GRASS VALLEY WASTEWATER TREATMENT PLANT UTILIZATION OF ENVIRONMENTAL PROTECTION AGENCY GRANT FUNDS TO SUPPORT THE RECYCLED WATER SYSTEM FACILITIES FOR LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

ENVIRONMENTAL ASSESSMENT

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CHAPTER 1
PURPOSE AND NEED

1.1 INTRODUCTION

In 1985 the San Bernardino National Forest-Arrowhead Ranger District issued a Special Use Permit to the Lake Arrowhead Community Services District to construct the Grass Valley Wastewater Treatment Plant (WWTP) on National Forest lands located as shown on Figure 1. The permit encompassed the plant and support facilities stated as follows: *"This permit includes the Grass Valley Treatment Plant, Grass Valley interceptor, Willow Creek interceptor, Outfall I, Outfall II, and STP pipeline. All waste, electrical, telephone, and any other utilities will be buried underground."* The area encompassed by the permit totaled 11.34 acres including the 7.5-acre treatment plant site. The original permit was issued for the purpose of: *"constructing, operating, and maintaining a sewage treatment facility and appurtenant structures."* After extensive consultation with the Forest Service, it was determined that the Grass Valley WWTP Special Use Permit extends to 2012 before it must be renewed, so this permit presently authorizes WWTP operations over at least the next five years (Refer to Appendix A).

The Lake Arrowhead Community Services District (LACSD or District) service area is located in the San Bernardino Mountains, north of the City of San Bernardino, in San Bernardino County, California. The communities in the area are: Lake Arrowhead, Cedar Glen, Blue Jay, Twin Peaks, Deer Lodge Park, Rim Forest, and Sky Forest. The District provides both water and wastewater service. The wastewater service area consists of approximately 4,900 acres with the same boundaries as those of the Arrowhead Woods community. There are currently an estimated10,700 wastewater connections. Refer to Figure 1, General Location, for a regional vicinity map and to Figure 2, LACSD Service Area, for the boundaries of the agency's water and wastewater service areas.

The District operates two wastewater treatment plants (WWTPs, Grass Valley and Willow Creek) that treat sewage generated by the community of Lake Arrowhead and immediately surrounding area. These two plants currently discharge their treated effluent, which is treated to secondary standards, to a pipeline which transports the discharge to a site located in the City of Hesperia. Approximately 2 million gallons per day (MGD) of municipal sewage is treated and discharged to the pipeline, which represents a return of the treated effluent to the Mojave Groundwater Basin. The Grass Valley WWTP has been operating successfully for almost 20 years.

1.2 REGULATORY REQUIREMENTS OF NEPA

The National Environmental Policy Act (NEPA) of 1969 requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, or enhance the environmental through well-informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the *Regulations for Implementing the Procedural provisions of the NEPA* (40 CFR §1500-1508) in 1978.

These regulations specify that an Environmental Assessment (EA) be prepared to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI);
- Aid in an agency's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS when one is necessary.

Further, besides NEPA, other pertinent federal environmental requirements have been established, including those under the Endangered Species Act and the National Historic Preservation Act. The EPA has consulted with the U. S. Fish and Wildlife Service and the State Historic Preservation Office and the "Concurrence Letters and Responses" are provided as Appendix B to this document.

1.3 PURPOSES OF THIS ENVIRONMENTAL REVIEW

Because the USEPA is partially funding the proposed action (project) through a grant, compliance with the National Environmental Policy Act (NEPA) must be demonstrated. In addition, compliance with the California Environmental Quality Act (CEQA) is necessary, and the LACSD served as the CEQA Lead Agency based on its responsibility as the primary agency implementing the project under CEQA. The CEQA review process has been completed, therefore, this environmental document is being prepared solely as a NEPA environmental document, termed an Environmental Assessment (EA). This document will be processed and distributed solely by the EPA, acting as the NEPA lead agency for issuance of a grant to implement the proposed project. This document provides the necessary information to determine if further environmental analysis is needed. Of particular concern to federal agencies in this review is that the project is located within the boundaries of the San Bernardino National Forest (SBNF) and may contain actions affecting resources under the jurisdiction of the SBNF.

Once this EA is completed, the USEPA will either issue a Finding of No Significant Impact (FONSI) or decide to prepare an Environmental Impact Statement (EIS) under NEPA. Should further documentation be required, it is likely that it would be in the form of an EIS. Only after the above procedures are completed can the grant to support proposed project be approved, with subsequent finalization of site plans and construction of the project by the LACSD. A Proposed Finding of No Significant Impact is provided as Appendix C to this document.

1.4 PROJECT PURPOSE AND NEED

The Grass Valley Wastewater Treatment Plant (WWTP) is a facility that provides the protection of public health and the environment, and its continued operation is essential to residents of Lake Arrowhead and surrounding small communities, and the environment of both the San Bernardino Mountains and the Mojave River drainage basin. LACSD is proposing to modify the existing WWTP design to incorporate additional treatment capability that will allow the District to produce wastewater of sufficient quality to use for recycled water purposes. Prior to allocating grant funds to support this project, the EPA must fulfill its responsibilities under the NEPA. This Environmental Assessment (EA) serves as the NEPA document which evaluates the environmental effects that may be caused by installing and operating the proposed new

treatment facilities that would be partially funded by EPA grant funds. All of the modifications in the treatment plant design will occur within the existing WWTP footprint. Installation of the proposed facilities will result in a higher level of wastewater treatment and reuse of some of the treated effluent for recycled water purposes within the LACSD service area, or adjacent areas where such use would be beneficial to the mountain communities. The objective is to reduce potable water consumption for certain uses, such as irrigation, and shift the potable water conserved by use of recycled water to meet domestic water supply demands of the mountain communities. Upon completion of the Final EA, the EPA will either issue a Finding of No Significant Impact (FONSI) or proceed with the preparation of an Environmental Impact Statement (EIS). Following completion of the environmental disclosure process, a decision can be made whether to allocate the grant funds to support improvements in the WWTP.

This document is prepared to comply specifically with the EPA requirements under NEPA. One of these requirements is public notice to interested parties that the EPA is considering the issuance of a grant to the LACSD to support the higher level of wastewater treatment and reuse of some treated effluent for recycled water purposes. A copy of the Public Notice for Newspapers is provided as Appendix D to this document.

CHAPTER 2
PROPOSED ACTION, INCLUDING ALTERNATIVES

2.1 INTRODUCTION

The proposed action is a request by the Lake Arrowhead Community Services District (LACSD or District) to the federal Environmental Protection Agency (EPA) to allocate grant funds to support the installation of additional facilities within the existing footprint of the Grass Valley Wastewater Treatment Plant (WWTP). If the grant funds are allocated to the District, the WWTP will continue to operate and allow the District to upgrade the level of treatment of wastewater to a level that meets Title 22 (this section of the California Administrative Code contains the standards for treatment of wastewater for use as recycled water) recycled water requirements. Ongoing wastewater treatment operations will not change from that already permitted and authorized by Special Use Permit originally issued by the Forest Service. Thus, continued operation of the WWTP will not cause any new or different physical changes in the environment. It is the proposed new treatment facilities that have a potential to make physical changes in the environment. The LACSD's preferred alternative action and proposed new treatment facilities are outlined below. However, the following information regarding the WWTP's operations is presented to assist in understanding the proposed action.

2.2 BACKGROUND INFORMATION REGARDING THE WWTP'S OPERATIONS

2.2.1 Existing Grass Valley WWTP Facilities

2.2.1.1 Existing Wastewater Treatment Plant Operations

Figure 3 presents a site plan of the Grass Valley WWTP. The existing facilities are shown on this plan and they are consistent with those identified in the 1985 Forest Service Special Use Permit (SUP) and supporting materials. The current collection system conveys raw wastewater to the headworks of both the Willow Creek and Grass Valley WWTPs. An existing 24-inch ductile iron pipe intertie connects the two plants together. Both facilities provide secondary treatment. The Grass Valley facility also provides nitrogen removal and chlorination/disinfection treatment. The Willow Creek facility is an extended aeration plant with a capacity of 1.7 MGD. The Grass Valley WWTP is an advanced secondary treatment facility that uses trickling filters and deep bed denitrification filters. The Grass Valley facility has a design capacity of 2.3 MGD.

The District can operate the dual treatment facilities in three modes. The first mode is as two separate treatment facilities. Flow from the Lake Arrowhead basin is treated at the Willow Creek facility and the Grass Valley basin's waste flows are treated at the Grass Valley facility.

The second mode of operation, the one the District normally uses, combines the treatment processes together. A consistent 0.6 MGD of the District's wastewater flow is treated at the Willow Creek facility and the remainder is sent untreated to the Grass Valley facility. The activated sludge process at the Willow Creek facility is operated in the extended aeration mode, used to nitrify all of the ammonia in approximately 45 percent of the total District flow. The fully nitrified effluent, along with all of the liquid sludge from the Willow Creek facility is then

discharged into the District's inter-tie pipeline where the nitrogen is removed through natural biological processes. Using the pipeline in this fashion has helped lower the District's total nitrogen load entering the Grass Valley WWTP. BOD test results from primary effluent indicate that a large majority of solids entering the Grass Valley facility drop out during the primary clarification process.

The third mode of operation is a variation of the first two. The Willow Creek receives a set flow amount into the plant and all excess flow is then sent to the Grass Valley facility via the intertie pipeline. Willow Creek facility biosolids are discharged into the intertie line for processing at the Grass Valley facility. The Willow Creek facility effluent is then blended with the Grass Valley facility effluent in the District's outfall pipeline. The District used this mode to eliminate pumping Willow Creek facility effluent to the Grass Valley facility, thus lowering the intertie flow volume and associated energy requirements and pumping costs.

In 2003, the District treated a total of approximately 500 million gallons of sewage, a daily average of 1.3 MGD. Flows increase during holiday weekends and during storm events. The next planned phase of the Grass Valley WWTP is to expand the plant to treat a holiday weekend average of 3.75 MGD with an average daily normal flow of 2.7 MGD. During these periods it is assumed for design purposes that the influent BOD, suspended solids and ammonia concentrations will be 300, 300 and 30 milligrams per liter (mg/l) respectively. However, during storm events, it is assumed that the constituents will be diluted due to infiltration and inflow. The proposed design flow rates and influent wastewater concentrations are presented in Table 1 below.

2.2.1.2 Existing Treatment Plant

Grass Valley WWTP: The Grass Valley WWTP was placed in operation in 1988 to handle increasing flows from the Grass Valley drainage area. The plant consists of aerated grit chambers, primary clarifiers, high-rate plastic media trickling filters, secondary clarifiers, an equalization pond, tertiary denitrification filters and chlorine contact tank. Following flow equalization, the treated effluent is discharged through a ten-mile outfall pipeline to a disposal site (the effluent is percolated in basins adjacent to the Mojave River) near Hesperia. Sludge handling consists of a gravity thickener and a belt filter press. Dewatered sludge is either trucked to a compost site or to the Mitsubishi Cement Plant where it is kiln incinerated for final disposal. Existing Grass Valley WWTP facilities are summarized in Table 1.

Table 1
EXISTING GRASS VALLEY WASTEWATER TREATMENT PLANT

Description	Units	Existing Design
Plant Capacity		
Design (18" Infl)	MGD	2.3
Hydraulic Peak	MGD	6.7
Preliminary Units		
Influent Flow Metering		
Parshall Flume		
Number		1
Size	inches	18
Range	MGD	0.15 to 3.0
Mechanical Bar Screen		
Number		1
Width	feet	2.0
Free Opening	inches	1
Grit Removal Facilities		
Aerated Grit Tanks		
Number		2
Length	feet	20
Width	feet	10
Water Depth	feet	8
Volume, total	cf	3,200
Detention Time at PWWF (3.9 MGD)	min.	12
Clam Shell Grit Removal		
Capacity	tons	1
Primary Units		
Primary Clarifiers		
Number		2
Diameter	feet	45
Depth	feet	10
Surface Area, ea.	sf	1,590
Volume, ea.	gallons	118,904
Detention Time at 3.9 MGD		
All in Service	hours	1.4
One Out of Service	hours	0.7
Overflow Rate at 1.8 MGD		
All in Service	gpd/sf	566
One Out of Service	gpd/sf	1,132
Sludge Pumps		
Number		2
Capacity	gpm	100
Horsepower	Hp	5
Secondary Units		
Trickling Filters		
Number		2
Diameter	feet	42
Depth	feet	24
Area, ea.	sf	1,385

Volume, ea.	1000 cf	33.2
BOD Loading, total	lb/1000 cf	23.2

Table 1 (continued), Page 2 of 3

Description	Units	Existing Design
Secondary Units (continued)		
Trickling Filters (continued)		
Hydraulic Loading @ ADWF w/recirc	gpd/sf	794
Recirculation Pumps		
Number		3
Capacity, ea.	gpm	1,400
Horsepower, ea.	Hp	25
Secondary Clarifiers		
Number		2
Diameter	feet	55
Side Water Depth	feet	10
Surface Area, ea.	sf	2,375
Volume, ea.	gallons	177,650
Overall Rate at 1.8 MGD		
All In Service	gpd/sf	379
One Out of Service	gpd/sf	758
Detention Time @ 3.9 MGD		
All In Service	hours	2.2
One Out of Service	hours	1.1
Waste Sludge Pumps		
Number		2
Capacity, ea.	gpm	100
Horsepower	Hp	5
Equalization Pond		
Number		1
Bottom Area	acre	0.85
Final Effluent Pump Station		
Number		4
Capacity, ea.	gpm	2,100
Horsepower, ea.	Hp	40
Nutrient Units (Denitrification filters)		
Sand Filters		
Number		3
Length	feet	30
Width	feet	10
Area, ea.	sf	300
Media Depth	feet	6
Hydraulic Loading @ 1.8 MGD		
All In Service	gpm/sf	1.39
One Out of Service	gpm/sf	2.09
Chlorine Contact Tanks		
Number		2
Length	feet	
Width	feet	
Total Volume	gallons	23,936
Detention Time @ 1.8 MGD	min.	19.2
Detention Time @ 2.5 MGD	min.	13.8

Table 1 (continued), Page 3 of 3

Description	Units	Existing Design
Solids Handling		
Gravity Sludge Thickener		
Number		1
Diameter	feet	28
Depth	feet	12
Area	sf	615
Overflow Rate @ 300 gpm	gpm-sf/day	702
Belt Filter Press		
Number		1
Belt Width	meters	1.5
Feed Sludge	%	4.3
Feed Rate	gpm	120
Solids Capture	%	90
Cake Moisture	%	20

2.3 PROPOSED ACTION

2.3.1 Project Location

The proposed recycled water program would be implemented within the LACSD service area, see Figure 2. The service area encompasses numerous sections located within Township 2 North, Range 3 West, San Bernardino Meridian. The project area is located in the San Bernardino Mountains, north of State Highway 18, and can be found on the USGS – Harrison Mountain and Lake Arrowhead Quadrangles, 7.5 Minute Series Topographic maps.

2.3.2 Environmental Setting

The District service area is located in the San Bernardino Mountains at elevations ranging from just below 5,000 feet average mean sea level (AMSL) and 6,000 feet AMSL. The project area extends from the ridge dividing surface runoff from the north to the south (San Bernardino Valley and Victor Valley, respectively). Topography in the area ranges from steep to shallow sloping montane valleys. The Lake Arrowhead area climate is relatively dry, but substantial precipitation, both rainfall and snow can occur during the wet season from the passage of frontal storms and occasional tropical thunderstorms. Average annual temperature is about 55°F and ranges from 0°F to 100°F. The rainy season begins in November and continues through March, with the quantity and frequency of rain varying from year to year. The average annual rainfall is approximately about 35 inches.

The project area consists of a wide range of uses including San Bernardino National Forest lands that are managed by the U.S. Forest Service to a mixture of montane urban, suburban, and rural residential community. Lake Arrowhead is a focal point for local recreational use and these uses have been ongoing in the project area for almost a century. The land uses are a combination of open forest, residential and commercial uses. The majority of the Lake

Arrowhead area is residential with commercial zoning occurring along the major arterials (State Highways 173 and 18 and local roadways).

2.3.3 Project Characteristics

At present, LACSD treats approximately two (2) million gallons per day (MGD) of municipal sewage. The treated effluent is discharged to a pipeline that transports the treated effluent about ten (10) miles to the City of Hesperia (Hesperia outfall). The treated effluent is discharged on a parcel of land owned by the District in the City of Hesperia, where it percolates into the Also Subbasin aquifer and which represents a return of the treated effluent to the Mojave Groundwater Basin. To capture some of this treated effluent for use as recycled water within the LACSD's service area, the District is proposing to upgrade the treatment process at the Grass Valley WWTP so that the effluent will qualify as "recycled" water that can be re-used on the mountain for irrigation or other allowed uses. Thus, upgrades to the Grass Valley WWTP will make it a functioning Water Reclamation Facility (WRF), which is proposed to treat and deliver up to 1.0 MGD of recycled water to future users in the District's service area. Use of recycled water for irrigation will offset present use of potable water supplies used for irrigation. Grant funds from the EPA would be utilized for engineering design and construction drawings for these new facilities.

There are three basic actions for infrastructure facilities that must be completed for the Grass Valley WWTP to provide future users the recycled water that will be produced by the WRF in the future. These facilities and/or action are:

1. Upgrade the treatment plant to produce 1.0 MGD of Title 22 - 2.2 MPN/100 ml treated recycled water;

2. Install a pipeline to deliver recycled water from the WRF to the initial future users of the recycled water for irrigation purposes; and

3. Modify the water systems of other future users to utilize recycled water for irrigation per State Department of Health Services (DHS) requirements. Such facilities cannot be defined at this time and are not considered to be part of the initial proposed action.

The purpose of the proposed project is to upgrade treatment facilities to produce recycled water meeting Title 22 standards; provide a means of transporting the recycled water to potential users, which primarily consists of irrigation consumption. Initiating use of recycled water will reduce demand on higher quality, potable water resources on the mountain; and begin a recycled water utilization program, in this case irrigation, to meet water supply demands within the District's service area. Due to the limited supply of potable water supplies in the San Bernardino Mountain communities, the District considers the proposed new treatment facilities to be an essential water supply enhancement project. Note that recycled water can be used for uses other the irrigation, such as construction dust control, and industrial operations, including cooling or process water. The proposed project is one of the recommendations in the LACSD's *Water Demand and Supply Final Report* (LACSD, 2003).

The District Passed Ordinance No. 56, Declaration of Mandatory Recycled Water Use, on June 10, 2003. This was done to comply with the California Water Code, Section 13550, which

requires that irrigation of greenbelt areas, including golf courses, parks, highway landscaped areas, and certain other non-domestic water uses be done with recycled water instead of potable water, where recycled water is available. This ordinance also addressed recycled water use requirements, which are described later in this section. The proposed project fulfills and implements this ordinance and state law.

2.3.3.1 Grass Valley Wastewater Treatment Plant Treatment System Upgrades

The existing Grass Valley WWTP system will continue to operate as it is currently. All facilities would remain in place and operational. After influent metering and grit removal a new diverter constructed at the head of the treatment plant would divide incoming wastewater flow between the existing treatment process and a new tertiary treatment process/system, Figure 4, which identifies the preferred alternative layout of the new tertiary treatment system facilities.

The Tertiary Treatment System consists of the following proposed facilities: a new trickling filter, new secondary clarifier, new primary clarifier, membrane treatment system, Ultraviolet (UV) disinfection system, recycled water storage in an existing 800,000 gallon secondary equalization holding pond and a new pump station/electric control building. Denitrification is achieved in the anoxic zone using raw sewage as the carbon source. The tertiary treatment system employs microfilters that have a 0.4 micron opening so that a six log removal of bacteria and a 4 log removal of virus are obtained. Thus, the tertiary treated effluent is designed to have coliform concentration of less than 23 most probable number per 100 milliliters (MPN/100 ml). Currently permitted discharges to the Hesperia Disposal Fields would not require further disinfection. The recycled water for irrigation or other use on the mountain would be disinfected to 2.2 MPN/100 ml using a UV disinfection system that will replace the existing chlorination system as a contact site for recycled water only to achieve a State DHS requirement of 450 CT (chlorine disinfection contact time). Recycled water produced by this treatment system could then be delivered by pipeline for irrigation purposes or to other future recycled water users after additional environmental evaluation when such uses are proposed.

Under normal operation the tertiary system would be used to treat up to 1.0 MGD of wastewater for delivery to future recycled water users. The remaining wastewater would be treated using the existing trickling filter/denitrification system and discharged to the Hesperia outfall as presently occurs. Water passing through the filter/denitrification system will be seasonally sent to the locations requiring irrigation water. Thus, the recycled water will also be denitrified.

If the proposed action is approved, the District proposes to construct the new treatment facilities over an 18-month period and will require a range of employees on the project site, with a maximum on the site at any one time of 15 construction personnel. The employees are expected to generate 30 vehicle trips per day. It is assumed that the maximum number of truck deliveries per day will be 4 trucks. Site grading will require 15 days to complete; it will require a front end loader, two 10 yard dump trucks, and a bobcat; it will require 5 persons. The total area to be disturbed by grading encompasses about 36,000 square feet or 0.83 acre. Equipment required onsite during construction of the new treatment facilities is expected to include: a back-hoe, 10 yard dump truck, air compressor, concrete trucks, a crane, front end loaders, and a bobcat.

2.3.3.2 Recycled Water Distribution System Facilities

Each of the proposed new facilities required to support recycled water irrigation of the golf course is described below.

Low Head Pump Station - Recycled water will be pumped into the distribution pipeline as it is produced using low-head pumps. The low-head pump station will be designed to support pumping up to 2,500 gallons per minute (gpm), the ultimate plant build-out capacity. The long range goal of the District is to recycle as much of the wastewater as possible for return to the mountain community.

The proposed station will contain three pumps, two active duty pumps and a third stand-by pump. Each pump will be driven by a 20 horse power motor. The motors will be equipped with variable frequency drives capable of adjusting their output to match recycled water production.

The system is designed so that the low-head pumps will operate whenever recycled water is being produced. The low-head pump station will be equipped with programmable logic controllers (PLCs) that monitor water levels in a wet well at the end of the tertiary treatment system. When recycled water is being produced the water level in the wet well will rise. The PLC will sense the water level rise and turn on the low-head pumps to match production. This design allows instantaneous movement of recycled water to the distribution pipeline.

Grass Valley WWTP Recycled Water Pump Station - During the evening hours when irrigation demand occurs, high-head pumps will deliver the recycled water over the mountain and to the Lake Arrowhead County Club (LACC) golf course. Operating high-head pumps during the off-peak electricity demand hours of 6 PM to 10 AM reduces electrical costs significantly.

The Grass Valley WWTP is located at an elevation of about 4,810 feet above mean sea level (msl). The golf course is located at an elevation of approximately 5,150 feet msl. Additionally, the proposed new pipeline route crests at approximately 5,280 feet (Figure 5, Proposed Recycled Water Line Alignment). Therefore, recycled water generated at the Grass Valley facility will need to be boosted up approximately 470 feet over the ridge crest to the LACC golf course. Friction loss in the pipeline adds up to an additional 110 feet of head that the pumps will need to overcome. The total maximum pumping head is estimated to be 580 feet at a flow of 2,500 gpm. The average pumping head will be 515 feet at a flow of 1,500 gpm. Pumping against high pressure will require that the station be equipped with a surge relief valve that will discharge back into a storage tank.

The Grass Valley facility high-head pump station will be capable of pumping up to 2,500 gpm, the ultimate plant build-out capacity. Assuming six hours of pumping over a 180 day irrigation period, the energy consumed daily will be 699 kilowatts (kw). The highest projected run time is 12 hours or 2,155 kw consumed daily. This is important for the District's long range goal to recycle all wastewater for return to the mountain community.

The proposed station will contain three pumps, two active duty pumps and a third stand-by pump. Each pump will be driven by a 200 horse power motor. The motors will be equipped with variable frequency drives capable of adjusting their output to match recycled water delivery with irrigation demand.

The system is designed so that the high-head pumps will operate outside the peak hours of 10 AM to 6 PM. They will run during the evening and early morning hours when irrigation is occurring and allowed by State DHS. The high-head pump station will be equipped with programmable logic controllers (PLC) that monitor the pressure within the pipeline. When the irrigation pumps turn on the pipeline pressure will drop. The PLC will sense the pressure drop and turn on the high-head pumps to match a set pressure point within the pipeline. This design allows instantaneous delivery of recycled water to the golf course, maximizes the amount of service pressure available for the golf course (estimated to be about 40 psi), and eliminates the need for a storage tank at the golf course.

Pipeline - Delivery of recycled water from the Grass Valley WWTP to future irrigation uses will be accomplished by a dedicated recycled water pipeline. The District envisions the first recycled water user to be the LACC golf course, the largest user of irrigation water within the District's service area. Recycled water delivery will be accomplished through a single pipeline running from the treatment plant to an on-site pump station at the golf course. Figure 5 identifies the recommended pipeline alignment. The total length of the alignment is approximately 15,000 feet and it will follow existing roadways (along Grass Valley Road) once it leaves the Grass Valley facility. The pipeline is located within roadways and easements through the residential area between the treatment plant and the golf course. Pipeline material will be AWWA C-900 PVC, Class 200.

The pipeline is proposed to be 14-inches in diameter to accommodate up to 2,500 gallons per minute (gpm), the estimated ultimate plant build-out capacity for recycled water. This is important for the District's long range goal to recycle all wastewater for return to the mountain community. This equates to a peak flow of 3.6 MGD, while maintaining a flow velocity below seven feet per second. Flow above seven feet per second is typically discouraged to reduce over-scouring the pipeline wall.

There is an abandoned 14-inch pvc/steel force main available for use along a portion of the proposed pipeline alignment as an alternative. See Figure 5. This force main may be utilized in place of constructing a new pipeline, saving money on construction and reducing the adverse effects related to installing pipelines within residential areas. The abandoned force main available for use is 17 years old and approximately 4,300 feet long. It is located within an easement along the back edge of residential properties fronting Brentwood Drive. The force main begins at the three-way intersection of Brentwood Drive, Edge Cliff Drive and Grass Valley Road and terminates on Brentwood Drive approximately 800 feet west of Oakmont Drive. Figure 5 identifies where the abandoned force main is located. The line has been reviewed by LACSD personnel and is considered to be usable for the intended purpose. After cleaning and disinfection the pipe can be used as part of the reclaimed water distribution system.

The pipeline will be constructed over a four-month period and will require an estimated 7 to 10 persons to install it. The workers are expected to generate 20 vehicle trips per day. It is assumed that the maximum number of lineal feet of pipeline installed per day will be 300 feet. A total of 20 total truck deliveries will be required to deliver the pipe for installation. The pipeline trench will be about 5 feet wide and will typically not exceed 5 feet in depth. The area of potential effect, or construction staging, could be a maximum of 20 feet wide. The total area to be disturbed for pipeline installation, then, would range from 0.034 acre/day (5' x 300' = 1,500 square feet) to 0.14 acre/day (20' x 300' = 6,000 square feet). For the total estimated length

of15,000 linear feet, this would be 1.72 to 6.88 acres. Assuming the 5 feet depth of trenches, this would equate to 278 cubic yards of soil removed and replaced daily, or 13,889 cubic yards of soil moved for the entire alignment. Equipment required onsite during installation of the pipeline is expected to include a backhoe, 10-yard dump truck, and a bobcat.

Permits or Approvals needed to implement the Proposed Action include:

- Forest Service authorization to make WWTP modifications in conformance with the approved SUP;
- Approval of a Master Permit to Distribute recycled water from the Lahontan Regional Water Quality Control Board; and
- Approval by Caltrans to install a recycled water distribution pipeline in State Highway 173.

2.4 ALTERNATIVES

2.4.1 No Action Alternative

The No-Action alternative would consist of a decision not to authorize the recycled water facilities described above. This would eliminate the potential beneficial future use of recycled water in the LACSD service area. This would protect the public health by allowing the Grass Valley WWTP to continue operating, but it would not allow ultimate offset of potable water consumption on the mountain with recycled water. Implementation of the no action alternative would result in specific new, direct adverse effects to the environment, which are described in the analysis section of this EA. Specifically, the District would have to arrange for delivery of out-of-District sources of potable water supplies, such as imported State Project Water, with the installation of extensive infrastructure and very high costs to the District to provide such water supplies in accordance with its obligations to protect public health and safety.

Permits needed for the No Action Alternative:

- Special Use Permit from the Forest Service to continue operation of the existing Grass Valley WWTP, with no authorization for additional facilities.

2.4.2 Onsite Facility Layout Alternative

The District has identified two alternative facility layout alternatives for the Recycled Water System. These layouts are shown on Figures 6 and 7. In each drawing, the Membrane System structure has been relocated to the central portion of the WWTP site. In Figure 6 the pump station remains at the same location as proposed in the proposed action as a separate facility and in Figure 7 the pump station is shown as a separate facility in the southwestern portion of the project site. The effects of these onsite alternatives will be evaluated in this document.

2.4.3 Partial Pipeline Alignment Alternative

Figure 5 shows the location of the alternative pipeline alignment which consists of an existing force main pipeline located about one-half of the way between the treatment plant and the

LACC golf course. The effects of utilizing this existing pipeline segment and connecting at both ends with new pipeline in the alignment shown will be evaluated in this document.

CHAPTER 3
AFFECTED ENVIRONMENT

The following discussion of the affected environment generally addresses the 18 environmental issues that will be further analyzed under Environmental Consequences. By presenting environmental information in this format, it will be possible for the environmental review to more easily serve both CEQA and NEPA environmental documentation requirements, as additional CEQA documentation may be required in the future. The affected environment issues are addressed in the following order, which includes NEPA topics and also includes the CEQA environmental issues: air quality, water quality, utilities/services, land use, transportation, natural environment, human population, construction, energy impacts, coastal zone management act, cultural resources, wild and scenic rivers, endangered species, flood plain management and protection of wetlands, farmland protection, and coastal barrier resources. To the extent that the above natural resources or man-made systems occur or are in demand at the site, the following discussion summarizes the existing environmental condition or circumstances.

3.1 AIR QUALITY

3.1.1 Environmental Setting: Air Quality

Generally, the project area is located in the San Bernardino Mountains and just within the South Coast Air Basin (SoCAB), one of the major air management basins established for managing air quality within California. Further, the area lies wholly within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). LACSD currently operates diesel generating equipment on an emergency basis, but obtains electricity (power) for its existing WWTP operations from Southern California Edison (SCE) company. The air quality data presented below provides general information regarding existing air quality for the region, but because Lake Arrowhead is located
well east of Cajon Pass where air pollution is transported out of the basin, overall air quality is generally believed to be better than elsewhere in the Basin, both during the summer and winter.

3.1.2 Climate/Meteorology and Air Quality

The area is characterized by an alpine climate, with substantial winter precipitation in the form of snow. Daily temperatures in the summer average 60°F to 70°F. Temperatures in the winter average approximately 35°F to 40°F. On average the Lake Arrowhead area receives approximately 40 inches of precipitation per year, with a sharp transition between the southern area adjacent to the crest of the San Bernardino Mountains and the eastern edge of the District's service area near the dam. Historical precipitation consists of both rainfall and snowfall. Air quality is generally considered good. There are no large stationary sources of air pollutants in the Lake Arrowhead area of the San Bernardino Mountains. Thus, most emissions are generated from vehicle traffic and from wood stoves. Additionally, local logging operations from the recent removal of numerous dead and dying trees (due to drought and bark beetle infestation), are expected to contribute particulates for a number of years.

Although the project area has good air quality generally, according to federal classification for the SoCAB, it is subject to ozone and particulate (PM_{10}) pollution. Ozone does not originate from vehicle and industrial exhaust in the immediate project area. Rather, the ozone comes from pollutant transport from smog blowing from the south and southwest from the coastal plain portion of the SoCAB, which is located south and west of Lake Arrowhead. Ozone concentrations are highest in the summer months. The colder winter temperatures and reduced solar insolation reduce the reactions that form smog, so ozone pollution rarely exceeds air quality standards during the winter.

Table 2 as follows shows recent data for ozone and particulates, both coarse (PM_{10}) and fine ($PM_{2.5}$). This information is based on the nearest regularly sampled air quality monitoring station to Lake Arrowhead, which is located at a comparable elevation to the project site in Crestline. This is station No. 5181, termed Central San Bernardino Mountains. Due to its lower elevation and proximity to Cajon Pass, air quality is somewhat worse than what would be found for Lake Arrowhead. Particulates have been monitored at this station for coarse (PM_{10}) particulates. There are fine ($PM_{2.5}$) particulates data for station No. 5818, termed the East San Bernardino Mountains station. Particulate matter violations in the San Bernardino Mountains are rare as indicated by the data in Table 2. Historic data indicates that even with combustion of wood in stoves and fire places, particulate concentrations rarely exceed the particulate matter standards.

3.1.3 Applicable Air Quality Plans, Policies and Regulations

Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS). The NAAQS were established for several major pollutants, termed “criteria” pollutants because the standards adopted for NAAQS must be supported by specific medical evidence. The NAAQS are two-tiered: primary, to protect public health; and secondary, to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation and property, etc.). The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulates less than ten microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). The primary standards for these pollutants are shown in Table 4; the health effects resultant from exposure to these pollutants are shown in Table 3. In July 1997, the EPA adopted a new NAAQS for particulates less than 2.5 microns ($PM_{2.5}$) and new ozone standards, which fully became effective in 2003.

Table 2
AIR QUALITY DATA FOR
CENTRAL AND EAST SAN BERNARDINO MOUNTAINS

Year Sta. No. 5181	Days exceeding State Ozone standard	Days exceeding Federal Ozone standards	Maximum 1-hour reading in ppm
2003	84	34 (74)	0.163
2002	91	22 (82)	0.161
2001	88	26 (74)	0.171
2000	85	17 (73)	0.18
Year Sta. No. 5181	**Percent of Samples exceeding State PM10 standard**	**Percent of Samples exceeding Federal PM 10 standard**	**Maximum 24-hour reading in ug/m^3**
2003	0	0	47
2002	5	0	52
2001	--	--	--
2000	0	0	49
Year Sta. No. 5818	**Annual Arithmetic Mean for PM 2.5**	**Percent of Samples exceeding Federal PM 2.5 standard**	**Maximum 24-hour reading in ug/m3**
2003	10.5	0	35.0
2002	11.3	0	34.1
2001	10.9	0	34.6
2000	10.6	0	29.0

Notes:

Ozone State Standard: 0.09 ppm based on 1-hr average

Ozone Federal Standards: 0.12 ppm based on 1-hr average (and 0.08 ppm based on 8-hr average)

PM_{10} State Standard: 50 ug/m3 based on 24-hr average

PM_{10} Federal Standard: 150 ug/m^3 based on 24-hr average

$PM_{2.5}$ Federal standard is AAM: 15 ug/m^3

ppm = parts per million

ug/m^3 = micrograms per cubic meter

Source: SCAQMD Air Quality Summary Data (www.aqmd.gov)

Table 3
HEALTH EFFECTS SUMMARY FOR AIR POLLUTANTS

Pollutants	Sources	Primary Effects
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardio-vascular diseases. Irrigation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide	Motor vehicle exhaust. High temperature. Stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust. Natural events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impair-ment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart disease (angina).
PM_{10} and $PM_{2.5}$	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions. Diesel exhaust from mobile sources.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest dis-comfort. Soiling. Reduced visibility. Fine particulates are carcinogenic.
Sulfur Dioxide	Combustion of sulfur-containing fossil fuels. Smelting of sulfur-bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coating, etc.
Lead	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.
Source: SCAQMD		

Table 4
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards		National Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone	1 hour	0.09 gpm (180 ug/m3)	Ultraviolet Photometry	0.12 ppm (235 ug/m3)	Same as Primary Std.	Ethylene Chemilumin-escence
Carbon Monoxide	8 hours	9.0 ppm	Non-dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m3)		Non-dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
Nitrogen Dioxide	Annual Average		Gas Phase Chemiluminescence	0.053 ppm (100 ug/m3)	Same as Primary Std.	Gas Phase Chemilumine-scence
	1 hour	0.25 ppm (470 ug/m3)				
Sulfur Dioxide	Annual Average		Ultraviolet Fluorescence	80 ug/m3 (0.03 ppm)		Paraosonanine
	24 hour	0.04 ppm (105 ug/m3)		365 ug/m3 (0.14 ppm)		
	3 hour				1300 ug/m3 (0.5 ppm)	
	1 hour	0.25 ppm (656 ug/m3)				
Suspended Particular Matter (PM_{10})	Annual Geometric Mean	30 ug/m3	Size Selective Inlet High Volume Sampler and Gravimetric Analysis			Inertial Separation and Gravimetric Analysis
	24 hour	50 ug/m3		150 ug/m3	Same as Primary Std.	
	Annual Arithmetic Mean			50 ug/m3		
Sulfates	24 hours	25 ug/m3	Turbidmetric Barium Sulfate			
Lead	30-day Average	1.5 ug/m3	Atomic Absorption			Atomic Absorption
	Calendar Quarter			1.5 ug/m3	Same as Primary Std.	
Hydrogen Sulfide	1 hour	0.03 ppm (42 ug/m3)	Cadmium Hydroxide ST Reaction			
Vinyl Chloride (chloroethene)	24 hour	0.010 ppm (26 ug/m3)	Tediar Bag Collection, Gas Chromatography			
Visibility Reducing Particles	8 hours (10 a.m. to 5 p.m. PSI)	Insufficient amount to produce an expansion coefficient of 0.23 per ug/m3 due to particles when the relative humidity is less than 70 percent. Measurement in accordance with ARB Method V.				

Data collected at permanent air quality monitoring stations are used by the California Air Resources Board (CARB) and the EPA to classify regions as "attainment," if the primary NAAQS have been achieved, or "non-attainment" if not. Other classifications include "non-attainment/transitional" or "unclassified." This is based on air quality data for the most recent three calendar years. The SoCAB is currently classified by EPA as a non-attainment area for two criteria pollutants (EPA, April 15, 2004). The Basin air quality status is listed as "extreme non-attainment" for ozone, "serious non-attainment" for PM_{10} and "non-attainment" for $PM_{2.5}$. Concentrations of CO, NO_2, SO_2 and Pb are classified as "attainment" for the SoCAB and Lake Arrowhead area.

The EPA has designated the Southern California Association of Governments (SCAG) the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA.

State Regulations/Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. The standards are shown in Table 4.

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required non-attainment areas in the State to prepare attainment plans, and proposed to classify each such areas on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all. The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of non-attainment pollutants, unless all feasible measures have been implemented. The Basin is classified as a "severe" non-attainment area for ozone, carbon monoxide, and particulates. The Basin is presently in compliance with the State nitrogen dioxide standard.

Regional Air Quality Planning Framework

The California Air Resources Board (CARB) coordinates and oversees both State and federal air pollution control programs in California. The CARB has divided the State into 15 air basins. Significant authority for air quality control within each air basin has been given to local Air Pollution Control Districts (APCD) or Air Quality Management Districts (AQMD), which regulate stationary source emissions and develop local non-attainment plans. CARB has designated all of Los Angeles County south of the San Gabriel Mountains, Orange County, and the non-desert portions of Riverside and San Bernardino counties as the Basin (SoCAB) under the jurisdiction of the SCAQMD. SCAQMD is responsible for regulatory stationary source emissions, and has been given the authority to regulate mobile emissions as an indirect source. The SCAQMD and SCAG jointly conduct air quality planning in the Basin. The CARB regulates motor vehicles and fuels.

Regional Air Quality Management Plan

Compliance with the provisions of the federal CAA and CCAA is the primary focus of the latest Air Quality Management Plan (AQMP) developed by SCAQMD and SCAG. The Plan is revised every 3 years, with the latest version adopted by the SCAQMD in 2003. The latest AQMP was approved by the CARB in 2003, and was included in the State Implementation Plan (SIP) and sent to the EPA for its review and approval. This is the approved plan for managing air quality in the SoCAB. The EPA rejected the ozone attainment portion of the 1997 SIP for the Basin in January 1999. The SCAQMD incorporated the required changes in its 2003 AQMP for inclusion in the SIP.

According to the 2003 AQMP, attainment for all federal health standards is to occur no later than year 2000 for carbon monoxide, the year 2006 for PM_{10} and the year 2010 for ozone. State standards would be attained no later than the year 2000 for carbon monoxide. State standards for ozone and PM_{10} would not be achieved until after the year 2010. Both the federal and State standards for nitrogen dioxide have been met, and the SCAQMD has requested EPA redesignation of the Basin to “attainment” for this criteria pollutant. Note that under the new regulatory structure, the attainment date for ozone may be extended to 2017.

The 2003 AQMP includes short-term, intermediate, and long-term control measures, and market based incentive strategies to meet targets for emission reduction. The short-term measures identified specific control measures under existing technology. The control measures consist mainly of stationary source controls that will be the subject of the SCAQMD rule making, CARB adopted motor vehicle emissions standards and fuel specifications, and federally adopted programs to reduce emissions from sources under federal jurisdiction. Intermediate term measures are composed primarily of the extension, or more stringent application, of short-term control measures. Long-term measures depend on substantial technological advancements and breakthroughs that are expected to occur throughout the next two decades.

Control measures focus on adoption of new regulations or enhancement of existing regulations for stationary sources, implementation/facilitation of advanced transportation technologies (i.e., telecommunication, zero emission and alternative fuel vehicles and infrastructure and both capital and non-capital based transportation improvements). Capital based improvements consist of high occupancy vehicle (HOV) lanes, transit improvements, traffic flow improvements, park and ride and intermodal facilities, and urban freeway, bicycle and pedestrian facilities. Non-capital based improvements consist of rideshare matching and Congestion Management Plan (CMP) based transportation demand management activities.

One type of transportation measure eliminated from the 2003 AQMP was indirect source controls, which would regulate local land use decisions, particularly medium to large-scale developments. These measures were found too expensive to implement without producing cost-effective emissions reductions. Rule 2202, the replacement for Regulation XV - Ridesharing, remains in effect to ensure that emissions reduction levels originally forecast with implementation of Regulation XV and other indirect source control strategies are achieved. This removal reflects a growing understanding that command and control measures tied to local land use decisions do not effectively alter travel behavior.

The 2003 Air Quality Management Plan still forecasts attainment with NAAQS by the deadlines identified above, but based on current air quality data, substantial additional reductions in emissions of NOx, ROG and particulates will be required to achieve these standards. Much of the required emission reductions are being allocated to federally controlled emissions sources, such as reductions in mobile source emissions from ships, trains, trucks and automobiles. Without such reductions, the NAAQS may not be achievable.

Air Toxics

Toxic air contaminants (TACs) are airborne substances that are capable of causing short-term or long-term adverse human health effects. TACs include both organic and inorganic chemical substances. TACs may be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Research and teaching facilities where a variety of chemicals are used for various experiments may also be a source of TACs.

The 1990 federal CAA Amendments expanded the regulation of hazardous air pollutants (HAPs; the federal government terminology for TACs), establishing a list of 172 individual compounds and 17 compounds categories to be regulated as HAPs. The federal CAA required the EPA to establish a stringent, technology based emissions standard for stationary sources of emissions of these listed substances. The Act also required the EPA to list “major” and “area” source categories that the EPA finds sufficiently threatening to human health or the environment by November 1993, to establish emissions standards for at least 40 stationary source categories by November 1994, and to establish standards for all regulated sources by November 2002.

“Major sources” are defined as any stationary source that emits at least 10 tons per year (tpy) of any HAP or 25 tons per year of any combination of HAPs. “Area sources” are stationary sources encompassing small diverse facilities that routinely release small amounts of HAPs. By November 1997, the EPA must list sufficient categories and subcategories of area sources to ensure that 90 percent of the emissions of the 30 HAPs presenting the greatest threat to the public health in the largest number of urban areas are subject to regulation.

In the state of California, the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB2588) requires specified facilities to submit to the local air pollution control agency, in this case, the SCAQMD, a comprehensive plan to inventory Air Toxics emissions for all substances listed pursuant to the Act. After the inventory preparation plan is approved, the facility must implement the plan and submit the resulting air toxics emission inventory to the District. After the District receives the completed emission inventories subject to the Act, it is then required to identify high priority facilities for which health risk assessments must be prepared to estimate the potential health risk associated with TAC emissions.

Assembly Bill 1807 (Tanner Bill) set up a statewide process to determine the need for methods to set standards for toxic air contaminants. The process includes identification of toxic air contaminants, determination of emissions and ambient levels of the identified compounds, preparation of regulatory needs documents, and establishment of minimum statewide emission control standards by the Air Resources Board (ARB).

The ARB has identified several chemicals as TACs under the Tanner Bill, including asbestos, benzene, cadmium, carbon tetrachloride, chlorinated dioxins and dibensofurans (15 species), chromium (VI), ethylene dibromide, ethylene oxide and methylene chloride as toxic air contaminants. The ARB has not developed statewide ambient air quality standards for any of these toxic chemicals.

The SCAQMD regulates levels of air toxics through a permitting process that covers both construction and operation. Both new and existing industries routinely use materials classified as air toxics. For both new and modified sources, the SCAQMD has adopted Rule 1401, with which the project proponent must comply before the project can be constructed and put into operation. A permit, when issued, will allow the facility to operate and will specify the conditions, if any, that might limit its operation.

Rule 1401 pertains to new source review of carcinogenic air contaminates. Rule 1401 specifies limits for maximum individual cancer risks resulting from permit units which emit carcinogenic air contaminants. It imposes Best Available Control Technology for toxics (T-BACT) requirements based on allowable risk. It should be noted that the cumulative analysis requirement in Rule 1401 has been eliminated. Cumulative or facility wide inventory requirements are considered to be included in AQMD Rule 1402.

The cumulative impacts from the new units, plus all permitted units within a 100-meter radius operated by the applicant, must be modeled. This cumulative risk must not result in:

- A maximum individual excess cancer risk greater than one in one million ($1x10^{-6}$), if the unit is constructed without T-BACT;
- A maximum individual excess cancer risk greater than ten in one million ($1x10^{-5}$), if the unit is constructed with T-BACT; or
- Greater than 0. 5 excess cancers in the population subject to a risk greater than one in one million.

In addition to the air toxics, the SCAQMD controls the emissions of reactive organic gases (ROG), and odors through regulations and the permitting process.

The SCAQMD which has jurisdiction over air quality issues in the SCAB has determined that compliance with the terms and conditions of its applicable permits and regulations is adequate mitigation for potential project-related impacts to air quality. No further mitigation is required.

3.1.4 Air Quality Planning Conformity

The issue of air quality conformity or consistency with the regional air quality planning process is determined by comparing the proposed project with the regional growth forecasts contained in these documents. The SCAQMD AQMP has concluded that regional air quality for the SoCAB can meet NAAQS by the year 2010 with reasonable growth if all of the measures identified in the AQMP to reduce pollutant emissions are implemented.

Part of the overall air quality planning effort has been the compilation of a Regional Comprehensive Plan and Guide (RCPG) 1996 by the SCAG, updated in 2004. For planning purposes, the AQMP assumes that if future growth in the region is consistent with the forecasts contained in the RCPG, the measures identified in the AQMP will be sufficient to reduce emissions in the SCAB to the point that ambient air pollutants concentrations will not exceed the federal NAAQS by the year 2010. The AQMP indicates that there still may be violations of the California AAQS for ozone in the year 2010, but the region will be near compliance for these standards.

Given this assumption, the key to determining consistency with the AQMP and RCPG is to evaluate the project's contribution to growth projections by ascertaining whether the project is being implemented consistent with applicable General Plan and whether growth forecasts for the region are meeting or exceeding the forecast contained within the RCPG.

3.2 HYDROLOGY AND WATER QUALITY

3.2.1 Surface Water

The topography of the WWTP area slopes downward from the south to the small valley in which the WWTP is located. Surface water flows within the WWTP are contained and delivered to the headworks. Thus, the WWTP itself does not generate runoff to the adjacent unnamed creek. This creek flows west until it intersects Grass Valley Creek, which flows down the back side of the San Bernardino Mountains until it eventually connects to the Mojave River. There is no direct runoff from the WWTP to the Mojave River. As noted above, internal surface flows are captured and treated and the secondary treated effluent is piped to a parcel of land in the City of Hesperia where it is allowed to percolate into the Alto Subbasin aquifer near the Mojave River.

The Lahontan Regional Water Quality Control Board designates the project site as being in the Mojave Hydrologic Unit, No. 628. In the Basin Plan, the Board established "beneficial uses" for specific segments of the Mojave River, as well as associated water quality objectives which are designed to protect the uses. The beneficial uses are designated for 24 subunits, including several creeks, lakes and reservoirs, and wetlands. They generally include MUN (Municipal Water Supply), AGR (Agricultural Water Supply), GWR (Groundwater Recharge), REC-1 (Water Contact Recreation), REC-2 (Non-Contact Water Recreation), COMM (Commercial and Sportfishing), WARM (Warmwater Aquatic Habitat), COLD (Coldwater Aquatic Habitat), and WILD (Wildlife Habitat). The nearest surface water with specific water quality objectives is the Mojave River at Victorville (a distance of about ten miles), which has objectives: chloride at 75 mg/l, sulfate at 40 mg/l, fluoride at 0.2 mg/l and boron at 0.2 mg/l, all expressed as average annual values.

The pipeline alignment to the LACC golf course will follow existing paved roadways, which do not have any surface water resources within their rights-of-way. Surface runoff from the impervious roadways is delivered to local storm water collection systems and leaves the project area through Grass Valley Creek.

3.2.2 Ground Water

The San Bernardino Mountains have very little ground water storage in alluvial aquifers. Almost all ground water available in the Lake Arrowhead area is from fractured bedrock aquifers, which store water only in joint fractures occurring in the underlying granitic-type bedrock. The LACSD extracts limited quantities of ground water from the fractured bedrock for potable water purposes, but has to treat some of this ground water because it has high concentrations of alpha particles.
As is the case with surface water, there may be some subsurface connection to the Mojave River aquifers, but no information is available regarding if and how such connections occur. The Lahontan Regional Water Quality Control Board designates the project site as being in the Upper Mojave River ground water basin, No. 6-42. The beneficial uses are MUN (Municipal Water Supply), AGR (Agricultural Water Supply), IND (Industrial Water Supply), FRSH (Freshwater Replenishment), and AQUA (Aquaculture). Water quality of the ground water extracted by the District is considered to be good, with the exception noted above. Also, based on other locations in the San Bernardino Mountains, locally high concentrations of fluoride and arsenic are know to occur.

3.2.3 Water Quality

The U.S. Environmental Protection Agency (USEPA), Region 9, has ultimate jurisdiction for federal water quality standards and requirements in the project area. The project area is also under the jurisdiction of the State Water Resources Control Board, with the Region 6 Lahontan Regional Water Quality Control Board being the local agency. These agencies enforce the state water quality standards and requirements, as well as coordinating federal reviews, permitting procedures and enforcement actions. Pertinent water quality standards are presented in the previous two subsections of this document.

The major water related issues associated with this proposed project relate to stormwater runoff and use of recycled water for irrigation in the District's service area. Stormwater quality could be affected during construction. There will be no loss of pervious surface outside of the WWTP that could increase surface runoff, because the pipeline alignment is totally located within paved and compacted road rights-of-way. As noted above, the surface runoff generated within the WWTP is captured and delivered to the headworks of the treatment plant where it is treated to secondary standards and delivered to the District's Hesperia property for percolation.

The Basin Plan discusses stormwater quality, runoff, erosion and sedimentation management issues in Section 4.3. Control measures are listed for each of these. The Basin Plan outlines the requirements for Construction NPDES (National Pollutant Discharge Elimination System) Stormwater Permits, which were based on the potential disturbance of five acres or greater of land in the 1995 Basin Plan, but are now required for construction sites of one acre or greater. Stormwater Pollution Prevention Plans (SWPPPs) are required before construction begins, as well as notifications to the Regional and State Water Resources Control Board. Erosion and sedimentation control is supervised by the Regional Board on the basis of voluntary implementation of Best Management Practices (BMPs). Other jurisdictions are referenced for specific measures and permits, such as local grading ordinances.

The local jurisdiction for the proposed project that addresses stormwater runoff, and erosion and sedimentation, is the County of San Bernardino. The County's Development Code addresses stormwater runoff control and erosion and sediment control in Title 8, Division 10,

Soil and Water Conservation--Chapter 2, Sections 810.0201 through 810.0275. For any project requiring a County Development Permit, a Soil Erosion and Sediment Control Plans must be submitted. Site runoff controls must be developed to control runoff from a ten-year storm event. However, the modifications in the WWTP site and the pipelines in the roadway must compile a SWPPP that will prevent degradation of surface water downstream from the project's area of potential effect.

The project area is located within the Mojave River Basin. Surface water flows are seasonal, mostly from October through April. Grass Valley Creek is an ephemeral or non-perennial stream, originating from the Twin Peaks area. The Creek runs along the west side of Grass Valley Road. The LACC golf course portion of the project area is located within the drainage swale, which comprises this creek system. Grass Valley Lake is situated to the north of LACC. It receives drainage from the Creek, for that portion which is not diverted to Lake Arrowhead to the east via a gravity tunnel and open channel system. The District has a water right of up to 800 acre-feet per year of water from the Creek. A hydrology study of stormwater runoff, conducted by Tetra Tech, showed the average capacity of conveyance from Grass Valley to Lake Arrowhead as 901 acre-feet/year (LACSD, 2003).

The local geologic characteristics include faulting due to the nearby San Andreas Fault zone. The District recently developed two wells, Nos. 1 and 2, on lands owned by the Lake Arrowhead Country Club. These are used for drinking water and as a source of irrigation water for the golf course. Groundwater production occurs within the weathered, fractured, or faulted granitic rock intervals, with water indicated in the nearby existing wells (Numbers 1 and 2) at 350 and 665 foot depths (Integrated Water Resources, Inc., 2003). The water quality is generally good, as determined by the Department of Health Services (DHS) required Title 22 tests (for primary and secondary drinking water standards) done in April and May of 2003. The water quality is relatively low in Total Dissolved Solids (TDS) content at 160 mg/l. Well #1 did have high Gross Alpha radioactivity of 103 pCi/l, which is above the 15 pCi/l maximum contaminant limit. See Table 5 below for recent water quality data from these two developed and nearby existing wells. For comparison, existing surface water quality of Lake Arrowhead is also shown, along with drinking water standards.

Table 5
LACSD WATER QUALITY DATA FOR 2002-2003

Selected Water Quality Parameter	Groundwater Wells #1 and 2	Surface Water Lake Arrowhead	MCL
Alkalinity (Total) as CaCO3	140 mg/l	50-115 mg/l	NA
Aluminum	100 ug/l	ND-11 ug/l	1000 ug/l
Antimony	ND		6 ug/l
Arsenic	ND		50 ug/l
Asbestos	<0.2 MFL		7 MFL
Barium	ND		1000 ug/l

Selected Water Quality Parameter	Groundwater Wells #1 and 2	Surface Water Lake Arrowhead	MCL
Beryllium	ND		4 ug/l
Calcium	38 mg/l	15-30 mg/l	NA
Chloride	2.7 mg/l	15.8-28.3 mg/l	600 mg/l
Chromium (Total)	1.4 ug/l		50 mg/l
Color	3-5 units	0.5-75 units	15 units
Coliform (Total)		ND-1.8%	5%
Copper	30 ug/l	59-92 ug/l	1000 ug/l
Cyanide	ND		200 ug/l
Fluoride	<0.1 mg/l		1.7 mg/l
Foaming Agents (MBAS)	<5 ug/l		500 ug/l
Gross Alpha radioactivity	35.1-103 PCi/l		15 PCI/l
Hardness (Total) as CaCO3	110 mg/l	51-117 mg/l	NA
Iron	400 ug/l		300 ug/l
Lead	6.2 ug/l	35 ug/l	NA
Magnesium	2.9 mg/l	2.2-5.68 mg/l	5 mg/l
Manganese	0.18 mg/l		5 mg/l
Mercury	ND		2 ug/l
Nickel	ND		100 ug/l
Nitrate (as NO3)	<2 mg/l		45 mg/l
Nitrite (as N)	ND		1000 ug/l
pH	7.9 units	7.1-8.5	NA
Potassium	2.0 mg/l	2.02-3.18 mg/l	NA
Sodium	14 mg/l	10.2-22.8 mg/l	NA
Specific Conductance	280 umhos/cm		2,200 US
Sulfate	2.2 mg/l	1.53-16.6 mg/l	500 mg/l
Total Dissolved Solids	160 mg/l	75.5-98 mg/l	1,000 mg/l
Trihalomethanes	ND	6.7-58.7 ug/l	100 ug/l
Turbidity	0.73-3.8 NTU	0.16-1.13 NTU	5 NTU

Selected Water Quality Parameter	Groundwater Wells #1 and 2	Surface Water Lake Arrowhead	MCL
Zinc		0.051 mg/l	5 mg/l

Notes:
MCL = Maximum Contaminant Level, based on primary and secondary drinking water standards
NA = Not Applicable; ND = Not Detected
Organics not shown, as all "not detected" except for toluene in Well #1 at 0.6 ug/l

Sources: Well Test Data for #1 and #2; 2002 LACSD Consumer Report

3.2.3.1 Basin Plan

The project area is under the jurisdiction of the California Regional Water Quality Control Board, Lahontan Region. Its Water Quality Control Plan ("Basin Plan") governs the identified surface and ground waters. Grass Valley Lake and Grass Valley Creek are in the Upper Mojave Hydrologic area, hydrologic unit number 628.20, and associated minor surface waters and wetlands are in Grass Valley hydrologic unit number 628.41. The designated beneficial uses of these surface waters are: MUN (municipal water supply), AGR (agricultural water supply), GWR (ground water recharge), REC-1 (body contact recreation-swimming), REC-2 (secondary contact recreation-boating), COMM (commercial and sportfishing), WARM (warmwater freshwater habitat), COLD (coldwater freshwater habitat), and WILD (wildlife habitat). Grass Valley Lake is only designated for COLD, i.e., not also WARM. Additional beneficial uses for FRSH (freshwater replenishment), WQE (water quality enhancement) and FLD (flood peak attenuation/flood water storage) apply only to minor wetlands. Grass Valley minor surface waters are also designated for POW (hydropower generation).

There are specified water quality objectives for certain surface water bodies in the San Bernardino Mountains Area, Mojave Hydrologic unit, shown on Table 3-21 of the Basin Plan. For Grass Valley Creek upstream of the lake, the water quality objectives are: total dissolved solids (TDS) as an annual average value is 103 mg/l, chloride 11.1 mg/l, sulfate 4.6 mg/l, fluoride 0.13 mg/l, boron 0.02 mg/l, nitrogen as nitrate 0.2 mg/l, as total nitrogen 0.3 mg/l, and phosphate 0.05 mg/l.

There are certain Waste Discharge Prohibitions contained in Section 4.1 of the Basin Plan that are related to the proposed project. Effective March 24, 2004 the prohibition for the Mojave Hydrologic Unit was amended as follows:

> "2. The Discharge of waste to land or water within the following areas is prohibited (Figure 4.1-23): (a) the Silverwood Lake watershed
> (b) Deep Creek watershed above elevation 3,200 feet
> (c) The Grass Valley Creek watershed above elevation 3,200 ft.
>
> This prohibition does not apply to stormwater discharges unless such discharges create a condition of pollution or nuisance. An exemption to this prohibition may be granted by the Regional Board whenever the Regional Board finds that the

discharge of waste will not, individually or collectively, directly or indirectly, result in exceeding the water quality objectives or unreasonably affect the water for its beneficial uses."

The groundwater basin generally underlying the project area, mostly downstream, is given as the alluvial Upper Mojave River Valley, No. 6-42. Its beneficial uses in the Basin Plan on Table 2-2 are shown as MUN, AGR, IND (industrial service supply), FRSH and AQUA (aquaculture). For all groundwater that is designated as MUN, for municipal supply, the median concentration of coliform organisms over any seven-day period is to be less than 1.1/100 ml. Concentrations of chemical constituents must be less than the primary and secondary drinking water standards found in Title 22 regulations.

Possible contaminating activities related to the existing wells in the project vicinity are identified as: (1) nitrates from septic systems and high density sewer systems and (2) golf course fertilizing operations. Regarding septic systems, problems are dependent upon the highly localized characteristics of fractured rock aquifers. Infiltration of organic pollutants from other golf course maintenance activities are a factor, but would be problematic only for much shallower wells. Pesticides and herbicides were not found in water samples (Integrated Water Resources, Inc., 2003).

3.2.3.2 Grass Valley WWTP Effluent Water Quality

The Lahontan Regional Board updated its Waste Discharge Requirements for both of LACSD's wastewater treatment facilities (Willow Creek and Grass Valley) in 2002, under Board Order No. R6V-2002-0008 (and WDID No. 6B360107001). This update was partially intended to ensure that discharge permits were consistent with the Lahontan Region's 1995 Water Quality Control Plan. The effluent is piped to the Hesperia Disposal Site, which contains 150 acres of an irrigation area, in which the effluent is used for spray irrigation of fodder crops, and approximately 200 acres of percolation ponds. The TDS concentrations in groundwater under the Hesperia Disposal Site range from 150-350 mg/l. Nitrate as nitrogen concentrations are below 10 mg/l. Groundwater is found 50 feet below ground surface at this location.

In the discharge specifications for this order, the discharge was not to cause the nitrate concentration in ground waters beneath the Hesperia Disposal Site to exceed the U.S. Environmental Protection Agency's drinking water standard of 10 mg/l for nitrogen as a daily maximum, and 8 mg/l for nitrogen as a 30-day average. The median concentration of coliform organisms over any seven-day period must be less than 1.1/100 ml (for groundwater). In order to achieve this, the wastewater discharge at the outfall is required to have less than a median concentration of total coliform of 23/100 ml, or a 30-day maximum of 240/100ml.

3.2.3.3 Recycled Water Quality Requirements

The "Title 22" standards for water reclamation were derived as public health regulations under the Department of Health Services (DHS). They are found under Title 22, Division 4, Environmental Health, Chapter 3, Water Recycling, in the California Code of Regulations as Article 3 Section 60305. These standards address the allowed uses for recycled water, treatment levels, and performance and design parameters both for treatment processes and uses. Two sets of standards have been developed which are applicable to the proposed

project, the Water Recycling Criteria and Groundwater Recharge Guidelines. The Water Recycling Criteria have been applied to projects, replacing the 1978 Wastewater Reclamation Criteria, although they have been in draft form until official adoption in December 2000. The Groundwater Recharge Guidelines are still in draft form, but have also been applied to subsurface injection and surface spreading of recycled water.

There are four levels of treatment specified for recycled water under the Water Recycling Criteria at this time, summarized as follows. The associated allowed uses of water treated at each level are also given.

Undisinfected Secondary Recycled Water—This is an oxidized wastewater in which the organic matter present in the wastewater has been stabilized, is nonputrescible and contains dissolved oxygen. This water can be used for surface irrigation of non-edible crops and sewer flushing.

Disinfected Secondary 2.2 Recycled Water—This is recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a Most Probable Number (MPN) of 2.2 per 100 ml. utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed MPN of 23 per 100 ml. in more than one sample in any 30-day period. This water can be used for surface irrigation of food crops and for impoundments with restricted access.

Disinfected Secondary 23 Recycled Water—This is recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed an MPN of 23 per 100 ml. utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 240 per 100 ml. in more than one sample in any 30-day period. This water can be used for surface irrigation with restricted access, landscape impoundments, non-misting type cooling towers, and secondary uses (road cleaning, dust control, nonstructural fire-fighting, industrial boiler feed).

Disinfected Tertiary Recycled Water—This is filtered and disinfected wastewater that meets the following criteria:

(a) the filtered wastewater has been disinfected by either:

(1) a chlorine disinfection process that provides a CT (chlorine concentration times modal contact time) value of not less than 450 mg-minutes/liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) a disinfection process that, when combined with the filtration process, has been demonstrated to reduce plaque-forming units of F-specific bacteriophage MS2, or polio virus, per unit volume of water in the wastewater to one hundred thousandths (1/100,000) of the initial concentration in the filter influent through the range of qualities of wastewater that will occur during the recycling process. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

(b) the median concentration of total coliform bacteria measured in the disinfected effluent does not exceed a MPN 2.2 per 100 ml. utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed a MPN of 23 per 100 ml. in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 ml. This water can be used for surface irrigation with non-restricted access, irrigation of food crops, for impoundments with non-restricted access, misting and non-misting cooling towers, flushing of toilets and urinals, structural fire-fighting, decorative fountains, commercial laundries and car washes.

The criteria also address filtration requirements. An oxidized wastewater that is coagulated and passed through either natural undisturbed soils, or a filter media bed must: (1) have a filtration rate that does not exceed 5 gallons per minute per square foot (gpm/sf) of filter media area for mono, dual and mixed media filters, and 2 gpm/sf of filter media area for traveling bridge automatic backwash filters, and (2) turbidity of the filtered wastewater does not exceed an average of 2 nephelometric turbidity unit (NTU) in a 24-hour period; 5 NTU more than 5 percent of the time during a 24-hour period, and 10 NTU at any time. If the wastewater is passed through a microfiltration, ultrafiltration, nanofiltration or reverse osmosis membrane, the turbidity of the filtered wastewater cannot exceed 0.2 NTU more than 5 percent of the time in a 24-hour period, or 0.5 NTU at any time.

Concerning contaminants and physical characteristics, recycled water must also comply with the state's drinking water standards, Basin Plan water quality objectives, and public health goals for regulated compounds and pending regulations for arsenic, uranium, radon and disinfection by-products.

The criteria also specify some use area requirements, particularly setbacks for irrigation activities and impoundments. No irrigation with disinfected tertiary recycled water can take place within 50 feet of any domestic water supply well, unless all of the following conditions are met: that a geological investigation shows that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface; that the well has a seal extending from the surface into the aquitard; that the well is housed; that the ground surface around the wellhead allows surface water to drain away from the well; and that the well owner approves of the elimination of the buffer zone requirements. No irrigation or impoundment of disinfected secondary 2.2 or disinfected secondary 23 recycled water can take place within 100 feet of any domestic water supply well. No irrigation or impoundment of undisinfected secondary recycled water can take place within 150 feet of any domestic water supply well. Recycled water systems must be separate from potable water systems for irrigation and other uses. Standards are referenced for dual-plumbed recycled water systems.

The Groundwater Recharge Guidelines are still in draft form, most recently revised in August of 2002. These Guidelines apply to Planned Groundwater Recharge Reuse Projects, where projects are defined as those using recycled water designed, constructed, or operated for the purpose of recharging by infiltration (via surface spreading) or injection (via subsurface injection) of recycled water a groundwater basin designated in the Water Quality Control Plan. The Guidelines require that water be filtered and disinfected tertiary recycled water for surface spreading projects and advanced wastewater treatment using a reverse osmosis process for subsurface injection projects. Although the proposed LACSD project is not a planned

groundwater recharge project, the designated beneficial uses for surface water in the Grass Valley Creek system include MUN and GWR. Regarding the latter, the project could be considered an "incidental" groundwater recharge. In any case, LACSD must demonstrate that the quality of the proposed discharge is comparable to the water quality of the underlying groundwater, in order to comply with the State Water Resources Control Board (SWRCB) Resolution No. 68-16 on maintaining existing high quality in surface waters, groundwaters and wetlands. This is termed an "antidegradation" analysis. A draft antidegradation analysis was provided as Appendix E to the Initial Study.

3.3 UTILITIES / SERVICE SYSTEMS

3.3.1 Domestic Water Supply

Since this EA document addresses the development of a project to implement the District's Recycled Water Plan, sources of potable water and facilities will not be described in detail here. Generally, the primary source of potable water in the District's service area is surface water extracted from Lake Arrowhead and ground water from wells that intercept fractures in the bedrock which underlies the San Bernardino Mountains. The LACSD produces and delivers approximately 2,100 acre-feet annually to it potable water customers, including approximately 200 acre-feet of water to the LACC golf course for irrigation.

3.3.2 Sewage Treatment

The District also serves the area with wastewater infrastructure. The project description at the beginning of this document summarizes the wastewater treatment operations at the two WWTPs operated by the District. Approximately 1,500 acre-feet of sewage is treated annually and delivered by the outfall line to the percolation site in the City of Hesperia. The proposed action includes retention of some of the treated effluent for treatment to produce recycled water that can offset certain irrigation needs within the District's service area.

3.3.3 Solid Waste Disposal

The municipal solid waste from the area, including the Crestline, Lake Arrowhead and Running Springs, is collected by a private disposal company at a collection station near Running Springs and transported to San Bernardino Valley landfills for disposal. Solid waste generated is delivered to the Materials

3.3.4 Natural Gas

The Gas Company provides natural gas service. For those not having gas service in the Lake Arrowhead area propane delivery can be arranged through local propane purveyors, such as Proflame, Amerigas or Flowgas. Natural gas is not used by the District, other than to heat its administrative and maintenance buildings.

3.3.5 Electric Power

Southern California Edison (SCE) provides electrical services to the Lake Arrowhead area. Electricity is consumed by the District to operate the WWTP, pump stations (for both potable and wastewater), and water wells.

3.4 LAND USE / PLANNING

The project sites and immediate area are located in unincorporated San Bernardino County, with land use managed by the County under the Lake Arrowhead Community Plan and County General plan. Currently, the WWTP is designated for Public use (PUB) by the County. Regarding the need for a program to further treat the wastewater effluent to recycled water standards, there are limited potable water supply resources located in the Lake Arrowhead community area, and recycled water can offset current irrigation use of potable water. Lake Arrowhead experiences some limited growth of new residential units, but one of the major problems for this recreation area is that residences are used part-time which causes water demand to fluctuate over a wide range. Thus, even though growth has occurred at a slow rate, the population fluctuates both weekly (weekends have higher water demands) and seasonally due to the large number of part-time occupied residences within the District's service area.

3.5 TRANSPORTATION / TRAFFIC

The project site is accessed off of State Highway 173, which is paved adjacent to the plant, but further down the mountain is the only remaining unpaved State Highway. The pipeline alignment follows a portion of State Highway 173 (paved) and several local roads, including Grass Valley Road, Oak Way, Edge Cliff Drive, Brentwood Drive, Oakmont Drive and Golf Course Road. Because of the paving, State Highway 173 does not carry much traffic past the WWTP. Only local traffic utilizes the local roads in the project area and with exceptions during holidays, traffic on these roadways is within the capacity of the local roadways.

No railroad tracks pass near the project site or in this portion of the San Bernardino Mountains. No airports occur in or near the vicinity of the project site or pipeline alignment.

3.6 NATURAL RESOURCES

3.6.1 Biological Resources

3.6.1.1 Vegetation, Habitat and Wildlife

A Biological Survey was conducted on July 27, 2004 by biologist Pamela Wright of Tom Dodson & Associates. The report is contained in Appendix F. The project area is characterized by montane coniferous forest. The vegetation community found here is a closed-canopy mixed conifer-pine/oak phase of middle elevation montane coniferous forest as described in Table 2-7 of Southern California Mountains and Foothills Assessment (Stephenson and Calcarone, 1999). This forest type is characterized by a diverse mix of conifers and hardwoods including Jeffrey (*Pinus jeffreyi*), ponderosa (*P. ponderosa*) and sugar pines (*P. lambertiana*), incense cedar (*Calocedrus decurrens*) and black and live oak (*Quercus kelloggii, Q. chrysolepis*). The vegetation along the proposed pipeline alignment includes the above trees and black and scrub oak (*Quercus kelloggi, Q. Berberifolia*), manzanita (*Arctostphylos glauca* and other species), buckbrush (*Ceoanothus cuneatus*), mountain whitethorn (*Ceoanthus cordulatus*), yerbe santa

(*Eriodictyon trichocalyx*), rabbitbrush (*Chrysothamnus nauseosa*), mountain mahogany (*Cercocarpus betuloides*), and poison oak (*Toxicodendron diversilobum*). Willow (*Salix* spp.) is found in the immediate vicinity of Grass Valley Lake. There was no substantial leaf litter accumulation along the shoulder of Grass Valley Road.

The golf course and treatment facility sites are generally landscaped, paved and developed. In addition to turf grasses and ornamental shrubs and trees, riparian and wetland vegetation (willows, cattails, etc.) occur along drainages and ponds in these areas. A tributary to Grass Valley Creek drains from the treatment facilities to the north. Grass Valley Creek and Lake are considered to be jurisdictional waters in the areas of the proposed water new facilities and water lines. This riparian corridor is generally downstream of the project area and is designated by the County General Plan as a wildlife corridor (Open Space Element of 1991, No. 16): "This wildlife corridor follows the alignment from the National Forest to its junction with the Mojave River. The creek serves as a dispersion corridor to and from the National Forest and should be maintained as open space to preserve habitat values and wildlife dispersion." However, it should also be noted that this area has been substantially altered for recreational golf course use, including changes to drainage structures.

A list of sensitive species and communities which occur within the Lake Arrowhead USGS. Quadrangle from the California Natural Diversity Database (CNDDB) has been generated. The following shows those "protected" (i.e., endangered or threatened by federal standards and/or of special concern by state standards) species which have been previously documented in the area (LACSD, 2003; TKC, 1999).The Biological Survey indicates that some of these sensitive species have at least a moderate potential occur within the project's pipeline alignment. These are highlighted with an asterisk (*).

- Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*)
- Parish's yampah *(Perideridia parishii ssp. Parishii*)
- Mojave tarplant (*Deinandra movahensis*)
- San Bernardino mountain owl's clover (*Castilleja lasiorhyncha*)
- Nevin'sbarberry (*Bervenris nevinii*)
- *(Dudleya abramsii* ssp. *Affinia*)
- Silver-haired ivesia (*Ivesia arygyrocoma*)
- Andrews marble butterfly (*Euchloe hyantis andrewsi*)*
- California red-legged frog (*Rana aurora draytoni*)
- Mountain yellow-legged frog (*Rana mucosa*)
- Arroyo toad (*Bufo californicus*)
- Yellow-blotched salamander (*Ensatina eschscholtzi croceater*)
- San Bernardino mountain kingsnake (*Lampropeltis zonata parvirubra*)
- Southern rubber boa (*Charina bottae umbratica*)
- San Diego horned lizard (*Phyronosoma coronatum blainvillei*)*
- Southern spotted owl (*Strix occidentalis occidentalis*)*
- Southern flying squirrel (C*laucomys sabrinus*)*

No wetlands or waters of the United States occur within the area of potential effect for the proposed project. The project will be developed within the existing Grass Valley WWTP and existing roadways, all the way from the WWTP to the golf course.

3.6.2 Geology and Soils

3.6.2.1 Geology

The general geology of the area consists of igneous bedrock, classified as granitic rock that is compositionally granodiorite. The bedrock is weathered and faulted in areas. The San Bernardino Mountains consist of crystalline granitic rocks that have been subject to uplifting along the San Andreas Fault Zone. The mountains are part of the east-west trending Transverse Ranges.

The Lake Arrowhead community is located six miles north of the San Andreas Fault Rift Zone. The San Andreas Fault is the longest and most active fault in California. It is a northwest trending fault along the southern side of the San Bernardino Mountains. This fault is the boundary between two major crustal plates (Pacific and North American) that are moving relative to each other at the rate of a few inches per year. A maximum credible earthquake is at Magnitude of 8.25 on the Richter scale. Estimated maximum accelerations for bedrock could be 0.35-70g. This would likely result in surface rupture and slope failures/landslides. Due to nearness to this fault, as well as the Cleghorn Fault, the Lake Arrowhead area is designated as Zone 3 by the California Division of Mines and Geology, with a Code 4 of Uniform Building Code. In other words, it is very likely that major destructive earthquakes may occur, such that the most stringent seismic building standards apply (TKC, 1999).

Paleontological resources, which are in the form of fossil plants or animals, are not known to occur in the project area because the underlying bedrock is igneous in character and no major areas of young or old alluvium occur in the project area.

3.6.2.2 Soils

The soils in the area of Lake Arrowhead Country Club and Grass Valley Lake belong to the Wind River complex. These are moderately deep to deep, well-drained soils formed in materials weathered from granitic rock on hills and mountainsides at elevations of 4,000-6,000 foot. Type MbE soil, Morical 15-30% slope, is found to the east and west of the project site. Permeability is moderately rapid, erosion hazard is moderate, and the drainage class is well-drained. This soil type has low productivity. Jeffrey and Coulter pines and black oak, sugar pines, and annual grasses are supported. The proposed irrigation work on the LACC golf course is located in Oak Glen family soils-riverwash association. AeD type is found in drainage ways of 2-10% slope. Surface layers are of an unstabilized sandy and gravelly nature, with cobbly or stoney materials that are frequently flooded, washed and reworked such that little vegetation is supported (U.S. Department of Agriculture, U.S. Forest Service, and Soil Conservation Service, 1981).

The soils northward along Grass Valley Road are also type MbE.. The access road to Grass Valley WWTP has DcDE type soils and the plant site has DaF. These belong to the Pacifico-Wapi families complex, on 15-50% slopes. Both of these types are found on mountainsides that support Ponderosa/Jeffrey Pines, Coulter Pines or Canyon Live Oaks. They are grayish brown loamy sands on the surface to light yellowish brown gravelly loamy sands in the subsurface. It is approximately 10-15 inches to granite rock. They are rapidly permeable, with high erosion hazard, low soil productivity and belong to Hydrologic soil group C.

3.6.3 Mineral Resources

Based on a review of the Lake Arrowhead Community Plan and a field review of the project site and pipeline alignment, there are no known mineral resources in the project area.

3.6.4 Visual Resources / Aesthetics

The San Bernardino Mountains have many aesthetic qualities, including forested areas, scenic viewpoints, and lakefronts. The communities in these mountains provide both summer and winter recreational opportunities that are dependent upon these qualities. The main goal of the San Bernardino County General Plan for the Mountain Planning Region, of which the unincorporated community of Lake Arrowhead is a part, for open space is to "help protect the alpine character and environment." Grass Valley Road and State Route (SR) 18 are the nearest roads that have been identified as scenic highways in the Open Space Element of the General Plan, under Policy No. OR-58. Further, some Lake Arrowhead subregional policies and actions that might apply are:

- Grass Valley Creek (and others) are to be protected from encroachment or development that detracts from their natural beauty (Section III.C-35).
- Industrial uses that expand or remodel, where building permits are required, shall require landscaping with indigenous species and have fencing along all boundaries abutting a land use district (Section III.C-36).

The project area is partially located on the west side of Grass Valley Road, from its junction with State Route 173, southward to Lake Arrowhead Country Club (LACC). There are limited views on these sites, and from offsite areas to the sites, due to the dense forest and the residential community of Arrowhead Woods. The golf course fairways are the most open, which probably would also have been the case pre-country club, as this would have appeared as the Grass Valley wash. The Grass Valley Wastewater Treatment Plant (WWTP) is located approximately two miles to the north of Grass Valley Lake, a little further north of Grass Valley Road's junction with SR 173. It is in an isolated area, except for some recreational off-road and camping use areas.

3.7 POPULATION AND HOUSING

Data from the 2000 United States Census, updated through 01/01/01 (www.dof.ca.gov), indicate that the unincorporated portion of San Bernardino County has a population of 292,200, which is approximately 16.6 percent of the County's total 1,764,300 population. Data from Senate District No. 31 (www.sen.ca.gov) indicate that the population of the project area is 20,028, with Crestline having 10,218 and Lake Arrowhead having 8,934. Variability in local population is due primarily to weekend and seasonal visitors to the San Bernardino National Forest. It has been projected that the population will be 29,171 by the year 2020, based on census tracts 109 and 110 (TKC, 2000).

Lake Arrowhead is not an economically disadvantaged community in terms of the housing market (i.e., there are no "environmental justice" issues related to this project). There were 8,015 dwelling units in 1990, with 66 percent of these being seasonal residences and 93

percent single family homes. In 1998, the median home price was $124,000, with $158,600 being the average home price. This was higher than the County median of $121,000 at that time. Over 5 percent of the homes were worth more than $1 million. It was projected that there would be 22,603 single-family and multi-family units by the year 2020 for census tracts 109 and 110 (TKC, 2000).

The LACSD currently has 7,800 water service customers, most of these being individual residences with a few commercial and institutional customers (tourism-related services and schools and a hospital). The LACSD has approximately 10,700 wastewater connections.

3.8 CONSTRUCTION

This subsection is used under NEPA guidance to describe construction aspects not addressed elsewhere. The construction scenario for this project site has been summarized in the project description, Section 2.3.3, and analyzed in more detail under Air Quality Impacts, Section 4.1. The main activities related to construction, that will be evaluated in the environmental consequences section of this report, include: site clearing, grading, some excavation for the structures and for site drainage controls and a retention basin, and placement of connections to existing water conveyance infrastructure. All work will be conducted within the areas shown on the site plan, Figure 4.

3.9 ENERGY ISSUES

The project site is already used for wastewater treatment operations and is located near existing power supplies. There should be no need for extension of any new energy resources. The new equipment and buildings will be supplied from current electrical connections to the WWTP site. There will also be energy, primarily in the form of petroleum products and perhaps some electricity, consumed by the construction activities.

3.10 COASTAL ZONE MANAGEMENT ACT

The proposed project area is located more than 60 miles from the California coast and therefore, this Act does not apply to the proposed project.

3.11 CULTURAL RESOURCES

Generally, the San Bernardino Mountains were used as seasonal camps for Serrano, Cahuilla, Shoshoean, and Paiute Indians. The vicinity of Lake Arrowhead was an ancient hunting and gathering area. European settlers used the mountains for mining and logging activities. With the encroachment of settlers in the 1800s, many conflicts between settlers and native Indians occurred. Saw mills were constructed near Blue Jay and Little Bear Valley in the mid-1850s (TKC, 1999).

The LACSD service area was examined for archaeological resources in 1992 (J.F. Davidson Associates, Inc., 1992). The sensitivity of the project area for historical resources has been rated by the San Bernardino County Museum's Archaeological Information Center as generally: moderate for prehistoric archaeological resources, high for historic archaeological and historic resources, and unknown for cultural landscapes and ethnic resources. Two sites have been

identified as existing in the general project area: a pending historical archaeological site, a resort site, and a California Point of Historical Interest, Antlers Inn.

Past disturbances of the Grass Valley Creek corridor from natural water and sediment movement (riverwash), and development as a golf course make the probability of discovering cultural resources with any integrity low. The area within the Grass Valley WWTP has all been previously disturbed and similarly would not be expected to have resources. A new Cultural Resources Survey was conducted by CRM Tech (Appendix G), however, according to records on file at the Archaeological Information Center, the area including the Grass Valley WWTP had been surveyed for cultural resources in 1983, with no archaeological sites or other potential historic properties being identified. Seven archaeological sites were identified in the general project area, these being primarily Native American. The Rock Camp Guard Station was recorded as a large village complex, this being situated approximately 1,500 feet from the project site. The U.S. Forest Service records yielded similar results. It was indicated that the Grass Valley Tunnel, constructed in 1894, crosses the southern half of the proposed pipeline alignment, just north of Grass Valley Lake. This tunnel was part of a larger irrigation system conceived to transport water from Deep Creek to San Bernardino Valley.

A field survey was conducted on August 6, 2004 by Josh Smallwood of CRM Tech. Areas of particular concern, along State Highway 173 and Pilot Rock Road in the northern portion of the project area, as well as the Grass Valley Tunnel area in the southern portion of the pipeline alignment, resulted in no buildings, structures, objects, sites, features, or artifacts more than 50 years of age being encountered. The Native American consultation by CRM Tech, completed September 14, 2004, indicated that no specific cultural sites or issues were identified. The Morongo Band of Mission Indians thought the proposed activities might be in a traditional use area to which the tribe may have cultural ties and requested an archaeological monitor be present during construction activities. The San Manuel Band of Mission Indians requested that an approved Native American archaeological monitor be present during construction activities.

3.12 WILD AND SCENIC RIVERS

The proposed project is not located adjacent to or near any natural creek that has been assigned a wild and scenic river designation. The most current National Forest land use plan indicates that Deep Creek, north of the project site, should be assigned such a designation.

3.13 ENDANGERED SPECIES

Please refer to section 3.6.1 which discusses potential sensitive and listed plant and animal species. Several amphibians including the California red-legged frog (*Rana aurora draytoni*), Mountain yellow-legged frog (*Rana mucosa*) and Arroyo toad (*Bufo californicus*) may occur in the general area. No listed species have been identified within the project area of potential effect. Based on the above records reviews and field surveys, there do not seem to be federal or state listed protected or sensitive species on the project site or pipeline alignment.

3.14 FLOODPLAIN MANAGEMENT AND PROTECTION OF WETLANDS

The proposed project site is not located in a designated floodplain, nor will the project affect any area flood control structures. Hydrology of the site is characterized as sheet flow, which travels

internally at the WWTP or along the pipeline alignment along existing roadways. There are no riparian, wetland or aquatic resources on or near the project site.

3.15 FARMLAND PROTECTION

The project site is already dedicated to wastewater and transportation uses. The project area consists of an operating WWTP and paved roadways. No farming activities or active cultivation occur within the project area of impact and no farmland resources occur on the project site to be converted to some other land use.

3.16 COASTAL BARRIER RESOURCES

The project site is located more than 60 miles from the California coast. Thus, this issue does not apply to the project area or to the proposed project.

3.17 OTHER ENVIRONMENTAL ISSUES

3.17.1 Hazards and Hazardous Materials

The project site is located at the edge of a mountain suburban community and at a location where hazardous materials are not used on a routine basis and where no hazardous waste disposal or contamination has occurred historically. The project area is located in an FR-2 Fire Safety Overlay District, i.e., a high fire hazard area subject to wildland fires. This certainly was evidenced by the major fire in the area in October and November of 2003. State Routes 173 and 189 are designated as primary evacuation routes out of the mountain area, with Grass Valley Road being a secondary evacuation route.

The project area was examined for locations of identified Leaking Underground Fuel Tanks (LUFTs) and also active Underground Storage Tanks (USTs). Lake Arrowhead Country Club had a LUFT site, but the case is now closed. There are two open LUFT cases in the area: at the Lake Arrowhead Chevron Station at 325 Highway 173 and at the Lake Arrowhead North Shore Marina at 870 Highway 173. There are seven active Underground Storage Tank sites in the Lake Arrowhead area. The Grass Valley Wastewater Treatment Plant at 2 Pilot Rock Road is identified, as well as the Willow Creek Wastewater Treatment Plant at 2N311 Forestry Road. LACSD's Station No. 33 at 883 Brentwood Drive is identified, additionally. These do not have any public wells near them, according to the state's database information. (http://geotracker.swrcb.ca.gov)

Project construction activities will involve use of equipment containing small amounts of petroleum products and hydraulic fluids. Contract specifications, required by the LACSD will have provisions for proper maintenance of equipment and spill prevention, handling and disposal of such materials. Project operations will involve the storage or use of more chlorine at the Grass Valley WWTP site, although Ultraviolet disinfection has been considered, which reduces chlorine use generally. LACSD can also use sodium hypochlorite instead of gaseous chlorine. LACSD has completed a chlorine Risk Management Plan.

3.17.2 Noise

The project area is generally a forested, recreational area with individual residences. It is isolated from noise-generating activities, except for vehicle traffic noise along Grass Valley Road, which is adjacent to the project sites (Grass Valley WWTP and LACC golf course). A noise study was performed for the proposed Eagle Ridge development, to the east of these main project sites. In 1998, all locations along Grass Valley Road, at 50 ft. from the road, had ambient noise levels of 62.1-64.1 dB CNEL (Community Noise Equivalent Level) (TKC, 1999). State Highway 173 was not included in this study–no recent data available.

Generally speaking, a “quiet rural area” is near the 40 dBA (A-weighted decibels) sound level. Residential developments should be at no more than 65 dBA sound level exterior and no more than 45 dBA interior; these are the standards used for planning by most municipalities. Outdoor recreational uses should also be in the 60-65 dBA range, with 70 dBA as maximum sound level (State of California, 1998).

Construction activities related to the proposed project may generate noise above the 60 or 65 dB (decibel) levels. However, the impacts will affect few residences overall and will be temporary in nature. The new low-head and high-head pumping stations at the Grass Valley WWTP site will generate long-term operational noise. They will be housed in buildings.

3.17.3 Public Services

Mountain Community Hospital is the primary hospital in the area. Paramedic services are provided by the Lake Arrowhead Fire District, which has a Fire Station on Peninsula Drive, one-quarter mile to the east of the project site, as well as a seasonal Fire Station on State Route 173, to the east of the entrance to the Grass valley WWTP. To the south is the Crest Forest Station No. 26, a full-time station in Twin Peaks. Additionally, the San Bernardino County Sheriff’s Department has a regional station on SR 189 in Twin Peaks, approximately three miles from the main project site.

The general area is served by the Rim of the World Unified School District. The nearest school is located one-half mile to the east of the project site, the Mary P. Henck public intermediate school at 730 Rhine Road. There is also one high school located on SR 18 in Lake Arrowhead. UCLA has a conference center on the north central shore of Lake Arrowhead. No formal recreation space or parks occur in the project area, but National Forest public lands do occur in the area surrounding the project area. Such land is available for passive recreational activities, such as hiking.

3.17.4 Recreation

The entire mountain area provides recreational opportunities. In addition to the San Bernardino National Forest lands, San Bernardino County has some parks in the project area: Crest Park and Switzer Park on Highway 18, and Lake Gregory Regional Park in Crestline. Lake Arrowhead has boating, water-skiing, and fishing, sunbathing and swimming. There are three ski resorts in the mountains at Big Bear Lake and near Running Springs. Hiking and camping is allowed in the National Forest lands, as well as Off-Highway Vehicle use in specific restricted areas. There are also private areas for recreation: camping at Dogwood Campground, east of SR 189 and Daley Canyon Road, and golfing at Lake Arrowhead Country Club.

3.17.5 Airport Hazards

There are no airports within the general area and the project site is not near any active flight hazard zones.

3.17.6 Environmental Justice

Environmental justice issues are related to a minority or low-income population that has or will be exposed to more than its fair share of pollution or environmental degradation if a project is implemented. The project site is located in an area where the existing community population has a median income that is higher than the County as a whole. Further, the project site is not located in a neighborhood that suffers from exposure to adverse human health or environmental conditions. Refer to the discussion under subsection 3.7, Population and Housing.

3.17.7 Unique Natural Features and Areas

The project site and pipeline alignment are located on the north slopes of the San Bernardino Mountains. There are no unique natural features within the WWTP boundary or adjacent or near the pipeline alignment.

3.17.8 Sole Source Aquifer

Groundwater is located 200-564 hundred feet beneath the project area. The District obtains its water supply mostly from Lake Arrowhead or wells that intercept fractures in the underlying granitic bedrock. This bedrock aquifer is not designated by the federal Environmental Protection Agency (EPA) as a “sole source aquifer.”

3.17.9 Site Access and Compatibility

The land use designations on the properties adjacent to the project site primarily consists of low density residential uses and National Forest public land open space. The WWTP is authorized under a Special Use Permit from the San Bernardino National Forest.

Public access exists to the WWTP project site and the pipeline alignment on paved roads.

3.18 INVASIVE SPECIES

Much of the project area was covered with non-native plants, such as grass, and with paved or compacted dirt. Invasive weed species can and do occur along the disturbed area on the WWTP project site or along the pipeline route at random locations.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

The proposed project, the construction of new WWTP facilities to allow the production of approximately 1 mgd of recycled water to be used initially for irrigation of public landscaped areas. The decision to proceed with a recycled water program is based on the limited potable water supplies available in the vicinity of Lake Arrowhead in the San Bernardino Mountains. Implementation of the proposed project will cause both temporary and permanent changes to the physical environment during construction; however, the addition of these wastewater system infrastructure improvements and distribution pipeline are considered essential by the District to continue meeting the public health and safety requirements for and overall adequate water supply within its service area. Based upon the existing environmental conditions outlined above in the "Affected Environment" discussion, this section of the Environmental Assessment (EA) evaluates the effects of the changes on the environment. The Environmental Consequences section is organized in the same topical order and environmental issues are presented in the same order as the issues are presented in the previous discussion. The following issues are evaluated by using the questions posed for each issue in the standard CEQA Initial Study Environmental Checklist Form, which facilitates environmental evaluation in a format that can be used for future CEQA documentation as well.

4.1 AIR QUALITY

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The governing air quality management plan (AQMP) was adopted and is implemented by the South Coast Air Quality Management District (SCAQMD). The air quality issues related to this project are from construction activities, including grading (site preparation for treatment facilities, pump stations and storage tank), excavation and filling (trenches for water lines). Emissions will be in the form of fugitive dust, emissions from heavy equipment and construction worker and truck vehicles during the construction period. There may be an increase in operational emissions from use of the new treatment facilities and from worker vehicles for maintenance activities. There are no cumulative emissions to consider, as this project only serves current uses (recreational golf course) and is not considered to be growth-inducing.

The small size of the project, as well as its temporary and localized effects, should not generate sufficient emissions to cause any conflict with or obstruction of the implementation of the applicable Air Quality Management Plan. Further, use of recycled water is consistent with State and regional policy related to regional growth, so implementation of this project would be fully consistent with regional planning documents, including the Regional Comprehensive Plan and Guide. This makes the project consistent with the AQMP.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant With Mitigation Incorporation. The proposed project consists of onsite modifications to the existing wastewater treatment process and the diversion and use of

recycled water for irrigation to replace the existing use of potable water being used for irrigation within the District's service area. There would be no direct effects on air quality from utilizing up to 300 acre- feet of recycled water to irrigate the Lake Arrowhead Country Club golf course. The only indirect effect will be the emissions associated with electricity to pump the recycled water to the golf course. The emissions associated with increased electricity consumption to pump the water is described below.

The construction phase of the project may generate fugitive dust. The SCAQMD CEQA Air Quality Handbook established a quarterly grading acreage of 177 acres as being below the threshold of significance from an air quality standpoint. The proposed project falls below this threshold, as the entire project area for construction, for putting in new facilities at the Grass Valley WWTP and associated pipeline emplacement along Grass Valley Road is an estimated maximum of 6.88 acres. Improvements to the irrigation system at LACC will affect less than one acre. As a result the fugitive dust emissions will be well under 52.4 lbs per day (one acre of exposed soil) and less than 26.2 lbs/day of PM_{10}.

Some standard mitigation measures are used to minimize any localized fugitive dust which can cause nuisance impacts. These will be applied to the proposed project.

AQ-1 Measures to control fugitive dust during construction:

- ***Water will be used for short-term surface stabilization.***
- ***Chemicals or vegetation will be used for surface stabilization upon completion of grading activities if subsequent site developed is delayed.***
- ***Trackout on paved roads will be minimized.***
- ***There will be rapid cleanup of project-related trackout or spills on paved roads.***
- ***Haul trucks will be covered.***
- ***Grading and other soil movement activities will be minimized when winds exceed 30 mph.***

Emissions from vehicle traffic related to the project are not analyzed in detail. It is estimated that there might be 30 vehicle trips per day for an estimated 15 workers during the eighteen-month construction period at Grass Valley WWTP. There will be 7-10 persons a day working on the Grass Valley Road pipeline, with an estimated 8 vehicle trips per day, for three months, and fewer employees for the LACC irrigation system improvements. Operational emissions will be due to some new staff at the Grass Valley WWTP, which would be much less than the construction traffic, i.e., four to six additional trips per day. The South Coast Air Quality Management District (SCAQMD) considers 2,900 vehicle trips per day significant for mobile source emissions. There will be no significant impact for operations, according to these guidelines, even if construction traffic is 50 vehicle trips per day due to concurrent construction activities. Additional measures to be implemented include:

AQ-2 Measures to control construction traffic emissions:

- ***Efficient scheduling of equipment use, with a phased construction schedule to reduce the number of units operating simultaneously.***

- ***Performing regular engine maintenance on all equipment.***
- ***Provisions of local equipment storage areas so that equipment trips to the site can be reduced.***
- ***Construction personnel will be encouraged to ride share to reduce vehicle trips to the site.***
- ***Shut down equipment when not in use for more than 15 minutes.***

The only increase in long-term emissions associated with implementing the proposed project will be from the emissions generated from the additional electricity that will be consumed to pump the recycled water to the golf course. Assuming that maximum day demand for electricity is from a 300 horsepower pump station emissions would be as follows, using the SCAQMD CEQA Handbook, Table A9-11-B. One horsepower is equivalent to about .75 kilowatt hour. Thus, the hourly demand for the pump station is forecast to be about 225 kwh and the 24 hour demand would be for about 5.6 megawatt hours of electricity, again on the maximum summer day. Unmitigated electricity emissions from this demand would be:

Pollutant	Emissions/Day	Threshold
Reactive Organic Gas =	<1 lb per day	75 lbs per day
Nitrogen Oxides =	8.1 lbs per day	100 lbs per day
Carbon Monoxide =	1.4 lbs per day	550 lbs per day
Sulfur Dioxide =	<1 lb per day	150 lbs per day
Particulate Matter (PM10) =	<1 lb per day	150 lbs per day

Based on the emission data for the proposed project during operations, the full utilization of the pump station on a maximum summer day will not exceed the emission thresholds, and is in fact far below the thresholds. Thus, the project has no substantial indirect effect on air quality from delivery of recycled water to the golf course.

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant With Mitigation Incorporation. The project will not cause a cumulatively considerable net increase of any non-attainment pollutant (i.e., ozone and particulates, for this area) with implementation of mitigation. Refer to above information.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant With Mitigation Incorporation. The project area is generally located in a rural mountainous area. However, there are several residences near the golf course in the Arrowhead Woods community, mostly to the west of the proposed irrigation pipeline. The nearest school is located one-half mile to the east of the project site, the Mary P. Henck public intermediate school at 730 Rhine Road. Emissions are not forecast to be significant, but mitigation has been defined to ensure that local fugitive dust nuisance effects will not significantly affect the neighbors. Thus, pollutant concentrations to be generated by the project should not affect sensitive receptors.

e. Would the project create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Use of construction equipment for site preparation and excavation may result in some temporary and localized odors from use of diesel fuels. The overall project involves recycled water treatment facilities at the WWTP, which does produce odors. Operation of the new facilities is not anticipated to create any significant new objectionable odor impacts. There are no plans to expand facility odor controls at this time. The Grass Valley WWTP is located in an isolated area, so that there are few receptors in the area to be affected.

4.2 HYDROLOGY AND WATER QUALITY

a. Would the project violate any water quality standards or waste discharge requirements?

Less Than Significant Impact With Mitigation Incorporation. The proposed project consists of onsite modifications to the existing wastewater treatment process and the diversion and use of recycled water for irrigation to replace the existing use of potable water being used for irrigation within the District's service area. The following direct effects on water quality would result from utilizing up to 300 acre- feet of recycled water to irrigate the Lake Arrowhead Country Club golf course. The only indirect effect would be on the water quality of the underlying ground water, which is determined to be a less than substantial effect based on the Antidegradation Study prepared for this project.

The project will meet the stringent bacterial standards for disinfected tertiary recycled water through the use of the additional new facilities at Grass Valley WWTP, i.e., the Tertiary Treatment Process and Ultraviolet (UV) disinfection system. The project will meet the nitrogen drinking water standard of 10 mg/l as nitrogen or 45 mg/l as nitrate. Existing denitrification facilities are used for the recycled water going to the Hesperia Disposal Site. The recycled water would continue to meet the current nitrogen standards of 10 mg/l maximum and 8 mg/l 30-day average, which were derived for the Upper Mojave River groundwater basin. This is also the designated underlying shallow groundwater basin in the proposed project area. However, the project might not be able to meet the very low nitrogen concentrations found in groundwater in the deep wells on the golf course. Whether to apply these levels as "ambient" for non-degradation is an issue, since the irrigation water is more likely to continue through the shallow alluvial aquifer of Grass Creek towards the Mojave River and will not affect the deep wells in any way.

In terms of TDS, the existing Grass Valley WWTP effluent produced by secondary wastewater treatment is 320 mg/l TDS, which is higher than either receiving groundwater supply. See Table 6 (located at the end of this Chapter) which contains effluent water test data. This was cited as an issue in the current Waste Discharge Requirements (WDRs) contained in R6V-2002-0008, under items 22 and 23. "TDS concentrations in the discharge exceed background concentrations of TDS in ground water underlying the Hesperia Disposal Site...A provision of these WDRs includes a schedule the Discharger must meet to prepare a Phase I Report to quantify the magnitude and extent of TDS degradation of ground water that may be caused by use of the Percolation Ponds for disposal." Thus, there would be no change in impacts in the new operations from those of the previous, however, the location of the impacts would change.

The Antidegradation Study for the proposed project is provided in Appendix E to this document. The analysis focuses specifically on the planned irrigation of the LACC golf course with recycled water to be produced by the Grass Valley WWTP. The Study reached the following findings: *"The proposed use of Title 22-quality recycled water for direct reuse at the Lake Arrowhead Golf Course will not exceed the Mojave River Basin TDS water quality objective of 500 to 1,000 mg/L, as stated in the Basin Plan. Even when the TDS of recycled water is in the lower range of the objective, it should be taken into consideration that the water will only be used to irrigate the Golf Course from May to October. Therefore, the proposed project will not substantially degrade water quality.*

Based on the forecast quality of the recycled water and the short-period of application of recycled water during the summer when runoff is minimal, no adverse effect to water quality in Grass Valley Lake or in the creek downstream from the golf course will result from implementing the proposed action. Again, it is important to note that the golf course only requires irrigation during the summer, when surface runoff is minimal within the San Bernardino Mountains. No residual materials of any adverse consequence remains within the recycled water that would adversely impact Grass Valley Lake or downstream creek areas. As a result of controls on irrigation to minimize or eliminate any runoff to Grass Valley Creek, no known adverse effects are forecast to adversely effect this creek or any other waters of the United States.

Some wastewater will be generated by the project during construction, such as for dewatering trenches. Accidental discharge containment for the construction activities will be via a series of either wrapped or unwrapped hay bales placed along the downhill gradient of the trenches. This will be followed by other containment barriers as needed to protect the natural Grass Valley Creek drainage or Grass Valley Road.

Management of silt and sedimentation is important during the construction period, due to the project's location in a riparian corridor. The mitigation measures shown in number 3 in this section are required to reduce impacts of the above-described potential construction-related discharges.

The continued discharge of the effluent to the Hesperia disposal field will not cause any direct effect on water quality. This occurs because the treated effluent will either remain the same in quality, or it will be enhanced as a result of the additional treatment required to meet the Title 22 requirements. Therefore, the effect of the proposed project on continued discharge at Hesperia will either be neutral or improved relative to the existing condition.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Deep-drilled wells in the project area are considered to have adequate water supplies. Groundwater production is typically controlled by structural features such as fault zones and jointing, and weathered granitic rock. Wells are not subject to seasonal fluctuations in groundwater recharge as are shallower wells. Existing wells on Lake Arrowhead Country Club grounds are 350-665 feet below ground surface (BGS). No effect on these wells is anticipated this project. Further, the proposed project will reduce the consumption of surface

water supplies, which are considered to be a source for local groundwater recharge, as well as offsetting future use of groundwater resources.

The direct effect of using up to 300 acre-feet of recycled water at the golf course will be to reduce the volume of direct discharge to the Hesperia disposal field, or about 20% of the annual discharge of about 1,500 acre-feet. However, as the use of recycled water will offset potable water use for irrigating the golf course (either from ground water or surface water resources on the mountain), the total water within the Basin remains the same. Thus, the direct effect at the Hesperia disposal field will be to reduce immediate recharge, but the net effect on the Mojave River Basin will remain neutral and less than significant. The cumulative effect of directly reducing discharges to the Hesperia disposal field will be offset over time by the increased flow of ground water into the Mojave River Basin. No adverse cumulative effect to water within the Mojave River Basin, over the long-term, is forecast to result from implementing the proposed project.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?

Less Than Significant With Mitigation Incorporation. There will be temporary impacts during the construction phase, in which surface drainage might be changed especially in areas around excavations of trenches. Best management practices (BMPs) will be included in engineering specifications for the project. At a minimum, the following measures will be employed to minimize erosion or siltation.

WQ-1 Measures to reduce erosion and siltation:

- ***Excavation or grading activities will be suspended during periods of high winds or heavy rains.***
- ***Excavations will be left open for as short of a time as possible.***
- ***Construction site soils, where exposed, will be stabilized to control potential erosion from the site with methods determined most suitable by the District.***
- ***Stormwater will be diverted around active construction or staging areas, through use of barriers or temporary channels.***

There may be discharges for dewatering of excavations for new facilities at the Grass Valley WWTP site, as well as for pipeline trenches. These discharges will be directed towards specified locations, with care to avoid the Grass Valley Creek drainage corridor. The following mitigation measures will be applied to the proposed project. These measures were required by the California Department of Fish and Game for another recent project, installing new water supply wells in the Grass Valley corridor.

WQ-2 Measures to reduce erosion and siltation impacts on Grass Valley Creek:

- ***Silt settling basins shall be located away from the stream or lake to prevent discolored, silt-bearing water from reaching any stream or lake during any flow regime.***
- ***Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks will be placed on dirt roads, cat tracks, or other trails to control erosion.***
- ***Water containing mud, silt, or other pollutants shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows. A silt catchment basin(s) shall be constructed of silt-free gravel to capture water prior to entering a stream. Upon completion of the project and after all flowing water in the area is clear of turbidity, the gravel along with the trapped sediment shall be removed.***
- ***Silty/turbid water shall not be discharged into any stream or water course. Such water shall be settled, filtered, or otherwise treated prior to discharge.***
- ***Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require that the work site be isolated and/or the construction silt catchment basins, so that silt, or other deleterious materials are not allowed to pass into streams.***
- ***If an off-stream siltation pond/s is/are used to control sediment, pond/s shall be constructed in a location, or shall be designed, such that potential spills into the stream/lake during periods of high water levels/flow are precluded.***
- ***Catchment basins shall be constructed of materials which are free from mud and silt. Upon completion of the project, all basin material along with the trapped sediments shall be removed in such a manner that said removal shall not introduce sediments into any stream.***
- ***Upon CDFG determination that turbidity/siltation levels resulting from the project-related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation, shall be halted until effective CDFG-approved control devices are installed, or abatement procedures are initiated.***

d. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?

Less Than Significant With Mitigation Incorporation. There will be temporary impacts during the construction phase, in which surface drainage within the minor area of construction may be modified. Best management practices (BMPs) will be included in engineering specifications for the project. At a minimum, the following measures will be employed to minimize increases in the rate or amount of surface runoff.

Over the long-term the project is not forecast to substantially increase runoff from the golf course as a result of using recycled water. This occurs for two reasons: first, the golf course is

watered only during the summer months, so the recycled water does not contribute to runoff during the winter storms that provide almost all rainfall to the project area; and second, golf course watering will be carefully controlled to limit any runoff from the golf course during periods of irrigation. This is to minimize losses of water, but also to minimize transport of fertilizers and other materials from the project site. Thus, the effect on surface runoff from the golf course when recycled water is applied for irrigation will not be substantially adverse.

WQ-3 Measures to reduce surface runoff:

- ***Excavation or grading activities will be suspended during periods of heavy rains.***
- ***Excavations will be left open for as short of a time as possible.***
- ***Barriers or temporary channels will be used around active construction or staging areas to direct surface runoff to specified locations.***

With the implementation of the mitigation measures presented above, no further mitigation should be necessary.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant With Mitigation Incorporation. There could be temporary impacts during construction. See previous responses.

f. Would the project otherwise substantially degrade water quality?

Less Than Significant With Mitigation Incorporation. Besides bacteria, TDS and nitrogen, as discussed in item a on recycled water quality, recycled water is typically higher in Total Organic Carbon (TOC), phosphorus, Total Suspended Solids (TSS), turbidity (measured as NTUs), Biological Oxygen Demand (BOD), metals, fluoride, chloride and boron. Phosphorus, like nitrogen, is a plant nutrient. Use of recycled water for irrigation of golf courses can actually reduce the use of fertilizers. This would be a benefit of the project, in that fertilizer use at this particular golf course has been cited as a problem for contamination of shallow aquifers in the Basin Plan. TDS usually represents a variety of “salts.” If these salts are in the form of sodium chloride, there could be some potential for damaging vegetation. Sensitivity to boron could be a similar issue, as some plants get leaf burn (particularly avocado and citrus crops). Sodium, fluoride, boron and heavy metals can be phytotoxic ions, the effects dependent upon concentrations and type of receiving vegetation (Asano, 1998).

Generally, the allowed concentrations of TOC, TSS, turbidity, BOD, metals and boron in tertiary-treated wastewater are very low, compared to the levels allowed in secondary-treated effluent. The LACC golf course will have a potable water irrigation system, as well as the new recycled water system. Thus, if any problems to receiving vegetation arise, especially on the greens, the irrigation water type can be switched. In addition the following mitigation will be implemented.

WQ-4 LACSD shall coordinate with LACC to define permissible concentrations of chemicals that could harm the golf course turf or other landscaping. Concentrations of chemicals of concern shall be maintained below these thresholds or irrigation shall be achieved by balancing recycled water applications with existing water source applications.

g. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The project does not propose new housing. The project site is within the Grass Valley Creek corridor, which is a flood hazard area only used for recreational purposes (golf course). The project only serves existing housing and is an improvement to the current water supply and distribution system. Therefore, no impacts can be identified and no mitigation is required.

h. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less Than Significant Impact. The project will involve the construction new facilities at the Grass Valley WWTP site. The structures will be within a flood hazard area. The facilities are located in previously disturbed areas and are being designed to work in conjunction with and supplement existing drainage controls. There will be no net increase in off-site drainage. Thus, they should have no new significant effect on flood flows.

i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flood as a result of the failure of a levee or dam?

No Impact. The project serves existing uses in an authorized low-density development area. The project will not expose any new populations to potential flood hazards. Structures may be subject to loss from flooding. However, there are no levees or dams involved.

j. Would the project cause inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. The project area is over 70 miles inland from the Pacific Ocean at an elevation of over 5,000 feet. Due to the project area's distance from the ocean and elevation, there is no potential for a tsunami. The project area is located downstream of a small lake (Grass Valley Lake) and not near a large surface water body (Lake Arrowhead). There is no potential for inundation by seiche (seismically induced wave action) due to water bodies.

The standard Zone 4 earthquake design requirements and interior bracing of the project facilities will be adequate to avoid catastrophic damage from any potential seiche occurrence. Finally, the project area is in a slightly sloping area with soils derived from granitic materials. Thus, the risk of mudflow is minimal.

4.3 UTILITIES / SERVICE SYSTEMS

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The proposed project will provide additional treatment that will allow the District to exceed its existing wastewater discharge requirements and to adhere to stringent new requirements for use of recycled water. Refer to the discussions under items a and f under Section VIII, Hydrology and Water Quality. Fundamentally, the new project will result in a benefit due to the enhanced water quality for about one-half of the discharge from its treatment facility.

b. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. The project itself involves the construction of new wastewater treatment facilities and associated recycled water distribution system pipeline, connections, and storage. The result will be an improvement in the availability of water for use within the LACSD service area. The proposed project is not forecast to cause any adverse effects to other existing facilities in the LACSD service area.

c. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The project will result in no permanent new storm water drainage facilities or expansion of existing facilities. This project will disturb approximately 0.83 acres at the Grass Valley WWTP, 1.72-6.88 acres for the pipeline along Grass Valley Road, and less that one-quarter acre at the LACC golf course. Some temporary storm water best management practice facilities will be required during construction. The threshold for a Construction Stormwater Permit is currently 2.5 acres. This permit will be required. However, the general mitigation measures outlined under Section III, Air Quality and Section VIII, Hydrology and Water Quality will be applied to this project to control storm runoff and potential erosion during construction.

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The project will benefit public water supplies to the existing and future development by reducing use of surface water and groundwater resources. Therefore, the impact is identified as being beneficial, not adverse. No new water entitlements are needed.

e. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The project is being proposed by the wastewater agency, LACSD. It does not involve the need for new wastewater services, and capacity of the treatment system will be enhanced by the proposed project.

f. Would the project be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. The project will generate some small, unquantifiable amount of construction-related waste, likely to consist of miscellaneous vegetation and related debris. This waste will be disposed of in the County's San Timoteo Canyon Landfill. Other waste may

include downed dead and dying trees along the ss pipeline alignment, which, if impacted, will be disposed of through County-approved methods and locations.

g. Would the project comply with federal, state and local statutes and regulations related to solid waste?

No Impact. The solid waste to be generated by this project will be a minor amount of construction debris, which are waste types accounted for in statutes and regulations and allowed to be disposed at the San Timoteo Landfill.

4.4 LAND USE / PLANNING

a. Would the project physically divide an established community?

No Impact. The project does not involve construction of new structures that would cause any physical divisions of communities.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project is in conformance with the County of San Bernardino General Plan. The County and several agencies that provide services have been making an effort to reach rural residential areas. This particular project will not provide new water services, but will only improve existing services within the Mountain planning area.

c. Would the project conflict with any applicable habitat conservation plan or natural community or conservation plan?

Less Than Significant Impact. The project area generally is within habitat for some federally- and state-listed protected species. No species were observed during the Biology Survey (Appendix F). Bird nests were not encountered during the Biological Survey. However, the State of California prohibits the take of active bird nests. Mitigation measures were outlined in the Biology Section that ensure any nests will be protected. No additional mitigation is required.

4.5 TRANSPORTATION / TRAFFIC

a. Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Less Than Significant Impact. Construction activities will result in temporary traffic increases for construction worker community and equipment and materials deliveries. The project is anticipated to generate approximately 50 vehicle trips per day, for both construction worker commuting and trucks. Of these 20 trips are expected to occur during peak hour periods. The temporary volume of trips is so small as to not pose any significant increase in traffic relative to the capacity of the existing roadways. Long term trip generation is not forecast to be greater than one or two additional trips per day for maintenance and observations of facilities.

b. Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. Based on the forecast volume of traffic, the proposed project will not cause any change in levels of service on the existing roadways. See issue (a) above.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The project has no potential to affect on any air traffic patterns.

d. Would the project substantially increase hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (i.e., farm equipment)?

Less Than Significant With Mitigation Incorporation. The project will only affect area traffic temporarily during the construction period. The potential to affect emergency access and evacuation routes has been addressed under Hazards, Section VII above. A potential does exist to create traffic hazards during construction so the following mitigation will be implemented during construction on local roadways.

TR-1 The LACSD shall prepare a construction traffic management plan for work in public roads that complies with the Work Area Traffic Control Handbook or other applicable County of San Bernardino and Caltrans standards to provide adequate traffic control and safety during construction activities. The performance standard for the plan shall be the provision of safe, albeit inconvenient, traffic flow during construction and the provision of adequate access through construction areas, or adequate detour routes, to meet safety and emergency vehicle access and transit through construction areas at all times when construction is underway for any components of the proposed project.

e. Would the project result in inadequate emergency access?

Less Than Significant With Mitigation Incorporation. During construction activities, the existing internal roads at the Grass Valley WWTP and Lake Arrowhead Country Club may be temporarily blocked for parking or equipment staging. Construction of the pipeline alignment along Grass Valley Road may affect traffic. Deliveries of equipment to the Grass Valley WWTP may affect traffic on SR 173. Both of these roads must be kept open as emergency evacuation routes. Mitigation identified under Hazards and under issue (d) above will ensure that adequate emergency access is maintained during construction in public roadways.

f. Would the project result in inadequate parking capacity?

Less Than Significant Impact. The project will have little impact on parking capacity. There may be increased staff at the WWTP (one or two individuals), but adequate area is available for parking at this facility for facility employees.

g. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (i.e., bus turnouts, bicycle racks)?

Less Than Significant Impact. The project does not involve a substantial number of construction or operating employees, nor does it contribute to any new population. Thus, it should not have any effect on alternative transportation. The project area is located where public transportation service is limited or non-existent.

4.6 NATURAL RESOURCES

4.6.1 Biological Resources

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant With Mitigation Incorporation. The Biological Survey found no state or federally listed endangered or threatened species in the areas of proposed construction (golf course, treatment facility and pipeline alignment). However, there is potential for listed species to exist. The following mitigation measure will be applied to the project:

BIO-1 Mitigation Measure to reduce or eliminate impacts on listed plant or animal species:

- ***In the event a listed species is observed with the construction areas prior to or during grading/construction, construction will be immediately stopped. A qualified biologist will be called to assess the situation and to determine subsequent actions.***

Over the long-term the use of recycled water will occur at a direct 1:1 ratio to the existing application of potable water for irrigation purposes. Since the water quality will not be substantially degraded from use of recycled water and since the application rates for recycled water will be commensurate with existing irrigation practices, no degradation in the habitat either adjacent to and surrounding the golf course or downstream of the golf course in Grass Valley Creek is forecast to result from implementing the proposed project.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game of U.S. Fish and Wildlife Service?

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal filling, hydrological interruption, or other means?

No Impact. The riparian and wetlands areas related to the golf course and Grass Valley WWTP site are not proposed to be subject to construction activities. Particularly, the one wetlands area at the WWTP site is not to be affected. No drainage crossings are proposed at the golf course. Thus, there will be no direct impacts to these areas. Potential temporary construction impacts are addressed under Section VIII, Hydrology and Water Quality.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. The above ground impacts of pipeline emplacement are temporary and have no potential to impact migratory movements of native species. Also, the areas to be affected by the proposed project are already disturbed and subject to human uses (golf course, road and treatment plant site). Because the permanent above-ground

infrastructure is located at an operating treatment plant, there is no potential to impact migratory corridors.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant With Mitigation Incorporation. Bird nests were not encountered during the Biological Survey. However, the State of California prohibits the take of active bird nests. Thus, the following mitigation measures apply to ensure conformance when actual construction activities begin.

BIO-2 Mitigation measures to ensure conformance with conservation plans and policies:

- ***Any grubbing or brushing to occur on the property should be conducted outside of the State identified bird breeding season of February 15 through September 1.***
- ***Alternatively, the site would need to be evaluated by a qualified biologist to determine if birds were nesting in the shrubs or trees to be removed prior to initiation of ground disturbance.***

The proposed pipeline emplacement along existing roadways may impact a small area of coniferous trees and montane chaparral habitat. There are trees greater than 6-inches in diameter within the project area. Removing or damaging such trees may require a permit from the County of San Bernardino. The pipeline route and required staging areas will be surveyed prior to any construction, but at this time no trees are proposed for removal. Thus, the project should not conflict with these policies and regulations.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed project is not located within the area of an adopted or proposed Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

4.6.2 Geology and Soils

a. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Strong seismic ground shaking? Seismic-related ground failure, including liquefaction? Landslides?

Less Than Significant With Mitigation Incorporation. The project, development of new wastewater treatment facilities, and water lines, will be designed to meet seismic specifications of the County and the LACSD, which are stringent due to the LACSD's boundaries being in a seismically active area. The project does not involve placing any new population in the area, therefore no significant impacts are forecast to occur for this issue. The new wastewater facilities and storage tank must be designed to meet the high seismic risks.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant With Mitigation Incorporation. Construction activities will result in excavation and replacement of up to approximately 14,000 cubic yards of soil, the types of which are considered to have a moderate to high erosion hazard. An additional few hundred cubic yards of material will be excavated on the golf course, but the shallow slope and adjacent landscaping minimize the potential for erosion hazards. Thus, some soil erosion, through both wind erosion (fugitive dust generation) and water erosion (stormwater runoff) could occur. Appropriate mitigation measures and best management practices will be employed during construction to minimize any impacts, as presented in the air quality and hydrology and water quality sections of this analysis.

c. Would the project be 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. The project is located in an area of Morical-Wind Rivers complex and Pacifico-Wapi soils, which pose a moderate to high erosion hazard and are located on slopes of 15-50%. Construction will occur in very defined and contained areas such that adjacent areas should not be affected, however. Certain construction practices will minimize impacts, as listed in other sections of this document.

d. Would the project be located on expansive soil, as defined in Table 18 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. Soils in the project area are sandy loamy types, which have low to moderate shrink-swell potential, and are do not contain clay which would be expansive.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project does not involve septic tanks or waste water disposal systems such that this would be an issue. Therefore, no impacts are forecast to occur.

4.6.3 Mineral Resources

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The proposed project is not in an area with identified aggregate resources. No other minerals are known to occur in the area. No impact is expected to occur and no mitigation is required.

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The proposed project is not in an area with identified aggregate resources. No other minerals are known to occur in the area. No impact is expected to occur and no mitigation is required.

4.6.4 Visual Resources / Aesthetics

a. Would the project have a substantial adverse effect on a scenic vista?

No Impact. The project will not change land uses, or affect the existing scenic vistas in the project area or visual aspects of the area. The construction activities will be temporary and localized. The only new structures, which are treatment facilities, pump stations and a water storage tank, will be placed within the footprint of the existing Grass Valley WWTP. The structures will match the other structures at this site. The site is isolated from view, away from the road and surrounded by natural features.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. The project site is not located on a state scenic highway, such that this is not an issue. Grass Valley Road is a county-designated scenic highway, however. It is proposed to put the recycled water pipeline here. This would be a temporary impact during construction. This project should not permanently affect views to or from this road.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. There will be no permanent visual impacts from the new treatment facilities, storage tank, pump stations, and water transmission lines. The new facilities, pump stations and storage tank will be within the footprint of the existing Grass Valley WWTP. Emplacement of the pipeline will cause temporary impacts along Grass Valley Road. Improvements to the irrigation system at LACC will cause temporary visual impacts during construction; they should not create any new permanent above-ground features that will substantially degrade the existing visual quality of the project area.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The construction areas may be temporarily lighted if activities are conducted through the early evening, but this is not anticipated. Provisions will be made for exterior lighting at the new facilities and storage tank, located within the Grass Valley WWTP. This lighting is installed for safety and access control. The additional lighting will be directed onsite and is not forecast to be significantly greater than the current lighting at the facility. As impacts are considered to be minimal, no mitigation is needed.

4.7 POPULATION AND HOUSING

a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact. The project is intended only to improve reliability of water service to an existing recreational facility, the golf course. However, the issue of making additional potable water available would seem to have a potential to allow additional population growth or

cumulative changes in future water supply. In fact, this is not the case for the following reasons. The District is short on water supplies and is already initiating efforts to bring in imported water supplies to assist in meeting its current demand for potable water. The District's overall Water Supply Plan indicates that it will need to implement the use of recycled water irrigation in order to meet both the existing and long-term demand within its service areas due to limitations on use of water in Lake Arrowhead. Thus, the net result of using recycled water does not make potable water available for growth, only to meet current or near term demands. Over the long-term, the import of water supplies or development of totally new water supplies will allow the District to meet the demand for potable water within its service area, but is not forecast to cause or contribute to cumulative or growth inducing effects. The proposed project would be wholly consistent with the land use designations allowed in the County General Plan for the area encompassed by the District service area.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project does not involve changing existing housing.

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Refer to item (a) above. No impact is forecast to occur as the project does not involve changing existing housing.

4.8 CONSTRUCTION ASPECTS

Construction impacts and related mitigation measures are described in various parts of Section 4 of this document. Many of the construction impacts addressed in this document are subject to mitigation and the proposed project can be implemented without any significant adverse short-term environmental effects. No long-term construction impacts are forecast to result from project implementation.

4.9 ENERGY ISSUES

Overall, the project will consume some energy during the construction period, primarily the use of petroleum-based fuels for equipment. Some electricity will be consumed for operating the additional treatment facilities and the pump stations. These uses can be served through existing energy resources, such that impacts should be minimal.

4.10 COASTAL ZONE MANAGEMENT ACT

There are no identified impacts for the proposed project. The project is not located in any coastal zone management area.

4.11 CULTURAL RESOURCES

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less Than Significant With Mitigation Incorporation. One historic site may be impacted by the proposed construction, the Grass Valley Tunnel at the southern end of the proposed alignment. The field survey did not yield any evidence of this feature. However, a general mitigation measure will be applied to this project.

CR-1 Mitigation to prevent any impacts to historical resources:

- ***In the event that historical resources are encountered during project construction, construction activities will be halted or redirected until a qualified archaeologist can evaluate the nature and significance of the finds.***

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant With Mitigation Incorporation. No archaeological resources are expected to be affected by the proposed project. The Cultural Resources Survey included a Native American consultation. One response from a regional tribe requested that an archaeological monitor be present during construction activities. A second response requested that an approved Native American monitor be present.

Therefore, this general mitigation measure will be applied to the project.

CR-2 Mitigation to prevent impacts to archaeological resources:

- ***An approved Native American monitor will be present to monitor all initial earth-moving construction activities. Once all excavation and trenching are completed and the trenches are being refilled and compacted, monitoring is no longer required. Should archaeological resources be encountered, construction activities will be halted or redirected until such qualified archaeologist can evaluate the nature and significance of the finds.***

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. The soils in the project area have evolved from highly metamorphosed granitic bedrock that has a very low potential to contain any paleontological resources. No potential for adverse impacts to such resources will occur from implementing the proposed project. No unique geologic or physical features occur on the project area.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant With Mitigation Incorporation. No known human remains occur within the area of potential affect of the project. However, the County requires a standard mitigation measure.

CR-3 Mitigation to minimize impacts on human remains:

- ***In the unlikely event that human remains should be encountered during the construction of the proposed project, all construction will cease and the San Bernardino County's Coroner Office will be contacted within 24-hours of the discovery.***

4.12 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act does not apply to this project, since no such rivers occur within or near the proposed project site.

4.13 ENDANGERED SPECIES

Please refer to the biology survey of the project area of effect provided as Appendix F to this document. Based on the records reviews and field surveys, the San Bernardino Mountains host several known listed and sensitive plant and animal species. However, based on the site specific surveys for biological resources in support of the proposed project, no federal or state listed, protected or sensitive species within the area of potential effect on the WWTP site, along the pipeline alignment or on the golf course. Some use by foraging raptors would be expected on the golf course, but the net effect of the proposed project is to maintain the golf course in its present condition. However, these species are quite mobile and use wide areas of open space, as partially located on the site and in the surrounding area. Therefore, no further environmental analysis or mitigation is required.

4.14 FLOODPLAIN MANAGEMENT AND PROTECTION OF WETLANDS

No flood hazards or floodplains occur in the project area. No wetlands were discovered on the project site. Therefore, the proposed project can have no adverse impact on any floodplain management strategies nor any wetlands. No mitigation is proposed.

4.15 FARMLAND PROTECTION

a. Would the project convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use?

No. The project area does not contain any farmland and none occurs within the surrounding desert area that could incur indirect adverse impact. No mitigation is proposed.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No. See item (a) above.

c. Would the project involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No. See item (a) above.

4.16 COASTAL BARRIER RESOURCES

There are no such resources to be affected by the proposed project. The project area is 70 miles inland from the California coast.

4.17 OTHER IMPACT ISSUES

4.17.1 Hazards and Hazardous Materials

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. The only hazardous material associated with both construction and operation of the project will be in the form of petroleum products. The new pumps (low-head and high-head) will need backup generators if they are required to be available during a power outage, which are usually run on diesel fuel. There also will be chlorine delivered to the Grass Valley WWTP site for the treatment facility. The plant upgrade will increase chlorine gas usage by approximately 2,000 lbs/year. On-site storage of chlorine or sodium hypochlorite will continue.

The LACSD has standard operational procedures for safe transport and use of its operational and maintenance materials. The agency will have to add the new facilities to its current Business Contingency and Emergency Plan. The LACSD has a chlorine Risk Management Plan, which will be revised to include the additional use and storage. No other mitigation measures are necessary.

b. Would the project create a significant hazard to the public or the environmental through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. There should be no materials used in relation to this project that might cause any hazard more than those currently used at the Grass Valley WWTP (i.e., petroleum products for construction equipment and pumps; chlorine for disinfection)). Potential impacts of this project are minimal.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There is one existing school near the project area, along the Grass Valley pipeline alignment. However, this school is located one-half mile to the east. It is the Mary P. Henck public intermediate school at 730 Rhine Road. No impact is forecast to occur to this school from installing the pipeline.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Refer to the discussion under the Environmental Setting of this section. The project would not impact or be impacted by any known contaminated site.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project area is not near any airport, such that this would be an issue.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

See response to (e) above.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact With Mitigation Incorporation. The project area is partially located on SR 173, which is a designated primary evacuation route out of the mountain area. Grass Valley Road is a designated secondary evacuation route. Therefore, closure of these roads is not allowed, except when a bypass or detour route is provided as part of a traffic management plan. Some additional planning for construction activities will be needed, with Sheriff's Department and local fire stations (County and Forest Service).

HAZ-1 During construction of the pipeline, local emergency response providers shall be contacted and emergency access and evacuation requirements shall be maintained at a level sufficient to protect the safety of residents and the local population. The specific measures to provide adequate protection shall be defined in a traffic management plan approved by the local police and fire agencies.

h. Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The project area is located in a high fire hazard location. The structures being constructed for the new wastewater treatment facilities at Grass Valley WWTP could be exposed to wildland fire events. The project has no potential to expose people to increased risk from wildland fires. The facilities will be located within the treatment plant compound which does not have a high fuel load within the fence or directly adjacent to the facility. Further, the new facilities will not be constructed of combustible materials. Thus, even though the potential wildland fire hazard is high, the actual fire hazard relative to the new facilities is not considered significantly adverse. The provision of recycled water to the community also provides an additional water supply to combat a wildland fire within the District's service area.

4.17.2 Noise

a. Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant With Mitigation Incorporation. The construction activities needed for this project will involve the use of certain noise-generating construction equipment. The ranges of

noise that are described as follows are from U.S. Environmental Protection data. Compactors, front loaders, backhoes, scrapers, and graders produce 72-95 dB at 50 foot distance. Pump engines typically produce 82-93 dB at 50-foot distance.

Approximately 300 area residences will be temporarily impacted by construction noise in the area of the golf course, 300 residences along the Grass Valley Road pipeline alignment, and no residences near the Grass Valley WWTP. The Toll Road Campground is also located to the north of the treatment plant, which is temporarily occupied with campers for periods of time during the summer. The California Department of Health Services states that an exterior CNEL (Community Noise Equivalent Level) is to be no more than 65 dB (decibels) averaged over 24 hours for residential and open space land uses, such as those in the project area. Because construction impacts will be limited to day time, the overall effect on background noise is considered to be less than significant. The short-term construction noise impacts can be mitigated by use of the following standard measures.

NO-1 Mitigation measures to reduce construction noise impacts:

- ***Construction will be limited to the hours of 7AM to 7PM on weekdays, and between 9AM and 6PM on Saturday, and will not occur on Sundays or federal holidays, except in emergencies.***
- ***All construction vehicles and fixed or mobile equipment will be equipped with properly operating and maintained mufflers.***
- ***All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period will be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.***
- ***If equipment is being used than can cause hearing damage at adjacent noise receptor locations (distance attenuation will be taken into account), portable noise barriers will be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds.***

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Excavation for trenches for new water lines and land preparation for wastewater treatment units and storage tank will generate noise, but no significant ground vibration, such as from a pile driver or other similar piece of equipment, will be generated by this activity. See response to (a) above.

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant With Mitigation Incorporation. There will be some operational noise impacts, particularly due to the new low-head and high-head pump stations operating at the Grass Valley WWTP site. However, the pumps will be in enclosed structures, located in an isolated area. This will buffer any nearby noise receptors. Noise levels at the nearest occupied residences or in the Toll Road Campground will not exceed 50 dB during nighttime hours,

unless the LACSD obtains a waiver from the affected residents. This will be accomplished by enclosing the pumps to attenuate noise if required.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant With Mitigation Incorporation. See response to item (a) above.

e. For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no public airports near the project site, such that this would be an issue.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips existing near the project area that would be affected.

4.17.3 Public Services

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?

Less Than Significant Impact or No Impact. There will be no need for new or physically altered governmental facilities as part of this project. However, there may be a temporary need for some services during the construction phase, related to security, fire and/or emergency response. The permanent new facilities at the Grass Valley WWTP site should not require additional services, i.e., more than is already used for the plant operations.

The only police or fire protection likely to be required for operations would be trespass or theft of equipment or material at the reservoir site. Standard protection measures are implemented by the District to protect its facilities and equipment and materials, which will also be applied to the proposed project. Resources to respond to any situations are available primarily through the County Sheriff's Department and Fire Department. No other mitigation is required.

The proposed project itself is an improvement in public services for an existing population. It is not forecast to cause any population growth during construction or future operations. Thus, no additional demand for school facilities is forecast to occur.

4.17.4 Recreation

a. Would the project increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The project would not change the use of neighborhood or regional parks or recreation facilities, in this case the Lake Arrowhead Country Club. The entire Lake Arrowhead area has been designated for recreational use (County Plan).

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant With Mitigation Incorporated. The project will require limited work on the irrigation system at the Lake Arrowhead Country Club golf course. Thus, recreational use of this site could be impacted during construction. The following mitigation measure will be implemented to control conflicts with golf course operations to a less than significant impact level.

REC-1 LACSD shall either schedule the work on the golf course during the period when golf recreation activities does not occur or shall implement construction on the golf course in accordance with a construction plan that minimizes conflicts with golf play, both in terms of duration of construction and area disturbed. All disturbed areas shall be returned to the same condition as existed prior to ground disturbance on the golf course.

4.17.5 Airport Hazards

No Impact. The project area is not located near any public or private airport. No potential exists for other than random overflight aircraft hazards and no airport operation hazards can affect the project site. No mitigation is proposed.

4.17.6 Environmental Justice

No impact. The project site is located within a portion of the community of Lake Arrowhead that is not low income or of uniform ethnicity. Also, there are no historic activities that would expose the community nearby the project site to existing pollution or safety hazards that would result in cumulative environmental injustice issues. The proposed project has no potential to adversely impact any low income or ethnic communities in either the short- or long-term. The project itself will be an improvement to the service area that will benefit the long-term water supply all customers of the LACSD.

4.17.7 Unique Natural Features and Areas

No impact. The WWTP site and pipeline alignment are located in man-made environments that do not have any natural features or natural areas. The proposed project will remove mostly non-native vegetation on about two acres of the graded WWTP site which includes the facilities and construction lay-down areas. The pipeline alignment follows existing roadways and does not affect any sites that would constitute a unique natural feature.

4.17.8 Sole Source Aquifer

No impact. The project site is not located over a sole source aquifer.

4.17.9 Site Access and Compatibility

The proposed treatment facilities will be located in an area already dedicated to wastewater treatment operations. The pipeline alignment will follow existing roadway alignments which have already been disturbed and dedicated to public use. There will be no adverse impacts to site access or land use compatibility resulting from implementing the proposed project.

4.18 INVASIVE SPECIES

The project location is in the developed area of the San Bernardino Mountains. There are already invasive species in the vicinity, and on the project site, particularly non-native grasses. The implementation of the project will not result in the removal of any native vegetation or habitat, such that the area used by invasive species will be increased. The project itself will does not include activities that would introduce new invasive species into the project area and pipeline alignment.

CHAPTER 5
ALTERNATIVES ANALYSIS

As outlined in the project description (Section 2), there are three alternatives to the proposed action. These are: (1) No Action Alternative; (2) Onsite Facility Layout Alternative; and (3) Partial Pipeline Alignment Alternative. With the exception of the No Action Alternative, each of the alternatives represents a feasible alternative from an engineering perspective and each alternative would allow the District to meet the project action objective of replacing consumption of essential potable water supplies for irrigation of public landscaping, including the Lake Arrowhead Country Club (LACC) golf course.

5.1 NO ACTION ALTERNATIVE

The No Action Alternative would eliminate the installation of the proposed project facilities, including the WWTP treatment facilities required to produce the recycled water and the recycled water pipeline distribution system. Thus, the No Action Alternative can not fulfill the District's objective of reducing potable water consumption for landscape irrigation. Regardless, the No Action Alternative would result in eliminating most of the adverse environmental effects associated with the proposed action. The environmental effects that would result from implementing the No Action Alternative is provided below for each of the resource issues addressed in Chapter 3 and 4.

a. *Air Quality*: The No Action Alternative would eliminate any new air emissions that would be caused by constructing and operating the new treatment facilities and the pipeline. No new air emissions would be generated under this alternative.

b. *Hydrology and Water Quality*: The No Action Alternative would eliminate the upgrade in quality of the treated effluent that would result from the proposed project. It would also eliminate an assured source of recycled water that could be used for irrigation, which can reduce demand for limited potable water resources. All other hydrology/water quality effects would be eliminated by implementing the No Action Alternative.

c. *Utilities and Service Systems:*

   1. *Domestic Water Supply:* The No Action Alternative will not affect actual consumption of potable water. However, this alternative would also not provide recycled water, which could supplant present potable water consumption and make this potable water available to meet domestic water supply requirements for the District's customers. This is an adverse effect of the No Action Alternative, that could become significant if inadequate potable water supply is available in the future.

   2. *Sewage Treatment:* Neither the No Action Alternative or the proposed action will have any adverse effects on sewage treatment facilities.

3. *Solid Waste Disposal:* Minimal solid waste will be generated by the proposed action, but no solid waste would be generated by the No Action Alternative. Solid waste disposal impacts would be eliminated by the No Action Alternative.
4. *Natural Gas:* Natural gas consumption will increase if the proposed action is implemented, but this increase in consumption will be eliminated under the No Action Alternative.

5. *Electric Power:* Electricity consumption will increase if the proposed action is implemented, but this increase in consumption will be eliminated under the No Action Alternative.

d. *Land Use/Planning:* Neither alternative will have any land use or planning effects if they are implemented.

e. *Transportation/Traffic:* The proposed action will cause short-term effects on the flow of traffic on roadways where the pipeline would be installed. The No Action Alternative would eliminate construction and any effects on traffic flow over the short-term.

f. *Natural Resources:*

1. *Biological Resources:* Implementation of the proposed action would not adversely impact any sensitive biological resources as none occur within the footprint of the proposed facilities within the WWTP nor along the roadway where the pipeline will be installed. The No Action Alternative would eliminate any ground disturbing activities and would also not have any potential to adversely affect any biological resources.

2. *Geology and Soils:* Neither alternative would adversely affect any geology resources nor would any geological constraints adversely impact the proposed facilities. Soil disturbance associated with the proposed action would be eliminated by the No Action Alternative. Mitigation would not be required to control soil erosion under the No Action Alternative.

3. *Mineral Resources:* No mineral resources occur within the project's area of potential effect, so both alternatives have no potential to adversely impact such resources.

4. *Visual Resources/Aesthetics:* Short-term disturbances to the visual setting during construction and new facilities at the WWTP that will modify the existing visual setting would be eliminated by the No Action Alternative.

g. *Population and Housing:* Neither project would alter the existing population and housing characteristics of the Lake Arrowhead area.

h. *Construction:* The No Action Alternative would eliminate all construction activities and associated environmental effects such as noise, air emissions, construction traffic, etc.

i. *Energy Issues:* The No Action Alternative would eliminate the small increase in direct electricity and natural gas consumption required to support the proposed action treatment equipment. However, over the long-term indirect energy consumption required to produce

additional potable water to meet domestic water demand will offset the difference in energy consumption.

j. *Coastal Zone Management Act:* Neither alternative has any potential to affect coastal zone resources due to the lack of such resources within the project area of potential impact.

k. *Cultural Resources*: No cultural resources were identified within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to any cultural resources.

l. *Wild and Scenic Rivers:* No wild or scenic river resources occur within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to such resources.

m. *Endangered Species:* No endangered or sensitive species occur within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to such resources. Please refer to the biology survey of the project area of effect provided as Appendix F to this document. Based on the records reviews and field surveys, the San Bernardino Mountains host several known listed and sensitive plant and animal species. However, based on the site specific surveys for biological resources in support of the proposed project, no federal or state listed, protected or sensitive species within the area of potential effect on the WWTP site, along the pipeline alignment or on the golf course.

n. *Floodplain Management and Protection of Wetlands:* No floodplain or wetlands resources occur within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to such resources.

o. *Farmland Protection*: No farmland resources occur within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to such resources.

p. *Coastal Barrier Resources:* No coastal barrier occur within the project area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects to such resources.

q. *Other Environmental Issues:*

1. *Hazards and Hazardous Materials:* The No Action Alternative would eliminate the need for use of additional chemicals required for treating the secondary treated wastewater to recycled water standards. These chemicals currently are routinely used at the WWTP, but the volume of chemicals that will be used in the future will be increased.

2. *Noise:* The proposed action will generate construction noise and long-term noise from the new proposed pump station at the WWTP. The No Action Alternative would eliminate both sources of noise from the environment.

3. *Public Services:* No public service demands would be created by either alternative, so neither the proposed action or the No Action Alternative would cause adverse affects to public services.

4. *Recreation:* No recreational resources or activities would be affected by either alternative, so neither the proposed action or the No Action Alternative would cause adverse effects to public services.

5. *Airport Hazards:* No airports or airport hazards occur within the area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse effects airport operations or be exposed to hazards from such operations.

6. *Environmental Justice:* There are no environmental justice issues of concern within the Lake Arrowhead community, so neither the proposed action or the No Action Alternative would cause adverse environmental justice effects.

7. *Unique Natural Features and Areas:* No unique natural features or areas occur within the area of potential effect, so neither the proposed action or the No Action Alternative would cause adverse environmental justice effects.

8. *Sole Source Aquifer:* The project area is not dependent nor does it overlie a sole source aquifer, so neither the proposed action or the No Action Alternative would cause adverse effects to any sole source aquifer.

9. *Site Access and Compatibility:* Site access issues will be reduced by the No Action Alternative because the proposed action will cause short-term site access effects along the pipeline alignment. No compatibility issues will occur under either alternative, so neither the proposed action or the No Action Alternative would cause adverse effects on land use compatibility.

10. *Invasive Species:* Due to construction activities, invasive, non-native species have a greater potential to occur from implementing the proposed action. The No Action Alternative would eliminate the limited potential for invasive species to spread to disturbed construction areas. Neither alternative has any potential to introduce any new invasive species.

The environmental impact forecast contained in Chapter 4 of this document identifies a number of adverse effects, primarily related to construction, that will result from implementing the proposed action. The proposed action was determined to cause impacts that are not considered either substantially or significantly adverse. The No Action Alternative will eliminate all of these less than significant impacts from construction and use of energy and chemicals to support the additional treatment facilities required to produce treated effluent that meets recycled water standards. The single-most important adverse effect associated with implementing the No Action Alternative is the long-term effect on domestic water supply resources from continuing to use potable water for land uses with high irrigation demands. As a result, the No Action Alternative can not meet the fundamental project objective of offsetting demand for limited potable water resources within the LACSD service area.

5.2 ONSITE FACILITY LAYOUT ALTERNATIVES

The purpose in examining alternatives to a project is to determine whether there are alternatives that can reduce the impacts that will be caused by implementing the preferred alternative. LACSD identified three different onsite facility layout alternatives, including the preferred layout. No offsite alternative locations were considered for two reasons. Any offsite alternative would require development of undisturbed land with potentially significant onsite biology resources and would then require new connections (pipelines) to the existing WWTP. Thus, any offsite alternative to the proposed action was rejected as inherently causing greater adverse environmental effects than the proposed action.

The onsite facility layout alternatives are shown in Figures 6 and 7. The proposed action combines the membrane treatment unit and pump station in a single facility located in the northern portion of the project site. As Figure 6 shows the first onsite facility layout alternative separates these facilities and places the membrane treatment unit in the central portion of the property. The new clarifier and trickling filter remain at the same location. Figure 7 shows the second onsite facility layout alternative and under this alternative the membrane treatment unit remains in the central portion of the WWTP while the pump station has been relocated to the western portion of the project site. All impacts from these two onsite facility layout alternatives remain the same, except for site specific resource issues, such as biology, cultural resources and earth movement. Since the whole site is essentially flat and since no important cultural or biological resources occur within the WWTP site, implementation of either of the layout alternatives would not cause any additional adverse environmental effects. Thus, if either of these alternatives is selected by the LACSD as the ultimate site layout, no additional adverse environmental effects will be caused by such selection.

5.3 PARTIAL PIPELINE ALIGNMENT ALTERNATIVE

Figure 5 shows the potential alignment of an existing, abandoned force main (the blue colored alignment shown on Figure 5) that could be utilized in place of a portion of the proposed action pipeline alignment, shown in red on Figure 5. This is a feasible alternative that the LACSD could implement and still meet its project objectives. By utilizing the force main to carry recycled water to the LACC golf course, approximately one mile of pipeline construction activity on Brentwood Drive could be avoided. Selection of this alternative would eliminate the short-term construction impacts for approximately 4,300 feet of this roadway. Long-term operational effects of this alternative would remain the same. Thus, the effects of implementing the partial pipeline alignment alternative would be to reduce some adverse impacts relative to the proposed action.

CHAPTER 6
CUMULATIVE IMPACTS

There may be temporary cumulative impacts during construction of the project, such as noise impacts during construction due to activities on the site being combined with traffic on the adjacent roadways or along the pipeline route.

Permanent cumulative impacts would include an increase in consumption of energy resources and of the additional chemicals required to treat the secondary effluent to recycled water standards. The project WWTP site of approximately eleven acres will be fully developed with wastewater treatment facilities. Since this site is already dedicated to wastewater treatment uses, the expansion of facilities at this site is not considered to be a substantial cumulative effect on the visual and land use characteristics of the existing site.

No other cumulative effects have been identified for this project.

CHAPTER 7
SUMMARY OF MITIGATION MEASURES

The following mitigation measures will be incorporated into this project:

AQ-1 Measures to control fugitive dust during construction:

- Water will be used for short-term surface stabilization.
- Chemicals or vegetation will be used for surface stabilization upon completion of grading activities if subsequent site developed is delayed.
- Trackout on paved roads will be minimized.
- There will be rapid cleanup of project-related trackout or spills on paved roads.
- Haul trucks will be covered.
- Grading and other soil movement activities will be minimized when winds exceed 30 mph.

AQ-2 Measures to control construction traffic emissions:

- Efficient scheduling of equipment use, with a phased construction schedule to reduce the number of units operating simultaneously.
- Performing regular engine maintenance on all equipment.
- Provisions of local equipment storage areas so that equipment trips to the site can be reduced.
- Construction personnel will be encouraged to ride share to reduce vehicle trips to the site.
- Shut down equipment when not in use for more than 15 minutes.

WQ-1 Measures to reduce erosion and siltation:

- Excavation or grading activities will be suspended during periods of high winds or heavy rains.
- Excavations will be left open for as short of a time as possible.
- Construction site soils, where exposed, will be stabilized to control potential erosion from the site with methods determined most suitable by the District.
- Stormwater will be diverted around active construction or staging areas, through use of barriers or temporary channels.

WQ-2 Measures to reduce erosion and siltation impacts on Grass Valley Creek:

- Silt settling basins shall be located away from the stream or lake to prevent discolored, silt-bearing water from reaching any stream or lake during any flow regime.
- Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks will be placed on dirt roads, cat tracks, or other trails to control erosion.

- Water containing mud, silt, or other pollutants shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows. A silt catchment basin(s) shall be constructed of silt-free gravel to capture water prior to entering a stream. Upon completion of the project and after all flowing water in the area is clear of turbidity, the gravel along with the trapped sediment shall be removed.
- Silty/turbid water shall not be discharged into any stream or water course. Such water shall be settled, filtered, or otherwise treated prior to discharge.
- Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require that the work site be isolated and/or the construction silt catchment basins, so that silt, or other deleterious materials are not allowed to pass into streams.
- If an off-stream siltation pond/s is/are used to control sediment, pond/s shall be constructed in a location, or shall be designed, such that potential spills into the stream/lake during periods of high water levels/flow are precluded.
- Catchment basins shall be constructed of materials which are free from mud and silt. Upon completion of the project, all basin material along with the trapped sediments shall be removed in such a manner that said removal shall not introduce sediments into any stream.
- Upon CDFG determination that turbidity/siltation levels resulting from the project-related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation, shall be halted until effective CDFG-approved control devices are installed, or abatement procedures are initiated.

WQ-3 Measures to reduce surface runoff:

- Excavation or grading activities will be suspended during periods of heavy rains.
- Excavations will be left open for as short of a time as possible.
- Barriers or temporary channels will be used around active construction or staging areas to direct surface runoff to specified locations.

WQ-4 LACSD shall coordinate with LACC to define permissible concentrations of chemicals that could harm the golf course turf or other landscaping. Concentrations of chemicals of concern shall be maintained below these thresholds or irrigation shall be achieved by balancing recycled water applications with existing water source applications.

TR-1 The LACSD shall prepare a construction traffic management plan for work in public roads that complies with the Work Area Traffic Control Handbook or other applicable County of San Bernardino and Caltrans standards to provide adequate traffic control and safety during construction activities. The performance standard for the plan shall be the provision of safe, albeit inconvenient, traffic flow during construction and the provision of adequate access through construction areas, or adequate detour routes, to meet safety and emergency vehicle access and transit through construction areas at all times when

BIO-1 Mitigation Measure to reduce or eliminate impacts on listed plant or animal species:

- In the event a listed species is observed with the construction areas prior to or during grading/construction, construction will be immediately stopped. A qualified biologist will be called to assess the situation and to determine subsequent actions.

BIO-2 Mitigation measures to ensure conformance with conservation plans and policies:

- Any grubbing or brushing to occur on the property should be conducted outside of the State identified bird breeding season of February 15 through September 1.
- Alternatively, the site would need to be evaluated by a qualified biologist to determine if birds were nesting in the shrubs or trees to be removed prior to initiation of ground disturbance.

CR-1 Mitigation to prevent any impacts to historical resources:

- In the event that historical resources are encountered during project construction, construction activities will be halted or redirected until a qualified archaeologist can evaluate the nature and significance of the finds.

CR-2 Mitigation to prevent impacts to archaeological resources:

- An approved Native American monitor will be present to monitor all initial earth-moving construction activities. Once all excavation and trenching are completed and the trenches are being refilled and compacted, monitoring is no longer required. Should archaeological resources be encountered, construction activities will be halted or redirected until such qualified archaeologist can evaluate the nature and significance of the finds.

CR-3 Mitigation to minimize impacts on human remains:

- In the unlikely event that human remains should be encountered during the construction of the proposed project, all construction will cease and the San Bernardino County's Coroner Office will be contacted within 24-hours of the discovery.

HAZ-1 During construction of the pipeline, local emergency response providers shall be contacted and emergency access and evacuation requirements shall be maintained at a level sufficient to protect the safety of residents and the local population. The specific measures to provide adequate protection shall be defined in a traffic management plan approved by the local police and fire agencies.

NO-1 Mitigation measures to reduce construction noise impacts:

- Construction will be limited to the hours of 7AM to 7PM on weekdays, and between 9AM and 6PM on Saturday, and will not occur on Sundays or federal holidays, except in emergencies.

- All construction vehicles and fixed or mobile equipment will be equipped with properly operating and maintained mufflers.
- All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period will be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.
- If equipment is being used than can cause hearing damage at adjacent noise receptor locations (distance attenuation will be taken into account), portable noise barriers will be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds.

REC-1 LACSD shall either schedule the work on the golf course during the period when golf recreation activities does not occur or shall implement construction on the golf course in accordance with a construction plan that minimizes conflicts with golf play, both in terms of duration of construction and area disturbed. All disturbed areas shall be returned to the same condition as existed prior to ground disturbance on the golf course.

CHAPTER 8
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CHAPTER 9
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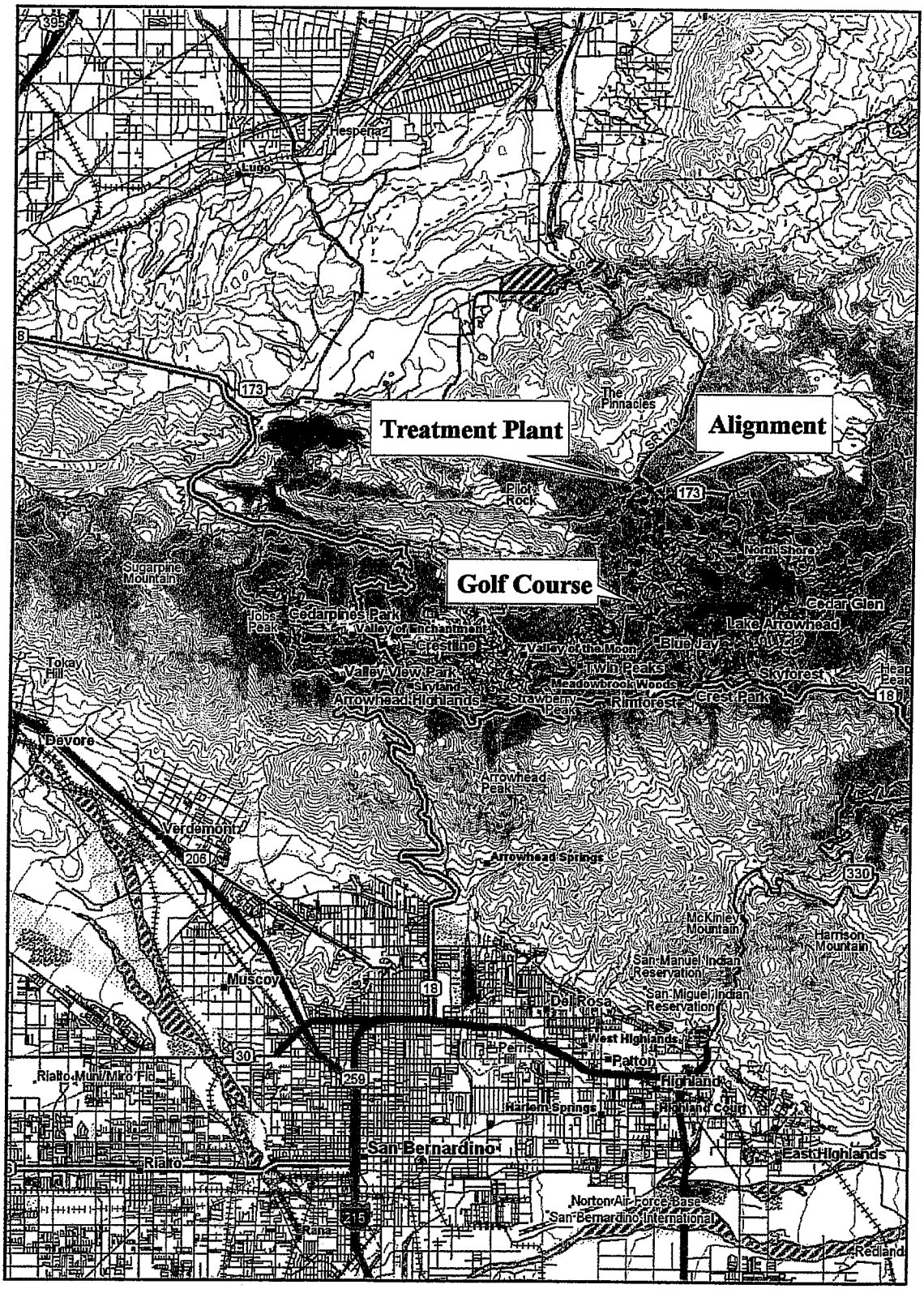
FIGURES

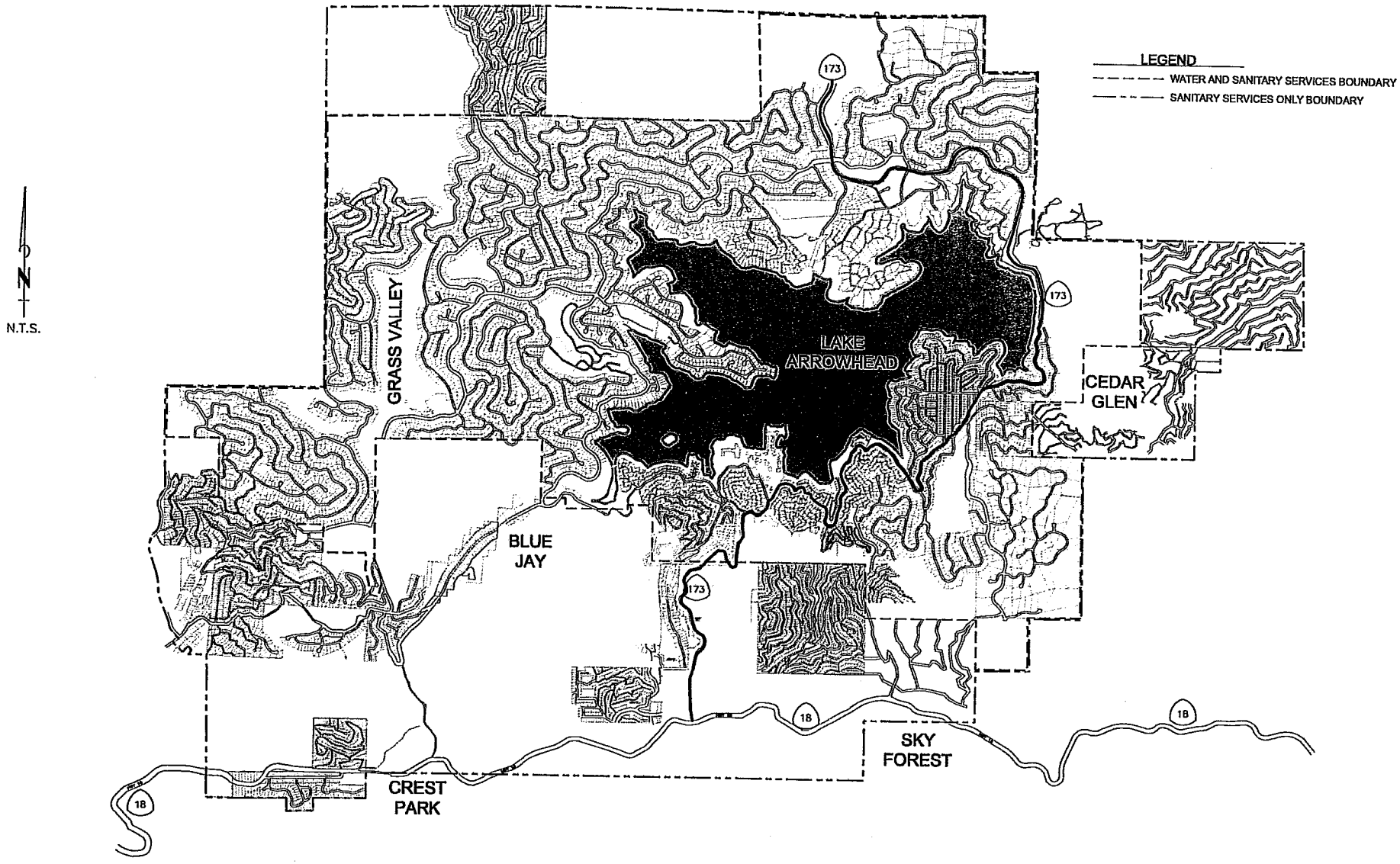
FIGURE 1
Regional Map



Source: DeLorme TopoQuads

Tom Dodson & Associates
Environmental Consultants

FIGURE 2
LACSD Service Areas



Source: Lake Arrowhead Community Services District

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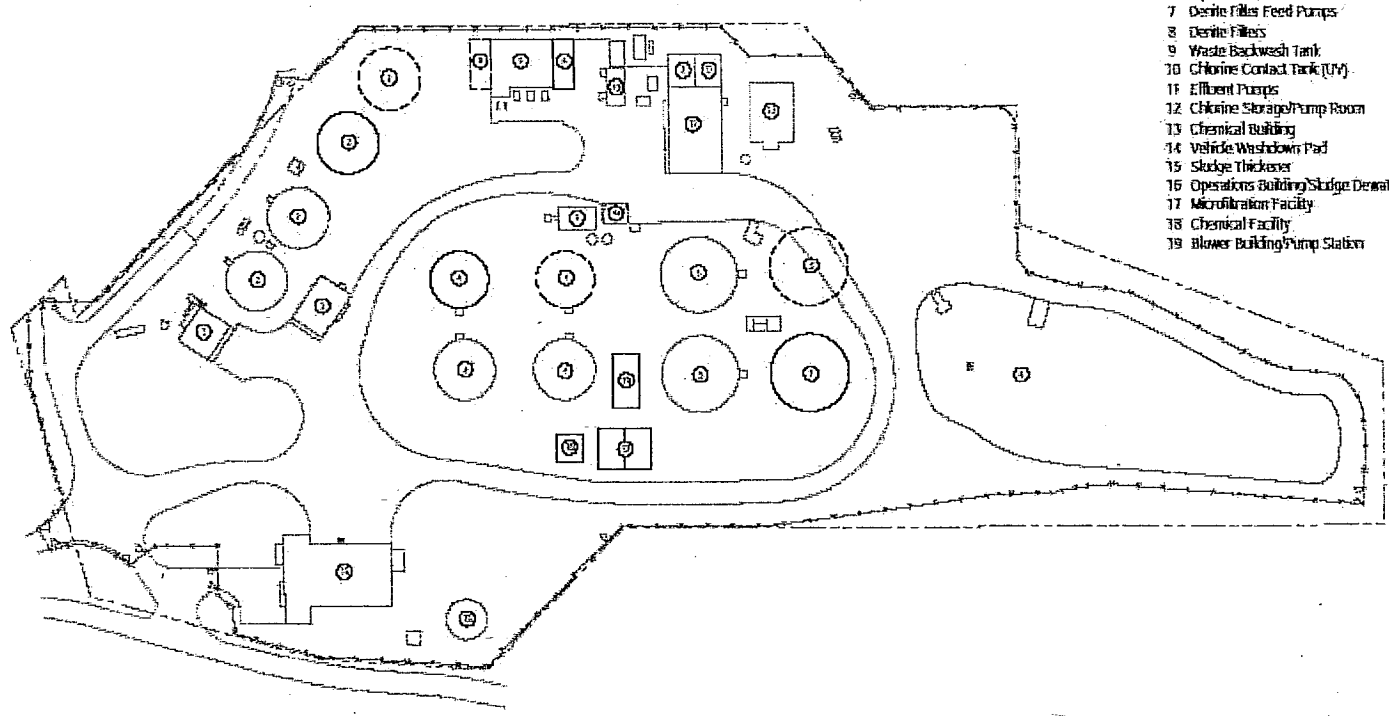
Environmental Consultants

FIGURE 3
Existing Treatment Facility



1 Headworks
2 Primary Clarifier
3 Raw Sludge Pump Station
4 Trickling Filter
5 Secondary Clarifier
6 Equalization Pond
7 Denite Filter Feed Pumps
8 Denite Filters
9 Waste Backwash Tank
10 Chlorine Contact Tank (UV)
11 Effluent Pumps
12 Chlorine Storage/Pump Room
13 Chemical Building
14 Vehicle Washdown Pad
15 Sludge Thickener
16 Operations Building/Sludge Dewatering
17 Microfiltration Facility
18 Chemical Facility
19 Blower Building/Pump Station

Legend:

Existing

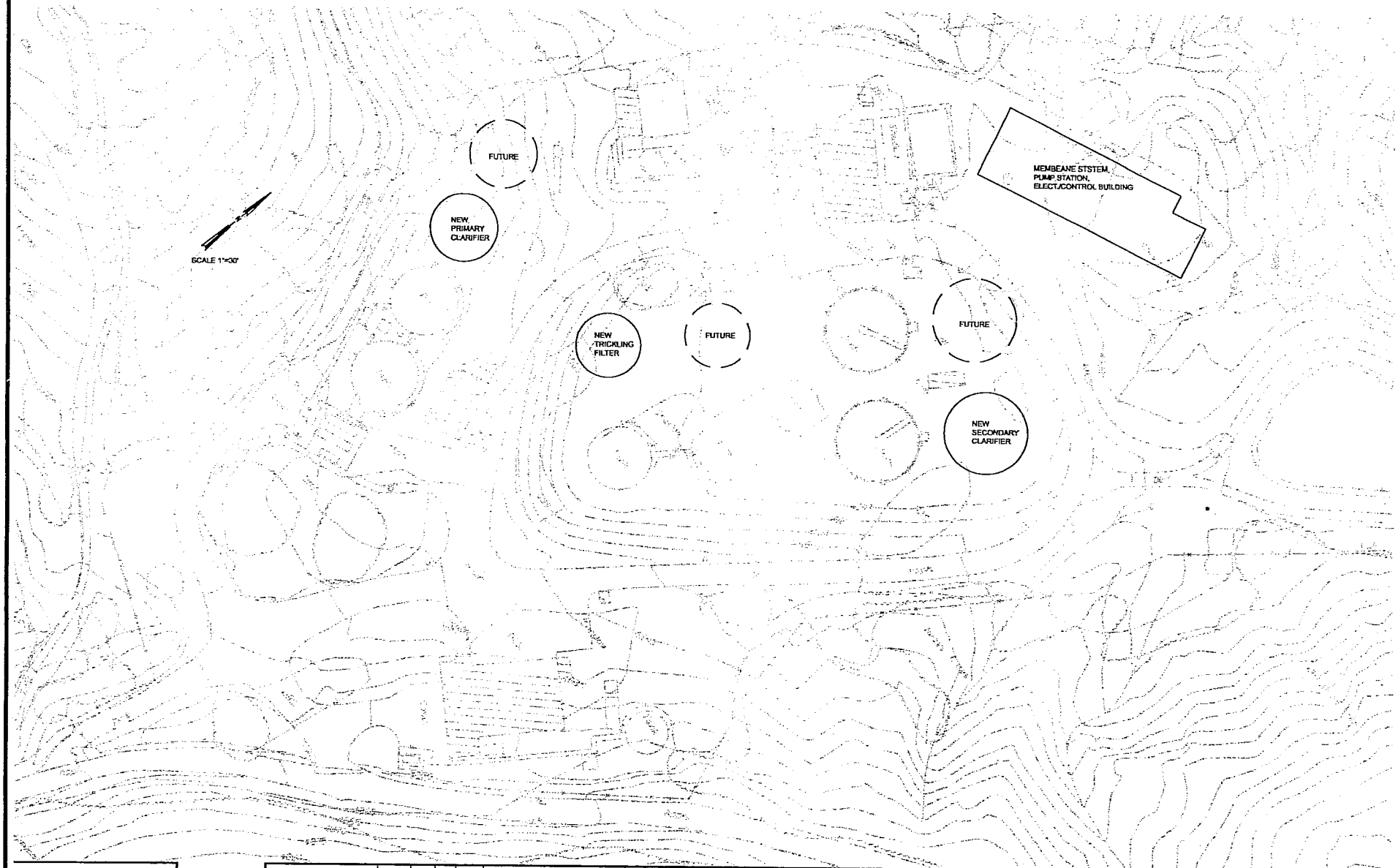
Phase I Facilities

Future Facilities

Source: CH2M-Hill

FIGURE 4

Preferred Alternative Facility Layout of the New Tertiary Treatment System Facilities (Option 1)



CH2MHILL
3 HUTTON CENTRE DRIVE, SUITE 200
SANTA ANA, CA 92707
(714) 429-2000

Designed Engineer
Drawn Drawn_By
Checked Checked_By
Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

REVIEWED BY:
Project Manager
Date

SCALE
AS SHOWN

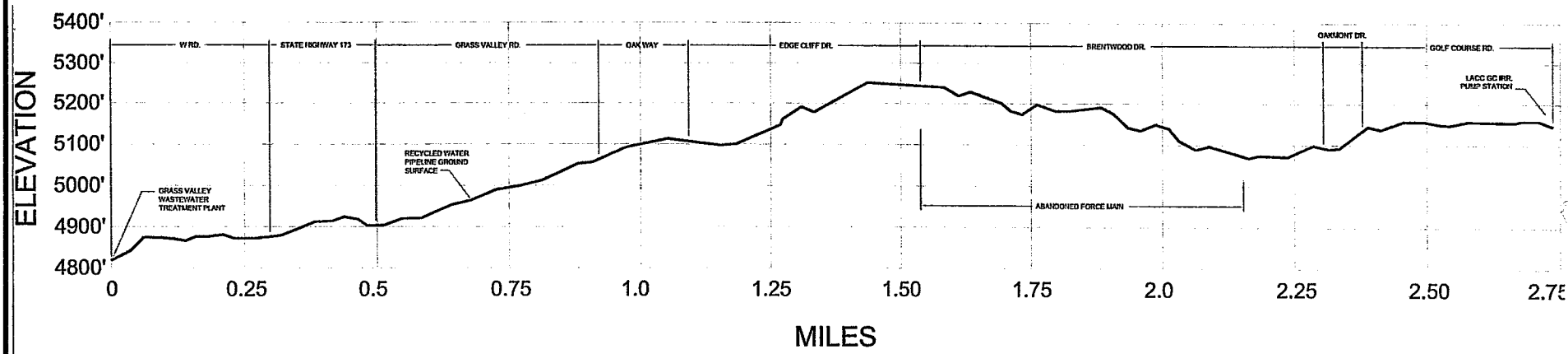
Lake Arrowhead
Community Services District
WATER/WASTEWATER SYSTEM
P.O. BOX 700
LAKE ARROWHEAD, CA 92352
(909) 336-7100

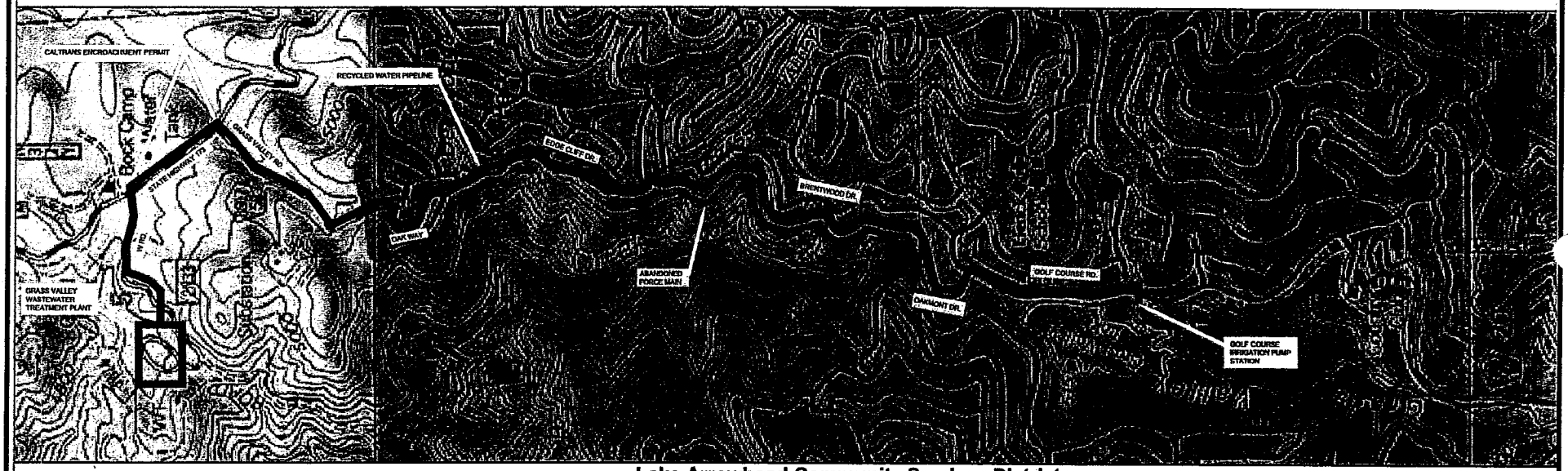
RECYCLED WATER SYSTEM PHASE 1
PROJECT NO. XXXX
OPTION 1

SHEET NO. X OF X
JOB NO. 332895
DRAWING NO. X

Tom Dodson & Associates
Environmental Consultants

FIGURE 5
Recycled Water Pipeline Alignment





TETRA TECH, INC.
10815 Rancho Bernardo Rd, Suite 200
San Diego, California 92127
(858) 673-5505
(858) 673-1610 FAX

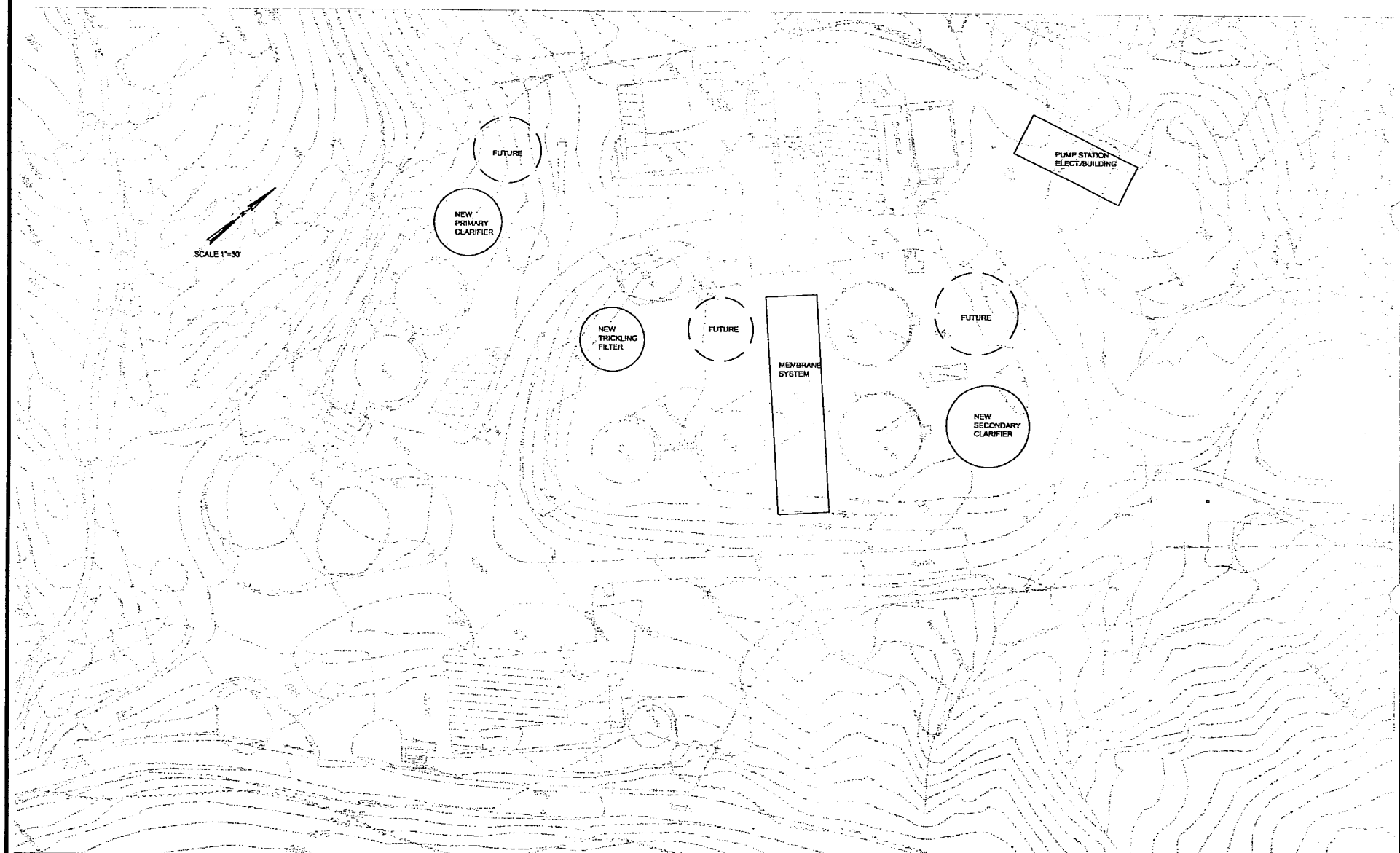
NOT TO SCALE

Lake Arrowhead Community Services District

RECYCLED WATER PIPELINE ALIGNMENT

Potential Recycled Water Plant Design

FIGURE 6
Alternative Facility Layout of the New Tertiary Treatment System Facilities (Option 2)



CH2MHILL
3 HUTTON CENTRE DRIVE, SUITE 200
SANTA ANA, CA 92707
(714) 429-2000

Designed Engineer
Drawn Drawn By
Checked Checked By
Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

REVIEWED BY:
Project Manager
Date

SCALE
AS SHOWN
The Scale shown below is true for an original drawing. If not, you must use this chart, adjust scales accordingly.
0" 1"

Lake Arrowhead Community Services District
WATER/WASTEWATER SYSTEM
P.O. BOX 700
LAKE ARROWHEAD, CA 92352
(909) 336-7100

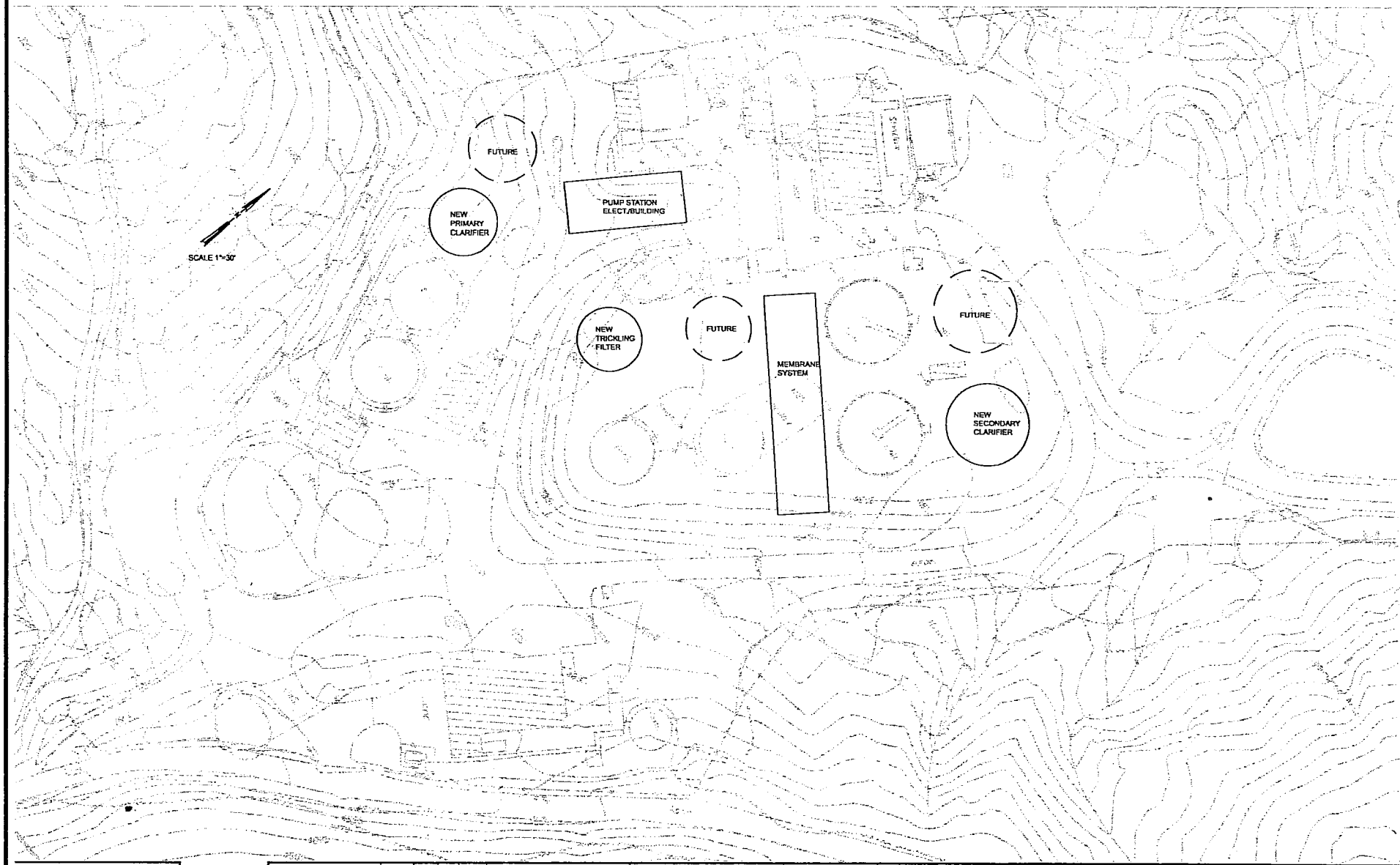
RECYCLED WATER SYSTEM PHASE 1
PROJECT NO. XXXX
OPTION 2

SHEET NO. X OF X
JOB NO. 332895
DRAWING NO. X

Tom Dodson & Associates
Environmental Consultants

FIGURE 7

Alternative Facility Layout of the New Tertiary Treatment System Facilities (Option 3)



CH2MHILL
3 HUTTON CENTRE DRIVE, SUITE 200
SANTA ANA, CA 92707
(714) 429-2000

Designed Engineer
Drawn Drawn_By
Checked Checked_By
Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

REVIEWED BY:
Project Manager Date

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If not one inch on this sheet, adjust scales accordingly.
0" 1" Millimeters 1"

Lake Arrowhead
Community Services District
WATER/WASTEWATER SYSTEM
P.O. BOX 700
LAKE ARROWHEAD, CA 92352
(909) 336-7100

RECYCLED WATER SYSTEM PHASE 1
PROJECT NO. XXXX
OPTION 3

SHEET NO. X OF X
JOB NO. 332895
DRAWING NO. X

Tom Dodson & Associates
Environmental Consultants

APPENDIX A

U. S. FOREST SERVICE SPECIAL USE PERMIT DECISION NOTICE – CATEGORICAL EXCLUSION

USDA United States Department of Agriculture
Forest Service
San Bernardino National Forest
Mountaintop District
28104 Highway 18
P.O. 350
Skyforest, CA 92385
Phone: 909-382-2600 #1
Fax: 909-337-1104

File Code: 2720
Date: DEC 21 2006

Ryan Gross
District Engineer
LACSD
P.O. Box 700
Lake Arrowhead, CA 92352

Dear Mr. Gross:

The purpose of this letter is to advise you that the Decision Memo for the Lake Arrowhead Community Services District (LACSD), Grass Valley Plant expansion and upgrade has been approved. Upon receipt of this letter you made start work immediately. Attached is a copy of the Best Management Practices that you will be required to follow during the duration of this project.

If you should have any questions please contact, Veronica Magnuson, District Lands and Special Uses Officer at 909.382.2765.

Sincerely,

Allison Stewart

ALLISON L. STEWART
District Ranger

P.S. Thanks for your patience.

DECISION MEMO FOR
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT GRASS VALLEY WASTEWATER TREATMENT PLANT EXPANSION AND UPGRADE
USDA Forest Service, San Bernardino National Forest
Mountaintop Ranger District
San Bernardino County

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410, or call (202) 720-5964 (Voice and TDD). USDA is an equal employment opportunity provider and employer. USDA is an equal opportunity provider and employer.

Purpose and Need

At present, Lake Arrowhead Community Services District (LACSD or District) treats approximately two (2) million gallons per day (MGD) of municipal wastewater. The treated wastewater effluent is discharged to a pipeline that transports the treated effluent approximately ten (10) miles to the City of Hesperia (Hesperia outfall). The treated effluent is discharged on a parcel of land owned by the District in the City of Hesperia, where it percolates into the Alto Subbasin aquifer and which represents a return of the treated effluent to the Mojave Groundwater Basin. As part of the next master planned phase of expansion and in order to capture some of this treated effluent for use as recycled water for outdoor irrigation within the LACSD's service area, the District is proposing to upgrade the treatment process at the Grass Valley Water Treatment Plant (GVWWTP), which is located on National Forest System lands and authorized under a special use permit (SUP) re-issued in 1993 (authorized on 6/18/93, expiration date 12/31/12)., so that a portion of the effluent will qualify as "recycled" water that can be beneficially re-used on the mountain for outdoor irrigation or other allowed uses. Use of recycled water for outdoor irrigation will offset present use of potable water supplies used for irrigation.

Delivery of recycled water from the GVWWTP to future outdoor irrigation users will be accomplished by a dedicated recycled water pipeline. The District envisions the first recycled water user to be the Lake Arrowhead Country Club (LACC) golf course, the largest user of outdoor irrigation water within the District's service area. Recycled water delivery will be accomplished through a single pipeline running from the GVWWTP to an on-site pump station at the golf course. The total length of the alignment is approximately 15,000 feet and it will follow existing roadways once it leaves the GVWWTP. The pipeline is located within roadways

and easements through the residential area between the GVWWTP and the golf course. The first 3,200 feet of the proposed pipeline will follow the Forest Service easement from State Highway 173 to the GVWWTP. Pipeline material will be American Water Works Association C-900 PVC, Class 200. The pipeline is proposed to be 14-inches in diameter. (see Attachment 1)

Decision

GVWWTP provides the protection of public health and the environment, and its continued operation is essential to residents of Lake Arrowhead and surrounding communities, and the environment of both the San Bernardino Mountains and the Mojave River drainage basin. Therefore I have decided to allow LACSD to carry out the following activities:

1) Upgrade and expand its existing Grass Valley Wastewater Treatment Plant (GVWWTP) within the existing 7.5 acre site and in accordance with the original master plan for the site which includes phased expansion and upgrades of the GVWWTP facilities up to its ultimate 5 million gallons per day capacity. This includes one new primary clarifier (45foot diameter by 10 feet in height), one new trickling filter (42 foot diameter by 25 feet height), one new secondary clarifier (55 foot diameter by 10 feet in height), membrane treatment system (80 feet by 40 feet by 15 feet), ultraviolet (UV) disinfection system (which will be contained in the membrane treatment system), recycled water storage in an existing 800,000 gallon secondary equalization holding pond and a new pump station/electric control building (see Attachment 2); and.

2) Install a recycled water pipeline within the existing paved roadway encompassing the Grass Valley Interceptor easement (a 3,200 lineal feet easement granted for the pipeline and road access to the Grass Valley Treatment Plant under a special use permit

3) As part of the implementation of this decision, Best Management Practices (BMP's) will be given to LACSD to follow for all ground disturbing activities to reduce the level and extent of potential impacts from the project. (see Attachment 1)

The existing GVWWTP system will continue to operate as it is currently configured. All facilities would remain in place and operational.

Location

The project area is located approximately two and a half miles northwest of Lake Arrowhead, CA within Township 2 North, Range 3 West, Section 5, SBM.

Reasons For Categorically Excluding the Proposed Action

I have considered the extraordinary circumstances listed below and the effects that this project will have on those resource conditions. I have determined that either the extraordinary

circumstance does not exist or that the effect to these resource conditions is so minimal that further analysis of this project in an EIS or an EA is not necessary. As the FSH 1909.15 section 30.3 states, "the mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion. It is the degree of the potential effect of an action on these resource conditions that determines whether extraordinary circumstances exist."

Resource conditions that could constitute a finding of extraordinary circumstances (and the reasons why they do not apply to this project) are as follows:

- **Federally listed threatened or endangered species or designated critical habitat, species proposed for federal listing or proposed critical habitat, or Forest Service sensitive and watch-list Species:** A biological assessment (BA) was completed for threatened and endangered wildlife. The BAs determined the project will have no effect to federally listed threatened or endangered species and may affect and will not likely adversely affect designated critical habitat. For these reasons, no consultation with the U.S. Fish and Wildlife Service was required. Our biological evaluation analyzed the effects on Forest Service sensitive species, and determined that impacts may occur to individuals, but will not likely cause a trend to federal listing or loss of viability.
- **Flood Plains, wetlands, or municipal watersheds**: No adverse effects to domestic or municipal uses of surface water within the project area, or jurisdictional wet lands, flood plains within the project area are anticipated.
- **Recreation and Scenery:** There are no congressionally designated areas, such as wilderness, wild and scenic rivers, or other national recreation areas within the project
- **Inventoried Roadless Areas:** There are no inventoried roadless areas within the project area.
- **Research Natural Areas:** There are no research natural areas within the project area.
- **Native American Religious or Cultural Sites, Archaeological Sites, or Historic Properties (heritage resources):** Surveys determined that there are no archaeological or historic resources identified within the area of potential effect.

Based on the above information, it is my determination that this activity will be of limited size and degree of disturbance. I find this action qualifies under provision FSH 1909.15, 31.2 category 3: "Approval, modification, or continuation of minor special uses on National Forest System lands that require less than five contiguous acres of land."

Past experiences and environmental analysis reveal that no extraordinary circumstances exist that cause the action to have significant effects upon the human environment. This action is therefore excluded from further documentation in either an environmental assessment or environmental impact statement.

Public Involvement/Issues

Specialists reviewed the project proposal and a site visit was conducted. This project is listed on the Forest's Schedule of Proposed Actions (SOPA) which is published quarterly on the Forest's website. The project was first published on the SOPA on October 1, 2005 and has been listed each subsequent quarter. No public inquires were received. This project is not subject to legal notice and comment pursuant to 36 CFR 215.4(a).

Findings Required by Other Laws and Regulations

This finding is consistent with the San Bernardino National Forest Land and Resource Management Plan (2005), the Endangered Species Act of 1973, the State Historic Preservation Act, and the National Forest Management Act of 1976.

Implementation Date

This project/action may be implemented immediately.

Administrative Review or Appeal Opportunities

Pursuant to 36 CFR 215.12(f), this decision is not subject to appeal

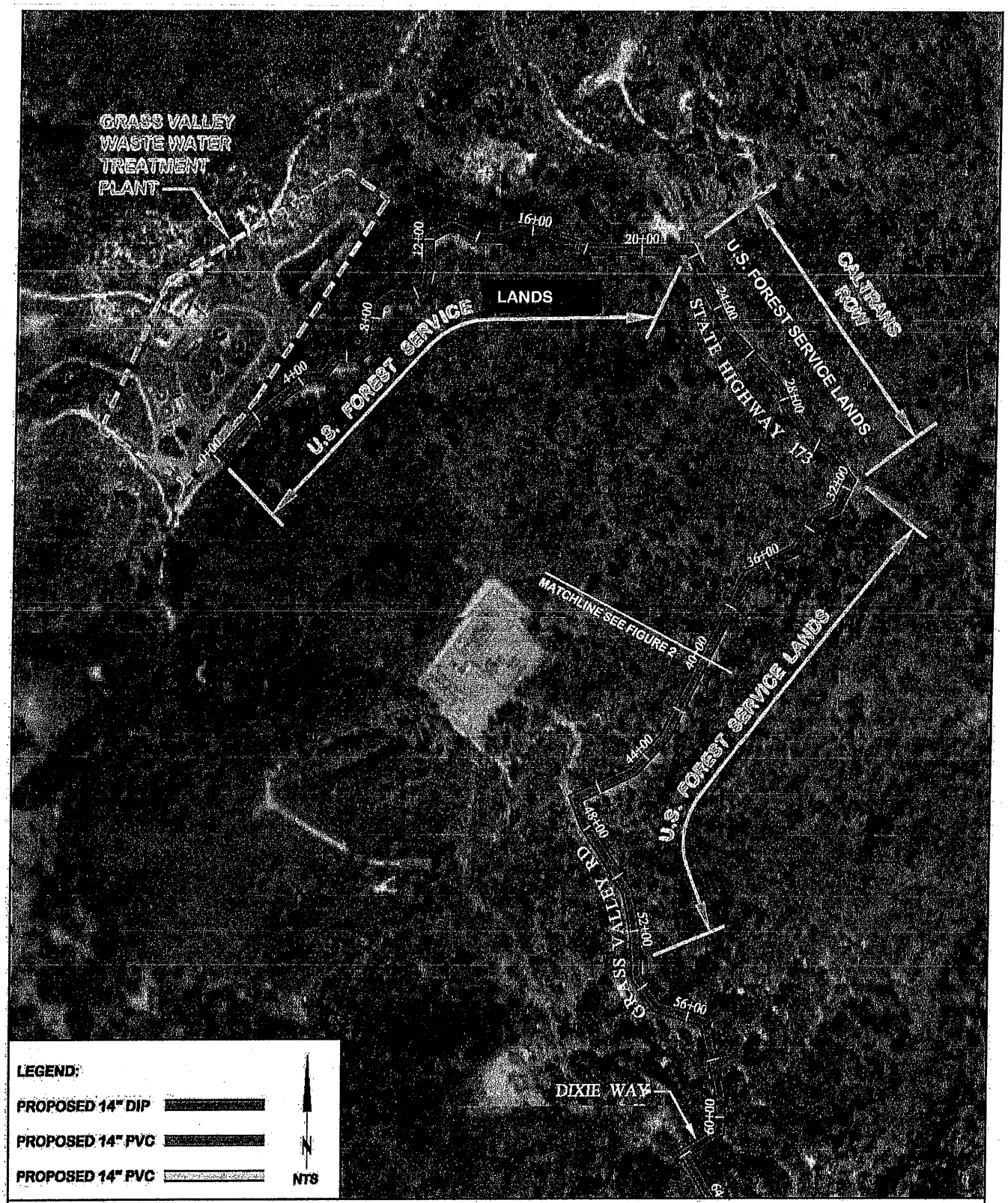
Responsible Official

The responsible official is Jeanne Wade Evans, Forest Supervisor. For additional information regarding this project, contact Veronica Magnuson, Mountaintop Land and Special Uses Office at the Mountaintop District, San Bernardino National Forest at 909-382-2765.

Approved By: Jeanne Wade Evans **Date** 12/21/06

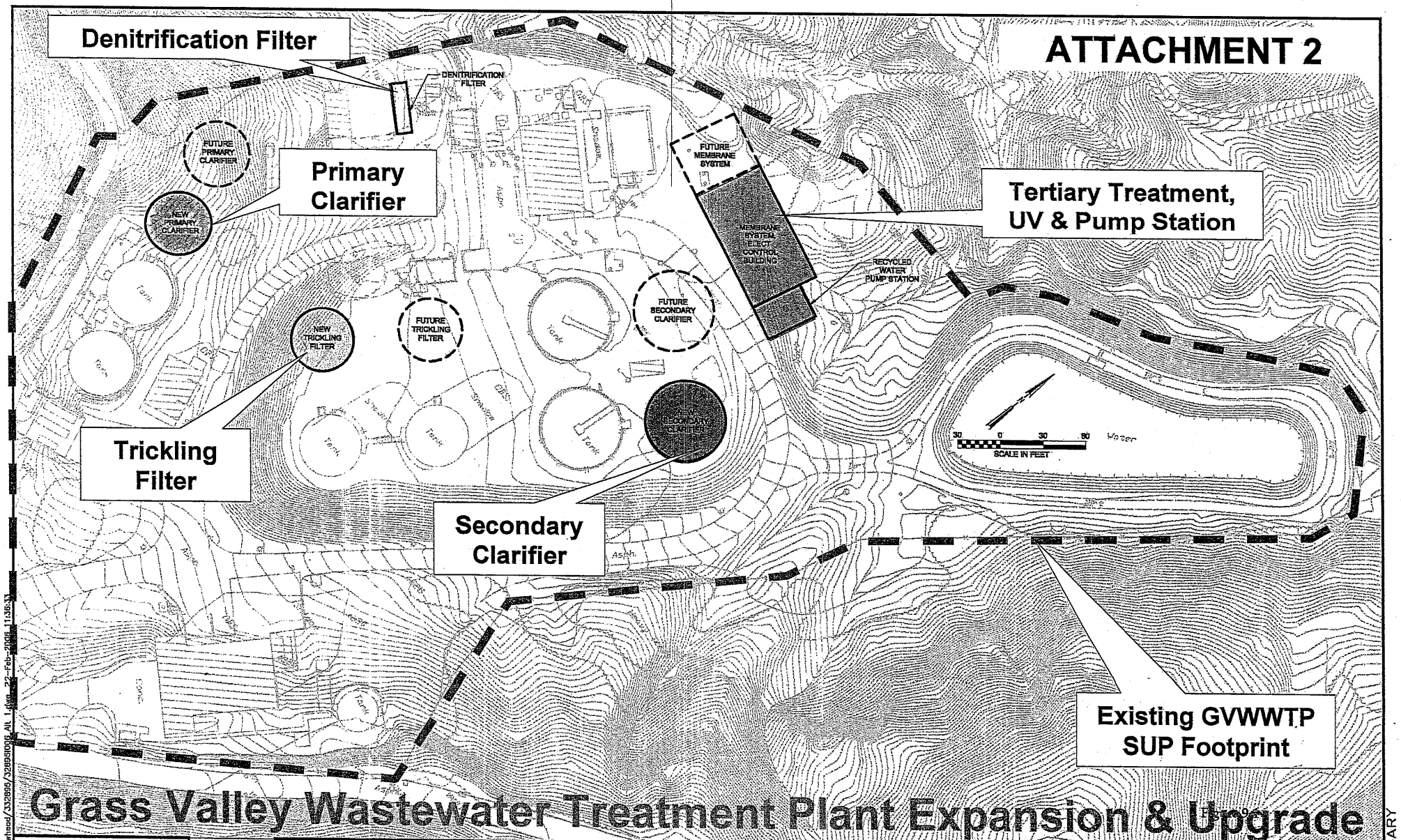
JEANNE WADE EVANS
Forest Supervisor

ATTACHMENT 1



LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT
PROPOSED RECYCLED WATER PIPELINE ALIGNMENT
ALL WITHIN EXISTING PAVED ROADWAYS / RIGHT OF WAY

ATTACHMENT 2



Grass Valley Wastewater Treatment Plant Expansion & Upgrade

CH2MHILL
3 HUTTON CENTRE DRIVE, SUITE 200
SANTA ANA, CA 92707
(714) 429-2000

Designed C. QUAN 2/06
Drawn B. ALLEN 2/06
Checked _____ Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

REVIEWED BY: _____ Date _____
Project Manager

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Lake Arrowhead Community Services District
WATER/WASTEWATER SYSTEM
P.O. BOX 700
LAKE ARROWHEAD, CA 92352
(909) 336-7100

RECYCLED WATER SYSTEM PHASE 1
PROJECT NO. XXXX
OPTION 1

SHEET NO. X OF X
JOB NO. 332895
DRAWING NO. X

PRELIMINARY

SCO-NOM-Arrowhead/332895/32895I006 Alt 1.dwg 22-Feb-2006 11:36:33

Attachment 3

WATER QUALITY MANAGEMENT FOR FOREST SYSTEM LANDS IN CALIFORNIA BEST MANAGEMENT PRACTICES FOR LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT GRASS VALLEY WASTEWATER TREATMENT PLANT EXPANSION AND UPGRADE

USDA Forest Service, San Bernardino National Forest
Mountaintop Ranger District
San Bernardino County

Avoidance/Minimization and Mitigation Measures

All applicable Best Management Practices (BMPs) (USDA Forest Service 2000a) should be identified and followed in all ground. disturbing forest management actions, including in all contracts, operating plans, and work orders. The following measures will help reduce the level and extent of potential impacts from the project. These are incorporated in my decision.

Air Quality Measures to control fugitive dust during construction:
Water will be used for short-term surface stabilization.

- Chemicals or vegetation will be used for surface stabilization upon completion of grading activities if subsequent site developed is delayed.
- Trackout on paved roads will be minimized.
- There will be rapid cleanup of project-related trackout or spills on paved roads.
- Haul trucks will be covered.
- Grading and other soil movement activities will be minimized when winds exceed 30 mph.
- Measures to control construction traffic emissions:
- Efficient scheduling of equipment use, with a phased construction schedule to reduce the number of units operating simultaneously.
- Performing regular engine maintenance on all equipment.
- Provisions of local equipment storage areas so that equipment trips to the site can be reduced.
- Construction personnel will be encouraged to ride share to reduce vehicle trips to the site.
- Shut down equipment when not in use for more than 15 minutes.

Attachment 3

Water Quality - Measures to reduce erosion and siltation:

- Excavation or grading activities will be suspended during periods of high winds or heavy rains."Heavy" rain: if soil moistures are such that equipment causes compaction/rutting two inches deep, then work must be stopped and not started until either, 1) inspection by Forest Service personnel conducts a hydro/soils assessment on compaction questionnaire, or 2) 24 hours from storm ending, providing when driving around on soil no rutting occurs.
- Excavations will be left open for as short of a time as possible.
- Construction site soils, where exposed, will be stabilized to control potential erosion from the site with methods determined most suitable by the District.
- Stormwater will be diverted around active construction or staging areas, through use of barriers or temporary channels.
- Sediment/soils will not leave construction footprint with silt fencing, sand bags,

Measures to reduce erosion and siltation impacts on Grass Valley Creek:

- Silt settling basins shall be located away from the stream or lake to prevent discolored, silt-bearing water from reaching any stream or lake during any flow regime.
- Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks will be placed on dirt roads, cat tracks, or other trails to control erosion.
- Water containing mud, silt, or other pollutants shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows. A silt catchment basin(s) shall be constructed of silt-free gravel to capture water prior to entering a stream. Upon completion of the project and after all flowing water in the area is clear of turbidity, the gravel along with the trapped sediment shall be removed.
- Silty/turbid water shall not be discharged into any stream or water course. Such water shall be settled, filtered, or otherwise treated prior to discharge.
- Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require that the work site be isolated and/or the construction silt catchment basins, so that silt, or other deleterious materials are not allowed to pass into streams.
- If an off-stream siltation pond/s is/are used to control sediment, pond/s shall be constructed in a location, or shall be designed, such that potential spills into the stream/lake during periods of high water levels/flow are precluded.
- Catchment basins shall be constructed of materials which are free from mud and silt.

Upon completion of the project, all basin material along with the trapped sediments shall be removed in such a manner that said removal shall not introduce sediments into any stream.

- Upon CDFG determination that turbidity/siltation levels resulting from the project-related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation, shall be halted until effective CDFG-approved control devices are installed, or abatement procedures are initiated.

Measures to reduce surface runoff:

- Excavation or grading activities will be suspended during periods of heavy rains.
- Excavations will be left open for as short of a time as possible.
- Barriers or temporary channels will be used around active construction or staging areas to direct surface runoff to specified locations.

Traffic Management - The LACSD shall prepare a construction traffic management plan for work in public roads that complies with the Work Area Traffic Control Handbook or other applicable County of San Bernardino and Caltrans standards to provide adequate traffic control and safety during construction activities. The performance standard for the plan shall be the provision of safe, albeit inconvenient, traffic flow during construction and the provision of adequate access through construction areas, or adequate detour routes, to meet safety and emergency vehicle access and transit through construction areas at all times when construction is underway for any components of the proposed project.

Biology/Botany – Incorporation of the following measures would help reduce the level of impacts to wildlife and plant species.

- Sites that could support *Castilleja lasiorhyncha, Phacelia mohavensis* and other Sensitive and Watch List plants that prefer wet soils and swales should be avoided by equipment, storage, and activities.
- Dirt excavated from the trenches should be piled in the roads, not on undisturbed areas.
- Prior to ground disturbance, the project area should be surveyed for invasive non-native plant occurrences. If rare plant occurrences are located, they should be reported to the District Botanist to coordinate removal and ensure that seeds/plants are not spread by project activities. The project proponent should monitor the disturbed areas for at least one growing season for invasive plant species and be required to facilitate removal of occurrences if necessary.
- To comply with the Migratory Bird Treaty Act and in order to prevent impacts to nesting birds, conduct falling of trees with obvious or suspected nests after August 31st unless there is an immediate safety threat.
- In order to reduce the likelihood of death of cavity-dwelling species, a biologist should be on site when tree felling occurs to monitor cavities for signs of non-avian and avian species.
- To reduce the potential impacts to Sensitive and Watch reptiles and amphibians, construction workers should be trained on the identification of these species and/or have a biological monitor on site. In particular, training on arroyo toads and southern rubber boas is important.

- Trenches should not be left open over night. If that is not feasible, boards should be placed in the trench to provide an escape ladder for animals that might fall in the open pit.
- Workers should confine all vehicles, equipment, and materials to the roadbed, road shoulders lacking vegetation, and existing wide bare spots along the road.
- If tree roots of 3+ inches in diameter are encountered during digging, they should not be severed. Instead, workers should use hand tools to clear the soil around the root so that conduit can be placed underneath the root.
- Any spills or leaks of fuel or any other substance should be reported immediately to the Forest Service (Veronica Magnuson – 382-2765 and Dispatch – 383-5654).
- Where water crossings are present and flowing, the Company should use barriers on the uphill side to temporarily block the water flow until after the trench is filled. Sediment barriers should be placed on the downhill side to prevent sediment from being carried downstream or down-drainage. If a pump is used to clear water from the trench, only clear water should be released into the drainage/stream.
- When working in riparian crossings in the road (ephemeral and intermittent drainages), the hydrological pattern should be restored to pre-construction configuration (except for the hardening/paving).
- No work should be permitted after dark.
- LACSD will have a qualified biologist on hand at all times to monitor construction activities. In the event a listed species is observed with the construction areas prior to or during grading/construction, construction will be immediately stopped and Forest Service will be contacted immediately qualified to assess the situation and to determine subsequent actions.
- All plant and seed mixes used during restoration will need to have Forest Service approval prior to use.

Cultural Resources -Mitigation to prevent any impacts to historical resources:

- In the event that historical resources are encountered during project construction, activities will be halted or redirected until a Forest Service archaeologist can evaluate the nature and significance of the finds.
- Mitigation to prevent impacts to archaeological resources:
- An approved Native American monitor will be present to monitor all initial earth moving construction activities.
- Once all excavation and trenching are completed and the trenches are being refilled and compacted, monitoring is no longer required. Should archaeological resources be encountered, construction activities will be halted or redirected until Forest Service archaeologist can evaluate the nature and significance of the finds.

Mitigation to minimize impacts on human remains:

- In the unlikely event that human remains should be encountered during the construction of the proposed project, all construction will cease and Forest Service

archaeologist will need to be contacted immediately to evaluate the nature and significance of the finds. The San Bernardino County's Coroner Office will be contacted within 24-hours of the discovery.

Hazards - During construction of the pipeline, local emergency response providers shall be contacted and emergency access and evacuation requirements shall be maintained at a level sufficient to protect the safety of residents and the local population. The specific measures to provide adequate protection shall be defined in a traffic management plan approved by the local police and fire agencies.

Noise - Mitigation measures to reduce construction noise impacts:

- Construction will be limited to the hours of 7AM to 7PM on weekdays, and between 9AM and 6PM on Saturday, and will not occur on Sundays or federal holidays, except in emergencies.
- All construction vehicles and fixed or mobile equipment will be equipped with properly operating and maintained mufflers.
- All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period will be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.
- If equipment is being used than can cause hearing damage at adjacent noise receptor locations (distance attenuation will be taken into account), portable noise barriers will be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds.

Visuals – Mitigations to meet visual impacts

- Any ground disturbance or physical changes to National Forest System lands are to be returned to a natural condition within one year so completely that any change is visually not evident.
- Soil and rack excavations are t be placed back to bed in characteristic landscape form approved by the Forest Service.
- Painting of any new improvements, tanks and pipes above ground, will need to a Forest Service approved color before painting.

Contact Person

For additional information regarding this project, contact Veronica L. Magnuson at the Mountaintop District, San Bernardino National Forest at 909-382-2765.

APPENDIX B

CONCURRENCE LETTERS AND RESPONSES

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

May 25, 2007

In Reply Refer To: EPA070202A

Howard Kahan
EPA Project Officer
U. S. Environmental Protection Agency
Region IX Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, California 90046

Re: Lake Arrowhead Community Service District Grass Valley Wastewater Treatment Plant Upgrade Project (EPA Grant #XP-96939001-1), San Bernardino County, California.

Dear Mr. Kahan:

Thank you for continuing consultation with me, regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act, the Environmental Protection Agency (EPA) is providing funds through the above noted grant for construction of the subject undertaking and is seeking my comments on their determination of effects to historic properties.

Earlier in this consultation I requested that you provide additional evidence of your efforts to identify historic properties in the project Area of Potential Effects regarding the locations of two historic properties, archeological site CA-SBR-342/H and the Grass Valley-Lake Arrowhead Tunnel (constructed 1907). In your present letter of May 9, 2007 and in additional information submitted on your behalf by B. Tom Tang of CRMTECH via email, you have provided additional data on the locations of these two historic properties. This information verifies that CA-SBR-342/H is located at least 1,000-1,500 feet northeast of the project APE and will not be subject to any effects from the project construction. Data on the location of the Grass Valley-Lake Arrowhead Tunnel provided by the Lake Arrowhead Community Services District have verified that this feature, although overlapping with a small section of the proposed pipeline route, was installed at a vertical depth that places it approximately 10 feet below the vertical APE of the proposed pipeline route.

After reviewing your letter and other submitted documentation, I can now concur that your historic property identification efforts have been completed pursuant to 36 CFR Part 800.4 and that a finding of No Historic Properties Affected is appropriate in compliance with 36 CFR art 800.4(d)(1). Be advised that under certain circumstances,

such as unanticipated discovery or a change in project description, the EPA may have additional future responsibilities for this undertaking under 36 CFR Part 800.

Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90046

May 9, 2007

Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation (OHP)
P.O. Box 942896
Sacramento, CA 94296-0001

Re: Request for Concurrence on Section 106 Compliance and a Finding of "No Historic Property Affected"
Grass Valley Wastewater Treatment Plant Upgrade Project (OHP Login No. EPA070202A; EPA Grant No. XP-96939001-1)
Lake Arrowhead Community Services District (LACSD)
San Bernardino County, California

Dear Mr. Donaldson:

In response to your letter dated March 23, 2007, I am writing to provide additional information on Site CA-SBR-342/H, the prehistoric village site mentioned in your letter, and the 1890s-era tunnel in hopes of clarifying the precise locations of these features in relation to the proposed undertaking's Area of Potential Effects (APE). It is my hope that the additional information would demonstrate that a Phase II archaeological testing program would not be productive or necessary at these locations, and that archaeological monitoring, as recommended in the historical/archaeological resources survey report prepared for this undertaking by CRM TECH in 2004, would be adequate to address potential cultural resources concerns regarding these features.

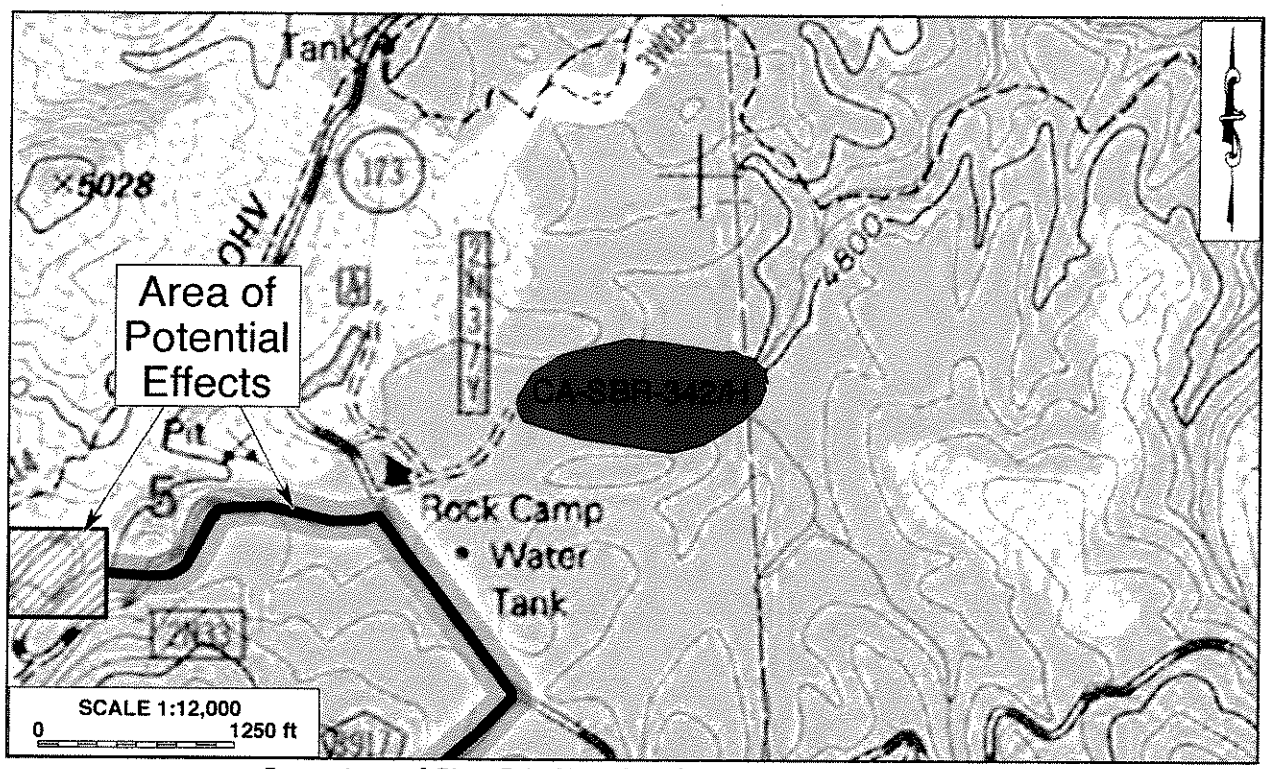
Site CA-SBR-342/H

According to records and maps on file at the Archaeological Information Center in Redlands, Site CA-SBR-342/H is located at least 1,000-1,500 feet from the proposed pipeline route, and on the opposite side of Willow Creek (see map on p. 2). CRM TECH's 2004 study recommended monitoring in the APE near that location because of the possibility of buried cultural deposits beyond the established site boundaries. However, no features or artifact deposits were discovered within or near the APE, either in 2004 or during previous studies. Consequently, it would be difficult to conduct a meaningful

archaeological testing in the APE. Considering that the nearest part of the APE to the site lies within the highly disturbed right-of-way of Highway 173, it is unlikely for test excavations within the APE, presumably at randomly chosen spots, to yield any archaeological remains associated with Site CA-SBR-342/H.

Grass Valley-Lake Arrowhead Tunnel

Regarding the location of the tunnel in relation to the proposed undertaking, Ryan Gross, District Engineer for the LACSD, provided the following information based on the district's records:



Location of Site CA-SBR-342/H in relation to the APE

> The construction of the tunnel in Figure 7 of [the CRM TECH] report was completed in 1907 (as is stamped on the tunnel itself) and is currently used to transfer surface water from Grass Valley Lake to Lake Arrowhead. The tunnel is operated by the Arrowhead Lake Association (ALA). The Lake Arrowhead Community Services District has an 8" sewer pipeline that was constructed inside the tunnel in the mid-1960s. As for the alignment of the proposed recycled water pipeline there will be approximately 10 feet separation from the bottom of the proposed recycled water pipeline to the top of the tunnel and therefore the tunnel will not be impacted by the project.

In other words, while horizontally the tunnel overlaps with a small segment of the proposed pipeline route, vertically it lies approximately 10 feet below the impact zone of

the undertaking. Since the undertaking entails relatively shallow trenching and pipeline installation at this location, it does not appear to have the potential to affect the function, appearance, or any other characteristics of the tunnel. Therefore, I have concluded that the tunnel is located outside the APE. Nevertheless, archaeological monitoring appears to be appropriate at this location to prevent inadvertent impact to this potential historic property or any associated features.

Conclusion

Based on the results of CRM TECH's 2004 study and the additional information presented above, and pursuant to 36 CFR 800.4(d)(1), the EPA, in conjunction with the State Water Resources Control Board, concludes that the proposed undertaking will have no effect on any historic properties, under the condition that the trenching operations and other ground-disturbing activities near the locations of Site CA-SBR-342/H and the Grass Valley-Lake Arrowhead Tunnel be monitored by a qualified archaeologist. I am requesting your concurrence on that conclusion, and on the determination that Section 106 compliance is complete and adequate for the undertaking.

Thank you very much for your assistance in this matter. If you need any further information regarding this submittal, please feel free to contact me at (213) 244-1819 or e-mail at kahan.howard@epa.gov.

Sincerely,

Howard Kahan, Environmental Scientist
US EPA Southern California Field Office (WTR-1)
600 Wilshire Blvd Suite 1460
Los Angeles CA 90017

CC: Madeleine Hirn, State Water Resources Control Board
Ryan Gross, Lake Arrowhead Community Services District
Tom Dodson, Tom Dodson and Associates
B. Tom Tang, CRM TECH

Ryan Gross

From: B. Tom Tang [tom.tang@crmtech.us]
Sent: Friday, May 04, 2007 5:00 PM
To: Ryan Gross
Cc: Tom Dodson; kahan.howard@epa.gov; mhirn@waterboards.ca.gov
Subject: Re: EPA070202A (Grass Valley)

Hi, all!

Very good news—Bill Soule at the OHP agrees with our positions on the two issues he raised in his original comments. Now the only thing left to do is for me to put all the additional information in a formal letter, which the lead agency (I believe that would be the EPA, right?) can then transmit to the OHP officially. I should be able to get my part done in the early part of next week. Then I guess I'll e-mail the draft to each of you for comments first, just to make sure we have all bases covered. How does that sound?

Tom Tang

------ Forwarded Message
From: "Soule, William" <wsoule@parks.ca.gov>
Date: Fri, 4 May 2007 10:55:45 -0700
To: "B. Tom Tang" <tom.tang@crmtech.us>
Conversation: EPA070202A (Grass Valley)
Subject: RE: EPA070202A (Grass Valley)

Tom:

I agree that this looks like both the archeological site CA-SBR-342/H and the historic tunnel are outside of the project APE, and as long as the trenching in the areas along the proposed pipeline route are subject to archeological monitoring in the vicinity of those two historic properties, I believe that I can complete this consultation. However, I would prefer that, for the record, you submit and summarized this data in a formal letter to the SHPO. Please also state in the letter that you have been authorized to act for the EPA for Section 106 consultation purposes. Include a map of the APE and the locations of the two historic properties in questions. Refer to our login # EPA070202A.

Bill

William E. Soule
Associate State Archeologist
Office of Historic Preservation
Phone: 916-654-4614
Fax: 916-653-9824
Email: wsoule@parks.ca.gov
------ End of Forwarded Message

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov

March 23, 2007

In Reply Refer To: EPA070202A

Howard Kahan
EPA Project Officer
United States Environmental Protection Agency
Region IX Southern California Field Office of Historic Preservation
600 Wilshire Blvd. Suite 1460
Los Angeles, California 90046

Re: Lake Arrowhead Community Service District Grass Valley Wastewater Treatment Plant Upgrade Project (EPA Grant #XP-96939001-1), San Bernardino County, California.

Dear Mr. Kahan:

Thank you for seeking consultation with me, regarding the above noted undertaking, pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act. The Environmental Protection Agency (EPA) is providing funds through the above noted grant for construction of the subject undertaking. Project aspects include the upgrade of the Grass Valley Wastewater Treatment Plant, construction of a pump station, and the installation of a subsurface 14-inch diameter transmission pipeline along a 15,000 foot route from the treatment facility to the Lake Arrowhead County Club Golf Course. The treated affluent will be used for irrigation purposes at the golf course.

The EPA has determined that the Area of Potential Effects (APE) consists of the Grass Valley Treatment Facility, the proposed pump station to be located within an existing parking lot at Grass Valley Lake, and a 60 foot wide corridor for the installation of the 15,000 linear foot pipeline. I concur that the EPA's determination of the APE is appropriate pursuant to 36 CFR Parts 800.4(a)(1) and 800.16(d).

As documentation of the EPA's efforts to identify historic properties within the project APE, you have submitted, in addition to your letter of January 18, 2007, the following report:

- *Identification and Evaluation of Historic Properties Lake Arrowhead Community Services District Recycled Water Pipeline Alignment, Grass Valley Area, San Bernardino County, California* (B. Tang, M. Hogan, M. Dahdul, and J. Smallwood; CRM TECH: August 23, 2004).

Having reviewed the records search, literature review, Native American consultation, and field survey described in this report, I have reached the conclusion that your efforts to identify historic properties within the project APE are not yet completed pursuant to

36 CFR Part 800.4. The archeological report submitted in support of this undertaking notes that "the area along State Highway 73 and Pilot Rock Road were considered especially sensitive for prehistoric cultural resources" and "a prehistoric village site was situated near the northern portion of the APE while a tunnel dating to the 1890's was shown in historic maps as traversing through the southernmost section of the APE" (B. Tang et al; 2004:10-12).

I believe that your proposal to address the potential presence of buried historic properties through the implementation of an archeological management plan based on monitoring of subsurface disturbances and the treatment, as discoveries, of any such properties encountered during the implementation of the undertaking, would not in good faith provide the full measure of protection that I understand to be the intent of the Part 800 regulations. I recommend that the EPA undertake further, proactive efforts (i.e., Phase II Archeological Study) toward the identification of historic properties, prior to the construction of the project, as well as providing for standard monitoring of project implementation and treatment of discoveries.

Examples of the types of proactive identification measures that could be employed for subsurface testing are shovel scrapes, auguring, backhoe trenches, and small scale test excavations. I will also consider an alternative type(s) of Phase II historic property identification efforts in the APE, if the EPA can demonstrate that those efforts would achieve results comparable to those that would result from a proactive subsurface identification program such as outlined above. Additionally, the proposed finding of effect in your letter of January 18, 2007, which is stated as "no likely adverse effect to cultural resources," is not pursuant to 36 CFR Part 800.

I will be pleased to continue this consultation following the submittal of the additional information requested above, and the identification by the EPA of a finding of effect pursuant to 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011

In Reply Refer To:
FWS-SB-5131.1

DEC 15 2006

Ms. Kim Wittorff
Environmental Scientist
State Water Resources Control Board
Division of Financial Assistance
P.O. Box 944212
Sacramento, California 94244-2120

Subj. Request for Concurrence with a "Not Likely to Adversely Affect" Determination Regarding the Lake Arrowhead Community Services District, Grass Valley Wastewater Treatment Plant Recycled Water Program Improvements Project, San Bernardino County, California; State Revolving Fund Loan No. C-06-4352-110

We received and have reviewed your letter dated November 8, 2006, addressed to the Fish and Wildlife Service's Ventura Field Office, requesting our concurrence on your agency's effects determination regarding the project referenced above. Your letter and enclosures were forwarded to this office for review. Your agency has determined that the project "may affect, but is not likely to adversely affect" the federally endangered arroyo toad (*Bufo californicus*) and mountain yellow-legged frog (*Rana muscosa*) and the federally threatened California red-legged frog (*Rana aurora draytoni*).

The proposed project will upgrade the Green Valley Wastewater Treatment Plant (GVWTP) to produce up to 1.0 million gallons per day of recycled water meeting Title 22 standards. Additionally, the project will install a storage tank and pipeline to deliver recycled water from the GVWTP to the Lake Arrowhead Country Club (LACC) golf course, and modify the LACC's private golf course water system to use reclaimed water for irrigation per State Department of Health Services requirements. All drainages and associated riparian habitat will be avoided by bore and jacking under the drainages and riparian habitat.

The proposed project impact areas are roadside areas impacted by wastewater treatment facilities, vehicular parking and snow removal activities. In general, the roadways have a very narrow shoulder with occasional areas for pullouts. Private residences occur along the majority of the pipeline alignment. In the residential areas, much of the roadside is landscaped with ornamentals or untended and vegetated with ruderal species.

A field survey of the project area was conducted on July 27, 2004. The result of the general biological survey was that no habitat for federally threatened or endangered species occurs along

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the pipeline alignment, the GVWTP's compound or the LACC. Protocol surveys conducted in 2003 were negative for the federally listed amphibian species in the portion of Grass Valley Creek on the LACC. However, as noted previously in this letter, the project has been designed to avoid impacts to streams within the LACC that could potentially support amphibian species at the time the project is undertaken.

Based upon our review of your letter (2006), Initial Study (2004), the Biological Survey Report (2004), and the protocol surveys (2003), we conclude that the proposed action as described in the referenced documents will not affect federally-listed species. In view of this determination, we believe that the interagency consultation requirements of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*), have been satisfied. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

We appreciate this opportunity to work cooperatively with your agency. If you have any questions regarding this letter, please contact John Hanlon of this office at (760) 431-9440, extension 220 or email at john_hanlon@fws.gov.

Sincerely,

for Karen A. Goebel
Assistant Field Supervisor

cc:
Lake Arrowhead Community Services District
Lahontan Regional Water Board

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90046

December 15, 2006

Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
PO Box 942896
Sacramento, CA 94296-0001

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act (NHPA) for the Lake Arrowhead Community Service District. EPA Grant #XP-96939001-1

Dear Mr. Donaldson:

I am writing to initiate consultation with the State Historic Preservation Officer (SHPO) under 36 CFR Part 800, for the above referenced project.

Project Description
The proposed project includes the upgrade of the treatment process of the Grass Valley Wastewater Treatment Plant, construction of a pump station, and the construction of a subsurface 14 inch transmission main along 15,000 linear feet. The newly treated effluent will travel along the transmission main to the Lake Arrowhead County Club Golf Course. This effluent will be used for irrigation purposes on the golf course.

Area of Potential Effect
Under Section 800.4 a1, I am making a determination of the Area of Potential Effect (APE). The APE consists of the Grass Valley Wastewater Reclamation Facility, associated pipeline rights-of way, and the proposed pump station within an existing parking lot at Grass Valley Lake. The pipeline route measure approximately 15000 feet and the APE for the proposed pipeline rights-of-way has a width of 60 feet. For a map of the project and the complete verbal description see the enclosed cultural resources survey by CRM Tech.

Identification of Historic Properties
Under section 800.4 b, an effort has been made to identify historic properties. The enclosed cultural resources survey summarizes that effort which included a records search, a historical background search, consultation with Native American representatives and a field survey.

1) The records search found no archaeological site within the APE. Seven sites were identified outside the APE but within a one-mile radius. A known Native American camp ground is located

approximately 1,500 feet from the proposed pipeline. An approved monitor will be present during initial earth moving activities.

2) The historical background search identified a segment of a tunnel with in the APE.

3) Consultation with tribal representatives did not identify any cultural resources in the APE. From the responses the San Manuel Band of Mission Indians recommend using an approved monitor throughout the site. The Morongo Band of Mission Indians recommended that a qualified archaeologist be identified if any cultural resources are found. EPA contracted tribal representatives on March 8, 2006. EPA received two comments. The Ramona Band of Cahuilla recommended having a Native American monitoring during construction. The Morongo Band of Mission Indians again recommended that a qualified archaeologist be identified if any cultural resources are found.

4) The field survey discovered no cultural artifacts. Additionally the tunnel identified in the historical background search was not located during the field survey

Assessment of Adverse Effects

Under section 800.5 a, I have applied the criteria of adverse effect and have determined that since No cultural resources have been found within the APE, this project will have **no likely adverse effect to cultural resources**. The Lake Arrowhead Community Service District will implement the following mitigation measures for the project.

1) In the event that historical resources are encountered during project construction, construction activities will be halted or redirected until a qualified archaeologist can evaluate the nature and significance of the finds.
2) An approved Native American monitor will be present to monitor all initial earth-moving construction activities.

I am requesting your concurrence with the Area of Potential Effect and the determination of no adverse effect. If I do not receive a response after the 30-day comment period, I will assume concurrence. If you require additional information or have questions regarding this request, please call me at (213) 244-1819.

Sincerely,

Howard Kahan

Howard Kahan
EPA Project Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Lake Arrowhead Recycled Water Program Improvements

Dear Tribal Representative,

The city of Lake Arrowhead, California is proposing to upgrade the treatment process at the Grass Valley waste water treatment plant to re-use the recycled water for irrigation and other uses.

The purpose of this letter is to contact Native American tribal groups to determine whether there are Traditional Cultural Places in the vicinity of the project or other issues of concern. In August of 2004, CRM TECH contacted Tribal Representatives to identify any cultural resources in the area. The representatives that responded did not identify any cultural resources in the project area. CRM TECH survey of the area of potential effect (APE) did not identify any cultural resources. A copy of the resource survey can be found in the initial study for the recycled water program improvements. This was released by the Lake Arrowhead Community Services District in October 2004.

Please notify this office if you are aware of any historic properties of religious or cultural significance to the Tribe that may be affected by the proposed project. If we have not heard from you by April 1, 2006, we will assume that there are no areas of concern. If you have any questions regarding this request, please feel free to contact me by telephone at (213) 244-1819 or by fax at (213) 244-1850.

My email address is Kahan.howard@epa.gov
Thank you for your assistance in this matter.
Sincerely,

Howard Kahan

Howard Kahan
Environmental Scientist
Water Division (WTR-4)

Britt Wilson
<britt_wilson@morongo .org>
03/15/2006 09:50 AM

To Howard Kahan/R9/USEPA/US@EPA
cc Britt Wilson <britt_wilson@morongo.org>
bcc
Subject Native American Info- USEPA/H. Kahan; Lake Arrowhead Recycled Water Program Improvements

Thank you for contacting the Morongo Band of Mission Indians concerning cultural resource information relative to the above referenced project(s). Due to the high number of information requests the Tribe has been receiving, we are only able to respond via email.

The project(s) is outside of the Tribe's current reservation boundaries but within an area that may be considered a traditional use area or one is which the Tribe has cultural ties (e.g. Cahuilla/Serrano territory). The Tribe, however, has no specific information regarding cultural resources in the project/area but would like to offer the following comments:

- If Native American cultural resources (other than isolates) are found on the project site, or the site is in a medium to high-probability area for those resources, the Tribe recommends a cultural resources survey and archaeological site monitoring –preferably utilizing Native American monitors;
- In accordance with state law, the County coroner should be contacted if any human remains are found during earthmoving activities;
- If Native American cultural resources are uncovered during earthmoving activities, work in the immediate vicinity of the find shall cease and an archaeologist meeting Secretary of Interior standards shall be retained to assess the find. Any treatment plan or action by an archaeologist should include consultations with the Morongo Band of Mission Indians.

[SPECIAL NOTE (for projects other than cell towers): *If* this project is associated with a city or county specific plan or general plan action it is subject to the provisions of SB18-Tradtional Tribal Cultural Places (law became effective January 1, 2005) and will require the city or county to participate in **formal, government-to-government** consultation with the Tribe. If the city or county are your client, you may wish to make them aware of this requirement. By law, they are required to contact the Tribe. This email does ***not*** constitute consultation under SB18.]

Thank you for the opportunity to comment on the project.

Sincerely,

Britt W. Wilson
Project Manager/Cultural Resources Coordinator
Morongo Band of Mission Indians
Planning & Economic Development Department
245 N. Murray Street
Banning, CA 92220
Office: (951) 755-5200
Direct: (951) 755-5206
Fax: (951) 922-8146
Email: Britt_wilson@morongo.org

Wayta' Yawa' (Always Believe)

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
FAX (916) 341-5707 • Internet Address: http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

NOV 08 2006

CERTIFIED MAIL NO.: 7001 0320 0000 7544 6559
Return Receipt Requested

Field Office Supervisor
U.S. Fish and Wildlife Service
Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726

REQUEST: ENDANGERED SPECIES ACT (ESA) SECTION 7 CONCURRENCE (APPLICATION FOR FEDERAL FUNDING)

APPLICANT: LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT (DISTRICT)

PROJECT: RECYCLED WATER PROGRAM IMPROVEMENTS PROJECT (PROJECT), SAN BERNARDINO COUNTY; STATE REVOLVING FUND (SRF) LOAN NO. C-06-4352-110

State Water Resources Control Board (State Water Board) staff has determined that the above-mentioned Project is **not likely to adversely affect federally listed species** and is seeking concurrence from the U.S. Fish and Wildlife Service (USFWS). The Division of Financial Assistance of the State Water Board administers the SRF program and, pursuant to 40 CFR Part 35, the District has applied for a loan from this program to assist in financing the District's Project. This loan program is partially funded by a capitalization grant from the U.S. Environmental Protection Agency (USEPA) and issuance of the SRF loan is considered equivalent to a **FEDERAL ACTION.** Therefore, the Project must undergo federal consultation with agencies responsible for implementation of federal environmental statutes and authorities. The USEPA has delegated lead agency responsibility for informal consultation under Section 7 of the federal ESA to the State Water Board. Based on the Project information below, the State Water Board staff is requesting concurrence from USFWS to complete the federal review process.

The District operates the Grass Valley wastewater treatment plant (WWTP) that treats sewage generated by the community of Lake Arrowhead and immediately surrounding area. This plant currently discharges approximately 2.0 million gallons per day (mgd) of secondary effluent to a pipeline that transports the discharge to the City of Hesperia.

The proposed project will upgrade the WWTP to produce up to 1.0 mgd of recycled water meeting Title 22 standards. Additionally, the project will install a storage tank and pipeline to deliver recycled water from the WWTP to the Lake Arrowhead Country Club (LACC) golf course, and modify the LACC's private golf course water system to use reclaimed water for irrigation per State Department of Health Services requirements.

(LACC) golf course, and modify the LACC's private golf course water system to use reclaimed water for irrigation per State Department of Health Services requirements.

The California Natural Diversity Database identified the following threatened or endangered species as having the potential to occur in the project vicinity: endangered arroyo toad (*Bufo californicus*) and mountain yellow-legged frog (*Rana muscosa*) and threatened California red-legged frog (*Rana aurora draytonii*). A field survey was conducted on July 27, 2004, and no federal endangered or threatened species were observed during the survey. The waters in the vicinity of the project do not provide suitable habitat for the arroyo toad. There are no known recent occurrences of the California red-legged frog or the mountain yellow-legged frog in the project vicinity. Protocol surveys conducted in a portion of Grass Valley Creek on the golf course in 2003 found no evidence to suggest inhabitation by either species.

Based on the above information, State Water Board staff has determined that the Project is **not likely to adversely affect** federal special status species. If you have questions or comments, please respond within 30 days upon receipt of this letter. To request a time extension, please call me at (916) 327-9117. If no comments or requests for extensions are received, the State Water Board will proceed with funding approval for this Project at the end of the review period.

Sincerely,

S. Jurkevics for

Kim Wittorff
Environmental Scientist

Enclosure

cc: Mr. Mark Veysey, Manager Water Resources (w/o enclosure)
Lake Arrowhead Community Services District
28200 State Highway 189
Lower Village, Suite 100
Lake Arrowhead, CA 92352

Mr. Tom Dodson (w/o enclosure)
Tom Dodson & Associates
2150 N. Arrowhead Avenue
San Bernardino, CA 92405

Ms. Cindi Mitton, Senior Engineer (w/o enclosure)
Lahontan Regional Water Board, Victorville Office
15428 Civic Drive, Suite 100
Victorville, CA 92392

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
FAX (916) 341-5707 • Internet Address: http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

NOV 08 2006

See Mailing List

REQUEST: COMMENTS ON APPLICATION FOR FEDERAL FUNDING

APPLICANT: LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT (DISTRICT)

PROJECT: RECYCLED WATER PROGRAM IMPROVEMENTS PROJECT (PROJECT), SAN BERNARDINO COUNTY; STATE REVOLVING FUND (SRF) LOAN NO. C-06-4352-110

State Water Resources Control Board (State Water Board) staff is seeking comments from your agency to complete the **federal review process** for the above-mentioned Project. The Division of Financial Assistance of the State Water Board administers the SRF Program and, pursuant to 40 CFR Part 35, the City is seeking a loan from this program to assist in financing the Project. This loan program is partially funded by a capitalization grant from the U.S. Environmental Protection Agency (USEPA) and issuance of a loan is considered equivalent to a **FEDERAL ACTION**. Therefore, the Project must undergo federal consultation with agencies responsible for implementation of federal environmental statutes and authorities. The USEPA has delegated lead agency responsibility for this federal consultation to the State Water Board. Specific Project information is provided below.

Project
The District operates the Grass Valley wastewater treatment plant (WWTP) that treats sewage generated by the community of Lake Arrowhead and immediately surrounding area. This plant currently discharges approximately 2.0 million gallons per day (mgd) of secondary effluent to a pipeline that transports the discharge to the City of Hesperia.

The proposed project will upgrade the WWTP to produce up to 1.0 mgd of recycled water meeting Title 22 standards. Additionally, the project will install a storage tank and pipeline to deliver recycled water from the WWTP to the Lake Arrowhead Country Club (LACC) golf course, and modify the LACC's private golf course water system to use reclaimed water for irrigation per State Department of Health Services requirements.

Protection of Wetlands
There will be no effects on wetlands. The riparian and wetland areas related to the golf course and WWTP site will not be subject to construction activities nor altered in any way. Additionally, no drainage crossings are proposed at the golf course. Refer to page 24 of the Mitigated Negative Declaration (MND).

Flood Plain Management
The project area is partially located in a floodplain zone, that of Grass Valley Creek, which has been restricted to recreational uses (golf course) for more than 50 years. The WWTP site construction will also be within a flood hazard area, although the construction will not cause a net increase in off-site drainage. Refer to pages 29 and 40 of the MND.

Farmland Protection Policy Act
The project area does not contain agricultural lands.

Endangered Species Act
State Water Board staff has determined that the project is not likely to adversely affect federal special status species and is requesting concurrence from the U.S. Fish and Wildlife Service through the Section 7 informal consultation process.

Clean Air Act
State Water Board staff is required to complete a federal Clean Air Act general conformity analysis for SRF projects and has determined that a conformity determination is not required for the District's project. The District is located in the South Coast Air Basin, within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is in severe non-attainment for 8-hour ozone and serious non-attainment for particulate matter up to 10 micrometers in size (PM10). The federal "de minimis" levels for these non-attainment designations are 25 tons per year (tons/year) for reactive organic gases (ROG) and oxides of nitrogen (NO_X) and 70 tons/year for PM10. At most, the proposed project will emit 0.027 tons/year ROG, 0.77 tons/year NO_X, and 0.002 tons/year of PM10. The emissions for the proposed project would not exceed the "de minimis" thresholds, and the project would not exceed 10 percent of the total emissions of the area. Therefore, a conformity determination is not necessary.

If you have questions or comments, please respond within 30 days of receipt of this letter. To request a time extension, please call me at (916) 327-9117. If no comments are received, the State Water Board will proceed with funding approval for this Project at the end of this review period.

Sincerely,

Kim Wittorff
Environmental Scientist

Enclosure

cc: Mr. Mark Veysey, Manager Water Resources (w/o enclosure)
Lake Arrowhead Community Services District
28200 State Highway 189
Lower Village, Suite 100
Lake Arrowhead, CA 92352

Mr. Tom Dodson (w/o enclosure)
Tom Dodson & Associates
2150 N. Arrowhead Avenue
San Bernardino, CA 92405

Ms. Cindi Mitton, Senior Engineer (w/o enclosure)
Lahontan Regional Water Board, Victorville Office
15428 Civic Drive, Suite 100
Victorville, CA 92392

MAILING LIST

Ms. Lisa Hanf
U.S. EPA, Region 9
Environmental Review Coordinator
75 Hawthorne Street
San Francisco, CA 94105

U.S. Army Corps of Engineers
Regulatory Branch
P.O. Box 532711
Los Angeles, CA 90053-2325

Ms. Karen E. Armes, Acting Regional Director
Federal Emergency Management Agency, Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607

USDA, Natural Resources Conservation Service
Resource Technology Staff
430 G Street, Suite 4164
Davis, CA 95616-4164

APPENDIX C

PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FINDING OF NO SIGNIFICANT IMPACT
For the
Grass Valley Wastewater Treatment Plant and Recycled Water System Facilities
Design and Construction

PROJECT LOCATION AND DESCRIPTION

The U.S. Environmental Protection Agency (EPA) is considering an award to the Lake Arrowhead Community Services District to fund final design and construction. The proposed project would modify the existing Grass Valley wastewater treatment plant, in Lake Arrowhead, to incorporate additional treatment capability that will allow the district to produce wastewater of sufficient quality to use for recycled purposes. The project is located in the unincorporated area known as Lake Arrowhead in the San Bernardino Mountains.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The Lake Arrowhead Community Services District plans to increase the level of treatment and the treatment capacity of the District's Grass Valley Wastewater Treatment Plant to produce 1.0 million gallons per day of effluent for beneficial uses within the district. The project requires the construction of a recycled water conveyance system that will include 1.0 million gallons of storage, a 2,500 gallons per minute high head pump station, a 15,000 lineal foot 14-inch diameter transmission pipeline, and modification of the intended user's irrigation system. The initial end user of the recycled water is the Lake Arrowhead Country Club Golf Course.

ENVIRONMENTAL CONSEQUENCES AND CONDITIONS

Pursuant to the National Environmental Policy Act (NEPA), EPA prepared an Environmental Assessment (EA), which examined the potential environmental impacts and alternative to the proposed project. The EA considered a wide range of regulatory, environmental and socio-economic factors, including Land Use, Water Quality, Air Quality, Natural Resources, Cultural Resources, Endangered Species, Environmental Justice, Resource Use Patterns, Noise and Visual Resources/Aesthetics. Based on information from the EA, the Environmental Protection Agency (EPA) has determined that the proposed project, the Grass Valley Wastewater Treatment Plant and Recycled Water System Facilities, will not pose significant impacts to the environment and an Environmental Impact Statement is not required.

PUBLIC REVIEW

The EA is on file, along with other project materials, and is available for public inspection at the EPA Southern California Field Office in Los Angeles, CA. Copies of the EA are also available for public review at the Lake Arrowhead Branch Public Library, 27235 Highway 189, Blue Jay, CA 92317 and the Lake Arrowhead Community Services District Office, 28200 State Highway 189, Building O3, Suite 160, Lake Arrowhead, CA 92352. In addition, the EA will be posted on

the EPA website at http://www.epa.gov/region09/nepa/epa-generated.html and the Lake Arrowhead Community Services District web site at: http://www.lakearrowheadcsd.com/

To obtain additional information about the project, please contact Howard Kahan by email at: kahan.howard@epa.gov or by calling (213)244-1819.

All interested persons may submit comments to EPA Region 9 by July 6, 2007. No administrative action will be taken on this proposed project prior to the expiration of the comment period. Comments, via letter, fax or email, should be sent to Howard Kahan at the address listed below.

Howard Kahan (WTR-1)
U.S. EPA, Region 9
Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90017
Telephone: (213) 244-1819
Fax: (213) 244-1850
Email kahan.howard@epa.gov

FINDING

After EPA assesses any comments received, those comments, EPA's responses and this FONSI will be forwarded to the Regional Administrator for review and signature. If this FONSI is signed by the Regional Administrator, it will not be re-circulated for review, but will be available to any individual upon request.

_____ _____

Wayne Nastri Date
Regional Administrator

APPENDIX D

PUBLIC NOTICE FOR NEWSPAPERS

Public Notice for the Finding of No Significant Impact for the Grass Valley Wastewater Treatment Plant and Recycled Water System Facilities Design and Construction

The U.S. Environmental Protection Agency (EPA) is considering authorizing the expenditure of funds awarded to the Lake Arrowhead Community Services District in May of 2006. These funds ($431,100) were provided by the U.S. congress to help modify the existing Grass Valley wastewater treatment plant, in Lake Arrowhead, to incorporate additional treatment capability that will allow the district to produce wastewater of sufficient quality to use for recycled purposes.

In compliance with the National Environmental Policy Act, EPA has prepared an environmental assessment (EA) that examines the potential environmental impacts of the wide range of regulatory, environmental (both natural and human) and socio-economic factors, the EA did not identify any significant impacts from the implementation of the this project.

Copies of the EA and FONSI are also available for public review at the following locations:

Lake Arrowhead Branch Public Library
27235 Highway 189
Blue Jay, CA 92317

Lake Arrowhead Community Services District Office
28200 State Highway 189, Building O3, Suite 160
Lake Arrowhead, CA 92352

In addition, the EA will be posted on the EPA website at
http://www.epa.gov/region09/nepa/epa-generated.html

To obtain additional information about the project, please contact Howard Kahan by email at: kahan.howard@epa.gov or by calling (213) 244-1819.

Interested persons, including those who disagree with this proposal may submit comments to EPA Region 9 within 30 calendar days from the date the FONSI is issued. No administrative action will be taken on this proposed project prior to the expiration of the comment period which ends July 6, 2007. Comments, via letter, fax or email, should be sent to Howard Kahan at the address listed below.

Howard Kahan (WTR-1)
U.S. EPA, Region 9
Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90017
Telephone: (213) 244-1819
Fax: (213) 244-1850
Email kahan.howard@epa.gov

APPENDIX E

ANTIDEGRADATION ANALYSIS

ANTIDEGRADATION STUDY FOR THE PROPOSED RECYCLED WATER USE AT THE LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

January 2005
(revised)

Prepared by:

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ANTIDEGRADATION STUDY FOR THE PROPOSED RECYCLED WATER USE AT THE LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

Introduction

This report presents the results of an antidegradation analysis of the Mojave River Basin with respect to planned recycled water use at the Lake Arrowhead Community Services District (District) service area in a two phase approach and disposal of the remaining treated effluent to the Hesperia Disposal Site. The recycled water will be tertiary-treated Title 22-quality water generated from the proposed Grass Valley Wastewater Treatment Plant (Grass Valley WWTP) upgrade. The Phase I Recycled Water Project will convey recycled water to the Lake Arrowhead Country Club (Golf Course) with any remaining recycled water that is not used at the Golf Course will be conveyed by a land outfall with the remaining Grass Valley WWTP effluent to the Hesperia Disposal Site. The analysis has been completed for future conditions assuming all Grass Valley WWTP effluent is tertiary treated for recycled water use.

Background

The District operates the Grass Valley WWTP which treats sewage to advanced secondary treatment levels with a 2.3 MGD capacity. Recycled Water Phase I Project for the District is to upgrade the Grass Valley WWTP to produce Title 22-quality effluent for unrestricted recreation and irrigation uses, construction of a 16-inch recycled water distribution system which is to be delivered primarily to the Golf Course, although excess recycled water would be directed to the Hesperia Disposal Site which is and will continue to be the primary disposal method of WWTP effluent. Recycled Water – Phase II Project for the District will include Grass Valley WWTP additional equipment, expansion of the recycled water distribution system to local schools, parks and residential landscaping.

Water Quality Standards

The Golf Course and future Phase II customers are located within the Alto subarea of the Mojave River Groundwater Basin. The primary responsibility for the protection of the basin's water quality lies with the State Water Resources Control Board and the Regional Water Quality Control Boards-Lahontan Region. The Basin Plan for the Lahontan Region sets forth water quality standards for the surface and groundwaters of the Region. According to the Basin Plan, the water quality objectives, which apply to all groundwaters in the region, shall not contain concentrations of chemical constituents in excess of the secondary maximum contaminant levels (SMCLs) based on drinking water standards specified in Title 22. For TDS the SMCL ranges are as follows:

Maximum Contaminant Level Ranges for TDS, mg/L [1]		
Recommended	Upper	Short Term
500	1,000	1,500

The drinking water standard for nitrate as nitrogen is set at 10 ppm (equivalent to the 45 ppm nitrate as nitrate drinking water standard).

Projected Water Quality

Based on the recommended methods of treatment, the projected TDS levels in the recycled water are 300 milligrams per liter (mg/L). Although a membrane bioreactor system will be added for the production of recycled water, the other existing treatment facility components, including the denitrification filters and the chlorination/disinfection facilities, will be kept in place. As a result, the nitrogen levels and the disinfection by-products in the effluent are not expected to change and will continue to comply with Waste Discharge Requirements.

The District is also involved in a plan where State Water Project (SWP) water is proposed as a replacement water supply to 50% of their current supply from Lake Arrowhead. The TDS level of Lake Arrowhead ranges from 50 mg/L to 85 mg/L while the proposed source from SWP reflects TDS levels from 210 mg/L to 300 mg/L.

Anti-Degradation Analysis

Currently, the TDS of the effluent produced by the District's two wastewater treatment plants ranges from 200 to 330 mg/L. The use of SWP water by the District could increase the TDS levels in wastewater treatment plant effluent because the increase in TDS in 50% of the supply water would be carried into the resulting wastewater effluent. The District assumed the role of co-lead agency for the preparation of an Initial Study/Mitigated Negative Declaration for the State Water Project Water Transfer project. The environmental study included an identification of the impacts of using SWP water in the LACSD service area. By completing a mass balance for salt, the study showed an increase in TDS levels in wastewater treatment plant effluent and an overall change in TDS levels of the recharge water supply to the Alto portion of the Mojave River watershed of approximately 4 ppm (mg/L). The calculations assumed TDS levels of Lake Arrowhead water of 85 mg/L and of SWP water of 263 mg/L. Also, the calculations assumed a 2.4 MGD wastewater flow which is the peak capacity of the Grass Valley WWTP. Values for surface water inflow (recharge) of 65,000 AFY in the Alto subarea and 200 mg/L for TDS levels were also used in the calculations.

Based on the Preliminary Design Report for the Grass Valley WWTP upgrade, potential discharges would contain approximately 300 mg/L of TDS. While the TDS level in the recycled water is not projected to exceed the current level of TDS in the effluent, the calculations included in the State Water Project Water Transfer study were based on an average value of 265 mg/L of TDS for effluent produced by the District's WWTPs.

Therefore, the analysis was revised for the projected TDS of the recycled water effluent using 300 mg/L. The resulting increase in TDS level of the recharge water supply due to the use of State Water Project water and additional treatment from the WWTP upgrade is expected to be 5 mg/L. (See attachment for detailed calculations.)

A summary of the TDS levels is presented below:

Comparative Levels of TDS

Supply	a) Lake Arrowhead	50-85 mg/L
	b) SWP	210-300 mg/L (263 mg/L avg.)
Effluent[3]	c) Existing (Secondary)	200-330 mg/L
	d) Projected (Title 22-quality)	300 mg/L
Recharge Water Supply	e) Increase due to WWTP effluent	3 mg/L
	f) Increase due to SWP water	4 mg/L
	g) Increase due to SWP water and WWTP upgrade	5 mg/L
Groundwater	h) Existing Alto subarea TDS level[4]	200 mg/L
	i) Projected Alto subarea TDS level with SWP water and WWTP upgrade (h+e+g)	208 mg/L
j) Objective from Basin Plan[2]		500-1,000 mg/L

Findings

The proposed use of Title 22-quality recycled water for direct reuse at the Lake Arrowhead Golf Course will not exceed the Mojave River Basin TDS water quality objective of 500 to 1,000 mg/L, as stated in the Basin Plan. The expected increase in the level of TDS in the Alto subarea due to an increase in TDS of the recharge water supply is 208 ppm. Furthermore, it should be taken into consideration that the water will only be used to irrigate the Golf Course from May to October. Therefore, the proposed project will not substantially degrade the water quality.

[1] From Table 64449-B "Secondary Maximum Contaminant Levels – Ranges", Article 16 of Title 22 of the California Code of Regulations.

[2] From the State Water Resources Control Board - Lahontan Region Basin Plan

[3] From the Preliminary Design Report of the Recycled Water System – Phase I prepared for the Lake Arrowhead Community Services District, October 2004 by Tetra Tech, Inc..

[4]From the Initial Study/Mitigated Negative Declaration for the State Water Project Water Transfer and Infrastructure Improvements Project Prepared for Crestline-Lake Arrowhead Water Agency and Lake Arrowhead Community Services District, November 2004 by Science Applications International Corporation.

Mass Balance for Salt[1]

Percent SWP Water	0%	50%
Total Water Supply Per Year	3,000	3,000
Lake Arrowhead Water	3,000	1,500
	977.49	488.74
	2.68	1.34
	85	85
	1,897.00	949
	0.949	0.474
SWP Water Supply		
af/yr	-	1,500
MG/yr	-	488.74
MG/day	-	1.34
ppm TDS	263	263
Pounds/Day TDS	-	2,935
Tons/Day TDS	-	1,468
Combined Water Supply		
af/yr	3,000	3,000
MG/yr	977.5	977.5
MG/day	2.68	2.68
ppm TDS	85.0	174.0
Pounds/Day TDS	1,897	3,884
Tons/Day TDS	0.949	1.942
Treatment Plant		
Plant Effluent Flow af/yr	2,690	2,690
MG/yr	876.6	876.6
MG/day	2.40	2.40
Calculation to Determine Use Contribution TDS		
Fraction of Supply Water that enters Plant	89.7%	89.7%
Supply Contribution Pounds/Day TDS (Fraction)	1,701	3,483
Supply Contribution Tons/Day TDS (Fraction)	0.851	1.741
Plant Effluent TDS for Calculating Use Contribution	265	300
Lake Arrowhead Water TDS	85	85
Use Contribution TDS	180	215
Use Contribution Pounds/Day TDS	3,603	4,304
Use Contribution Tons/Day TDS	2	2
Calculated Combined Plant Effluent Pounds/Day TDS	5,304	7,787
Calculated Combined Plant Effluent Contribution Tons/Day TDS	3	4
Calculated Combined Plant Effluent ppm TDS	265.0	389.0
GW Quality		
Surface Water Inflow to Alto Subarea af/yr (not including WWTP)	65,000	65,000
MG/yr	21,179	21,179
MG/day	58.0	58.0
Surface Water Inflow to Alto Subarea - ppm TDS (not including WWTP)*	200.0	200.0
Pounds/Day TDS	96,785	96,785
Tons/Day TDS	48.4	48.4
Combined WWTP + Surface Water Inflow to Alto Area af/yr	67,690.4	67,690.4
MG/yr	22,055.5	22,055.5
MG/day	60.4	60.4
Combined WWTP + Surface Water Inflow to Alto Area ppm TDS	202.6	207.59
Pounds/Day TDS	102,089	104,572
Tons/Day TDS	51.0	52.3
Change of Surface Water Alone to Surface Water with Plant Effluent ppm TDS	2.6	7.59
Change from Lake Arrowhead to Part SWP Water - ppm TDS		4.99

Basic Formula
Pounds/Day = 8.34 x TDS in ppm x MG/day
or
TDS in ppm = Pounds/Day / (8.34 x MG/day)

[1] This analysis was modified from Appendix E of the Initial Study/Mitigated Negative Declaration for the State Water Project Water Transfer and Infrastucture Improvements Project prepared for Crestline Lake Arrowhead Water Agency and Lake Arrowhead Community Services District, November 2004 by Science Applications International Corporation

APPENDIX F

BIOLOGICAL RESOURCES SURVEY

BIOLOGICAL SURVEY

ON

RECYCLED WATER PIPELINE AND RELATED INFRASTRUCTURE PROJECT

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

Prepared for:
Lake Arrowhead Community Services District
28200 State Highway 189
Lower Village, Suite 100
Lake Arrowhead, CA 92352
(909) 337-8555

Prepared by:
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2150 N. Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

August 2004

Certification: I hereby certify that the statements furnished herein and in the attached exhibits present data and information required for this Biological Survey to the best of my ability, and the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Pamela M. Wright

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INTRODUCTION AND SUMMARY OF FINDINGS

Project Description

The Lake Arrowhead Community Services District's (LACSD or District) Grass Valley Wastewater Treatment Plant (GVWWTP) treats sewage generated by the community of Lake Arrowhead and the immediately surrounding area. GVWWTP discharges effluent treated to secondary standards to a pipeline that transports the discharge to the City of Hesperia, where it is percolated into the Mojave Groundwater Basin. The District is proposing to upgrade the treatment process at the GVWWTP so that the effluent will meet the quality standards of "recycled" water that can be re-used on the mountain for irrigation or other allowed uses in order to supplement supply during the extended drought. The GVWWTP will treat and deliver up to 1.0 MGD of recycled water, primarily to the Lake Arrowhead Country Club (LACC) golf course.

There are three basic actions for infrastructure facilities that must be completed for the GVWWTP to provide recycled water to the LACC golf course as the initial user of recycled water. These facilities and/or actions are: to upgrade the treatment plant to produce 1.0 MGD Title 22 - 2.2 MPN/100 ml treated recycled water; to install a storage tank and pipeline to deliver recycled water from the GVWWTP to the golf course; and to upgrade the LACC's private golf course water system to use recycled water for irrigation per State Department of Health Services (DHS) requirements while maintaining the potable supply. The recycled water conveyance system includes a low-head recycled water pump station, a steel storage tank, a high-head recycled water pump station and approximately 15,000 lineal feet of 14-inch pipeline installed between the GVWWTP and the LACC golf course.

The proposed storage tank is located on the southeastern corner of the plant, near the current equalization pond. An alternative location is also available and identified in Figure 3, just west of the denitrification filters. The tanks dimensions will be approximately 30 feet in height and 80 feet in diameter and will be designed to hold one million gallons of recycled water in storage. The total area to be disturbed by grading within the facilities compound is approximately 1.5 acres.

Delivery of recycled water from the GVWWTP to LACC golf course will be accomplished through a 14-inch pipeline running from the treatment plant to an on-site pump station at the golf course. The pipeline will be located within roadways and easements through open space and residential areas between the treatment plant and the golf course.

There is an abandoned 14-inch pvc/steel force main available for use along a portion of the proposed pipeline alignment as an alternative. This force main may be utilized in place of constructing a new pipeline, saving money on construction and reducing the issues of constructing pipelines within residential areas. The abandoned force main available for use is 17 years old and approximately 4,300 feet long. It is located within an easement along the back edge of residential properties fronting Brentwood Drive. The force main begins at the three-way intersection of Brentwood Drive, Edge Cliff Drive and Grass Valley Road and terminates on Brentwood Drive approximately 800 feet west of Oakmont Drive. Figure 6 identifies where the abandoned force main is located. The line has been reviewed by LACSD personnel and is considered to be usable for the intended purpose. After cleaning and disinfection the pipe can be used as part of the recycled water distribution system.

The pipeline trench will be about 5 feet wide and will typically not exceed 5 feet in depth. The area of potential effect, or construction staging, could be a maximum of 20 feet wide The total area to be disturbed

for pipeline installation, then, would range from 0.034 acre/day (5' x 300' = 1,500 square feet) to 0.14 acre/day (20' x 300' = 6,000 square feet). For the total estimated length of 15,000 linear feet, this would be 1.72-6.88 acres. As the road shoulder is typically much narrower than 20-feet, pipeline placement will require disturbance to existing asphalt roadways.

Modifications or retrofits to the existing LACC golf course irrigation system will be required to incorporate existing facilities into the proposed recycled water irrigation system. These facilities include: backflow protection; separation of water systems; tagging and signing; and setback and perimeter issues. Similar modifications would be required for all future recycled water customers. New pipeline in the golf course will be installed within existing turf areas. All drainages and associated riparian habitat will be avoided by bore and jacking under the drainages and riparian habitat.

Project Location

The project is located in Sections 5, 8, 17 and 20 of T2N, R3W SBM as shown on the Lake Arrowhead quadrant of the USGS topographic map 7.5 minute series. The GVWWTP is located at an elevation of about 4,810 feet above mean sea level (msl). The golf course is located at an elevation of approximately 5,150 feet msl. The proposed new pipeline route crests at approximately 5,280 feet. Therefore, recycled water generated at the GVWWTP will need to be boosted up approximately 470 feet over the ridge crest to the LACC golf course.

Environmental Setting

The project area is characterized by a mixed conifer-pine/oak phase of middle elevation montane coniferous forest as described in Table 2-7 of Southern California Mountains and Foothills Assessment (Stephenson and Calcarone, 1999). This forest type is characterized by a diverse mix of conifers and hardwoods including Jeffrey, ponderosa and sugar pines (*Pinus jeffreyi*, *P. lambertiana*, *P. ponderosa*), incense cedar (*Calocedrus decurrens*) and black and live oak (*Quercus kelloggii, Q. chrysolepis*). The vegetation along the alignment becomes sparser as the alignment traverses down the northern slope of the mountains where less rain falls due to the rain shadow effect. Vegetation typical of the dryer side is a montane manzanita chaparral with manzanita(*Arctostaphylos glauca*, and *A. glandulos* ssp. *glandulosa*), buckbrush (*Ceoanothus cuneatus*), mountain whitethorn (*C. cordulatus*), yerba santa (*Eriodictyon trichocalyx*), rabbitbrush (*Chrysothamnus nauseosa*), mountain mahogany (*Cercocarpus betuloides*), buckwheat (*Eriogonum fasciculatum*) and chamise (*Adenostoma fasciculatum.*) The chaparral species grow with varying degrees of tree cover by the conifer/oak trees.

The treatment facilities compound is generally disturbed with buildings and landscaping, although several areas along the perimeter of the compound support natural habitat. The central circle is lower than the road and flows from the site collect along the road and support a narrow band of cattails, indicating a potential wetland area. Portions of the golf course also support wetland and riparian vegetation around ponds and especially along Grass Valley Creek. All of the wetland and riparian habitat adjacent to project activities is"edge" habitat, i.e. habitat that it is surrounded by or adjacent to disturbed land. The project will avoid all wetland and riparian areas and any surface water flows from construction activities are required to be detained; therefore, there is no impact to wetland or riparian areas resulting from the proposed project.

As stated above, the construction activities will occur in the near vicinity of drainages (unnamed and Grass Valley Creek) and Grass Valley Lake. The project proposes to jack and bore under any jurisdictional "waters" or "wetlands" as defined by Sections 401 and 404 of the Clean Water Act and "streambeds" as

defined by Sections 1600 of the Fish and Game Code. Grass Valley Creek is designated by the County General Plan as a wildlife corridor (Section II Planning Issues: Natural Resources Revised August 14, 1991). Policy OR-15 states:

> **Because the County desires to protect and preserve natural habitat, areas shown on the Resources Overlay as "Policy Zones" and "Wildlife Corridors" shall be targeted for ministerial and discretionary actions, including purchase of some lands, in support of preserving the natural features and habitat present.**

A portion of the project occurs along Grass Valley Creek and within the broadly conceptualized Grass Valley Creek Corridor; however, as the project is located within road right-of-way and disturbed areas (plant facilities and golf course), the project has no potential to impact wildlife movement.

The result of the general biological survey was that no state or federally listed as endangered or threatened species were observed in the alignment.

METHODOLOGY

The California Natural Diversity Data Base (CNDDB) and literature references were examined to obtain information on species occurrences in the project vicinity. A field survey of the site was conducted on July 27, 2004 by biologist Pamela Wright. Habitat characteristics, habitat disturbance and animal species were recorded.

RESULTS and DISCUSSION

The result of the general biological survey was that no state or federally listed as endangered or threatened species were observed along the pipeline alignment or in the district's compound. The project impact areas are predominantly roadside areas impacted by wastewater treatment facilities, vehicular parking and snow removal activities. In general, the roadways have a very narrow shoulder with occasional areas for pullouts. Private residences occur along the majority of the alignment, and in some cases the homes located close proximity to the road with only as little as a car length's distance between the road and the nearest structure. In the residential areas much of the roadside is landscaped with ornamentals (cosmos, turf grass, roses, groundcovers, etc.) or untended and vegetated by ruderal species (brome grasses). In some cases landscaping plants could be impacted by the project. Vegetation observed along the pipeline alignment include Jeffrey, ponderosa and sugar pines (*Pinus jeffreyi*, *P. ponderosa*, *P. lambertiana*), incense cedar (*Calocedrus decurrens*) and black and scrub oak (*Quercus kelloggii, Q. berberifolia*), manzanita (*Arctostaphylos glauca*, and *A. glandulos* ssp. *glandulosa*), buckbrush (*Ceoanothus cuneatus*), mountain whitethorn (*C. cordulatus*), yerba santa (*Eriodictyon trichocalyx*), rabbitbrush (*Chrysothamnus nasuseosa*), mountain mahogany (*Cercocarpus betuloides*), buckwheat (*Eriogonum fasciculatum*), chamise (*Adenostoma fasciculatum*), poison oak (*Toxicodendron diversilobum*), willow (*Salix* sp. - in the immediate vicinity of grass valley lake), flea bane aster (*Erigeron foliosus*), milkweed (*Asclepias fascicularis*), mustard (*Hirschfeldia incana*), scarlet bugler (*Penstemon centranthifolius*) and scotch broom (*Genista monspessulana*). There is no substantial leaf litter accumulation along the shoulder. Portions of the pipeline alignment are along a road that is adjacent to Grass Valley Lake or Grass Valley Creek.

The golf course and treatment facilities are generally landscaped, paved and developed. In addition to turf grasses and ornamental shrubs and trees, riparian and wetland vegetation (willows, cattails, etc.) occurs along drainages and ponds. A tributary to Grass Valley Creek drains from the treatment facilities in the north of the site (please refer to Figure 3. Site Plan). Cattails have also grown along a portion of the treatment facilities road. All of the wetland and riparian habitat is currently "edge" habitat surrounded by or adjacent to disturbed land. The project will avoid all wetland and riparian areas and flows from construction activities are required to be detained; therefore, no impact to wetland or riparian areas is expected to result from the proposed project.

A list of sensitive species which occur within the Lake Arrowhead Quadrangle per the CNDDB or have been identified as likely to occur in the area (LACSD, 2003; TKC, 1999; Stephenson and Calcarone 1999) and a discussion of their occurrence potential is provided in Table 1. The following sensitive species have at least a moderate potential to occur within the project alignment: Andrews marble butterfly (*Euchloe hyantis andrewsi*) - no status, San Diego horned lizard (*Phyronosoma coronatum blainvillei*) - CDFG CSC and FS Sensitive, Southern spotted owl (*Strix occidentalis occidentalis*) - CDFG CSC, FS Sensitive and USFWS Bird of Conservation Concern, Southern flying squirrel (*Claucomys sabrinus*) - CDFG CSC and FS Sensitive. Because the pipeline alignment impact is so narrow and because impacts will occur in disturbed areas, the potential to impact the species with a moderate or greater potential to occur in the area is low. Maps of sensitive species in the project area (Figures 4.9, 4.24, 4.25, 4.28) in a Southern California Mountains and Foothills Assessment (PSW-GTR-172) indicate that arroyo toad is known from the drainages in the project area and that southern rubber boas, California spotted owls and flying squirrels are known from the project vicinity.

The area of the project activity is a potential resource area for the California State Special Concern species and Forest Service Sensitive species San Bernardino Flying Squirrel (*Glaucomys sarinus*) and California State Special Concern and federal species of special concern California spotted owl (*Strix occidentalis occidentalis*). The project is not expected to result in the removal of any trees. Neither the pruning nor the removal of one to several trees would be expected to impact these species because the project site is located in an area already heavily impacted by residential, civic and recreational uses. The limited permanent above ground infrastructure will located in disturbed areas and will not increase human activity in the area beyond current levels.

Table 1. CNDDB Occurrence Overlay for the USGS Lake Arrowhead Quadrangle and additional species identified as likely to occur in the area.

Scientific and Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Bufo californicus arroyo toad	E / SC	Requires open, shallow breeding pools with minimal current and a sand or pea gravel substrate overlain with sand or flocculent silt (Sweet 1989). Adjacent banks must provide open, sandy or gravely terraces with very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak. Heavily shaded pools are unsuitable for larvae and juvenile toads due to lower water and soil temperatures and poor algal mat development (Sweet 1992).	The waters in the vicinity of the site do not provide suitable habitat for arroyo toad. The occurrence of this species in the Lake Arrowhead quadrangle is located at the Mojave Dam Spillway, an open spreading drainage, more than six miles north of the portion of the project site that is along riparian areas. This species could occur within Grass Valley Creek. The project will not impact the riparian areas in the vicinity of the site activities, therefore even if this species were to occur in the area it would not be impacted. There is no potential to impact this species.
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	N / S2.1 / 1B: 2-2-3	Grows on vernally moist sites in chaparral, meadows and lower montane coniferous forest between 600 and 2245 meters.	All occurrences of this species occur along drainages. The project will not impact the drainages in the vicinity of the site activities. Due to lack of suitable habitat and the high level of disturbance within the area of impact, occurrence potential is low.
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	N / S2.2 / 1B: 2-2-3	Grows on mesic soils in open areas of stream and meadow margins and in vernally wet areas. Typically blooms from June to September.	This species is known in the vicinity of the project site from a hill north of the Lake Arrowhead Golf Course in 1929. As this species occurs in mesic to drying soils in open areas of stream and meadow margins or of vernally wet areas (CNDDB), it is not likely to be impacted by the proposed project. The project will not impact stream margins. Due to lack of suitable habitat and the high level of disturbance within the area of impact, occurrence potential is low.
Charina bottae umbratica southern rubber boa	SC / T	Found in the vicinity of streams or in wet meadows. Requires loose, moist soil for burrowing and seeks cover in rotting logs, and hibernates in rock outcroppings.	None of the project alignment or water district facilities compound has thick duff on the ground. The majority of impacts are on dry slopes with substantial sun exposure. No rock outcroppings were observed in the project impact areas. The project will not impact streams. Due to lack of suitable habitat and the high level of disturbance within the area of impact, occurrence potential is extremely low.

Scientific and Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Charina trivirgata rosy boa	SC / S3S4	Inhabits habitats with a mix of brushy cover and rocky soil (desert and chaparral) from the coast to the Mojave and Colorado Deserts.	Occurrence in the Lake Arrowhead quadrangle is about 3 miles north of the project area in an ephemeral stream/riparian habitat dominated by sycamore and Arizona ash. None of the project alignment or water district facilities compound is located in habitat where this species would be expected. Due to lack of suitable habitat and the high level of disturbance within the area of impact, occurrence potential is extremely low.
Deinandra mohavensis Mojave tarplant	N / E / 1B :2-1-3	Grows on low sand bars in river beds or in ephemeral grassy areas between 850 and 1600 meters.	No suitable habitat occurs on the site for this species. The occurrence of this species within the quadrangle is located at the confluence of Deep Creek and the Mojave River, an entirely different habitat than is present on site. There is no potential for this species to occur on the site.
Dudleya abramsii ssp. *parishii* *San Bernardino Mountains dudleya*	N / S2.2 / 1B:2-1-3	Grows on outcrops, granite, quartzite and rarely limestone on pebble (pavement) plains in upper montane coniferous forest, pinyon and juniper woodland. Endemic to San Bernardino County between 1270 and 2600 meters.	There is no suitable habitat for this species on any part of the project site. This species was not observed along the alignment. Due to lack of suitable habitat and the high level of disturbance within the area of impact, occurrence potential is extremely low.
Ensatina eschscholtzi croceater yellow-blotched salamander	N / SC	Occur in forests, well shaded canyons, oak woodlands and old chaparral in areas with cover objects (logs, bark, boards, and rocks), rodent burrows or other underground retreats. Most common where there is a lot of coarse woody debris on the forest floor.	There are no records of this species occurring in San Bernardino County in the CNDDB. According to www.californiaherps.com hybrids of this species and *E. e. eschscholtzi* occur in portions of the San Bernardino Mountains. However, due to the narrow alignment of the project impacts and the location of impacts within highly disturbed areas, occurrence potential is low.
Euchloe hyantis andrewsi Andrew's marble butterfly	N / S1	Inhabits yellow pine forest near Lake Arrowhead and Big Bear Lake in the San Bernardino Mountains between 5000 and 6000 feet. Host plants are plants in the Brassicaceae family including *Streptanthus bernardinus* (and other species), *Arabis*, *Lepidium* and *Descurainia*.	This species was documented to occur on a nearby property during surveys within the last five years. This species could occur within the project area of impact. Occurrence potential is moderate.

Scientific and Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Glaucomys sabrinus californicus San Bernardino flying squirrel	N / SC	Inhabits mid- to upper-elevation mature coniferous forest habitats, especially in close proximity to water sources. They use cavities in large trees, snags and logs for cover.	The pruning or removal of one to several trees is not expected to impact this species. Because the majority of the project alignment and water district facilities compound are located in areas already heavily impacted by residential and recreational uses, and because few trees are expected to be impacted by the project, no impact is expected. Occurrence potential for this species is moderate to high.
Ivesia argyrocoma silver-haired ivesia	N / S2.2 / 1B: 2-2-2	Grows in pebble plains and meadows with other rare plants. In California this species is known only from San Bernardino County between 1480 and 2680 meters.	No pebble plain habitat occurs along the project alignment or at the water district facilities compound. The nearest known occurrence of this species is about four miles east of the project site. Occurrence potential is extremely low.
Lampropeltis zonata parvirubra San Bernardino Mountain kingsnake	N / S2?	Inhabits a variety of habitats in the San Bernardino Mountain including valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadow.	Suitable habitat occurs in the vicinity of the project alignment. However, due to the narrow alignment of the project impacts and the location of impacts within highly disturbed areas, occurrence potential is low.
Perideridia parishii ssp. *parishii* Parish's yampah	N / S2.2?/ 2 / 2-2-1	Grows in damp meadows or along streambeds in open pine canopy. Typically blooms from April to June.	The project will not impact stream margins or wet meadows. Occurrence potential is low.
Phrynosoma coronatum blainvillei San Diego horned lizard	N / SC	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.	This species was not encountered on the site. Suitable habitat occurs within the vicinity of the area of impact. Due to the high level of disturbance within the area of impact, occurrence potential is low to moderate.

Scientific and Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Rana aurora draytonii California Red-legged Frog	T / SC	Occurs in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation in the lowlands and foothills. Requires 11-20 weeks of permanent water for larval development and estivation habitat.	There are no recent known occurrences of this species in the project vicinity (CNDDB, Figure 4.12 of Stephenson and Calcarone.) Protocol surveys conducted in a portion of Grass Valley Creek on the Golf Course in 2003 found no evidence to suggest inhabitation by this species. The project will not impact the riparian areas in the vicinity of the site activities, therefore even if this species were to occur in the area it would not be impacted. Occurrence potential is very low.
Rana muscosa mountain yellow-legged frog	E / SC	Requires steep, rocky, mountain streams. Always encountered within a few feet of water. Tadpoles may require up to 2 yrs to complete their aquatic development.	There are no known extant occurrences of this species in the project vicinity (CNDDB, Figure 4.13 of Stephenson and Calcarone.) Protocol surveys conducted in a portion of Grass Valley Creek on the Golf Course in 2003 found no evidence to suggest inhabitation by this species. The project will not impact the riparian areas in the vicinity of the site activities, therefore even if this species were to occur in the area it would not be impacted. Occurrence potential is low.
Strix occidentalis occidentalis California spotted owl	SC / SC	Prefers forest stands with high structural diversity and with a high percentage of very large trees (> 100 centimeters diameter at breast height) for breeding and roosting. Minimum territory size for a pair of CSO is 300 acres of mature forest (Stephenson and Calcarone 1999).	The project does not include tree removal and as such will not have an impact of nesting resources. The project impacts are is in an area known to support this species. (See USDA PSW-GTR-172 Southern California Mountains and Foothills Assessment pg. 190.) Impacts associated with the pipeline are temporary in nature, and the additional facilities at the water district compound will occur in developed areas. Occurrence potential for this species is moderate to high.

Coding and Terms			
E= Endangered	T = Threatened	SC= Species of Concern	N= None
R= Rare	C= Candidate	PE= Proposed Endangered	N / A = Not Applicable

Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.

Coding and Terms

State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, posses or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess or destroy the nest or eggs of any such bird."

State Plant Rankings:

S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres
S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres
S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres
S4 - No Threat Rank
S5 - No Threat Rank

.1 - very threatened
.2 - threatened
.3 - no current threats known

SH - all sites in California are historical

CNPS Plant Rankings:
1A- presumed extinct in California
1B - Rare, Threatened or Endangered in California and elsewhere
2 - Rare, Threatened or Endangered in California but more common elsewhere
3 - Plants for which more information is needed
4 - Plants with a limited distribution

R-E-D Code:
R - Rarity
1 - Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2 - Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3 - Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
E - Endangerment
1 - Not endangered
2 - Endangered in a portion of its range
3 - Endangered throughout its range
D - Distribution
1 - More or less widespread outside California
2 - Rare outside California
3 - Endemic to California

? uncertainty about distribution or identity
* extirpated
?* uncertainty about distribution, but extirpated if once present
(*?) occurrence confirmed, but possibly extirpated

Drainages

There are riparian areas adjacent to portions of the project impact area. A potential wetlands area occurs within the existing water district compound as indicated by catttails in Photos 1 and 2. However, no impacts to riparian areas of the low spot within the compound where cattails grow are proposed as part of the project. Drainages with riparian habitat occur in the golf course as well as near roads where pipelines will be placed. No drainage crossings are anticipated, and therefore, no impacts to jurisdictional "waters" or "wetlands" as defined by Sections 401 and 404 of the Clean Water Act or "streambeds" as defined by Sections 1600 of the Fish and Game Code are proposed as part of the project.

Trees

The above ground impacts of the proposed pipeline emplacement are temporary and have no potential to impact migratory movements of native species. Portions of the project are within the Grass Valley Creek wildlife corridor, as contained in the Open Space Element of the County's General Plan. The Corridor zones are generalized and "the actual size and location of these corridors will need to be determined based on future detailed study." The permanent above ground infrastructure to be installed as part of the proposed project is approximately 1.5 acres a the GVWWTP and approximately 50 sq.ft. as part of the recycled water distribution pipeline and golf course retrofit. Permanent above ground infrastructure is

being located within the existing disturbed water district compound and the disturbed golf course area. Because of the small size of the above ground infrastructure associated with the project and because of the location in already disturbed areas, there is no potential to impact migratory corridors.

Project activities may require trimming of branches to provide to the trenching equipment, but no trees are expected to be removed as part of the project's activities. In the event that tree trimming is necessary, it should be conducted by a qualified arborist to avoid unnecessary damage to the health and aesthetics of the tree. Removing or damaging trees more than six-inches in diameter may require a permit from the County of San Bernardino. The County of San Bernardino Plant Protection and Management Division 9 Provisions identify Subject Trees as the following:

> ***89.0315 Except as otherwise provided by this Division, any person who intends to remove a living, native tree with a six (6) inch or greater stem diameter or nineteen (19) inches in circumference measured at four and one-half (4.5) feet above the average ground level of the tree base shall first obtain approval from the County to do so in accordance with the procedures set forth in this Division.***

In the event that it would be necessary to remove a tree, the County process requires that a permit for removal of subject trees be procured unless the removal is in accordance with a listed exception. Because of the land ownership and location of the trees that may require removal, the following exceptions may apply if trees were to be removed as part of the project.

> ***89.0110(b)(2) Removal from lands owned by the United States Government, State of California or local governmental entity, excluding Special Districts.***
>
> ***9.0110(b)(12) Any regulated native plant or tree that is within twenty (20) feet of a structure on the lot that was constructed or set down under a County development permit.***

These exceptions do not exempt the removal of trees from compliance with *Chapter 2. Tree protection from Insects and Disease*. Section 89.0205 of Chapter 2 identifies the measures that must be satisfied when disposing of Coniferous Trees and Section 89.0210 identifies coniferous tree stump treatment standards. As long as the performance standard criteria established in the standard permit exceptions or requirements are satisfied, no mitigation is required and the potential impact is addressed.

CONCLUSIONS

No state or federally listed as endangered or threatened species were observed on the site. The proposed project is not located within the area of an adopted or proposed Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

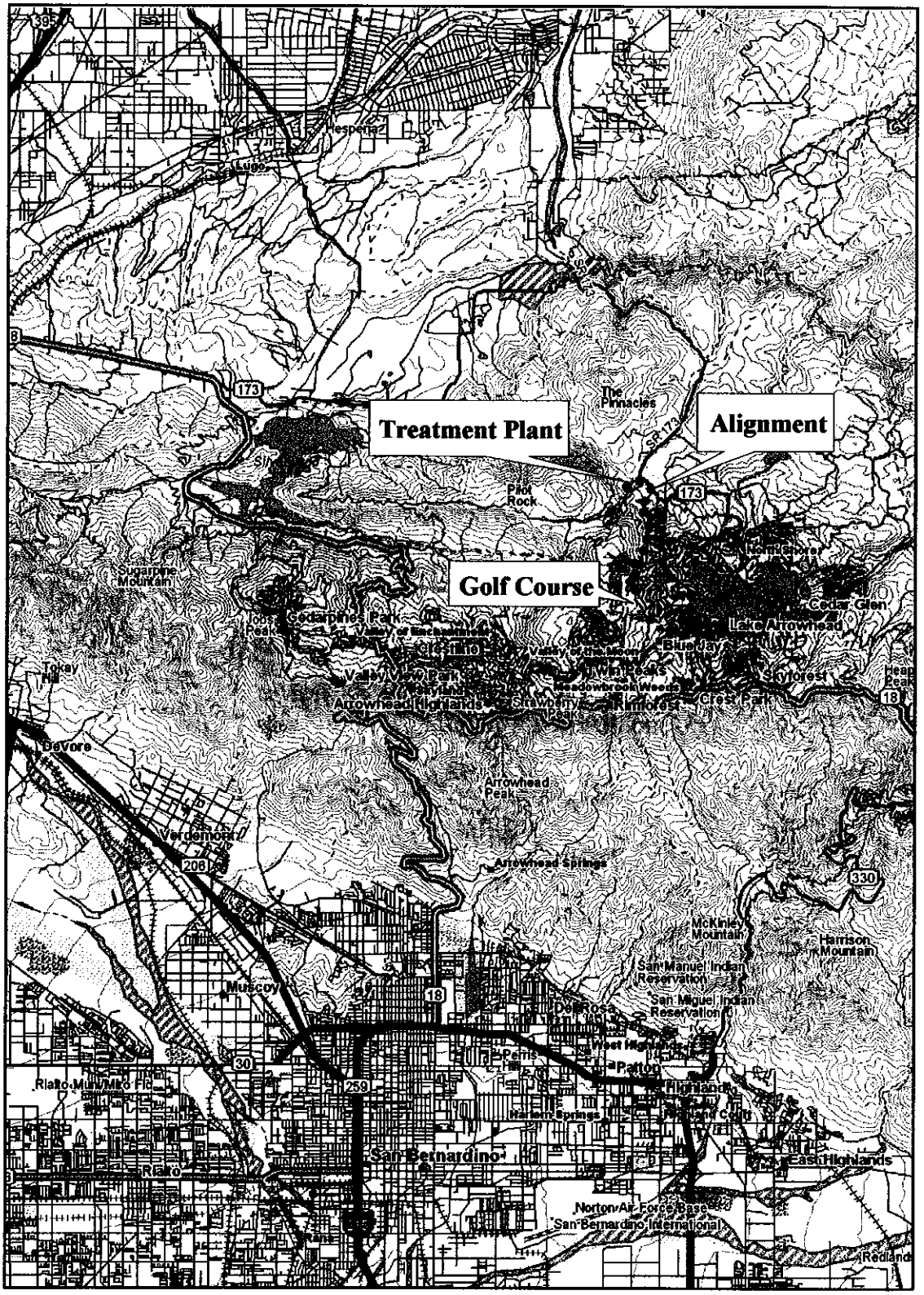
Bird nests were not encountered during the surveys. However, the State of California prohibits the take of active bird nests. Thus, any grubbing or brushing to occur on the property should be conducted outside of the State identified breeding season of February 15 through September 1. Alternatively, the site would need to be evaluated by a qualified biologist to determine if birds were nesting in the shrubs or trees to be removed prior to initiation of ground disturbance.

Stream channels as defined by the Section 1600 of the State of California Fish and Game Code under jurisdiction of the CDFG, or "Waters of the United States" as defined by Section 404 of the Clean Water Act under the jurisdiction of the U.S. Army Corps of Engineers (Corps) may be crossed by proposed pipelines. The project proponent has indicated that all pipelines will either be jack and bored under

drainages or tied to existing bridges to avoid impacts to jurisdictional areas. If in any case it is determined that impacts to drainages cannot be avoided (if pylons are required to be placed, etc.), the project proponent is hereby advised that consultation will likely be required with the United States Corps of Engineers, California Department of Fish and Game and the State Water Quality Regional Control Board for impacts to state and federal jursidictional waters.

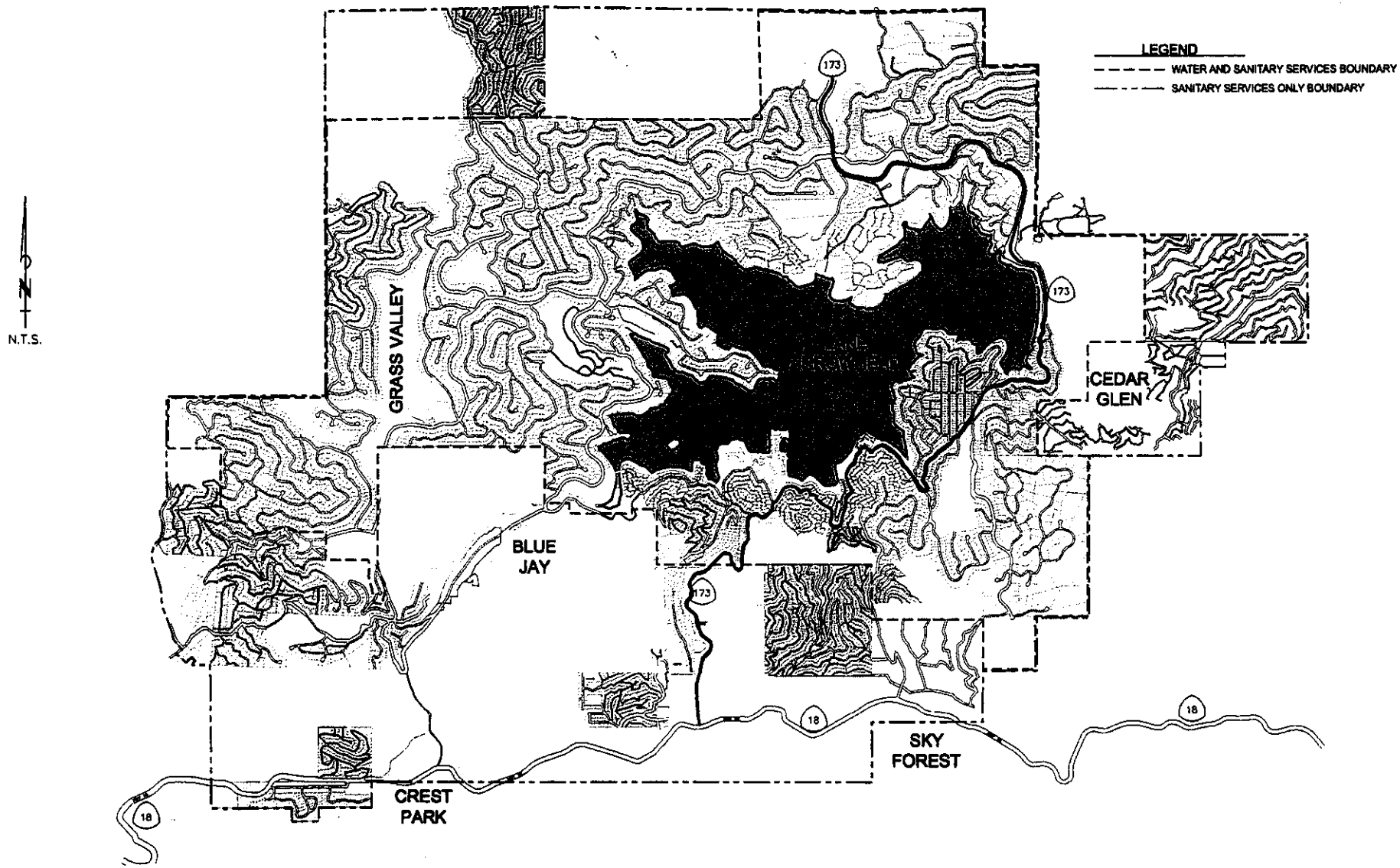
The project proponent is hereby informed that in the event that a listed species is observed within the construction areas prior to or during grading/construction, that the loss of any listed species is considered an illegal take under both state and federal law. This report and recommended mitigation measures do not constitute authorization for incidental take of state of federally listed endangered, threatened or sensitive species, state regulated bird nests or state or locally regulated plant species.

FIGURE 1
Regional Map



Source: DeLorme TopoQuads

FIGURE 2
Vicinity Map



Source: Lake Arrowhead Community Services District

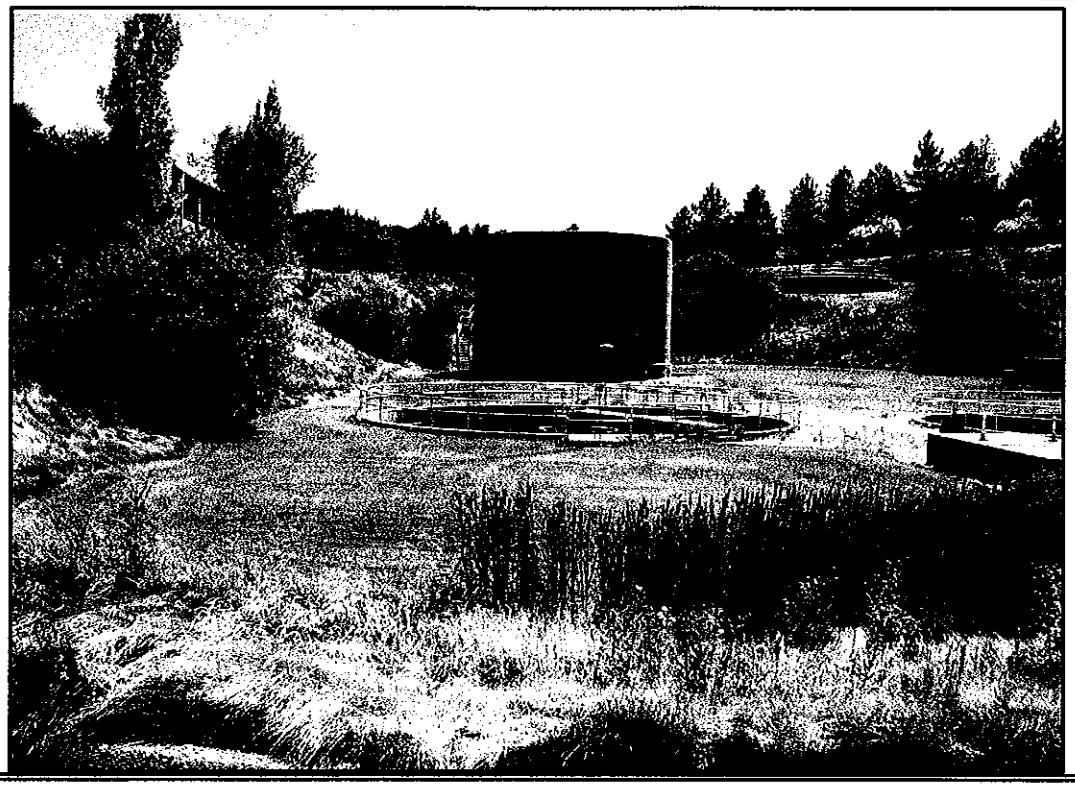


PHOTO 1: View of District Facilities

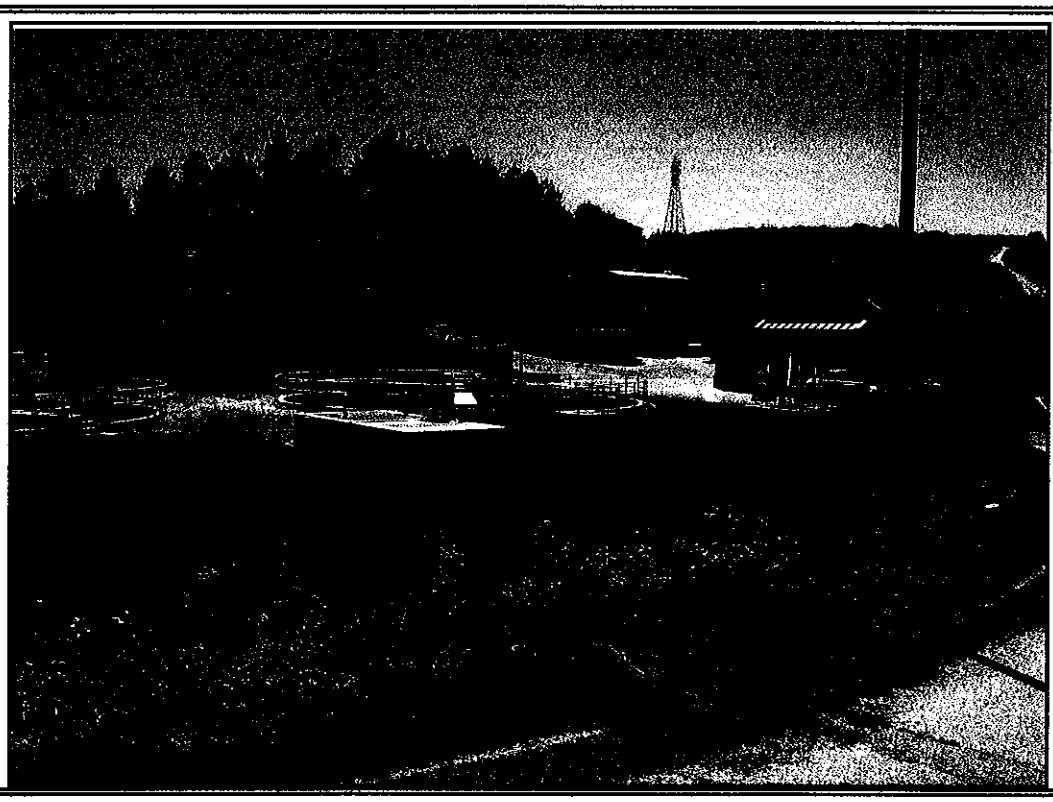


PHOTO 2: View of District Facilities

SITE PHOTOGRAPHS	**TOM DODSON & ASSOCIATES** Environmental Consultants	**FIGURE 3**

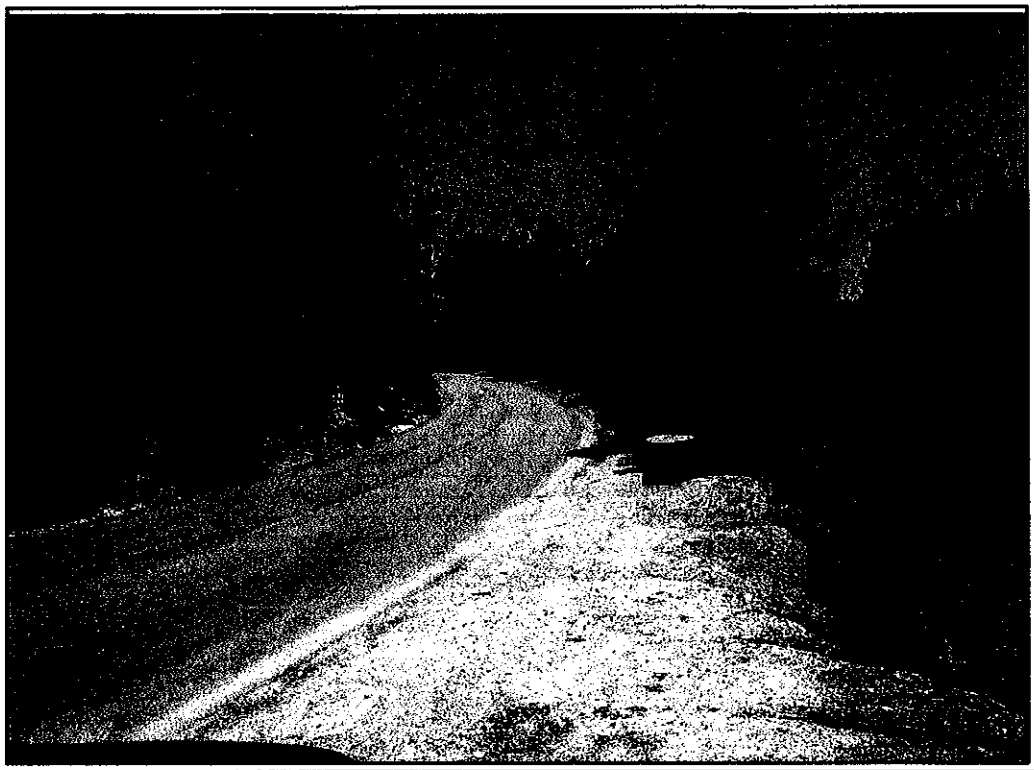


PHOTO 3: **View of the pipeline alignment along Golf Course Road. Vegetation in Grass Valley Creek is visible east of the road.**

PHOTO 4: **View of the pipeline alignment along Grass Valley Road.**

SITE PHOTOGRAPHS	**TOM DODSON & ASSOCIATES** **Environmental Consultants**	**FIGURE 4**

PHOTO 5: View of the pipeline alignment along Highway 173.

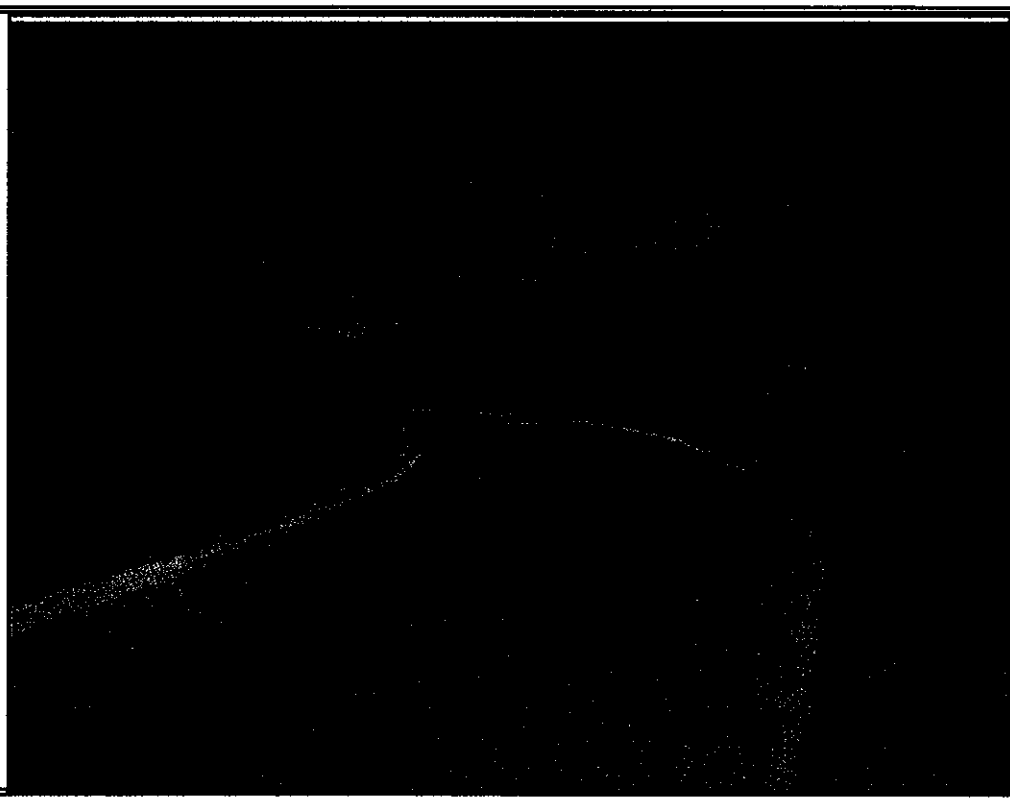


PHOTO 6: View of the pipeline alignment along District Facilities access road.

SITE PHOTOGRAPHS	**TOM DODSON & ASSOCIATES** **Environmental Consultants**	**FIGURE 5**

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California Fish and Game Code 3503 and 3503.5 state:

3503: *It is unlawful to take, possess or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation made pursuant thereto.*

3503.5: *It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

APPENDIX G

HISTORICAL/CULTURAL RESOURCES SURVEY

IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT RECYCLED WATER PIPELINE ALIGNMENT

Grass Valley Area
San Bernardino County, California

Submitted to:

Tom Dodson, President
Tom Dodson and Associates
2150 N. Arrowhead Avenue
San Bernardino, CA 92405

Submitted by:

Bai Tang, Principal Investigator
Michael Hogan, Principal Investigator
Mariam Dahdul, Archaeologist/Report Writer
Josh Smallwood, Archaeologist
CRM TECH
4472 Orange Street
Riverside, CA 92501

August 23, 2004

CRM TECH Contract #1392
Approximately 5 Acres and 2.8 Linear Miles
USGS Lake Arrowhead, Calif., 7.5' Quadrangle
Sections 5, 8, and 17, T2N R3W, San Bernardino Base Meridian

MANAGEMENT SUMMARY

In August 2004, CRM TECH performed a cultural resources study on the Area of Potential Effects (APE) of the proposed upgrade of the Grass Valley Wastewater Reclamation Facility and associated pipeline route in the unincorporated Grass Valley area of San Bernardino County, California. The APE lies within Sections 5, 8, and 17, T2N R3W, San Bernardino Base Meridian, as depicted in the USGS Lake Arrowhead, Calif., 7.5' quadrangle. The study is a part of the environmental review process for the project, as required by the Lead Agencies, namely the United States Forest Service and the Lake Arrowhead Community Services District, pursuant to Section 106 of the National Historic Preservation Act and the California Environmental Quality Act (CEQA).

The purpose of this study is to provide the U.S. Forest Service and the Lake Arrowhead Community Services District with the necessary information and analysis to determine whether the proposed undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Title 14 CCR §15064.5(a)(1)-(3), that may exist in or near the APE. In order to identify such historic properties, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, consulted with Native American representatives, and carried out an intensive-level field survey.

The results of this study have established that no potential historic properties or historical resources were previously recorded within or adjacent to the APE, and none was encountered during the present survey. Historic maps consulted for this study, however, show that a tunnel constructed in 1894 traversed through the southern end of the APE while the historical/archaeological records search indicated that a large Native American village site was recorded a short distance to the northeast of the APE. The current field survey did not encounter any remnants of the 1890s tunnel or cultural artifacts associated with the prehistoric village site.

Based on these findings and pursuant to 36 CFR 800.4(d)(1) and Calif. PRC §21084.1, CRM TECH recommends that the Lake Arrowhead Community Services District and the U.S. Forest Service may reach a finding that *no known historic properties or historical resources will be affected by the proposed undertaking*. However, due to the sensitivity for cultural resources in the vicinity of the APE, archaeological monitoring of earth-moving activities is recommended for the areas in the southernmost part of the APE as well as along Highway 173 and Pilot Rock Road in the northernmost part of the APE.

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INTRODUCTION

In August 2004, CRM TECH performed a cultural resources study on the Area of Potential Effects (APE) of the proposed upgrade of the Grass Valley Wastewater Reclamation Facility and associated pipeline route in the unincorporated Grass Valley area of San Bernardino County, California (Fig. 1). The APE lies within Sections 5, 8, and 17, T2N R3W, San Bernardino Base Meridian, as depicted in the USGS Lake Arrowhead, Calif., 7.5' quadrangle (Fig. 2). The study is a part of the environmental review process for the project, as required by the Lead Agencies, namely the United States Forest Service and the Lake Arrowhead Community Services District, pursuant to Section 106 of the National Historic Preservation Act and the California Environmental Quality Act (CEQA).

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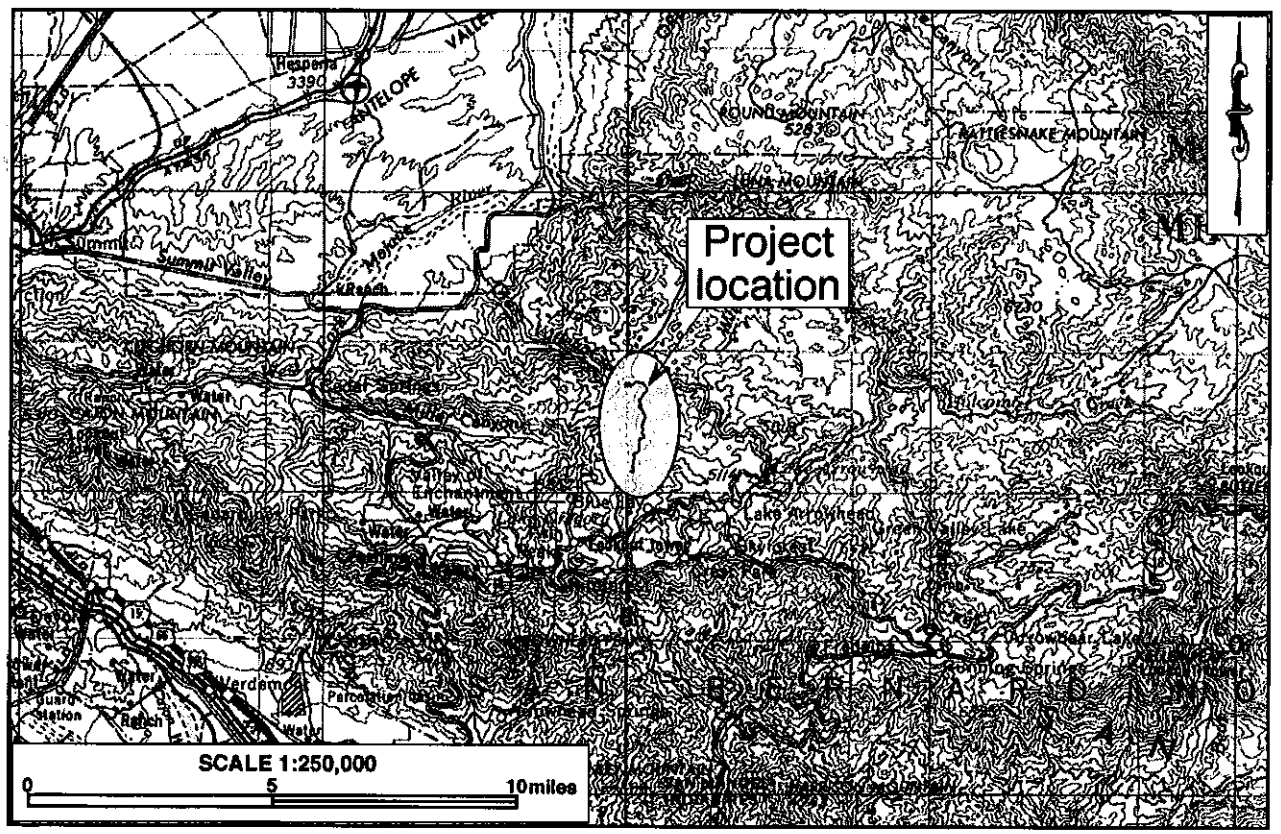

Figure 1. Project vicinity. (Based on USGS San Bernardino, Calif., 1:250,000 quadrangle [USGS 1969])

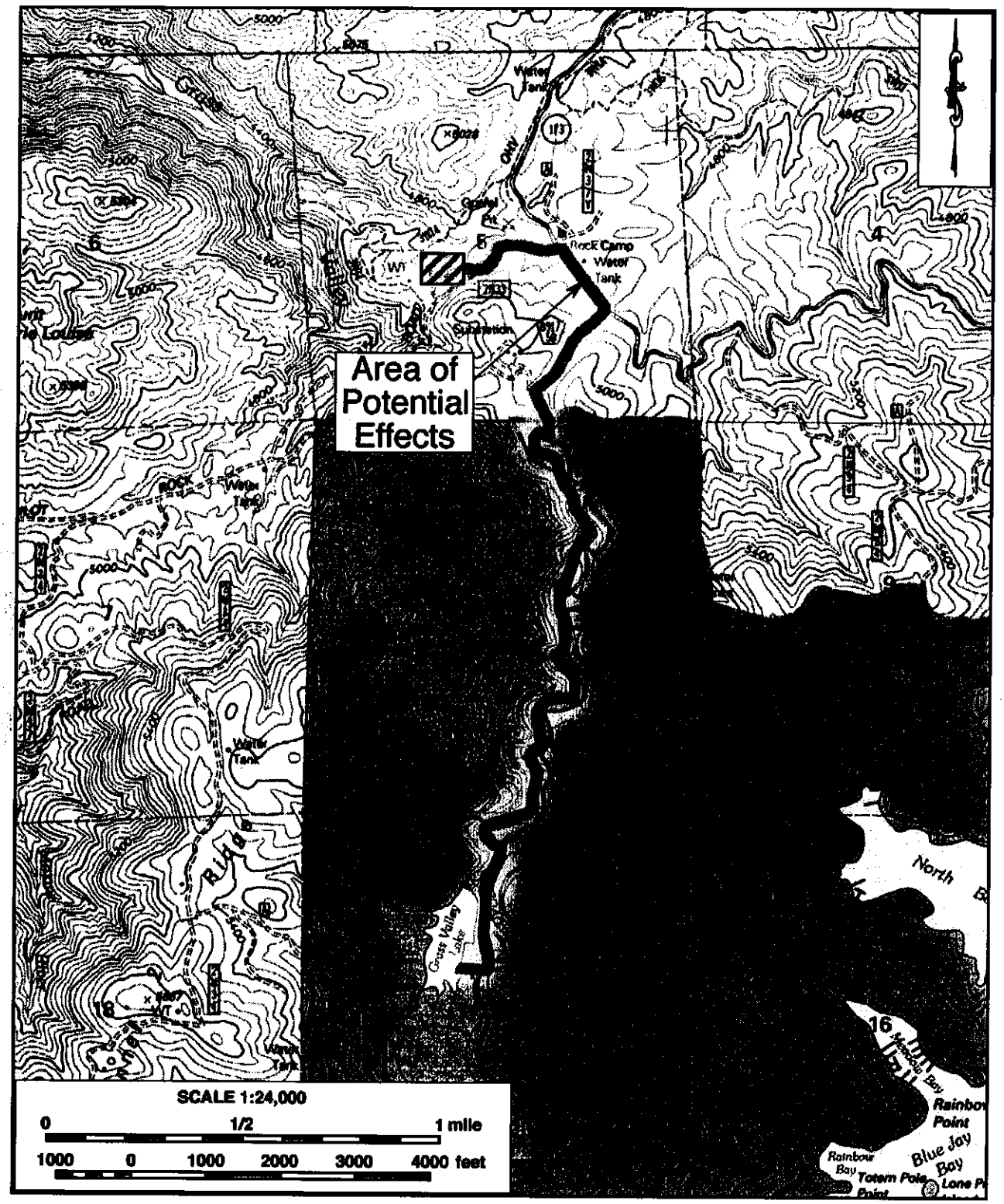

Figure 2. Area of Potential Effects. (Based on USGS Lake Arrowhead, Calif., 1:24,000 quadrangle [USGS 1988])

AREA OF POTENTIAL EFFECTS

According to 36 CFR 800.2(c), the Area of Potential Effects is "the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist." For the current undertaking, the APE consists of the Grass Valley Wastewater Reclamation Facility, associated pipeline rights-of-way, and a proposed pump station to be constructed within an existing parking lot at Grass Valley Lake. The pipeline route, measuring approximately 2.8 linear miles, will traverse between the existing reclamation facility and the proposed pump station near the lake. The APE for the proposed pipeline rights-of-way has a width of 60 feet.

As stated above, the undertaking includes the installation of a pump station near Grass Valley Lake (Fig. 3). From this point, the proposed pipeline route traverses north along Golf Course Road, left onto Oakmont Drive, and then right onto Brentwood Drive (Fig. 3). It follows Brentwood Drive to Grass Valley Road where it immediately turns left onto Edge Cliff Drive. The alignment follows Edge Cliff Drive northerly to Oak Way, then across a vacant lot to connect to Grass Valley Road again (Fig. 3). It follows Grass Valley Road and

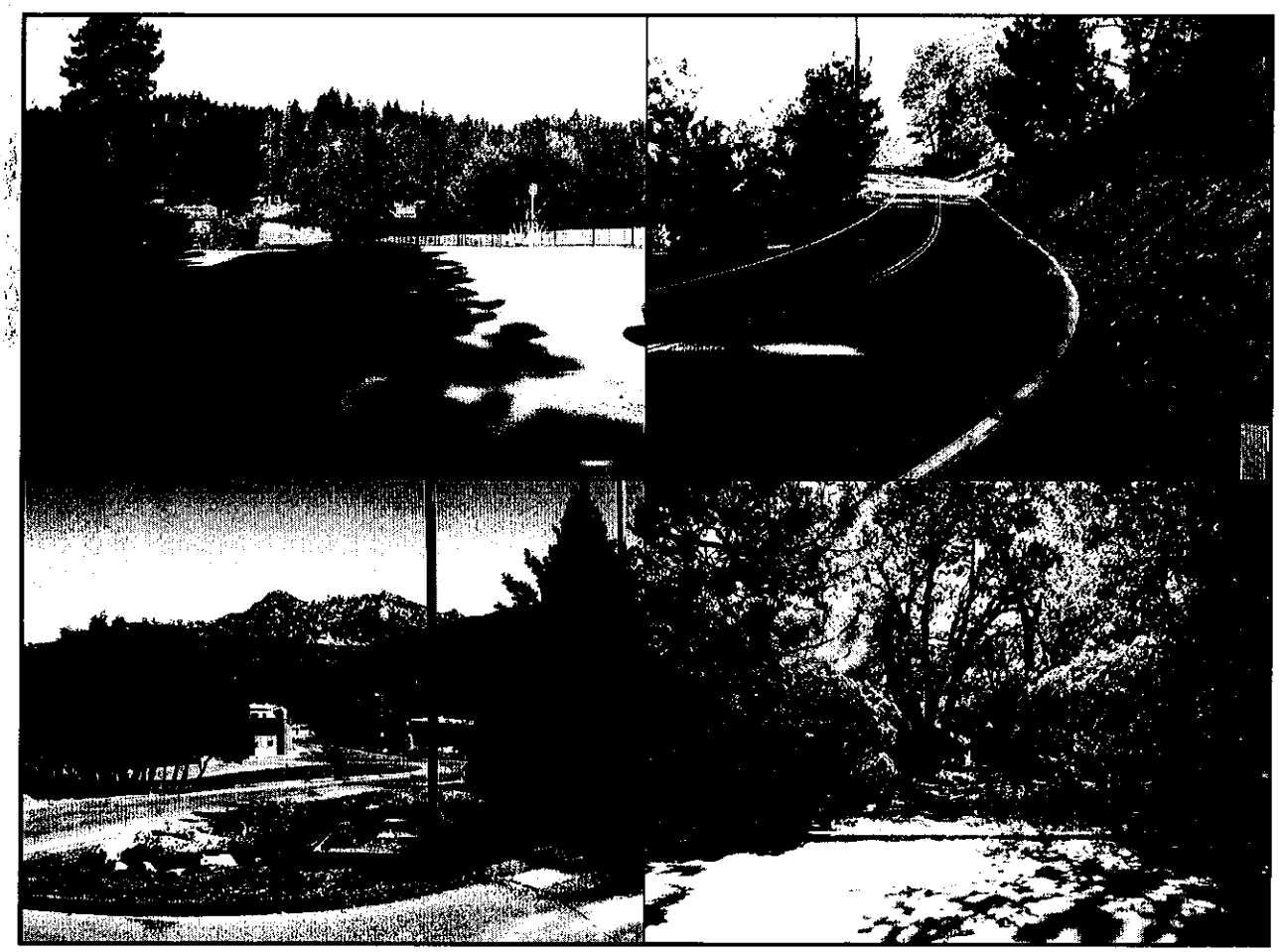

Figure 3. Typical landscapes along the APE route. *Clockwise from upper left*: the parking lot at Grass Valley Lake; north along Brentwood Drive; east from Oak Way to Grass Valley Road; the existing Grass Valley Wastewater Reclamation Facility.

turns left onto State Route 173, then left again onto Pilot Rock Road and southwesterly to the existing Grass Valley Wastewater Reclamation Facility (Fig. 3). The alignment route follows the rights-of-way of existing paved roads for the entire length of the project except for the portion between Oak Way and Grass Valley Road. The configuration and location of the APE are illustrated in Figure 2.

SETTING

CURRENT NATURAL SETTING

The Area of Potential Effects is situated within the San Bernardino Mountains, west of Lake Arrowhead, and within Grass Valley. Dictated by this geographic setting, the climate and environment of the APE and its surrounding region are typical of southern California's mountain region. Temperatures in the region reach over 90 degrees in summer, and dip to 20 degrees in winter while average annual precipitation is 20-30 inches. Elevations along the APE itself range from approximately 4,810 feet to approximately 5,280 feet above mean sea level, with the terrain relatively hilly. The northern half of the APE is located within forest land, while most of the southern half lies within residential development. The pipeline rights-of-way lie entirely on existing paved roads or undeveloped lands.

CULTURAL SETTING

Ethnohistoric Context

The San Bernardino Mountains have long been the heart of the homeland of the Serrano Indians, whose traditional territory also includes the southern rim of the Mojave Desert, extending from today's Victorville eastward to Twentynine Palms. The name "Serrano" was derived from a Spanish term meaning "mountaineer" or "highlander." The basic written sources on Serrano culture are Kroeber (1925), Strong (1929), and Bean and Smith (1978). The following ethnographic discussion of the Serrano people is based on these sources.

Prior to European contact, the Serranos were primarily gatherers and hunters, and occasional fishers, who settled mostly where flowing water emerged from the mountains. They were loosely organized into exogamous clans, which were led by hereditary heads, and the clans in turn were affiliated with one of two exogamous moieties. The exact nature of the clans, their structure, function, and number are not known, except that each clan was the largest autonomous political and landholding unit, the core of which was the patrilineage. There was no pan-tribal political union among the clans.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was negligible until 1810, when a mission *asistencia* was established on the edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serranos in the San Bernardino Mountains were removed to the nearby

missions. At present, most Serrano descendants are found on the San Manuel and the Morongo Indian Reservations, where they participate in ceremonial and political affairs with other Native American groups on an inter-reservation basis.

Historic Context

In 1772, a small force of Spanish soldiers under the command of Pedro Fages, military *comandante* of Alta California, became the first Europeans to set foot in the San Bernardino Mountains, followed shortly afterwards by Francisco Garcés, the famed explorer, in 1776. During the next 70 years, however, the Spanish/Mexican colonization activities in Alta California, which concentrated predominantly in the coastal regions, left little physical impact on the San Bernardinos. Aside from occasional explorations and punitive expeditions against Indian livestock raiders, the mountainous hinterland of California remained largely beyond the attention of the missionaries, the *rancheros*, and the provincial authorities. The name "San Bernardino" was bestowed on the region at least by 1810, when the *asistencia* and an associated mission rancho were officially established under that name in the valley lying to the south.

After the American annexation of California in 1848, the rich resources offered by the mountains brought drastic changes to the San Bernardinos, spurred by the influxes of settlers from the eastern United States. Beginning in the early 1850s, the dense forest was turned into the scene—and victim—of a booming lumber industry, which brought the first wagon roads and industrial establishments into the San Bernardinos. In 1860, the discovery of gold in the Bear and Holcomb Valleys ushered in a miniature gold rush, and with it a number of mining towns with several thousand residents. Around the same time, the lush mountain range also attracted cattlemen, sheepmen, and their herds, and within the next two decades gained the reputation of being the best summer grazing land in southern California. Then in 1884-1885, an even more valuable resource in arid southern California, water, became the focus of development in the San Bernardinos when the Bear Valley Land and Water Company created the Big Bear Lake reservoir to ensure the success and prosperity of the Redlands colony.

By the 1890s, excessive logging and sheep grazing in the San Bernardino Mountains had given rise to a forest conservation movement among residents of the San Bernardino Valley to protect the watershed. In 1893, the movement succeeded in persuading the U.S. government to create the San Bernardino Forest Reserve, later renamed the San Bernardino National Forest, and over the next few decades effectively brought an end to logging and sheep grazing in the San Bernardinos. In the meantime, the favorable climate, enticing scenery, and the string of man-made lakes, including Arrowbear and Green Valley lakes, gradually propelled the resort industry to the forefront of development in the San Bernardinos, burgeoning from the first commercial resort established on the shore of Big Bear Lake in 1888. In 1915, the budding industry received a major boost from the completion of the automobile highway known as Rim of the World Drive. Since then, the San Bernardinos have grown into—and remain—one of southern California's most popular tourist attractions[1].

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[1]. For further discussion of the history of the San Bernardino Mountains, see Robinson (1989) and LaFuze (1971).

RESEARCH METHODS

RECORDS SEARCH

On August 3, 2004, CRM TECH archaeologist Adrián Sánchez Moreno (see Appendix 1 for qualifications) completed the records search at the Archaeological Information Center (AIC), located at the San Bernardino County Museum, Redlands. The AIC is the State of California's official cultural resource records repository for the County of San Bernardino, and a part of the California Historical Resource Information System, established and maintained under the auspices of the Office of Historic Preservation.

During the records search, Moreno checked the Center's electronic database for previously identified cultural resources within or near the APE, and existing cultural resources reports pertaining to the project vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resource Information System.

Moreno also visited the U.S. Forest Service office situated in the community of Skyforest, San Bernardino County, California, for additional cultural resources information that the U.S. Forest Service may have on file regarding this area of the San Bernardino Mountains. Moreno met with Doug McKay who checked the agency's database for records of archaeological sites in the area. The results of the records search are presented below.

HISTORICAL BACKGROUND RESEARCH

Bai "Tom" Tang, CRM TECH historian (see App. 1 for qualifications), conducted the historical background research on the basis of published literature in local history and historic maps of the area. Among maps consulted for this study were the U.S. General Land Office's (GLO) land survey plat map dated 1884, and the U.S. Geological Survey's (USGS) topographic maps dated 1901-1902 and 1954-1956. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, located in Moreno Valley.

NATIVE AMERICAN CONSULTATION

As part of the research procedures, CRM TECH archaeologist Laura Hensley Shaker (see App. 1 for qualifications) contacted the State of California's Native American Heritage Commission in Sacramento to request a records search in the commission's sacred lands file. Following the commission's recommendations, CRM TECH further contacted a total of eight Native American representatives in the region, both by mail and by facsimile, to solicit local Native American input regarding any possible cultural resources concerns over the proposed undertaking. The correspondences between CRM TECH and the Native American representatives are attached to this report in Appendix 2.

FIELD SURVEY

On August 6, 2004, CRM TECH archaeologist Josh Smallwood (see App. 1 for qualifications) carried out the field survey of the APE. The APE along existing roadways measures 60 feet wide and was surveyed at a reconnaissance level by driving along the alignment route and checking any areas that might have cultural resources. The area within the Grass Valley Wastewater Reclamation Facility contains water treatment facilities and landscaping, and the parking lot near Grass Valley Lake is paved with asphalt, with the surrounding area partially landscaped with grass. Due to the previous disturbances, these areas were also surveyed on a reconnaissance level. Areas of undisturbed native soil along the existing roads were inspected intensively along parallel 15-meter (ca. 50-ft) transects to cover a 60-foot-wide corridor.

Using these methods, the entire APE was surveyed systematically for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Ground visibility was good along existing roadways, but was obviously poor within the the Grass Valley Wastewater Reclamation Facility and within the parking lot near Grass Valley Lake.

RESULTS AND FINDINGS

RECORDS SEARCH

According to records on file at the Archaeological Information Center, the northern portion of the Area of Potential Effects, specifically the Grass Valley Wastewater Reclamation Facility, had been surveyed for cultural resources in 1983 (Lerch and Smith 1983), but no archaeological sites or other potential historic properties were identified. Outside the APE boundaries but within a one-mile radius, a total of eight previous studies were carried out covering various parcels of land and linear features (Fig. 4). Seven archaeological sites were identified within the scope of the records search but outside of the APE boundaries. The sites are primarily prehistoric—i.e., Native American—in nature and consist of chipped stone and groundstone scatters, midden, and bedrock milling features. However, one of the sites, CA-SBR-342 (the Rock Camp Guard Station), was recorded as a large village complex consisting of possible house pits, midden, cupule boulders, bedrock milling features, groundstone and chipped stone pieces, ceramic sherds, projectile points, and beads. CA-SBR-342 was situated approximately 1,500 feet northeast of the APE.

The records search at the U.S. Forest Service yielded the same results presented above. However, the records on file at the agency also indicated that the Grass Valley Tunnel, constructed in 1894, traversed across the southern half of the APE (see "Historical Background Research" below). U.S. Forest Service archaeologist Doug McKay recommended that this portion of the APE be monitored by a qualified archaeologist during earth-moving activities in case a segment of the tunnel is uncovered as a result of excavations in the area. McKay also indicated that archaeological monitoring should be carried out in the portion of the APE situated along Highway 173 and Pilot Rock Road due to its proximity to Site CA-SBR-342 (see above).

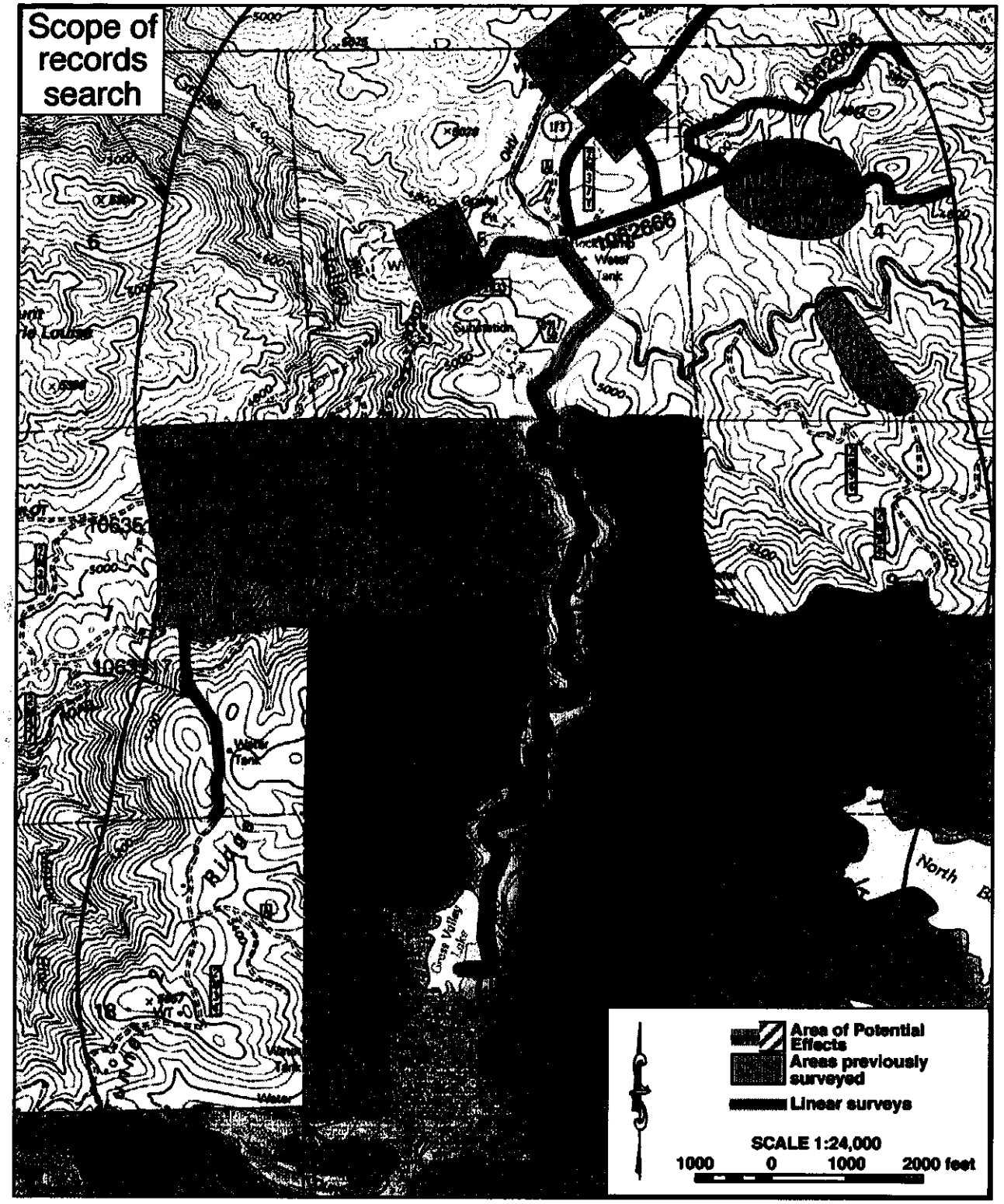

Figure 4. Previous cultural resources surveys in the vicinity of the APE, listed by AIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

HISTORICAL BACKGROUND RESEARCH

Historic maps consulted for this study reveal little evidence of human activities in the immediate vicinity of the APE during the late 1850s to early 1880s (Fig. 5). By 1898-1899, the forerunners of Highway 173 and Grass Valley Road were noted crossing the northern end of the APE (Fig. 6). During the ensuing half-century, the community of Lake Arrowhead appeared southeast of the APE while a campground came into existence in the northeast (Fig. 7). A tunnel running in an east-west direction was also shown between Lake Arrowhead and Grass Valley Lake (Fig. 7). A segment of the tunnel appears to cross the southern end of the APE. Robinson (1989:121) places the completion of the tunnel, known in historic times as the Grass Valley Tunnel, to August 1894. The tunnel was part of a larger irrigation system conceived to transport water from Deep Creek to San Bernardino Valley.

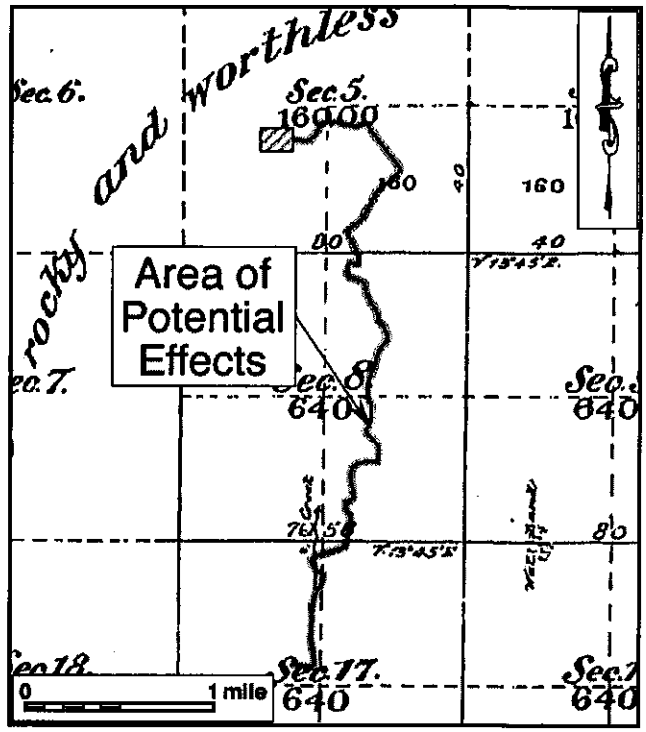

Figure 5. The APE and vicinity in 1857-1883. (Source: GLO 1884)

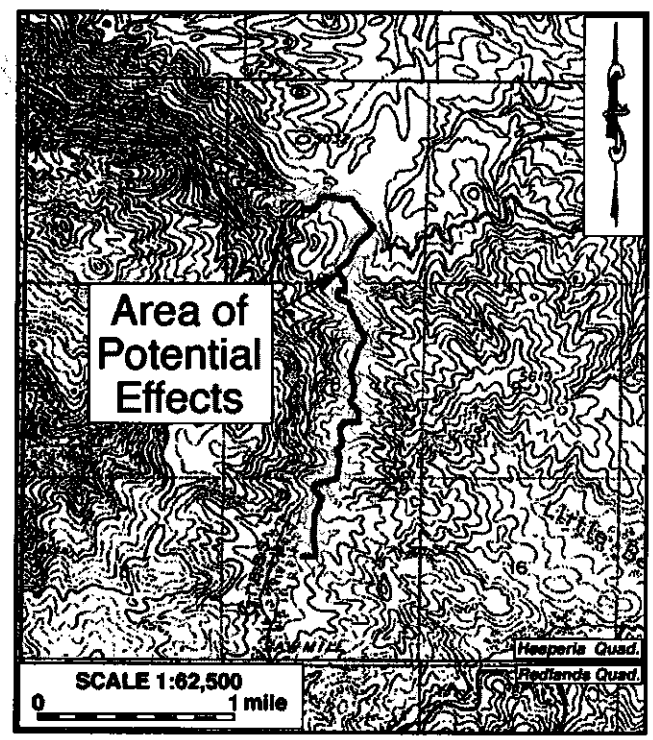

Figure 6. The APE and vicinity in 1898-1899. (Source: USGS 1901; 1902)

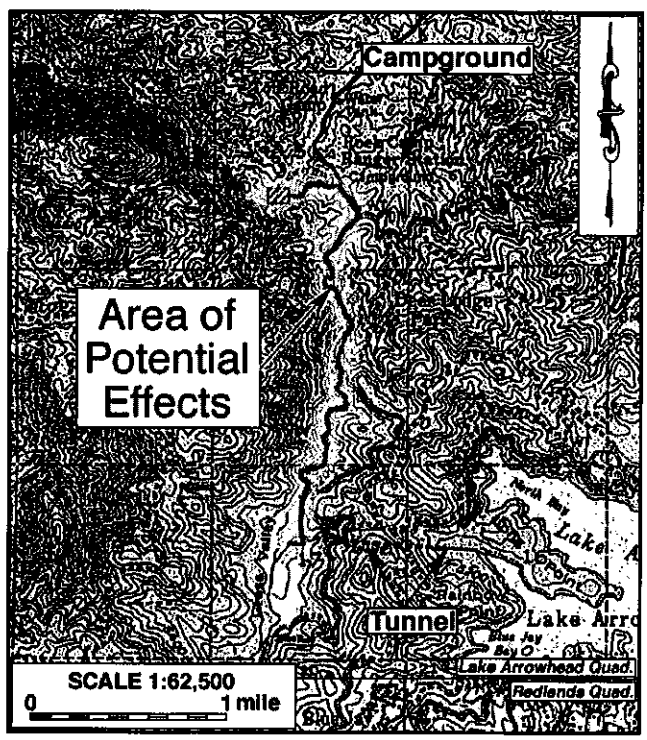

Figure 7. The APE and vicinity in 1952. (Source: USGS 1954; 1956)

NATIVE AMERICAN CONSULTATION

In response to CRM TECH's inquiry, the Native American Heritage Commission reported that the sacred lands record search identified no Native American cultural resources in the immediate vicinity of the APE (App. 2). However, noting that "the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area," the commission suggested that other Native American representatives be contacted, and provided a list of potential contacts in the region (App. 2).

Upon receiving the Native American Heritage Commission's response, CRM TECH contacted all eight individuals on the list and the organizations they represent by fax and by mail on August 19, 2004. As of this time, one response has been received from the San Manuel Band of Mission Indians (SMBMI), stating that they recommend that an approved SMBMI Native American monitor be utilized throughout the project. The list of approved SMBMI Native American monitors is located in Appendix 2. Telephone contact is currently pending to allow sufficient time for the Native American representatives to receive and review the written request. If any Native American concerns over cultural resource issues arise in future consultations, they will be reported immediately to the lead agencies and project proponents, and appropriate actions will follow.

FIELD SURVEY

The field survey produced completely negative results for potential cultural resources. The entire APE was closely inspected for any evidence of human activities dating to the prehistoric or historic periods, but none was found. The area along State Highway 173 and Pilot Rock Road were considered especially sensitive for prehistoric cultural resources, due to the location of a known prehistoric village site to the northeast. However, during the field survey of the area, no features, artifacts, or cultural soils were observed in the area along State Highway 173 and Pilot Rock Road and no traces of the Grass Valley Tunnel were found in the southern end of the APE. In sum, no buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered during the field survey.

DISCUSSION

The purpose of this study is to identify and evaluate any "historic properties" or "historical resources" that may exist within or adjacent to the Area of Potential Effects of the proposed undertaking. "Historic properties," as defined by the Advisory Council on Historic Preservation, include "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior" (36 CFR 800.16(l)). The eligibility for inclusion in the National Register is determined by applying the following criteria, developed by the National Park Service as per provision of the National Historic Preservation Act:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or
(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4)

For CEQA-compliance considerations, the State of California's Public Resources Code (PRC) establishes the definitions and criteria for "historical resources," which require similar protection to what NHPA Section 106 mandates for historic properties. "Historical resources," according to PRC §5020.1(j), "includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a)(1)-(3)).

Regarding the proper criteria of historical significance, CEQA guidelines mandate that "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 Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

The results of this study have established that no potential historic properties or historical resources were previously recorded within or adjacent to the APE, and none was encountered during the present survey. Historical maps consulted for this study show that a tunnel constructed in 1894 traversed through the southern end of the APE. However, the current field survey did not encounter any remnants of this feature. Therefore, this study concludes that *no "historic properties" or "historical resources" exist within or adjacent to the APE.*

RECOMMENDATIONS

Section 106 of the National Historic Preservation Act mandates that federal agencies take into account the effects of their undertakings on historic properties and seek ways to avoid, minimize, or mitigate any adverse effects on such properties (36 CFR 800.1(a)). Similarly, CEQA establishes that "a project that may cause a substantial adverse change in the

significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired."

As stated above, no "historic properties" or "historical resources" have been identified within the Area of Potential Effects during this study; however, a prehistoric village site was situated near the northern portion of the APE while a tunnel dating to the 1890s was shown in historic maps as traversing through the southernmost section of the APE. Based on these findings, CRM TECH presents to the Lake Arrowhead Community Services District and the U.S. Forest Service the following recommendations regarding the proposed undertaking:

- No "historic properties" or "historical resources" have been recorded within or adjacent to the APE, and thus no known historic properties will be affected by the undertaking as currently proposed.
- Archaeological monitoring of earth-moving activities is recommended for the areas along Highway 173 and Pilot Rock Road as well as in the southernmost part of the APE.

CONCLUSIONS

The foregoing report has provided background information on the Area of Potential Effects, outlined the methods used in the current study, and presented the results of the various avenues of research. Throughout the course of the study, no "historic properties" or "historical resources," as defined by Section 106 and CEQA, were encountered within or adjacent to the APE. Pursuant to 36 CFR 800.4(d)(1) and Calif. PRC §21084.1, CRM TECH recommends that the Lake Arrowhead Community Services District and the U.S. Forest Service may reach a finding that *no known historic properties or historical resources will be affected by the proposed undertaking*. However, due to the sensitivity for cultural resources in the vicinity of the APE, archaeological monitoring of earth-moving activities is recommended for the areas along Highway 173 and Pilot Rock Road as well as in the southernmost part of the APE.

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GLO (General Land Office, U.S. Department of the Interior)
1884 Plat Map: Township No. 2 North Range No. 3 West, San Bernardino Meridian; surveyed in 1857-1883.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington, D.C.

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1971 *Saga of the San Bernardinos*. Hogar Publishing Company, Colton, California.

Lerch, Michael K., and Gerald A. Smith
1983 Cultural Resources Assessment for Proposed New Facilities, Lake Arrowhead Wastewater Master Plan, San Bernardino County, California. On file, Archaeological Information Center, San Bernardino County Museum, Redlands, California.

Robinson, John W.
1989 *The San Bernardinos: The Mountain Country from Cajon Pass to Oak Glen: Two Centuries on Changing Use*. Big Santa Ana Historical Society, Arcadia, California.

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1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology 26. Reprinted by Malki Museum Press, Banning, Calif., 1972.

USGS (United States Geological Survey, U.S. Department of the Interior)
1901 Map: Redlands, Calif. (15', 1:62,500); surveyed in 1898-1899.
1902 Map: Deep Creek, Calif. (15', 1:62,500); surveyed in 1898-1899.
1954 Map: Redlands, Calif. (15', 1:62,500); aerial photographs taken in 1952.
1956 Map: Lake Arrowhead, Calif. (15', 1:62,500); aerial photographs taken in 1952.
1969 Map: San Bernardino, Calif. (1:250,000); 1958 edition revised.
1996 Map: Lake Arrowhead, Calif. (7.5', 1:24,000); aerial photographs taken in 1994.

APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA*

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, UC Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists.
Society for American Archaeology.
Society for California Archaeology.
Pacific Coast Archaeological Society.
Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Mariam Dahdul, M.A., RPA*

Education

2002 M.A., Anthropology, California State University, Fullerton.
- Thesis title: Beads and Ornaments from the Coachella Valley;
- Thesis Advisor: Dr. Phyllisa Eisentraut.

1993 B.A., Geography, California State University, Fullerton.

2003 "Ceramics Analysis," graduate seminar presented by Dr. Delaney-Rivera, California State University, Fullerton.

2002 "Section 106-National Historic Preservation Act: Federal Law at the Local Level," presented by UCLA Extension.

2002 "Historic Archaeology Workshop," presented by Richard H. Norwood, Base Archaeologist, Edwards Air Force Base.

Professional Experience

2000- Project Archaeologist, CRM TECH, Riverside.
- Preparing cultural resources management reports, maps, and site records;
- Analyzing beads, ornaments, and shell;
- Conducting archaeological field surveys;
- Participating in various archaeological testing and mitigation programs.

Laboratory and Field Experience

2001 Archaeological field school under the direction of Dr. Brian Byrd.
- Test excavations of sites at the San Elijo Lagoon Reserve, including flotation of soil samples and sorting and cataloguing of artifacts.

2000 Archaeological field class under the direction of Dr. Claude Warren.
- Excavated units at Soda Lake in the Mojave Desert and produced lake bottom stratigraphic profiles.

1999-2000 Archaeology Laboratory, CSU, Fullerton.
- Assisted in the cataloguing of artifacts.

1999 Field survey course under the direction of Dr. Phyllisa Eisentraut.
- Surveyed and mapped prehistoric site in the Mojave Desert.

Papers Presented

2002 "Shell Beads from the Coachella Valley," Sixth Annual Symposium of the Coachella Valley Archaeological Society.

2002 "Shell Beads from the Coachella Valley," Kelso Conference on the Archaeology of the California and Mojave Deserts.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management study reports since 2000.

* Register of Professional Archaeologists

PROJECT ARCHAEOLOGIST
Josh Smallwood, B.A.

Education

1998	B.A., Anthropology, Humboldt State University, Arcata, CA.
1997	Archaeological Field School, Fort Ross Historic District, Fort Ross, CA.
1997	Archaeological Field School, Test and Mitigation Projects, Eureka, CA.
1996	Archaeological Field School, Mad River Watershed Surveys, Blue Lake, CA.
1994	A.A., Anthropology, Palomar College, San Marcos, CA.
1993	Archaeological Field School, San Pasqual Battlefield, San Pasqual, CA.
	Archaeological Field School, Asistencia Las Flores, Camp Pendleton, CA.
1992	Archaeological Field School, Palomar College Campus Late Prehistoric Sites, San Marcos, CA.
1994-	Extensive study of lithic resource procurement strategies, reduction technology, tool manufacture, and reproduction.
2002	"Historical Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base.
2001	"CEQA and Section 106 Basics," presented by Richard Carrico, Principal Investigator, Mooney & Associates, San Diego.
2001	"OSHA Safety Training for Construction Monitors," presented by OSHA and City of San Diego.
2000	"HABS/HAER Recording Methods for Historic Structures," presented by Robert Case, Historic Archaeologist, Mooney & Associates, San Diego.
1998	"Unexploded Ordinance Training," presented by EOD officers, Fort Irwin Army Training Facility, Barstow.
1997	"Obsidian Sourcing through Characterization," presented by Thomas Origer, Sonoma State University.

Professional Experience

2002- Project Archaeologist/Report Writer, CRM TECH, Riverside, CA.
- Archaeological field work, historic-period building surveys, historic-period artifact, marine shell, and lithic analyst. Historical background research based on published literature, historic maps, oral interviews, and county archival records.

2001-2002 Associate Archaeologist, Tierra Environmental, San Diego, CA.
- Field work, report writer, marine shell, lithic, and historic-period artifact analyst.

1998-2002 Archaeologist, A.S.M. Affiliates, Encinitas, CA.
- Survey, testing, data recovery, monitoring, and core sample projects for large public utility and military contracts, marine shell and lithic analysis.

1997-2000 Archaeologist for several environmental/planning consultants, Department of Defense subcontractors, and Humboldt State University/Bureau of Land Management cooperative projects. Crew chief/member for survey, testing, data recovery, and monitoring projects, marine shell, lithic, and historic-period artifact analyst.

Cultural Resources Management Reports

Co-author of and contributor to numerous CEQA and Section 106 study reports since 1997.

PROJECT ARCHAEOLOGIST
Laura Hensley Shaker, B.S.

Education

1998	B.S., Anthropology (with emphasis in Archaeology), University of California, Riverside.
1997	Archaeological Field School, University of California, Riverside.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside.
1999	"Unexploded Ordinance Training," presented by EOD officers; Fort Irwin Army Training Facility, Barstow.

Professional Experience

1999-	Project Archaeologist, CRM TECH, Riverside.
1999	Archaeological survey and excavation at Vandenburg Airforce Base; Applied Earthworks, Lompoc.
1999	Archaeological survey at Fort Irwin Army Training Facility, Barstow; A.S.M. Affiliates, Encinitas.
1998-1999	Paleontological field work and laboratory procedures, Eastside Reservoir Project; San Bernardino County Museum, Redlands.
1998	Archaeological survey at the Anza-Borrego State Park; Archaeological Research Unit, U.C. Riverside.
1997-1998	Archaeological survey and excavation at the Twentynine Palms Marine Corps Air and Ground Combat Center; Archaeological Research Unit, U.C. Riverside.

PROJECT ARCHAEOLOGIST
Adrián Sánchez Moreno, B.A.

Education

1999	B.A., Anthropology (with emphasis in Archaeology), University of San Diego.
2003	"Native American Ceramics Workshop," presented by the San Diego County Archaeological Society, Santa Catarina de los Pai Pai, Baja California, Mexico.
2003	"Native American Basketry Workshop," presented by the San Diego County Archaeological Society, San José de la Zorra, Baja California, Mexico.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside.

Professional Experience

2003	Field Crew, survey and excavation on Isla de Cedros, Baja California, Mexico.
2000-	Project Archaeologist, CRM TECH, Riverside. • Surveys, excavations, data recovery, monitoring, faunal analysis, mapping, and records searches.
1999	Field Crew, excavation on Marine Corps Air Station, Camp Pendleton. K.E.A. Environmental, San Diego.
1999	Field Crew, excavation at Freedmen's Cemetery site in Alexandria, Virginia. URS Greiner Woodward & Clyde.
1999	Field Crew, survey and excavation in Guerrero Negro, Mexico. • Including identification of osteological specimens.
1999	Field Crew, excavation at Lake Chapala, Baja California, Mexico. • Excavation and cataloguing of lithic artifacts from the oldest known site in Baja California.
1998	Field Crew, petroglyph survey in San Pedro Atacama, Chile. • Focusing on identification of possible habitation and petroglyph sites.

APPENDIX 2

CORRESPONDENCES WITH NATIVE AMERICAN REPRESENTATIVES*

* All persons and organizations in the Native American Heritage Commission's referral list were contacted. A sample letter is included in this report.

CRM TECH
FAX COVER SHEET

4472 Orange Street
Riverside, CA 92501
909·784·3051·Tel
909·784·2987·Fax

To:
Rob Wood

Native American
Heritage Commission

Fax:
(916) 657-5390

From:

Laura Hensley Shaker

Date:
July 23, 2004

Number of pages (including this cover sheet):

2

HARDCOPY:

_____ will follow by mail

√ will not follow unless requested

RE: Sacred Land records search

Dear Mr. Wood:

This is to request a Sacred Lands records search.

Name of project: 1392: Grass Valley Alignment

Project size: Ca. 5 acres and 2.8 linear miles

Location: Grass Valley, San Bernardino County

USGS 7.5' quad sheet data:

Lake Arrowhead, Calif., quadrangle,
Sec. 5, 8, and 17 of T2N R3W

Please call if you need more information or have any questions.

Results may be faxed to the number above.

I appreciate your assistance in this matter.

Thank you,

Laura Hensley Shaker
CRM TECH

Map included

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

July 30, 2004

Laura Hensley Shaker
CRM Tech
4472 Orange Street
Riverside, CA 92501

Sent by Fax: 909-784-2987
Number of Pages: 2

RE: Proposed 1392: Grass Valley Alignment, San Bernardino County

Dear Ms. Shaker:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-6251.

Sincerely,

Carol Gaubatz
Program Analyst

NATIVE AMERICAN CONTACTS
San Bernardino County
July 29, 2004

Morongo Band of Mission Indians
Allen J. Parker, Tribal Administrator
245 N. Murray St., Suite C Cahuilla
Banning , CA 92220 Serrano
(951) 849-8807
(951) 755-5200
(951) 849-9667 - FAX

Morongo Band of Mission Indians
Britt W. Wilson, Cultural Resource Coordinator
245 N. Murray Street, Suite C Cahuilla
Banning , CA 92220 Serrano
britt_wilson@morongo.org
(951) 849-8807
(951) 755-5200
(951) 922-8146 Fax

Morongo Band of Mission Indians
Maurice Lyons, Chairperson
11581 Potrero Rd. Cahuilla
Banning , CA 92220 Serrano
(951) 849-4697/98
(951) 755-5200
(951) 849-4425 Fax

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838 Fernandeño
Newhall , CA 91322 Tataviam
tsen2u2@msn.com Serrano
(661) 753-9833 Office Vanyume
(760) 885-0955 Cell Kitanemuk
(760) 949-2103 Home

San Manuel Band of Mission Indians
Ali Kashani, Environmental Coordinator
PO Box 266 Serrano
Patton , CA 92369
akashani@sanmanuel-nsn.gov
(909) 864-8933 EXT-2200
(909) 864-3370 Fax

San Manuel Band of Mission Indians
Bernadette (Ann) Brierty, Cultural Resources
PO Box 266 Serrano
Patton , CA 92369
bbrierty@sanmanuel-nsn.gov
(909) 864-8933 EXT-2203
(909) 864-3370 Fax

San Manuel Band of Mission Indians
Deron Marquez, Chairperson
PO Box 266 Serrano
Patton , CA 92369
dmarquez@sanmanuel-nsn.gov
(909) 864-8933 EXT-3070
(909) 864-3370 Fax

San Manuel Band of Mission Indians
Geri Farr, Tribal Administrator
PO Box 266 Serrano
Patton , CA 92369
gfarr@sanmanuel-nsn.gov
(909) 864-8933 EXT-3210
(909) 864-3370 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 1382: Grass Valley Alignment, San Bernardino County.

CRM TECH
4472 Orange Street
Riverside, CA 92501

August 19, 2004

ATTN: Tom Linton, Director of Planning
Maurice Lyons, Chairperson
Morongo Band of Mission Indians
11581 Potrero Road
Banning, CA 92220

RE: CRM TECH Contract #1392: Grass Valley Recycled Water Pipeline Alignment
In the community of Grass Valley, San Bernardino County

Dear Mr. Lyons:

CRM TECH is conducting the cultural resources studies for the project referenced above. One of our responsibilities is to consult with the people most likely to be aware of Native American cultural resources in the vicinity of this undertaking. Therefore, I am writing to inquire if you or other members of your tribe have any knowledge of sacred/religious sites or other sites of Native American traditional cultural concern at or near the location of the project.

The project's Area of Potential Effects (APE) lies within Sections 5, 8, and 17, T2N R3W, San Bernardino Base Meridian, as depicted in the USGS Lake Arrowhead, Calif., 7.5' quadrangle. The study is a part of the environmental review process for the project, as required by the Lead Agencies, namely the United States Forest Service and the Lake Arrowhead Community Services District, pursuant to Section 106 of the National Historic Preservation Act and the California Environmental Quality Act (CEQA).

According to records on file at the Archaeological Information Center, the northern portion of the APE, specifically the Grass Valley Wastewater Reclamation Facility, had been surveyed for cultural resources in 1983 (Lerch and Smith 1983), but no archaeological sites or other potential historic properties were identified. Outside the APE boundaries but within a one-mile radius, a total of eight previous studies were carried out covering various parcels of land and linear features. Seven archaeological sites were identified within the scope of the records search but outside of the APE boundaries. The sites are primarily prehistoric—i.e., Native American—in nature and consist of chipped stone and groundstone scatters, midden, and bedrock milling features. However, one of the sites, CA-SBR-342 (the Rock Camp Guard Station), was recorded as a large village complex consisting of possible house pits, midden, cupule boulders, bedrock milling features, groundstone and chipped stone pieces, ceramic sherds, projectile points, and beads. CA-SBR-342 was situated approximately 1,500 feet northeast of the APE.

A records search was also conducted at the U.S. Forest Service office in the community of Skyforest, San Bernardino County, California, for additional cultural resources information that the U.S.F.S. may have on file regarding this area of the San Bernardino Mountains.

Tel.: 909 784 3051 Fax: 909 784 2987

CRM TECH
4472 Orange Street
Riverside, CA 92501

This search yielded the same results presented above. U.S.F.S. archaeologist Doug McKay indicated that archaeological monitoring should be carried out in the portion of the APE situated along Highway 173 and Pilot Rock Road due to its proximity to Site CA-SBR-342.

On August 6, 2004, CRM TECH carried out the field survey of the APE, which produced completely negative results for potential cultural resources. The entire APE was closely inspected for any evidence of human activities dating to the prehistoric or historic periods, but none was found. The area along State Highway 173 and Pilot Rock Road were considered especially sensitive for prehistoric cultural resources, due to the presence of Site CA-SBR-342 to the northeast. However, during the field survey of the area, no features, artifacts, or cultural soils were observed in this area or anywhere within the entire APE. In sum, no buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered during the field survey.

Due to the sensitivity for cultural resources in the vicinity of the APE, CRM TECH is recommending archaeological monitoring of earth-moving activities for the areas along Highway 173 and Pilot Rock Road as well as in the southernmost part of the APE, where a 1890's tunnel was indicated in the historic maps.

Any information you can provide about Native American concerns regarding the location of this undertaking would be greatly appreciated. Thank you very much for your consideration of this matter.

Cordially,

Laura Hensley Shaker
CRM TECH

Tel.: 909 784 3051 Fax: 909 784 2987

From: Bernadette Brierty <BBrierty@sanmanuel-nsn.gov>
To: <laura.shaker@crmtech.us>
Cc: Ali Kashani <AKashani@sanmanuel-nsn.gov>
Date: Friday, August 20, 2004 4:09 PM
Subject: Re: 1392 Grass Valley Consltation letter

Laura Shaker,
Project # CRM TECH Contract #1392: Grass Valley Recycled Water Pipeline Alignment, In the community of Grass Valley, San Bernardino County.

I would like to take this opportunity to thank you for complying with the requirements of Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR part 800. The San Manuel Band of Serrano Mission Indians shares your concern over the treatment of Native American artifacts including funerary objects, ceremonial items, and items of cultural patrimony.
The proposed construction activities are in the area of known Serrano archeological sites. Hereby, we request that CRM TECH utilize one of the San Manuel Band of Mission Indians (SMBMI) approved Native American Monitors from the list provided throughout this project.
Attached is the SMBMI's approved list of Native American Monitors.
Should you have any questions regarding this request, please do not hesitate to call me at (909) 864-8933, extension 2203.

Respectfully,
Ann Brierty
GIS Coordinator
San Manuel Band of Mission Indians

>>> Laura <laura.shaker@crmtech.us> 8/20/2004 9:00:30 AM >>>
please send your responses to this letter ASAP.
Be sure to note the project number and name if you respond via e-mail.

Thanks,

Laura Shaker
CRM TECH
4472 Orange Street
Riverside, CA 92501

ph: 951.784.3051
fax: 951.784.2987
laura.shaker@crmtech.us

SMBMI - Native American Monitors

1. **Native Grounds Monitoring and Research, Inc. — Bennae Calac, President**
   Phone # (760) 617.2872

2. **Pechanga Cultural Resources — Amy Minniear, Consultant**
   Phone # (909) 308.9295

3. **Faye Roman**
   Phone # (909) 790.1390

4. **Jeanette McKenna, Archeologist Consultant/Monitor**
   Phone # (562) 696.3852

5. **Dr. Nickson, Agua Cliente Band of Mission Indians**
   Phone # (760) 883.1313

CRM TECH

4472 Orange Street
Riverside, CA 92501

September 14, 2004

Tom Dodson
Tom Dodson and Associates
2150 N. Arrowhead
San Bernardino, CA 92405

Re: Native American Consultation for Grass Valley Wastewater Reclamation Facility and Pipeline Project, Grass Valley area, San Bernardino County (CRM TECH Project #1392)

Dear Mr. Dodson:

At your request, we have completed Native American consultation for the project referenced above. As part of the consultation procedures, CRM TECH requested a sacred land records search from State of California's Native American Heritage Commission in Sacramento.

In a letter dated July 30, 2004, the Native American Heritage Commission reported that the results of the sacred lands record search identified no Native American cultural resources in the immediate vicinity of the APE. However, noting that "the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area," the commission suggested that other Native American representatives be contacted, and provided a list of potential contacts in the region.

Upon receiving the Native American Heritage Commission's reply, CRM TECH contacted all eight individuals on the referral list and the organizations they represent by mail and fax on August 19, 2004. Additional attempts were made to contact these Native American representatives by telephone. As of this date CRM TECH has been able to contact five of the representatives.

Two of the responses received were from the San Manuel Band of Mission Indians (SMBMI) and their responses were included in the Identification and Evaluation of Historic Properties Report sent to you on August 23, 2004. Since the issue date of the report, three additional responses have been received from the Morongo Band of Mission Indians, stating that their tribe had no specific concerns regarding this project. However, Britt Wilson, Cultural Resource Coordinator for the Morongo Band of Mission Indians, did state that the proposed construction activities are in an area that may be considered a traditional use area to which the tribe may have cultural ties. Mr. Wilson recommended that the Coroner's Office be contacted if human remains are uncovered during construction, that a qualified archaeologist be consulted if any cultural resources are uncovered and that the Tribe receive a copy of any cultural resources report subsequently issued on the project.

Tel. 951 784 3051 • Fax 951 784 2987 • Cell 951 376 7843

CRM TECH
1777 Chicago Street
Riverside, CA 92507

CRM TECH has attempted to contact the San Fernando Band of Mission Indians but without success. Messages were left with John Valenzuela, Chairperson, but no responses regarding the project have been received to date.

In summary, in the Native American consultation process for this project, we have contacted the Native American Heritage Commission and three local Native American groups, and have received responses from the commission and from two of the three local tribes, none of which identified any specific sites of Native American cultural concern in the project vicinity. At this time, we will continue to collect Native American responses should any be forthcoming. If any Native American concerns over cultural resource issues arise in the future regarding this project, they will be reported immediately to you.

Sincerely,

John J. Eddy
CRM TECH

Encl.: Sample letter to Native American representatives, responses received from Native American representatives, and telephone correspondence log.

Tel. 951 784 3051 • Fax 951 784 2987 • Cell 951 376 7843

CRM TECH
4472 Orange Street
Riverside, CA 92501

August 19, 2004

Bernadette Brierty, Cultural Resource Coordinator
San Manuel Band of Mission Indians
P.O. Box 266
Patton, CA 92369

RE: CRM TECH Contract #1392: Grass Valley Recycled Water Pipeline Alignment,
In the community of Grass Valley, San Bernardino County

Dear Ms. Brierty:

CRM TECH is conducting the cultural resources studies for the project referenced above. One of our responsibilities is to consult with the people most likely to be aware of Native American cultural resources in the vicinity of this undertaking. Therefore, I am writing to inquire if you or other members of your tribe have any knowledge of sacred/religious sites or other sites of Native American traditional cultural concern at or near the location of the project.

In August 2004, CRM TECH performed a cultural resources study on the Area of Potential Effects (APE) of the proposed upgrade of the Grass Valley Wastewater Reclamation Facility and associated pipeline route in Grass Valley, San Bernardino County, California. The APE lies within Sections 5, 8, and 17, T2N R3W, San Bernardino Base Meridian, as depicted in the USGS Lake Arrowhead, Calif., 7.5' quadrangle. The study is a part of the environmental review process for the project, as required by the Lead Agencies, namely the United States Forest Service and the Lake Arrowhead Community Services District, pursuant to Section 106 of the National Historic Preservation Act and the California Environmental Quality Act (CEQA).

According to records on file at the Archaeological Information Center, the northern portion of the Area of Potential Effects, specifically the Grass Valley Wastewater Reclamation Facility, had been surveyed for cultural resources in 1983 (Lerch and Smith 1983), but no archaeological sites or other potential historic properties were identified. Outside the APE boundaries but within a one-mile radius, a total of eight previous studies were carried out covering various parcels of land and linear features. Seven archaeological sites were identified within the scope of the records search but outside of the APE boundaries. The sites are primarily prehistoric—i.e., Native American—in nature and consist of chipped stone and groundstone scatters, midden, and bedrock milling features. However, one of the sites, CA-SBR-342 (the Rock Camp Guard Station), was recorded as a large village complex consisting of possible house pits, midden, cupule boulders, bedrock milling features, groundstone and chipped stone pieces, ceramic sherds, projectile points, and beads. CA-SBR-342 is situated approximately 1,500 feet northeast of the APE.

Tel.: 909 784 3051 Fax: 909 784 2987

CRM TECH
4472 Orange Street
Riverside, CA 92501

A records search was also conducted at the U.S. Forest Service office situated in the community of Skyforest, San Bernardino County, California, for additional cultural resources information that the U.S.F.S. may have on file regarding this area of the San Bernardino Mountains. This search yielded the same results presented above. U.S.F.S. archaeologist Doug McKay indicated that archaeological monitoring should be carried out in the portion of the APE situated along Highway 173 and Pilot Rock Road due to its proximity to Site CA-SBR-342.

On August 6, 2004, CRM TECH carried out the field survey of the APE, which produced completely negative results for potential cultural resources. The entire APE was closely inspected for any evidence of human activities dating to the prehistoric or historic periods, but none was found. The area along State Highway 173 and Pilot Rock Road were considered especially sensitive for prehistoric cultural resources, due to the location of a known prehistoric village site to the northeast. However, during the field survey of the area, no features, artifacts, or cultural soils were observed in the area along State Highway 173 and Pilot Rock Road or anywhere within the entire APE. In sum, no buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered during the field survey.

Due to the sensitivity for cultural resources in the vicinity of the APE, CRM TECH is recommending archaeological monitoring of earth-moving activities for the areas along Highway 173 and Pilot Rock Road as well as in the southernmost part of the APE.

Any information you can provide about Native American concerns regarding the location of this undertaking would be greatly appreciated. Thank you very much for your consideration of this matter.

Cordially,

Laura Hensley Shaker
CRM TECH

Tel.: 909 784 3051 Fax: 909 784 2987

From: Bernadette Brierty <BBrierty@sanmanuel-nsn.gov>
To: <laura.shaker@crmtech.us>
Cc: Ali Kashani <AKashani@sanmanuel-nsn.gov>
Date: Friday, August 20, 2004 4:09 PM
Subject: Re: 1392 Grass Valley Consltation letter

Laura Shaker,
Project # CRM TECH Contract #1392: Grass Valley Recycled Water Pipeline Alignment, In the community of Grass Valley, San Bernardino County.

I would like to take this opportunity to thank you for complying with the requirements of Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR part 800. The San Manuel Band of Serrano Mission Indians shares your concern over the treatment of Native American artifacts including funerary objects, ceremonial items, and items of cultural patrimony.
The proposed construction activities are in the area of known Serrano archeological sites. Hereby, we request that CRM TECH utilize one of the San Manuel Band of Mission Indians (SMBMI) approved Native American Monitors from the list provided throughout this project.
Attached is the SMBMI's approved list of Native American Monitors.
Should you have any questions regarding this request, please do not hesitate to call me at (909) 864-8933, extension 2203.

Respectfully,
Ann Brierty
GIS Coordinator
San Manuel Band of Mission Indians

>>> Laura <laura.shaker@crmtech.us> 8/20/2004 9:00:30 AM >>>
please send your responses to this letter ASAP.
Be sure to note the project number and name if you respond via e-mail.

Thanks,

Laura Shaker
CRM TECH
4472 Orange Street
Riverside, CA 92501

ph: 951.784.3051
fax: 951.784.2987
laura.shaker@crmtech.us

SMBMI - Native American Monitors

1. **Native Grounds Monitoring and Research, Inc. — Bennae Calac, President**
   Phone # (760) 617.2872

2. **Pechanga Cultural Resources — Amy Minniear, Consultant**
   Phone # (909) 308.9295

3. **Faye Roman**
   Phone # (909) 790.1390

4. **Jeanette McKenna, Archeologist Consultant/Monitor**
   Phone # (562) 696.3852

5. **Dr. Nickson, Agua Cliente Band of Mission Indians**
   Phone # (760) 883.1313

From: Britt Wilson <britt_wilson@morongo.org>
To: <crmtech@crmtech.us>
Cc: Britt Wilson <britt_wilson@morongo.org>, Bernadette Brierty <BBrierty@sanmanuel-nsn.gov>
Date: Thursday, September 2, 2004 11:21 AM
Subject: CRM TECH Contract #1392, Grass Valley/Lake Arrowhead, Pipeline Project

---

Thank you for contacting the Morongo Band of Mission Indians concerning cultural resource information relative to the above referenced project. Due to the high number of consultation requests the Tribe has been receiving, we are only able to respond via email.

The project(s) is outside of the Tribe's current reservation boundaries but within an area that may be considered a traditional use area or one is which the Tribe has cultural ties (e.g. Serrano territory). The Tribe, however, has no specific information regarding cultural resources in the project/area. The County coroner should be contacted if any human remains are uncovered during construction. Also, the Tribe recommends that a qualified archaeologist be consulted if cultural resources are uncovered during construction and that the Tribe receive a copy of any cultural resources report subsequently issued on the project. We would like to recommend that any artifacts uncovered be considered for donation to the Morongo Band of Mission Indians/San Manuel Band of Mission Indians.

If you have not already done so, you should also contact Ann Brierty of San Manuel (see email address above)

Thank you for the opportunity to comment on the project.

Sincerely,

Britt W. Wilson

Project Manager

Planning & Economic Development Dept.

Morongo Band of Mission Indians

245 N. Murray Street, Suite C

Banning, CA 92220

(951) 755-5200 **NEW AREA CODE EFF. 7-17-2004**

Direct Line 755-5206

Fax **(951)** 922-8146

Cell Phone (951) 323-0822

Britt_Wilson@morongo.org

Wayta' Yawa'

Phone Log

Name	Tribe	Phone	Comments
Allen J. Parker, Tribal Administrator	Morongo Band of Mission Indians	Left message on voicemail at 2:30 pm on August 25, 2004; Returned call on August 27, 2004 at 1:30 pm	Mr. Parker voiced no concerns regarding this project.
Britt W. Wilson, Cultural Resource Coordinator	Morongo Band of Mission Indians	Left message on voicemail at 2:32 pm on August 25, 2004	(See attached email response)
Maurice Lyons, Chairperson	Morongo Band of Mission Indians	Left message on voicemail at 2:34 pm on August 25, 2004. Spoke with executive assistant at 8:10 am on Spetember 7, 2004.	Chairperson Maurice Lyons has no specific concerns regarding the project. He forwarded his letter to Cultural Resources, and Britt Wilson has replied on behalf of Tribe.
John Valenzuela, Chairperson	San Fernando Band of Mission Indians	Left messages on voicemail at 2:35 pm on August 25, 2004, and at 8:15 am on September 7, 2004.	No response to date.
Ali Kashani, Envionmental Coordinator	San Manuel Band of Mission Indians	Left messages on voicemail at 2:48 pm on August 25, 2004, and at 8:20 am on September 7, 2004.	Forwarded concerns to Ann Brierty who sent email response on August 23, 2004. (See attached email response)
Bernadette (Ann) Briety, Cultural Recources	San Manuel Band of Mission Indians	Reached by phone at 11:00 am on September 7, 2004.	Email letter received on August 23, 2004. (See attached response)
Deron Marquez, Chairperson	San Manuel Band of Mission Indians	Left messages on his executive assistant Carolyn Tobbin's voicemail at 2:50 pm on August 25, 2004, and at 8:20 am on September 7, 2004.	No response to date.
Geri Farr, Tribal Administrator	San Manel Band of Mission Indians	Left messages on voicemail at 2:55 pm on August 25, 2004, and at 8:30 am on September 7, 2004.	No response to date.