

## Section 2.4 Long Hydrologic Area, Owens River (4 of 5 Focus Watersheds)

### 2.4a Watershed Overview

The Owens River watershed has been selected as a priority watershed because of the high resource value of its waters. The entire Owens River watershed is designated as a 'Category 1' Priority under the California Unified Watershed Assessment prepared in accordance with the federal Clean Water Action Plan. For purposes of the Watershed Management Initiative (WMI), the upper reaches of the Owens River system (Figure 2.4(a)<sup>1</sup>), known as the Long Hydrologic Area (Figure 2.4(b)<sup>2</sup>), has been selected as a target subwatershed.. The RWQCB may apply watershed management strategies developed for the Long Valley subwatershed to the entire Owens/Mono watershed in the future. The Long Hydrologic Area overlies the geographic area where the two Regional Board offices (Victorville and South Lake Tahoe) generally divide responsibility.

The Long Hydrologic Area is located in Mono County and encompasses approximately 380 square miles. It includes the upper reaches of the Owens River above Crowley Reservoir. Within the watershed are numerous alpine lakes at the higher elevations of the eastern Sierra Mountains. A few peaks in this watershed are at elevations of over 12,000 feet above mean sea level. Within the watershed, numerous streams flow eastward to the Owens River, the principal of which are Mammoth, Deadman, Glass, Hot, McGee, Convict and Hilton Creeks. The headwaters of the Owens River is considered the "Big Springs". An ancient volcano, known as the Long Valley Caldera, forms the topographical shape of the Long Hydrologic Unit into an elongated oval. Volcanic activity in the area is recent. The low point in the watershed is formed by Crowley Reservoir, constructed in 1941, which has a spillway elevation of 8,781 feet above mean sea level. The following major land owners within the watershed manage over 90% of the land area:

- U.S. Forest Service (USFS), Inyo National Forest;
- U.S. Bureau of Land Management (BLM), Bishop Resources Area; and
- City of Los Angeles, Department of Water and Power (LADWP).

The Inyo National Forest includes the John Muir trail and several federal wilderness areas. The LADWP owns several reservoirs, which also receive heavy recreational use. A variety of unique species and subspecies of fish, wildlife and aquatic invertebrates exist in the Owens River watershed, including the endangered Owens tui chub. The Department of Fish and Game (DFG) has identified a number of "Significant Natural Areas", with unique biological attributes, in the watershed. The University of California operates the Sierra Nevada Aquatic Research Laboratory near Convict Lake.

The Town of Mammoth Lakes is the only incorporated community in the Long Hydrologic Area, which also includes a number of small unincorporated communities. The Town of Mammoth Lakes, with a permanent population of about 5,000, accounts for 3.7 million visitor-days annually, and serves as a gateway for increasing recreational use of federal lands in the area. The Town of Mammoth Lakes has been growing rapidly with new residential, commercial, industrial (e.g., geothermal energy ) and recreational (e.g., golf course and ski area) developments.

Hot Creek Hatchery, operated by the DFG, supports a large regional recreational fishery by providing fish stock for planting in other rivers and lakes. Other private hatcheries also provide excellent stock for planting. Crowley Lake is one of the largest and most used trout fisheries in California. Livestock grazing occurs on both public and private lands.

After construction of the Los Angeles Aqueduct in 1913, the waters of the Owens River have been transported out of the Owens River watershed further downstream. From 1941 to 1989, streams from the Mono Lake Basin have been diverted by the City of Los Angeles Department of Water and Power (LADWP) from Grant Reservoir through a tunnel into the Owens River. Due to a water rights decision by the State Water Resources Control Board,

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<sup>1</sup> Figure 2.4(a) is modified from the "Draft Environmental Impact Report for the Review of the Mono Basin Water Rights of the City of Los Angeles, May 1993", prepared by Jones, Stokes and Associates.

<sup>2</sup> Figure 2.4(b) is modified from the Geographic Information System maintained by the Inyo National Forest.

**FIGURE 2.4(a) -- Mono Owens Watersheds**

**FIGURE 2.4(b) -- Long Hydrologic Area**

flows in Rush Creek, Lee Vining Creek and other tributaries to Mono Lake, have been partially restored. Limited diversions still occur and may increase as Mono Lake reaches levels established by the SWRCB. These changes in flows will in turn impact flows in the upper Owens watershed. Together with the tributaries to Mono Lake, the entire Owens River watershed provides significant domestic water supplies to the Los Angeles metropolitan area.

## **2.4b Water Quality Problems and Issues**

The water quality of the snowmelt runoff from the higher elevations of the eastern Sierra mountains is excellent. This water recharges ground water and contributes to surface waters of the basin. At lower elevations, there are areas with naturally occurring poorer water quality, primarily due to geothermal waters from volcanic activity. The great demand for the high quality waters and for the recreational opportunities in the eastern Sierra region have allowed human caused influences that have degraded, or threaten to degrade, these high quality waters. Some water bodies in the watershed are listed as Water Quality Limited Segments under the federal Clean Water Act.

The RWQCB conducted numerous stakeholder meetings from 1997 to 1999. Based upon stakeholder input received during those meetings and RWQCB's own review of watershed issues in the Long Hydrologic Unit, the following watershed issues were identified:

**(A) Cooperative Relationships with Stakeholders** - Maintaining a cooperative relationship with stakeholders to effectively implement the WMI and to demonstrate a long-term commitment for improving water quality.

**(B) Water Quality and Quantity Relationships** - Evaluate long-term water quality of Crowley Reservoir from all upstream effects (point and non-point sources) and development of an appropriate monitoring plan to quantify these loading.

**(C) Wetlands and Riparian Habitat** - Impacts to wetlands and riparian habitat losses and establishing regional wetlands restoration projects or wetlands mitigation banks.

**(D) Urban Development** - Review development plans and work with stakeholders to ensure water quality issues are addressed.

**(E) Surface Water Discharges** - Development of environmentally acceptable plans, and subsequent permit actions for stormwater runoff (especially from large disturbed areas such as ski areas and large construction projects), and other direct discharges into surface waters.

**(F) Development of Total Maximum Daily Loads (TMDLs) for Water Quality Limited Segments** - Adoption of TMDLs and establishment of a long term management strategy to minimize future impacts where appropriate.

**(G) Reclaimed Water Use** - Evaluate potential impacts and adopt project-specific waste discharge requirements

**(H) Continued RWQCB Oversight of Other Water Quality Issues** - Continued RWQCB oversight of the other water quality issues in the Long Hydrologic Area.

Following are expanded discussions of these issues:

### **(A) Cooperative Relationships with Stakeholders**

The RWQCB activities to protect and enhance water quality and beneficial uses are expected to occur in cooperation with the following public entities:

- U.S. Forest Service, Inyo National Forest;
- U.S. Bureau of Land Management, Bishop Resources Area;
- U.S. Natural Resource Conservation Service;
- U.S. Army Corps of Engineers;
- U.S. Fish and Wildlife Service;
- U.S. Environmental Protection Agency;

- California Department of Fish and Game;
- California Department of Forestry and Fire Protection;
- California Department of Transportation;
- California State Water Resources Control Board, Division of Water Rights;
- Mono County;
- Town of Mammoth Lakes;
- Mammoth County Water District;
- Los Angeles Department of Water and Power; and
- University of California, Sierra Nevada Aquatic Research Laboratory and White Mountain Research Station.

Cooperation with the private sector in the self-determined implementation of Best Management Practices and watershed protection and restoration programs on private lands is also expected to be important. Through outreach and field presence, BMP implementation should improve. Opportunities for public participation will be provided on an ongoing basis through consideration of permits, enforcement actions, status reports, and Basin Plan amendments at RWQCB meetings, through technical and/or policy advisory committees for grant-funded projects, and through periodic watershed stakeholder meetings.

The RWQCB has indicated in the stakeholder meetings that it will intend to use the following approach to keep stakeholders informed and aware of WMI issues and to allow for public input in the process.

- Use the Mono County Collaborative Planning Team as one forum for discussion of policy related issues,
- Use the Long Valley Hydrologic Advisory Committee (LVHAC) and Owens Valley Interagency Committee meetings as one forum for discussion of technical related issues,
- Use periodic RWQCB Workshops for an expanded forum with the public and RWQCB members,
- Hold periodic stakeholder meetings for additional public input,
- Continue periodic mailings to interested stakeholders, and
- Use specific stakeholder groups or subgroups to address general or specific issues that arise (e.g., LVHAC's Cold Water Subgroup for issues relating to Mammoth Creek; Mono County Collaborative Planning Team Wetlands TAC).

### **(B) Water Quality and Quantity Relationships**

Due to a generally arid climate, the large quantity of water diversions (both surface and ground water), and an increasing demand on the resource, the relationship between water quality and quantity are significantly interrelated in the entire Owens River watershed. *The long-term water quality of Crowley Reservoir from all upstream effects is identified as a high Watershed Management Initiative priority.*

#### **LADWP Diversions**

The entire LADWP aqueduct system delivers an average of 470,000 acre feet per year of water. From 1941 until 1989, streams in the Mono Basin were diverted to the Owens River from Grant Lake through the Mono Craters Tunnel. From 1974 to 1989 the average yearly diversion was 83,000 acre feet. The Superior Court ordered that no diversions were allowed between 1990 to 1994 until the State Water Resources Control Board Water Rights hearings were complete. The SWRCB's Mono Basin Water Rights Decision No. 1631 allowed diversions to continue in a "step-up" fashion under certain conditions. The two primary factors that govern the export of Mono Basin water into the Owens Basin are that 1) the fisheries in streams that feed Mono Lake be maintained and that 2) the Mono Lake elevation is stabilized at 6,377 feet above mean sea level.

The historical diversions (of Grant Lake water into the river) resulted in channel morphology changes and served to lower alkalinity in the natural Owens River system. After the Mono Lake level stabilizes at 6,377 feet above mean sea level, diversions of Mono Basin water into the Owens River are expected to increase to as much as 30,000 acre feet per year. The RWQCB adopted water quality objectives in the 1975 Basin Plan that were incorporated into the revised 1995 Basin Plan based on Owens River water quality which included water diverted from Grant Reservoir through the Mono Craters Tunnel. The reduced diversions into the Owens River have an unknown effect on

maintaining water quality. The Basin Plan water quality objectives should be reviewed as part of establishing Total Maximum Daily Loads, discussed later.

### **Crowley Reservoir**

Crowley Reservoir is the natural low point for the entire Long Hydrologic Area. Most of the water from this reservoir is transported to hydroelectric power plants downstream; some is used to support a recently re-established fishery the downstream Owens River Gorge. On numerous occasions, most recently in the fall of 1996, releases of water containing low dissolved oxygen levels from Crowley Reservoir resulted in severe fish kills downstream in Pleasant Valley Reservoir. LADWP has made modifications to the Gorge power plants for air injection during conditions of low dissolved oxygen. The cause of the fish kill is believed to be due to elevated phosphorus and low inorganic nitrogen levels in Crowley Reservoir that combined with weather conditions to allow a massive blue-green algae bloom to form. The oxygen in the reservoir was consumed by the biological decay of the algae as it died, depressing dissolved oxygen levels. The sources of nutrients to Crowley Reservoir may be combinations of both natural and human caused sources. The RWQCB currently manages a contract with UC Santa Barbara, Sierra Nevada Aquatic Research Laboratory, to evaluate nutrient inputs to the reservoir. The RWQCB requested LADWP to modify the power generation and reservoir management activities to address this issue. A gradual long term decline in Crowley Reservoir angling successes, beginning in 1987 and persisting through many seasons, aroused public concern. A "Committee To Save Crowley Lake" was formed and requested the DFG to take action. As a result, the DFG adopted a Fisheries Management Plan for Crowley Lake in 1997. The LADWP has implemented a number of management strategies intended to address Crowley Lake issues. These strategies include riparian set-back fencing projects along the Owens River and other creeks upstream of Crowley Reservoir and the installation of equipment to increase dissolved oxygen levels in the Owens River Gorge hydroelectric power plants that release water from Crowley Reservoir into Pleasant Valley Reservoir.

### **Ground Water Pumping**

There are a number of current and proposed ground water extraction projects that may lower the water table or affect the supply spring water temperature for Hot Creek Hatchery. There are existing and proposed geothermal power generation projects near Casa Diablo, to the northwest of the hatchery. The zone of pumping and reinjection from these geothermal projects may affect the flow or temperature to the springs. These power plants have constructed spill retention basins to capture fluids should a well blowout or spill occur. Additionally, the Mammoth Community Water District supply wells and proposed commercial development projects near the Town of Mammoth Lakes Airport may lower Mammoth Creek and ground water levels which may affect springs and shallow ground water within the area. The Long Valley Hydrologic Advisory Committee (LVHAC) was formed as a Condition of Approval for the geothermal power plants. The LVHAC meets quarterly to make specific recommendations to the various member agencies based upon data collected from a maintained sampling network; examples include recommendations that better pre-project is collected, and encouraging that GIS capabilities are used to analyze historical data.

### **(C) Wetlands and Riparian Habitat**

Riparian habitat has been degraded from loss of vegetation, stream bank trampling, and loading of nutrients and coliform bacteria to surface waters from livestock wastes, recreational uses, and urban and commercial development. *Impacts to wetlands and riparian habitat loss is identified as a high WMI priority.*

### **Wetlands**

Construction for residential, commercial, and recreational development has disturbed steep slopes and wetlands. The RWQCB has utilized approximately \$300,000 to define and map wetland areas within parts of Mono County. Wetlands mapping has been completed for parts of the Long Hydrologic Area. The maps and a related report are available in the Mono County Planning office, or from the RWQCB.

The RWQCB is working with Mono County to identify potential restoration sites within the County, and to plan and pursue the implementation of the restoration sites. The RWQCB also is coordinating with Mono County

Collaborative Planning Team to explore establishing these restoration sites, and to establish a better permitting process for projects with wetlands impacts.

### **Livestock Grazing**

Livestock grazing is conducted by individual landowners on private lands or on leases of land from the major land managers in the watershed; the USFS, BLM, and LADWP. Most LADWP land is located in valley bottoms and meadows, incorporating streams and riparian areas. The DFG has noted that riparian vegetation is essentially absent along the Upper Owens River. The LADWP is implementing specific management plans on various grazing leases designed to protect riparian areas from overgrazing through the fencing projects already mentioned and other BMPs. In the past, the RWQCB has requested periodic status reports on these projects because specific complaints from the public were received. On LADWP and other non-federal lands, the RWQCB will rely on the three-tier grazing management approach outlined in the Water Quality Management Plan for Livestock Grazing on Non-Federal Lands, adopted by the State Board as part of the statewide nonpoint source waste management strategy. The USFS has developed Allotment Management Plans for each of their grazing allotments which prescribe BMPs for grazing and timber harvesting. The RWQCB relies upon a Management Agency Agreement requiring the USFS to protect water quality on USFS lands through use of BMPs. The BLM used Allotment Management Plans for the grazing allotments in its Bishop Resources Management Area.

### **(D) Surface Water Discharges**

There are a number of existing or proposed discharges that may have a direct impact on surface water quality. A number of these issues may require RWQCB regulatory actions to be taken.

### **Reclaimed Wastewater**

The Mammoth Community Water District (MCWD) operates the largest wastewater treatment facility in the Long Hydrologic Unit currently disposes wastewater in a natural depression known as Laurel Ponds. The DFG is concerned that the Laurel Ponds are a breeding area for a population of tiger salamanders which are likely an exotic species that pose a threat to the Hot Creek Fish Hatchery and the native Owens Tui chub (endangered species). The MCWD is preparing environmental documents to support an upgrade of treatment facilities which would allow for the delivery of treated reclaimed wastewater to be used on two golf courses located in the Town of Mammoth Lakes. Currently, the Basin Plan contains a prohibition against discharge of waste above an elevation of 7,650 feet in the Mammoth Creek Watershed. During a RWQCB workshop held in July 1997, the following issues were identified:

- Demonstration that the reclaimed wastewater will meet all appropriate water quality criteria
- Resolution of impacts from reduced flows to Laurel Ponds
- Adoption of a Basin Plan Prohibition Exemption to allow the reclaimed wastewater to be used above 7,650 feet
- Evaluating the wetlands impacted from changes in flow to Laurel Ponds

### **Fish Hatcheries**

There are two fish hatcheries discharging water directly to the surface waters; Hot Creek Hatchery operated by the DFG and Alpers Ranch. The RWQCB will evaluate and revise the NPDES permit for the Hot Creek Hatchery and Alpers Ranch as appropriate.

### **Whitmore Pool**

The Whitmore Pool is a natural hot springs used for public swimming. Chlorine is added to the influent pool water supply. The pool effluent then naturally flows into a wetlands downstream of the pool. The discharge may affect aquatic invertebrates in the wetlands which is identified as a sensitive biological area in the 1996 USFWS Owens Basin Wetland and Aquatic Species Recovery Plan.

## **Stormwater**

The RWQCB uses the Stormwater Program element of the federal NPDES permit system to regulate stormwater discharges that may cause erosion from industrial sites (e.g., Mammoth Lakes Airport and Mammoth Mountain Ski Area), construction sites (over 5 acres), and large municipalities. Stormwater from urban runoff in the Town of Mammoth Lakes and other areas contains grease, trace pesticides, herbicides, heavy metals, and elevated total dissolved solids that adversely affect beneficial uses of waters. The Town of Mammoth Lakes continues to implement a 1985 Stormwater Master Plan as funds become available. In 1997, the Town of Mammoth Lakes was awarded a grant under Section 319(h) of the Clean Water Act for construction of a second sedimentation basin on Murphy gulch as part of that plan. To protect Mammoth Creek, the Town of Mammoth Lakes and the RWQCB have entered into a Memorandum of Understanding to implement Basin Plan guidelines. For new development projects in the Town of Mammoth Lakes, the guidelines require that all runoff from a 20-year, 1-hour storm be retained onsite and infiltrated. The long-term effectiveness of the Basin Plan guidelines, which require the retention and infiltration of runoff water onsite, and changes resulting from construction of stormwater control facilities to implement the 1985 stormwater plan are unknown and should be further evaluated between the RWQCB and Town of Mammoth Lakes. Construction activity in the Mammoth Lakes area is expected to increase dramatically in the next few years as more recreational use support-related projects are developed.

### **(E) Development of TMDLs for Water Quality Limited Segments**

Please see TMDL section.

### **(F) Continued RWQCB Oversight of Other Water Quality Issues**

There are other waste discharges, such as those described below, that have affected water quality. The RWQCB will continue to work on these issues. Historically, the RWQCB has focused regulatory efforts on point source pollution control. More recently nonpoint source pollution control has been emphasized through implementing BMPs. The RWQCB will continue to support early identification of potential future water quality issues in the early stages of new project development through the environmental review process. The RWQCB will continue to use staff time for facility inspection, oversight and updating waste discharge requirement.

The Benton Crossing landfill, operated by Mono County, is the only permitted landfill in the Long Valley watershed. Low levels of volatile organic compounds have been detected in ground water beneath the landfill. Leaks associated with underground storage tanks have impacted ground waters and are remediated under the direction of Mono County for soil only cases and the RWQCB for ground water cases. Direct spills of pollutants may affect both ground and surface water beneficial uses. For example, the RWQCB took a 1996 enforcement action against an operator of a site that discharged waste oil into the Murphy Gulch drainage. Other than the MCWD, there are three other regulated wastewater treatment plants in the Long Hydrologic Area: Hilton Creek Community Services District, Convict Lake Campground, and Mammoth Mountain Ski Area. Onsite septic systems are used throughout the remainder of the Long Hydrologic Area watershed and are permitted by the Mono County Health Department. A Memorandum of Understanding exists between the RWQCB and Mono County to implement regional septic system criteria.

Nonpoint sources (both natural and human caused) may provide the greatest pollutant loading to surface waters in the Long Hydrologic Area. Some of the contributors, such as stormwater runoff, have been addressed above. Limited commercial timber harvesting occurs in the Inyo National Forest primarily of Jeffrey Pine and Red Fir. Water quality problems may result from erosion and riparian vegetation disturbance in connection with limited timber harvesting or other forest management activities, such as recreational uses and access roads. Humans and cattle are potential carriers of *giardia*, *cryptosporidium* and other microbial pathogens that may become waterborne and cause disease in humans. The impacts of heavy back country recreational use on watershed condition, and of back country human waste disposal on water quality, may also be locally significant. In 1991, a Health Advisory was issued for Mammoth Creek. Crowley Lake is open to body contact sports such as water and jet skiing. Boating is allowed if holding tanks are provided; however, there are no pump out facilities provided. Other lakes in the Region, such as Lake Tahoe, have been found to contain methyl tertiary butyl ether (MTBE), an oxygenate additive to gasoline that causes odor in drinking water at low concentrations. The presence of MTBE in lakes may be due to

releases from marinas during boat refueling or from boat exhaust. MTBE data is currently being collected for Crowley Reservoir. Extended day use or camping in areas with no sanitary or trash disposal facilities results in some human waste and other debris covering the shoreline. Outdoor recreational visitor use of the federal lands in the watershed is increasing. Water quality impacts of these activities are unknown but may be locally significant. Off road vehicle use in wetland areas is reported to occur near Benton Crossing which caused damage to plant life.

#### **2.4c Goals and Objectives with Milestones**

##### ***Overall Goal***

The fundamental goals of the RWQCB in applying a watershed management approach to the Owens Watershed is to protect, and where needed improve, water quality and beneficial uses in the watershed and other related areas by more effectively utilizing RWQCB resources in cooperation with other stakeholders. The RWQCB is committed to apply the lessons learned in the Long Hydrologic Area to other similar problem areas throughout the entire Owens/Mono Hydrologic Units.

##### ***(A) Cooperative Relationships with Stakeholders***

The RWQCB will improve communications between stakeholders on issues such as the purpose of the WMI, the role of the RWQCB, the interrelationship of the RWQCB with stakeholders and how public/private land management decisions affect the watershed. Board staff attend as many public forums as possible in the area (e.g. Long Valley Hydrologic Advisor Committee, Owens Valley Interagency Committee, Mono County Collaborative Planning Team) and try to hold RWQCB workshops to discuss the WMI for the Long Hydrologic Area. The RWQCB work with other stakeholder groups to identify ways to continue successful watershed tools in the long term.

##### ***(B) Water Quality and Quantity Relationships***

The RWQCB will work to ensure that water supply needs are balanced with ground and surface water resource protection and overall water quality improvement. The RWQCB staff will continue to work with the LADWP to assess the effectiveness of the fencing projects and other physical modification made in the Owens River Gorge power plants. The RWQCB will assist in developing monitoring strategies to quantify the natural and human caused sources of nutrient loading to Crowley Reservoir. The RWQCB will assist in securing funding sources for nutrient source data collection or implementing projects that reduce Crowley Lake nutrient loading.

##### ***(C) Wetlands and Riparian Habitat***

The RWQCB will continue to work with the Mono County Collaborative Planning Team and its Wetlands Technical Advisory Committee to develop a regional wetlands restoration project within five years. The RWQCB will continue to support data collection efforts that define causes of wetland and riparian degradation or loss and to assist in cooperatively developing regulatory strategies that implement the Basin Plan wetlands policy of avoidance, minimization and mitigation. The RWQCB will support developing rangeland management plans that foster BMPs for riparian corridor improvement as part of developing TMDLs.

##### ***(D) Surface Water Discharges***

The RWQCB will work closely with the MCWD to develop environmentally acceptable treatment alternatives for the use of reclaimed wastewater. The RWQCB will request information to evaluate the discharges from the Alpers Ranch and Whitmore Pool. Should the discharges from these two facilities require permits, the RWQCB will work with the dischargers in developing effluent limit criteria and adopt permits as necessary.

**(E) Development of TMDLs for Water Quality Limited Segments**

The RWQCB will prepare a plan for developing the TMDLs, collecting data necessary to support the TMDL, and preparing drafts of watershed management strategies for presentation to stakeholders. The RWQCB will work to maintain the schedule for developing TMDLs as agreed to by the Board. The RWQCB will work with stakeholders to develop a monitoring program to quantify the management strategy success. Some limited biomonitoring is currently underway.

**(F) Continued RWQCB Oversight of Other Water Quality Issues**

The RWQCB will give priority to environmental review of proposed new developments. For example, proposals to develop a gold mine in Long Valley have been discussed. This project, if proposed, should have early environmental consultation. The RWQCB will continue the core regulatory activities to address the highest water quality issues first. As part of each routine RWQCB action, emphasis will be given to further quantify water quality impacts from all point and nonpoint source discharges such as grazing, forest management practices, underground tanks, reclaimed wastewater reuse, urban runoff, fish hatcheries, and abandoned mines. The RWQCB will assist in developing specific control measures to address these issues on a project-by-project basis. Facility permits that are overdue should be revised before other permits.

**Mono-Owens Unit Tasks Planned for FY 02-03 to 06-07**

<b>EXPECTED TASKS</b>	<b>PY Estimate by Fiscal Year</b>				
	<b>FY 02- 03</b>	<b>FY 03- 04</b>	<b>FY 04- 05</b>	<b>FY 05- 06</b>	<b>FY 06-07</b>
<b>WATERSHED PROTECTION/SUPPORT TASKS</b>					
<b>Nonpoint source implementation</b>					
Conduct close review (including formal written comments) and oversight of grazing activities; implement <i>the California Rangeland Water Quality Management Plan</i>	0.1				
Prevent or reduce nonpoint source pollution from silviculture and other forestry management operations such as for fire control or for chemical applications (e.g., pesticides, fertilizers)					
Provide technical support to Mammoth area citizen monitoring group					
Implement NPS pollution control strategies					
Work with USFS regarding sediment loading and erosion in Lakes bas campgrounds and recreational parking areas					
Assist with management of contract for Restoration of Riparian Habitat at Crowley Lake					
Participate in implementation of Clean Sierra Waters 319 NPS Control Project – Sierra Nevada Alliance					
<b>Nonpoint source outreach/education</b>					
Conduct BMP workshops/contractor meetings	0.5				
Conduct outreach and coordination with other agencies (e.g., DFG, counties, cities, USFS, CalTrans, etc.) for project design for best benefit to water quality)	0.1				
Participate in regular meetings including (but not limited to) Owens Gorge Re-watering TAC; participate in one-time activities such as Earth Day, Science Fairs, etc.	0.05				
Solicit project proposals for funding under CWA 319, Prop 13 and CWA 205j	0.02				
<b>Nonpoint source contract management</b>					
Close-out contract for Murphy Gulch Siltation Basin #2 (\$232,460)					
<b>Timber Harvest (non-federal lands)</b>					
<b>Prop. 13 contract management</b>					
Manage contract for Upper Owens Watershed Plan	0.1				
<b>205j WQ planning contract management</b>					

<b>EXPECTED TASKS</b>	<b>PY Estimate by Fiscal Year</b>				
	<b>FY 02- 03</b>	<b>FY 03- 04</b>	<b>FY 04- 05</b>	<b>FY 05- 06</b>	<b>FY 06-07</b>
No contracts for FY 02-03					
<b>Basin Planning</b>					
Assist with basin planning for beneficial uses for EDW in watershed.	0.1				
<b>Wetlands management and protection</b>					
Review wetland mitigation/compensation for impacts due to unavoidable wetland loss	0.1				
Inventory gain/loss of wetlands	0.05				
Oversight of county projects to assist with wetlands regulations	0.05				
Participate in Mono County Collaborative Planning Team Wetlands TAC	0.05				
<b>Watershed management</b>					
Participate in Mono County Collaborative Planning Team	0.05				
Participate in Inyo County Collaborative Planning Team	0.05				
Participate in Long Valley HAC	0.05				
Oversight of additional geothermal exploration	0.1				
<b>REGULATORY TASKS</b>					
<b>NPDES</b>					
6000U000024 So. Cal Edison Statewide Utility (expires by 8/15/01)					
Shoshone WWT update	0.15				
<b>Stormwater</b>					
Oversight of Mammoth Lakes MOU implementation and possible MOU revisions or revocation	0.5				
Follow-up on Caltrans SEP –Lee Vining	0.1				
Inspect non-MOU Inyo and Mono County sites for stormwater NPS impact regulation	0.2				
Stormwater Phase II for Town of Mammoth Lakes	0.1				
<b>Non-15 (WDR)</b>					
CEQA document review and comment	0.2				
Oversight of CalTrans projects such as road widening	0.1				
6B 260101002 June Lake PUD STP (expires by 3/03)	0.1				
6B149107005 Big Pine Indian Res. WTF (expires by 11/01)	0.1				
6B260103001 Mammoth CWD STP (expires by 3/01)	0.1				
6B1422000002 Rovana Housing Package STP (expires by 9/01)	0.1				
6B140706001 Death Valley National Monument HDQ Furnace Creek WWTF (expires by 7/01)	0.1				
6B26014001 LADWP Crowley Lake Recreational Area (expires by 4/00)	0.1				
6B140801006 CalTrans Coso Junction Roadside Rest (expires by 3/00)	0.1				
6B141050001 CalTrans Division Creek Roadside Rest (expires by 1/01)	0.1				
6B140800001 DFG Mt. Whitney Fish Hatchery Residence (expires by 2/00)	0.1				
6B150801002 CalTrans Boron Roadside Rest (expires by 10/99)	0.1				
6B260102001 Lee Vining PUD WTF (expires by 7/99)	0.1				
6B261002001 Tioga Pass Resort (expires by 4/98)	0.1				
<b>Water Quality Certification</b>					
Review/prepare 401 certs.	0.3				
<b>Enforcement</b>					
Ski area inspection and enforcement as needed					

<b>EXPECTED TASKS</b>	<b>PY Estimate by Fiscal Year</b>				
	<b>FY 02- 03</b>	<b>FY 03- 04</b>	<b>FY 04- 05</b>	<b>FY 05- 06</b>	<b>FY 06-07</b>
<b>Chapter 15</b>					
6B260300002 Mono Co. DPW Benton Crossing Landfill (expires by 7/02)					
6B140300005 Inyo Co Keeler Class III Landfill (expires by 2/98)					
<b>Dept of Defense</b>					
<b>Underground Storage Tanks</b>					
Provide oversight of leaking UST investigations and clean up	1.0				
<b>Aboveground Storage Tanks</b>					
Provide oversight of AST spill investigations and clean up	0.2				
marina inspections					
Review of SPPP; follow up on county referalls of non-filers of SPPP					
<b>Spills or complaints from unregulated sites</b>					
Follow-up on spill investigations and clean up	0.6				

**CONTRACT NEEDS TO SUPPORT ABOVE EXPECTED TASKS:**

<b>Description</b>	<b>Amount Needed</b>	<b>Contract Term</b>
None identified at this time		

**WATERSHED UNIT: Mono Owens**

**Main Watershed(s): Mono Lake, June Lakes, Owens River**

<b>DESIRABLE TARGETED TASKS OR PROJECTS</b>	<b>PY Estimate by Fiscal Year</b>				
	<b>FY 02- 03</b>	<b>FY 03- 04</b>	<b>FY 04- 05</b>	<b>FY 05- 06</b>	<b>FY 06- 07</b>
<b>Implement BMPs/Improve Water Quality</b>					
Develop ski area BMP guidelines	0.15				
<b>Habitat Restoration/Beneficial Use Enhancement</b>					
Update ski area permits to address issues/standards for intermittent streams	0.2				
Develop guidance to evaluate wetland value and function as related to compensation	0.5				
Restore Laurel Creek (previous approval but not implemented)	0.25				
<b>Assess Loadings and Impacts</b>					
Evaluate monitoring data for trend analysis and WQOs	0.4				
Map data on GIS type format	0.1				
Training and resources for data management (e.g., SWIM, Geotracker)	0.1				
Evaluate impacts from use of asphalt grindings on dirt roads	0.05				
Evaluate impacts of snow removal, melting and storage	0.3				
Evaluate proposed use of geothermal heat to melt snow from sidewalks	0.2				
Evaluate measures to reduce impacts (fuel, etc) from boating on upper basin lakes	0.3				
<b>Research-oriented Studies</b>					

<b>DESIRABLE TARGETED TASKS OR PROJECTS</b>	<b>PY Estimate by Fiscal Year</b>				
	<b>FY 02- 03</b>	<b>FY 03- 04</b>	<b>FY 04- 05</b>	<b>FY 05- 06</b>	<b>FY 06- 07</b>
<b>Water Conservation and Management</b>					
Evaluate use of reclaimed water from proposed projects					
<b>Monitoring</b>					
Conduct additional ambient monitoring	0.2				
Promote/support citizen monitoring	0.05				
<b>Education and Outreach</b>					
Conduct education and outreach activities					
Participate in outreach activities for stormwater and water quality stewardship	0.1				
<b>Watershed Planning</b>					
Oversight of 401 and other mitigation projects to ensure compliance and success of mitigation (e.g., restoration of temporary impact areas and success of created areas)	1.0				
<b>Land Acquisition/Conservation</b>					

**CONTRACT NEEDS TO SUPPORT ABOVE DESIRABLE TARGETED TASKS:**

<b>Description</b>	<b>Amount Needed</b>	<b>Contract Term</b>
None identified at this time		