall be maintained for the entire period when trail crossing is used.

Full implementation of Mitigation Measure T-1 would ensure that less than significant impacts to pedestrian/bicycle facilities would occur as a result of the proposed project.

10.18 WATER SUPPLY

Impact Significance Criteria

- **Water Quality:** A project would have a significant impact if it would result in the use of domestic water that does not comply with the applicable State Drinking Water Standards as described in Title 22 of the California code of Regulations, Section 64421 et seq.
- **Water Quantity:** A project would have a significant impact if the demand for domestic water could not be met or if the source identified did not constitute a permanent water supply.
- **Fire Flow:** A project would have a significant impact if sufficient water flow would not be available to meet the fire fighting needs of the project.

Environmental Setting

The County's water supply is obtained from three major sources, including groundwater, surface water and imported water; a small amount of reclaimed water is also used (County of Ventura, 1988b). Within the project area, the Casitas Municipal Water District delivers wholesale water to several purveyors within the Ventura River drainage. The Casitas Municipal Water District tests the quality of its water supply on a regular basis, and exceeds the testing requirements set forth by federal and state standards (Casitas Municipal Water District, 2003). The water quality of the Casitas Municipal Water District is considered safe to drink per State and Federal standards (Casitas Municipal Water District, 2003).

The water supply of the Casitas Municipal Water District fluctuates with annual rainfalls. During normal and wet rainfall years, including the year 2003, the Casitas Municipal Water District has an adequate water supply to meet residential and agricultural demands (Casitas Municipal Water District, 2003). During drought years the Casitas Municipal Water District would rely upon intensified water conservation programs, reduced water allocations and the development of new water supplies to meet the demands of its service area (Casitas Municipal Water District, 2003).

As indicated above, the Casitas Municipal Water District currently has ample supply to meet fire flow needs. In the event of drought years, the Casitas Municipal Water District would implement water conservation programs, reduce water allocations and the development of new water supplies to ensure adequate fire flow protection.

Impacts

The proposed project would not result in the human consumption of water, or adversely affect domestic water quality. Herbicide treatments are expected to use either Rodeo® or Aquamaster®, both of which are labeled for use within water. Therefore, the proposed project and its alternatives would have no impact with respect to domestic water quality, and would not conflict with the goals and policies of the Ventura County General Plan.

The proposed project would result in the use of domestic water for irrigation purposes in the third, fourth, fifth, and sixth years of the project to establish and maintain revegetated areas. Water would be supplied by the Casitas Municipal Water District. The amount of water used during for the revegetation effort is considered to be both temporary and negligible when compared to the existing water supply and demand of the project area. Therefore, the proposed project and its alternatives would have no impact with respect to domestic water quantity, and would not conflict with the goals and policies of the Ventura County General Plan.

The proposed project and its alternatives would not involve the construction of any flammable structures. Additionally, the project would not affect fire flow pressures for other uses. Therefore, the proposed project and its alternatives would have no impact with respect to fire flow requirements, and would not conflict with the goals and policies of the Ventura County General Plan.

10.19 WASTE TREATMENT AND DISPOSAL

Impact Significance Criteria

- **Individual Sewage Disposal Systems:** A project would have a significant impact if it would not comply with the applicable sections from the following documents: Ventura County Building Code, Ventura County Sewer Policy, Ventura County Ordinance Code, Uniform Plumbing Code, Environmental Health Division Individual Sewage Disposal System Technical Information Manual, and Los Angeles Regional Water Quality Control Board Basin Plan.
- **Sewage Collection and Treatment Facilities:** A project would have a significant impact if it would individually or cumulatively generate sewage effluent which would be discharged to and exceed the capacity of existing sewer main or sewage treatment plant.
- **Solid Waste Management and Facilities:** Any project that generates solid waste would have an impact on the demand for solid waste disposal in Ventura County. However, unless the County has reason to believe that there is less than 15 years of disposal capacity available for County disposal, no individual project would have a significant impact on the demand for solid waste disposal capacity. Solid waste facilities shall comply with the following statues and regulations and are subject to enforcement by the Environmental Health Division: California Health and Safety Code; California Code of Regulations, Title 14 and 27; and California Public Resources Code.

Environmental Setting

The project area is located within an undeveloped portion of the main branch of the Ventura River. The project area does not contain any individual sewage disposal systems or sewage collection or treatment facilities. A filtration plant owned by the City of Ventura is located approximately 1.75 miles south of the project area, along the eastern bank of the Ventura River.

A "Countywide Siting Element" was approved by the California Integrated Waste Management Board on June 20, 2001 that extends the existing Solid Waste Facility Permit for the Simi Valley Landfill and Recycling Center (Padre, 2003). This extension, combined with the existing permitted capacity of the Toland Road Landfill would provide Ventura County with sufficient disposal capacity beyond the 15 year planning period mandated by State law (Padre, 2003).

Impacts

The proposed project and its alternatives would not involve any increase in the use of individual septic systems; therefore no impacts would occur. Additionally, the proposed project and its alternatives would not result in the long-term generation of sewage, and therefore would not create demand for sewage collection or treatment facilities. Sewage generation by the site preparation crew would be handled by a portable septic provider. Therefore, the proposed project and its alternatives would have no impacts with respect to sewage collection or capacity.

The proposed project and some of its alternatives would result in the disposal of chipped material originating from the removal of *Arundo*. Some of this material may be used to pad the existing Ojai Valley Trail and some material may be used as part of the Ojai Sanitation District's compost bio-composition experiment or other organizations that may wish to use the materials for their own purposes. Materials not recycled would be disposed of at a landfill. The quantity of solid wastes to be disposed of at a landfill is expected to be minimal and would therefore have a less than significant impact to solid waste management and facilities. The proposed project and its alternatives would not conflict with the goals and policies of the Ventura County General Plan.

10.20 UTILITIES

Impact Significance Criteria

Based on the Ventura County Initial Study Assessment Guidelines (County of Ventura, 2002), utility providers should be contacted to ascertain a project's impact on or demand for utilities.

Environmental Setting

The project area is located along the eastern bank of the Ventura River. The area is undeveloped and does not include any utility services.

Impacts

Electric. The proposed project and its alternatives would not involve the use of electricity either during site preparation or operation. All site preparation work would be conducted using fuel-powered equipment. Therefore, no impacts to electricity service would result.

Natural Gas. The proposed project and its alternatives would not involve the use of natural gas or disrupt natural gas service either during site preparation or operation. Therefore, no impacts to natural gas service would result.

Communications. The proposed project and its alternatives would not involve the establishment of, or require communication lines either during site preparation or operation. Therefore, no impacts to communication services would result.

10.21 FLOOD CONTROL AND DRAINAGE FACILITIES

Impact Significance Criteria

A potentially significant impact to flood control or drainage facilities may occur if a proposed project would substantially change the flow rate (i.e., increased runoff), velocity, erosion potential or capacity of flood control channels.

Setting

The project area is located along a slightly elevated linear swath along the east bank of the Ventura River. An existing flood control level is located approximately 20 feet east of the project area. The main branch of the Ventura River flanks the west side of the project area. The project area is within the 100-year floodplain as delineated on FEMA flood plain maps, and is within the flood route for the Matilija and Casitas Dams.

Impacts

The proposed project and Alternative 1 would involve the removal of *Arundo* within the Ventura River. When surface water velocities within the river are high, *Arundo* materials can be transported downstream and disrupt surface water flows, thereby creating potentially significant flood hazards. The removal of *Arundo* from the Ventura River would thus reduce impacts associated with potential flooding and erosion due to downstream transport of plant materials. These alternatives would therefore result in a beneficial impact.

The No Project Alternative and Alternative 2 would result in a significant amount of dead *Arundo* materials being left in place during the peak flow months of the Ventura River. Consequently, these alternatives would increase flood and drainage control potential due to the downstream transport of these materials. These impacts could be adverse and significant during years of peak rain and river flows unless preventative measures (i.e., maintenance and vegetation removal) are implemented by the VCWPD.

10.22 LAW ENFORCEMENT AND EMERGENCY SERVICES

Impact Significance Criteria

Based on the Ventura County "Initial Study Assessment Guidelines" (County of Ventura, 2002), a project would have a significant impact if it would decrease the average officer-to-population ratio, and/or increase the need for patrol facilities by increasing the distance between patrol area stations and new development areas. The current and minimally acceptable officer-to-population ratio is 1 to 1,270 in all of the existing unincorporated service areas, and patrol facilities are approximately 19.5 miles apart. Subjective variables such as calls for service, area to be served, and response times must also be considered.

Setting

For the County of Ventura, the Sheriff is also the Chief Law Enforcement Officer and, as such, has jurisdiction over its unincorporated areas. To accommodate the responsibilities of the Office of the Sheriff, the department is comprised of eight major divisions (County of Ventura, 2000b). The proposed project is located in the West County Patrol Division, which is comprised of four substations. The Ojai Station, located at 402 South Ventura Street in Ojai, is the closest station to the project site. It is located approximately 7 miles northeast of the project site.

According to County Ordinance 2538, the Sheriff is the Director of Disaster (Emergency) Services. West County is the primary station for the Sheriff's Emergency Operations Center (EOC), which handles emergency functions such as ambulance dispatching for the entire County and fire dispatching for the City of Fillmore. The EOC is also the primary point of contact for the "911" phone system; and is the central location that connects the county with EOC's throughout the state and coordinates communications and resources in case of disaster or other emergency.

Impacts

The proposed project and its alternatives would not attract persons to the local area, and would not require additional law enforcement or emergency services personnel, equipment, or facilities be provided. Based on current conditions, in event of emergency, the Ojai Station and the Sheriff's EOC would have adequate capacity and are within an acceptable distance to respond. Therefore, the proposed project and its alternatives would have no impact with respect to law enforcement and emergency services, and would not conflict with the goals and policies of the Ventura County General Plan.

10.23 FIRE PROTECTION

Impact Significance Criteria

Based on the Ventura County "Initial Study Assessment Guidelines" (County of Ventura, 2000a), a project would have a significant impact if the project site is located greater than five miles from a paid fire department, requires a response time in excess of 12 minutes, and/or requires additional personnel, equipment or facilities based on a density of one firefighter per every 3,000 to 4,000 persons (density dependent).

Setting

The Ventura County Fire Protection District protects life and property by providing fire prevention, fire suppression, fire investigation, hazardous materials response teams, rescue services, and related emergency services. The District operates 32 fire stations, divided into four battalion areas (Ventura 2000). The fire station located at 15 Kunkle Street in Oak View is the closest fire station to the project site. It is located approximately two miles north of the project site.

Impacts

The proposed project and Alternative 1 would not attract persons to the local area, and would not construct any flammable structures or otherwise create a fire hazard. Based on current conditions, in the event of fire, the Oak View Fire Station would have adequate capacity and response time. Therefore, the proposed project and Alternative 1 would have no impact with respect to fire protection services, and would not conflict with the goals and policies of the Ventura County General Plan.

The No Project Alternative and Alternative 2 would involve an accumulation of dead *Arundo* materials within the project area. The accumulation of this material would increase the potential for wildfires, which may result in a significant adverse impact if the existing level of service and response provided by the Ventura County Fire Protection District is not adequate to respond to such an event.

10.24 EDUCATION

Impact Significance Criteria

- **Schools:** A project would have a significant impact on school facilities if it would substantially interfered with the operations of an existing school facility, or would put additional demands on a school district that is currently overcrowded.
- **Libraries:** A project would have a significant impact on public library facilities if it would substantially interfered with the operations of an existing public library facility, or would put additional demands on a public library facility which is currently overcrowded.

Environmental Setting

There are 20 public school districts in Ventura County. The Arnaz School, which serves Kindergarten through 5th grade students, is located at 400 Sunset Avenue in Oak View, is the closest public school to the project site. It is approximately 2 miles north of the project site.

Ventura County is served by four independent public library jurisdictions. Sixteen libraries are operated by the County Library Services Agency. The Oak View Library located at 469 North Ventura Avenue in Oak View is the closest public library to the project site. It is located approximately 2 miles north of the project site.

Impacts

The proposed project and its alternatives would not directly or indirectly involve the in-migration of any new, permanent residents to the project area that would place additional demands on the County's existing public schools and libraries. Additionally, the proposed project and its alternatives would not be located within close proximity to any existing schools or libraries that would conflict with their operation during construction and maintenance activities. Therefore, the proposed project and its alternatives would have no impact on the County's existing educational facilities.

10.25 RECREATION

The following significance criteria have been established by the County for recreation:

- A project would have a significant impact on recreation if it would cause an increase in demand for recreation when measured against the following standards:
  - Local Parks and Facilities: Five acres of developable land (less than 15 percent slope) per 1,000 population.
  - Regional Parks and Facilities: Five acres of developable land per 1,000 population.
  - Regional Trails and Corridors: Two and one-half miles per 1,000 population.
- A project would have a significant impact on recreation if it would impede future development of recreational parks and facilities an/or regional trails and corridors.

Setting

The project area is located adjacent to the west side of the Ojai Valley Trail (Trail). The Trail is nine and one-half miles in length and flanks the east side of the Ventura River (County of Ventura Parks Department, 2003). It is a combined equestrian, bike and foot trail that links the community of Ojai with the City of Ventura. Foster Park is located approximately one-third of a mile south of the project area. Foster Park is a County park that flanks both sides of the Ventura River and includes group and family picnic areas, camping, an amphitheater, playground, horseshoe pits, and foot and equestrian trails (County of Ventura Parks Department, 2003).

Impacts

The proposed project and Alternatives 1 and 2 would not involve the development of new housing or other facilities that would create additional population within the project area; therefore, these alternatives would not would increase a demand of recreational facilities and no impact would occur. The proposed project and Alternatives 1 and 2 would not impede the development of any new trails or recreational facilities, as the project area is located within the an existing riverbed; therefore no impact would occur. During construction, construction-related activities and noise may create nuisance to users of the Trail; however, implementation of the project is not anticipated to require more that 30 days. Construction related activities would be temporary in nature, and with implementation of Mitigation Measures N-1, N-2, and T-1, impacts would be considered less than significant.

Following implementation of the proposed project and Alternative 1, chipped *Arundo* materials may be used to blanket the Trail. This enhancement of the would be considered a net benefit to the Trail and would be consistent with the County's Ojai Valley Area Plan's Goal 3 for parks and recreation, which states "protect existing trails and encourage the development of new bicycle and hiking/equestrian trails" (County of Ventura, 1995b).

Following implementation of the proposed project and Alternative 1, revegetation efforts with native plant species would enhance the overall appearance of the project area. This enhancement would also be considered a beneficial impact to users of the Trail and Foster Park.

Implementation of the No Project Alternative would not generate the construction-related nuisances associated with the proposed project or it alternatives. However, the No Project Alternative would not result in the benefits associated with the proposed project and its alternatives, as addressed above.

11.1 GROWTH INDUCING IMPACTS

CEQA Guidelines Section 15126(d) requires that an EIR address the growth inducing impacts of a proposed project. A proposed project may directly or indirectly induce growth if it: (1) fosters economic or population growth or additional housing; (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or (4) encourages or facilitates other activities that cause significant environmental effects.

The proposed project involves the implementation and evaluation of four different types of *Arundo* removal techniques, revegtation of the project area with native plant species, monitoring and maintenance, and public outreach and education (see Section 4 for details regarding the proposed project). The proposed project does not involve the construction of any new development (residential or otherwise) or infrastructure, and thus would not induce new growth within the project vicinity.

Initial implementation of the project would require up to 25 workers for a period of approximately 30 days; however, these workers would be anticipated to come from within the local area and would commute to the project site. Therefore, no new housing or development would be necessary. During the project's seven year period, work crews would periodically return to the site for repeat eradication activities and revegetation monitoring; however, this pool of workers would also come from the local area, and thus would not require the construction of new development.

As outlined in Sections 10.19 through 10.23, the proposed project would not affect the County's existing community services and facilities, or require new community services and facilities. Therefore, no impacts would occur.

11.2 CUMULATIVE IMPACTS

Cumulative impacts refer to two or more individual impacts that, when considered together, are considerable, or compound, or increase environmental impacts.

The project area is located in a relatively rural area of Ventura County. The community of Casitas Springs is located to the east of the project site and the Arroyo Mobile Home Park is located near its northern end. Rural residential areas are located to the west and south of the project area. The County does not have a listing of all proposed or approved development projects within the area; however, the County's Resource Management Agency, Planning Division, has noted that any new development would likely be limited to residential single lot development and improvements (County of Ventura, 2003b). No industrial development and only minor commercial development would be anticipated to occur within the project vicinity (County of Ventura, 2003b).

The VCWPD is currently planning a bank protection upgrade project adjacent to the demonstration site. The upgrade project includes improvements to approximately 5,350 feet of the existing flood control levee. The improvements would include: (1) adding earthen fill to raise the levee by three feet; (2) reestablishing the existing levee access road with gravel; (3) adding a vehicle turn-around at the northern terminus of the access road; (4) relocating approximately 210 feet of the Ojai Valley Trail;

and, (5) adding 368 linear feet of flood wall along the eastern margin of the levee within the Arroyo Mobile Home Park area (VCWPD, 2003). The upgrade project would be built in two phases, with several years in between the two phases. Improvements to the upstream components of the project would occur first, followed by improvements to the downstream elements of the project. The downstream components of the upgrade project lie parallel to the demonstration site. Phase 1 of the project is currently anticipated to commence in the summer of 2004.

The initial phase of the proposed project is currently anticipated to occur in the fall of 2003, or the spring of 2004, depending on completion of its environmental review process and permitting requirements. Once approved, the initial *Arundo* removal effort would not be anticipated to require more than 30 days to complete; therefore, conflicts with, or the creation of significant cumulative impacts due to implementation of the proposed project and the Ventura River Bank Protection Upgrade Project are not be anticipated.

During Project Years 2 through 6, there would be periodic activities at the proposed demonstration site that may occur concurrently with construction of the proposed Ventura River Bank Protection Upgrade Project. However, activities associated with the proposed project would not be anticipated to require more than five workers over an estimated two-day period for no more than four times between April 15 and November 1. Consequently, no significant cumulative impacts or conflicts with the proposed Ventura River Bank Protection Upgrade Project would be anticipated to occur.

11.3 IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(c) requires an EIR to evaluate a proposed project's irreversible changes to the environment. Irreversible environmental changes include such issues as current or future commitments to using non-renewable resources, or secondary impacts that commit future generations to similar uses.

The proposed project involves the removal of *Arundo*, followed by the re-establishment of native plant species within the demonstration site. Continued *Arundo* removal and native plant maintenance would continue for a six-year period. The project additionally involves public outreach and education.

Implementation of the project would result in the consumption of energy as it relates to the fuel sources needed for construction and maintenance-related vehicles and equipment. As reviewed in Section 10.8, the use of non-renewable resources would not be substantial in comparison to overall energy use and would be short term (no more than 30 days). Additionally, the proposed project is limited to a seven-year period, and thus would not permanently commit non-renewable resources. Therefore impacts associated with this use are considered to be less than significant.

Implementation of the project would require the use of water during Project Years 2 through 6. However, the volume of water required for the project would be temporary in nature and would not substantially affect local water supplies, as reviewed in Section 10.18. Therefore, impacts to this resource would be considered less than significant.

Implementation of the proposed project would ultimately enhance the project area and Ventura River watershed, and thus would be considered an overall beneficial impact.

12. UNAVOIDABLE SIGNIFICANT IMPACTS

CEQA Guidelines Section 15126(b) requires an EIR to identify the significant environmental effects of a proposed project that cannot be mitigated to a level of less than significant if the proposed project is implemented.

The proposed project would create one adverse, significant impact that cannot be mitigated to a level of less than significant. This impact involves construction-related noise that would exceed the County's adopted significance criteria for construction-related noise near residential areas during Project Year 1. As outlined in Section 8.3.2, the closest residents to the project area are located in the Arroyo Mobile Home Park, approximately 150 feet to the northeast of the northern most extent of the project area. The noise modeling analysis undertaken for the proposed project and its alternatives indicates that peak noise levels at the mobile park due to the removal of *Arundo* in the northern portion of the project site would be up to 77 dBA L_{eq}. The staging area where the *Arundo* would be chipped would be located approximately 500 feet south of the mobile home park and would generate noise levels at the mobile home park up to 72 dBA L_{eq}. Although the modeled noise levels are highly conservative in that they do not account for noise reduction factors such as absorption by soft surfaces, and obstructions that block the line of sight between the construction equipment and the receptors, it is estimated that the proposed construction noise levels during Project Year 1 would exceed the County's significance criteria of 55 dBA L_{eq} for residential areas.

Implementation of the proposed project would include Mitigation Measure N-1; however, this mitigation would not reduce noise-related impacts to a level of less than significant. Therefore, the proposed project would result in an unavoidable significant impact. However, during project Years 2 through 6 there would be a substantial reduction in the number and operating time of the hand held equipment needed for the removal of resprouting *Arundo* material, and there would be no chipping activities; impacts associated with noise would thus be substantially reduced during these years. During Project Year 7 there would be no physical activities within the demonstration site and no impacts associated with noise would occur.

Although the proposed project would result in an unavoidable significant impact, it is still recommended as the preferred alternative because: (1) the impact would be temporary in nature; (2) the proposed project would create several beneficial impacts; (3) Alternative 1 would result in the same unavoidable significant impact; and, (4) Alternatives 2 and 3 would result in additional unavoidable significant impacts that would not occur with implementation of the proposed project. Section 6 and Table 6-1 of this EIR provide a summary of all of the impacts associated with the proposed project and its alternatives.

13. LISTINGS OF PREPARERS AND REVIEWERS

In accordance with CEQA Guidelines Section 15063(d)(6), Table 13-1 provides a listing of the persons that prepared this EIR. Table 13-2 provides a listing of those members of the ATF who participated in its review.

Table 13-1 List of EIR Preparers

Name	Company	Function/Technical Section(S)
Sue Walker	Aspen Environmental Group	Project Manager, Executive Summary, Introduction, Legal Authority and Environmental Review Process, Project Description, Alternatives, General Plan Environmental Goals and Policies, Land Use, Visual Resources, Aviation Hazards, Public Health, Recreation, Energy Resources, Fire Hazards, Long-Term Implications, Comparison of Alternatives, Unavoidable Significant Impacts
Tom Scofield	Aspen Environmental Group	Deputy Project Manager, Biological Resources, Regulatory Setting; Hazardous Materials and Waste
Spencer MacNeil	Aspen Environmental Group	Regulatory Setting
Brewster Birdsall	Aspen Environmental Group	Air Quality
Matt Fagundes	Aspen Environmental Group	Noise, Transportation and Circulation
Lisa Blewitt	Aspen Environmental Group	Water Supply, Waste Treatment and Disposal, Utilities, Flood Control and Drainage, Law Enforcement and Emergency Services, Fire Protection, Education
Jenny Slaughter	Aspen Environmental Group	Water Resources, Mineral Resources, Hazardous Materials and Waste, Coastal Beaches and Sand Dunes, Seismic, Geologic and Hydraulic Hazards, Fire Hazards
Jeanette KcKenna	McKenna, et al.	Cultural and Paleontological Resources
Judy Spicer	Aspen Environmental Group	Document Production Coordinator
Debra Matsumoto	Aspen Environmental Group	Editing
Kati Simpson	Aspen Environmental Group	Graphics

Table 13-2 List of EIR Reviewers

Person	Agency
Peggy Rose	Ventura County Resource Conservation District
Dennis Kanthack	Ventura County Watershed Protection District
Darleen Alves	Ventura County Watershed Protection District
Jorine Compopiano	Ventura County Watershed Protection District
Keith Gurrola	Ventura County Fire Department
Denise Steurer	United States Fish and Wildlife Service
Morgan Wehtje	California Department of Fish and Game

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APPENDICES

A. RESPONSE TO COMMENTS

B. MITIGATION MONITORING PLAN

C. CEQA RELATED NOTICING

D. NOISE MODELING

E. AIR QUALITY CALCULATIONS

APPENDIX A.

RESPONSE TO COMMENTS

APPENDIX A. RESPONSE TO COMMENTS

The project's Draft Environmental Impact Report (EIR) was circulated for public and agency review from June 16, 2003 through July 30, 2003. During the review period, comments could be submitted in the form of a letter, facsimile (fax), or verbally. The project additionally was discussed at the Ventura County Environmental Report Review Committee (ERRC) on August 6, 2003; during the ERRC meeting the public and attending agency personnel were provided with the opportunity to comment on the project and its Draft EIR.

During the Draft EIR's public and agency review period four comment letters were received. Two letters were submitted by State agencies (the California Department of Transportation [Caltrans] and the California Coastal Conservancy), and two letters were submitted by local agencies (the Ventura County Air Pollution Control District [VCAPCD] and the City of San Buenaventura [City]). No comments were submitted by the public during the Draft EIR's review period, and no comments were raised by parties other than members of ERRC during the ERRC meeting held on August 6th.

Comment letters received on the Draft EIR are presented in this Appendix. The comment letters received are provided on the left side of the following pages with specific comments indicated numerically. The corresponding responses to the numbered comments are presented on the right side of each page.

Department of Transportation
Received July 31, 2003 Page 1

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
120 SO. SPRING ST.
LOS ANGELES, CA 90012
PHONE: (213) 897-4429
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

IGR/CEQA No. 030658AL
Ventura River Arundo Removal
Demonstration Project, Draft EIR
Vic. LA-33 / PM R5.631
SCH #: 2003041091

July 31, 2003

Mr. Jeff Pratt
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009

Dear Mr. Pratt:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project.

1 Caltrans is developing a Casitas Bypass Project on SR-33 in the area where this Arundo removal demonstration project will occur. The Casitas Bypass is still in the early conceptual stage of development. One or more of the alternative alignments being considered would impact the same portion of the Ventura River where the Arundo removal project will occur.

2 Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful of your need to discharge clean run-off water.

3 Any transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. We recommend that large size truck trips be limited to off-peak commute periods. In addition, a truck/traffic construction management plan is needed for this project. Thank you for the opportunity to have reviewed this project.

"Caltrans improves mobility across California"

1. Comment noted. The Ventura County Watershed Protection District (VCWPD) is aware of the Casitas Bypass Project and will track the project's progress. Questions and concerns regarding Casitas Bypass Project and it alternatives will be communicated to the California Department of Transportation (Caltrans) through the inter-agency coordination and communications that will be required during the project's environmental review process under the California Environmental Quality Act (CEQA) and any required local regulatory permitting needs.

2. Comment noted. Construction of the proposed project includes the implementation of Best Management Practices (BMPs) to minimize impacts associated with storm water runoff. The project will additionally comply with all Federal and State regulatory permit requirements for storm water runoff, including preparation an implementation of a Storm Water Pollution Prevention Plan (SWPPP), if required.

3. As noted in Section 4 of this Final Environmental Impact Report (EIR), construction of the proposed project does not involve the use of any heavy construction equipment. Only one haul truck for the transportation of Arundo materials from the demonstration site to the chipping area would be required. Other traffic-related issues during project construction would be limited to construction worker commute trips for a maximum 30-day period. Section 10.17 of this Final EIR concludes that these trips will not result in a significant impact to the existing Level of Service (LOS) for either State Route 33 or U.S. Highway 101. Because the proposed project will not require the transport of oversized equipment/vehicles, a Caltrans transportation permit will not be required. Additionally, due to (1) the short duration of construction (30 days), (2) the limited number of construction-related vehicles needed, and (3) the majority of construction-related vehicular movement on an existing flood control levee access road and a dirt access road with limited public access, no significant traffic impacts have been identified in this Final EIR that would warrant the development and implementation of a truck/traffic construction management plan as mitigation. It is noted, however, that prior to and during construction signs shall be clearly posted that include a point of contact and phone number for construction-related questions and concerns, including issues associated with traffic and transportation, should they arise.

Department of Transportation
Received July 31, 2003 Page 2

If you have any questions, please feel free to contact me at (213) 897-4429 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 030658AL.

Sincerely,

STEPHEN J. BUSWELL
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Steve Buswell/AL

"Caltrans improves mobility across California"

Coastal Conservancy
Received July 30, 2003 Page 1

Coastal Conservancy

RECEIVED
JUL 30 2003
FLOOD CONTROL DEPT.

July 29, 2003

Darleen Alves
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009-1610

Re: Draft EIR for Ventura River *Arundo* Removal Demonstration Project

Dear Ms. Alves:

On behalf of the California Coastal Conservancy, I have reviewed the Draft EIR and am providing the following comments.

Cut and Paint Method:
Please clarify the method for treating regrowth in stands that receive an initial cut and paint treatment – foliar spray, repeat cut and paint, or other approach. 4

- Page ES-2 - "1. Mechanical removal of the Arundo biomass immediately followed by the painting … ***and subsequently treating regrowth with _____***."
- Page ES- 3 - During project years 4, 5, and 6, would project maintenance truly include "re-painting" or will regrowth in the cut and paint section of the project area be treated with foliar spray? 5

Monitoring and Reporting Program:
Most of the items listed on page ES-3 relate to the revegetation experiment. Additional data should be collected specific to the Arundo removal demonstration including but not limited to the following: 6

- Amount of resprouting per method
- Amount of retreatment per method
- Amount and concentration of herbicide for initial treatment and retreatments per method
- Number of retreatments per method
- Costs per method (labor and equipment)
- Impacts noted per method
- Lessons learned and adaptations made to approach

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California State Coastal Conservancy

4. All herbicide applications for *Arundo* regrowth under Removal Method 1 will be painted or sprayed, depending on the density of regrowth during Project Years 2 through 6.

5. As indicated in response to comment 4, above, all herbicide applications for *Arundo* regrowth under Removal Methods 1, 2, and 3 during Project Years 2 though 6 will be either painted or sprayed depending on the density of regrowth.

6. Comment noted. The suggested data collection and assessments have been incorporated into those items to be addressed in the project's Annual Reports.

Darleen Alves, Ventura County Watershed Protection Division **Page 2**
July 29, 2003

7 A-1: Will the chipper be the main equipment/vehicle use in the project area since the chips will be left onsite for others to haul? If so, then how do the A-1 measures address minimizing emissions from the chipper? Are there alternatively fueled chippers? Is it feasible to turn the chipper off when not in use or will it be continually manned?

8 A-2: Will chipping result in fugitive dust emissions? If so, then what additional measures will reduce this source of emissions?

9 BR-1: The EIR identifies the entire project area as a wetland (p. 7-2); therefore, please clarify what is meant by avoidance of wetland and riparian areas? Will arundo be left in some areas?

BR-3:

10 • Please add fauna. "The purpose … is to prevent permanent and temporary impacts to wetlands, sensitive vegetation, ***and fauna …***"

11 • The EIR states that herbicides will not be combined with R-11 surfactants. Will they truly be surfactant free?

12 • The concentration ranges allowed ought to be stated in the final EIR.

13 BR-5: Please specify the survey protocols in the Final EIR or Mitigation Monitoring Plan.

14 BR-6: If arundo exists in the buffer areas, then how will it be managed to prevent its spread into the treated areas?

Please contact me if I may further clarify my comments and questions.

Sincerely,

Karen C. Bane

Karen C. Bane
Project Manager
South Coast Program
(510) 286-0922
kbane@scc.ca.gov

California State Coastal Conservancy

7. The primary equipment required for the project includes hand held equipment (clippers, loppers, etc.) for *Arundo* removal, equipment to haul the removed *Arundo* material out of the river to the chipping area, trucks to support foliar spray applications, and chipping equipment. As indicated in Section 10.3 and Appendix E of this Final EIR, emissions associated with chipping equipment have been evaluated and no impacts to local or regional air quality that cannot be mitigated to less than significant will result. As noted in Mitigation Measure A-1, equipment idling time (i.e., having the chipping equipment running during periods when chipping activities are not occurring) will be minimized to the extent practicable and feasible, and alternatively fueled construction equipment will be used to the extent practicable and feasible.

8. Chipping will result in a minor amount of fugitive dust emissions. Dust emissions from the short-term operation of the chipper were not explicitly calculated because they would be minor in comparison to the quantity of dust caused by vehicle and equipment activities within and around the demonstration site during initial project construction (approximately eight pounds per day). Dust from the chipper is not considered significant because it would not be used to grind the *Arundo* material to a finely sized product. The chipper would create chips that would not be likely to become airborne over substantial distances, and would contain moisture to minimize their air transport. Further, any visible dust emissions caused by the chipper would be controlled pursuant to the requirements of the Ventura County Air Pollution Control District's Rule 51 (see comment and response to comment number 18, below). As such, no additional mitigation is considered necessary.

9. Section 7.1.1.1 of the Final EIR has been revised to reflect that only a small portion of the demonstration site (approximately 0.52 acre) is considered "wetland" as defined by the U.S. Army Corps of Engineers (USACE). It is additionally noted, however, in Section 7.1.1.1 that the entire project area could be considered wetland by the criteria/definitions prescribed by other regulatory agencies. As indicated in Mitigation Measure BR-1, impacts will be minimized by identifying and staking/flagging all wetland and riparian vegetation that can be avoided to the extent feasible, construction-phase monitoring by the VCWPD Restoration Coordinator (or his/her designated representative), and implementation the project's revegetation plan. It is noted that the intent of the project is to enhance wetland and riparian habitat, and that the short-term impacts to wetlands that may occur as a result of project implementation will ultimately be compensated by this enhancement.

All *Arundo* within the demonstration site will be removed using Removal Methods 1 through 4, as outlined in Section 4 of this Final EIR.

10. Comment noted. The language of Mitigation Measure BR-3 incorporates this suggestion.

11. Surfactants to be used in conjunction with any herbicide applications will be of the non-ionic formulation and approved for use in water. "R-11" will not be used in any herbicide applications. Examples of surfactants that may be used are "Agri-dex" and/or "Activator-90.

12. As indicated in Section 10.16 of the project's Final EIR, a glyphosate-based herbicide (either Rodeo® or Aquamaster®) will be used. These two herbicides have the same formulations (53.8 percent weight isopropylamine salt of glyphosate and 46.2 percent by weight water). The maximum allowable rate of application for these two herbicides is 7.5 pounds of active ingredient per acre, or 5.6 quarts per acre. This maximum application rate will not be exceeded. Sections 8.1, 8.2, 10.15 and 10.16 of this Final EIR used the above-referenced formulation and application rate as a "worst case scenario" for evaluating potential impacts associated with herbicide use and concluded that no impacts that cannot be mitigated to less than significant will occur.

13. As indicated in Mitigation Measure BR-5, the final pre-construction survey protocols to be followed will be consistent with all State and Federal permit requirements/conditions of project approval (California Department of Fish and Game [CDFG], United States Fish and Wildlife Service [USFWS], and United States Army Corps of Engineers [USACE]). These requirements remained pending at the time of the project's Final EIR publication; however, all established pre-construction survey protocols will be implemented, including the mapping and monitoring of sensitive species for construction-phase avoidance, and all pre-construction surveys and construction-phase avoidance measures will be appropriately documented as required by regulatory permit requirements.

14. All *Arundo* material within the demonstration site will be eradicated using Removal Methods 1 through 4, as described in Section 4 of this Final EIR. No *Arundo* outside of the demonstration site will be removed or otherwise managed. However, during Project Years 2 through 6, all resprouting *Arundo* material, or invading *Arundo* material from areas surrounding the demonstration site, will be removed per Removal Methods 1 through 4. It is noted that although there will be no management of *Arundo* outside of the boundaries of the demonstration site, implementation of the project's Removal Methods 1 through 4 will inherently provide useful data regarding which types of removal techniques are the most effective (and ineffective) at controlling the spread of *Arundo* from peripheral areas.

Ventura County Air Pollution Control District
Received July 30, 2003 Page 1

Ventura County
Air Pollution
Control District

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Michael Villegas
Air Pollution Control Officer

July 29, 2003

Ms. Darleen Alves
Environmental Specialist
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009-1600

Subject: Request for review of Draft Environmental Impact Report (Draft EIR) for the Ventura River Arundo Removal Demonstration Project (Ventura County Watershed Protection District)

Dear Ms. Alves:

Air Pollution Control District staff has reviewed the subject Draft EIR, which is a proposal for a project to demonstrate Arundo removal techniques. Arundo is a highly invasive, non-native plant species that has substantially degraded the natural habitat and riparian qualities of rivers throughout California, including the Ventura River.

The proposed demonstration site is a five-acre area located along the east bank of the Ventura River, near the community of Casitas Springs. This project would evaluate four (4) different Arundo eradication techniques, which are:

1) Mechanical removal immediately followed by painting of remaining stems with herbicide.

2) A foliar spray application, with the dead materials being removed the following spring with handheld equipment.

3) Removal of above ground Arundo mechanically with handheld equipment, without herbicide application, and subsequently treating regrowth with an herbicide.

4) Mechanical removal, including excavation of the root mass, followed by monitoring and hand removal of regrowth.

In addition to assessing eradication techniques, six different riparian revegetation treatments with native plant species would be tested. The project also includes a public outreach and education program to heighten awareness regarding the ecological benefits of Arundo removal.

Ventura County Air Pollution Control District
Received July 30, 2003 Page 2

The proposed project would be a seven (7) year program that includes initial Arundo removal followed by repeat removal treatments, native plant re-establishment, and revegetation monitoring.

Project Location

The proposed project is located along the east bank of the Ventura River in Casitas Springs in unincorporated Ventura County. The area proposed for the demonstration site is an estimated five-acre linear swath located immediately west of an existing flood control levee. The site is approximately 50 feet wide, 4,500 feet long, and ranges in elevation from 260 to 280 feet above sea level.

Regional Air Quality Impacts

15

Section 10.3 – Air Quality, on pages 10-3 through 10-8 of the Draft EIR discusses the potential impacts of the project on air quality. District staff has reviewed the Draft EIR and concurs with its findings. Based on the information provided by the applicant the project will not have a significant effect on regional air quality.

Equipment exhaust emissions generated as a result of this project would be short-term in nature. These activities would include mechanical removal, transport of the cut stalks, application of herbicide, chipping, and disposal of the material. This activity would be fully completed over the course of 12 to 18 months, but the bulk of the activity would occur within 30 days.

Local Air Quality Impacts

16

Based on information in the Draft EIR, the subject project will generate local air quality impacts, but those impacts are expected to be less than significant.

Mitigation Measures

17

Although the project is not expected to result in any significant regional air quality impacts, the District recommends that mitigation measure "A-1" be implemented. This measure, found on pages 10-6 through 10-7 of the Draft EIR, would help to minimize the production of ozone precursors generated by short-term activities onsite. District staff would also like to recommend the following additional elements be added to the "A-1" mitigation measure:

1) The engine size of construction equipment shall be the minimum practical size.

2) Heavy-duty diesel-powered construction equipment manufactured after 1996 (with

15. Comment noted. The project will not result in any impacts to regional air quality that cannot be mitigated to a level of less than significant.

16. Comment noted. The project will not result in any impacts to local air quality that cannot be mitigated to a level of less than significant.

17. Comment noted. The Ventura County Air Pollution Control District's (VCAPCD's) recommendations for Mitigation Measure A-1 have been incorporated in this Final EIR and will be implemented as part of the project's Mitigation Monitoring Plan.

Ventura County Air Pollution Control District
Received July 30, 2003 Page 3

Ventura River Bank Protection Upgrade Project
July 29, 2003
Page 3

17 (cont.)

federally mandated clean diesel engines) shall be utilized wherever feasible.

3) The number of construction equipment operating simultaneously shall be minimized through the efficient management practices to ensure that the smallest number is operating at any one time.

The District also recommends that mitigation measure "A-2" be implemented. This measure, found on page 10-7 of the Draft EIR, would help to minimize the potential impact of fugitive dust associated with the project. District staff would also like to recommend the following element be added to the "A-2" mitigation measure to ensure that any potential nuisance issues are addressed:

18

1) Facilities shall be operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, *Nuisance*.

"A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."

APCD Permits

19

On page 10-5 of the Draft EIR, the need for obtaining a APCD Permit to Operate for stationary internal combustion engines (50 horsepower and greater) is documented. As provided in the District's review of the notice of preparation (NOP) for this project, the applicant should contact APCD Permitting staff at (805) 645-1401 or (805) 645-1445 for more information regarding obtaining the appropriate permits. Potentially the onsite chipping equipment could require an APCD permit.

General Conformity

20

This project may be subject to the requirements of the federal General Conformity rule. On November 23, 1993, a federal rule entitled "Determining Conformity of General Federal Actions to State or Federal Implementation Plans" was published in the Federal Register. This rule, also called "general conformity," states that a federal agency may not "engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan." In Ventura County, the applicable implementation plan is the Ventura County Air Quality Management Plan.

The general conformity rule applies to federal actions that are: 1) needed on projects

18. Comment noted. The VCAPCD's recommendations for Mitigation Measure A-2 have been incorporated in this Final EIR and will be implemented as part of the project's Mitigation Monitoring Plan.

19. VCWPD staff will contact VCAPCD permitting staff to ensure that any necessary permits, as deemed appropriate by VCAPCD, for the chipping equipment are obtained prior to the start of construction. Section 3.3 of this Final EIR reflects this recommendation.

20. A General Conformity Rule and analysis is not directly applicable to the project as part of the CEQA review and approval process, because the project is not directly associated with a Federal action. The only Federal agency that would potentially require a General Conformity Rule analysis for the project is the USACE. However, the USACE will be reviewing and approving this project under Regional General Permit Number 41. The USACE does not typically require a General Conformity Rule analysis for projects that can be approved under a Regional General Permit because these types of projects have minimal impacts, both individually and cumulatively, on the aquatic environment. In addition, because the USACE's nexus to approving the project is limited to a very small area of the demonstration site, and the project would not exceed the General Conformity Rule *de minimus* emission thresholds, a General Conformity Rule analysis will not likely be required.

Ventura County Air Pollution Control District
Received July 30, 2003 Page 4

20 (cont.)

equaling or exceeding 25 tons per year of volatile organic compounds (VOC) or oxides of nitrogen (NO_X); 2) not covered by the federal Transportation Conformity rule; and, 3) not exempted under a "presumed to conform" action listed in the rule.

Examples of federal actions subject to the general conformity rule include Army Corps of Engineer permits, wastewater treatment plant construction or expansions, and new airports or airport expansions. Examples of federal actions not subject to the general conformity rule include permit renewals, planning activities, routine maintenance and repair activities, actions subject to transportation conformity, and activities with emissions below the general conformity de minimis threshold of 25 tons per year of ROC or NO_X.

District staff is providing this information since this project may be subject to the federal conformity rule. The general conformity rule applies only to federal agencies and is not part of the CEQA environmental review process. If the project is subject to the general conformity rule, the federal agency, and not your agency, is responsible for conducting the conformity analysis. Since information collected for the CEQA process can be used for the federal conformity analysis, coordination between your agency and the federal agency may prevent time delays and duplication of efforts.

If you have further questions regarding general conformity and its applicability, please contact Ben Cacatian of the APCD by telephone at (805) 645-1428 or by email at ben@vcapcd.org.

If you have any questions, contact me by telephone at (805) 645-1439 or by email at andy@vcapcd.org.

Sincerely,

Andy Brown

Andy Brown
Planning & Evaluation Division

City of San Buenaventura
Received August 6, 2003 Page 3

CITY OF SAN BUENAVENTURA

CITY COUNCIL

Ray Di Guilio, Mayor
Brian Brennan, Deputy Mayor
Neal Andrews, Councilmember
James J. Friedman, Councilmember
James L. Monahan, Councilmember
Carl E. Morehouse, Councilmember
Sandy E. Smith, Councilmember

August 4, 2003

Ventura County Watershed Protection District
Attention: Darlene Alves
800 S. Victoria Avenue
Ventura, CA 93009-1610

Re: Ventura River *Arundo* Removal Demonstration Project Draft Environmental Impact Report

Dear Ms. Alves:

In response to the Notice of Availability that was prepared for the Ventura River *Arundo* Removal Demonstration Project Draft Environmental Impact Report (DEIR), the City of San Buenaventura is submitting the following comments.

21 Section 3.3 of the DEIR discusses the Local Regulatory Setting and Project Approvals. However this discussion should include identification of the City of San Buenaventura as a Responsible Agency, as City approval of the License Agreement would be required subsequent to County certification of the Final EIR and project approval. The License Agreement is necessary in order to allow for the proposed project to take place on the identified land under City jurisdiction.

The City appreciates the opportunity to provide comments on the subject document. If you have any questions regarding the above, please contact me at (805) 654-7727.

Regards,

Paul Calderwood
Senior Planner

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21. Comment noted. Section 3.3 of this Final EIR has been revised to reflect the City of San Buenaventura's role as a Responsible Agency.

APPENDIX B.

MITIGATION MONITORING PLAN

APPENDIX B. MITIGATION MONITORING PLAN

INTRODUCTION

This Mitigation Monitoring Plan (MMP) has been prepared in accordance with the requirements of Public Resources Code Section 21081.6, which requires the adoption of a reporting or monitoring program for projects in which the Lead Agency has required changes or adopted mitigation measures to avoid potentially significant adverse environmental impacts. Specific reporting and/or monitoring requirements to be enforced prior to, during, or following project implementation must be defined prior to final approval by the responsible decision-maker under the California Environmental Quality Act (CEQA), in this case, the Ventura County Watershed Protection District Board of Supervisors.

This MMP will be in effect throughout all phases of the Ventura River *Arundo* Removal Demonstration Project (project). The Ventura County Watershed Protection District (VCWPD) is the agency responsible for implementation of the MMP.

The mitigation measures specified in Table B-1 have been incorporated into the project's Final Environmental Impact Report (EIR). Implementation of these measures is intended to avoid or minimize potentially significant impacts identified in the EIR.

Table B-1 Mitigation Monitoring Plan Ventura River *Arundo* Removal Demonstration Project

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
Air Quality				
A-1: The construction contractor shall ensure that the following measures are implemented to reduce short-term construction-related emissions: • Minimize equipment idling time. • Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications. • Use alternatively fueled construction equipment, such as compressed natural gas, or electric, as feasible. • The engine size of construction equipment shall be the minimum practical size. • Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) shall be utilized wherever feasible. • The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time.	During Construction.	Construction specifications will require the contractor to adhere to Mitigation Measure A-1. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect the construction and equipment to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document the equipment that was used in daily or weekly construction status/inspection reports.
A-2: The construction contractor shall ensure that the following measures are implemented to reduce PM_{10} emissions due to fugitive dust: • The area disturbed by clearing should be minimized to prevent excessive amounts of dust. • Regular ground wetting of disturbed soils and unpaved areas should be conducted to control fugitive dust emissions. Reclaimed water, environmentally safe soil stabilization materials, or roll-compaction should be used whenever possible. • On-site vehicle speed should be limited to 15 miles per hour in unpaved areas. • During periods of high winds (i.e., wind speeds sufficient to cause fugitive dust to impact adjacent properties), all clearing operations should be curtailed to the degree necessary to prevent fugitive dust from being a hazard or a nuisance, either on-site or off-site. • Roadways in the vicinity of site access points should be swept as necessary to prevent the accumulation of silt. • Facilities shall be operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, "*Nuisance*," which states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health	During construction.	Construction specifications will require the contractor to adhere to the required Mitigation Measure A-2. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect the construction to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports.

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."				
Biological Resources				
BR-1: The ATF shall avoid and/or minimize damage and/or loss of wetland and riparian vegetation types due to *Arundo* removal activities by completing the following: • Maximum avoidance of wetlands and riparian by identifying these areas and appropriate buffer zones • Maximum avoidance of riparian tree species by flagging trees with a Diameter at Breast Height (DBH) of 3 inches or greater • Implementation of the project's Revegetation Plan • Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator Once the delineated wetlands have been verified by the USACE, avoidance and impact minimization measures will be finalized. Avoidance will consist of identifying and flagging the adjacent wetland areas and riparian tree species with a DBH of 3 inches or greater to minimize impacts to wetland vegetation types. The ATF shall ensure the acquisition of all required State and Federal regulatory permits and approvals. The ATF shall additionally ensure implementation of the requirements of these permits and approvals to minimize potential impacts to wetland and riparian vegetation to the extent feasible.	Prior to, during and following construction.	The VCWPD Restoration Coordinator, or his/her designee, will ensure the acquisition of all required regulatory permits prior to the start of construction. The VCWPD Restoration Coordinator, or his/her designee, will monitor, inspect and direct, as needed, construction-related activity to ensure avoidance of sensitive biological resources and compliance with Mitigation Measure BR-1. The VCWPD will monitor post-construction implementation of the project's Revegetation Plan and provide a summary of the monitoring in the project's Annual Reports,	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports A summary of post-construction monitoring of the project's Revegetation Plan will be provided for inclusion in the project's Annual Reports.
BR-2: The purpose of this measure is to prevent temporary hydrologic alteration to wetlands and associated sensitive vegetation from soil disturbance activities associated with the project by requiring: • Appropriately timing work so that soil disturbance does not occur during the wet season (when surface water is present). Typically, the wet season extends from approximately November 1st through April 15th • Supervision and verification of the implementation of this measure by the VCWPD's Restoration Coordinator.	During and following initial construction.	The VCWPD Restoration Coordinator, or his/her designee, will ensure that no project-related activities are undertaken during the wet season unless conditions require such activity due to unforeseen circumstances. In the event that project activities are required during the wet season all appropriate regulatory agencies will be contacted prior to any such activity.	VCWPD	The VCWPD Restoration Coordinator, or his/her designee will submit documentation of compliance with Mitigation Measure BR-2 for inclusion in the project's Annual Report.
BR-3: The purpose of this measure is to prevent permanent or temporary impacts to wetlands and associated sensitive vegetation and fauna during herbicide treatments of *Arundo*. All activities requiring herbicide treatment would: • Appropriately time work so that herbicides are not applied during the wet season to avoid potential impacts to downstream vegetation where feasible, and to avoid impacts to fish and wildlife species. Typically, the wet season extends from approximately November 1st through	During and following initial construction.	Construction specifications will require the contractor to adhere to the required Mitigation Measure BR-3. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect initial construction, herbicide re-applications and revegetation activities to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports A summary of post-construction

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
April 15th • Ensure that appropriate water-safe herbicides are used. Treatments will use a glyphosate-based herbicide including Rodeo® and/or Aquamaster®, both of which are labeled for use within water • Ensure that herbicides are applied at concentrations that are considered safe for biological resources within and adjacent to the project area. • Ensure that herbicides are mixed with a water soluble dye of low toxicity that highlights treated areas • Minimize overspray of herbicides onto non-target species by disallowing spraying when wind velocities exceed 6 mph • Minimize trampling of native vegetation by establishing marked trails • Remove dead *Arundo* material that was foliar treated and left in place to avoid fire hazard potential prior to the beginning of fire season. • Have a licensed professional conduct or oversee herbicides applications • Supervise and verify of the implementation of these measures by the VCWPD's Restoration Coordinator.				monitoring of the project's Revegetation Plan will be provided for inclusion in the project's Annual Reports.
BR-4: The ATF shall avoid impacts to special status plant species by: • Conducting pre-construction surveys for special status plant species • Mapping and flagging any special status plant species within or adjacent to the proposed project area during construction to protect them • Supervision and verification of the implementation of these measures by the VCWPD's Restoration Coordinator. Prior to construction, the location of special status plant species will be determined through appropriately-timed surveys according to California Native Plant Society (CNPS) protocol; this shall apply to all areas of the proposed project including: the five acre demonstration site, the staging area, and the access road. Determination of potential habitat for rare species, and surveys conducted for presence of rare plant species will be performed by a qualified botanist or biologist. These surveys will be appropriately timed to cover the blooming periods of the special status plant species with the potential to occur in the area. Any rare plant species within the proposed project area (including a 50-foot wide buffer zone on each side of the project's work areas) will be flagged and accurately mapped	Prior to and during initial project construction.	The VCWPD Restoration Coordinator, or his/her designee will appropriately flag, stake and map the special status plant species prior to the start of construction. The VCWPD Restoration Coordinator, or his/her designee, will monitor, inspect and direct, as needed, construction-related activity to ensure avoidance of special status plant species and compliance with Mitigation Measure BR-4.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports.

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
on construction plans to protect the area occupied by the species during construction. Flagging shall be supervised by the VCWPD's Restoration Coordinator, and appropriate buffer distances from the rare plant population shall be determined by him or her. The VCWPD's Restoration Coordinator shall have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where potential erosion may impact a special status plant species or its habitat. Compliance with these measures prior to and during construction will be supervised and verified by the VCWPD's Restoration Coordinator.				
BR-5: The ATF shall ensure pre-construction biological resource surveys to identify the location of sensitive biological resources. Pre-construction surveys will be consistent with all survey protocols and requirements stipulated by resource agencies as a condition of project approval. Sensitive resources shall be clearly mapped and marked on construction drawings or project maps before construction in these areas.	Prior to initial construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will conduct, or arrange for the completion of, pre-construction biological surveys prior to the start of construction. A mapping of the results of the surveys will be provided to the contractor prior to the start of construction for the purposes of avoiding sensitive biological resources during initial project construction. The VCWPD Restoration Coordinator, or his/her designee, will monitor, inspect and direct, as needed, construction-related activity to ensure avoidance of special status plant species and compliance with Mitigation Measure BR-5.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports and the project's construction maps.
BR-6: The VCWPD's Restoration Coordinator shall ensure the staking and flagging of identified sensitive resources before construction activities begin. The VCWPD's Restoration Coordinator shall also inspect all areas with sensitive resources prior to construction to ensure that staking and flagging (i.e., native riparian with a DBH of 3 inches or greater), and required setback buffers are maintained. Avoidance measures and buffer distances vary for each species and are specified for some species in Mitigation Measures BR-11, BR-12, and BR-13. The specific buffer zone distance will be determined by the appropriate resource agencies (CDFG and USFWS).	Prior to and during initial construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure the staking and flagging, with appropriate buffer zones, of sensitive biological resources prior to the start of construction. The contractor will be advised of the staking and flagging and the requirement for avoidance of these areas. The VCWPD Restoration Coordinator, or his/her designee, will monitor, inspect and direct, as needed, construction-related activity to ensure avoidance of special status plant species and compliance with Mitigation Measure BR-6.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports.
BR-7: The ATF shall acquire all permits and authorizations required by Federal, State, regional and local jurisdictions to proceed with the proposed project.	Prior to construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure the acquisition of all required regulatory permits and approvals prior to	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
		the start of construction.		in daily or weekly construction/inspection status reports.
BR-8: The ATF or its construction contractor shall ensure that all construction personnel comply with the following: • Litter or other debris that may attract animals shall be removed from the project area on a daily basis • No pets will be allowed in the construction area	During construction.	Construction specifications will require the contractor to adhere to Mitigation Measure BR-8. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect the construction to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports.
BR-9: The ATF shall use qualified inspectors, biologists, and/or resource specialists to monitor construction activities. A biological resource monitor or the VCWPD's Restoration Coordinator shall be present as needed for *Arundo* removal efforts requiring mechanical removal. The VCWPD's Restoration Coordinator or his/her designated monitor(s) shall be responsible for pre-construction surveys, staking sensitive resources, on-site monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. All personnel undertaking these activities shall be familiar with the wildlife species and other sensitive biological resources in the general project area and qualified to recognize potential construction effects to these resources, and shall ensure that State and/or Federal wetland/riparian and special status species protection guidelines are followed.	Prior to, during and following construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure the use of qualified biological monitors and compliance with all mitigation measures prior to and during and following initial construction.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports and will provide summaries for inclusion in the project's subsequent Annual Reports.
BR-10: Where construction would occur within or near known or potential special status species habitat, as defined below, the ATF shall perform the actions defined in the following paragraphs. • **Southern Steelhead Trout and Arroyo Chub.** Potential impacts to southern steelhead trout and arroyo chub can be mitigated by limiting *Arundo* removal and ongoing control activities to periods where surface water is not present within the project site (Mitigation Measures BR-2 and BR-14). • **California Red-Legged Frog.** The ATF shall ensure completion of pre-construction surveys (Mitigation Measure BR-5) to determine if this species is present within or immediately adjacent to the project area. If pre-construction surveys identify red-legged frogs within or adjacent to the project, then no more than one week prior to the start of construction, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity	Prior to and during construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure all of the pre-construction and construction-phase protocols required by Mitigation Measure BR-10 for the protection of Southern Steelhead Trout, Arroyo Chub, California Red-Legged Frog, Western Spadefoot Toad, Two-Striped Garter Snake and Southwestern Pond Turtle.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document compliance in daily or weekly construction/inspection status reports and will provide summaries for inclusion in the project's subsequent Annual Reports.

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored and appropriate measures taken during construction to ensure that any relocated animals do not move back into the construction corridor. To further minimize impacts to California red-legged frogs and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods when surface water is not present within the site. • **Western Spadefoot Toad.** To minimize impacts to western spadefoot toad and other aquatic species, *Arundo* removal and ongoing control activities shall be limited to outside the breeding period and/or when surface water is not present within the project site. This species, however, could be impacted in burrows that may occur within the project area. In order to minimize impacts to this species, the ATF shall ensure pre-construction surveys to determine if this species is present. If pre-construction surveys identify western spadefoot within or adjacent to the project, then no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or shall be held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the designated wildlife biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety. • **Two-Striped Garter Snake.** In areas within the project that are known to or potentially could support two-striped garter snake habitat (i.e., aquatic habitat), the ATF shall ensure pre-construction surveys (Mitigation Measure BR-5) to determine if this species occurs in the project area. If pre-construction surveys have identified two-striped garter snake within or adjacent to the project, then, no more than one week prior to the start of construction in these areas, the animals shall be captured by an agency-approved wildlife biologist. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance area or held in captivity until construction is completed through their habitat. The decision of whether or not and where to relocate the animals shall be made by the wildlife				

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
biologist in consultation with CDFG and the USFWS, based on site-specific conditions affecting the animals' safety. The capture sites shall be monitored during construction to ensure that any relocated animals do not move back into the project area. The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals of relocated species do not move into the construction corridor. To further minimize impacts to two-striped garter snake and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within the project site (Mitigation Measures BR-6 and BR-14). • **Southwestern Pond Turtle.** Where construction is to occur near known or potential habitat for southwestern pond turtle (i.e., near ponded water), pre-construction surveys shall be conducted to determine the presence or absence of this species (Mitigation Measure BR-5). If pond turtles are observed, a determination shall be made in consultation with CDFG as to whether or not construction will adversely impact this species and what measures shall be implemented. To further minimize impacts to southwestern pond turtle and other aquatic species, *Arundo* removal and ongoing control activities will be limited to periods where surface water is not present within the project site (Mitigation Measures BR-2 and BR-14).				
BR-11: *Arundo* removal and ongoing control activities shall be limited to periods outside the respective breeding season of the potentially affected species. All construction-related and ongoing *Arundo* control activities shall be limited to a period outside the known breeding period for great blue heron, great egret, western yellow-billed cuckoo, southwestern willow flycatcher, olive-sided flycatcher, least Bell's vireo, yellow-breasted chat, yellow warbler, tricolored blackbird, and Lawrence's goldfinch where feasible (October 1 through March 1). (No pre-construction surveys will be required for activities that occur within this period. If construction is required outside this period, the ATF will consult with CDFG and the USFWS to determine appropriate mitigation to avoid impacts to these species.)	Following initial construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure that all project-related activities following initial construction comply with Mitigation Measure BR-11. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect project-related activities associated with the project's Revegetation Plan and subsequent *Arundo* eradication efforts.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will summarize compliance with Mitigation Measure BR-11 for inclusion in the project's Annual Reports.
BR-12: The ATF shall avoid disturbance to active raptor nests within or near the project. No pre-construction surveys shall be required if construction activities are to occur only during the non-breeding season for raptors (September 1 through January 31). If, however, construction activities are scheduled to occur during the breeding season (February 1	Prior to and during construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure pre-construction surveys, as necessary, agency contact and coordination, and the staking and flagging of active nests prior to the start of construction for compliance	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will summarize compliance with Mitigation Measure BR-12 for inclusion in the project's

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
through August 31), pre-construction surveys of all potentially active nest sites within 500 feet of the construction corridor shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species such as northern harrier and short-eared owl. If surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required. If active nests are found, a 500-foot no-disturbance buffer shall be established around the active nest(s). The size of individual buffers can be adjusted, following a site evaluation by a qualified biologist, which shall depend upon the presence of topographical features that obstruct the line of sight from the construction activities to the nest and the observed sensitivity of the birds. Site evaluations and buffer adjustments shall be made in consultation with the local CDFG representative. The portion of the project that is within the designated buffer shall be identified in the field by staking and flagging (Mitigation Measure BR-6).		with Mitigation Measure BR-12.		Annual Reports.
BR-13: No construction activity shall be permitted until the applicable resource agencies determine that the proposed mitigation will result in less than significant impacts to the affected species.	Prior to construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure regulatory concurrence with all impact assessments associated with the project through project permitting, consideration of all comments received on the project's Environmental Impact Report, and on-going agency coordination and communications.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will summarize compliance with Mitigation Measure BR-12 for inclusion in the project's Annual Reports.
BR-14: To avoid or minimize potential impacts to special status aquatic species, the ATF shall limit all *Arundo* removal activities and ongoing control activities to periods outside the wet season where feasible, and when areas within the project site do not support surface water. The allowable distance between the project activities and surface water shall be determined in consultation with the USFWS, NOAA Fisheries Service, and the CDFG.	During and following initial construction.	The VCWPD Restoration Coordinator, or his/her designee, will ensure that no project-related activities are undertaken during the wet season where feasible unless site-specific conditions require such activity due to unforeseen circumstances. In the event that project activities are required during the wet season all appropriate regulatory agencies will be contacted prior to any such activity.	VCWPD	The VCWPD Restoration Coordinator, or his/her designee will submit documentation of compliance with Mitigation Measure BR-14 for inclusion in the project's Annual Report.
Noise				
N-1: Use of loud hand held construction equipment such as chain saws or heavy-duty construction equipment or trucks shall not occur between the hours of 7 p.m. and 7 a.m., and equipment engine covers should be in place and mufflers shall be in proper working condition.	During and following initial construction.	Construction specifications will require the contractor to adhere to Mitigation Measure N-1. The VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect the construction to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document the equipment that was used in daily or weekly construction/inspection status reports.

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
Transportation and Circulation				
T-1: Signs shall be posted on the Ojai Valley Trail warning bicyclists of heavy-duty truck crossings. The signs shall be posted approximately 100 feet north and south of the of the active construction access road, at least one week prior to the use of the trail crossing. The signs shall be maintained for the entire period when trail crossing is used.	Prior to and during initial project construction.	The VCWPD Restoration Coordinator, or his/her appointed designee, will ensure the posting of signs to alert the general public of planned construction-related activity.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document the equipment that was used in daily or weekly construction/inspection status reports.
Water Resources				
WR-1: The designated contractor shall develop and be prepared to implement a Spill Prevention, Containment and Countermeasures Plan that specifies construction equipment fueling procedures, equipment maintenance procedures, herbicide mixing and application procedures and containment and cleanup measures to be followed in the event of a spill. The Plan, at a minimum shall include: • The handling and storage of construction equipment and maintenance fluid (oils, fuels, etc.). Fluids shall be stored in closed containers and disposed of promptly and properly away from permeable areas to prevent potential contamination of the project area. • Immediate control, containment, and cleanup of fluids and herbicides due to spills or equipment failure (broken hose, punctured tank, etc.). All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills, the refueling of portable equipment shall occur within a contained area. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Refueling activities shall ensure that the potential for spillage from overfilling, nozzle removal, or other action is minimized to the extent feasible. • All on-site workers will be briefed on environmental concerns regarding the project, including the use of herbicides, and appropriate work practices (including spill prevention and response measures). The construction contractor shall monitor all construction-related activities to ensure that all of the environmental protection measures are followed throughout initial project activities and subsequent activities.	Prior to and during construction.	Construction specifications will require the contractor to adhere to Mitigation Measure WR-2. The contractor will implement the plan as necessary and the VCWPD Restoration Coordinator, or his/her appointed designee, will monitor and inspect the construction to confirm compliance.	VCWPD	The VCWPD Restoration Coordinator, or his/her appointed designee, will document the equipment that was used in daily or weekly construction/inspection status reports.

Mitigation Measure	Implementation Phase	Monitoring Action	Responsible Agency	Monitoring Documentation
WR-2: The ATF or its construction contractor shall ensure that no project activity occurs in the wet season (November 1st through April 15th) or when surface water is present where feasible.	During and following initial construction.	The VCWPD Restoration Coordinator, or his/her designee, will ensure that no project-related activities are undertaken during the wet season where feasible unless conditions require such activity due to unforeseen circumstances. In the event that project activities are required during the wet season all appropriate regulatory agencies will be contacted prior to any such activity.	VCWPD	The VCWPD Restoration Coordinator, or his/her designee will submit documentation of compliance with Mitigation Measure WR-2 for inclusion in the project's Annual Report.

APPENDIX C.

CEQA RELATED NOTICING

NOTICE OF PREPARATION

April 7, 2003

TO: Ventura Clerk of the Board
800 S. Victoria Ave
Ventura, CA 93009-1920

SUBJECT: Notice of preparation of a Draft Environmental Impact Report for Casitas Springs *Arundo Donax* Removal Demonstration Project, Ventura County, CA

The Ventura County Watershed Protection District, acting as Lead Agency, has determined that the above referenced project may have a significant effect on the environment and that an environmental impact report (EIR) should be prepared. A brief project description and location map are attached.

The purpose of this notice is to call your attention to this project and to request that your organization assist us in identifying the scope and content of the environmental information that should be addressed in the EIR. Your agency/ organization has been identified as a:

- ☐ Responsible agency
- ☐ Trustee agency
- ☐ Affected agency
- ☐ Transportation planning agency or Public agency having authority over transportation facilities near the project
- ☒ Adjacent Local Government
- ☐ Interested party

Pursuant to State law, this information must be submitted to us by certified mail no later than 30 days after receipt of this letter. Please submit comments to:

Ventura County Watershed Protection District
Attn: Darleen Travali
800 S. Victoria Ave.
Ventura, CA 93009-1600

If you have any questions or concerns, or would like to meet with County staff to discuss the contents of this notice, please contact Darleen Travali at (805) 477-7175 as soon as possible.

Sincerely,

Jeff Pratt, Director
Watershed Protection Department

Attachments:
Project Description
Location Map

1.0 BACKGROUND

The proposed Casitas Springs *Arundo donax* Removal Demonstration Project (project) is being sponsored by the Ventura County Arundo Task Force (ATF), a consortium of federal, state and local agencies, publicly elected officials, and public and private interest groups. Members and affiliates of the ATF include:

- Natural Resources Conservation Service
- Ventura County Resource Conservation District
- Ventura County Watershed Protection District
- U.S. Army Corps of Engineers
- California Department of Fish and Game
- U.S. Fish and Wildlife Service
- California Exotic Pest Plant Council
- State Congressman Elton Gallegly
- City of Thousand Oaks
- Ventura County Fire Department
- California State Parks Department
- Channel Islands Parks
- City of Ventura
- California South-Central Coast Watersheds Restoration Program.
- Ojai Valley Land Conservancy
- Surfrider Foundation
- California Conservation Corps
- Hill Canyon Conservancy
- California Coastal Conservancy
- Ventura County Solid Waste Management
- National Park Service, Santa Monica Mountains
- Friends of the Santa Clara River
- Valley View Ranch
- U.S. Forest Service
- Spectrum Agricultural Service
- U.S. Navy, Pt. Mugu Naval Air Station
- California Nature Conservancy
- MESA Project (Matilija Environmental Science Area Society and Ventura County Superintendent of Schools Office)

As described in detail below, the ATF proposes to implement a five-acre demonstration project to evaluate four different *Arundo donax* ("giant cane") removal methods in the Ventura River. Within the Ventura River, giant cane has displaced native riparian vegetation critical for wildlife. Many special status species, including the southern steelhead trout, occur in the watershed and would benefit from the removal of the giant cane and restoration of native riparian habitat. Real cost and methodology data generated by the project would allow for effective planning and implementation of future giant cane removal projects within the watershed, and, ultimately, throughout other watersheds within Ventura County. In addition, six different riparian revegetation treatments would be tested. The proposed project also includes a public outreach and education program to heighten awareness regarding the ecological benefits of giant cane removal.

2.0 PROJECT DESCRIPTION

The proposed project is located along the east bank of the Ventura River in Casitas Springs, Ventura County, California (Figure 1). The area proposed for the demonstration site is an estimated five-acre linear swath located immediately west of an existing flood control levee. The site is approximately 50 feet wide, 4,500 feet long, and ranges in elevation from 260 to 280 feet above sea level (Figure 2). The Ventura County Watershed Protection District and the City of Ventura own the site.

The proposed project is a seven-year program that includes initial giant cane removal followed by repeat removal treatments, native plant re-establishment, and revegetation monitoring. The demonstration site would be separated into four areas and four different types of removal methods would be implemented to evaluate their effectiveness. The removal methods proposed for the site include:

(1) Mechanical removal of biomass immediately followed by the painting of the remaining stems with an herbicide at appropriate cut-stump concentrations (50 percent to 100 percent volume-to-volume [v/v]) ("cut and paint").

(2) A foliar spray application of the biomass at a concentration of approximately 1.5 percent to 6 percent v/v and then letting the biomass remain on site until it is dead. The dead materials would then be removed mechanically.

(3) Removal of the biomass mechanically without applying any herbicide and subsequently treating regrowth with an herbicide, as appropriate, as it emerges.

(4) Mechanical removal of the biomass, including excavation of the root mass, followed by monitoring and hand removal of regrowth.

For those methods that would involve the use of herbicide treatments, a glyphosate-based herbicide would be used. It is currently anticipated that either Rodeo® or Aquamaster® would be used, both of which are labeled for use within water. None of the methods that involve herbicide applications would involve the use of a R-11 surfactant. For the initial removal, it is estimated that no more than 30 gallons of herbicide would be needed.

During Project Year 1, efforts would be focused on the giant cane's removal using the four techniques described above. The removal would be completed prior to November 1st or after April 15th, depending upon completion of the project's regulatory review and approval process. Herbicide applications would be completed or supervised by a licensed professional to ensure that specific safety measures, including containment and clean-up plans in the event of an accidental spill or leak of the herbicide, are followed. To minimize the public's potential exposure during clearing and herbicide applications, active work areas and notices would be clearly posted along all access points to the demonstration site.

The mechanical removal of the giant cane would be accomplished by hand clearing the above ground biomass to allow for the separation of the giant cane from native vegetation species. The giant cane stems would be cut off to approximately 12 inches above ground level using hand held equipment such as loppers, chain saws, and power brush cutters. For those areas designated for direct spraying, a tow truck sprayer with a directional nozzle would travel along the existing levee maintenance road. For that area where the giant cane is completely removed, all removal efforts would be done by hand.

Cut stalks would be loaded onto trucks and transported, via the existing levee maintenance road, to a construction staging area located south of an existing mobile home park and east of the project area (Figure 2). Chipping activities would be undertaken as far away as possible from the mobile home park to minimize impacts to its residents. The material would be chipped using standard wood chipping equipment. The chipped material would be spread to a depth of approximately 12 to 18 inches for drying. This material would then be offered at no charge to persons or organizations that wish to recycle the material in such a way that would preclude the reestablishment of the giant cane. Stockpiled materials that are not recycled would be removed from the site within 12 to 18 months of the initial chipping.

During Project Year 2 reapplication of a glyphosate-based herbicide would be completed within those areas of the demonstration site that are designated for either spraying or painting. As with the initial phase, all re-application activities would adhere to all manufacturer specifications, be completed or supervised by a licensed professional, and follow the safety precautions described above. Public posting of these activities would be undertaken as well.

For the area of the demonstration site designated for full giant cane removal, all regrowth would be removed using hand held tools. No heavy construction equipment would be used. Depending on the

degree of regrowth, this activity may be necessary on a monthly, or possibly weekly basis during the peak-growing season.

During Year 2 the project's revegetation effort would also be initiated and native plant species would be propagated. The proposed revegetation pallet for the project includes: Freemont Cottonwood (*Populus fremonti*); Black Cottonwood (*Populus trichocarpa*); Western Sycamore (*Platanus racemosa*); Mexican Elderberry (*Sambucus mexicana*); Coast Live Oak (*Quercus agrifolia*); Coyote Bush (*Baccharis pilularis*); Mulefat (*Baccharis salicifolia*); Arroyo Willow (*Salix lasiolepis*); Red Willow (*Salix laevigata*); Sandbar Willow (*Salix interi*), and various native grasses. The specific combinations and placement of this vegetation would be determined following an assessment of site conditions after the giant cane removal is completed.

During Project Year 3, giant cane removal activities would continue (mechanical removal and herbicide applications), and the proposed project's revegetation effort would be physically implemented. The revegetation effort would include placement of a temporary irrigation system by hand.

During Project Years 4, 5 and 6 project maintenance (i.e. re-spraying, re-painting, mechanical removal) would continue, as would irrigation operation and activities associated with maintaining revegetated areas. At the end of Project Year 6, the irrigation system used for establishment of the revegetation effort would be removed by hand.

During Project Year 7 monitoring, reporting and public outreach and education would continue; however, there would be no physical alterations/activities associated with the project site.

As indicated above, starting in Project Year 2 the site would be monitored on an annual basis between January and May. The key evaluation topics that would be addressed as part of the monitoring program include:

- Planting date(s)
- Planting methods
- Pounds per acre of seed or spacing
- Seedbed conditions at time of planting
- Adequate moisture
- Approximate rainfall received annually
- Weed competition
- Applied irrigation
- Dates of spraying
- Plant vigor and recovery
- Plant survival
- Foliage height
- Resistance to drought
- Beneficial insects
- Pests
- Client acceptance
- Erosion control/ground cover density
- Sediment trapping ability
- Ability to control wind erosion
- Ability to control sheet and rill erosion
- Ability to control gully erosion
- Plant adaptation to site
- Clipping dates
- Produced biomass
- Purpose achieved
- Plant failure/anticipated failure
- Recommendations

Following completion of each annual monitoring cycle, an Annual Report would be prepared. These reports would include a summary of all project activities, photo-documentation, recommendations, observations, data collected and other relevant information. For Project Year 1 the Annual Report would be primarily focused on the initial giant cane removal effort.

3.0 SALIENT ENVIRONMENTAL ISSUES

Based upon environmental analyses that have been previously conducted within the project area, it is anticipated that the most salient environmental issues to be addressed in the proposed project's environmental documentation will include biological resources, noise related issues, and earth and water resources.

Pursuant to the requirements of the California Environmental Quality Act (CEQA), other environmental effects that will be evaluated in the proposed project's Environmental Impact Report (EIR) will include:

- Aesthetics
- Agricultural Resources
- Air Quality
- Cultural and Paleontological Resources
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

4.0 PROBABLE ENVIRONMENTAL EFFECTS

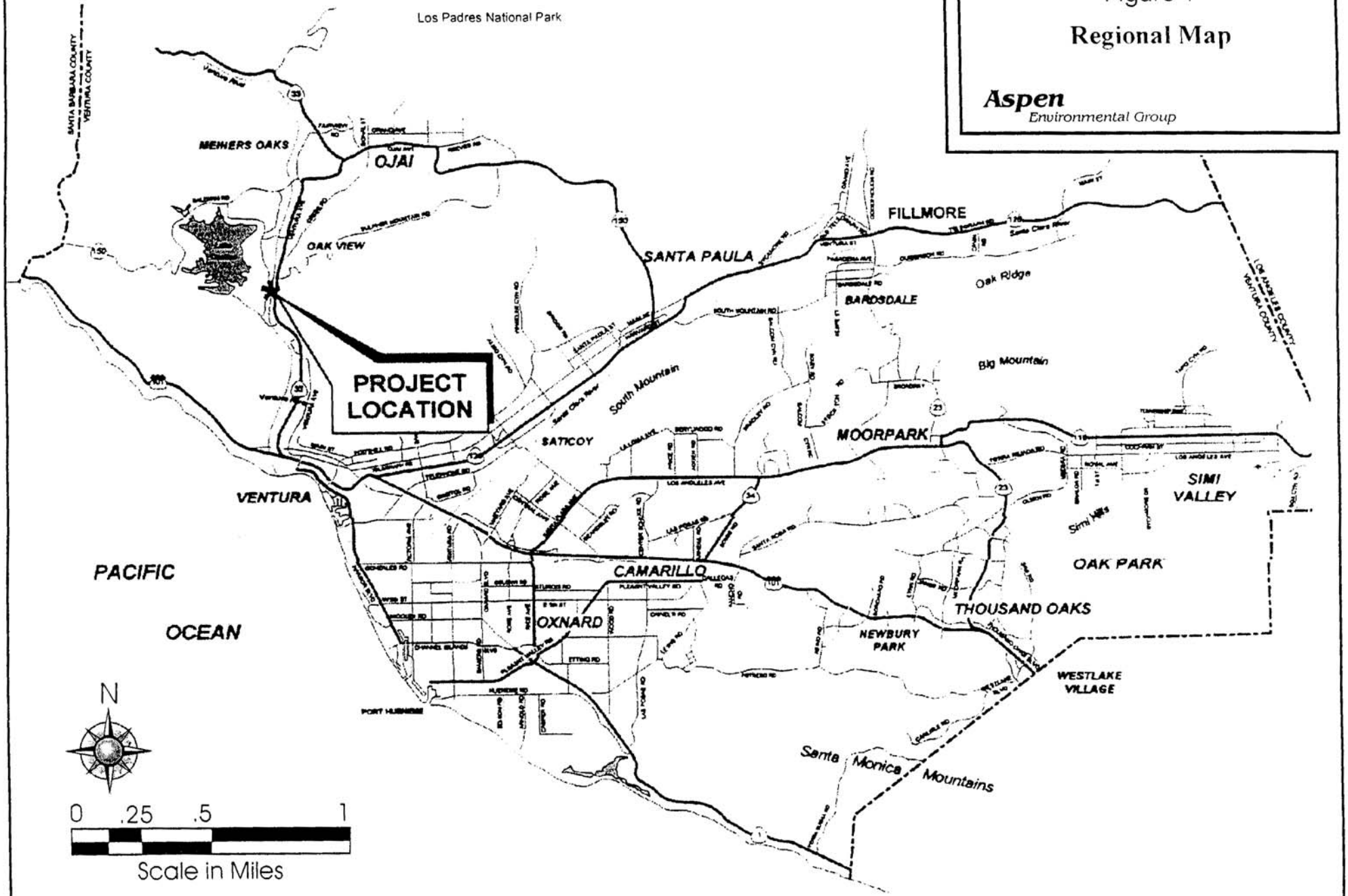
It is currently anticipated that no environmental effects associated with the proposed project would potentially create a significant impact that cannot be mitigated to a level of less than significant. For those resource-specific issue areas where mitigation is required to reduce impacts to a level of less than significant, such mitigation will be identified in the project's Draft and Final EIR. If mitigation is recommended, a Mitigation Monitoring Plan will be provided in the project's Final EIR.

Casitas Springs Arundo Donax Removal Demonstration Project

Figure 1

Regional Map

Aspen Environmental Group

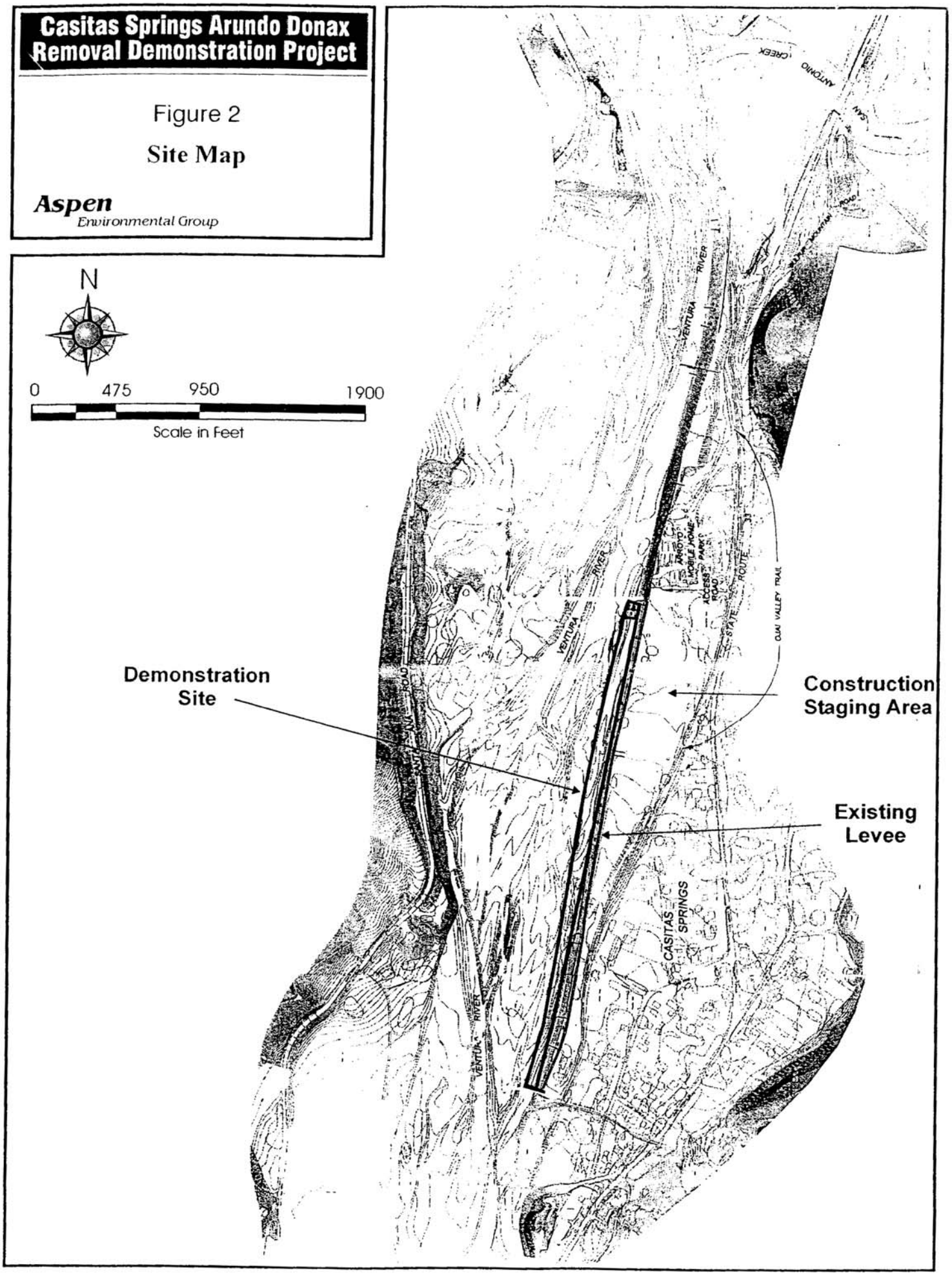


Casitas Springs Arundo Donax Removal Demonstration Project

Figure 2

Site Map

Aspen Environmental Group



PUBLIC NOTICE
Ventura County Watershed Protection District
800 South Victoria Avenue

Notice is hereby given that the Ventura County Watershed Protection District (District) intends to adopt an Environmental Impact Report (EIR) for a project known as the **Ventura River Arundo Removal Demonstration Project.** The proposed project would result in potential adverse impacts to air quality, biological resources, water resources, noise and transportation. With the exception of noise, all adverse impacts can be mitigated to a less than significant level.

Project Location: The proposed demonstration site is a five-acre site located along the east bank of the Ventura River, near the community of Casitas Springs. The site is approximately 50 feet wide by 4,500 feet long and ranges in elevation from 260 to 280 feet above sea level.

Brief Project Description: The purpose of this project is to demonstrate Arundo removal techniques. Arundo is a non-native, invasive perennial plant that has become a biological threat to riparian ecosystems throughout California. The project would evaluate four different removal techniques, including six riparian revegetation treatments with native plant species, public outreach, and educational programs.

The EIR is available for review at the following locations:

1.	Ventura County Watershed Protection District*	800 S. Victoria Ave	Ventura
2.	Ventura County Clerk of the Board	800 S. Victoria Ave.	Ventura
3.	County of Ventura Avenue Library	606 N. Ventura Ave.	Ventura
4.	County of Ventura Foster Library	651 E. Main	Ventura
5.	County of Ventura Oak View Library	469 Ventura Ave.	Oak View
6.	County of Ventura Meiners Oaks Library	114 N. Padre Juan Ave.	Meiners Oaks
7.	County of Ventura Ojai Library	111 E. Ojai Ave.	Ojai
8.	Krishnamurti Library	1130 McAndrew Road	Ojai

*Documents referenced in the EIR are available by request at the Ventura County Watershed Protection District.

The public review period for this EIR is June 16 to July 30, 2003. During this time, anyone may comment on the EIR by writing to: Ventura County Watershed Protection District

Attention: Darleen Alves
800 South Victoria Avenue
Ventura, CA 93009-1610
805-477-7175

An Environmental Report Review Committee (ERRC) public meeting will be held in Room 311 of the Ventura County Administration Building on August 6, 2003 at 1:30 pm. This meeting will evaluate the technical adequacy of the EIR in relation to the California Environmental Quality Act. Public comment and participation in this meeting is encouraged.

APPENDIX D.

NOISE MODELING

Casitas Springs Arundo Donax Removal Demonstration Project, Noise Impact Estimates

Equipment	Peak Noise Levels	Ref dBA @ 50 ft	Arundo Removal quantity	Staging Area quantity
	Chain Saw	86	4	0
	Heavy Truck	88	0	1
	Chipper	90	0	1
	Total Quantity of Equipment:		4	2
	dBA Noise Reduction Associated With Levee		5	0
	Peak Unmitigated Composite @ 50 ft:		87.0	92.1

* Sources: U.S. EPA FTA, 1995. Transit Noise and Vibration Assessment.
NIOSH, 2003. Sound Advice - Protecting Your Ears in Noisy Work Environments.
Note: Chipper noise level is an estimate based on levels of similar pieces of equipment.

		@ Ref	@ __ ft	@ __ ft	@ __ ft	@ __ ft	@ __ ft
	Ref Dist (ft)	**50**	**150**	**250**	**400**	**500**	**1000**
Construction	Northern Reach of Project	87.0	77.5	73.0	69.0	67.0	61.0
	Staging Area	92.1	82.6	78.1	74.1	72.1	66.1

* distance accounts for atmospheric spreading only (-6 dB per doubling distance).
* obstructions, such as the levee, would reduce levels.
* levels do not account for intermittent operation (estd: Lmax).

APPENDIX E.

AIR QUALITY CALCULATIONS

AIR QUALITY ATTACHMENT - Arundo Donax Removal Demonstration

Table 1: PEAK DAILY ORGANIC MATERIAL AND FUGITIVE DUST EMISSIONS

Herbicide Application

Maximum Organic Content (lb/gal)	Gallons per Day	ROG Emissions (lbs per day)
6.6	3	19.92

Source:

Material balance based on maximum possible organic content, with specific gravity 0.8.

Graded Surface

Emission Factor	Acres a Day	Days	Mitigation Reduction	PM10 Emissions
(lbs/day/acre)	(acres)	(days)		(lbs/day)
26.4	1.0	30	70%	7.9

Source:

Table A9-9 *SCAQMD CEQA Handbook, 1993*

Emission factors for chipping are not available from U.S. EPA, SCAQMD, or other reliable references.

SUMMARY OF ROG and DUST EMISSIONS

Units	Herbicide Application ROG	Graded Surface PM10
lb/day	19.92	7.92

AIR QUALITY ATTACHMENT - Arundo Donax Removal Demonstration

Table 2: DAILY MOBILE SOURCE EMISSION ESTIMATES FOR MECHANICAL REMOVAL EQUIPMENT

Parameter	Units	Chainsaws	Power Cutters	Chipper	Landscape Loader	Parameter	Units	Haul Trucks	
Number of Equipment Units		6	2	1	1	Miles per trip		0.8	
Operational Hours	hr/day	8	8	8	8	Trips per day		160	
Average Rated Horse Power	hp	6	8	55	55	Conversion Factor	(lb/g)	0.002205	
Typical Load Factor	%	25.00%	12.50%	46.50%	46.50%				
Emission Factor	lb/hp-hr					Emission Factor	(g/mile)		
CO		2.15	2.15	0.015	0.015	CO		6.42	
ROCs		0.684	0.684	0.003	0.003	ROCs		1.34	
NOx		0.0021	0.0021	0.022	0.022	NOx		9.27	
SOx		0.0008	0.0008	0.002	0.002	SOx		0.30	
PM10		0.00143	0.00143	0.001	0.001	PM10		0.43	
Total Daily Emissions	(lb/day)								**Peak Daily**
CO		154.800	34.400	3.069	3.069			1.812	197.1
ROCs		49.248	10.944	0.614	0.614			0.378	61.8
NOx		0.151	0.034	4.501	4.501			2.616	11.8
SOx		0.058	0.013	0.409	0.409			0.085	1.0
PM10		0.103	0.023	0.205	0.205			0.121	0.7

Refer to separate table for emissions associated with commuting workers.

Chainsaws and Power Cutters are based on emission factors for 2-stroke engines (1993). Actual emissions will be substantially less.

Sources:

Tables A9-8-B and -C, A9-5-K-6 and A9-5-L *SCAQMD CEQA Air Quality Handbook*

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Table 3: Emissions Associated with Commuting Worker Trips

Vehicle Type	Vehicle Trips per Day	Round trip Miles	ROC Emission Factor (g/mile)	ROC Total Emissions (lbs)	NOx Emission Factor (g/mile)	NOx Total Emissions (lbs)	SOx Emission Factor (g/mile)	SOx Total Emissions (lbs)	CO Emission Factor (g/mile)	CO Total Emissions (lbs)	PM10 Emission Factor (g/mile)	PM10 Total Emissions (lbs)
Workers Commuting (LDGV)	12	30	2.77	2.1965	1.82	1.4432	0.05	0.0396	18.43	14.6141	0.11	0.0872
Workers Commuting (LDGT)	12	30	3.84	3.0449	2.42	1.9189	0.05	0.0396	27.83	22.0678	0.11	0.0872
Total Emissions (lbs/day)				5.2414		3.3621		0.0793		36.6819		0.1744

Notes:

Emission factors for ROC, NOx, and CO obtained from Appendix J of AP-42 (USEPA, 1998)
Emission factors for ROC, NOx, and CO assumes 35 mph at 75 F; year 2000
Emission factors for PM10 and SOx obtained from Appendix 9 of CEQA Handbook (SCAQMD, 1993)
Workers cummuting are divided into half Light Duty Gasoline Vehicles (LDGV) and half Light Duty Gasoline Trucks (LDGT). It is assumed that a total of 10 workers would commute to the work site each day.

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TABLE 4: EMISSIONS SUMMARY

MAXIMUM DAILY SHORT-TERM EMISSIONS

Air Pollutant	Herbicide Application	Fugitive Dust	Mechanical Removal	Worker Trips	Maximum Daily
Carbon Monoxide (CO)			197.1	36.7	233.8
Reactive Organic Compounds (ROCs)	19.9		61.8	5.2	87.0
Nitrogen Oxides (NOx)			11.8	3.4	15.2
Sulfur Oxides (SOx)			1.0	0.1	1.1
Particulates (PM10)		7.9	0.7	0.2	8.8