



NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1

JULY 2007

Submitted to:  
State Water Resources Control Board and  
Department of Water Resources

Submitted by:  
The North Coast Regional Partnership  
Del Norte, Humboldt, Mendocino, Modoc,  
Siskiyou, Sonoma and Trinity Counties



# **NORTH COAST INTEGRATED REGIONAL WATER MANAGEMENT PLAN, Phase I**

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## LIST OF ACRONYMS

|         |   |
|---------|---|
| 5C      | Five Counties Salmonid Conservation Program               |
| AF      | acre-feet   |
| ASBS    | Area of Special Biological Significance                   |
| BLM     | USDI Bureau of Land Management                            |
| BMPs    | Best Management Practices                                 |
| CARCD   | California Association of Resource Conservation Districts |
| CCA     | Critical Coastal Area                                     |
| CCC     | California Coastal Commission                             |
| CDF     | California Department of Forestry                         |
| CDFG    | California Department of Fish and Game                    |
| CEPA    | California Environmental Protection Agency                |
| CSD     | Community Services District                               |
| DWR     | Department of Water Resources                             |
| EPA     | U.S. Environmental Protection Agency                      |
| ESA     | Endangered Species Act                                    |
| FS      | USDA Forest Service                                       |
| JPA     | Joint Powers Authority                                    |
| KRBFTF  | Klamath River Basin Fisheries Task Force                  |
| LAFCO   | Local Agency Formation Commission                         |
| MG      | million gallons   |
| MGD     | million gallons per day                                   |
| MMs     | management measures                                       |
| MMA     | Marine Managed Area                                       |
| MOMU    | Memorandum of Mutual Understanding                        |
| NCIRWMP | North Coast Integrated Regional Water Management Plan     |
| NCRWMG  | North Coast Regional Water Management Group               |
| NCWAP   | North Coast Watershed Assessment Program                  |
| NOAA    | National Oceanic and Atmospheric Administration           |
| NMFS    | National Marine Fisheries Service                         |
| NPDES   | National Pollutant Discharge Elimination System           |
| NPS     | nonpoint sources  |
| NSO     | northern spotted owl                                      |
| NWFP    | Northwest Forest Plan                                     |
| PNAMP   | Pacific Northwest Aquatic Monitoring Partnership          |
| POTWs   | Publicly Owned Treatment Works                            |
| RNSP    | Redwood National and State Parks                          |
| RWQCB   | Regional Water Quality Control Board                      |
| RWQCBs  | Regional Water Quality Control Boards                     |
| RCD     | Resource Conservation District                            |
| RWQMP   | Rangeland Water Quality Management Plan                   |
| SCWA    | Sonoma County Water Agency                                |
| SONCC   | Southern Oregon/Northern California Coast                 |
| SWAMP   | Surface Water Ambient Monitoring Program                  |
| SWQPA   | Stormwater Quality Protection Area                        |
| SWRCB   | State Water Resources Control Board                       |
| THP     | Timber Harvest Plan                                       |
| TMDL    | Total Maximum Daily Load                                  |
| TPZ     | Timber Production Zone                                    |
| UCCE    | University of California Cooperative Extension            |
| USDA    | U.S. Department of Agriculture                            |
| USGS    | U.S. Geologic Survey                                      |
| USDI    | U.S. Department of the Interior                           |
| UWMP    | Urban Water Management Plan                               |
| WDR     | Waste Discharge Requirement                               |

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Fieldbrook CSD  
City of Eureka  
Willow Creek CSD  
Garberville Sanitary District  
Redway CSD  
Orick CSD  
Humboldt Bay Harbor, Recreation and Conservation District  
City of Arcata  
City of Rio Dell  
City of Trinidad  
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Lake County Watershed Protection District

**Mendocino County Agencies:**

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City of Fort Bragg  
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County of Mendocino  
Mendocino County Water Agency  
Mendocino Resource Conservation District  
City of Ukiah  
Redwood Valley County Water District  
Brooktrails Township CSD

**Modoc County Agencies:**

County of Modoc

**Siskiyou County Agencies:**

County of Siskiyou  
City of Etna

**Sonoma County Agencies:**

County of Sonoma  
Town of Windsor  
City of Cloverdale  
City of Rohnert Park  
City of Santa Rosa  
City of Healdsburg  
City of Sebastopol  
City of Cotati  
Sonoma County Water Agency  
Graton CSD  
Sotoyome Resource Conservation District  
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Russian River Watershed Council  
North Coast Resource Conservation and Development Council  
Circuit Rider Productions, Inc.  
Gualala River Watershed Council  
Pacific Coast Fish, Wildlife and Wetlands Restoration Association  
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Stewards of the Coast and Redwoods  
Institute for Fisheries Resources  
California Department of Forestry and Fire Protection  
Occidental Arts and Ecology Center  
California Land Stewardship Institute  
E Center

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## INTRODUCTION AND PLANNING APPROACH

### SECTION 1.0





## **SECTION 1.0 INTRODUCTION AND PLANNING APPROACH**

The North Coastal watersheds of California comprise a unique region – a significant area of great ecological, cultural and socio-economic diversity. Although diverse and encompassing a large geographic scope, many of the issues and concerns are consistent throughout the North Coast region. The North Coast retains some of the last viable salmonid populations in the State and is a key source of clean drinking water for the region and beyond. Unlike many areas of California, the North Coast region continues to support natural resource based economies – including commercial fishing, timber harvesting, recreational tourism and agriculture. While some resource-based industry will likely always exist in the region, the economic focus of the region is undergoing transition and becoming increasingly reliant on service-based rather than natural resource based economies. This transition has been and will continue to be difficult for certain sections of the region due to the fact that economic resources are limited and therefore, the ability to construct needed water infrastructure is limited. Additionally, while certain sub-areas within the region are economically stable, much of the North Coast is designated as disadvantaged, and is struggling with legacy environmental challenges. Due to limited funding at the county and local levels, all of the jurisdictions within the region face serious challenges to accomplishing statewide water management objectives as well as meeting requirements related to state and federal environmental regulations.

Impacts to salmonids and the beneficial uses of water often originate locally at a watershed or basin scale yet may affect the entire region. Conversely, decisions regarding salmonid protection and the beneficial uses of water often take place at the statewide level and need to adequately account for local priorities, knowledge, and needs. A flexible and inclusive regional framework is therefore needed to better integrate local and statewide water management efforts.

To effectively coordinate and implement basin scale water management strategies that directly improve beneficial uses of water and salmonid habitat across the North Coast region, the seven counties and over seventy partnering entities within the North Coast region have engaged in the development of a North Coast Integrated Regional Water Management Plan (NCIRWMP). The framework for the NCIRWMP will ensure that locally derived, solution-oriented actions are coordinated at the basin level and at the North Coast region level to collectively address cumulative impacts to salmonids and the beneficial uses of water throughout the entire North Coast Region.

The major themes of the NCIRWMP are salmonid recovery, the beneficial uses of water, and intra-regional cooperation. Phase I of the NCIRWMP will be submitted to the State Water Resources Control Board and the Department of Water Resources for consideration in July 2005. Phase II is proposed for funding as a Proposition 50 Integrated Regional Water Management Plan Planning Project. The NCIRWMP, Phase 1 will be the first major milestone in an adaptive management process for the North Coast. It has provided an initial guide for evaluation, planning, collaboration, project prioritization and implementation for all water management actions within this NCIRWMP proposal. True to the adaptive management intent of Integrated Regional Water Management Planning, this Phase I plan will be built upon, using lessons learned throughout the process to further strengthen the NCIRWMP and its implementation projects to ensure the projects provide maximum water quantity, water quality and habitat protection benefits.

We anticipate that this framework will support the state in meeting its goals of Integrated Regional Water Management Planning at both the local and regional scales, help to reduce the volume of disjointed, competing requests for funding submitted to state agencies, and increase the number and quality of local planning efforts that fit within already established statewide frameworks. Additionally, the NCIRWMP identifies and integrates implementation projects at a regional level that contribute to the broad goals of salmonid recovery and the beneficial uses of water, and to the specific water management strategies and priorities identified by the State of California (*see Section 5.0, Proposed Projects and Priorities and Appendix A, Projects Integration with Statewide Goals*).

The planning region for the North Coast Integrated Regional Water Management Plan (NCIRWMP) is consistent with the RWQCB Region 1 boundary (*see Map 1, North Coast Region*). While the planning region was selected as the planning scale for overall coordination and integration of broad water management objectives throughout the region, the six Watershed Management Areas (WMAs) were selected as the appropriate scale for more detailed planning in order to address watershed specific issues and to help coordinate planning among the counties using their General Plan authority (*see Maps 1, North Coast Region and 2, Regional Watershed Management Areas*). This planning framework was selected for the following reasons:

- Impacts to salmonids and the beneficial uses of water may result from individual local land use decisions and actions, but effects are cumulative across large geographic areas and effective solutions often require a watershed and ultimately, a regional approach that can be adopted and implemented by many stakeholders.
- Shared socio-economic and natural resources values and issues exist throughout the region, with an emphasis on salmonid recovery and the beneficial uses of water for human and natural systems.
- There are multiple benefits and efficiencies associated with conforming and contributing to existing, watershed-based frameworks established by the SWRCB, RWQCB, DWR and the Resources Agency through the Watershed Management Initiative, the Basin Plan, the California Water Plan and the North Coast Watershed Assessment Program. This planning framework will help to achieve the goals and objectives of the above listed plans. Additional benefits of coordination at the regional scale include the existence of rigorous scientific information, a consistent geographic scope and associated spatial data, as well as consistent planning approaches, data management and education of partners and stakeholders.
- Key state natural resources agencies – such as the California Department of Fish and Game and the California State Coastal Conservancy – are utilizing watershed-based natural resource planning approaches in the North Coast region. The NCIRWMP uses this information-rich, watershed-based framework for guidance and to ensure consistency with statewide planning efforts and priorities, such as the Recovery Strategy for Coho Salmon (CDFG 2004).
- The NCIRWMP acts as a regional framework for synchronizing statewide planning and priorities with local planning efforts – allowing statewide management strategies to be effectively understood and applied to multiple local areas.
- The NCIRWMP provides for the assembly of local (watershed and county) components into a locally led regional plan.

The NCIRWMP emphasizes and incorporates applicable federal, state, regional, county, and local water and watershed management plans (*see Appendix B, Existing Water and Watershed Management Plans & Programs*). The participating organizations and stakeholders are committed to collaborative planning in order to better manage and conserve the water resources of the North Coast region.

The North Coast Integrated Regional Water Management Plan is a living and evolving document based on adaptive management principles. Phase I of the NCIRWMP provides an overview of present conditions in the North Coast Region and the six WMAs, summarizes existing planning efforts, describes goals and objectives for water management in the region and the six WMAs, identifies and prioritizes integrated water management projects, and outlines monitoring for the success of those projects. Phase II will further integrate state priorities with local planning and implementation efforts and improve coordination and project development between entities in the Region.

The NCIRWMP Phase I was developed in accordance with the IRWM Grant Program Proposal Solicitation Package and Guidelines developed by the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB), under the oversight and direction of the North Coast Regional Water Management Group (NCRWWMG).

## **1.1 REGIONAL FRAMEWORK FOR INTEGRATED PLANNING IN THE NORTH COAST**

There are many benefits associated with synchronized, regional planning at the North Coast Region scale as opposed to establishment of myriad county-based or watershed-based efforts for the region. County or watershed-based efforts in the region would be limited and complicated due to boundary issues and planning approaches. Many watersheds are in multiple counties, and the approaches that have historically been applied to watershed-based planning are profoundly different than the planning approaches typical of county-based general plans. With a regional approach to integrated water management planning, the NCIRWMP can provide a framework for melding different spatial scales, jurisdictional and physical boundaries, and planning methodologies into a cohesive mechanism for efficient attainment of water management goals – both statewide and locally.

While the NCIRWMP is being developed at the North Coast Region scale, the NCIRWMP framework has a strong inherent emphasis on local planning, data gathering, issues analysis, project identification, prioritization, and implementation. The NCIRWMP approach to planning acknowledges and incorporates the unique issues, information and planning approaches of local areas (both watersheds and counties) within a framework that integrates statewide planning priorities. This flexible and adaptive approach allows the NCIRWMP to accomplish effective planning at a large scale, while retaining and enhancing high-resolution data and planning at the local scale. We expect that this approach will assist the State in efficiently interacting with the North Coast Region – avoiding the need to interact individually with hundreds of entities throughout the region on issues related to integrated regional water management planning. Conversely, the NCIRWMP approach to planning at multiple scales enhances the ability of individual counties and watershed groups to understand and implement Statewide Priorities without needing to “reinvent the wheel”. According to the Water Quality Control Plan for the North Coast Region (NCRWQCB 1993), “*The protection and orderly development of the Region’s water resources make it essential that all planning efforts be coordinated.*” We believe that the NCIRWMP planning approach accomplishes that goal.

From a geographic perspective, the NCIRWMP planning framework is based on watershed designations – ranging from large systems such as the Eel River watershed down to sub-watersheds within the larger watersheds. Using watershed boundaries as the geographic planning framework allows the North Coast to integrate with other regional, state and federal planning, implementation and funding efforts – including those already in place with California Department of Fish and Game, California State Coastal Conservancy, State Water Resources Control Board, Regional Boards and Department of Water Resources.

### ***1.1.1 NCIRWMP PLANNING APPROACH***

The NCIRWMP relies upon an adaptive management approach – providing for ongoing data gathering, planning, design, implementation and evaluation at a variety of scales in a long-term, iterative, community-based process. The NCIRWMP acts as a nexus between statewide planning efforts and local planning, helping to synchronize the large, complex planning processes, regulations and priorities at the state level with the locally specific issues, data, concerns, planning and implementation needs at the local level. The NCIRWMP will provide for the following:

- Data gathering and sharing among local, regional and state agency collaborators
- Organized efficient framework for identifying local and regional issues, evaluating water management planning objectives and strategies, identifying opportunities for integration of water management strategies, and evaluating implementation projects.
- Educating local planning efforts regarding integrated regional water management planning considerations and conveying Statewide Priorities to local planning efforts
- Organized, efficient framework for regional project prioritization – reduction in competition within the region
- Enhancement of funding opportunities due to demonstrated integrated planning approach

### ***1.1.2 RELATION TO LOCAL PLANNING AND INTEGRATION OF LOCAL, REGIONAL, STATE AND FEDERAL PRIORITIES***

#### **Local Planning and Priorities**

Local planning efforts in the North Coast Region have historically been segregated into jurisdictional planning and watershed planning. Most jurisdictional planning has been focused on county-based general plans and city-based planning. Although general plans often have a natural resources element, many do not fully integrate the natural resource-based water management issues in a given area.

Watershed planning in the North Coast Region has predominantly focused on natural resources – including specific species, habitats and ecosystem processes, and has largely been directed by the state natural resources agencies. In general, watershed planning does not tend to incorporate municipal considerations to the degree that is necessary for effective integrated water management planning and implementation.

There is an historic lack of a framework for integration of state priorities with local planning efforts. While cumulative impacts are felt at the regional, or even statewide scale, many of these impacts tend

to be caused at the local level and are most affected by local planning. It is therefore critical that the transfer of data and priorities between state and local planning efforts take place in an organized fashion. Scale issues may also be problematic, as state agencies are addressing broad statewide issues and priorities, while local planning is high resolution and focused at the county, city or watershed scale.

Many local planning entities do not have the staff or resources to evaluate statewide planning goals and objectives – the NCIRWMP acts as an information resource for counties, cities, and watershed groups to learn about, understand and implement statewide objectives within the context of local planning. NCIRWMP, by operating as a planning and implementation “hub” at the regional scale, synchronizes local planning with statewide planning efforts – making both stronger and more robust.

### **Integrated Coastal Watershed Management Planning**

The NCIRWMP works with and incorporates the Integrated Coastal Watershed Management Plans (ICWMPs) in the North Coast region, including ICWMPs underway in the City of Trinidad, and the watersheds of the Noyo and Big Rivers, the Mattole River, the Russian River, and Salmon Creek. These watershed planning processes place an emphasis on all of the objectives and themes of the NCIRWMP, with a special focus on Critical Coastal Areas (CCAs) and Areas of Special Biological Significance (ASBS).

### **Statewide Priorities**

In addition to the IRWM PSPs and Guidelines, The State of California has developed several guidance documents that are applicable to integrated water management planning in the North Coast Region. These include the State Water Resources Control Board’s Watershed Management Initiative (WMI) and the associated RWQCB Basin Plan, the Department of Water Resource’s recently released California Water Plan, and the Department of Fish and Game Recovery Strategy for Coho Salmon. The California State Coastal Conservancy is in the process of completing an enhancement plan for the North Coast. Significant research, planning and staff expertise has been invested in these guidance documents, and they provide technical and jurisdictional direction to the Region in terms of integrated planning to attain water quality objectives and the recovery of endangered salmonids.

Following is a list of Statewide Priorities that the NCIRWMP will meet or contribute to:

- TMDL implementation
- Implementation of NCRWQCB WMI Chapter
- Implementation of SWRCB’s NPS Pollution Plan
- Implementation of state species recovery plans
- Address environmental justice concerns
- Integrated projects with multiple benefits
- Support and improve local and regional water supply reliability
- Contribute expeditiously and measurably to the long-term attainment and maintenance of water quality standards

- Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas including areas of special biological significance;
- Include safe drinking water and water quality projects that serve disadvantaged communities.

The plan development process for NCIRWMP Phase I and II meets statewide process goals as follows:

1. NCIRWMP has an inclusive and transparent development process that incorporates stakeholders and community members in the plan development process and in the project prioritization and implementation process.
2. NCIRWMP places an emphasis on engagement, planning and project implementation for disadvantaged communities throughout the Region.

### **Federal Priorities**

The NCIRWMP process identifies and incorporates appropriate federal priorities. These may include species recovery plans as outlined by NOAA Fisheries, components of the US Environmental Protection Agency's NPS program and other planning information from agencies such as Natural Resources Conservation Service, U.S. Geological Survey or U.S. Fish and Wildlife Service.

### **References:**

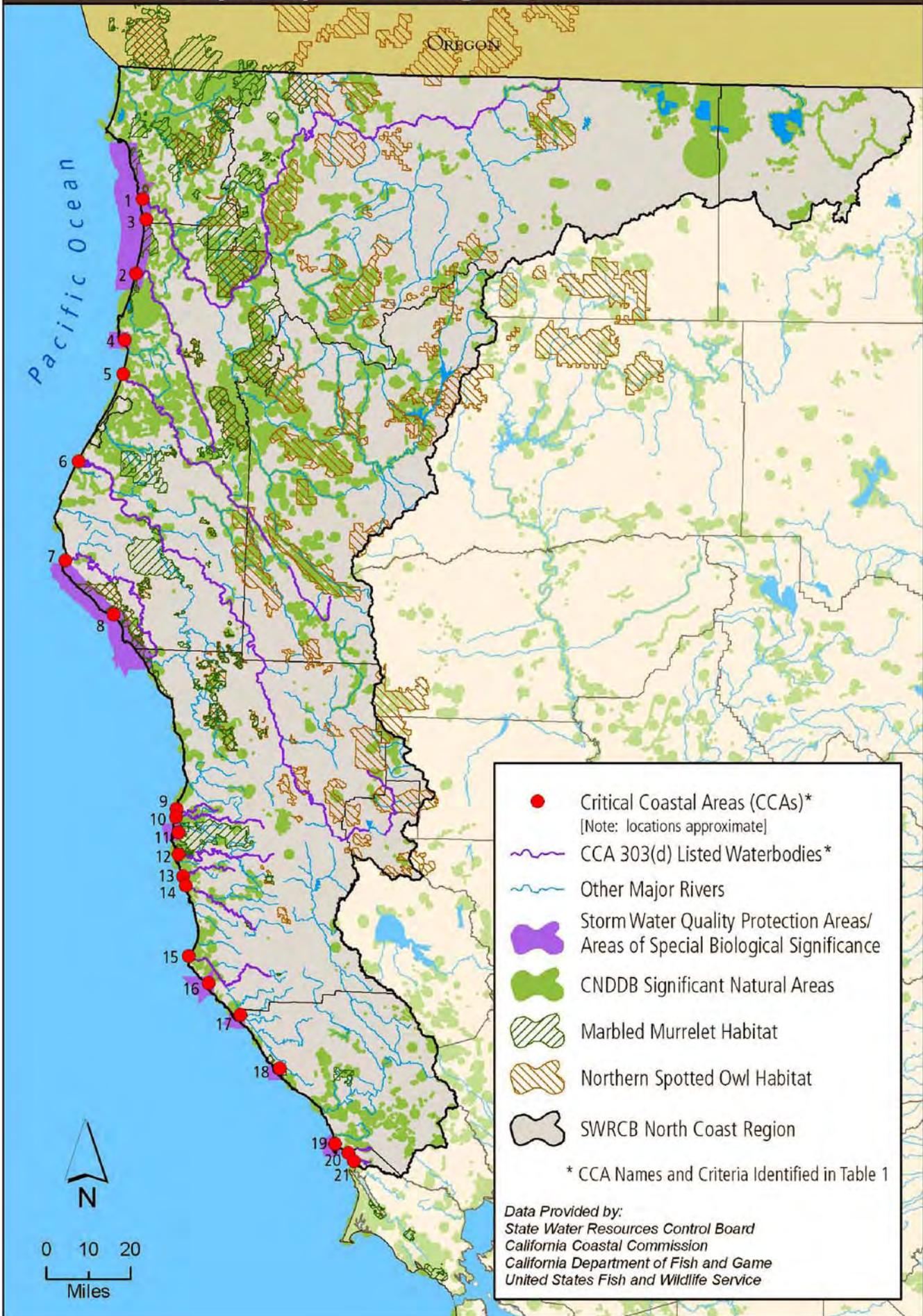
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# Map 1. North Coast Region



North Coast Integrated Regional Water Management Plan  
**Map 2. Important Biological Areas and Habitats**



- Critical Coastal Areas (CCAs)\*  
[Note: locations approximate]
- ~ CCA 303(d) Listed Waterbodies\*
- ~ Other Major Rivers
- Storm Water Quality Protection Areas/  
Areas of Special Biological Significance
- CNDDB Significant Natural Areas
- / / / / Marbled Murrelet Habitat
- X X X X Northern Spotted Owl Habitat
- SWRCB North Coast Region

\* CCA Names and Criteria Identified in Table 1

Data Provided by:  
 State Water Resources Control Board  
 California Coastal Commission  
 California Department of Fish and Game  
 United States Fish and Wildlife Service



## OBJECTIVES—PHASE 1

## SECTION 2.0





## **SECTION 2.0 OBJECTIVES FOR THE NORTH COAST INTEGRATED REGIONAL WATER MANAGEMENT PLAN – PHASE 1**

Following are the six primary integrated water management objectives for the North Coast region. These objectives were developed with input from the Policy Review Panel, Technical Peer Review Committee, resources agencies and stakeholders in the North Coast region. These objectives are all interrelated, and are relevant at both the local and regional scale. The NCIRWMP objectives fully incorporate the eleven water management strategies that are required to be considered pursuant to CWC §§ 79562.5 and 79564, and include sixteen of the twenty management strategies listed in the Guidelines. Additionally, these NCIRWMP objectives are consistent with State water management elements, State priorities and objectives and IRWM Program Preferences. Section 8 of this document includes a detailed discussion of how these NCIRWMP objectives integrate with state and IRWM program objectives, preferences and priorities.

Each of the NCIRWMP objectives is described in more detail in the following section.

1. Conserve and enhance native salmonid populations by protecting and restoring required habitats, water quality and watershed processes
2. Protect and enhance drinking water quality to ensure public health
3. Ensure adequate water supply while minimizing environmental impacts
4. Support implementation of Total Maximum Daily Loads (TMDLs), the North Coast Regional Water Quality Control Board's (NCRWQCB) Watershed Management Initiative, and the Non-Point Source Program Plan.
5. Address environmental justice issues as they relate to disadvantaged communities, drinking water quality and public health
6. Provide an ongoing, inclusive framework for efficient intra-regional cooperation, planning and project implementation

### **OBJECTIVE 1: CONSERVE AND ENHANCE NATIVE SALMONID POPULATIONS BY PROTECTING AND RESTORING REQUIRED HABITATS, WATER QUALITY AND WATERSHED PROCESSES**

The viability of salmonid populations is a critical environmental and economic issue for the North Coast region, and has been adopted by the Policy Review Panel as one of three major themes for the NCIRWMP. Salmonids are a strong indicator of watershed health; the positive impacts of salmonid recovery actions are expected to enhance other beneficial uses of water in the region. The Watershed Management Initiative, Basin Plan, California Water Plan, Recovery Strategy for Coho Salmon, and Steelhead Restoration and Management Plan, as well as many other watershed and general plans identify salmonid recovery as a primary objective for the North Coast region. The North Coast region still retains viable runs of salmonids, yet they are at risk of extinction. Impacts to salmonids are cumulative and complex, taking place at individual sites and watersheds, as well as across large spatial and temporal scales. There is therefore a great deal of complexity associated with the recovery of these anadromous species with a large range and complex life cycle – management must take into account everything from local, site specific planning and actions, to large scale approaches such as those being

led by CDFG and NOAA Fisheries at the Evolutionarily Significant Unit (ESU) scale. The NCIRWMP approach to intra-regional planning and cooperation offers a framework for understanding and prioritizing local water management actions and land use actions in the context of state and federal priorities and regulations related to salmonid recovery. Historically, there has been a significant disconnect between water management planning/water infrastructure development, local land use, and watershed restoration/salmonid recovery. The NCIRWMP process has created a mechanism to convene all of the stakeholders and decision makers to address the integration of these historically segregated planning and implementation efforts. All of the priority projects in the NCIRWMP (*see Section 5*) contribute to the recovery of endangered salmonids – either directly or indirectly. Many of the projects address salmonid issues in watersheds identified as recovery units in the CDFG Coho Recovery Strategy. By protecting salmonids, the NCIRWMP will also achieve protection and enhancement of other beneficial uses, such as improved drinking water quality and reliable water supply; thus, salmonid protection is considered inclusive of other beneficial uses. Because salmonid population viability requires good management practices at a variety of scales, and because impacts to salmonids are cumulative throughout the North Coast Region, a series of restoration and conservation projects distributed throughout the region may be the most effective approach for enhancing and restoring salmonid populations.

## **OBJECTIVE 2: PROTECT AND ENHANCE DRINKING WATER QUALITY TO ENSURE PUBLIC HEALTH**

The North Coast suffers from a variety of water quality problems that affect public health, including failing municipal sanitation and individual septic systems, groundwater contamination, toxic chemical pollution and a variety of other point and nonpoint source pollution issues. The cumulative regional impact of these water quality issues is substantial - affecting a significant portion of the population (predominantly in disadvantaged communities) and impacting the economic and environmental viability of the North Coast. Many communities are faced with Cease and Desist Orders from the State for water quality violations, yet they lack the resources to address system deficiencies. Failing community wastewater treatment and water supply systems undermine Smart Growth strategies and promote large lot residential conversion of productive resource lands. The intra-regional cooperation framework established by the NCIRWMP is assisting local communities with resolving these daunting infrastructure problems by providing information about state regulations and priorities, facilitating the identification and prioritization of projects and securing sources of funding. The Policy Review Panel has indicated that the protection and enhancement of water quality for public health is a key objective of the NCIRWMP. Since many rural coastal communities don't have access to water treatment, they rely upon healthy watersheds to provide clean drinking water. The NCIRWMP addresses water management issues from both a watershed *and* a jurisdictional perspective – therefore this objective includes a focus on ensuring healthy watersheds as a means to attain water quality objectives for the North Coast.

## **OBJECTIVE 3: ENSURE ADEQUATE WATER SUPPLY WHILE MINIMIZING ENVIRONMENTAL IMPACTS**

Adequate water supply is an increasing concern in the North Coast as rising populations put pressure on already allocated systems and environmental regulations and goals require the maintenance of in-stream flows. Because of its focus on fisheries conservation and general environmental stewardship, the North Coast IRWMP emphasizes water supply projects that are efficient and minimize impacts to

the other beneficial uses of water – specifically watershed function, aquatic function and public health. To this end, projects prioritized by the Policy Review Panel focus on water conservation, water recycling/re-use, and water supply efficiency. Additionally, the Policy Review Panel supports innovative solutions that demonstrate the successful resolution of water supply and environmental conflicts, while acting as a model for other areas within the North Coast region. Since many rural coastal communities don't have access to water treatment, they rely upon healthy watersheds to provide water security. The NCIRWMP addresses water management issues from both a watershed *and* a jurisdictional perspective – therefore this objective includes a focus on ensuring healthy watersheds as a means to attain water security for the North Coast.

**OBJECTIVE 4: SUPPORT IMPLEMENTATION OF TOTAL MAXIMUM DAILY LOADS (TMDLs), THE NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD'S (NCRWQCB) WATERSHED MANAGEMENT INITIATIVE, AND THE NONPOINT SOURCE POLLUTION PLAN.**

The NCIRWMP prioritizes those projects that address TMDLs and nonpoint source issues for the North Coast region, including temperature, sediment, nutrient, pathogen and chemical impairment. The primary reason for listing of surface waters in the North Coast region as impaired under Section 303(d) of the California Clean Water Act is excessive sediment. The NCIRWMP will support projects that reduce sediment loads to the region's streams and rivers. Identified sediment sources include erosion from logged lands, erosion from agriculture, erosion from construction sites, and runoff and sediment transport from urban and residential areas. Projects focused on reducing erosion and associated sediment loads are directly related to objectives 1-3, and are expected to substantially benefit water quality, water supply and salmonid recovery.

**OBJECTIVE 5: ADDRESS ENVIRONMENTAL JUSTICE ISSUES AS THEY RELATE TO DISADVANTAGED COMMUNITIES, DRINKING WATER QUALITY AND PUBLIC HEALTH**

The majority of the North Coast region is designated as disadvantaged according to the definition provided by the State of California (*see Section 3.10*). The primary environmental justice issue addressed by the NCIRWMP, Phase I is the preponderance of failing sanitation systems in disadvantaged communities. These failing systems represent a severe human health risk in areas that lack the financial resources to address them, creating socioeconomic inequity in terms of drinking water quality and other beneficial uses of water. Because of this, the NCIRWMP Policy Review Panel has selected this issue as a primary objective in meeting the water management needs of the North Coast region. The NCIRWMP is managed in partnership with these disadvantaged communities in the region and includes mechanisms for outreach and the identification of future projects to improve water quality, water supply, quality of life, and economic opportunity for disadvantaged communities of varying sizes throughout the region.

**OBJECTIVE 6: PROVIDE AN ONGOING, INCLUSIVE FRAMEWORK FOR EFFICIENT INTRA-REGIONAL COOPERATION, PLANNING AND PROJECT IMPLEMENTATION**

A key factor in meeting the preceding five water management objectives is the existence of an inclusive, transparent framework for intra-regional cooperation, collaboration, information sharing,

planning and implementation. Therefore, the sixth major objective of the NCIRWMP is to maintain and enhance this existing cooperative framework to address the substantial water management needs of the North Coast, identify and refine planning and implementation priorities, provide for efficient and effective use of planning and implementation dollars, ensure an adaptive management approach to planning, and ensure equity for the North Coast region in terms of funding allocation. The NCIRWMP collaborative partnership includes the following components:

- a) Policy Review Panel comprised of members appointed by the Board of Supervisors from each of the seven counties
- b) Technical Peer Review Committee comprised of a diversity of technical experts appointed by each county's representatives on the Policy Review Panel
- c) Project Team, including consultants and staff of various participating agencies
- d) Stakeholders, including agencies, cities, counties, tribal organizations, watershed groups, landowner groups and interested citizens

Over seventy members of the above partnership have signed onto a Memorandum of Mutual Understandings indicating their support for this approach (*see Appendix C, Memorandum of Mutual Understandings*). All meetings and workshops are open to the public, and all information about the process is disseminated via the interactive website for the North Coast Integrated Regional Water Management Plan, thereby ensuring maximum transparency, stakeholder inclusion and information exchange (<http://www.northcoastirwmp.net/>).

A key benefit of the NCIRWMP intra-regional cooperation framework is its ability to synchronize local planning efforts with state and federal priorities and regulations. Most municipalities and groups in the region do not have the resources to respond to the myriad of constantly evolving policy issues and mandates from a variety of state and federal agencies. The NCIRWMP can act as a centralizing source for this information, assisting small communities and watershed groups in meeting state and federal objectives and priorities, and conveying local issues and priorities to state and federal agencies. Cooperation and active collaboration between multiple stakeholders will ensure that all relevant viewpoints are addressed, that conflicts are identified and solutions developed, and local and regional needs and objectives are integrated in the selected projects to maximize benefits. Additionally, active intra-regional cooperation ensures the efficient use of limited funds, avoiding the need for each county or jurisdiction to "reinvent the wheel" when attempting to address statewide planning priorities and state and federal regulations.

### **Relationship of Projects to NCIRWMP Objectives**

The projects (*described in Section 7*) are linked on a thematic level as defined by the NCIRWMP objectives. Each serves to meet one or more of the regional objectives to: conserve and enhance native salmonids, protect and enhance drinking water, ensure adequate water supply & security, support implementation of state programs, address environmental issues, and provide an ongoing, inclusive framework for efficient, cooperative, collaborative, intra-regional project implementation (*see Section 7*). Physical connectivity is not required for achieving these objectives; a series of projects distributed throughout the region – addressing both local and statewide priorities - has been determined by the Technical Peer Review Committee and Policy Review Panel to be the best approach for meeting these objectives and improving the quality of life for the region's residents.



## NORTH COAST REGIONAL DESCRIPTION

### SECTION 3.0





## **SECTION 3.0 NORTH COAST REGIONAL DESCRIPTION**

The North Coast Region as defined by the North Coast Integrated Regional Water Management Plan (NCIRWMP) is consistent with the North Coast Region boundary delineated by the North Coast Regional Water Quality Control Board (NCRWQCB). The North Coast Region is a hydrologic region made up of watersheds that drain to the Pacific Ocean from Marin County in the south to the Oregon border. The North Coast Region includes all of the Counties of Del Norte, Humboldt, Trinity and Mendocino, major portions of Siskiyou and Sonoma Counties and small portions of Glenn, Lake, Marin and Modoc Counties. The region encompasses a total area of approximately 19,390 square miles, including 340 miles of coastline (NCRWQCB 2005). The 2000 population of the entire region was approximately 664,000, with most of the population concentrated along the Pacific Coast and in the inland valleys immediately north of the San Francisco Bay Area. (*See Map 1, North Coast Region*).

### **3.1 REGIONAL PHYSICAL AND BIOLOGICAL FEATURES**

The region is characterized by sedimentary geology with inclusions of metamorphic, granitic, and volcanic rock. The presence of NW-SE trending faults and geologic structures largely defines the river systems located in the Coast Range in the southern, coastal area of the region. Larger metamorphic and intrusive blocks form the Siskiyou Mountains in the northern coastal and interior region. The eastern extent of the Klamath basin lies within the volcanic Cascade mountain range.

Significant natural freshwater bodies, apart from rivers and estuaries, are scant. The large natural freshwater bodies are the remnant Meiss Lake in Siskiyou County, the Laguna de Santa Rosa in Sonoma County, and historic Tule Lake in Modoc County.

Estuaries and littoral environments are very significant to the region. They provide important habitat for a variety of organisms and are strongly affected by freshwater outflow. Examples are Lake Earl in Del Norte County, Humboldt Bay and northern lagoons, and Bodega Bay. Also included in this category are the often extensive estuarine environments of many waterways, including the Smith, Klamath, Tenmile, Noyo, Albion, Big, Navarro, Gualala, and Russian Rivers and smaller waterways such as Redwood Creek.

The estuarine environment along the coast is extremely important to many species of waterfowl and shore birds, both for feeding and nesting and for anadromous salmonids, which use estuaries as a staging area to physiologically adapt to changes in salinity. Marine invertebrates and fish utilize the rich resources in tideland areas along the North Coast, and serve as forage for seabirds and marine mammals. Offshore coastal rocks are used for resting and reproduction by marine mammals and as nesting areas by many species of seabirds.

Many local drainages that flow directly to the ocean are too minor to be described in this overview but are nonetheless important. These smaller watersheds are 'interfluves,' or areas outside of the larger watershed boundaries used at the regional planning scale. Local drainages include important ecosystems that may provide habitat for sensitive species, and other wildlife. The entire region contains many sensitive species including thirty federally endangered plant species, four federally endangered fish species (including Central Coast ESU coho salmon), four federally endangered bird

species, and seven federally endangered mammals (*see Appendix D, North Coast Region Potential Federal and State Listed Species*). The North Coast region is renowned for its wealth of natural resources, recreational opportunities, wildlife, and scenic vistas. The region's mountains, valleys, forests, and grasslands are home to deer (*Odocoileus hemionus*), common garter snake (*Thamnophis sirtalis*), elk (*Cervus elaphus*), Vaux's swift (*Chaetura vauxi*), bear (*Ursus americanus*), southern torrent salamander (*Rhyacotriton vareigatus*), mountain lion (*Puma concolor*) and many other animal species. The abundant streams and rivers of the region provide essential habitat for anadromous fish and other aquatic species, and the lakes and reservoirs support both cold and warm water fish. Additionally, the remnant lakes and managed reservoirs of the far northeastern portion of the region are important for migratory waterfowl, and serve as critical links in the Pacific flyway.

Two temperature zones characterize the North Coast Region. The coastal climate is moderate and foggy and temperature does not vary greatly by season. Inland parts of the region are less affected by the moderating coastal influence and experience a more Mediterranean temperature regime. Seasonal temperatures can range from over 100 degrees Fahrenheit during the summer months to below freezing during the winter. The North Coast receives more precipitation than any other part of California. The Mattole watershed in Mendocino County has the highest recorded rainfall and may receive as much as 120 inches of rain per season. On the other hand, the Modoc Plateau, in Siskiyou and Modoc Counties, is relatively dry, with an annual precipitation of 10 inches and an annual snowfall of 23 inches. Due to the excessive amounts of winter rainfall, damaging floods occur frequently in the North Coast Region. Particularly destructive floods occurred in the North Coast region in December 1955, December 1964, and February 1986 (NCRWQCB 2005).

### **3.2 SENSITIVE HABITATS & SPECIAL DESIGNATIONS**

The North Coast Region, in addition to the extensive amount of state and federal forests, also contains 21 areas designated as Critical Coastal Areas (CCAs). CCAs are areas that are considered to be environmentally sensitive and in need of protection or improvement by federal, state, and local governments. Table 1: California's Critical Coastal Areas shows CCAs according to three methods of classification. The 1998 method identified 303 (d) listed water bodies flowing into Marine Managed Areas (MMAs). Marine Managed Areas are "named, discrete geographic marine and estuarine areas along the California coast designated using legislative, administrative or voter initiative processes, and intended to protect, conserve or otherwise manage a variety of resources and their uses (Resources Agency of California 2000)." A second method of classification is Stormwater Quality Protection Areas (SWQPAs), which were formerly Areas of Special Biological Significance (ASBS), and the final classification method is the original 1995 list, which consisted of 303(d) listed waterbodies (NCRWQCB 2005). Stormwater Quality Protection Areas (SWQPAs), which replace Areas of Special Biological Significance, are displayed on Map 2, Important Biological Areas and Habitats.

The California Wild and Scenic Rivers Act was passed in 1972 to preserve designated rivers possessing extraordinary scenic, recreation, fishery, or wildlife values. With its initial passage much of the North Coast region became "protected". Areas that were designated in 1972 included the Smith River and tributaries, Klamath River and tributaries, Scott River, Salmon River, Trinity River, Eel River, and Van Duzen River. The North Fork Salmon and Van Duzen Rivers and Wooley Creek are also designated as Wild and Scenic.

### **3.2.1. MARINE AND PROTECTED AREAS: IMPAIRED WATER BODIES**

Control and prevention of pollution for the Marine and Protected Areas in the North Coast are set forth in the policies adopted by the State and Regional Water Quality Control Boards. Pollution prevention and management measures are needed to ensure that adequate protection of important habitats and systems occur. Humboldt Bay is rimmed with multiple historic and abandoned industrial sites that require monitoring to ensure that contaminant plumes do not pollute the important Humboldt Bay oyster beds. The designation of Critical Coastal Zone areas serves to protect water quality and important ecosystems from further degradation. State legislated protection has been assigned to many of the North Coast's significant estuarine, marine and terrestrial coastal resources. Designations include Water Quality Protection Area for the non-terrestrial marine and estuarine resources along the coastline (SWRCB 2003) and several Critical Coastal Areas, including Redwood Creek for its coastal reach and estuary (CCC 2003).

Many of the streams and rivers throughout coastal Northern California contain excessive amounts of sediment, resulting in a reduction in water quality and impacts to the beneficial uses of those waters. Water bodies that drain approximately fifty-nine percent of the area in the North Coast Region are listed as impaired due to sediment under Section 303(d) of the Clean Water Act (NCRWQCB 2004). Impaired bodies throughout the North Coast are shown in Map 3, Impaired Water Bodies and are listed in Appendix E, Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

Some of the most sensitive beneficial uses are impacted by sediment. Those uses are associated with the migration, spawning, reproduction, and early development of coldwater fish such as coho salmon (*Oncorhynchus kisutch*), chinook salmon (*O. tshawytscha*), and steelhead trout (*O. mykiss*).

### **3.2.2. THREATENED AND ENDANGERED WILDLIFE**

All of the watersheds within the North Coast Region support plant and animal species considered to be rare, threatened, or endangered by state or federal government (see Appendix D, North Coast Region Potential Federal and State Listed Species). Some of these species are: Northern red-legged frog (*Rana aurora aurora*), Behren's silverspot butterfly (*Speyeria zerene behrensi*), coho salmon (*Oncorhynchus kisutch*), steelhead, pink salmon (*Oncorhynchus gorbuscha*), Humboldt marten (*Marates americana americana humboldtensis*), tidewater goby (*Eucyclogobius newberryi*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), Roderick's fritillary (*Fritillaria roderickii*), white sedge (*Carex albidā*), Hickman's cinquefoil (*Potentilla hickmani*), and soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*). Not all species listed occur in every watershed and many threatened and endangered plants and animals are not included here.

### **Salmonids**

Coho salmon have experienced a significant decline in the past 40 to 50 years. Coho salmon abundance, including hatchery stocks, has declined at least 70% since the 1960s, and is currently 6 to 15% of its abundance during the 1940s. Coho salmon harvest decreased considerably in the late

1970s, despite a fairly stable rate of hatchery production (CDFG 2004). Recent abundance-trend information for several stream systems along the central and north coasts indicates an overall declining trend throughout California for coho that is also exhibited by steelhead and chinook. (See *Map 4, Salmonid Evolutionarily Significant Units and Appendix F, California Department of Fish and Game Coho Recovery Units in the North Coast Region*).

Because their life cycle is intricately tied to conditions that impact water quality and quantity, salmonids are useful indicators of watershed health. Spawning salmon require adequate flows in order to return to their natal streams and clean, appropriately sized gravel to spawn. Juveniles require intact complex habitat – pools, riffles, large woody debris, and riparian vegetation - to provide shelter, food, cool water temperatures, and other factors necessary for survival. Smolts require intact, unpolluted estuarine habitat to adjust to salinity prior to outmigration. Sedimentation, increased water temperature, and chemical and biological pollution negatively affect at least some stages of the salmonid life cycle. Salmonids, with this complex life cycle that is highly dependent on adequate watershed conditions, serve as an indicator species for watershed health. For this reason, salmonids have been chosen by the North Coast Regional Water Management Group (NCRWMG) as a point of focus for improving all beneficial uses – actions and policies that benefit salmonids will improve overall watershed health.

In addition to providing an indicator of watershed health, salmonids also serve important socio-economic purposes. North Coast fisheries have traditionally supported a commercial and recreational fishing industry, and have always been an important component in the traditional North Coast Native American social structure and economy.

### **3.3 ECOLOGICAL PROCESSES TO SUPPORT ENVIRONMENTAL RESOURCES**

With the exception of dammed watersheds, many of the river systems in the North Coast Region still possess intact fluvial geomorphic processes and the habitats that form in response to them, although many of the habitats have been impacted by timber harvest, invasion of non-native plant species, or other land uses. Additionally, in some locations, the geomorphic and ecological processes have been negatively affected by a variety of land use changes including channelization, road development, agriculture, gravel mining, dam construction, and other land uses. The importance of these disruptions in ecological processes for proper watershed function is exemplified by the decline of salmonid populations throughout the Region. Restoration of these processes will be indicated by success of salmonid recovery.

The North Coast Region contains plentiful environmental resources that support a burgeoning tourism and recreation industry, commercial extractive industries, and agriculture and commercial fishing, as well as urban and sub-urban growth. Additionally, the area provides relatively clean air and water resources (*see Section 3.6*) and aesthetic resources to provide a high quality of life for the region's residents. In non-drought water years, the region receives plentiful rainfall to support environmental resources and other beneficial uses. Furthermore, the region's environmental resources serve as habitat for a large number of plant and animal communities and large corridors of undeveloped land allow for migration, dispersal and genetic exchange.

| <b>Table 1: California's Critical Coastal Areas, North Coast Region, 2002 List</b> |                                       |   |              |                      |   |
|--|---------------------------------------|---|--------------|----------------------|---|
| <b>CCA #</b>   | <b>CCA Name</b>                       | <b>1998 303(d) listed waterbodies flowing into MMAs</b> | <b>SWQPA</b> | <b>1995 CCA list</b> | <b>Notes and additional designations</b>              |
| 1  | Klamath River                         | X   | X            | X                    |   |
| 2  | Redwood Creek                         | X   | X            | X                    |   |
| 3  | Redwood National Park                 |   | X            |                      | Park includes Klamath and Redwood CCAs within borders |
| 4  | Kelpbeds at Trinidad Head             |   | X            |                      |   |
| 5  | Mad River                             |   |              | X                    |   |
| 6  | Eel River                             |   |              | X                    |   |
| 7  | Mattole River                         | X   |              | X                    |   |
| 8  | King Range National Conservation Area |   | X            |                      |   |
| 9  | Pudding Creek                         | X   |              |                      |   |
| 10   | Noyo River                            |   |              | X                    |   |
| 11   | Pygmy Forest Ecological staircase     |   | X            |                      |   |
| 12   | Big River                             |   |              | X                    |   |
| 13   | Albion River                          |   |              | X                    |   |
| 14   | Navarro River                         |   |              | X                    |   |
| 15   | Garcia River                          | X   |              | X                    |   |
| 16   | Kelpbeds at Saunders Reef             |   | X            |                      |   |
| 17   | Del Mar Landing Ecological Reserve    |   | X            |                      |   |
| 18   | Gerstle Cove                          |   | X            |                      |   |
| 19   | Bodega Marine Life Refuge             |   | X            |                      |   |
| 20   | Estero Americano                      | X   |              | X                    |   |
| 21   | Estero de San Antonio                 | X   |              | X                    |   |

Source: *NCRWQCB 2005*

*Note: Table 1 includes method of CCA classification: 1) 1998 303(d) listed waterbodies flowing into Marine Managed Areas (MMAs); 2) Stormwater Quality Protection Areas (SWQPAs, formerly Areas of Special Biological Significance, ASBSs); and 3) original 1995 CCA list consisting of 303(d) listed waterbodies (NCRWQCB 2005).*

### **3.4 INTERNAL BOUNDARIES**

Internal boundaries to the North Coast Region are delineated in two ways in the NCIRWMP. The region is delineated according to county boundaries for jurisdictional planning purposes and according to watershed for implementation of projects to meet local, regional, and statewide water management priorities. Other internal boundaries in the region include private and federal water districts. Private water districts include those representing counties or portions of counties, municipalities, irrigation districts, or particular water bodies. The only federal water boundary in the region is the Klamath Project, which is administered by the US Bureau of Reclamation. These boundary designations will be used both individually and in concert to evaluate issues, data and projects.

#### ***3.4.1 JURISDICTIONAL BOUNDARIES***

On a state level, the North Coast Region has the same boundaries as Region One – the North Coast Region – for the California State Water Resources Control Board (SWRCB). According to the Department of Water Resources (DWR), the North Coast Region is partially contained within its North Coast District and partially contained within its Central District. According to California Department of Fish and Game boundaries, the North Coast Region is partially contained within its North Coast Region and partially contained within its Central Coast Region. On a federal level, the region is contained within the US EPA's Region Nine, which covers the entire Pacific Southwest. The region also contains several tribal boundaries; tribes are recognized as independent, sovereign nations that possess a trust relationship with the U.S. government.

On a more local level, the North Coast Region is comprised of four entire counties – Del Norte, Humboldt, Trinity, and Mendocino, major portions of two counties – Siskiyou and Sonoma, and smaller portions of four counties – Modoc, Lake, Glenn, and Marin. The county boundaries are depicted in Map 1, North Coast Region. The region contains many other local jurisdictional boundaries, such as cities, towns, Resource Conservation Districts (RCDs), Resource Conservation and Development Councils (RC&D), and Local Agency Formation Commissions. These are described below.

#### **Municipal Boundaries**

The boundaries of numerous cities and towns are contained within the North Coast Region. Most of these entities are signatories to the MOMU (*see Section 6.0, Development Process for the NCIRWMP and Acknowledgements, Memorandum of Mutual Understanding Signatories*). These municipalities, by participating in the NCIRWMP, have an opportunity to present their communities' unique challenges to others in the Region and obtain visibility at the state level. They benefit from participation through the project prioritization process, which identifies those areas in greatest need and has as an overarching goal environmental justice for the entire region. The municipalities can assist with the NCIRWMP planning process by incorporating applicable policies, monitoring programs, and management strategies into their local planning documents. Many of the smaller municipalities within the region are considered disadvantaged by the SWRCB (*see Section 3.10, Demographic, Economic, Social and Cultural Attributes*).

## **County Boundaries**

### ***Counties***

The North Coast Region covers all of Del Norte, Humboldt, Trinity and Mendocino counties, major portions of Siskiyou and Sonoma Counties and small portions of Glenn, Lake, Modoc and Marin. (*see Map 1, North Coast Region*).

### ***Resource Conservation Districts***

The region has multiple Resource Conservation Districts (RCDs), including Lava Beds/Butte Valley RCD, Central Modoc RCD, Gold Ridge RCD, Humboldt County RCD, Marin County RCD, Mendocino County RCD, Shasta Valley RCD, Siskiyou RCD, Sotoyome RCD, Southern Sonoma County RCD, Trinity County RCD, and West Lake RCD. These RCDs primarily occur within the Region, but those in the Northeastern and Southern portions extend beyond the Region's boundaries. In most cases, RCD jurisdictional boundaries are shared with the counties, with the exception of Sonoma, Siskiyou and Modoc counties. (*see Map 5, North Coast Region RCD Boundaries*).

### ***Resource Conservation and Development Councils***

The region is also made up of several Resource Conservation and Development Councils (RC&D). An RC&D area covers several counties and is locally defined and directed by a council consisting of public and private sponsors. Currently, Del Norte and Humboldt counties do not have a RC&D council.

The purpose of an RC&D council is to accelerate the conservation, development, and utilization of natural resources to improve the general level of economic activity, and to enhance the environment and standard of living in authorized RC&D area. The authorized RC&D areas within the region are as follows:

- Ore-Cal – which includes Siskiyou County and extends into Oregon
- North Cal-Neva – which includes Modoc county
- Trinity – which is entirely made up of Trinity County
- North Coast – which includes Sonoma, Mendocino, Marin and Lake counties

### ***Local Agency Formation Commissions***

Local Agency Formation Commissions (LAFCO) are independent agencies established by State law. A LADCO is responsible for reviewing, approving or disapproving changes in organization to cities and special districts including annexations, detachments, new formations and incorporations. Much of the current authority for LAFCO came from the Cortese-Knox Hertzberg Local Government Reorganization Act (CKH Act) of 2000. The objectives of LAFCO are to encourage the orderly formation of local governmental agencies, to preserve agricultural land resources and to discourage urban sprawl. Service reviews became a part of LAFCO's mandate with the passage of the CKH Act.

### **3.4.2 PHYSICAL BOUNDARIES**

#### **Groundwater Basin Boundaries**

The North Coast Region contains numerous groundwater basins identified by the California Department of Water Resources (DWR). These basins are listed in Appendix G, Groundwater Basins in the North Coast Region and shown in Map 6, Groundwater Basins.

#### **Watershed Boundaries**

The Water Quality Control Plan for the North Coast Region divides the region into two natural drainage basins – the Klamath River Basin and the North Coastal Basin (NCRWQCB 2005). For planning purposes and to address the statewide goal of protecting water through the Watershed Management Initiative (WMI), the NCRWQCB has divided the region into six designated watershed management areas (WMAs). These areas are the Klamath River, Trinity River, Humboldt, Eel River, Russian/Bodega, and North Coast Rivers.

Each of these WMAs is comprised of numerous CalWater Hydrologic Units. CalWater is a spatial dataset of watersheds in California, developed by the Interagency Watershed Mapping Committee (IWMC), often referred to as the "CalWater Committee". For many years, State and Federal agencies have been working through the committee to map the watersheds and hydrologic units in the State of California. The North Coast is defined by CalWater as Hydrologic Region (HR) 1. Each Hydrologic Region is broken up into Hydrologic Units, with each unit indicating an entire major river basin. Large tributaries of major rivers are designated as Hydrologic Areas (HA). In turn, HAs are subdivided into Hydrologic Sub-Areas (HSA).

Following is a summary of the descriptions of each Watershed Management Area as defined by the Watershed Management Initiative (SWRCB), including a range of conditions for each WMA for surface water and groundwater. (*See Map 7, Regional Watershed Management Areas*).

#### ***Klamath Watershed Management Area***

The Klamath WMA has been divided into three sub-basins: Lower Klamath, Middle Klamath and the Upper Klamath and includes the hydrologic basins of the Klamath, Lower Klamath, Salmon River, Middle Klamath, Scott River, Shasta River, Upper Klamath, Butte Valley and Lost River. The Klamath River and its estuary are designated as a Critical Coastal Area. (*See Map 8, Klamath Watershed Management Area*).

The Lower Klamath sub-watershed includes the Klamath River and its tributaries downstream from the Scott River, excluding the Trinity River. It covers 2,564 square miles and includes the Salmon and Blue Rivers and the Klamath River delta/estuary (NCRWQCB 2005). This sub-watershed contains mountainous terrain that has historically supported the silvicultural economy of the small communities along the Lower Klamath River. Limited mining activities also occurred in the region historically. Salmon fishing has been important in the region since the occupation by the Karuk and Yurok tribes, which have their ancestral communities along the River. Today, recreational fishing joins traditional fishing as an important part of the area's economic and social structure.

The Middle Klamath basin encompasses the portion of the Klamath River and tributaries between the confluence of the Klamath and Scott Rivers and Iron Gate Dam including the mainstem of the Klamath River and the Shasta and Scott River watersheds. The basin covers 2,850 square miles (NCRWQCB 2005). Both the Shasta and Scott Rivers receive water from precipitation and snowmelt. The small towns in the watershed, including Etna, Fort Jones, and Callahan, have historically had a silvicultural and agricultural economic base. In the 1800's, the alluvial plains were mined extensively and more recently, channeling for flood control has altered the morphological characteristics of these systems. Yreka and Weed contain the largest populations in this sub-watershed.

The Upper Klamath basin encompasses the area upstream of the Iron Gate Dam. Only a small part of this area is located in California. The primary sub-watershed in California is the Lost River watershed, which covers approximately 1,689 square miles and includes the Clear Lake Reservoir (NCRWQCB 2005). The area around Clear Lake is characterized by high desert streams and is sparsely settled. Land uses in the California portion of the basin are primarily crop agriculture, grazing, and lands administered for the National Wildlife Refuge. The basin is subject to many complex jurisdictional issues associated with water delivery and utilization of water infrastructure facilities including issues related to irrigation, hydropower, endangered species, tribal rights and lake level management demands for the Upper Klamath Lake. In addition, the Iron Gate fish hatchery has an NPDES permit, which has a stipulated minimum flow requirement.

### ***Trinity River Watershed Management Area***

The Trinity River basin drains an area of approximately 2,900 square miles of mountainous terrain. The Trinity River is the largest tributary to the Klamath River; from its headwaters in the Klamath and Coast ranges, the river flows 172 miles south and west through Trinity County, then north through Humboldt County and the Hoopa Valley and Yurok Indian reservations to its confluence with the Klamath River (NCRWQCB 2005). (*See Map 9, Trinity River Watershed Management Area*). Much of the WMA is prone to seismically induced landslides, especially during winter months when soils are saturated. Additionally, inner valley gorges are considered highly unstable. Ground water resources are relatively plentiful throughout the WMA, but are not well defined. Annual precipitation averages 57 inches/year with a low of 37 inches in Weaverville and Hayfork and a higher rainfall of 75 inches in Trinity Center and 85 inches in the Hoopa Mountains. There are occasional summer thunderstorms that produce extensive runoff and may start wild fires.

The Trinity River watershed is primarily rural with human populations centered near Trinity Center, Weaverville, Lewiston, Hayfork and Hyampom. Timber harvest has traditionally been a large factor in the economy on both federal and private land. The US Forest Service (USFS) and the Bureau of Land Management (BLM) manage approximately 80 percent of the land in the Trinity WMA; of the remaining 20 percent, about half are industrial timberlands (NCRWQCB 2005).

In the early 1950s two major water-development features were installed above river-mile 112 and the community of Lewiston. This "Trinity River Diversion (TRD)" consists of Lewiston Dam and its reservoir and related facilities and Trinity Dam and its reservoir (known as Trinity Lake). The TRD project diverts a majority of the upper-basin's water yield at Lewiston for power generation and to support the US Bureau of Reclamation's (USBR) Central Valley Project (CVP). The hydrologic changes produced by the TRD project have altered stream-channel conditions and instream habitat for many miles below

Lewiston. Trinity River downstream of the TRD provides habitat not only for anadromous salmonids and other native species, but also the non-native brown trout (*Salmo trutta*).

Water quality in the basin ranges from the high quality, pristine waters that emerge from the Trinity Alps wilderness to various degrees of impairment in the mainstem and southern tributaries which are caused in part by human activity. Timber harvest, road construction, and associated activities are recognized as sources of sedimentation and high summer water temperatures. Mining for gold, both currently and historically, is also a source of impairment. Recreational instream dredging causes sedimentation, especially in the mainstem and canyon areas, and legacy effects from historic gold mining include acid mine drainage and mercury pollution.

### ***Humboldt Bay Watershed Management Area***

The Humboldt Bay WMA encompasses waterbodies that drain to the Pacific Ocean from Humboldt Bay north to Redwood Creek. The major river systems in the WMA are the Mad River and Redwood Creek; other waterbodies include Humboldt Bay and Mad River Slough, and coastal lagoons (Big, Stone, and Freshwater Lagoons) and streams (Elk and Little Rivers and Freshwater, Jacoby, and Maple Creeks). In the east, the terrain is elevated hillslope with coastal plain occurring in the west. Precipitation ranges from 32 to 98 inches annually. Redwood Creek, the Kelpbeds at Trinidad Head, and the Mad River are the Critical Coastal Areas that occur in this WMA (NCRWQCB, 2005). (*See Map 10, Humboldt Bay Watershed Management Area*). The streams support production of anadromous salmonids, including steelhead and cutthroat trout, coho and chinook salmon.

### ***Mad River***

The Mad River watershed has a long history of timber harvest on both USFS and private land. Gravel mining occurs in the lower portions of the watershed. Private landowners conduct grazing and limited agriculture in the flat areas around the bay. Humboldt Bay is an important commercial and recreational shellfish growing and harvest area and provides the largest port between San Francisco and Coos Bay, Oregon. Urbanized areas include Trinidad, McKinleyville, Arcata, and Eureka and rural residential areas are scattered throughout the WMA. The majority of the population lives in the Humboldt Bay area cities of Arcata and Eureka.

The Mad River is CWA section 303(d) listed for sediment and temperature impacts. The primary issues for water quality are forestry related, with urbanization and associated industrial and public nonpoint sources. The drinking water for most of the Humboldt Bay area is supplied by Ranney Collectors in Mad River with other coastal streams providing drinking water for other communities. Mad River is continuously supplied with water via releases from the Ruth Reservoir (with 48,030 acre-foot storage capacity), although these supplies are dependant on adequate precipitation and flows through the season. The Eureka waterfront was the site of several industrial operations that left the soil and groundwater contaminated with heavy metals, petroleum products, and pentachlorophenols (PCPs). The waterfront is now undergoing redevelopment and decontamination efforts.

### *Redwood Creek*

Redwood Creek flows into the Pacific Ocean near the town of Orick and is located about 35 miles north of Eureka. Redwood Creek drains a 285-mi<sup>2</sup> area and is about 67 miles long. The watershed is located entirely within Humboldt County.

Redwood Creek is a basin of mixed ownership and contains a rich blend of industrial and non-industrial timberlands, coastal and upland agricultural lands, state and federal national parks, other federal properties, and the unincorporated town of Orick. Redwood Creek supports three federally listed as threatened salmonids species as well as the non-listed coastal cutthroat trout (*O. clarkii*) and resident fish species (RNSP 1997). The watershed also provides domestic water supplies to rural communities and recreational opportunities. At the coast, Redwood Creek discharges into a designated Water Quality Protection Area (formerly known as Areas of Special Biological Significance) (SWRCB 2001, SWRCB 2003) and a Critical Coastal Area (CCC 2003).

Redwood Creek is a model watershed where government agencies, private landowners, non-profit organizations and the local communities are cooperating to restore and protect water quality and the associated aquatic and riparian resources, and provide economic opportunity to the Orick community. The watershed has a rich history of scientific studies that spans decades and well-established cooperation between groups with seemingly conflicting interests. The watershed is home to pioneering work in watershed restoration and erosion control.

The watershed is a mixed ownership of private (56 percent) and public (44 percent) lands. More than 90 percent of the private lands are managed for timber production and ranching by eight private landowners. The upper two-thirds of the watershed contain vast expanses of timber and ranch lands managed primarily by seven landowners. Timberlands have been maintained in large unbroken tracts of lands, which have slowed rural residential development in upland areas (RNSP 2001). Located along the coast, the small town of Orick is the only municipality in the watershed and has a population of about 315 people (HC 2003). Orick is relatively isolated from other north coast communities and qualifies as a "disadvantaged community." The Orick valley contains the coastal floodplain of Redwood Creek and is one of only two groundwater basins identified in the watershed (DWR 2003). The town of Orick is located in the valley. Orick is the major socioeconomic center in the watershed. It is located along U.S. Highway 101 and is the southern gateway to Redwood National and State Parks.

Redwood National Park and Prairie Creek Redwoods State Park are located in the lower part of the Redwood Creek basin. This sub basin has been extensively researched and is considered a "reference watershed" that displays nearly pristine conditions, and is home to significant old growth stands of coast redwood. In 1982 the park received international recognition when it was designated as both a World Heritage Site and International Biosphere Reserve. The protection of streamside redwoods along Redwood Creek was a central issue for the establishment and expansion of Redwood National Park and is linked to upstream watershed conditions.

### ***Eel River Watershed Management Area***

The Eel River and its tributaries comprise the third largest river system in California, and the largest river system draining to Humboldt County's coast. The Eel River WMA encompasses roughly 3,684 square miles (NCRWQCB, 2005). The main tributaries to the Eel River are the Van Duzen River, the Bear River, Yager, Larabee, Bull and Salmon Creeks. Lake Pillsbury, is located near the headwaters of the mainstem Eel. The upper watershed is mountainous and soils are steep and highly erodible. The Eel River is designated as a Critical Coastal Area. (*See Map 11, Eel River Watershed Management Area*).

In the west, the river meanders on a coastal plain and is joined by the Salt River. Several dairies are located on the coastal plain, as well as several small towns. Other communities in the watershed include Scotia, Garberville, Laytonville, and Willits. In many of the alluvial valleys, surface and ground water are closely connected, thus surface water withdrawals have a substantial effect on local groundwater supplies. A Northwestern railroad line following along the Eel River has fallen into disrepair due to numerous landslides and accidents. Recently, reviving the railroad has been discussed, but the costs may outweigh the benefits (NCRWQCB 2005). The rail line has negatively impacted water quality. The Eel River WMA is a well-known recreation destination with numerous state and private campgrounds along its length; beneficial uses include both water contact and non-contact uses such as swimming and boating. The river also supports a large recreational fishing industry; it is the third largest producer of salmon and steelhead in the State of California (NCRWQCB 2005). Due to the erodible soils, steep terrain, and land use history, there is significant concern for the viability of this anadromous fishery resource.

### ***North Coast River Watershed Management Area***

The North Coast Rivers not included in other WMAs are included in this grouping. The major watersheds south of the Oregon border include the Smith River, Bear River, Mattole River, Ten Mile River, Noyo River, Big River, Albion River, Navarro River, Greenwood, Elk and Alder Creeks, Garcia River and Gualala River (NCRWQCB, 2005). (*See Map 12, North Coast River Watershed Management Area*). The twelve Critical Coastal Areas in the North Coast WMA are the Mattole River, King Range National Conservation Area, Pudding Creek, Noyo River, the Pygmy Forest Ecological Staircase, Big River, Albion River, Navarro River, Garcia River, the Kelpbeds at Saunders Reef, Del Mar Landing Ecological Reserve, and Gerstle Cove.

#### ***Mattole River***

The headwaters of the Mattole River begin in Mendocino County, and it flows north 62 river miles, through steep, forested lands in Humboldt County and into the ocean ten miles south of Cape Mendocino. Tributaries to the Mattole River include Mill, Squaw, Bear, Thompson, Honeydew, and Bridge Creeks. The watershed encompasses approximately 304 square miles and is subject to varying rainfall; near the coast, the river receives about 50 inches per year while near the headwaters, about 115 inches of rain fall per year. The largest communities are Petrolia, Honeydew and Whitethorn, but the 2000-person population is scattered throughout the watershed. Small landowners – those with less than 450 acres - own about 43 percent of the watershed, the Bureau of Land Management (BLM) owns about 12 percent, and commercial timber companies own most of the remaining land. Silviculture and ranching are the predominant businesses; water quality problems are those associated with timber

harvest, road building, forest conversion, and overgrazing. Fish species known to inhabit the Mattole River include coho, Chinook, steelhead, rainbow trout (*Oncorhynchus mykiss*), and brook lamprey (*Ichthyomyzon fossor*); other species include the southern torrent salamander (*Rhyacotriton variegatus*) and tailed frog (*Ascaphus truei*).

#### *Ten Mile River*

The Ten Mile River watershed covers approximately 120 square miles (NCRWQCB 2005). It is about eight miles north of the City of Fort Bragg and shares ridges with Pudding Creek and the North Fork of the Noyo River to the south and Wages Creek and the South Fork of the Eel River to the north. Elevations range between sea level and 3,205 feet (NCRWQCB 2005). Near the coast, the terrain is comprised of an estuary and a broad river floodplain with more rugged mountainous topography in the eastern portion of the watershed. Most of the basin, except the northeast grasslands, coastal plain, and estuary, is characterized by narrow drainages bordered by steep to moderately steep slopes. The watershed has abundant rainfall and cool temperatures during the winter with dry, warm summers interspersed with breezes and coastal fog. Precipitation in the western part of the watershed is about 70 inches per year while about 40 inches per year occurs in the eastern part of the watershed (NCRWQCB 2005).

The watershed is entirely privately owned. Hawthorne Timber Company, LLC, which is managed by Campbell Timberland Management, LLC, owns about 85 percent of the watershed. Three small non-industrial timber owners and a few residences make up the remainder of the ownership. The watershed has a long history of timber harvest.

The coldwater fishery that supports coho, chinook, and steelhead is the primary - and most sensitive - beneficial use in the watershed. Protection of these species is considered to protect any of the other beneficial uses identified in the watershed that could be impaired due to water quality (NCRWQCB 2005).

#### *Noyo River*

The Noyo River watershed encompasses the 113 square mile coastal drainage system immediately west of the City of Willits, flowing into the Pacific Ocean at the City of Fort Bragg. The climate consists of moderate temperatures – an annual average of 53 degrees F - and an average annual rainfall of 40 - 65 inches.

Silviculture is the primary land use within the watershed. Approximately 50 percent of the watershed is owned by two commercial silviculture operations: the Mendocino Redwood Company and Hawthorne Timber Company (managed by Campbell Timberland Management). The Jackson Demonstration State Forest (administered by the California Department of Forestry and Fire Protection) encompasses about 19 percent of the watershed. Critical Coastal Areas in the vicinity of the watershed include Pudding Creek, Noyo River, and the Pygmy Forest Ecological Staircase (NCRWQCB 2005). Minor land uses in the basin include ranching and recreation. The mouth of the Noyo River contains a marina and fish processing facilities in support of the local commercial fishing industry. The Noyo is the primary drinking water source for the City of Fort Bragg and also provides habitat for steelhead, coho,

and chinook. It is listed as impaired by sediment, due in part to timber harvest, grazing, and related human activities.

### *Big River*

The Big River watershed drains about 181 square miles (NCRWQCB 2005). The watershed drains from east to west, and shares ridges with the Noyo River watershed to the north, the Eel River watershed to the east, and the Little, Albion and Navarro Rivers watersheds to the south. The Big River estuary is located immediately south of the town of Mendocino. The climate is characterized by a pattern of low-intensity rainfall in the winter and cool, dry summers with coastal fog. Mean annual precipitation is approximately 40 inches near the western part of the watershed and about 51 inches at Willits to the east (NCRWQCB 2005). The Big River is designated a Critical Coastal Area.

The predominant current and historic land use is silviculture with less area used for ranching. The largest community is the Town of Mendocino. Together, the five largest property owners –four private timber companies and Jackson State Demonstration Forest - own 83 percent of the watershed. Thirty-one property owners own another 14 percent of the land (parcels from 160 to 3,760 acres), and private residences make up the rest of the land use (NCRWQCB 2005).

In 2002, most of the Big River Estuary, and some associated upland areas were added to the California State Park System. The Big River Parcel consists of 7,334 acres, which, when added to the surrounding State Park system, creates a 74,000-acre wildlife corridor linking coastal and inland habitats into the largest piece of connected public land contained entirely within Mendocino County (NCRWQCB 2005).

Coho, steelhead, and chinook currently inhabit the Big River watershed, but population numbers are low compared to historic levels. The estuary and lower river provide critical habitat for spawning, rearing, and staging for adult, juvenile, and smolting salmonids.

### *Albion River*

The Albion River watershed drains approximately 43 square miles (NCRWQCB 2005). It drains primarily from east to west, and shares ridges with the Big River watershed to the north and northeast and the Navarro River watershed to the south and southeast. The Albion River estuary is located near the town of Albion, about 16 miles south of the City of Fort Bragg. Elevations range from sea level to 1,566 feet and the watershed is dominated by relatively flat marine terraces that extend several miles inland and are incised by gorges carved by the major river channels and streams (NCRWQCB 2005). The climate in the watershed is characterized by a pattern of low intensity rainfall in the winter and cool, dry summers with coastal fog. Mean annual precipitation is about 40 inches near the western margin of the watershed and about 50 to 55 inches to the east at Willits (NCRWQCB 2005). The main tributaries of the Albion River include Railroad Gulch, Pleasant Valley Creek, Duck Pond Gulch, South Fork Albion River, Tom Bell Creek, North Fork Albion River, and Marsh Creek. The Albion River estuary has been designated as a Critical Coastal Area.

Over half of the watershed (54%) is owned by Mendocino Redwood Company. Smaller industrial timberland ownerships, some ranches, and numerous smaller parcels that are mostly residences

comprise the other half (NCRWQCB 2005). The predominant historic and current land use is silviculture, with some agricultural and recreational uses. The Albion River estuary, which remains open to the sea year round, is used as a commercial and sport fishing harbor for small boats. The river and estuary have historically served as habitat for coho, chinook, and steelhead. Beneficial uses associated with the coldwater fishery are the most sensitive of the beneficial uses in the watershed; protection of these beneficial uses is thought to serve to protect other beneficial uses harmed by excessive sediment.

### *Navarro River*

The Navarro River watershed encompasses approximately 315 square miles. The Navarro River flows through the coastal range, Anderson Valley, and into the Pacific Ocean. It is the largest coastal basin in Mendocino County. Rainfall averages about 40 inches per year at Philo and mostly occurs between December and March (NCRWQCB 2005). The Navarro River is a designated Critical Coastal Area.

Land-uses in the watershed include silviculture (70%), rangeland (25%), and agriculture (5%) with a small percentage devoted to rural residential development (NCRWQCB 2005). Timber production, ranching and other agricultural activities are historic activities that continue to the present day, while the fishery has decreased. Anderson Valley today supports orchards and a growing viticulture industry.

### *Greenwood Creek*

The Greenwood Creek Watershed encompasses approximately 25 square miles and is located on the southern Mendocino Coast with Greenwood Ridge as its northern border, Clift Ridge as its southern border, and Signal Ridge as its eastern border. Greenwood Creek, is a Class I coastal stream and provides habitat for steelhead and coho (NCRWQCB 2005).

Land use in the watershed is primarily for timber production, viticulture, fruit orchards, residential and some cattle ranching. Most of the watershed is privately owned; Mendocino Redwood Company holds about 60% as Timber Production Zone (TPZ) land, and approximately 50 smaller landowners own the rest of the watershed (NCRWQCB 2005). The only public land in or adjacent to Greenwood Creek is Greenwood State Beach, which contains the Greenwood Creek estuary, and a small parcel owned by the Elk County Water District.

### *Garcia River*

The Garcia River watershed encompasses approximately 114 square miles in southwestern Mendocino County (NCRWQCB 2005). The river forms an estuary that extends from the ocean to the confluence of Hathaway Creek. The floodplains of the lower portion of the watershed are primarily cropland. The watershed contains the Garcia River and the Kelpbeds at Saunders Reef Critical Coastal Areas.

The primary historic land uses include silviculture, dairy ranching, and gravel mining; these have not changed during the past two decades. Timber harvesting remains the dominant land use activity, but hillside vineyard development is becoming a concern for production of sediment as land is increasingly

converted to new vineyards. The watershed is completely privately owned by multiple owners (NCRWQCB 2005). The river and estuary provide habitat for salmonids and identified beneficial uses include commercial and sport fishing. The Garcia River has been listed as impaired due to sediment.

### *Gualala River*

The Gualala River watershed encompasses about 300 square miles; the Gualala River flows from Mendocino County to Sonoma County in a north-south direction, reaching the ocean at the town of Gualala. The watershed contains mostly mountainous terrain; tributaries flow through steep valleys with narrow floors that contain erodible soil. Most of the annual precipitation occurs between October and April, with the greatest amounts in January. Rainfall averages about 38 inches per year at the coast and up to 100 inches per year on the inland peaks (NCRWQCB 2005).

The primary historic land uses are silviculture, orchards, and ranching with timber harvest still an important industry. Timber companies own about one-third of the watershed; Gualala Redwoods Inc. is the largest commercial owner, holding about 30,000 acres (NCRWQCB 2005). Orchards and ranching are on the decline while the watershed has seen an increase in hillside vineyard development, which threatens to continue to impair water quality with respect to sediment delivery. The Gualala River provides the primary source of drinking water for Sea Ranch and Gualala. The watershed supports an anadromous fishery that includes coho salmon.

### ***Russian/Bodega Watershed Management Area***

This management area includes the Russian River and Bodega hydrologic units including the Bodega Harbor, Salmon Creek, Americano Creek, and Stemple Creek watersheds. (*See Map 13, Russian/Bodega Watershed Management Area*).

### *Russian River Hydrologic Unit*

The Russian River hydrologic unit (HU) encompasses 1,485 square miles in Mendocino and Sonoma counties. It is bounded by the Coast Ranges on both the east and west. The mainstem is about 110 miles long and flows from north of Ukiah southward through Redwood Valley to its confluence with Mark West Creek, where it turns west, passes through the coast range, and empties into the Pacific Ocean (NCRWQCB 2005). The summer climate is moist and cool near the coast with temperatures increasing in the valley areas, which are isolated from the cooling coastal influence. During winter, average rainfall ranges from 30-80 inches, depending on locale.

The reservoirs that provide flood protection and water supply storage include Lake Sonoma (Warm Springs Dam) on Dry Creek west of Healdsburg and Lake Mendocino (Coyote Valley Dam) on the East Fork Russian River near Ukiah. A diversion from the Eel River via the Potter Valley Project for the purpose of power production provides considerable benefit to the overall water storage in Lake Mendocino. The Russian River hydrologic unit supplies drinking water for over 570,000 people. It also provides water for agricultural, municipal, and industrial purposes.

### *Bodega Hydrologic Unit*

The Bodega HU contains streams with headwaters in the Coast Range that enter the Pacific Ocean south of the Russian River. Salmon, Americano, and Stemple Creeks and their associated estuaries are the main waterbodies in this HU. The terrain is relatively steep and erodible and is sensitive to disturbance. Cooler temperatures and relatively high winter rainfall due to coastal influences typify the climate of the Bodega HU. Because of the Mediterranean climate, summertime flows are often non-existent in Americano and Stemple Creeks, while Salmon Creek flow is low but sustained. Each of these watersheds have estuary areas, however, the Estero Americano (Americano Creek) and the Estero de San Antonio (Stemple Creek) are prized for their resemblance to fjords and the enhanced resource values associated with isolated estuarine environments. Both of these estuaries are designated Critical Coastal Areas and the Bodega Marine Life Refuge is also a Critical Coastal Area.

## **3.5 MAJOR WATER-RELATED INFRASTRUCTURE**

There are several large water supply projects in the North Coast Region (DWR 2005). These include the U.S. Bureau of Reclamation Klamath Project, the U.S. Army Corps of Engineers Russian River Project, the Humboldt Bay Municipal Water District Ruth Reservoir, and the U.S. Bureau of Reclamation Trinity Lake Reservoir as well as several other water supply, power generation, and flood control projects.

The Klamath Project includes water supply facilities in California and Oregon. The California facilities include Clear Lake Reservoir, which is used to provide potable water; Tule and Lower Klamath Lake, which function as waterfowl refuges; and the Iron Gate Reservoir, which provides energy for a hydroelectric facility owned by Pacific Power and Light Company (DWR 2005). Three additional power-generating reservoirs are located in Oregon. The reservoirs in Oregon are operated on a peaking basis while the Iron Gate Reservoir is operated as a baseload plant (NCRWQCB 2003). The Klamath Project has been extremely controversial because to maintain adequate instream fishery flow to ensure the survival of endangered salmonid populations, coordination between many jurisdictions is necessary. Water to farms has at times been cut off to prevent harm to the fisheries, resulting in extreme controversy, and in some cases, violence.

The U.S. Army Corps of Engineers Russian River Project includes both Lake Sonoma and Lake Mendocino, which provide water for agriculture and municipal and industrial uses, in addition to maintaining the minimum stream flows to provide fish passage for salmonids and recreation. Lake Sonoma was formed in 1984 with the completion of the Warm Springs Dam and Lake Mendocino was formed in 1959 by the construction of the Coyote Dam on the East Fork of the Russian River.

Additional flows into the East Fork of the Russian River upstream of Lake Mendocino are provided by diversions from the Potter Valley Project, a hydroelectric plant owned and operated by Pacific Gas and Electric Company. Water for the Potter Valley Project is stored in Lake Pillsbury, built in 1921, which is impounded by Scott Dam on the Eel River.

The Ruth Reservoir was formed in 1962 after the completion of the Matthews Dam on the Mad River in Trinity County. The dam is owned and operated by the Humboldt Bay Municipal Water District and

serves about 60,000 customers in Humboldt County as well as supplying electric power to Pacific Gas & Electric. The dam serves as a recreational destination and wildlife habitat in addition to supplying water and energy resources (California Department of Water Resources 2005).

The Claire Engle Reservoir, known locally as Trinity Lake, is a part of the Central Valley Project. It was formed by the completion of the Trinity Dam on the Trinity River in 1961. The dam is also used for hydroelectric power generation and the lake provides recreational activities and wildlife habitat.

The Santa Rosa Subregional Reclamation System reclaims water, treats it to a tertiary level, and distributes it to agricultural users, golf courses, public and private landscaping, and the Geysers steamfield. It is one of the largest reclaimed water agricultural irrigation systems in the country (City of Santa Rosa undated). For the Geysers Recharge Project, reclaimed water is piped through a 42-mile pipeline and injected into underground wells in the Geysers steamfield. Once within the wells, the water is gradually heated by geothermal activity to produce a steam that is then utilized to produce electricity at nearby power plants. The Geysers Recharge Project was chosen as a means to dispose of treated wastewater during the winter months, when there is no demand for agricultural irrigation. The Subregional Reclamation System had previously been discharging the unused water to the Russian River, but stricter water quality regulations removed this option. The Subregional Reclamation System is currently exploring other means of reusing or disposing of current and future amounts of reclaimed water in order to best manage water resources. Other water reuse projects exist throughout the region; however, they are minor compared to the infrastructure described above.

## **3.6 WATER QUALITY**

### **3.6.1 SURFACE WATER QUALITY**

The North Coast Region faces many water quality challenges. The US EPA has listed most of the Region's rivers and streams as impaired according to the Clean Water Act Section 303d (*See Map 3, Impaired Waters*). The total maximum daily loads (TMDLs) established by the US EPA for sediment and temperature are the most common listings (*see Appendix E, Summary of Current Status of TMDL Development and Implementation in the North Coast Region*). TMDLs for sediment and temperature are associated with salmonid decline and impairment of beneficial uses (NCRWQCB 2005). Impairment is mostly due to nonpoint source pollution that is produced by a variety of sources including storm water runoff, erosion and sedimentation from roads, agriculture, and timber harvest, channel modification activities, gravel mining and dairy operations, failing septic tanks and MTBE, PCE, and dioxin contamination from gas stations and industrial activities (NCRWQCB 2005).

A majority of the watersheds in the Region contain steep, highly erodible soils that are prone to landslides. This tendency is exacerbated by land use practices that include road building, timber harvest, residential development, and forest conversion to agriculture (recently vineyards) or subdivisions. The erosion produces sediments that flow into streams and may cause aggradation and sedimentation, adversely impacting spawning and rearing habitat of federal threatened and state listed salmonids. Redwood Creek, as well as many of the other waterways within the region, is currently listed as both temperature and sediment impaired under the federal Clean Water Act, section 303(d), due to past timber harvest, removal of riparian vegetation, widespread streamside landsliding and

channel aggradation (SWRCB 2003, Bundros and others 2003, NCWAP 2005). A sediment Total Maximum Daily Load (TMDL) for Redwood Creek was developed and promulgated by the U.S. Environmental Protection Agency (USEPA 1998). Erosion from logging roads upstream of the parks was identified as a major source of sediment in Redwood Creek (RNPS 1997, USEPA 1998). A sediment implementation plan was written, but has not been adopted by either the regional or state water boards. A stream temperature TMDL for the Redwood Creek watershed has not been written, but other studies provide assessments and recommendations to improve riparian conditions (Bundros and others 2003, CDFG 2004, NCWAP 2005).

In addition to land use practices, channel modifications for flood control and water diversions for crop irrigation and drinking water supply have radically changed water quality conditions in many water bodies in the region. Ranney collectors - horizontal wells adjacent to or under the bed of a stream - provide the drinking water for many of the northern communities in the Region. These collectors are actually collecting surface water, which decreases the amount of surface water available for other beneficial uses. Reduced natural flows from both Ranney collectors and instream diversions can result in increased temperature and decreased capacity to dilute contaminant concentrations.

Anadromous fisheries in the region have been adversely affected by a number of water quality factors. The Eel, Mad, Mattole, Trinity, and Russian Rivers, as well as many other rivers and streams including Redwood Creek, are listed on the Clean Water Act 303(d) list as impacted by excessive sedimentation (*see Map 10, Impaired Water Bodies and Appendix E, Summary of Current Status of TMDL Development and Implementation in the North Coast Region*). One of the largest impacts from sedimentation occurs when salmonid spawning nests – redds – are covered with fine sediment that prevents oxygen from reaching the eggs and inhibits emergence, effectively smothering the next generation. Timber harvest and floodplain development can decrease the riparian canopy that shades rivers and streams, causing increased water temperatures to levels that are harmful – or even lethal – to coldwater fish. Water diversions have resulted in summer temperatures in the Trinity and Klamath Rivers that are sub-optimal, or at times, lethal, to salmonids (DWR 2005). The North Coast Region's basin plan sets turbidity restrictions and establishes temperature objectives for the Trinity River. Fisheries may also be adversely impacted by the lack of woody debris for pool habitat formation and sediment metering. Flood control measures can also adversely impact salmonid habitat. For example, consider the Redwood Creek estuary, where the summer water quality is poor. Degradation of water quality in this estuary is directly related to the construction of the Redwood Creek Federal Flood Control Project. While these levees provide beneficial flood protection to Orick, they have significantly impacted estuary function by drastically altering the physical setting of the estuary and sloughs (RNPS 1997, NCWAP 2005). The current condition of the estuary is considered a major limiting factor to anadromous salmonid production in the Redwood Creek watershed (RNPS 1997, CDFG 2004, NCWAP 2005). Many such examples exist throughout the North Coast, and while previous efforts such as the North Coast Watershed Assessment Program have provided a significant amount of information about these watersheds, an integrated, regional, planning effort such as the NCIRWMP will provide the needed framework for effective management, restoration, and enhancement projects.

Inadequate wastewater treatment and aging septic tanks from numerous riverfront homes cause bacteriological contamination in the lower Russian River. Additionally, throughout the region there are numerous small wastewater treatment plants operating in violation of waste discharge permits. These failing systems threaten human health and drinking water and impair beneficial uses, in addition to causing economic hardship for the communities in which they operate (*see Section 8.3.3, Critical*

*Impacts of Not Implementing NCIRWMP Projects*). Shellfish harvesting beds in Humboldt Bay have been closed multiple times due to nonpoint source runoff, most often following large rain events. Mercury, a legacy pollutant from mining and other industrial activities, concentrates in fish tissue and has been found to be of concern in Lakes Pillsbury, Mendocino, and Sonoma. Additionally, fuel constituents, such as MTBE, chemicals from wood treatment at lumber mills, silviculture operations, agriculture, and residential applications are region-wide water quality issues.

### **3.6.2 GROUND WATER QUALITY**

Groundwater quality problems in the North Coast Region include seawater intrusion and elevated nutrients in shallow coastal groundwater aquifers; high total dissolved solids (TDS), elevated mineral and heavy metal concentrations and alkalinity in groundwater in the Modoc Plateau basins; and iron, boron, and manganese in the inland groundwater basins of Mendocino and Sonoma counties. Legacy pollution from abandoned mines and historical lumber mills and present-day forest and agricultural herbicide application also pose a potential threat to regional groundwater, as do septic tank failures throughout the Region. Additionally, throughout the region, there are numerous small wastewater treatment plants operating that are violating waste permit discharges due to equipment malfunction, age, or limited capacity, or a combination of these problems. These failing systems threaten human health and drinking water and other beneficial groundwater uses, and they also cause economic hardship for the communities in which they operate (*see Section 8.3.3, Critical Impacts of Not Implementing NCIRWMP Projects*). For example, groundwater and surface water pollution studies in Orick confirmed effluent from septic tanks was contaminating ground and surface water supplies (OLA 1999). Contamination was attributed to old and failing septic systems on small parcels combined with high groundwater levels during winter months that can rise to within three feet of the surface. The investigators believe most of the contamination was of human origin and recommended a modern-day wastewater facility to address the issue and allow for future community growth (OLA 1999).

The City of Willits and other communities and individuals in Humboldt County have found high arsenic, iron, and manganese levels in their well water supplies. Chemical contamination has caused the closure of municipal wells in Sebastopol and Santa Rosa in Sonoma County. Industrial operations including lumber mills, oil storage, and wrecking and railroad yards have caused both soil and ground water contamination with heavy metals, petroleum products, and pentachlorophenols (PCPs) in locations throughout the region. In the City of Eureka, the City, along with corporate partners and other agencies, is currently undertaking cleanup and redevelopment of the historically contaminated waterfront. The Mendocino City Community Services District, which serves the Town of Mendocino in Mendocino County, adopted an ordinance in 1990 that regulates new groundwater extraction – for example, when a new well is built or when the amount extracted from an existing well is increased (California Department of Water Resources 1996).

### **3.6.3 RECLAIMED/RECYCLED WATER QUALITY**

Programs that recharge urban runoff or reclaimed/recycled water must incorporate protection of human health, the environment, and groundwater. Management practices and level of treatment will vary depending upon the intended end use of the recycled water. For the most part, agriculture can usually utilize lower quality water than most urban users, but some crops will be sensitive to certain

constituents such as boron, while this may not pose a problem in projects such as recharging the Geysers aquifer in Sonoma and Lake counties.

### **3.7 WATER QUANTITY**

Water quantity to provide drinking water and support other beneficial uses in the North Coast is limited by water quality in some areas and by the lack of infrastructure for at least part of the year in many of the region's rural and isolated areas.

#### ***3.7.1 RELEVANT LEGISLATION***

Senate Bill 1062 by Sen. Charles Poochigian requires that the Department of Water Resources (DWR) include multiple strategies to address the state's water supply needs in California Water Plan updates (DWR 2005). Additionally, it establishes an advisory committee to assist with the Plan update. The Bill describes California's need to provide water planners with reliable information regarding water supplies and accurate estimates of expected population growth, and establishes the integral role of water conservation, waste water recycling, conjunctive use, desalination, and water storage as components in meeting those needs. Specifically, the bill states:

"§ 1: The Legislature finds and declares all of the following:

- (a) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (b) The Department of Finance projects that California's population will increase to over 47 million persons by 2020, increasing the need for the development of additional safe and reliable water supplies that are critical to the health, safety, and welfare of all Californians, including the state's future generations.
- (c) Water-related infrastructure investment needs are growing rapidly as a result of a growing population and economy, environmental and public health requirements, and aging water delivery systems.
- (d) The Department of Water Resources projects that Californians will experience chronic water shortages, as early as 2000, unless actions are taken to increase the amount of developed water available for use in California."

#### ***3.7.2 SURFACE WATER QUANTITY***

According to the DWR (2005), surface water storage in the North Coast Region in 1998 was 2,236.3 acre-feet (AF), while at the end of 1998, it was 2,938.8 AF. In 1999, surface water storage was 2,740.7 AF at the beginning of the year and had decreased to 2,495.0 AF at year's end. In 2001, surface water storage was initially 2,495 AF and dropped to 2,003.9 AF by the end of the year. This water is used for urban, municipal, and rural residential needs, agriculture, state and federal water supply projects,

managed wetlands, required Delta outflow, instream flow, and Wild and Scenic Rivers flow. When water supplies fall short, as they did in 2000 and 2001, the Wild and Scenic Rivers and environmental uses receive the largest reductions (DWR 2005).

The amount of surface water in the North Coast Region is extremely dependent upon precipitation as described above. In very wet years, there may be a surplus, but in drought years, quantity is limited and can become a source of contention between water users. For example, the Klamath Basin has had water shortage problems in recent years that have led to confrontations between farmers and regulators and farmers and environmentalists. As the population of the North Coast Region grows (*see Section 3.10, Demographic, Economic, Social, and Cultural Attributes*), drinking water will continue to experience increases in demand, making the identification of alternative sources for agricultural and landscape irrigation a high priority. The NCRWGM provides the framework for regional cooperation and collaboration to determine the optimal strategies to ensure that surface water supply is able to meet environmental and human-related beneficial uses during both surplus and drought water years.

### **3.7.3 GROUNDWATER QUANTITY**

There are 63 groundwater basins/subbasins delineated in the North Coast region, two of which are shared with Oregon (DWR, Bulletin 118). These basins underlie approximately 1,022 million acres (1,600 square miles) (*see Map 11, North Coast Region Ground Water Basins*).

There is limited large-scale groundwater development in the North Coast Region due to the small number of significant coastal aquifers. Most of the groundwater development that has occurred comes from shallow wells installed adjacent to rivers. There are, however, significant groundwater basins underlying the Klamath River valley along the Oregon border and the southern tip of the Region underlying Santa Rosa in Sonoma County (DWR 2005) (*See Map 11, North Coast Region Groundwater Basins*). Despite the limits on large-scale infrastructure, groundwater is used widely throughout the region for individual domestic, agricultural, and industrial water supply (NCRWQCB 2005). Many rural areas rely exclusively on private wells for residential water. There are also an unknown number of small dams, and water-related infrastructure, which may have a large cumulative impact on groundwater.

In California, regulation of extraction and appropriation of groundwater is the responsibility of local agencies (DWR 2005). As with surface water, recharge to groundwater supply is highly dependent on precipitation. The amount of groundwater available varies yearly with precipitation, infiltration, and the amount of withdrawals from groundwater basins. Withdrawals, in turn, are in part dependent on the amount of surface water available for municipalities that use both surface and ground water for supply needs. Groundwater is a significant water source for some small rural communities that rely on residential wells for water, but the total amount of groundwater use in the region is small compared to surface water use.

Identified groundwater basins in the Redwood Creek watershed are the Redwood Creek Area and Prairie Creek Area groundwater basins (DWR 2003). The Orick Community Services District provides domestic water through a centralized distribution system that includes two wells located adjacent to

Redwood Creek in the northern part of town. In the Redwood Creek watershed, there are no water development projects such as dams and surface water diversions.

#### **3.7.4 RECLAIMED WATER QUANTITY**

Water recycling, also known as reclamation or reuse, is an umbrella term encompassing the process of treating wastewater, storing, distributing, and using the recycled water. Recycled water is defined in the California Water Code to mean “water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.”

Existing uses of reclaimed water including landscape irrigation and holding tanks for fire suppression, are currently being used by the City of Santa Rosa, the City of Arcata, the Town of Windsor and other entities within the region. The use of reclaimed water is a positive, proactive method that can increase surface and groundwater quantity by reducing demand on both sources.

#### **3.7.5 IMPORTED WATER QUANTITY**

The North Coast Region does not import water, but water transfers do occur within the region. For example, Eel River water is diverted at the Potter Dam into the Russian River. The North Coast generally exports more water to other regions – mainly the Central Valley Project and the north San Francisco Bay area through the infrastructure described in Section 3.5.1 – than the volume of water consumed within the Region for agriculture and urban uses.

#### **3.7.6 DESALTED WATER**

Currently the North Coast Region does not possess any desalination plants or have any plans for development of desalination facilities, although this option may be explored by the NCRWMP in the future.

### **3.8 WATER SUPPLIES AND DEMAND FOR 20-YEAR PLANNING HORIZON**

Given that much of the North Coast Region is rural and disadvantaged (*see Section 3.10.2, Economic Indicators*), there is a universal challenge for communities in addressing water supply as well as sewage disposal. This challenge has been identified by the Regional Water Quality Control Board, and the Department of Water Resources and was further documented by the number of project proponents who submitted applications to the NCIRWMP relating to sustainable potable water supplies. In the context of a 20-year planning horizon for the North Coast, there are some substantial issues to be addressed, in part due to the number and significance of current infrastructure needs, high cost of upgrades, and lack of available funding and technical assistance for small and disadvantaged communities with multiple needs.

Water supplies will continue to be stressed in the next 20 years. Several communities within the North Coast are planning to address future water supply and water quality issues via their County General Plan documents. Stream water diversion for accelerating rural residential development is looming as a significant threat to salmonid recovery efforts. The NCIRWMP provides a framework for addressing this regional challenge on a watershed and local basis. A consistent theme identified by local planning documents throughout the North Coast is the need for maximizing water conservation and maximizing reuse. Sonoma County and Humboldt County have developed some innovative options for wastewater disposal systems – such as the world-renowned Arcata Marsh in Humboldt County - that have been designed to reclaim and reuse wastewater for irrigation and enhancement of wildlife projects.

Surface water supplies in the North Coast Region are almost completely dependent upon rainwater, so in years that demand remains stable and rainfall is abundant, future water supply will only be limited by local water quality issues – which the implementation of the NCIRWMP projects will help to alleviate – and the need for water-related infrastructure – which will also be partially addressed through implementation of NCIRWMP projects. In years of scarce rainfall, surface water supplies will be stressed and several years of drought will likely produce more water supply-related conflicts such as the Klamath Basin conflict that has occurred for the past few years. Greater use of water recycling for irrigation and other compatible uses such as the Geysers project and improvements to water recycling technology may alleviate some of the Region’s reliance on adequate rainfall amounts.

While groundwater development is being considered by some parts of the region as a potential future water source, both Sonoma County and Modoc County (despite demographic and cultural differences) share a concern over future groundwater development. The Mendocino City CSD, concerned that the groundwater basin that supplies the Town of Mendocino with potable water was being overdrafted, has developed a groundwater management plan and put limits on new well development or the increase in withdrawals of existing wells (Mendocino City CSD undated). Sonoma County has recognized that groundwater is scarce in large areas of the County where intensive rural development and the installation of private wells has led to over drafting. Siskiyou and Modoc counties have voiced concerns over the large number of deep high output wells that have been recently developed to deal with the current water quantity challenges of that part of the region. The long-term impacts and consequences of those wells are unknown. It is the intent of the NCRWMP to determine the extent and condition of the region’s groundwater basins as needed as funding becomes available.

### **3.9 MAJOR LAND USE IN THE REGION**

The major land uses in the Region are resource extraction including timber harvest, fishing and gravel mining, and agriculture including vineyards, orchards, rangeland, and row crops. Forest and rangeland cover about 98% of the land area of the region (DWR 2005). The North Coast region’s economy has historically been based on agriculture and resource extraction. (*See Map 14, North Coast Region Land Use and Land Cover*).

Agricultural lands are extremely significant in terms of water supply - irrigated agriculture accounts for about 81% of the developed uses of water supplies in the region. Crops range from vineyards and orchards that are mainly concentrated in the Russian River, to pasture, alfalfa, grain and potatoes in the Klamath watershed. Ranches and dairy operations throughout region contribute to water quality

issues, especially when animals are in confined facilities. The trend for agricultural land in the past few decades has been one of transformation to urban uses. This is in part due to low crop values and the high price of surface and developable ground water (DWR 2005), but also can be attributed to an increased demand for housing in the southern part of the Region, which is close to the San Francisco Bay Metropolitan Area. Although land in agriculture has declined, agricultural water use has not, reflecting the replacement of large tracts of un-irrigated orchards with smaller acreages of irrigated vineyards (DWR 2005).

Upland rock quarries must be properly managed to prevent sediment discharge. In-stream gravel extraction must be regulated to prevent salmonid habitat degradation and extraction beyond sustained yield levels. Gravel extraction removes cobble from the river system and can contribute to fine sedimentation.

Both large corporations and smaller, family-owned companies conduct timber harvest operations. Environmental regulations regarding timber harvest currently moderate sediment and temperature impacts to water bodies, but significant legacy effects from past practices are still present.

Recreational tourism – including camping, hiking, swimming, kayaking, and sport fishing – is an important component of the regional economy. The region contains about 400 miles of scenic shoreline, more than 40 state parks, the Smith River National Recreation Area and Redwood National and State Parks (DWR 2005).

High-tech industries occur in the southern part of the region due to the proximity to the Bay Area. Additionally, professional consulting agencies specializing in engineering, restoration, geomorphology, and other applied sciences occur throughout the region in response to the regulatory environment, urban growth, and infrastructural development.

### **3.10 DEMOGRAPHIC, ECONOMIC, SOCIAL AND CULTURAL ATTRIBUTES**

#### ***3.10.1 DEMOGRAPHICS***

##### **Population**

The North Coast Region includes all residents of Del Norte, Humboldt, Trinity, and Mendocino counties, the majority of Modoc, Siskiyou, and Sonoma counties, and a small percentage of the populations of Glenn, Lake and Marin counties. The entire population of the Region was approximately 644,000 in 2000 (DWR 2005).

The majority of the North Coast Region's population is concentrated in the southern portion of the Region, in Sonoma and Marin counties, with 458,614 and 3,220 residents respectively, or approximately two-thirds of all inhabitants. Marin County and part of Sonoma County are also considered part of the nine-county Bay Area Association of Bay Area Governments (ABAG) (ABAG 2005). Mendocino and Humboldt Counties comprise 86,265 and 12,827 residents, respectively. The remainder of the population is distributed in the northeast and southeast sections of the Region. In the northeast, Siskiyou County includes 44,309 citizens, and Del Norte has approximately 27,507 residents in the Region. Three counties represent the east section's population: Glenn with 2,234, Lake with 12,425, and Trinity with 13,022.

The North Coast Region has experienced steady population growth over the past two decades and is projected to continue positive growth through the year 2020 (CA Department of Finance (DOF) 2000). Due to the rural nature of much of the region and the fact that there is a lower associated cost of living, many communities within the region are seeing an influx of retirees from larger, more urbanized settings. This has placed pressure on existing community services. Additionally, as population densities encroach in the more urban settings, some of the more rural communities are becoming bedroom communities. There is also a rise in migrant workers within the region. Modoc County has a county operated migrant camp. The trend for both Modoc and Siskiyou counties is that many of the migrant workers are becoming permanent residents, while younger non-migrant residents continue to leave the area.

Despite the overall growth rates of the Region, population growth rates are not as great as those of the rest of the State, reflecting the rural character of the Region. In fact, some of the more remote counties of the region - Modoc and Siskiyou - are projected to lose overall population in the coming decades. The most populated area of the Region, Sonoma County, experienced a higher growth rate than the State's average in 1980 and 1990, and is estimated to continue this pattern with population increases of 15% and 14% by 2010 and 2020, respectively. Table 2 describes the historic and projected population growth trends for the North Coast Region.

### **Age**

The North Coast Region's median age is significantly higher than that of the state, according to State Department of Finance projections. While the Region's overall birthrate continues to fall, estimates point toward an increasingly aging population in most of the North Coast Region. The median age for residents in the region is currently, 39.2 and will rise to approximately 42 over the next 20 years, while California's median age is expected to remain stable at 33-34, due to continued high birthrates throughout the state (Department of Finance Age Projections, 2001).

Increasingly, retirees are settling in the North Coast Region as they value the area's rural quality of life. This may lead to an increase in the demand for health-related services and related construction. The present lack and projected decline of population age 25 and younger is indicative of a region that is unable to provide living wage jobs that retain local youth.

The North Coast Region has a significantly higher percentage of Native American residents than that of the state's 1%, with 4% of residents identifying as tribal members. The two largest Native American reservations are in the North Coast Region, and include the Hoopa Reservation in Humboldt County, and the Round Valley Reservation in Mendocino County. A list of all federally recognized tribes in the North Coast Region is included in Table 3.

**Table 2. North Coast Historic and Projected Population Growth**

| <b>County</b>                      | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2010</b> | <b>2020</b> | <b>80-90<br/>% Change</b> | <b>90-00<br/>% Change</b> | <b>00-10<br/>% Change</b> | <b>10 -20<br/>% Change</b> |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|---------------------------|---------------------------|---------------------------|----------------------------|
| Del Norte                          | 18,217      | 23,460      | 27,507      | 29,126      | 30,765      | 22%                       | 15%                       | 5%                        | 5%                         |
| Glenn                              | 21,350      | 24,798      | 26,453      | 29,348      | 31,950      | 14%                       | 6%                        | 8%                        | 8%                         |
| Humboldt                           | 108,514     | 119,118     | 126,518     | 133,138     | 139,518     | 9%                        | 6%                        | 5%                        | 5%                         |
| Lake                               | 36,366      | 50,631      | 58,309      | 69,258      | 79,676      | 28%                       | 13%                       | 13%                       | 13%                        |
| Marin                              | 222,568     | 230,096     | 247,289     | 252,400     | 251,280     | 3%                        | 7%                        | 0%                        | 0%                         |
| Mendocino                          | 66,738      | 80,345      | 86,265      | 94,300      | 100,664     | 17%                       | 7%                        | 6%                        | 6%                         |
| Modoc                              | 9,449       | 9,678       | 9,449       | 9,547       | 9,285       | 2%                        | -2%                       | -3%                       | -3%                        |
| Siskiyou                           | 39,732      | 43,531      | 44,301      | 46,611      | 45,862      | 9%                        | 2%                        | -2%                       | -2%                        |
| Sonoma                             | 299,681     | 388,222     | 458,614     | 515,968     | 602,783     | 23%                       | 15%                       | 14%                       | 14%                        |
| Trinity                            | 11,858      | 13,063      | 13,022      | 13,442      | 13,402      | 9%                        | 0%                        | 0%                        | 0%                         |
| <b>North<br/>Coast<br/>Region*</b> |             |             |             |             |             | <b>14%</b>                | <b>7%</b>                 | <b>5%</b>                 | <b>5%</b>                  |
| California                         | 23,667,902  | 29,760,021  | 33,871,648  | 39,246,767  | 43,851,741  | 20%                       | 12%                       | 11%                       | 11%                        |

Source: Department of Commerce, CA Dept. of Finance

\*Note: Aggregated population numbers are not presented, as Region reflects portions of some counties.

| <b>Table 3. North Coast Region Federally Recognized Native American Tribes</b> |                      |   |  |              |  |                                      |                           |                                       |                |
|--|----------------------|---|--|--------------|--|--------------------------------------|---------------------------|---------------------------------------|----------------|
| <b>Del Norte</b>   | <b>Glenn</b>         | <b>Humboldt</b>                         | <b>Lake</b>                                  | <b>Marin</b> | <b>Mendocino</b>   | <b>Modoc</b>                         | <b>Siskiyou</b>           | <b>Sonoma</b>                         | <b>Trinity</b> |
| Yurok Tribe  | Nomlaki/Wintun       | Wiyot, Bear River Band, Mattole         | Pomo   | None         | Pomo   | Paiute/Shoshone                      | Karuk Tribe of CA         | Pomo                                  | None           |
| Tolowa   | Grindstone Rancheria | Rohnerville Rancheria                   | Middletown Rancheria                         |              | Hopland Reservation  | Cendarville Rancheria                | Shasta/Upper Klamath      | Stewarts Pt. Rancheria                |                |
| Yurok Elk Valley Rancheria   |                      | Wiyot, Yurok, Hupa Blue Lake Rancheria  | Pomo Upper Lake Rancheria                    |              | Pomo Potter Valley Rancheria   | Paiute Fort Bidwell Reservation      | Quartz Valley Reservation | Pomo Dry Creek Rancheria              |                |
| Yurok Resighini Rancheria  |                      | Yurok, Wiyot, Tolowa Trinidad Rancheria | Pomo Dry Creek Rancheria                     |              | Pomo Manchester/PtAreal Rancheria                                    | Pit River Lookout Rancheria          |                           | Pomo Lytton Springs Rancheria         |                |
|  |                      | Wiyot Hoopa Valley Indian Reservation   | Pomo Robinson Rancheria                      |              | Pomo Coyote Valley Rancheria   | Pit River/Achomawi Alturas Rancheria |                           | Federated Indians of Graton Rancheria |                |
|  |                      | Wiyot Big Lagoon Rancheria              | Pomo/Pit River Big Valley Rancheria          |              | Pomo Sherwood Valley Rancheria                                       | Pit River X-L Rancheria              |                           |                                       |                |
|  |                      | Yurok Tribe Karuk Tribe of CA           | Pomo/Wailaki Scotts Valley Rancheria         |              | Pomo Pinoleville Rancheria   |                                      |                           |                                       |                |
|  |                      |   | Elem Indian Branch Pomo Indians Sulpher Bank |              | Pomo Redwood Valley Rancheria  |                                      |                           |                                       |                |
|  |                      |   |  |              | Achomoway, Concow, Nomalaki, Wailaki, Wintun Yuki, Pomo Round Valley |                                      |                           |                                       |                |
|  |                      |   |  |              | Rancheria Pomo Laytonville Rancheria                                 |                                      |                           |                                       |                |

Source: Federal Register, BIA Report of Federally Registered Tribes, 2002

**Educational Attainment**

The North Coast Region has a relatively high rate of high school graduates and advanced degree recipients, matching the state’s percentage despite the lack of proximity to major centers of learning and related infrastructure. The North Coast Region includes several state, community, private and vocational colleges which serve to support educational attainment. Further, intellectual capital migrates to the Region. Educated professionals are drawn to the area for its high quality of life, natural surroundings and distance from urbanized areas. A recent survey of Willits Chamber of Commerce members identified that over 30% of members established their businesses in the area due to a positive tourism experience (Willits Chamber of Commerce Membership Survey, 2003).

**3.10.2 ECONOMIC INDICATORS**

**Resident Income**

A number of income characteristics indicate that the North Coast Region is economically disadvantaged, as compared to the general population of the state (*see Map 15, Disadvantaged Communities*). The 2000 median household income (MHI) of North Coast Region households, \$36,774 was significantly below that of the state’s, which was \$47,493 per year. A breakdown of MHI per household is provided in Table 4 (US CENSUS Bureau 2000). Thirty-six percent of the region’s population is disadvantaged according to Median Household Information provided by the US Census Bureau (2000). Eight of the ten counties that are partially or entirely contained within the region qualify as disadvantaged (US Census Bureau 2000). Disadvantaged status is defined as those having median household incomes less than 80% of the statewide annual MHI by the DWR and SWRCB. For Census 2000 data, this figure is \$37,994 (DWR and SWRCB 2004). Per Capita income for the Region is also lagging behind California’s rate by approximately 8%, as illustrated in Table 4.

The NCIRWMP partnership includes the disadvantaged communities in the region, processes for outreach and projects to improve quality of life, economic opportunity, and maintenance of autonomy for disadvantaged communities of varying sizes throughout the region.

| <b>Table 4. North Coast Region Median Household Income</b> |                                |
|--|--------------------------------|
| <b>County</b>  | <b>Median Household Income</b> |
| Del Norte  | \$29,642                       |
| Glenn  | \$32,107                       |
| Humboldt   | \$31,226                       |
| Lake   | \$29,627                       |
| Marin  | \$71,306                       |
| Mendocino  | \$35,996                       |
| Modoc  | \$27,522                       |
| Siskiyou   | \$29,530                       |
| Sonoma   | \$53,076                       |
| Trinity  | \$27,711                       |
| <b>North Coast Region</b>                                  | <b>\$36,774</b>                |
| California   | \$47,493                       |

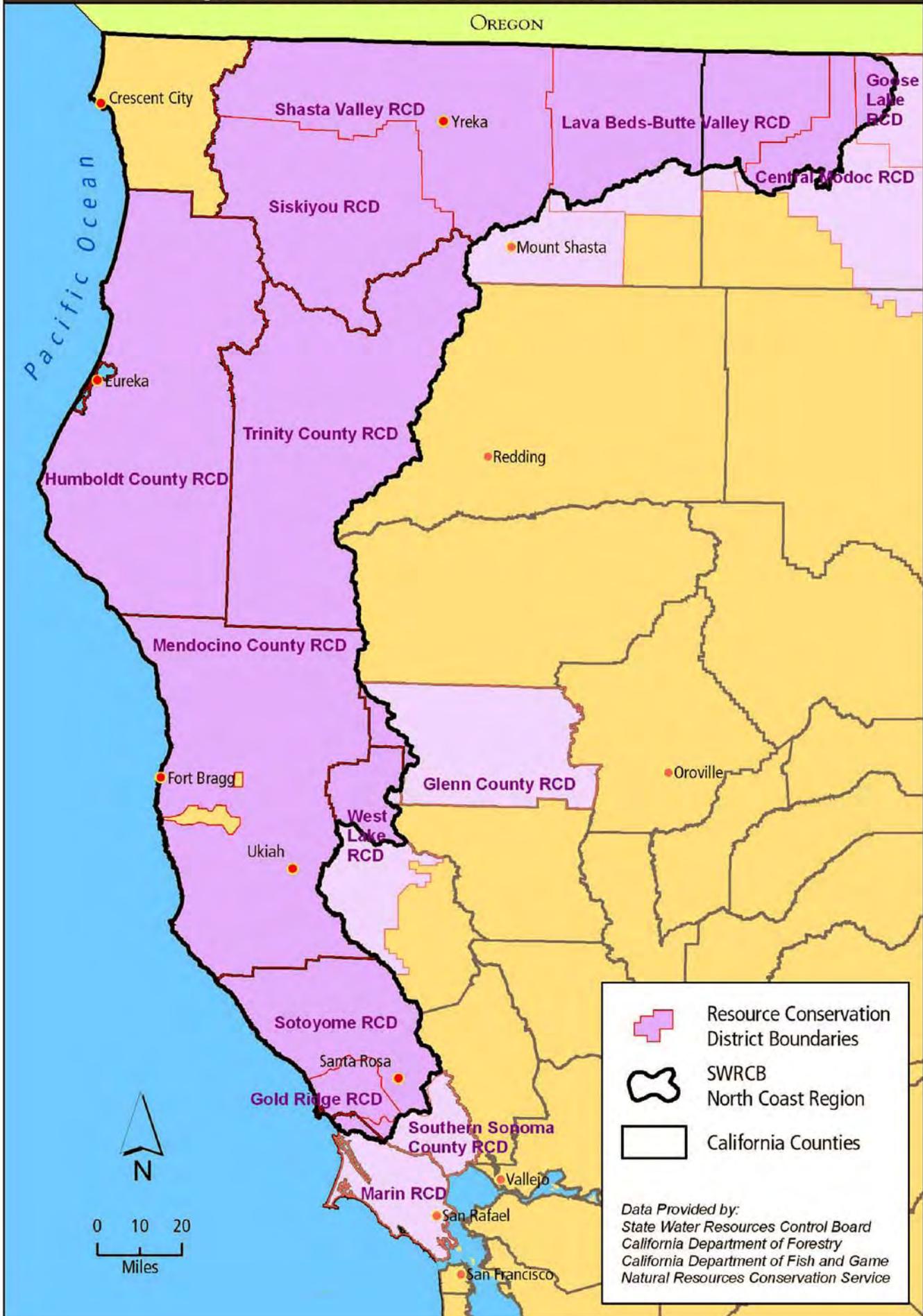
Source: 2000 US Census



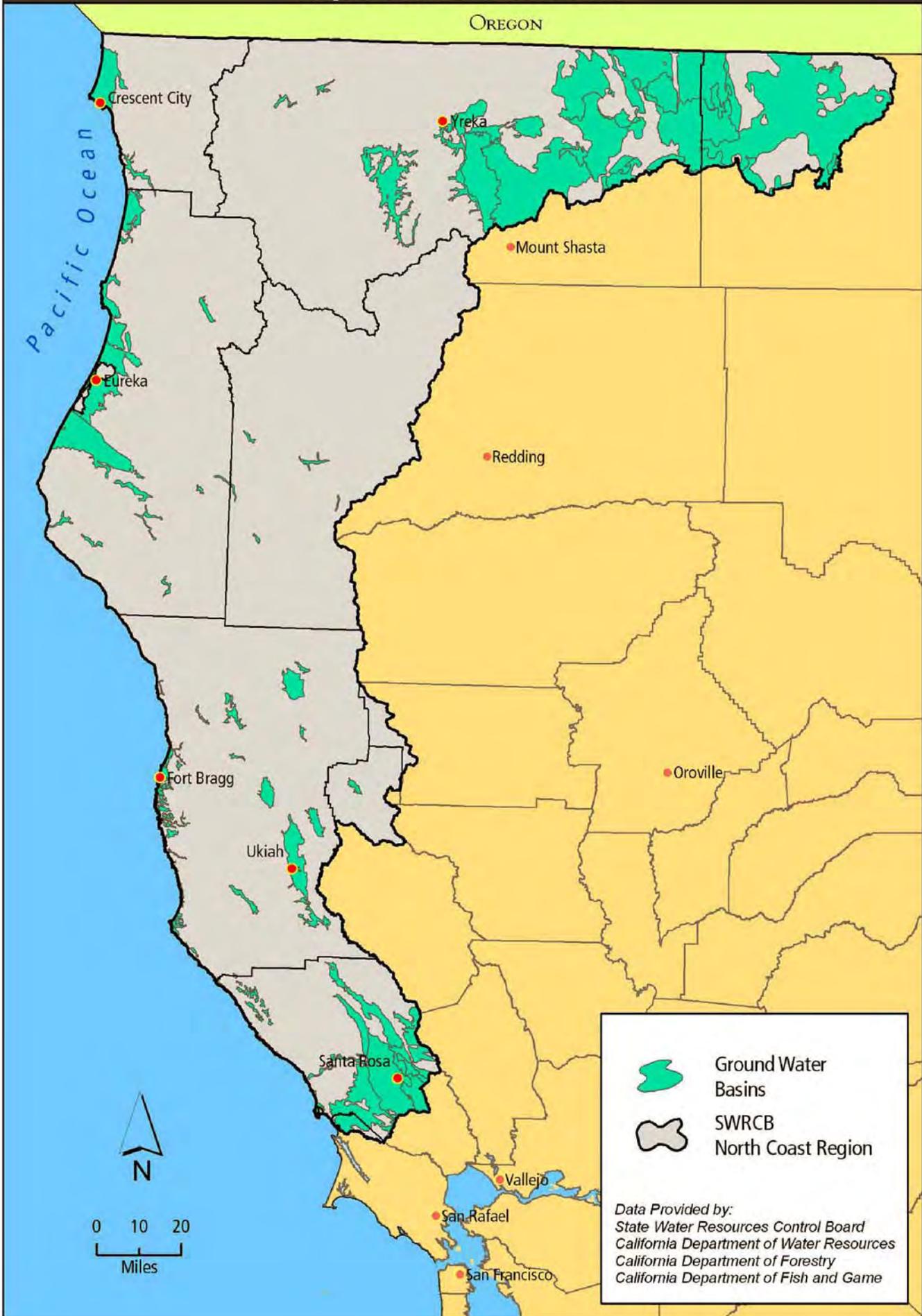
### Map 4. Salmonid Evolutionarily Significant Units



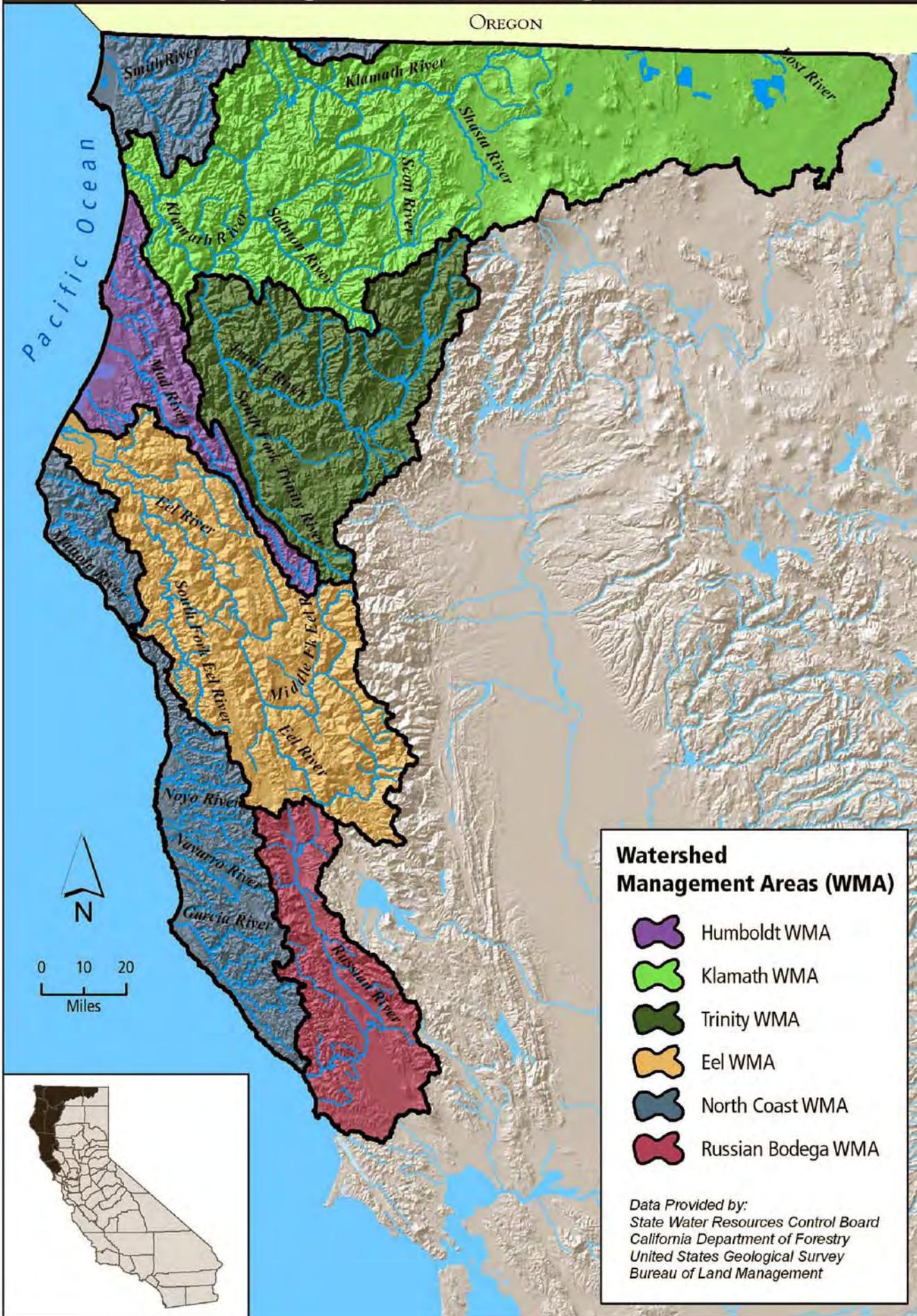
North Coast Integrated Regional Water Management Plan  
**Map 5. Resource Conservation District Boundaries**



**Map 6. Ground Water Basins**



North Coast Integrated Regional Water Management Plan  
**Map 7. Regional Watershed Management Areas**

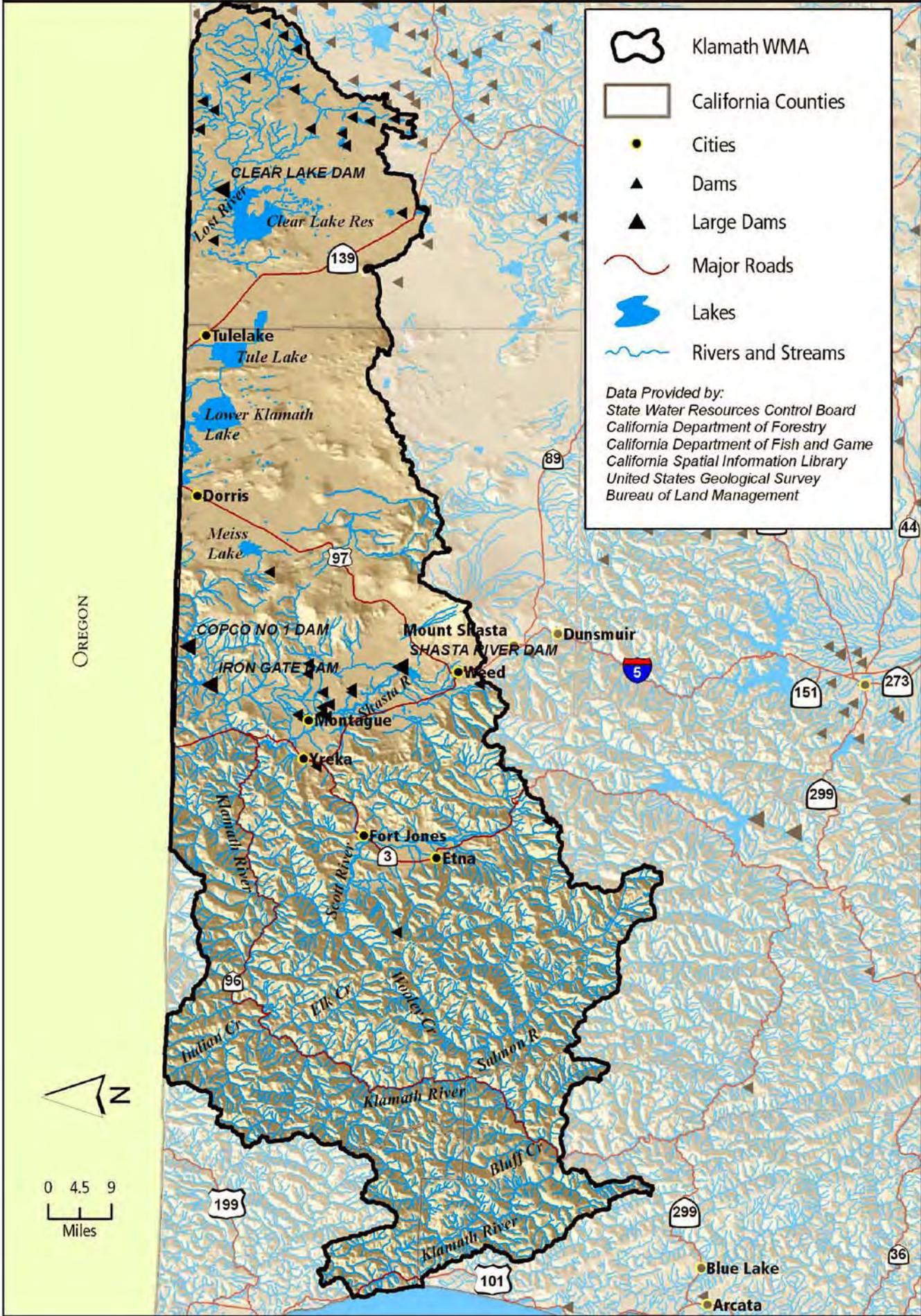


**Watershed Management Areas (WMA)**

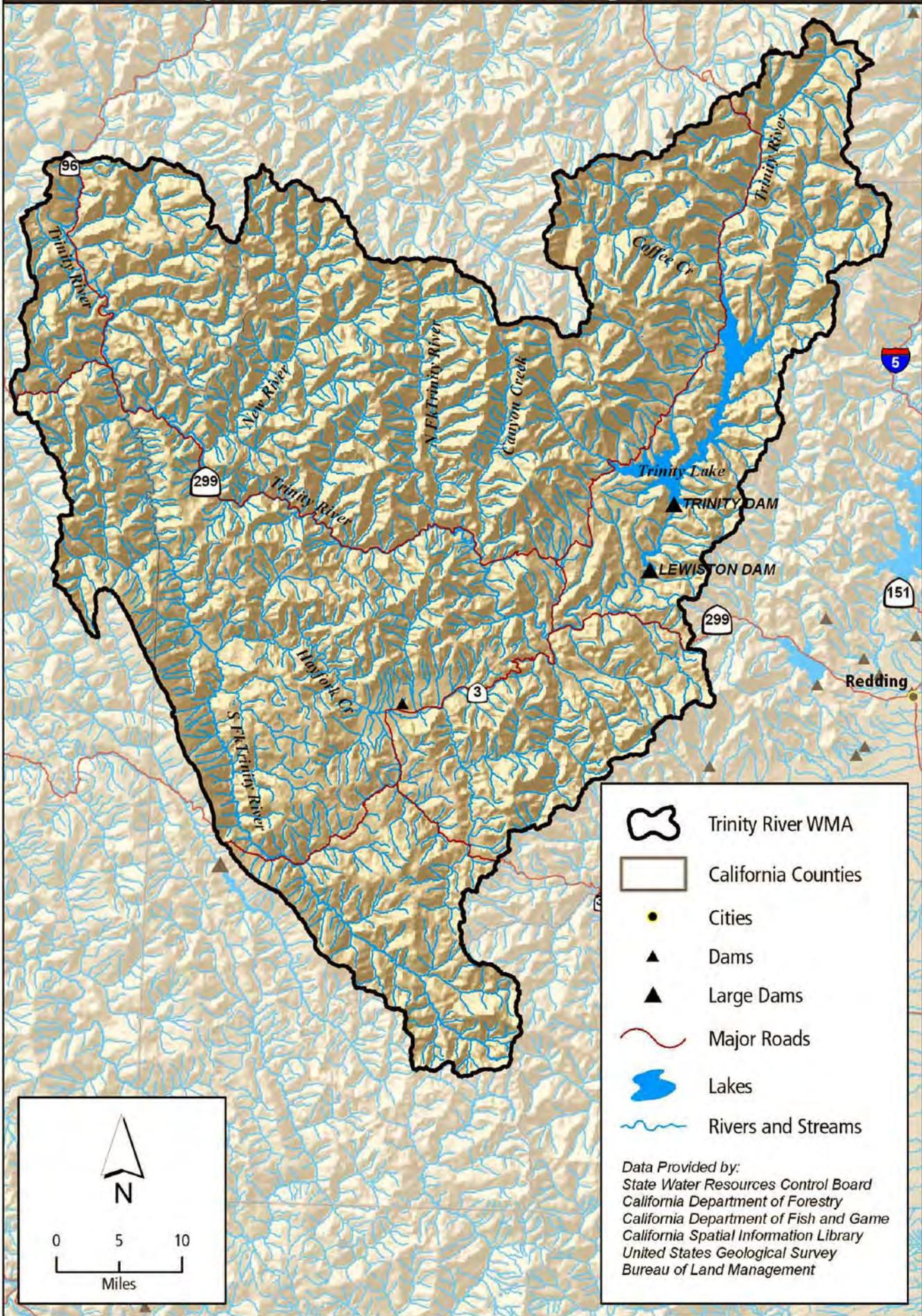
-  Humboldt WMA
-  Klamath WMA
-  Trinity WMA
-  Eel WMA
-  North Coast WMA
-  Russian Bodega WMA

Data Provided by:  
State Water Resources Control Board  
California Department of Forestry  
United States Geological Survey  
Bureau of Land Management

North Coast Integrated Regional Water Management Plan  
**Map 8. Klamath Watershed Management Area**



North Coast Integrated Regional Water Management Plan  
**Map 9. Trinity River Watershed Management Area**

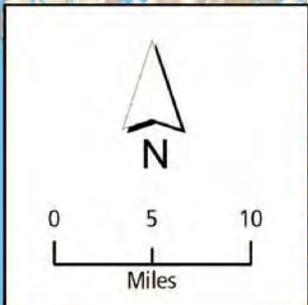


North Coast Integrated Regional Water Management Plan  
**Map 10. Humboldt Bay Watershed Management Area**



|  |                     |
|--|---------------------|
|  | Humboldt Bay WMA    |
|  | California Counties |
|  | Cities              |
|  | Dams                |
|  | Large Dams          |
|  | Major Roads         |
|  | Lakes               |
|  | Rivers and Streams  |

Data Provided by:  
 State Water Resources Control Board  
 California Department of Forestry  
 California Department of Fish and Game  
 California Spatial Information Library  
 United States Geological Survey  
 Bureau of Land Management



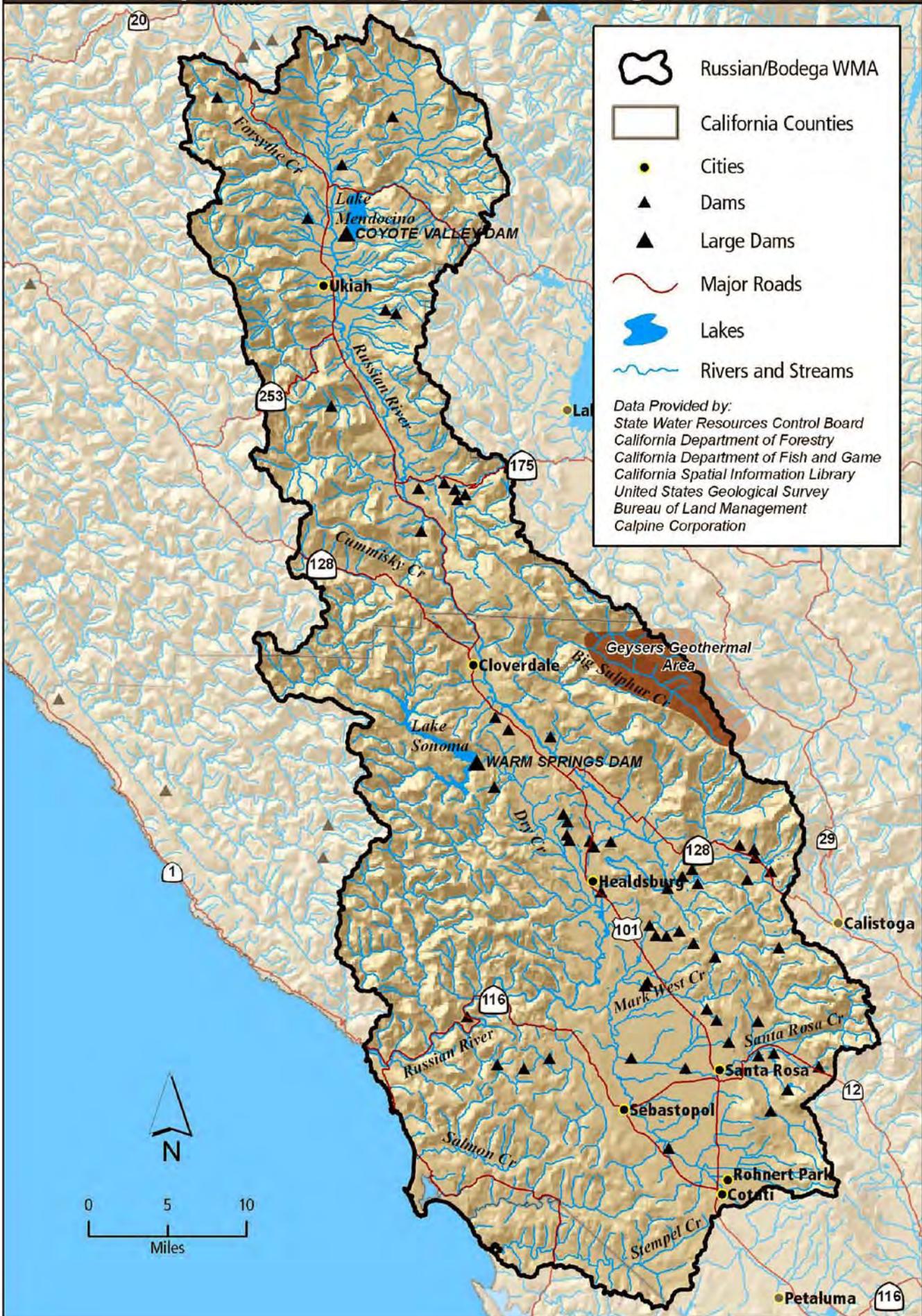
North Coast Integrated Regional Water Management Plan  
**Map 11. Eel River Watershed Management Area**



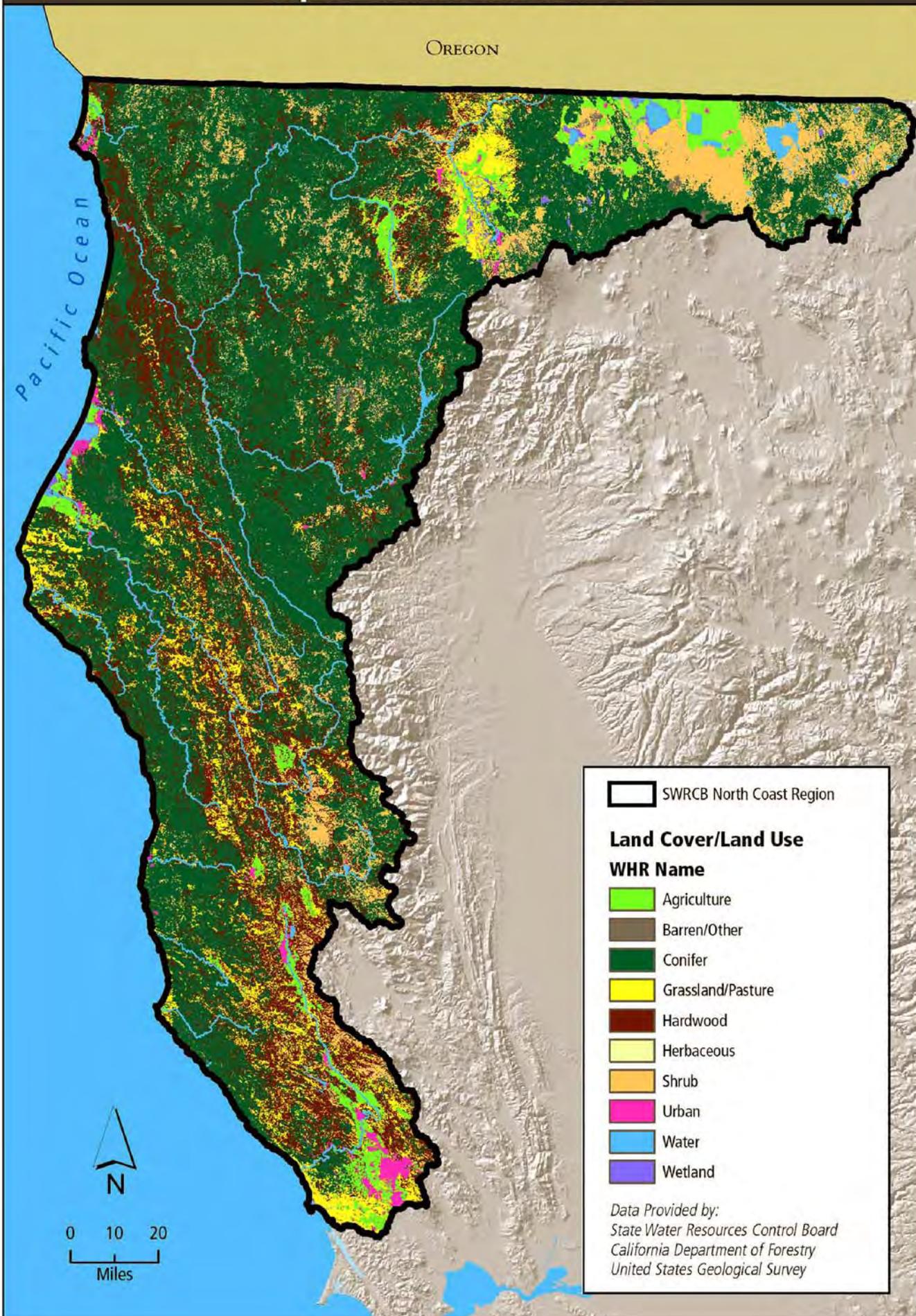
**Map 12. North Coast Rivers Watershed Management Area**



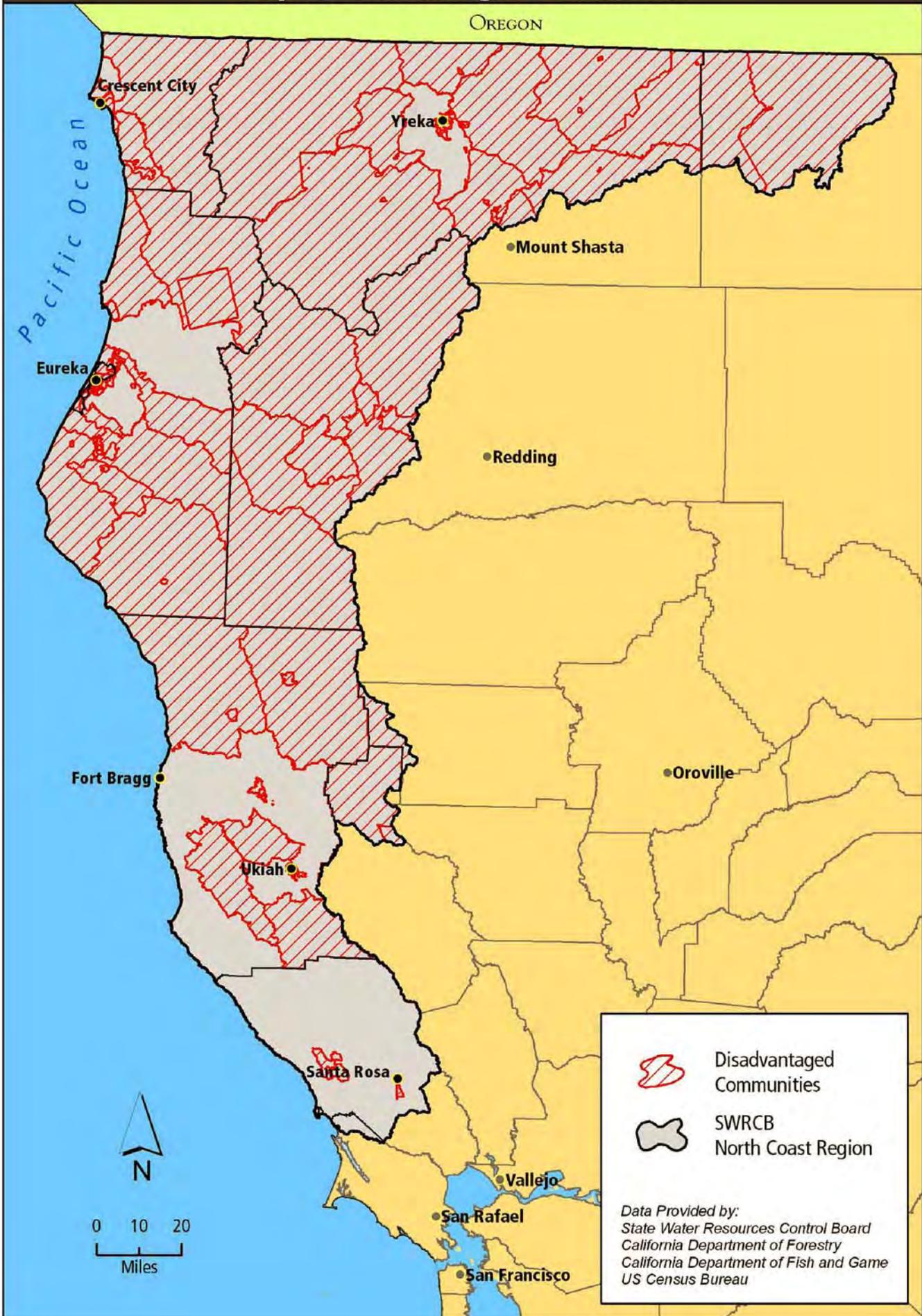
North Coast Integrated Regional Water Management Plan  
**Map 13. Russian/Bodega Watershed Management Area**



**Map 14. Land Use and Land Cover**



**Map 15. Disadvantaged Communities**





## IDENTIFICATION OF KEY WATER MANAGEMENT ISSUES

### SECTION 4.0





## **SECTION 4.0 IDENTIFICATION OF KEY WATER MANAGEMENT ISSUES**

To manage water resources at multiple scales, a variety of key issues must be considered, including riparian and wetland ecosystem function, point and nonpoint source discharges, groundwater and surface water interactions, and water quality and quantity. In addition to the independent aspect of each key issue, interaction among issues creates complexity and results in considerable challenges to water management.

### **4.1 REGIONAL ISSUES**

Water management issues at the regional scale cover a range of water quality, watershed health and water quantity concerns. These issues have motivated state and federal agencies to develop programs to guide, encourage, and support protection and restoration of anadromous fish habitat, and beneficial uses including protection and enhancement of drinking water and pollution prevention. Although usually developed at a statewide, regional, or Watershed Management Area (WMA) scale, many of the programs are implemented at the local scale by local jurisdictions, watershed groups, Joint Powers Authorities (JPAs) or other cooperative coalitions, Native American tribes, or state or federal agencies. The water management issues faced by the North Coast Region are described below.

#### **4.1.1 ISSUES RELATED TO SALMONID POPULATION DECLINE**

Native, naturally spawning salmonid populations in the region have declined in the past five decades. Under the federal Endangered Species Act (ESA), Central Coast ESU and Southern Oregon/Northern California Coast ESU coho salmon (*Oncorhynchus kisutch*), Central California Coast ESU and Northern California ESU steelhead trout (*O. mykiss irideus*) and California Coastal ESU chinook (*O. tshawytscha*), have been listed as threatened; however, as of March 14, 2005, the status of Central California Coast ESU coho has been proposed for upgrading to endangered (NOAA 2005). Central California Coast ESU coho are listed by California as endangered and Southern Oregon/Northern California ESU coho have been listed as threatened (CDFG 2005). Extensive research has been conducted regarding salmonid population decline and it is considered to be a result of some combination of the following factors:

- Water quality degradation
- Habitat loss and degradation
- Stream passage restriction
- Reduced stream flows
- Introduced species and hatchery fish
- Naturally occurring environmental fluctuations that impact the availability of fresh water and marine productivity

An important regional issue impacting fisheries habitat that has received attention at the local, state and federal levels is timber management and its potential impacts on water quality and water quantity. Historic timber harvest practices caused extreme sedimentation and loss of canopy cover, which caused streams that were once suitable habitat to become marginal or unusable. The implementation of Best Management Practices, (BMPs), and regulations requiring riparian setbacks have lessened these

negative impacts, however, timber harvest, road construction, and related activities continue to cause habitat degradation to a more limited extent. Management of timber lands by both industrial and non-industrial landowners has become a highly contentious issue with regard to how logging practices and road building impact watershed resources, sedimentation, and cumulative effects. This issue is central to the arena of fisheries protection, particularly as it has been identified as contributing to the degradation of watersheds, including spawning and juvenile rearing habitat (*NCRWQCB 2004*).

Another pressing water management issue concerning salmonids is the availability of instream flows to retain cool water temperatures that ensure salmonid survival. Recovery of listed salmonids in the region includes large-scale watershed-based recovery efforts that have contributed to conflict over agricultural water supply. For example, agricultural irrigation withdrawals coupled with a drought year in 2001 and 2002 in the Klamath Basin left inadequate surface water for listed salmonids (USFWS 2003). The Klamath River Basin has long been the focus of attention by multiple state and federal agencies, tribes, and stakeholders. The Klamath River Basin Fisheries Task Force (KRBFT) was authorized by Congress in 1986 and is overseeing a 20-year effort to restore salmonid fishery values to the Klamath watershed. The KRBFT is headed by a multiple-representative task force that makes funding, management, and scheduling decisions regarding fishery restoration efforts in the watershed (*NCRWQCB 2005*).

Additional salmonid recovery efforts are being led by CDFG, which in 2004 released the Recovery Strategy for Coho Salmon. It also released the Steelhead Restoration and Management Plan in 1996 and created the California Salmonid Stream Habitat Restoration Manual (1998), which is used as a guide by restoration practitioners throughout California and will be utilized for the implementation of several of the NCIRWMP prioritized projects (*see Section 7*). NOAA Fisheries is also coordinating salmonid recovery. Additionally, local watershed groups and partnerships such as the Five Counties Salmonid Conservation Program (5C), Fish Friendly Farming and the Shasta-Scott Recovery Team are working cooperatively with regulatory agencies, landowners, and other stakeholders to implement projects that benefit salmonid habitat. Numerous local agencies, water districts, and NGOs contribute to salmonid recovery via a diversity of conservation, management and restoration actions. Cumulatively, their contributions to salmonid recovery are significant. Summaries of the above mentioned plans and programs are found in Appendix B, Existing Water And Watershed Management Plans & Programs. The North Coast IRWMP provides a unifying framework for need identification and prioritization of these projects, a forum in which local concerns and state and federal requirements may be exchanged and disseminated, and a regional body for coordination and analysis of monitoring efforts. A matrix that describes how existing North Coast region water management plans address water management strategies is found in Appendix H, Matrix of Existing Water Management Planning Efforts.

#### **4.1.2 WATER QUANTITY ISSUES**

Groundwater and surface water quantity are impacted by urban and rural residential demand for potable water, agricultural irrigation needs, and municipal and industrial uses. Inter-basin water diversion for agricultural and human use is occurring within the region, specifically from the Eel watershed to the Russian River watershed. In addition, water is transferred outside of the region from the Russian River to supply municipal water for the North San Francisco Bay Area and from the Trinity River to the Central Valley for agricultural uses.

The Eel River diversion at Potter Valley provides power production and incidental supplemental water to the Russian River. Flow reduction in the Eel River has contributed to reductions in fish spawning habitat and increased water temperatures (*CEED 2002*).

Flows from the Trinity are integral to the ecosystem health of the Lower Klamath River. The Trinity River Division (TRD) of the Central Valley Project (CVP) was completed in 1965 and has received attention from the Secretary of Interior, Bureau of Reclamation, Native American tribes, and a broad spectrum of stakeholders. On December 29, 2000 the Secretary of the Interior signed the Trinity River Record of Decision (ROD) to require higher releases to the Trinity River from Lewiston Dam. The Westlands Water District and others filed suit to have the Trinity ROD set aside through an injunction. There have been multiple rulings from the Federal Court since that time. As of May 10, 2005 the Bureau of Reclamation initiated full flows to the Trinity River under the 2000 ROD (*CBDA 2003*).

In many coastal watersheds throughout the region, significant, localized water withdrawals via riparian right have impacted listed salmonids region-wide, and affected water supply security for rural water users, communities, and small municipalities. These watersheds are approaching a population threshold where population is high enough to create water supply problems and fisheries impacts, but too small to create community-scale water systems.

Balancing these water demands while maintaining existing and improving degraded salmonid habitat is an important management challenge for the North Coast Region. By bringing all parties together in a cooperative and collaborative enterprise for the benefit of the entire region, the NCIRWMP is the first step in developing and implementing creative, efficient, equitable responses to these challenges.

#### **4.1.3 WATER QUALITY ISSUES**

Regional water quality problems include contamination of surface and groundwater due to:

- Nonpoint source pollution from storm water runoff, animal feeding operations, and other land management activities
- Erosion and sedimentation originating from roads, agriculture, timber harvest, riparian channel modification, and gravel mining;
- Chemical pollutants such as MTBE, PCE, and dioxins originating from industrial facilities.
- Point source pollution violations by Publicly Owned Treatment Works (POTWs) and other violations

These issues are compounded by a lack of adequate funding to design and implement a regional water quality monitoring plan and to conduct comprehensive sub-regional watershed assessments that build upon already existing research by local watershed groups, state agencies, and the currently un-funded North Coast Watershed Assessment Program. Other issues include: a) a lack of funding to implement projects that would improve treatment facility capacity, b) the need to build facilities where none presently exist, and c) the need to upgrade treatment to higher levels and reduce permit violations at POTWs.

Regional activities focus on continuing to regulate point source discharges, reducing erosion from confined agricultural and municipal areas, maintaining groundwater cleanup programs, improving

public outreach and education, and promoting water reuse and recycling programs. Nonpoint source water quality issues are a primary concern and are being addressed through the Total Maximum Daily Load (TMDL) process, which is developed and implemented at a watershed scale, the NCRWQCB Water Quality Control Plan for the North Coast Region, and the SWRCB Nonpoint Source Program Strategy and Implementation Plan (*Appendix B, Existing Water And Watershed Management Plans & Programs*). A majority of the North Coast Region's watersheds are impaired by sedimentation that exceeds the existing water quality objectives established to protect beneficial uses. These sediment-impaired beneficial uses include coldwater fisheries, municipal and domestic water supply, navigation, and water-contact and non-water-contact recreation. Both historic and modern land use practices have contributed to, and are currently causing, elevated discharges of sediment to waters in the North Coast Region. The NCRWQCB and the SWRCB have indicated a preference for voluntary compliance with regulations and TMDL implementation, and many groups and programs - such as the Fish Friendly Farming Program and the Rangeland Water Quality Management Plan - offer landowners the technical assistance to follow this path. Several projects in the NCIRWMP include cooperative participation by area landowners in nonpoint source pollution control (*see Section 7*).

Sedimentation is a naturally occurring process, and, when it occurs in naturally generated quantities, it is an important component in the aquatic environment. Sediment levels are naturally elevated during times of high rainfall and runoff and aquatic organisms possess life history strategies that have adjusted to the natural timing, duration, and levels of sediment. However, land use activities in the North Coast Region have accelerated erosional processes and altered the timing, duration, and amount of sediment delivery to levels significantly outside the natural range.

Excess sediment has led to infilling of streams, which adversely impacts drinking water supplies, and causes degradation of salmonid habitats. Accelerated rates of erosion from land use practices are impacting the migration, spawning, reproduction, and early development of these coldwater anadromous fish.

Additional problems associated with excess sediment include:

- Decrease in the complexity of aquatic plant communities by decreasing light penetration
- Reduction in oxygen flow to and waste removal from salmon redds, or nests
- Decrease in the ability of juvenile fish to avoid predation
- Irritation of salmonid and other fish gills and destruction of the protective mucous that covers eyes and scales making fish more susceptible to infection and disease
- Unnatural aggradation of stream beds which contributes to creating barriers to migration of fish, and causes increased flooding
- Decrease in the availability of refugia – isolated habitats that retain environmental conditions that were once widespread
- Physical scouring of plants, insects, and other invertebrates from the streambed, thereby reducing food sources for fish
- Transportation of sediment-adsorbed chemicals, such as pesticides, from land to the water
- Interference with disinfection of drinking water
- Interference with the delivery of water supplies by added wear on water pumps

On November 29, 2004, the Regional Water Board adopted Resolution number R1-2004-0087, the Total Maximum Daily Load (TMDL) Implementation Policy for Sediment-Impaired Receiving Waters in the North Coast Region, which is applicable to all sediment-impaired watersheds in the Region

(NCRWQCB 2004). The goals of the TMDL Implementation Policy are to control sediment waste discharges so that TMDLs are met, sediment water quality objectives are attained, and beneficial uses are no longer adversely affected by sediment. This Resolution has re-focused NCRWQCB efforts to rely on the comprehensive regulatory tools provided by the Porter-Cologne Water Quality Control Act and the federal Clean Water Act to address anthropogenic sediment waste discharges. The resolution also directed the NCRWQCB Executive Officer to develop a work plan describing how and when actions will be taken to address sediment waste discharges. As the Regional Water Management Group, the NCRWQCB will assist the state with information dissemination and plan implementation and will integrate state findings, recommendations, and plans into future iterations of the NCRWMP, allowing the SWRCB and NCRWQCB to focus resources on better assessing regional groundwater, surface water, and environmental conditions.

#### **4.1.4 PROTECTION OF DRINKING WATER IN DISADVANTAGED COMMUNITIES**

The current trend for a number of rural disadvantaged communities is an increase in the retired population with its associated needs for health care services and infrastructure. Failing community treatment facilities in low income disadvantaged communities pose a threat to public health and impair water bodies with point source pollution. A number of Publicly Owned Treatment Works in the region are chronically in violation of permit compliance and currently under enforcement orders. The number of violations by small treatment facilities in disadvantaged communities in the North Coast is disproportionate to the state average. Throughout the North Coast, there is great need to replace or upgrade failing, aging systems with current technology and reliable systems.

The Small Community Wastewater Grant (SCWG) Program, funded by Proposition 40 and Proposition 50, provides grant assistance for the construction of publicly owned wastewater treatment and collection facilities for small communities with financial hardships. A challenge faced by many of the small treatment facilities in receiving these competitive grant funds include lack of funding to hire engineers or consultants needed to complete the preliminary studies required to qualify for the grant and loan programs. The NCRWQCB, as a coalition of regional jurisdictions, may have greater ability to obtain funding for such preliminary studies throughout the region, thus empowering the region's smaller communities and obtaining important information for local-, watershed-, and regional-scale planning.

#### **4.2 WATER MANAGEMENT ISSUES AT THE WATERSHED LEVEL**

Water management issues at the watershed level include water supply for agricultural, municipal, rural residential, environmental, industrial, and other beneficial uses. Groundwater withdrawal can impact groundwater levels and streamflow. Surface water diversions for irrigation or other uses can also reduce streamflow in a manner that alters the natural hydrologic regime and processes. These changes can impact water quality by reducing the dilution of pollutants or reducing movement of fine sediment through the system. In response to these impacts, there is increasing attention focused on utilization of tertiary treatment water from Publicly Owned Treatment Works (POTWs) for agricultural purposes (see Section 3 and Section 7, Appendix B, Existing Water And Watershed Management Plans & Programs). Such water recycling would alleviate pressures on groundwater and surface water supplies.

At the watershed level, the following urban water management issues are important: water supply to serve domestic and industrial needs, wastewater collection and distribution, stormwater management, infiltration management, industrial return flows, and the role of recycled or reclaimed water. Throughout the region, failing water treatment systems require immediate upgrades or replacement in order to meet current water quality regulations and provide clean, safe water for residents for drinking and recreation. In rural areas, domestic well water quality, agricultural withdrawals, and individual septic tank leakage are pressing issues. Enforcement of regulations involving domestic well water supplies and septic tank waste varies depending on resources available to public agencies and associated enforcement priorities.

It is important to coordinate activities to maximize prevention or reduction of many potential impacts to water quality at the watershed scale. Sediment loads derived from agriculture, forestry, road management, and construction may significantly influence downstream water quality. Agriculture and forestry generate nonpoint source sediment and, in some cases, chemical loads, while stormwater contributes to episodic point and nonpoint source loads. Animal waste, agricultural runoff, recycled water, and septic systems contribute nutrient loads and return flow from industrial use of water also impacts receiving water quality. The NCIRWMP is the region's first step toward effectively implementing water quality improvement projects to provide benefits at multiple scales. Future iterations of the Plan will provide greater coordination of planning and implementation efforts, additional data, and improved local stakeholder outreach.

Groundwater quality management issues stem from current and past pollution of groundwater sources that include leaking underground storage tanks, industrial pollution, pesticide application, leaking wastewater treatment facilities (individual and public) and artificial injection. These issues generally develop over time; often detection occurs only after the pollution has been occurring for a long period of time.

Beneficial uses to be protected through water quality and quantity management include recreation, fisheries, aesthetics, riparian and wetland habitats, and endangered species preservation. Fishery resources are typically most significantly at risk when considering the effects of water quantity withdrawals on decreased water quality and streamflow. Awareness of the impacts of water quantity management on water quality issues has been increasing and will continue to be considered in planning and implementation of management at the watershed scale.

Within the Watershed Management Initiative developed by the North Coast Regional Water Quality Control Board, specific issues are identified and discussed for each of the six watershed management areas (WMAs). Issues associated with these WMAs vary considerably in response to the level of urbanization and activities conducted.

The Russian River/Bodega Bay WMA is the most highly urbanized of the six WMAs in the region. Key issues include impacts to salmonid fisheries through sedimentation, riparian habitat degradation, fish passage barriers and stream modification; water supply for domestic, municipal and agricultural uses; point source discharges to both surface and groundwater from municipal and industrial sources; and nonpoint source pollution from failing septic systems, as well as urban and agricultural run-off.

Issues in the Klamath WMA primarily focus on maintaining both coldwater and warm water fisheries while maintaining the viability of agricultural and timber uses of the watershed. Addressing the issues in this watershed is complicated by the fact that approximately half of this WMA is located upstream within the state of Oregon. Entities involved in the issues of the Klamath include five federal agencies, two states, eleven counties and seven Native American Tribes.

Groundwater extraction is currently not regulated and is emerging as a potential water management issue in the Klamath basin. A large number of high output wells are being developed in the Klamath River basin. An estimated 60,000 acre-feet was extracted from the Klamath River groundwater basin in 2001, up from 6,000 acre-feet in 1997 (DWR 2003).

Other issues in the watershed include the dependence of the Klamath Basin Wildlife Refuges on irrigation for the health of the ecosystems and the occurrence of two endangered species of sucker fish in the Klamath Lake that require the maintenance of a minimum lake level. The issues in this WMA came to a head in 2001 (a drought year) when the Bureau of Reclamation severely restricted flows, which negatively impacted farmers and the Klamath Basin Wildlife Refuges, and again in 2002 when approximately 33,000 adult salmon died in the lower part of the Klamath due to poor water quality and reduced water flows (*DWR 2005*).

The North Coast River WMA includes multiple coastal rivers and watersheds. Primary issues in this area include implementation of timber harvest forest management plans to control sedimentation and temperature, as well as the development of TMDL waste reduction strategies for sedimentation.

Following are issues of concern for individual watersheds that fall within this WMA:

- The Mattole River watershed is noted for being prone to excessive landsliding due to slope instability, high levels of rainfall, timber harvesting and timber-related roads.
- The harbor at Fort Bragg must be frequently dredged due to large deposits of sediment from the Noyo River.
- The Garcia River is the first river on the North Coast to have a TMDL "Action Plan" that has been adopted into the NCRWQCB Basin Plan. This adoption was highly controversial and costly because of restrictions on timber harvest and forest road building.

Within the Humboldt Bay WMA, the Eureka Waterfront was historically the site of numerous industrial facilities including lumber mills, bulk oil storage and handling facilities, wrecking yards, and railroad yards. These operations produced both soil and groundwater contamination with heavy metals, petroleum products, and pentachlorophenols (PCPs). The Waterfront is currently undergoing cleanup and redevelopment. The City of Eureka is coordinating the redevelopment with several responsible parties including Union Pacific Railroad, Simpson Timber Company, Chevron, Unical, and Tosco oil companies, and a few others. The City is also cleaning up two brownfield sites on the Waterfront.

In addition, Humboldt Bay supports a significant commercial oyster industry and is a popular area for recreational shell fishing. Contaminated stormwater runoff during high intensity rainfall is a continued threat to commercial and recreational uses of the bay. Considerable monitoring is required from the commercial shellfish industry under a conditional harvest regulation to ensure a safe product.

The primary issues associated with water quality in the Eel River WMA include water diversion, timber practices, protection of drinking water supply, recreation, and the salmonid fishery. Impacts to the salmonid fishery include erosion, sediment transport, high water temperatures and reduced flow. An

issue of growing concern is the number of small illegal water diversions via small dams and ponds. Another issue of concern is the increasing number of small communities experiencing chronic water quality problems related to failing infrastructure.

In addition to the diversion of Trinity River waters to the Central Valley Project, issues of concern in the Trinity River WMA include water temperature, sedimentation and land use practices. Historic and current logging and road building activities have contributed to sedimentation and degradation of the watershed. Historic mining practices have contributed pollution at a number of sites within the basin and to mercury releases into the Trinity Lake. Contamination from failing septic tanks and leaking underground storage tanks are also of growing concern.

With its emphasis on integration of water management within both watershed and municipal/jurisdictional boundaries, the NCIRWMP offers an approach for addressing some of the severe, ongoing water management challenges facing the North Coast Region.

#### **4.3 IMPLEMENTATION AT THE COUNTY LEVEL TO ADDRESS WATER MANAGEMENT ISSUES**

County-level policies provide a local framework for the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) process, and control zoning, open space and parks, gravel and rock quarry management, and flood control. On an implementation basis, counties control road and bridge management, storm water and flood control, small dam management, transportation, and fire control. However, a lack of codified stormwater management policies in smaller incorporated cities has resulted in inconsistent application of BMPs and measures for stormwater control. Also, maintenance of implemented stormwater management measures is not consistently monitored in these smaller municipalities. Therefore, there can be wide variation in more rural areas of the region in the extent to which stormwater management for water quality and water quantity (i.e., excess runoff) are addressed. There are, however, several cooperative multi-stakeholder groups that include local jurisdictions and address water management issues. For example, the 5C Program has cooperatively drafted a road grading maintenance manual that has been used by most of the five counties (Del Norte, Humboldt, Mendocino, Siskiyou and Trinity) cooperating in the Program (*see Appendix B, Existing Water And Watershed Management Plans & Programs*).

The NCRWMP will serve as a mechanism through which relevant technical guidance documents can be disseminated, so that scarce resources are not wasted in duplicating existing work. Where conditions differ, modifications to existing documents can be added in order to address differences in geology, land use, or other biological or physical features. The NCIRWMP, as an adaptive planning document, is intended to enable counties and other jurisdictions to make wise sub-basin level planning decisions based on collective experience, knowledge, and shared information. If Humboldt County receives the SWRCB Water Management Planning Grant that it applied for on behalf of the NCRWMP, a proactive, watershed-based, county-level planning framework will be developed, shared with, and considered for implementation by, all member counties and other interested jurisdictions. This planning process will seek to address the water management issues described above in a logical, equitable, and methodical way.

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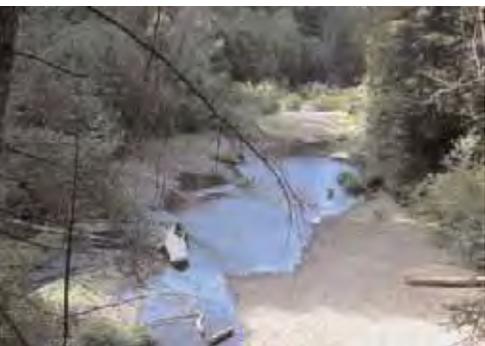
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## NEED FOR NORTH COAST INTEGRATED PLANNING

### SECTION 5.0



## **SECTION 5.0 NEED FOR NORTH COAST INTEGRATED PLANNING**

The North Coast is in need of a cohesive and collaborative framework for addressing those issues outlined in Section 4 and attaining local, regional and statewide objectives related to integrated water management.

The NCIRWMP planning process synchronizes the planning processes of local land use authorities, tribes, service providers, community groups, landowners and state and federal agencies. This process and the NCIRWMP demonstrate that a large multi-county region can plan and act in concert on water management issues through a locally based, regionally integrated community and watershed based planning process.

The process institutionalizes the regional water management planning framework envisioned by the legislature and provides a basis for mutual cooperation and implementation among the counties in the North Coast Region. NCIRWMP project implementation protects beneficial uses of water and improves salmon habitat, while at the same time reducing conflicts over water quantity and quality. It also promotes sustainable land use activities and patterns that will benefit the environment and economy of the Region.

The process demonstrates a basin level approach to integrated regional water management planning and implementation. At the basin level, the Plan demonstrates the effectiveness of a policy and decision making body comprised of elected officials from the region supported by technical staff and consultants and guided by an integrated regional water management plan. At a watershed level, the project demonstrates the involvement and cooperation of state agencies and boards, tribes, counties, cities, watershed groups, landowner groups, service providers and the general public within the region.





## DEVELOPMENT PROCESS

### SECTION 6.0





## **SECTION 6.0 DEVELOPMENT PROCESS FOR THE NCIRWMP**

Phase I of the North Coast Integrated Regional Water Management Plan represents the combined effort of many individuals and groups within the North Coast Region. Oversight for plan development and project selection has been provided by the North Coast Regional Water Management Group (represented by the NCIRWMP Policy Review Panel), while project identification and plan review have been provided by the Region's stakeholders, with project and plan technical review performed by the NCIRWMP Technical Peer Review Committee. All phases of plan development and project selection have been completely transparent to the public, and public involvement has been actively solicited and encouraged.

### **6.1 NORTH COAST REGIONAL WATER MANAGEMENT GROUP DESCRIPTION**

Phase I of the North Coast Integrated Regional Water Management Plan was developed under the oversight of the North Coast Regional Water Management Group. The North Coast Regional Water Management Group (NCRWVG) is a consortium of counties working together on water management planning and project prioritization and implementation for the North Coast region. The NCRWVG has authorized Humboldt County to act on their behalf as the regional applicant for the NCIRWMP implementation grant and Phase II planning grant. Currently the member counties of the NCRWVG are responsible for implementation of the NCIRWMP, with individual project proponents responsible for project implementation. The NCRWVG will be discussing the formation of a Joint Powers Agreement or similar institutional structure at their next meeting. More information about the authorizing resolutions for the existing institutional structure is contained in Appendix I, Authorizing Documentation and Eligible Applicant Documentation.

The Regional Water Management Group consists of the following entities, each with a unique local relationship to water management:

#### **Del Norte County**

Del Norte County does not directly manage water, however Del Norte County has a number of areas throughout the unincorporated area that rely on Districts to provide potable water and water for fire suppression. The City of Crescent City manages a municipal water system that provides potable water and fire suppression to the incorporated area as well as to unincorporated areas of the County that are in the proximity of the City limits and the transmission line serving the City system

#### **Siskiyou County**

The County Board of Supervisors is also the County's Flood Control District Board. A Groundwater Ordinance is in effect.

### **Trinity County**

The County of Trinity has authority over water quality and floodplain management per its General Plan and various ordinances. Through its membership in the Trinity Management Council, as determined by the Trinity River Record of Decision, Trinity County also has one vote out of 8 in determining annual flow releases into the Trinity River from Lewiston Dam. Trinity County is also the lead agency for implementation of the Five Counties Salmonid Conservation Program per mutual agreement among the counties of Siskiyou, Trinity, Humboldt, Del Norte and Mendocino.

### **Humboldt County**

Local MOU signed by all service districts and cities in the county engages all service districts and cities in collaborative water management. Land Use policies and ordinances also provide statutory control in areas not preempted by State and Federal authority.

### **Mendocino County**

The Mendocino County Water Agency's (MCWA) statutory authority is derived from the enabling legislation - the "Mendocino County Water Agency Act" - that created the MCWA. Pursuant to the Mendocino County Water Agency Act, the MCWA has the authority to provide for the control and disposition of storm and flood waters, make water available for any beneficial use, and secure title to real property, water rights and water distribution facilities.

### **Sonoma County**

County of Sonoma has statutory authority over water supply, water quality, flood control and storm water management as per the County's general plan and ordinances.

In addition to the above-listed counties, the Mendocino County Water Agency and Sonoma County Water Agency each have statutory authority over water in their own right.

Each of the counties listed are fully or partially included in a community designated as disadvantaged.

## **6.2 NCIRWMP COLLABORATIVE PARTNERSHIP**

The collaborative partnership that developed the Phase I NCIRWMP consists of the NCIRWMP Policy Review Panel, the NCIRWMP Technical Peer Review Committee, project staff and consultants, and the stakeholders within the North Coast Region. Each of these entities and their roles in plan development is described below.

### **6.2.1 POLICY REVIEW PANEL**

Each County's Board of Supervisors has assigned two representatives to a NCIRWMP Policy Review Panel – this group of fourteen board members, elected officials and staff members provide direction

and ultimate oversight to the NCIRWMP planning process, and with input from the Technical Peer Review Committee, make decisions about priority projects to be included in the NCIRWMP.

### **6.2.2 TECHNICAL PEER REVIEW COMMITTEE**

Each County's Board of Supervisors has appointed two individuals with a technical background related to integrated water management to the NCIRWMP Technical Peer Review Committee (TPRC). Members have experience in the following technical areas: engineering, watershed management, fisheries, restoration, water and wastewater infrastructure, environmental planning and natural resources policy issues.

The TPRC has two primary areas of responsibility: 1) review of the Phase I NCIRWMP from a technical perspective, and 2) review and recommended prioritization of identified projects, based on technical considerations and the criteria established by the State and the Policy Review Panel.

The TPRC assisted staff and consultants in the development of equitable review process criteria based on state IRWM requirements, and provided input into the development of a uniform scoring sheet for project ranking. The score sheet used to rank projects is shown in Appendix J, NCIRWMP Score Sheet.

The TPRC reviewed and ranked all projects independently using the score sheet, then met to discuss those projects that ranked the highest. TPRC members who had any interest (financial or otherwise) in a project did not rank that project, and recused themselves and left the room during discussion of that project. All review was conducted in compliance with the regulations of the Fair Political Practices Commission, Title 2, Division 6, section 18700.

### **6.2.3 PROJECT STAFF AND CONSULTANTS**

Consultants responsible for the development of the Phase I NCIRWMP included Circuit Rider Productions, Inc. (plan management, public outreach, technical writing, GIS and Mapping, website content), Forest, Soil and Water (technical writing), MIG (website development), Dina Moore (technical writing), and Pamela Swan Associates (socio-economic analysis).

Staff members from each of the counties have provided input throughout the planning process.

### **6.2.4 PARTNER ORGANIZATION AND ROLES**

In addition to the formal relationship of the NCIRWMP Regional Water Management Group, over seventy agencies, special districts, tribal organizations, non-governmental organizations, watershed groups and other stakeholders have signed a Memorandum of Mutual Understanding (MOMU) (*see Acknowledgements Section and Appendix C, Memorandum of Mutual Understandings*) signifying their support for and participation in the NCIRWM planning process.

Interviews were conducted with members of the Policy Review Panel, TPRC and selected natural resources and water management experts. These interviews provided information that was used in the development of the Phase I NCIRWMP, and are summarized in Appendix K, NCIRWMP Interview Responses.

### **6.3 STAKEHOLDER INVOLVEMENT**

The NCIRWMP Phase I was developed with input from a diverse group of stakeholders, including counties, cities, watershed and environmental groups, landowner groups, tribes, natural resources agencies, and interested citizens. Hundreds of individuals and groups have provided input and direction to the plan. Four main mechanisms were used to solicit input into the development of the NCIRWMP, Phase I including 1) the NCIRWMP website, 2) a series of public workshops held throughout the North Coast Region, 3) one-on-one technical assistance to project proponents, and 4) direct phone, e-mail and in person communication with interested agencies and citizens.

We have held over ten workshops in the North Coast Region to inform the community of the IRWM program, including statewide goals and objectives, regional planning framework and opportunities for funding. Additional stakeholder involvement has been accomplished via the NCIRWMP website – a means for people in a diverse and large geographic region to stay connected and informed, provide input and upload proposed projects. Finally, the NCIRWMP planning team has engaged in numerous phone calls, one-on-one meetings and presentations to inform people about the process and take input. All drafts, meetings, and processes related to the plan are public, and a targeted outreach program augments the availability of data via the website. All stakeholders and public are encouraged to propose projects and submit them for review.

The above process has been very successful in informing and engaging stakeholders in the Region, and we expect to continue and expand it in Phase II, per our Work Plan. The County representatives on the Policy Review Panel are elected officials (or appointments thereof) and have an inherent framework in place for taking public input.

Disadvantaged communities within the Region are described in the following section of this application, and have been involved in all aspects of the planning effort from its inception. Representatives of disadvantaged communities are the primary leaders designated by the North Coast Regional Water Management Group.

Environmental Justice needs have not been identified nor evaluated in Phase I of the NCIRWMP, except at a conceptual level. This planning component will be evaluated and developed further for Phase II.

One of the major possible obstacles to ongoing NCIRWMP planning and implementation is money – the North Coast has the commitment, investment and collaborative framework, but does not have a strong financial base. Because of the disadvantaged nature of the North Coast Region, without an influx of financing for additional planning and project implementation, many stakeholders may not be able to continue to participate.

### **6.3.1 NCIRWMP WEBSITE**

The NCIRWMP website ([www.northcoastIRWMP.net](http://www.northcoastIRWMP.net)) provides a mechanism to reach a wide audience across a large geographic region. The website – with an automatic e-mail update feature – is used to convey current information about the state IRWM process, local planning efforts, and events and deadlines associated with the North Coast IRWMP process. The website also contains a library of information relevant to water issues in the North Coast, as well as an on-line mapping feature that allows users to view various watershed, natural resources, socio-economic and jurisdictional data as well as proposed project locations.

In addition to information sharing, the website was used for project upload during Phase I, via an on-line template that prompted users for the key information listed in the state IRWM guidelines and other program documents.

### **6.3.2 WORKSHOPS**

Workshops were held throughout the North Coast region to convey IRWM information to stakeholders, answer questions and assist with project identification and upload.

### **6.3.3 TECHNICAL ASSISTANCE TO PROJECT PROPONENTS**

Project staff and consultants allocated significant time to provide project proponents with assistance in project development and descriptions. Any project proponent who requested assistance received help. Topics for assistance included eligibility requirements, technical issues, Program Preferences, budgetary information, and permitting issues.

## **6.4 METHODOLOGIES USED IN THE DEVELOPMENT OF THE NCIRWMP**

Multiple methods were used to develop the NCIRWMP – ranging from the collection, review and synthesis of existing spatial and non-spatial data, to the analysis of these data in support of plan development.

A GIS database was developed for the North Coast region using ESRI ArcGIS 9.0. Available spatial data were integrated into the database and key data were evaluated, including socio-economic information, and the interaction of planning/regulatory efforts with physical and ecological features. Results from these analyses are shown in the maps, tables and appendices associated with this document, as well as in the library on the website and the MapServer internet mapping application on the website.

## **6.5 FUTURE STRUCTURES AND PROCESSES: PLAN IMPLEMENTATION, ADAPTIVE MANAGEMENT AND PLANNING, STAKEHOLDER INVOLVEMENT**

Phase II of the NCIRWMP will create a formal institutional structure for plan implementation as a refinement of the current institutional structure outlined above and in attachment 4. THE NCRWMP

expects to maintain and enhance the NCIRWMP collaborative framework for ongoing input and oversight from the NCIRWMP Policy Review Panel, technical evaluation by the Technical Peer Review Committee, and input from stakeholders in the North Coast Region to support the ongoing development and refinement of the North Coast Integrated Regional Water Management Plan. This refinement is expected to include a) evaluation and updating of planning objectives, b) evaluation and updating of water management strategies and the integration thereof, c) evaluation and updating of data management and monitoring approaches, d) evaluation and updating of the water quality/water supply needs of the North Coast communities, and e) identification and prioritization of integrated projects that have multiple benefits and that respond to community needs and statewide priorities.

Additional structures and processes that will be refined and expanded during Phase II include the following:

- Continue to convene the NCIRWMP Policy Review Panel and Technical Peer Review Committee on a monthly or bi-monthly basis for NCIRWMP Phase II plan review, issues and data analysis, project review and prioritization and enhancements to the planning process. These meetings will be noticed and open to the public.
- Hold quarterly stakeholder meetings/workshops in each county to educate stakeholders regarding IRWM statewide and regional objectives, to obtain input from partners and interested public regarding NCIRWMP Phase II revisions/enhancements, issues and project priorities
- Provide regular updates and solicit input via the website and e-mail to all interested parties regarding NCIRWMP Phase II issues, data, revisions/enhancements and project priorities
- Define NCIRWMP planning sub-areas with the specific goal of enhancing understanding and collaboration among watershed groups and water and wastewater service providers at the local level.
- Hold up to three meetings in each sub-area to engage the community in locally led planning and to educate them about the role of the NCIRWMP and statewide priorities in local planning and project implementation.

Phase II NCIRWMP will continue to develop an adaptive management framework for North Coast Integrated Regional Water Management Planning, including detailed information about a process and tools for ongoing incorporation of statewide and local data at a variety of spatial and temporal scales, and an opportunity to continually refine NCIRWMP content, objectives and strategies. The following is expected to be accomplished during Phase II:

- Develop and document a process for ongoing integration of local/regional/state/federal priorities, data, projects and regulatory requirements.
- Incorporate data derived from the data management plan.
- Develop and disseminate a template or templates for an adaptive management approach to integrated regional water management planning that can be utilized by all stakeholders.

Phase II NCIRWMP will conduct outreach to identify refined NCIRWMP water management strategies and implementation alternatives within communities and WMAs.

This project will apply an outreach model at the community and watershed level using a wide variety of approaches and media including:

- The existing NCIRWMP website with local features and data relevant to the community/WMA
- technical and policy alternative reports
- summit meetings between elected representatives of cities and tribes
- staff level meetings
- town hall public meetings
- stakeholders meetings by subject area
- outreach to organization to facilitate participation
- local, state and federal agency caucuses
- NCIRWMP Policy and Technical Committee review

Meetings within community/WMA will be facilitated to allow the participants to actively engage in the planning process. Written materials will be designed and professionally edited for effective communication. Geographic information systems will be used to convey spatial information. The entire process will be structured to provide a framework for education, negotiation and decision-making on the issues, including those that are controversial and contentious.

The input received on the technical reports and presentations will be analyzed and the results reflected in discussion drafts of Water Resource Elements, and in the North Coast Integrated Regional Water Management Plan, Phase II.

Finally, a NCIRWMP Phase II Financing Plan will be developed that outlines a strategy for long-term funding of the NCIRWMP – both for ongoing adaptive management planning and for the implementation of projects. The financing plan will include a 20 year planning horizon and identify diverse funding sources, including state, federal and fee-for-service opportunities. The NCIRWMP Financing Plan will include the following:

- A list of potential financing options and structures
- A review process to evaluate financing list with NCIRWMP Policy Review Panel, Technical Peer Review Committee, elected officials decision-makers, and relevant stakeholders
- A report summarizing input about the financing list for inclusion in the Financing Plan
- Evaluation of the report by economic experts from throughout the region, state and country
- Summary of input from economic experts, resulting in the development of the Financing Plan





## PROPOSED PROJECTS AND PROJECT PRIORITIES

### SECTION 7.0





## **SECTION 7.0**

### **NCIRWMP PROPOSED PROJECTS AND PROJECT PRIORITIES**

The North Coast Integrated Regional Water Management Planning Process has identified numerous projects from throughout the North Coast Region that address state, regional and local objectives and priorities for water management. Project proponents are provided with information about IRWM guidelines and funding opportunities via the NCIRWMP website, workshops and other media.

During Phase I, 127 projects were identified and uploaded to the website, with proposals totaling a combined funding need of over \$317,000,000. Projects were assigned a numeric score using a score sheet that relied upon state IRWM grant program criteria and individually reviewed by the Technical Peer Review Committee (TPRC) (*see Appendix J, NCIRWMP Score Sheet*). The TPRC then met and evaluated the top scoring projects and forwarded their recommendations to the Policy Review Panel (PRP). The PRP then met and adopted a slate of high priority projects. These priority projects consist predominantly of the high scoring projects recommended by the TPRC, with some additional projects selected to allow for regional equity, to address integrated coastal watershed management priorities, and extremely serious public health problems (*see Map 16, Priority Project Locations*). All eligible projects are included in the NCIRWMP – those that were not ranked as the highest priority for Phase I are listed in Appendix L, NCIRWMP Project List and Scores.

#### **7.1 PROJECT SUMMARIES**

On the following pages, the prioritized NCIRWMP projects are presented **in the proponents' words**. Projects and their benefits are summarized and responsible entities are identified. These projects represent the specific actions, projects, and studies by which the first phase of the NCIRWMP will be implemented. Monitoring measures are identified and will be used to provide feedback to the NCRWMP, which will continue to modify the NCIRWMP and project implementation and prioritization as new information and technology becomes available. Cost estimate information for each of the selected projects can be found in Appendix M, NCIRWMP Project Budgets. Project timelines can be found in Appendix N, NCIRWMP Project Schedule.

The priority list of projects is shown in Table 8, with more detailed descriptions following the summary table. All submitted projects and scores are listed in Appendix L, NCIRWMP Project List and Scores.

**Table 8. NCIRWMP Priority Project List**

| Project ID # | Organization Name   | Project Name   | County Location    | Project City Location                   | Average Score | Request      | Revised     |
|--------------|---|--|--------------------|---|---------------|--------------|-------------|
| 7            | Mattole Restoration Council                                 | Mattole Integrated Water Management Program                    | HUMBOLDT MENDOCINO | Petrolia Whitethorn Ettersburg Honeydew | 75            | \$2,897,690  | \$1,543,743 |
| 236-S1       | Shasta Valley Resource Conservation District                | Shasta Water Association Dam Restoration                       | SISKIYOU           | Lake Shastina Forks of the Salmon       | 73            | \$10,902,844 | \$1,926,350 |
| 236-S2       | Shasta Valley Resource Conservation District                | Araujo Dam Restoration   | SISKIYOU           | Yreka Lake Shastina Forks of the Salmon | 73            | \$2,675,757  | \$878,275   |
| 236-S3       | Siskiyou RCD/Scott River Watershed Council                  | Scott River Water Trust Phase III                              | SISKIYOU           | Lake Shastina Etna                      | 73            | \$470,811    | \$160,000   |
| 236-S5       | City of Etna  | City of Etna Water Supply                                      | SISKIYOU           | Etna                                    | 73            | \$382,105    | \$318,105   |
| 78           | Sonoma County   | Monte Rio Community Wastewater Project                         | SONOMA             | Monte Rio                               | 69            | \$9,487,000  | \$3,461,727 |
| 86           | Orick Community Services District                           | Orick Community Services District Wastewater Treatment System  | HUMBOLDT           | Orick                                   | 69            | \$4,156,225  | \$2,628,441 |
| ICWMP - D    | Mattole Restoration Council                                 | Mattole Integrated Coastal Watershed Management Program        | HUMBOLDT           | Petrolia Whitethorn Ettersburg Honeydew | 68            | \$1,235,206  | \$1,235,206 |
| 22           | Pacific Coast Fish, Wildlife and Wetlands Restoration Assoc | Redwood Creek Erosion Control                                  | HUMBOLDT           | Orick                                   | 67            | \$1,325,000  | \$537,971   |
| 164          | California Land Stewardship Institute                       | Fish Friendly Farming Environmental Certification Program      | MENDOCINO SONOMA   | Yorkville Ukiah                         | 64            | \$3,000,000  | \$210,510   |
| 51           | Humboldt County Resource Conservation District              | Mid Van Duzen River Ranch Road Sediment Reduction Program      | HUMBOLDT           | Bridgeville Kneeland                    | 64            | \$810,000    | \$336,817   |
| 121          | Humboldt County RCD   | Salt River Restoration Project                                 | HUMBOLDT           | Ferndale                                | 64            | \$5,950,000  | \$1,169,502 |
| 23           | Graton Community Service District                           | Graton Wastewater Treatment Upgrade and Reclamation Project    | SONOMA             | Graton                                  | 64            | \$1,332,400  | \$654,921   |
| 128          | City of Santa Rosa  | Sonoma County Water Recycling and Habitat Preservation Project | SONOMA             | Santa Rosa Alexander Valley area        | 64            | \$50,000,000 | \$1,004,603 |

North Coast Integrated Regional Water Management Plan, Phase I

| Project ID # | Organization Name                                      | Project Name   | County Location     | Project City Location                   | Average Score | Request       | Revised      |
|--------------|--|--|---------------------|---|---------------|---------------|--------------|
| 217          | Modoc County   | Newell Water System Renovation                                 | MODOC               | Newell                                  | 64            | \$1,815,127   | \$1,496,963  |
| 38           | California State Parks - North Coast Redwoods District | Head Hunter/Smoke House Non-point Sediment Reduction Project   | DEL NORTE           | Crescent City                           | 64            | \$871,318     | \$280,680    |
| 151          | Trinity County   | Trinity Drinking Water Source Sediment Reduction Project       | TRINITY             | Weaverville<br>Douglas City<br>Lewiston | 62            | \$300,015     | \$280,695    |
| 108          | City of Eureka   | Martin Slough Interceptor Project                              | HUMBOLDT            | Eureka                                  | 62            | \$5,598,500   | \$2,572,905  |
| 125          | Mendocino County RCD                                   | Navarro Watershed Road Sediment Reduction Project              | MENDOCINO           | Boonville<br>Philo                      | 61            | \$1,415,427   | \$673,633    |
| 26           | Gualala River Watershed Council                        | Sediment Solutions for the Gualala: Phase III                  | MENDOCINO<br>SONOMA | Gualala                                 | 60            | \$1,132,445   | \$159,052    |
| 207          | Gualala River Watershed Council                        | Lower Fuller Creek Sediment Source Implementation Plan         | SONOMA<br>MENDOCINO | Gualala                                 | 60            | \$171,429     | \$0          |
| ICWMP - B    | Mendocino County RCD                                   | Forsythe Creek Sediment Control Project                        | MENDOCINO           | Calpella                                | 58            | \$2,523,651   | \$2,523,651  |
| 39           | Trinity County Waterworks District #1                  | Raw & Recovered Water for Irrigating Public Agencies           | TRINITY             | Hayfork                                 | 57            | \$1,350,000   | \$912,219    |
| 74           | City of Willits  | Willits Wastewater Treatment/ Water Reclamation Project        | MENDOCINO           | Willits                                 | 57            | \$500,000     | \$0          |
| 81           | Weaverville Sanitary District                          | Weaverville Sanitary District Water Reclamation Project        | TRINITY             | Weaverville                             | 57            | \$225,500     | \$280,688    |
| ICWMP - A    | Gold Ridge RCD   | Salmon Creek Sediment Reduction and Water Conservation Program | SONOMA              | Bodega                                  | 56            | \$359,995     | \$359,995    |
| 89           | Covelo CSD (Community Services District)               | Covelo Wastewater Facilities Improvement Project               | MENDOCINO           | Covelo                                  | 55            | \$3,231,700   | \$1,065,591  |
| ICWMP - C    | Mendocino Land Trust                                   | Big River Main Haul Road Phase I Restoration                   | MENDOCINO           | Mendocino                               | 52            | \$1,876,028   | \$1,876,028  |
| 55           | City of Crescent City                                  | Crescent City Wastewater Treatment Plant Renovation            | DEL NORTE           | Crescent City                           | 52            | \$7,000,000   | \$935,602    |
| 153          | Westport County Water District                         | Water Supply Reliability Project                               | MENDOCINO           | Westport                                | 52            | \$553,500     | \$374,241    |
|              | County of Humboldt                                     | Regional Administration  |                     |   |               | \$1,250,000   | \$1,250,000  |
|              |  |  |                     |   |               | \$124,799,673 | \$30,994,880 |

**Project #7 Title: Mattole Integrated Water Management Program**

Entity Responsible for Implementation: Mattole Restoration Council

Contact Name: Chris Larson, Executive Director

**County:** Humboldt Mendocino

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$2,897,690

**NCIRWMP recommended: \$1,543,743**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice

**Project Summary:**

The Mattole Integrated Water Management Program integrates basin-wide efforts to meet water supply, water quality and salmonid habitat goals for the coastal Mattole River watershed. The Program will yield increased water supply in drought-prone areas (over 2,500,000 gallons/year of residential and agricultural water storage and 6 demonstration sites), augmented summertime streamflows in critical salmon-bearing reaches (up to 28.8 gallons/minute during low-flow period), sediment reduction to meet TMDL and NCRWQCB Basin Plan goals (over 158,000 cubic yards stabilized), and habitat improvements (invasive plant eradication, salmon habitat enhancement and riparian restoration at 47 sites). A suite of effectiveness monitoring components will determine project performance and future management measures. By implementing these projects through an existing and robust watershed partnership, integrated project components will address multiple management goals for habitat and water supply.

**Project Goals:**

Integrated projects will address water supply and water quality/habitat protection goals through basin-wide voluntary efforts: (1) Installation of 700,000 gallons of water storage to prevent summertime water diversion from critical habitats, (2) Construction of two 290,000 gallon agricultural ponds, (3) Creation of three groundwater recharge basins and one well to triple summertime streamflow in the upper basin, (4) Monitoring streamflow and water quality to evaluate effectiveness, (5) Sediment treatments and monitoring to stabilize/remove 158,000 cubic yards of sediment near fish-bearing watercourses across 18,000 acres, (6) Planting 110,000 tree seedlings to meet riparian reforestation goals in the Mattole Watershed Plan, (7) Implementing water conservation measures and educating residents through demonstration sites at six public schools, (8) Eradication of noxious weeds at four high-priority riparian sites, and (9) Installing twenty-five habitat enhancement structures.

### **Project Benefits:**

The watershed is recognized statewide as a priority for salmonid and water quality protection. Depleted summertime flows and non-point source pollution threaten recovery efforts. This integrated approach addresses water supply/conservation, water quality, and habitat goals. Water shortages, particularly affecting residential users in the upper basin, will be ameliorated through water storage, groundwater recharge and water-use efficiency upgrades. Associated agreements restricting summertime water diversion will benefit impacted aquatic habitats. Additional habitat benefits will be secured through riparian restoration, invasive species eradication, and installation of habitat enhancement structures. Effectiveness monitoring of streamflow conservation and habitat restoration efforts will guide future actions. Demonstration sites at local schools will provide education on water-use efficiency concepts and provide models of water-wise facility management.

### **Collaborative Support:**

- ❑ Mattole Salmon Group
- ❑ Sanctuary Forest, Inc.
- ❑ State Coastal Conservancy
- ❑ Bureau of Land Management
- ❑ North Coast Regional Water Quality Control Board/SWRCB

### **Larger Project to which this Project Contributes:**

- ❑ Mattole River and Range Partnership

### **Description of Larger Project:**

The Mattole River and Range Partnership, a consortium of five Mattole-based conservation groups and state/federal resource agencies, is undertaking a five-year effort towards multiple watershed management goals. These include sediment control, non-point source pollution control, water conservation, riparian restoration, salmon habitat enhancement and education/outreach for private landowners. The Partnership operates under an MOU between the five organizations. A draft MOU is proposed to formalize state and federal agency involvement.

### **Political Support:**

This project is supported by water users, fisheries interests, government agencies, local watershed restoration organizations, land trusts, and landowner groups. Project proponents have a twenty-five year record of working with private landowners (controlling 88% of the basin) in watershed management efforts. In 2004 alone, project proponents worked with over 200 landowners, encompassing various land-uses, to implement watershed projects. This translates into broad local support for these efforts. In addition, project proponents have formal agreements authorizing co-management of public resources on BLM holdings and within the Upper Mattole River and Forest

Cooperative. A Technical Advisory Committee, consisting of technical representatives and stakeholders, oversees implementation of all project components. A watershed partnership MOU between five local conservation groups, landowner representatives, two counties and 13 state/federal agencies is being drafted.

### **Integration of Nonpoint Source Management Measures:**

Numerous project components are named in the NCRWQCB List of Targeted Nonpoint Source Pollution Prevention Projects. The NPS Program Plan emphasizes upslope sediment reduction, landowner education, fish habitat enhancement, riparian restoration, water quality monitoring, and stream channel monitoring as means of addressing watershed management issues in the Mattole River watershed.

### **Monitoring Deliverables:**

Monitoring deliverables include Streamflow Augmentation Effectiveness Monitoring Reports (3 years), Long-Term Streamflow Monitoring Reports (3 years), Depleted Streamflow Habitat Effects Monitoring Reports (3 years), Sediment and Riparian Habitat Restoration Effectiveness Monitoring Reports (2 years), associated project implementation monitoring checklists and reports, photographic documentation, approved Quality Assurance Project Plans, associated Monitoring Plans, database publication.

### **Performance Measures**

Monitoring elements will evaluate project completion and effectiveness. Water quality and habitat projects are evaluated under DFG/SWRCB protocols to evaluate aquatic habitat response to sediment treatments. Flow measurements in paired reaches will assess streamflow augmentation efforts. USGS gauge data will be used to place streamflows within a long-term context. Data will be entered into SWAMP- and GAMA-compatible formats, and will be published on-line for public use and analysis.

### **Scientific Basis of Project**

Prioritization was based on long-term water temperature, streamflow and habitat data sets. Sediment treatments are based on field inventories of sediment sources. Streamflow augmentation is based on an assessment that analyzed upper basin water use effects on aquatic habitats. Recharge basins have been designed by BLM personnel. Restoration sites were identified through basin-wide prioritization and field surveys. The Mattole TAC, DFG and NCRWQCB were consulted on monitoring study design.

**Project # 236 S-1 Title: Shasta Water Association Dam Restoration**

Entity Responsible for Implementation: Shasta Valley Resource Conservation District

Contact Name: Amy Hansen

**County:** Siskiyou

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$10,902,844

**NCIRWMP recommended: \$1,926,350**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The Shasta Water Association Dam Restoration project includes the design and installation of the a replacement diversion facility for the Shasta Water Association (SWA) that would provide continued agricultural water supply, reduce water quality impairment and provide for complete fish passage. Successful implementation would reduce conflicts among water users by improving agricultural water supply reliability and improve production of salmon from the Shasta River. Since 1912, flashboards are installed each summer in the SWA Dam, raising the water level roughly 4 feet and backing it up into a pumping bay and pumped into ditches, providing water for irrigating pasture. This project provides for the replacement of the dam, installation of pipes or ditch lining in leaky earthen ditches, new fish screens that meet criteria to protect coho, improving on-farm practices to maximize ranch water use efficiency and to minimize tailwater returns. The SWA diversion is identified in the NCWQCB Draft-TMDL for the Shasta River (2006) and the Recovery Strategy for California Coho Salmon (2004) as a high priority project.

**Project Goals:**

- Protect and enhance the salmonid fishery of the Shasta and Klamath Rivers.
- Maintain the viability of agriculture in the Shasta Valley.
- Improve water quality of the Shasta and Klamath Rivers.
- Improve water use efficiency of Shasta Water Association (SWA) users.
- Implement TMDLs on the Shasta River that explicitly identify impoundment as a major contributor of increased temperature and decreased dissolved oxygen in the Shasta River.
- Improve upstream and downstream fish passage in the Shasta River so spawning fish can more readily access critical spawning areas upstream near Big Springs, and juvenile fish can migrate downstream to the ocean or upstream to cold water refugia for summer rearing.

### **Project Benefits:**

This project has multiple benefits in that it integrates strategies designed to work together to provide for the beneficial use of water throughout the middle Klamath River Basin. Direct benefits of implementing this project are improvements in water quality, fisheries habitat improvement and protection, water supply reliability, water conservation and efficiency measures, safe drinking water protection for disadvantaged communities, and support of the local and regional economies based both on agriculture and recreation. The water management strategies proposed in this project focus on creating innovative and incentive-based solutions that will not only have long-term environmental benefits, but will help to keep the current agriculture operations of Siskiyou County viable and support the communities that depend on them.

### **Collaborative Support:**

- Shasta-Scott Recovery Team

### **Larger Project to which this Project Contributes:**

- Recovery Strategy for California Coho Salmon

### **Description of Larger Project**

Implementation of the State of California recovery strategy for the coho region of California. The Shasta-Scott portion is the Pilot Program for this larger project.

### **Political Support:**

Since 2002, with the completion of the preliminary engineering study study, the RCD has worked closely with the Araujo Diversion users, NRCS, CA Dept. of Fish and Game, U.S. Fish & Wildlife Service and other agencies in assuring that the project's goals and objectives were well defined and consistent with meeting both the needs of the Araujo diverters and the various relevant regulatory and ESA requirements. The Araujo working group meets periodically to discuss the project's progress, keep all parties informed on project progress, track milestones, and make sure that all loose-ends are accounted for. Members on the working group include the Araujo water users, Shasta Valley RCD, Shasta River CRMP, NRCS and U.S. Fish & Wildlife. Notes for the Araujo working group meetings are available through the Shasta Valley RCD for review. Furthermore the Shasta Valley RCD hosted a Permitting Workshop specifically in regards to the Araujo Diversion Removal Project with the goal of coordinating with all regulatory permitting agencies on what would be required to receive complete environmental compliance on this project. The permitting workshop, held in April of 2006, was a complete success and included regulatory agencies such as the North Coast Water Quality Control Board, U.S. Fish & Wildlife Service, CA Dept. of Fish and Game, NOAA, and Siskiyou County. The agenda, presentations

and notes are also available through the Shasta Valley RCD. The Shasta Valley RCD will continue to coordinate this project through the various partnering agencies and organizations.

### **Integration of Nonpoint Source Management Measures:**

This proposed project directly addresses the following management measures (MM) identified by SWRCB, CCC, and other State agencies in the SWRCB's Non-Point Source Program Plan to address NPSs of pollution that affect State waters. Agriculture: MM 1E, 1F Forestry: MM 2G Urban Areas: MM 3.1A, 3.1C, 3.3A, 3.5F Hydromodification: MM 5.2A, 5.2B, 5.2C Wetland and Riparian: MM 6A, 6B

### **Performance Measures:**

Water quality will be monitored for TMDLs on the parameters of temperature, dissolved oxygen, and sediment in the Scott and Shasta Rivers, in concert with the RCDs and the NCRWQCB. Habitat restoration will be measured by (1) the number of dams made passable by improvements funded in this project, (2) the water quality improvements made on the parameters of temperature, dissolved oxygen, and sediment; (3) the improved flow of streams in the Scott and Shasta Basins measured by the quantity of water purchased by the Scott River Water Trust; (4) acres of improved habitat. Water conservation improvements will be measured by the amount of water diverted from surface water sources per capita for municipal purposes, and the amount of water diverted per acre for agricultural purposes. Monitoring will be performed in a partnership among the local RCDs, DWR, DFG, and the Scott River Management Council.

### **Scientific Basis of Project:**

Individual project managers have baseline datasets that range from near-term to nearly 20 years of information. They have, in most cases, accumulated technical knowledge with staff or with contractors and have a base of scientific knowledge from consultants used in past projects. They are able to determine what additional baseline data, monitoring and analysis will be needed to manage the individual projects. It is the intention of Siskiyou County to participate in the administration of Prop. 50 funds, if received, for proposed projects within its jurisdiction through a JPA or other agreement with those in the North Coast Region. Under this agreement Siskiyou County will work with project managers to ensure adequate information on each project is utilized.

**Project # 236 S-2 Title: Araujo Dam Restoration**

Entity Responsible for Implementation: Shasta Valley Resource Conservation District

Contact Name: Amy Hansen

**County:** Siskiyou

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$2,675,757

**NCIRWMP recommended: \$878,275**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

This capital project provides for the replacement of an existing water diversion structure with one that will more reliably agricultural water supply, provide fish passage, install modern fish screens and improve water quality in the Shasta River. Since 1856 flashboards are installed each summer to raise the water level roughly 5 feet, and allowing the water to flow by gravity down irrigation ditches from which it is applied to fields via flood irrigation. Activities include the replacement of the existing leaking earthen ditches with pipelines, replacement of the dam with pumps, new fish screens that meet current criteria, and initiation of needed on-farm improvements to maximize water use efficiency and minimize the tailwater returns that diminish water quality. This project will completely eliminate a barrier to fish passage and improve water quality in the river. It will reduce conflicts through reduced water demand and improved conditions for aquatic species.

**Project Goals:**

- Protect and enhance the salmonid fishery of the Shasta and Klamath Rivers.
- Maintain the viability of agriculture in the Shasta Valley.
- Improve water quality of the Shasta and Klamath Rivers.
- Improve water use efficiency of Araujo Dam users.
- Implement TMDLs actions on the Shasta River that clearly identify this impoundment as a main contributor of increased temperature and decreased dissolved oxygen in the Shasta River.
- Improve upstream and downstream fish passage in the Shasta River so spawning salmon can more readily gain access to the critical upstream spawning areas near Big Springs, and migrating juvenile fish can either move downstream to the ocean, or upstream to cold water refugia areas for summer rearing.

### **Project Benefits:**

This project has multiple benefits in that it integrates strategies designed to work together to provide for the beneficial use of water throughout the middle Klamath River Basin. Direct benefits of implementing this project are improvements in water quality, fisheries habitat improvement and protection, water supply reliability, water conservation and efficiency measures, safe drinking water protection for disadvantaged communities, and support of the local and regional economies based both on agriculture and recreation. The water management strategies proposed in this project focus on creating innovative and incentive-based solutions that will not only have long-term environmental benefits, but will help to keep the current agriculture operations of Siskiyou County viable and support the communities that depend on them.

### **Collaborative Support:**

- Shasta-Scott Recovery Team

### **Larger Project to which this Project Contributes:**

- Recovery Strategy for California Coho Salmon

### **Description of Larger Project**

Implementation of the State of California recovery strategy for the coho region of California. The Shasta-Scott portion is the Pilot Program for this larger project.

### **Political Support:**

Since 2002, with the completion of the preliminary engineering study study, the RCD has worked closely with the Araujo Diversion users, NRCS, CA Dept. of Fish and Game, U.S. Fish & Wildlife Service and other agencies in assuring that the project's goals and objectives were well defined and consistent with meeting both the needs of the Araujo diverters and the various relevant regulatory and ESA requirements. The Araujo working group meets periodically to discuss the project's progress, keep all parties informed on project progress, track milestones, and make sure that all loose-ends are accounted for. Members on the working group include the Araujo water users, Shasta Valley RCD, Shasta River CRMP, NRCS and U.S. Fish & Wildlife. Notes for the Araujo working group meetings are available through the Shasta Valley RCD for review. Furthermore the Shasta Valley RCD hosted a Permitting Workshop specifically in regards to the Araujo Diversion Removal Project with the goal of coordinating with all regulatory permitting agencies on what would be required to receive complete environmental compliance on this project. The permitting workshop, held in April of 2006, was a complete success and included regulatory agencies such as the North Coast Water Quality Control Board, U.S. Fish & Wildlife Service, CA Dept. of Fish and Game, NOAA, and Siskiyou County. The agenda, presentations and notes are also available through the Shasta Valley RCD. The Shasta Valley RCD will continue to coordinate this project through the various partnering agencies and organizations.

### **Integration of Nonpoint Source Management Measures:**

This proposed project directly addresses the following management measures (MM) identified by SWRCB, CCC, and other State agencies in the SWRCB's Non-Point Source Program Plan to address NPSs of pollution that affect State waters. Agriculture: MM 1E, 1F Forestry: MM 2G Urban Areas: MM 3.1A, 3.1C, 3.3A, 3.5F Hydromodification: MM 5.2A, 5.2B, 5.2C Wetland and Riparian: MM 6A, 6B

### **Performance Measures:**

Water quality will be monitored for TMDLs on the parameters of temperature, dissolved oxygen, and sediment in the Scott and Shasta Rivers, in concert with the RCDs and the NCRWQCB. Habitat restoration will be measured by (1) the number of dams made passable by improvements funded in this project, (2) the water quality improvements made on the parameters of temperature, dissolved oxygen, and sediment; (3) the improved flow of streams in the Scott and Shasta Basins measured by the quantity of water purchased by the Scott River Water Trust; (4) acres of improved habitat. Water conservation improvements will be measured by the amount of water diverted from surface water sources per capita for municipal purposes, and the amount of water diverted per acre for agricultural purposes. Monitoring will be performed in a partnership among the local RCDs, DWR, DFG, and the Scott River Management Council.

### **Scientific Basis of Project:**

Individual project managers have baseline datasets that range from near-term to nearly 20 years of information. They have, in most cases, accumulated technical knowledge with staff or with contractors and have a base of scientific knowledge from consultants used in past projects. They are able to determine what additional baseline data, monitoring and analysis will be needed to manage the individual projects. It is the intention of Siskiyou County to participate in the administration of Prop. 50 funds, if received, for proposed projects within its jurisdiction through a JPA or other agreement with those in the North Coast Region. Under this agreement Siskiyou County will work with project managers to ensure adequate information on each project is utilized.

**Project # 236 S-3 Title: Scott River Water Trust Phase III**

Entity Responsible for Implementation: Siskiyou RCD/Scott River Watershed Council

Contact Name: Gary Black, Senior Project Coordinator

**County:** Siskiyou

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$470,811

**NCIRWMP recommended: \$160,000**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The Scott River is an inland watershed (Klamath Tributary) where flows are driven by snow pack. Flows are low in the summer/fall as part of the natural cycle. An active agricultural economy diverts water from the streams and groundwater. Competition for the limited flows in the summer/fall between salmon habitat needs and agricultural needs has been a contentious issue for decades in Scott Valley. The preferred method of resolve is a locally developed and operated Water Trust, focusing on providing instream benefit through making transactions with willing agricultural diverters. Phase I and II have created the legal determination, economic valuation, and developed the structure of the Water Trust (under CDFG funding), while Phase III will enact transactions providing increased instream flows. The Phase III project proposed under IRWMP funding is for the actual leasing or purchasing of water rights in several tributaries and the mainstem of the Scott River during the summer and fall months of 2007 and 2008.

**Project Goals:**

This application is to help with the first two years of phase III of the Scott River Water Trust - Implementation (activating the Water Trust) during 2007 and 2008. The goal of Phase Three is to secure and implement water lease/purchase transactions where water diverted for irrigation will remain instream to benefit the water quality and instream habitat within the Scott River watershed. Species of focus are cold water-dependent fish, including steelhead, Chinook and coho salmon (the latter listed as threatened under ESA and CESA). The goal of the Scott River Water Trust program is "To foster transactions which will provide improved stream flow for salmon and steelhead at critical periods of their habitat needs in the Scott River system by exchanging fair compensation to water right holders for the temporary or permanent instream use of their water allocation and the value foregone of the applied water."

### **Project Benefits:**

The Scott River Water Trust program developed to resolve the agricultural/instream needs competition, focusing on providing instream benefit through making transactions with willing agricultural diverters. Development of the Water Trust has been in process since 2002 (Scott River Watershed Council 2004) and is a priority of the State Coho Recovery Plan (CDFG). Phase I and II have created the water rights assessment and developed the structure of the Water Trust (both funded under CDFG grants), while Phase III (to be initially funded with IRWMP funds) will enact and fund transactions providing increased instream flows intended to provide increased habitat, improve water quality (Scott River is listed as impaired for excessive water temperatures) and provided for migration of anadromous fish for the two year period of 2007-2008. Implementation of the Scott River Water Trust – Phase III is the point where transactions are made to improve instream flow and water quality. Phase I, the water rights assessment, was completed in 2004 (Ellison, Schneider & Harris 2004) and phase II (economic and institutional phases) will be completed in March 2007 (WestWater Research 2007).

### **Collaborative Support:**

- Shasta-Scott Recovery Team
- Siskiyou Resource Conservation District (RCD)
- Scott River Water Trust
- DWR
- Bureau of Reclamation
- NRCS
- USFS
- CDFG
- NCRWQCB
- SWRCB

### **Larger Project to which this Project Contributes:**

- Recovery Strategy for California Coho Salmon

### **Description of Larger Project**

Implementation of the State of California recovery strategy for the coho region of California. The Shasta-Scott portion is the Pilot Program for this larger project.

### **Political Support:**

Since the listing petition for coho salmon was being considered by the State, the citizens of Siskiyou County, County government, and others across the region have looked for a way to resolve this ESA issue and to avoid a regulatory train-wreck. As a result, support at all levels cultivated to create a state team to develop the Recovery Strategy for California Coho Salmon as well as create the Shasta-Scott Recovery Team (SSRT) as the pilot program to address coho recovery recommendations for agricultural

activities and agricultural water use in the Shasta and Scott Valleys. The SSRT represents a diversity of stakeholders including local landowners, local government, State and Federal agencies, environmental groups, and recreational anglers. The California Fish and Game Commission approved the SSRT recommendations in February, 2004 (contingent upon the SSRT's condition that a programmatic Incidental Take Permit be approved). The ability of the SSRT to get this far indicates incredible local and political support for this Pilot Program. There has been political support from all levels that continues as team members finish the process and start to implement recovery and regulatory requirements.

### **Integration of Nonpoint Source Management Measures:**

This proposed project directly addresses the following management measures (MM) identified by SWRCB, CCC, and other State agencies in the SWRCB's Non-Point Source Program Plan to address NPSs of pollution that affect State waters. Agriculture: MM 1E, 1F Forestry: MM 2G Urban Areas: MM 3.1A, 3.1C, 3.3A, 3.5F Hydromodification: MM 5.2A, 5.2B, 5.2C Wetland and Riparian: MM 6A, 6B

### **Performance Measures:**

Water quality will be monitored for TMDLs on the parameters of temperature, dissolved oxygen, and sediment in the Scott and Shasta Rivers, in concert with the RCDs and the NCRWQCB. Habitat restoration will be measured by (1) the number of dams made passable by improvements funded in this project, (2) the water quality improvements made on the parameters of temperature, dissolved oxygen, and sediment; (3) the improved flow of streams in the Scott and Shasta Basins measured by the quantity of water purchased by the Scott River Water Trust; (4) acres of improved habitat. Water conservation improvements will be measured by the amount of water diverted from surface water sources per capita for municipal purposes, and the amount of water diverted per acre for agricultural purposes. Monitoring will be performed in a partnership among the local RCDs, DWR, DFG, and the Scott River Management Council.

### **Scientific Basis of Project:**

Individual project managers have baseline datasets that range from near-term to nearly 20 years of information. They have, in most cases, accumulated technical knowledge with staff or with contractors and have a base of scientific knowledge from consultants used in past projects. They are able to determine what additional baseline data, monitoring and analysis will be needed to manage the individual projects. It is the intention of Siskiyou County to participate in the administration of Prop. 50 funds, if received, for proposed projects within its jurisdiction through a JPA or other agreement with those in the North Coast Region. Under this agreement Siskiyou County will work with project managers to ensure adequate information on each project is utilized.

**Project # 236 S-5 Title: City of Etna**

Entity Responsible for Implementation: City of Etna Water Supply

Contact Name: Marilyn Seward

**County:** Siskiyou

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$382,105

**NCIRWMP recommended: \$318,105**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The City of Etna Water Supply project was developed to improve the water supply reliability for the City of Etna and to improve fish passage around the Etna Diversion Dam to allow Coho juvenile and adult salmonids and other anadromous fish to use the 4.8 miles of habitat above the diversion dam. The project incorporates improvements and repairs to the diversion dam structure and Etna water diversion, construction of a new fishway, enlargement of the sediment basin below the dam, replacement of the fish/debris screen, installation of a sluice gate on the 12" bypass pipe, installation of streamflow gages, and new security features for the dam fishway area (fencing). Also included in the project is a survey of the land surrounding the diversion dam and legal services for Etna to obtain clear title to the land.

**Project Goals:**

- Improve the City of Etna's water supply reliability.
- Provide for upstream passage of Coho salmon and other anadromous fish above the diversion dam.

**Project Benefits:**

The project was developed to improve the water supply reliability for the City of Etna and to improve fish passage around the Etna Diversion Dam to allow Coho juvenile and adult salmonids and other anadromous fish to use the 4.8 miles of habitat above the diversion dam (US FWS CA DFG. Draft Scott River Watershed Adult Coho Spawning Ground Surveys. January 2005).

**Collaborative Support:**

- ❑ Shasta-Scott Recovery Team

**Larger Project to which this Project Contributes:**

- ❑ Recovery Strategy for California Coho Salmon

**Description of Larger Project**

Implementation of the State of California recovery strategy for the coho region of California. The Shasta-Scott portion is the Pilot Program for this larger project.

**Political Support:**

The City of Etna has been working with the Siskiyou RCD and the Scott River Watershed Council to support their goals and those of the Shasta Scott Recovery Team. Construction of the fishway at the diversion dam site in Etna Creek opens up 4.8 miles of Coho habitat above the dam, which meets one of their goals.

**Integration of Nonpoint Source Management Measures:**

This proposed project directly addresses the following management measures (MM) identified by SWRCB, CCC, and other State agencies in the SWRCB's Non-Point Source Program Plan to address NPSs of pollution that affect State waters.

**Performance Measures:**

Water quality will be monitored for TMDLs on the parameters of temperature, dissolved oxygen, and sediment in the Scott and Shasta Rivers, in concert with the RCDs and the NCRWQCB. Habitat restoration will be measured by (1) the number of dams made passable by improvements funded in this project, (2) the water quality improvements made on the parameters of temperature, dissolved oxygen, and sediment; (3) the improved flow of streams in the Scott and Shasta Basins measured by the quantity of water purchased by the Scott River Water Trust; (4) acres of improved habitat. Water conservation improvements will be measured by the amount of water diverted from surface water sources per capita for municipal purposes, and the amount of water diverted per acre for agricultural purposes. Monitoring will be performed in a partnership among the local RCDs, DWR, DFG, and the Scott River Management Council.

**Scientific Basis of Project:**

Individual project managers have baseline datasets that range from near-term to nearly 20 years of information. They have, in most cases, accumulated technical knowledge with staff or with contractors and have a base of scientific knowledge from consultants used in past projects. They are able to determine what additional baseline data, monitoring and analysis will be needed to manage the individual projects. It is the intention of Siskiyou County to participate in the administration of Prop. 50 funds, if received, for proposed projects within its jurisdiction through a JPA or other agreement with those in the North Coast Region. Under this agreement Siskiyou County will work with project managers to ensure adequate information on each project is utilized.

**Project # 78 Title: Monte Rio Community Wastewater Project**

Entity Responsible for Implementation: Sonoma County Permit and Resource Management Department

Contact name: Ted Walker, Project Coordinator

**County:** Sonoma

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$9,487,000

**NCIRWMP recommended: \$3,461,727**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The Monte Rio Community Wastewater Project will protect and enhance groundwater quality through the elimination of existing impacts from substandard septic system discharges. Sonoma County, Permit and Resource Management Department will implement the project on behalf of Sonoma County and the Board of Supervisors.

**Project Goals:**

a) Improve water system reliability - removal of non-code compliant septic systems within the Zone A, bacteriological time of travel to existing public water wells (determined by CDHS). b) Improve water quality, remove significant source of bacteriological/nutrient degradation of ground and surface waters, including Lower Russian River and local tributaries; c) Collect, treat, disperse and reclaim treated wastewater for irrigation of pasture and riparian vegetation enhancement area; d) Treat wastewater to tertiary levels, eliminate current bacteriological impacts and reduce nitrate loadings to the Russian River and groundwater by more than 70%; e) Protect/conserves the use of water in the Sweet Water Springs and Camp Meeker community water systems; improve water use efficiency; f) Replace unmanaged septic systems, with a community system that is operated, maintained, monitored and managed under Waste Discharge Requirements issued by the North Coast Regional Water Quality Control Board.

**Project Benefits:**

Improved water quality in Lower Russian River/tributary streams. Russian River - Monte Rio is listed - Impaired Water Body, impacted from pathogens from septic systems. Project will remove a significant source of pathogen loading to the Russian River and will meet the local obligations to address the TMDL requirements expected for the 303(d) listed segment. Protect/enhancement of beneficial uses

of the Russian River. Basin Plan pathogen standards for REC-1 beneficial uses are frequently violated. Implementation removes a major source of pathogens -septic system from areas adjacent to the Russian River, improves ability to meet REC-1 receiving water standards, preserving/enhancing recreational uses of the River. Protect/implement water supply reliability. Septic systems located within the Zone A, 2-year time of travel, for community water supply wells. Poses high risk/ constant public health threat to drinking water wells for Sweet Water Springs Water District and Camp Meeker.

**Collaborative Support:**

- Rural Community Assistance Corporation
- California State Coastal Conservancy
- California State Department of Health Services
- United States Department of Agriculture
- California Conference of Directors of Environmental Health
- California Onsite Wastewater Association
- California Environmental Health Association
- North Coast Regional Water Quality Control Board
- Sonoma County Water Agency Other

**Impact of not implementing the project:**

A public health hazard will continue to exist in the community. The drinking water wells are subject to direct and indirect contamination from numerous individual noncompliant septic system discharges. Pathogens from failing septic systems will continue to migrate into the Russian River and Dutch Bill Creek. The recreational standard (REC-1) will continue to be in violation of the North Coast Regional Water Board Basin Plan. And non-point sources (septic systems) will continue to degrade the water quality within the community.

**Political Support:**

The Monte Rio Community Wastewater Project has the benefit of community and public involvement throughout the planning/feasibility and project selection phase, as well as in the design phase. The Sonoma County Board of Supervisors selected a Citizens Advisory Committee (CAC) to work with PRMD staff and the consultants throughout the planning, feasibility and design phase. Public meetings and workshops were held regularly with the CAC. The project has received input, comments, and direction from: the North Coast Regional Water Quality Control Board, Sonoma County Planning Commission and Design Review Board, State Department of Health Services, State Water Resources Control Board, California State Coastal Conservancy, California Directors of Environmental Health, California Environmental Health Association, California Onsite Wastewater Association, Sweet Water Springs Community Water District, the Camp Meeker Community Water District, Sonoma County Water Agency, and Russian River Watershed Protection Committee.

**Integration of Nonpoint Source Management Measures:**

Existing septic systems (nonpoint systems) within Monte Rio do not meet the Regional Boards Individual Septic Systems Policy or Basin Plan. Implementation of the project will meet the SWRCB's, Nonpoint Source Program Plan, Management Measure Title: 3.4 - Onsite disposal, 3.4A – New Onsite disposal systems and 3.4B – Operating Onsite disposal Systems. The Process Element targets grants for such projects.

**Monitoring Deliverables:**

The project facilities will be monitored in accordance with the Monitoring/Reporting Program prescribed by Regional Board in the adopted WDRs. Monitoring includes influent, effluent and receiving water sampling to verify conformance with performance standards. Monthly monitoring results will continue throughout the life of the project. Sonoma County will conduct additional bacteriological monitoring at local beaches for the life of the project verifying water quality objectives.

**Performance Measures:**

The project will be operated, maintained and monitored in accordance with provisions/requirements contained in Waste Discharge Requirements adopted by the Regional Water Quality Control Board. This includes a monitoring and reporting program with specifications for routine monitoring/reporting of influent, effluent and receiving water quality. The facility monitoring will document conformance with discharge requirements, Basin Plan water quality objectives, and overall system performance.

**Scientific Basis of Project:**

The project is a community wastewater collection, treatment and disposal system developed under review of a local stakeholders group, approved by the Regional Water Quality Control Board. It will be operated, maintained, and monitored in accordance with standards and performance requirements specified by the Regional Board - which includes effluent monitoring and receiving water sampling and analysis.

**Project # 86 Title: Orick Community Services District Wastewater Treatment Sys.**

Entity Responsible for Implementation: Orick Community Services District

Contact name: Ronald L Barlow, Chairman

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$4,156,225

**NCIRWMP recommended: \$2,628,441**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

Orick Community Services District (OCSD) proposes to construct a community wastewater collection, treatment and disposal system to replace the existing on-site systems comprised of septic tanks, leachfields and leach pits. The existing systems are malfunctioning, contributing to surface and groundwater contamination (Oscar Larson & Assoc. 1999 – reference to be provided in final draft) and are impeding economic development in the Orick community and surrounding area. This project proposal consists of completing the permitting (including EIR), design, and construction phases. An initial feasibility study (SHN 2004 – reference to be provided in final draft) recommended a low-pressure grinder pump for the collection system and a septage receiving station, pre-treatment screening, a double oxidation ditch for secondary treatment, composting facilities for sludge treatment, hypochlorite disinfection and storage ponds. OCSD is cooperating with several agencies and organizations to ensure the proposed system achieves environmental and sustainable development objectives.

**Project Goals:**

Goal: Establish a wastewater collection, treatment and disposal system in Orick that will protect human health and the environment and contribute to a prosperous, sustainable future for the community. Objectives: Incorporate sound scientific analysis into all phases of the project. Obtain grant funds to implement the project in order to reduce the financial burden on low-income community members. Utilize partnerships with multiple agencies, organizations and community members to ensure the system meets multiple needs. Achieve an environmentally-friendly and aesthetic design that will not detract from the natural beauty of the Orick valley and will serve as a source of community pride.

### **Project Benefits:**

This project will provide several environmental and socio-economic benefits: a. Protect ground and surface water quality from bacterial contamination which is currently posing a risk to human health and the environment including sensitive resources near the Redwood Creek estuary. b. Provide needed infrastructure to facilitate further economic development opportunities in and around the disadvantaged community of Orick. c. Improve the visitor experience for over 500,000 annual visitors who travel through and visit Orick, which serves as a gateway community to Redwood National and State Parks.

### **Collaborative Support:**

- State of CA, Housing & Comm. Develop Block
- Redwood Reg. Watershed Center
- Humboldt State University
- Orick Economic Develop. Corp.
- Redwood National and State Parks
- Orick School District
- County of Humboldt
- Orick Chamber of Commerce

### **Larger Project to which this Project Contributes:**

- Integrated Watershed Strategy for Redwood Ck

### **Description of Larger Project:**

The overall goal of the Integrated Watershed Strategy for Redwood Creek is to integrate several elements of watershed management into a cohesive and coordinated effort to improve water quality and associated beneficial uses as well as provide for sustainable socio-economic development for the community.

### **Political Support:**

This project is well-supported because it provides multiple benefits to several local and regional entities. Orick Community Services District (OCSD) is the local responsible agency and has demonstrated their commitment to the project by actively pursuing funds for the project and facilitating local involvement. The County of Humboldt successfully secured funds for a pollution study and feasibility study and is continuing to pursue additional financial and technical assistance. The Orick Economic Development Corporation, Chamber of Commerce and local businesses are interested in the project to further their goals of improving the socio-economic, tourism and business climate in Orick. Individual residents have voiced their support for a more efficient wastewater treatment system. Redwood National and State Parks has demonstrated interest in the project because of the benefits to

park resources around the Redwood Creek estuary and potential improvements to tourist accommodations.

**Integration of Nonpoint Source Management Measures:**

This project complies with the two primary strategies of the SWRCB's NPS Program Plan for controlling urban NPS pollution: (1) the prevention of pollutant loadings and (2) the treatment of unavoidable loadings. The construction of Orick's wastewater treatment system will remedy the NPS pollution problems associated with the existing onsite systems. Moreover, this project is following a "Tier I" and collaborative, community-based watershed approach, as recommended in the SWRCB's NPS Plan.

**Monitoring Deliverables:**

Follow monitoring plan as set forth in the O&M Manual.

**Performance Measures:**

The Operations and Maintenance (O&M) Manual will describe in detail all performance measures and monitoring procedures that OCSD will follow to ensure the project is operating effectively and attaining all statewide and local compliance standards associated with effluent limitations, waste discharge requirements as set forth in the NPDES permit, sludge management, public health, wetlands and water reclamation.

**Scientific Basis of Project:**

The NCWQCB has established a surface water ambient monitoring program (SWAMP) station in Orick, which will provide baseline and contribute long-term effectiveness data for this project. OCSD will hire experienced technical consultants to implement the three phases of this project: permitting, design and construction. Baseline data regarding contamination problems and malfunctions of the existing systems were documented in the Pollution Study in 1999. (1999).

**Project #ICWMP - D Title:** Mattole Integrated Coastal Watershed Management Program  
Entity Responsible for Implementation: Mattole Restoration Council  
Contact Name: F. Jeremy Wheeler, Executive Director

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$1,235,206

**NCIRWMP recommended: \$1,235,206**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice

**Project Summary:**

The Mattole Integrated Coastal Watershed Management Program (MICWMP) integrates efforts to meet water supply, water quality and salmonid habitat goals for the coastal Mattole River watershed, the Mattole River estuary, and the King Range Area of Special Biological Significance (King Range ASBS), a large, offshore state water quality protection area.

The MICWMP effort is guided by a tiered set of watershed management plans that have been created by the Mattole Restoration Council, the Mattole Salmon Group, and cooperating local non-profit organizations, private landowners, county/state/federal agencies, and the interested public.

The lower Mattole River and Mattole River estuary ("project area") are impaired by excessive sediment production in surrounding tributary watersheds. Excessive sediment production is closely linked with high summertime water temperatures, low dissolved oxygen levels, and other biological water quality limitations. Significant sediment is released from the Mattole River estuary during major storm events, which is discharged into the King Range ASBS, damaging tidal and near-shore habitats.

A secondary issue within the Mattole estuary complex is the lack of reliable water supply for salmonid habitat needs. While temperature impairments limit the viability of overwintering Chinook salmon habitat, there is a unique opportunity to create sustainable refugia habitat by returning Bear Creek, a major estuary tributary, to its historic stream channel. Other habitat improvement needs identified include invasive species eradication and vegetation management.

**Project Goals:**

Specific MICWMP goals include:

- Treatment of 158 sediment delivery sites to stabilize 73,395 cubic yards of sediment potentially deliverable to fish-bearing watercourses and the King Range ASBS.

- ❑ Reconfiguration of approximately 0.4 miles of the Lower Bear Creek channel to improve summertime water supply to an important Chinook salmon refugia in the Mattole estuary.
- ❑ Complete eradication of Japanese Knotweed at 7 sites within the Mattole estuary, re-treatment of approximately 35 Scotch and French broom control sites throughout the lower Mattole River watershed, and vegetation management activities related to water quality objectives.
- ❑ Water quality monitoring to determine restoration effectiveness in the Mattole estuary and affected project-area tributaries, including turbidity sampling, reach-level geomorphic measurements, temperature monitoring, and habitat utilization monitoring.

### **Project Benefits:**

The watershed is recognized statewide as a priority for salmonid and water quality protection. Depleted summertime flows and non-point source pollution threaten recovery efforts. MICWMP seeks to address key water quality and water supply factors through an integrated set of watershed management activities that are designed to provide long-standing benefits: (1) the reduction of sediment within the lower Mattole River and estuary, (2) improvement of water quality and water supply (particularly related to summertime water temperature and sediment), (3) improvement of the Mattole estuary's riparian, freshwater and brackish habitats, and (4) monitoring of restoration efforts to determine effectiveness.

### **Collaborative Support:**

- ❑ Mattole Salmon Group
- ❑ Sanctuary Forest, Inc.
- ❑ State Coastal Conservancy
- ❑ North Coast Regional Water Quality Control Board/SWRCB

### **Larger Project to which this Project Contributes:**

Mattole Watershed Plan

### **Description of Larger Project:**

MICWMP implements site-specific projects developed pursuant to the Mattole Watershed Plan (MRC, 2005), a five-year plan to restore the Mattole River watershed. The Plan contains technical chapters on streamflow enhancement, sediment reduction, invasive plants, riparian ecosystem restoration, and other topics. The Plan seeks integration between these focus areas, and proposes over 125 projects to meet watershed, water quality, streamflow, and habitat goals. The Watershed Plan is being updated to address coastal ecosystems under a current SWRCB grant under the Integrated Coastal Watershed Management Project (Prop 50, Chapter 8, Round 1 funding).

### **Political Support:**

MICWMP is a collaborative effort between the Mattole Restoration Council (MRC), the Mattole Salmon Group, private landowners, and numerous county, state and federal agencies represented on the Mattole Technical Advisory Committee. This consortium operates under a Steering Committee, and is currently drafting an operational MOU. The Mattole Restoration Council has enjoyed long-term collaboration with numerous state agencies within Resources Agency and Cal/EPA, as well as Humboldt and Mendocino Counties, the North Coast Regional Water Management Group, and numerous federal agencies.

### **Integration of Nonpoint Source Management Measures:**

The MICWMP project addresses coastal NPS issues within Critical Coastal Area #7 (Mattole River estuary) and Critical Coastal Area #8 (King Range Area of Special Biological Significance). The Mattole Restoration Council has coordinated NPS implementation activities with local Coastal Commission staff.

### **Monitoring Deliverables:**

MRC will complete a suite of restoration effectiveness monitoring measures throughout sediment reduction project areas. Parameters will include turbidity (grab and automated sample), channel morphology, photo-documentation and qualitative evaluation.

The Mattole Salmon Group's Lower Mattole River Temperature and Population Monitoring Program will measure water quality in the lower Mattole River in coordination with underwater observation of salmonids. These data provide an index of adult and juvenile salmonid relative abundance, distribution and habitat utilization in relation to Mattole River water quality, restoration effectiveness, and restoration planning.

### **Performance Measures**

Pre- and post-project monitoring will be conducted to evaluate the effectiveness of sediment reduction activities at the site, reach, and watershed scale. This intensive monitoring effort will help evaluate the effectiveness of project activities, increase our understanding of sedimentation and erosion processes in the watershed, and provide information to improve and guide future sediment reduction efforts. Water quality and habitat projects are evaluated under DFG/SWRCB protocols to evaluate aquatic habitat response to sediment treatments. Flow measurements in paired reaches will assess streamflow augmentation efforts. USGS gauge data will be used to place streamflows within a long-term context. Data will be entered into SWAMP- and GAMA-compatible formats, and will be published on-line for public use and analysis.

### **Scientific Basis of Project**

The Mattole Integrated Coastal Watershed Management Program is based on a robust technical and scientific understanding of water quality stressors and water supply limitations within the Mattole River watershed, and proposes implementation and monitoring efforts that are consistent with regionally and nationally accepted protocols for watershed and fisheries restoration. The Mattole TAC, DFG and NCRWQCB were consulted on monitoring study design.

**Project # 22 Title: Redwood Creek Erosion Control**

Entity Responsible for Implementation: Pacific Coast Fish, Wildlife and Wetlands Restoration Association

Contact name: Mitch Farro, Projects Manager

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$1,325,000

**NCIRWMP recommended: \$537,971**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Support implementation of State Programs

**Project Summary:**

This project is part of an ongoing effort that will improve and protect water quality and aquatic habitat in Redwood Creek. The project will decommission high-priority roads to minimize the adverse effects of roads on natural watershed processes. It will implement cost-effective erosion control and erosion prevention on high priority roads, based on the analysis of a basin-wide sediment source inventory, all of which are described in "Upper Redwood Creek Watershed Road Assessment: Updated Summary Report" (Bundros, et al. 2004 – reference to be provided in final draft). A small number of roads would also be upgraded. All road treatments will prevent fill failures, stream crossing washouts and stream diversions, and further degradation of water quality and aquatic and riparian habitat in the Redwood Creek watershed. Exact work location and site specifications will be determined based upon the most cost-effective suite of roads that can be assembled as a discrete project.

**Project Goals:**

The goal of this proposed project is to improve and protect the beneficial uses of water and associated resources in the Redwood Creek watershed by reducing the potential for accelerated erosion from logging roads in the upper basin. Erosion and sedimentation will be reduced mostly by decommissioning high priority roads. Completed basin-wide inventories and data analyses (Bundros, et al. 2004) will ensure high priority roads are treated first. Riparian conditions will also improve by reduced erosion rates.

**Project Benefits:**

This project will benefit water quality and salmonids in Redwood Creek watershed by reducing accelerated erosion and sedimentation from logging roads and landings. It will help fund the ongoing erosion control activities in the upper watershed, and will compliment the ongoing watershed restoration work occurring in the lower watershed within Redwood National and State Parks. Local

communities will also benefit from the continued growth of the restoration industry which commonly employs workers from the timber and fishing industries.

**Collaborative Support:**

- ❑ Redwood National and State Parks Funder
- ❑ Department of Fish and Game
- ❑ U.S. Fish and Wildlife Service
- ❑ NCRWQCB
- ❑ Redwood Creek Landowners Association

**Larger Project to which this Project Continues:**

- ❑ Integrated Watershed Strategy for Redwood Creek

**Description of Larger Project:**

The proposed project is part of the Integrated Watershed Strategy (IWS) for Redwood Creek. The IWS is being developed collaboratively by agencies, the Orick community and landowners who own and manage 90 percent of the watershed. The overall goal of the IWS is to integrate several elements of watershed management into a cohesive and coordinated effort that improves and protects water quality and associated beneficial uses and provide for sustainable socio-economic development for the community.

**Political Support:**

In the legislation expanding Redwood National Park, Congress authorized the park to implement erosion-control efforts on lands upstream of the park in the Redwood Creek watershed. Since then, the park and landowners have developed a collaborative relationship regarding erosion control, timber harvesting and road management in the upper basin. The park and landowners signed formal agreements to "...voluntarily cooperate to identify, prioritize and correct, where economically feasible, potential sediment sources within the Redwood Creek basin." The sediment source inventory for roads, completed in 2004, has further strengthened the cooperative relationship between landowners, agencies and organizations. PCFWWA has served as an unofficial watershed coordinator by facilitating communication between these entities to ensure that the assessment and implementation activities are completed. This project will provide another opportunity to continue building these cooperative partnerships.

**Integration of Nonpoint Source Management Measures:**

This project is following Tier One of the SWRCB's NPS Program Plan, as resource managers and landowners are voluntarily collaborating to implement erosion control management measures/BMPs

and are utilizing funding incentives and technical assistance to promote resource stewardship and water quality benefits. The project is also addressing TMDL load allocations and is part of a larger, interagency effort to monitor effectiveness of management measures, as called for in the NPS Plan.

**Monitoring Deliverables:**

Conduct photo point monitoring of the site. Establish and document locations, take photos before and after treatment. Include photos in final report and keep as a record for comparison in future years. Follow accepted protocols for documenting erosion processes, estimate approximate volumes and any potential sediment delivery to stream channels following the first winter after treatments have been completed.

**Performance Measures:**

The effectiveness of this project will be measured by: a) Calculating the volume of sediment (yds<sup>3</sup>) prevented from entering the stream system; b) Evaluating on-site conditions using photo-points and qualitative review; and c) Continuing to monitor the physical (suspended sediment and bedload) and biological condition of the Redwood Creek watershed, as part of a long-term monitoring effort by the USGS, RNSP, local landowners and state agencies.

**Scientific Basis of Project:**

The Sediment TMDL (USEPA 1999), draft NCWAP report (State 2002), Watershed Analysis (RNSP 1997) and "Road Assessment" Report (Bundros et al 2004) describe an abundance of baseline watershed data for Redwood. The Road Assessment describes and quantifies each erosion site including potential for erosion, future sediment yield, corrective treatments and associated costs. All data forms, maps and air photos are entered into a database and GIS and will be used to track project implementation.

**Project # 164 Title: Fish Friendly Farming Environmental Certification Program**

Entity Responsible for Implementation: California Land Stewardship Institute

Contact name: Laurel Marcus, Executive Director

**County:** Mendocino Napa Sonoma Lake

**Disadvantaged community:** Partially

**NCIRWMP request:** \$3,000,000

**NCIRWMP recommended: \$210,510**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs

**Project Summary:**

The Fish Friendly Farming (FFF) program implements water quality improvements, including comprehensive sediment source control and road assessment and repair, as well as water conservation and water use efficiency, enhancement of riparian corridors through removal of invasive species and revegetation, and widening of riparian corridors through direct actions with property owners. The FFF program began in 1999 and has implemented improvements on over 30,000 acres in three counties in conjunction with private property owners. This proposal would provide program implementation on an additional 20,000 acres in the Russian, Gualala and Navarro River watersheds and introduce the program in Lake County.

**Project Goals:**

The goals of the FFF program include: •Voluntary compliance by private landowners with TMDLs, Endangered Species Act and other water quality regulations. •Implementation of water conservation measures. •Implementation of sediment source control measures through improved land management practices, road repairs and major erosion site repairs. •Implementation of water quality improvement measures through revisions to pesticide use. •Implementation of riparian habitat improvements including long-term eradication and control of invasive plants and increasing the extent and quality of riparian corridors. •Certifying conservation action plans for farms through review by staff from NOAA-Fisheries, Regional Water Quality Control Board and the CA Department of Fish and Game.

**Project Benefits:**

The FFF program is a comprehensive implementation mechanism for water quality improvements, water conservation and habitat improvements on private farmland. The FFF program has had consistently high levels of enrollment by vineyard owners and managers and since its inception and has spread to encompass agricultural lands in five other watersheds. The FFF program provides the

technical assistance to landowners to produce a broad range of environmental benefits. Over 90 percent of the land in the Russian, Gualala and Navarro River watersheds is in private ownership and implementation of TMDLs for these sediment-impaired waterways requires private landowners implement improved land management measures. Similarly, participation by landowners is required to achieve recovery of endangered Coho salmon and steelhead trout and to implement water conservation measures.

**Collaborative Support:**

- ❑ Circuit Rider Productions
- ❑ NOAA-Fisheries
- ❑ North Coast Regional Water Quality Control Board
- ❑ Ca Dept. Of Fish and Game
- ❑ Sotoyome RCD

**Larger Project to which this Project Contributes:**

- ❑ Fish Friendly Farming Env. Certification program

**Description of Larger Project:**

The FFF program began in 1999 as a public/private collaboration between Laurel Marcus & Associates, the authors of the program, and the Sotoyome Resource Conservation District, the administrator of the program. The FFF program has since expanded to several additional watersheds and enrollment has more than tripled. The California Land Stewardship Institute (CLSI) was created to provide a regional organization to operate the FFF program. Your start date sections do not allow us to list the actual start date which is January 1999 and the fact that the program is ongoing. The cost listed below is for funding received up to 12/05.

**Political Support:**

The FFF program is supported by a range of agricultural organizations including the Mendocino County Farm Bureau, Sonoma County Grapegrowers Association and Mendocino County Winegrowers Alliance, and environmental groups including Friends of the Russian River, CalTrout and Trout Unlimited. Congressman Mike Thompson, State Senator Wes Chesbro and Assemblywoman Patty Berg have supported the program by assisting in funding requests and presenting certificates of merit to certified farmers. In addition, NOAA-Fisheries, the North Coast Regional Water Quality Control Board, the Department of Fish and Game (DFG), the Environmental Protection Agency and the State Water Resources Control Board have expressed their support in letters.

### **Integration of Nonpoint Source Management Measures:**

The FFF program will implement the following NPS Management Measures: 1. Agriculture – A. Erosion & Sediment control, D. Pesticide Management, F. Irrigation Water Management, G. Education & Outreach. 2. Forestry – C. Road Construction /Reconstruction, D. Road Management. 5. Hydro modification – 5.1A. Physical Characteristics of Surface Water, 5.1B. Instream and Riparian Habitat Restoration, 5.2A. Dam Erosion, 5.2C. Sediment Control Protection of Instream Riparian Habitat, 5.3A. Streambank Erosion. 6. Wetland, Riparian Areas and Vegetated Treatment System – A. Protection, B. Restoration of Wetlands & Riparian Areas.

### **Monitoring Deliverables:**

Photomonitoring is completed for each enrolled property. Effectiveness monitoring is completed for sites with grant funded projects. The start and end dates reflect the ongoing nature of the FFF program and the best estimate of 7/2006 as a start date and a four year timeframe for grants under this application

### **Performance Measures:**

As part of the FFF program, each owner/manager delineates permanent photo-monitoring points throughout the property to document BMPs implementation and changing natural conditions. In addition, CLSI works with many owners to install water temperature monitoring instruments and completes channel surveys, pebble counts and embeddedness measurements. The monitoring uses techniques similar to the SWAMP program.

### **Scientific Basis of Project:**

The FFF program documents scientific methods used to create the BMPs. Since the program is comprehensive in scope, the technical background includes the Universal Soil Loss Equation and its updated version, the TR-55 model for stormwater erosion effects, road inventory and assessment procedures, toxicology information from five academic databases for the effects of agricultural chemicals on fish and wildlife, an analysis of channel cross-sectional data to determine watershed area to bankfull channel width, NOAA fish migration barriers and water supply facilities publications, and NRCS soil conservation practices

**Project # 51 Title: Mid Van Duzen River Ranch Road Sediment Reduction Program**

Entity Responsible for Implementation: Humboldt County Resource Conservation District  
Contact name: Dina J. Moore, YES Grants Coordinator

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$810,000

**NCIRWMP recommended:** \$336,817

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs

**Project Summary:**

In December 1999, EPA completed the load allocations portion of the Van Duzen River TMDL for Sediment (EPA 1999). The Mid Domain of the watershed was identified as yielding the largest amount of sediment with roads being one of the largest management related contributors. This project involves implementing prevention and restoration measures as outlined in the "Summary Report for the Watershed Assessment and Erosion Prevention Planning Project for the Middle Van Duzen River" (PWA 2003), completed on the properties of the landowner members of the Yager/Van Duzen Environmental Stewards (YES), to reduce sediment delivery to streams from roads. The membership of YES encompasses approximately 78% of the land base in the middle third of the basin. The members of YES, a working watershed group formed in 1998 in response to the need for landowner representation and participation in cooperatively and collaboratively working with the multiple State and Federal agencies involved with the ongoing protection and regulation of water quality within the unique Mid Domain of the Van Duzen River basin.

**Project Goals:**

The goal of this project is a reduction of the sediment delivery contribution from roads: this project was preceded by and will be followed by more phases of implementing sediment source treatments. Through implementation of the sediment source treatments for the sites covered by this project as much as 50,000 tons of sediment savings will be attained; the actual sediment savings and affected road miles will be determined during the site work. Review of the database presented in the "Watershed Assessment and Erosion Prevention and Erosion Prevention Planning Project for the Middle Van Duzen River" (PWA 2003) will be used to identify priority sites for sediment source treatments. Specific plans for implementing site-specific treatments will be developed. Priority based on but not limited to: erosion potential, distance from Class I streams, volume of potential sediment reduction, comparison of implementation cost vs. sediment volume, dependence of the landowner on

the road, accessibility for implementation. Sediment source treatments will be assigned to the selected sites based on site-specific conditions and standard practices.

**Project Benefits:**

This project initiates implementation of management measures to address the problem of road related sediment sources as defined in the Van Duzen River TMDL for Sediment (EPA 1999), which indicated that the middle portion of the watershed has the highest rate of sediment delivery at 3,319 tons/mi<sup>2</sup>/yr (based on the unit conversion [EPA 1999] of 1.76 tons per cubic yard). 84% of this total is characterized as natural or background sediment yield (2,803 tons/mi<sup>2</sup>/yr), approximately 516 tons/mi<sup>2</sup>/yr is believed to be associated with land management activities with a major portion from roads. One of the Water Quality Concerns identified by EPA in the Van Duzen River TMDL for Sediment was "The challenge for resource managers is to reduce the risk of management-associated sediment delivery, particularly in the event of large storms, through implementing a prevention and restoration strategy, which will result in protection of these critical habitat values" (EPA 1999). This reduction in sediment delivery to the Van Duzen River and tributaries is an integral part of improving aquatic habitat, which supports cold-water dependant fish, primarily anadromous salmon and steelhead.

**Collaborative Support:**

- ❑ Humboldt County Resource Conservation District
- ❑ California Department of Fish and Game
- ❑ California State Water Resources Control Board

**Larger Project to which this Project Contributes:**

- ❑ Mid Van Duzen River Ranch Roads Sediment Reduction

**Description of Larger Project:**

This project is intended to implement management measures to address the problem of road related sediment sources as defined in the "Van Duzen River TMDL for Sediment" (EPA 1999). Furthermore this project is the follow up course of action that is intended to remediate erosion contributions as identified in the planning document cited above by Pacific Watershed Associates for the members of the Yager/Van Duzen Environmental Stewards.

**Political Support:**

The proposed project continues the going collaboration and coordination among multiple stakeholders, agencies, and interest groups. The "Erosion Prevention Planning Project for the Middle Van Duzen River" (PWA 2003) was one of the largest funded grants of its kind by DFG because of the large number of private landowners involved. There is a high degree of local support for this project because

it is the hope by many that it can serve as a model to demonstrate not only to other landowners within Region 1, as well as throughout the state, that a positive approach is available for implementing on-the-ground measures through partnerships with governmental agencies in a non-regulatory, self-determined manner to address the challenging issue of sedimentation. The policy makers at a county, state and federal level are highly supportive of efforts such as this project that initiate voluntary efforts at protecting and enhancing watershed systems.

### **Integration of Nonpoint Source Management Measures:**

The Mid Van Duzen Sediment Reduction Plan will consistently implement the goals and direction of the Plan for California's Nonpoint Source Pollution Control Program by implementing measures outlined in the plan. Furthermore watershed management strategies for this project have been developed giving consideration to local environmental and economic conditions.

### **Monitoring Deliverables:**

Photographs (i.e., photo-monitoring) to document pre- and post-construction conditions will be taken at each treatment site. The volume of sediment source reduction will be calculated based on the volume of fill/sediment removed and/or the volume of potential erosion reduced or eliminated at each treatment site. This monitoring can be considered effective if the site treatments can be measured, and pre-construction conditions can be identified and used as a baseline by clear photographs and identifiable survey monuments. Final report will summarize monitoring findings.

### **Performance Measures:**

Performance measures used to determine effectiveness of the project will be measured by an evaluation of the volume of sediment source reduction will be calculated based on the volume of fill/sediment removed and/or the volume of potential erosion reduced or eliminated at each treatment site. A photo monitoring plan to document pre- and post- construction conditions at each site, based on the SWRCB guidelines, will allow this project to be integrated into statewide monitoring efforts.

### **Scientific Basis of Project:**

The baseline data for this project was established by the "Erosion Prevention Planning Project for the Middle Van Duzen River" prepared by the firm of Pacific Watershed Associates, a geologic/hydrologic consulting firm. Technical knowledge and analysis will be provided by the Humboldt Co. Resource Conservation District who adhere to the guidelines set forth in the following manuals: "Natural Resource Conservation Service Field Office Technical Guide", CA. DFG "Salmonid Stream Habitat Restoration Manual" and the "Handbook for Forest and Ranch Roads" by Weaver and Hagans (1994).

**Project # 121 Title: Salt River Restoration Project**

Entity Responsible for Implementation: Humboldt County Resource Conservation District  
Contact name: Curtis Ihle, District Manager, Humboldt County Resource Conservation Dist

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$5,950,000

**NCIRWMP recommended: \$1,169,502**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The impacts of riparian deforestation, urban development, grazing, channelization and historic land use have resulted in increased sediment to the mainstem and prolific instream vegetation growth in the once navigable Salt River. Rapid siltation and resultant flooding of the mainstem causes damage to public and private infrastructure and has created a situation where the Ferndale Wastewater Plant is no longer in compliance with effluent dilution requirements resulting in a cease and desist order issued by the NCRWQCB. Project will improve channel conditions in the Salt River by removing sediment from the channel. Nuisance instream vegetation will be removed and replaced with an appropriate composition of managed riparian vegetation. Setback levees will be used on the tributaries to promote natural sediment deposition trends on the alluvial fan. Sediment detention basins will be used to reduce suspended sediment levels. Erosion sources in the upper watershed will also be treated.

**Project Goals:**

The mission of the project is to restore natural hydrologic function to the Salt River for the improvement of water quality, waste water treatment, flood control, wetlands enhancement, ecosystem restoration and other benefits to local economic and environmental resources. The project will increase water quality by treating identified stream bank and road related erosion sources. Sediment contributions to the mainstem Salt River will be reduced further by utilizing setback levees on the trans-delta reaches of the tributaries to allow sediment deposition to occur within a set-back levee system. Temporary sediment basin will be used to capture sediment for manual removal. The Salt River restoration project will improve channel conditions in the mainstem Salt River by removing and estimated 170,000yd<sup>3</sup> of accreted sediment and 29 acres of nuisance instream vegetation from the Salt River channel.

### **Project Benefits:**

The multiple benefits of restoring the Salt River include improved water quality, ecosystem restoration, and increased agricultural viability. By opening the Salt River: flood conveyance will be improved and flooding will be decreased; Ferndale wastewater plant will be able to meet waste discharge requirements and be less susceptible to flooding and the affects of siltation in lower Francis Creek; and fish will once again have safe passage to an additional 4 miles of mainstem and 8 miles of tributary. By treating upslope erosion hazards and by allowing sediment to deposit on the alluvial fan; suspended sediment contributions to the mainstem Salt River will be decreased, ensuring the long-term attainment of a functional river system. The project will also have benefits beyond the project boundaries by providing necessary estuarine rearing habitat to listed anadromous salmonids.

### **Collaborative Support:**

- Natural Resource Conservation Service- Eureka District
- California Department of Fish and Game
- California Coastal Conservancy Funder
- City of Ferndale
- County of Humboldt
- NRCS PL566 Small Watershed Planning Program

### **Larger Project to which this Project Contributes:**

- Salt River Cooperative Conservation Program

### **Description of Larger Project:**

The Salt River Cooperative Conservation Program (SRCCP) is comprised of representatives from various local, county, state, and federal agencies as well as numerous landowners and concerned citizens. The objective of the SRCCP is to work toward a balance of viable working landscapes, sustainably managed natural resources and the promotion of diverse economic opportunities within the Salt River Basin.

### **Political Support:**

The Project was initiated in 2003 by the USACE Section 206 program after pressure was applied by Humboldt County supervisors, City of Ferndale, and Congressman Mike Thompson. Accepting the responsibility of a 35% match of the six million dollar project, the HCRCD became the local sponsor for the USACE. USACE found that they were over-subscribed nationally and were unable to continue in the Salt River project. Because of the local partnership that coalesced to participate in the USACE process and because of the pressing socio-economic needs presented by the Salt Rivers' dysfunction; the HCRCD was not in a position to abandon their efforts. The Salt River Advisory Group (SRAG), a sub-committee of the HCRCD was formed to provide local guidance for the USACE but now operates as

the guiding local entity. SRAG is composed of 15 landowners and representatives from CDFG, NRCS-small watershed planning program, Coastal Conservancy, City of Ferndale, Humboldt County

**Integration of Nonpoint Source Management Measures:**

The Project will reduce non-point source pollution by: 1.) Utilizing riparian exclusion fencing to keep livestock from accelerating bank erosion. 2.) Restoring degraded stream banks; 3.) Upgrading and erosion proofing necessary roads; 4.) Decommissioning unnecessary roads; 5.) reduce non-point source dairy waste pollution by alleviating persistent nuisance flooding in the Salt River;

**Monitoring Deliverables:**

Vegetation transect monitoring, standardized channel cross section monitoring, monumented photo-point monitoring of vegetation composition, Land-use control measures, erosion hazard reduction measures.

**Performance Measures:**

Monitoring procedures will include both qualitative and quantitative measures as prescribed in the soon-to be published CDFG Coastal Monitoring Protocol. Qualitative measures will include photo-monitoring of vegetation composition of the mainstem and tributaries. Quantitative measures will include: standardized channel cross-sectional monitoring; land use control measures, vegetation transects, water temperature monitoring and erosion hazard reduction measures.

**Scientific Basis of Project:**

The 2005 CDFG Salt River Watershed Assessment provides an up to date report of watershed conditions specific to salmonids and their habitat needs. The report identifies data gaps, synthesizes information and makes recommendations. Other analysis is currently underway including: an upslope erosion hazard inventory, a hydrological analysis and a topographic elevation survey. Technical support will be provided through the NRCS PL 566 small watershed planning program and the SRAG.

**Project # 23 Title: Graton Wastewater Treatment Upgrade and Reclamation Project**

Entity Responsible for Implementation: Graton Community Service District

Contact name: Bob Rawson, General Manager

**County:** Sonoma

**Disadvantaged community:** Partially

**NCIRWMP request:** \$1,332,400

**NCIRWMP recommended: \$654,921**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The Graton CSD owns Graton's wastewater treatment facility. The system was constructed in 1976 and treats an ave. daily flow of up to 0.85 mgd. The current facility provides secondary treatment prior to discharge to Atascadero Creek. In order to comply with the Regional Water Quality Control Basin Plan, the facility will be upgraded to provide advanced wastewater treatment that meets Title 22 requirements for all reuse purposes. The project goal is to achieve zero discharge to Atascadero Creek and provide tertiary treatment. Reclaimed water will be used to irrigate approx. 100 acres of vineyard, redwoods, native grasses and woodlands. Irrigated plants will uptake and treat effluent and treat non-point source runoff from up-gradient livestock operations. Treated effluent in excess of evapotranspiration will filter through forest soil and recharge groundwater and enhance riparian vegetation. Wildlife habitat will thus be improved in riparian areas. Influent will be reduced via water conservation programs and reduction of storm water infiltration. Phytoremediation, filtration and other innovative technologies will be used to provide tertiary treatment.

**Project Goals:**

1. Eliminate secondary wastewater discharge, reduce total discharge to Atascadero Creek, and improve surface water quality in Atascadero Creek and the Russian River;
2. Comply with the Regional Water Quality Control Basin Plan and NPDES permit requirements;
3. Reduce life-cycle costs of wastewater treatment by providing sustainable, ecological, energy-efficient and profitable treatment of wastewater;
4. Utilize reclaimed wastewater effluent for irrigation, local groundwater recharge, and enhancement of riparian vegetation;
5. Abate up-gradient non-point source pollution from agricultural land uses through phytoremediation;
6. Reduce domestic, agricultural, and industrial groundwater withdrawal through water conservation and irrigation with reclaimed water;
7. Increase water flow in Atascadero Creek by enhancing groundwater flow to riparian vegetation;
8. Control influent contamination through:
  - a. management of infiltration,
  - b. educational programs and incentives,
  - c. source control programs;
9. Enhance wildlife habitat in riparian corridors and wetlands;
10. Provide opportunities for public education and recreation.

### **Project Benefits:**

The project will improve water quality in Atascadero Creek, Green Valley Creek and the Russian River by eliminating secondary effluent discharges and reducing non-point source pollution from agricultural chemicals and nutrients. Surface water quality improvements and reduction in water temperature from increased riparian vegetation will benefit salmonids and other endangered aquatic species. Terrestrial wildlife habitat will be improved. Groundwater, the local water supply, will be secured through reduction in domestic and agricultural withdrawals. Consumers will become increasingly aware of the benefits of conservation and will take appropriate actions. Net groundwater removal from the regional aquifer will be reduced. Wastewater treatment facilities will be protected from flooding thus preventing downstream water quality impacts. Public health and environmental benefits will incur by replacing chlorination as the disinfection method. The project will be a model for small communities seeking economic, ecological solutions to wastewater problems. Benefits will be multiplied through public education regarding native plants.

### **Collaborative Support:**

- ❑ Atascadero/Green Valley Watershed Council
- ❑ Russian River Watershed Council
- ❑ Graton Community Services Project
- ❑ West County Rural Alliance
- ❑ Central Laboral-Graton Labor Center
- ❑ Forrestville Citizens for Sensible Growth
- ❑ Oak Grove Elementary School
- ❑ Graton Day

### **Political Support:**

Local residents in the Graton Community Service District voted for the local control and implementation of ecological, economic and sustainable treatment technologies when the District was formed. The Community Implementation Committee was formed to provide input and oversight using a consensus process. The Sonoma County Water Agency continues to operate the plant and is assisting the transition to local management of the facility. Conceptual designs for the upgrade were developed with Atascadero/Green Valley Watershed Council input. Management of the project is collaborating with the Russian River Watershed Council and the upgrade conforms to that group's Watershed Active Management Plan and Plan of Action which were written with US Corp of Engineers assistance. The following groups provided input and support and will participate in the project: Central Laboral – Graton Labor Center, the Graton Community Services Project, the West County Rural Alliance, Graton Day, Forrestville Citizens for Sensible Growth and the Oak Grove Elementary School. Seed money for planning was provided by Bread for the Journey and the Christensen Development Fund.

**Integration of Nonpoint Source Management Measures:**

Yes. Non-point source sediment and nutrient pollution due to livestock and agricultural sources will be reduced through phytoremediation components of the project that rely on native grasses and redwoods.

**Monitoring Deliverables:**

1) Effluent and operational monitoring as prescribed in NPDES permit no. CA0023639; 2) Wastewater treated by phytoremediation for copper, lead and zinc; 3) Non-point source runoff monitoring for nitrogen, solids, turbidity; 4) Sediment erosion monitoring; 5) Groundwater will be monitored in the irrigation fields; 6) Surface water in Atascadero Creek and upstream in the Pitkin ditch will be monitored to ensure compliance with surface water standards; 7) Soils in the irrigation field will be monitored to ensure adequate filtration of recharged reclamation water.

**Performance Measures:**

Sampling and analyses will be conducted to measure results. Results will be submitted to the Regional Water Quality Control Board and become public record. Sampling of Atascadero Creek up and down stream from the project area will measure improvements resulting from the project. Data will be provided to First Flush Monitoring efforts conducted by the Atascadero/Green Valley Watershed Council, the Regional Water Quality Control Board, and the California Fish and Game Departments.

**Scientific Basis of Project:**

The District has operating records dating back to 1977, including rainfall, discharges and stream flow in Atascadero and Green Valley Creeks. District staff are competent, qualified professionals certified in the field of wastewater treatment. Lab analyses will be conducted using Standard Methods for Analysis of Water and Wastewater. A certified laboratory will be used for reportable data.

**Project # 128 Title: Sonoma County Water Recycling and Habitat Preservation Project**

Entity Responsible for Implementation: City of Santa Rosa

Contact name: Virginia I. Porter, Deputy Director Water Resources

**County:** Sonoma

**Disadvantaged community:** Partially

**NCIRWMP request:** \$50,000,000

**NCIRWMP recommended: \$1,004,603**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs

**Project Summary:**

The Project involves: expanding existing recycled water project (tertiary treatment plant, transmission and storage) by constructing additional facilities to deliver 780 AF recycled water for urban irrigation and 1985 AF for agricultural irrigation; and restoring/enhancing habitat to benefit 7 federally-protected species: 3 salmonids in the Russian River – Coho and Chinook salmon and steelhead; California Tiger Salamander (CTS); and 3 plants - Sonoma sunshine, Sebastopol meadowfoam, Burke's goldfields. The Project would benefit protected CTS and plant species by removing irrigation from and restoring 70 acres of Santa Rosa Plain lands owned by the City and then using that recycled water supply for agricultural and urban lands. These agricultural lands currently rely on diversions from the Russian River and tributaries which host 3 protected salmonid species; this would eliminate the need for these diversions. Irrigation to urban lands reduces the dependence on water supply diversions from the Russian River. The Project has a water quality benefit because some of the recycled water for irrigation is now discharged to impaired water bodies.

**Project Goals:**

The Project has two primary goals: 1) to restore and enhance habitat for environmental benefit in general and 7 protected species in particular; 2) to expand the use of recycled water for agricultural and urban irrigation to add water supply diversity and reliability to the region. The first goal is accomplished by: removing irrigation from and restoring 70 acres of habitat for CTS and 3 plant species; reducing agricultural diversions in sensitive areas of the Russian River and its tributaries by supplying recycled water for irrigation; reducing reliance on water supply diversions from the Russian River by providing recycled water to urban sites currently supplied from the Russian River system; reducing discharge of tertiary treated water into the Laguna de Santa Rosa and the Russian River. The second goal is accomplished by providing recycled water supply to sites currently reliant on groundwater and Russian River diversions.

### **Project Benefits:**

The Project would decrease reliance on Russian River and local groundwater supply by Sonoma County urban and agricultural water users by providing 2765 AF of recycled water each year to sites currently using potable or raw water supplies. The Project would also reduce recycled water discharge to impaired waters. Habitat for 7 federally-protected species would be restored or enhanced. For example, the Project would increase dedicated CTS habitat by 10% (from 738 acres to 808 acres).

### **Collaborative Support:**

- ❑ City of Rohnert Park
- ❑ SCWA

### **Larger Project to which this Project Contributes:**

- ❑ Incremental Recycled Water Program

### **Description of Larger Project:**

The Incremental Recycled Water Program Master Plan includes reuse of 6,750 AF annually by 2020. The proposed Project represents the first two phases of the Program. Subsequent phases involves expansion of the urban and agricultural water recycling systems and expansion of the Geysers steamfield injection project from current level of 12,200 AF per year. The Santa Rosa Plain element of the proposed Project is consistent with the Santa Rosa Plain Conservation Strategy, which has been established by resource agencies to provide a strategy for habitat conservation and enhancement of listed species on the Santa Rosa Plain. The Strategy is a coordinated mechanism for processing permits for projects that are in the potential range of listed species on the Santa Rosa Plain. The Strategy establishes the mitigation that will be required in areas of potential impact, and designates conservation areas where mitigation should occur. The cost of Strategy implementation could be as high as \$400 million.

### **Political Support:**

The City of Santa Rosa is the managing partner for regional water treatment and recycling authority (Santa Rosa Subregional Water Reclamation System), and the City of Rohnert Park, City of Cotati, City of Sebastopol and the County of Sonoma are partners in this system and support the Project. The Subregional System has built an urban water recycling system in Rohnert Park that is of similar magnitude to the urban recycling component of the proposed Project. The Town of Windsor is not part of the system but has constructed its own urban water recycling projects. The Town of Windsor relies on Russian River water supply and is supportive of water recycling projects to minimize diversion. Sonoma County Water Agency supports this project and has specifically called for increased use of recycled water to reduce peak demand and reliance on the Russian River system. Agricultural users

support the Project because it provides a reliable water supply. Resource agencies support the Project because of the 7-species benefit.

**Integration of Nonpoint Source Management Measures:**

Normal landscape irrigation results in dry season discharge that conveys pollutants on streets to local waterways. Urban water recycling projects are managed much more strictly such that runoff is incidental. This reduces conveyance of NPS pollution. Ag irrigation in Sonoma County vineyards occurs via drip systems so runoff is not an issue. Recycled water will not be used for frost protection, where runoff is more likely than from irrigation.

**Monitoring Deliverables:**

Irrigation project monitoring will be conducted, and results will be reported consistent with Regional Water Quality Control Board permit requirements. Monitoring and reporting associated with habitat restoration sites will include the following: a. Annual vegetation, hydrology, erosion, and wildlife monitoring. b. Annual reports to agencies. c. Annual remedial actions. d. Final report to agencies.

**Performance Measures:**

Effectiveness of water recycling Project elements will be assessed by the number of recycled water users, how much water they use, and whether water is used in compliance with permits and regulations. The City of Santa Rosa evaluates existing water recycling projects for these parameters with established monitoring, reporting and enforcement infrastructure. Effectiveness of habitat restoration Project elements will be assessed by acres created and utilization by the 7 target species.

**Scientific Basis of Project:**

The proponent currently manages one of the largest water recycling programs in the nation; it currently recycles more than 18,000 AF each year. More than 75 percent of the water it produces is currently recycled in urban, agricultural and industrial settings. The proponent has restored and maintained many acres of vernal pool and riparian habitat successfully. The City has the necessary expertise to manage the Project.

**Project # 217 Title: Newell Water System Renovation**

Entity Responsible for Implementation: Modoc County

Contact name: Michael Maxwell, County Administrative Officer

**County:** Modoc

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$1,815,127

**NCIRWMP recommended: \$1,496,963**

**NCIRWMP Objectives Addressed:**

- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The town of Newell including its water system was originally constructed more than 60 years ago as temporary facilities for up to 20,000 people in the Japanese internment camps of Modoc County during World War II. The system intended to be temporary when constructed continues to serve the agricultural community. The water system consists of three wells, two storage tanks (25,000 and 100,000 gallons), and approximately 35,000 lf of distribution and lateral service lines. Leaking approx. 94,000 gallons of water per day, elevated levels of bacteria from groundwater infiltration and iron oxides in the pipes, the system is close to catastrophic failure. Hammond Engineering, having reviewed the condition of the system, finds that the following repairs are necessary to maintain this critical piece of community infrastructure in a usable condition. The proposed project includes the following components: 1. Replace the 25,000-gallon-water storage tank (installed around 1940) with a new 100,000-gallon tank. 2. Install new water main and appurtenances (hydrants, valves, etc.).

**Project Goals:**

It is the goal of this project to provide a safe, dependable and low maintenance drinking water system for the community of Newell while conserving approx. 100 acre ft. per year of ground water currently being lost through leakage of the current system. Project will also reduce the current risk of contamination of sensitive wild life habitat of the Clear Lake and Tule Lake National Wildlife Refuges which are in the close proximity of Newell and its 100 acre-ft. per year water leak.

**Project Benefits:**

Accomplishing this project will provide a safe and low maintenance water system for the community of Newell. The water will be free from contamination and the source will be dependable. It will also reduce the cost of operating, maintaining, and patching the system by an estimated 90%, reducing the workload of the very small staff, and allowing the district to focus on other routine maintenance

necessary to protect the community's investment. When complete the project will conserve 100 acre ft. of ground water currently being pumped, treated, contaminated by ancient iron and lead pipes and possible sewer then expelled into the surrounding environment.

**Collaborative Support:**

- ❑ Modoc County Newell Water District
- ❑ Great Northern Corp. ( Non Profit.)

**Political Support:**

For several years the condition of the water system has been frequently discussed at District meetings with the community as well as various community development and economic development meetings both formal and informal. The project has strong support from the community, the agricultural citizen surrounding the community and the Modoc County Board of Supervisors.

**Monitoring Deliverables:**

The water system is currently monitored by the Newell County Water District for operation and maintenance and by County Environment Health for contamination and bacteria levels and will continue to do so. It is intent of the County and the District that Hammond Engineering will assume construction management and inspection duties when the project construction commences. An engineer inspector representing the District will be on the job daily during this time to monitor all construction activities.

**Performance Measures:**

Base line data of system leakage and past water system evaluation reports by the State of California Department of Health Services, which includes water quality monitoring, will be used to evaluate the effectiveness of the project. Testing of both leakage and water quality will follow the completion of the project and will continue there after.

**Scientific Basis of Project:**

The County will partner with Great Northern Corp. a non profit that specializes in, among other areas of low income program delivery, community infrastructure grant administration and project management. A California registered engineer having extensive technical knowledge of the current system will do the project design drawings and specifications. The same engineer, Mr. David B. Hammond will manage and inspect all construction activities as the project moves forward.

**Project # 38 Title: Head Hunter/Smoke House Non-point Sediment Reduction Project**

Entity Responsible for Implementation: California State Parks - North Coast Redwoods District

Contact name: Brian R. Merrill, Engineering Geologist

**County:** Del Norte

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$871,318

**NCIRWMP recommended: \$280,680**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Ensure adequate water supply
- Support implementation of State Programs

**Project Summary:**

This project will decommission 20 miles of critically unstable abandoned logging roads in the Mill Creek watershed, a tributary to the Smith River. The Project is within Del Norte Coast Redwoods State Park's Mill Creek Acquisition (MCA). The project includes removal of 76 stream crossings and 60 logging landings. The expected reduction in non-point source sediment directly deliverable to streams is approximately 108,000 cubic yards. Potential mass wasting attributed to poor drainage along proposed treatment roads is approximately 12,000 cubic yards. Sediment savings will be realized by removing actively failing stream crossings and large perched landing fills. Widespread failure of unstable road fillslopes will be eliminated by recovering fill and stabilizing it locally along the roads. Chronic roadbed and ditch erosion will be eliminated by recontouring the road cutbench and eliminating road ditches. The project will use widely accepted techniques for road decommissioning and stream crossing removal described in the California Dept. of Fish and Game Salmonid Stream Habitat Restoration Manual, Chapter 10.

**Project Goals:**

This project will eliminate non-point source sediment pollution from 76 failing stream crossings (75,200 cu.yds.) by removing them and stabilizing the fill on nearby road benches. The project will also stabilize 20 miles of critically unstable road (16,700 cu.yds.) by recovering potentially unstable fillslopes and using the material to eliminate road surface erosion and drainage ditches (2,000 cu.yds.). Sixty large yarder landings with potentially unstable fill (13,900 cu.yds.) will also be stabilized by recovering perched fillslope material. The earthmoving work will be accomplished using two pieces of heavy equipment. Following the earthmoving a team of hand laborers will cut and distribute locally derived mulch on the soil surface adjacent to all stream crossing excavations. During the following winter, tree planting crews will revegetate the crossing sites with an appropriate mixture of tree species for future shading and large woody debris recruitment. Trees used for revegetation will be propagated from trees growing within the project area.

### **Project Benefits:**

This project will provide direct benefits to water quality and habitat quality within the Mill Creek watershed and Lower Smith River. The project will reduce chronic non-point source sediment pollution by eliminating active and potential sources of erosion, and conduits for sediment delivery to streams. The project will also maintain the high water quality and exceptional habitat quality within the MCA by eliminating the potential for widespread catastrophic failure of stream crossings, landings and roads in the event of a large storm. In addition, decommissioned roads corridors will provide improved habitat for native tree species displaced by road building and logging operations, which will improve watershed quality. The removal of these roads will also eliminate the wildlife habitat fragmentation and terrestrial migration problems associated with these roads. Revegetation activities at the stream crossings will provide protection of the soil adjacent to streams, shade to maintain water temperature and eventually large woody debris as trees mature and fall. The project will also benefit local communities by employing local construction contractors for the heavy equipment work and tree planting crews for revegetation work.

### **Collaborative Support:**

- Smith River Alliance Funder
- California Dept of Fish and Game Funder
- Rural Human Services Funder
- Save-The-Redwoods-League
- California Conservation Corps
- California Wildlife Conservation Board
- State Costal Conservancy
- Del Norte County Board of Supervisors
- Redwood National Park
- College of the Redwoods
- Del Norte County Unified School District
- Regional Water Quality Control Board

### **Larger Project to which this Project Contributes:**

- Landscape Stabilization & Erosion Prevention Plan

### **Description of Larger Project:**

The Landscape Stabilization and Erosion Prevention Plan (LSEP) is a six year program to stabilize 125 miles of critically unstable roads within the MCA. The project proposed for this grant will be one of several that would be implemented under LSEP. Implementation of the LSEP began in 2004 and is expected to end in 2010.

### **Political Support:**

This project has broad local and regional support. The Del Norte County Board of Supervisors has an active member on the Mill Creek Advisory committee. The Smith River Alliance and the Save-The-Redwoods-League are active participants in the resource management of the property. The California Department of Fish and Game and the California Coastal Conservancy have provided technical and financial assistance for restoration. Rural Human Services has funded a program to train heavy equipment operators to work on sensitive watershed restoration projects, increasing local capacity for restoration. Del Norte County Schools and College of the Redwoods will be actively involved in nursery operations to raise trees for revegetation of road treatment sites. The California Conservation Corps has been actively participating in forest restoration work and will be used to construct instream habitat improvements funded under a separate project. State Senator Wesley Chesbro and Assemblywoman Patty Berg have both endorsed this project

### **Integration of Nonpoint Source Management Measures:**

This project is consistent with Tier 1 objectives as defined by the Non-Point Source Program where: "Self-determined implementation of management practices where landowner and resource managers develop and implement workable solutions to NPS pollution". Road decommissioning is widely recognized as an effective management strategy for permanent reductions in non-point source sediment.

### **Monitoring Deliverables:**

During construction work, site inspectors will establish photo points at stream crossing sites. Photo points will be land-marked with stakes or tree tags and labeled. Photos will be taken prior to major excavation, immediately following excavation and during site visits conducted two years following treatment. Photo points will be linked to the GIS developed for the MCA. Incorporate photos into GIS

### **Performance Measures:**

Following excavation of unstable and erodible material, annual field visits will be conducted once each spring for two years following treatment. Treatment sites will be evaluated for post-treatment erosion and significant erosion will be quantified using cavity measurements and channel cross sections. Post treatment erosion will be compared to predicted erosion had no treatment occurred. A percent effectiveness will be determined for each crossing site as the ratio of unrealized potential erosion and actual post-treatment erosion.

### **Scientific Basis of Project:**

This project was developed following a two-year road inventory and assessment. The assessment identified active and potential erosion problems associated with the road network throughout the MCA. The assessment was conducted by experienced engineering geologists and all inventory data were entered into an Access database. Priorities for road treatment were set based on the anticipated erosion during the next 5 years or major storm. Methods described in the California Dept. of Fish and Game Instream Habitat Restoration Manual will be used to implement the road treatments.

**Project # 151 Title: Trinity Drinking Water Source Sediment Reduction Project**

Entity Responsible for Implementation: Trinity County

Contact name: Sandra Pérez, Associate Planner

**County:** Trinity

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$300,015

**NCIRWMP recommended: \$280,695**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

This project proposes to improve the drinking water quality of major communities within Trinity County by treating sources of erosion on county roads that yield sediment upstream of each community's water intakes. The communities targeted, Weaverville and Lewiston, were surveyed in county road erosion inventories that calculated total potential erosion volumes and prescribed treatments for each source. Sources above major water intakes were prioritized based on their likelihood to deliver sediment, total potential sediment delivery volume over a ten year period, complexity of prescribed treatments, and cost effectiveness of prescribed treatments. Treatments are intended to return these county road sites to as hydrologically neutral a state as is practical and economical. Typical treatments include upgrading stream crossings, outsloping the road and installing rolling dips where safe and suitable, installing ditch relief culverts, and rocking unsurfaced roads. In both communities combined, this project proposes to treat/eliminate approximately 66,000 yd<sup>3</sup> of total potential sediment.

**Project Goals:**

This project implements the Water Board's Basin Plan and Sediment Amendment and the CA Coho Recovery Plan including: "TR-HU-10- Support continued State and Federal funding for...sediment reduction programs for DIRT-prioritized sediment source sites..on County roads." Treatments included in this proposal to improve drinking water quality through the reduction of approximately 66,000 yd<sup>3</sup> of sediment delivery upstream of water intakes are as follow: upgrade ~30 stream crossings, installing 3 emergency overflow culverts, installing 3 drop inlets and 1 flared inlet, outsloping 0.7 miles of road, installing 71 rolling dips and 13 critical dips, installing 15 ditch relief culverts, cleaning 8 culverts, removing 3.5 miles of berm, installing 0.2 miles of downspout, armoring ~4,800 ft<sup>2</sup> of fill face, and rocking 1 mile of unsurfaced roads. Work will be completed during two construction seasons using Trinity County Department of Transportation crews and, if necessary, with a subcontractor(s).

### **Project Benefits:**

All together, implementation of the treatments proposed will reduce sediment delivery upstream of major Trinity County community water intakes by 74,000 yd<sup>3</sup>. The work proposed is in the Trinity River watershed and will help achieve TMDL allocations for sediment. All of the sediment sources included in this proposal deliver to streams that host at least one species of anadromous fish (i.e., steelhead trout, listed Coho salmon, Chinook salmon). The proposed reduction in sediment will also improve the quality of anadromous fish habitat. Completion of the project would help to implement many of the range-wide and watershed specific recommendations of the CA Coho Recovery Strategy. Many of the treatment sites deliver into the Trinity River, a recreational and cultural resource that would also benefit from a reduction in sediment. This project takes advantage of various funding sources to distribute the cost share.

### **Collaborative Support:**

- Five Counties Salmonid Conservation Program (5C)

### **Political Support:**

Trinity County is the project proponent and either owns or has rights-of-way to all work sites. This project proposal was specifically identified and approved via county resolution #2005-012. It was included on the list of recommended priority projects proposed to the County Board of Supervisors by an ad hoc committee of local water supply providers, sewer district managers, watershed restoration groups, and county staff. Trinity County is a signatory to the North Coast Integrated Regional Water Management Memorandum of Mutual Understanding. Funding support for this project is also anticipated from US Forest Service Secure Rural Schools and Community Self-Determination Act Title II funds and CA Department of Fish and Game Fisheries Restoration Grant Program. Work proposed is based on inventories developed and managed by the Five Counties Salmonid Conservation Program (5C). This program along with implementation of this kind of sediment reduction project is identified and included in the CA Coho Recovery Strategy recommendations.

### **Integration of Nonpoint Source Management Measures:**

This project will treat approximately 66,000 yd<sup>3</sup> of non-point sediment from county roads in the Trinity River watershed below Lewiston Dam.

### **Monitoring Deliverables:**

Monitoring will consist of photo documentation of pre- and post project conditions. Existing road conditions will be documented via photo logs in early 2006 depicting both specific sites and the overall condition of the road with respect to erosion. Monitoring of specific sites and overall road condition will also be conducted during the winter and after storm events between construction seasons. Upon

completion of all treatments, post project road conditions will be photographed and combined with pre-project photos into one project log for comparison.

**Performance Measures:**

Project effectiveness will be determined by whether proposed treatments were installed as prescribed and by how sites respond during storm events. This response will be visually evaluated (observation for erosion and visual impacts to streams) and documented via photographic monitoring. Existing sites and the overall road condition with respect to erosion will be documented in early 2006. Upon completion of all treatments, post project road conditions will be photographed and combined with pre-project photos into one project log for comparison.

**Scientific Basis of Project:**

Proposed work is based on Pacific Watershed Associates (PWA) widely accepted road erosion inventory and treatment prescription protocols modified for use on county roads (Direct Inventory of Roads and Treatments &#8211; DIRT). DIRT incorporates formulas for quantifying erosion volumes along with treatments and immediacy ratings into a database that allows direct field input of physical site measurements for improved accuracy. The database also facilitates data management and site prioritization.

**Project # 108 Title: Martin Slough Interceptor Project**

Entity Responsible for Implementation: City of Eureka

Contact name: Michael Knight, Public Works Director/Building Official

**County:** Humboldt

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$5,598,500

**NCIRWMP recommended: \$2,572,905**

**NCIRWMP Objectives Addressed:**

- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The Martin Slough Interceptor Project is a collaborative wastewater collection system project between the City of Eureka and Humboldt Community Services District. The project includes a combination of new elements and alterations in some existing elements that will increase the reliability of the existing wastewater collection system avoiding wastewater overflows in the project area. The project will consist of approximately 16,500' of collector piping, 11,300' of interceptor piping, 13 MGD pump station, and 9,000' of dual force main piping. The project will eliminate up to 16 existing wastewater lift stations, and will reroute wastewater in a direct route to the Wastewater Treatment Plant, thereby improving the capacity and safety of the existing collection system and eliminating the lengthy, circuitous routing that generates odors due to extended travel time. The project will be sized to handle current and future peak wet weather wastewater flows for the full development condition of the 1,700 acre Martin Slough Basin for the 25-year return period storm, based on currently adopted planning documents and land use zoning.

**Project Goals:**

The main project goals are to improve the environment and water quality of the Martin Slough and Humboldt Bay watersheds by:

- Reducing the incidents of sanitary sewer overflows (SSO's)
- Reducing the current odor problem
- Improving system reliability and safety
- Improving pumping efficiency, thereby reducing pollution and cost.
- Accommodating wastewater flows for ultimate development in conformance with the Humboldt County and Eureka general plan

**Project Benefits:**

- Improved water quality in the Martin Slough, Elk River, and Humboldt Bay watersheds
- Reduced odors
- Long term environmental protection from improved wastewater system safety and reliability
- Annual cost savings by improving the efficiency of operation and maintenance operations

- Improved basin air quality by improving the efficiency of pumps and reducing odors
- Improved system reliability by having state-of-the-art controls and maintenance components
- Creating capacity for future planned growth in terms of wastewater CMOM
- \*Reduce shellfish closure of bay due to SSO's.

**Collaborative Support:**

- Humboldt Community Services District

**Political Support:**

The Martin Slough Interceptor Project has local, regional and federal support. The City of Eureka and Humboldt Community Services District have long recognized the need to construct this project. The project will help to protect the environment, improve collection system reliability and efficiency, and provide additional system capacity to help enable future growth in the unincorporated areas of Humboldt County southeast of Eureka consistent with the Humboldt County general plan. For this reason, the project enjoys the support of County representatives. The EPA supports this project and understands the need to protect one of the most sensitive ecological areas in Northern California. The EPA has provided a total of 1.7 mil. in three separate State and Tribal Assistance Grant Program funding cycles. The Regional Water Quality Control Board supports the project due to improvements in collection system reliability and reduction of incidences of sanitary sewer overflows. The project is supported by Assembly Member Patty Berg, U. S. Senator Dianne Feinstein, Congress Member Mike Thompson, and Senator Wesley Chesbro (letters of support attached).

**Integration of Nonpoint Source Management Measures:**

This project is not designed to reduce non-point source pollution. It will reduce the contamination of runoff from non-point sources by eliminating sanitary sewer overflows due to extreme wet weather events.

**Monitoring Deliverables:**

Monitoring Deliverables: Daily, Weekly, Monthly, Annual Reports on: Water Quality, System Performance & Energy Usage , Odor Control – Air Quality Management

**Performance Measures:**

Pre-project baseline data has been gathered and additional sampling is planned. Post-project monitoring will be conducted. Results of the two studies will be analyzed to determine the effectiveness of the project related to pollution reduction. The performance measures used will include fecal coliform, ammonia, conductivity, and turbidity. The monitoring efforts will modeled after first flush analyses that are conducted statewide and the results generated can be incorporated with those

studies. An economic benefit will be a reduction in collection system operation costs and can be prepared to pre-project cost.

**Scientific Basis of Project:**

The baseline information and data generated during the projects environmental phase will be used as a management tool to plan and implement the project. After project completion, this data will be use to evaluate its beneficial effect. The EIR for the project has been certified by the City and the NEPA will be completed shortly.

**Project # 125 Title: Navarro Watershed Road Sediment Reduction Project**

Entity Responsible for Implementation: Mendocino County RCD

Contact name: Jan Olave, Executive Director

**County:** Mendocino

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$1,415,427

**NCIRWMP recommended: \$673,633**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Support implementation of State Programs

**Project Summary:**

The purpose of the Navarro Watershed Road Sediment Reduction Project is to upgrade 61 miles of unimproved forest and ranch road systems, upgrading 293 road segments to save 71,887 cubic yards of sediment (over a 10 year period) from entering the river system. These road segments were identified by road assessments (using DFG approved PWA and Star\* Worksheet methodologies) and prioritized for their potential to deliver sediment, impacting water quality and fisheries habitat. This project will fully implement the highest priority road-sediment reduction treatments, as recommended in the Navarro Watershed Restoration Plan (1998) and the Navarro Watershed TMDL Technical Support Document (200).

**Project Goals:**

Project goals include, upgrade stream crossings--primarily sizing culverts for 100-year storm events--to manage flows and debris in transport, remove unstable sidecast material from steep slopes, and apply drainage techniques to disperse road surface run-off. These techniques will include removing outboard berm material, outsloping roads, rolling dip construction and/or ditch relief culvert installation. To improve road drainage and prevent sediment delivery into the Navarro River watershed, the project will: A. Replace, install, re-install and/or minimize diversion potential and erosion at 293 stream crossings with culverts sized for 100-year storm events; B. Outslope roads and remove berms, fill inboard ditches, and install rolling dips along 424 road segments; C. Outslope roads and remove outboard berms, clean culverts, and install trash racks (culver plugging prevention) where applicable.

**Project Benefits:**

The benefits, include: 1) implementing the recommendations of the Navarro Watershed Restoration Plan (1998) and the Navarro River Watershed TMDL Technical Support Document (200) to reduce road related sediment; 2) prevent 71,887 cubic yards of sediment from entering the Navarro River watershed; and 3) protect fish (coho salmon and steelhead-trout) and wildlife habitat.

**Collaborative Support:**

- ❑ Natural Resources Conservation Service
- ❑ CA Department of Parks and Recreation
- ❑ Navarro Watershed Working Group

**Larger Project to which this Project Contributes:**

- ❑ Navarro Watershed Road Sediment Reduction Project

**Description of Larger Project:**

This project will implement individual road sediment reduction inventories completed with Department of Fish and Game and State Coastal Conservancy funding, through the RCD. The road sediment reduction strategies follow the recommendations of the Navarro TMDL and Navarro Restoration Plans.

**Political Support:**

The project is supported by the Mendocino County Board of Supervisors, the Mendocino County Water Agency, the Anderson Valley Land Trust, the Farm Bureau, and the Navarro Watershed Working Group. The Mill Creek Watershed Road Sediment Reduction Projects have, to date, been the site of tours, workshops, and training sessions for heavy equipment operator and landowner technical education

**Integration of Nonpoint Source Management Measures:**

Yes. The project is consistent with Tier 1 objectives as defined by the Non-Point Source Program where determined implementation of management practices where landowner and resources develop and implement workable solutions to NPS pollution. Road decommissioning is recognized as an effective management strategy for permanent reductions in non-point source sediment.

**Scientific Basis of Project:**

The project design will reflect the recommendations for road sediment reduction as described in the individual road inventories funded through the CA department of Fish and Game and State Coastal Conservancy. These inventories were conducted by geologists and hydrologists on site, and reflect the best available science for developing road restoration strategies.

**Project # 26 Title: Sediment Solutions for the Gualala: Phase III**

Entity Responsible for Implementation: Gualala River Watershed Council

Contact name: Kathleen L. Morgan, Program Coordinator

**County:** Mendocino Sonoma

**Disadvantaged community:** No

**NCIRWMP request:** \$1,132,445

**NCIRWMP recommended: \$159,052**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs

**Project Summary:**

This project will reduce non-point sediment sources within two sub-watersheds of the Gualala River, consistent with sediment TMDL findings in Gualala River Technical Support Document for Sediment (TSD), (NCRWQCB, 2000) and the North Coast Region Basin Plan (NCRWQCB, 1993). Non-point sediment source reductions will improve water quality and benefit and protect public and private water supplies and instream aquatic habitat for endangered anadromous fish. A Sediment Source Implementation Program will be implemented in the Little Creek (5858 ac) and Robinson Creek, (8792 ac) planning watersheds. The project builds on Gualala River Watershed Council (GRWC) experience with prior projects. Anticipated work will focus on reducing erosion from existing road networks through drainage improvements, removal of at-risk sidecast fill slopes and removal and repair of at risk stream crossings, and treatment of erosion sites. This proposal will integrate inventory, implementation, monitoring, and education projects in the Gualala River watershed based on recommendations made in the TSD, the North Coast Regional Basin Plan, and the Gualala Synthesis Report.

**Project Goals:**

Specific project goals include three major elements: reduction of non-point sediment sources consistent with Gualala TMDL TSD, effectiveness monitoring, and stakeholder education. Non-point sediment source reduction will result in improved water quality in targeted high risk sub-basins and the Gualala River. Erosion sites on existing road systems within the 9 sq. mi. Little Creek sub-basin and the 14 sq. mi. Robinson Creek sub-planning watersheds will be prioritized for treatment. The effectiveness of these restoration strategies will be monitored. Systematic documentation and GIS mapping of erosion sites and treatments will be conducted. The GRWC Citizen Monitoring Program for in-stream aquatic habitat conditions will monitor project effectiveness and will be expanded, building on a 7-yr monitoring record within the Gualala watershed. Stakeholder education will focus on expanding the awareness and adoption of Best Management Practices for erosion control. This will be accomplished by continuing stakeholder outreach through the GRWC Education and Outreach Program. The Little

Creek project area includes multiple parcels and ownerships, providing expanded opportunity for direct participation of landowners in GRWC programs.

### **Project Benefits:**

Project benefits include both broad and specific improvements in water quality, watershed management, and stakeholder participation. TMDL strategies will be implemented. Specific beneficial uses of water as defined by the North Coast Region Basin Plan will be protected, improved or enhanced. Both planning watersheds within this proposal have either municipal water diversions (MUN) or individual water supply systems for drinking water downstream. Reduction of non-point sediment sources will potentially reduce turbidity in the Gualala estuary (Gualala Estuary Study, Keegan, 2003), resulting in improved estuarine habitat (EST). Improved drainage systems will aid in the freshwater replenishment (FRSH) for both sub-watersheds. The reduction of sediment will provide for less turbid receiving waters which will specifically enhance recreational fishing (REC-1). The Gualala lacks abundant cold water refugia for salmonids (COLD); reducing sediment loads will aid in the recovery of thermal refugia (deep pools). Fine sediment can impact the ability to spawn and the quantity of suitable spawning gravels for salmonids (SPWN); the project will reduce fine sediment inputs to spawning streams.

### **Collaborative Support:**

- ❑ California Department of Fish & Game
- ❑ Road committee for the Brushy Ridge Loop, Flournoy Road and Little Creek Road System
- ❑ Gualala Redwoods, Inc.
- ❑ Preservation Ranch
- ❑ Pacific Watersheds and Associates
- ❑ Sotoyome Resource Conservation District
- ❑ Redwood Coast Land Conservancy
- ❑ Kashia Band of Pomo Indians Stewarts Point Rancheria
- ❑ North Coast Regional Control Board
- ❑ U S Geological Survey, WRD
- ❑ Mendocino Redwoods Company

### **Political Support:**

The GRWC has support from, and works collaboratively with a wide variety of agencies, local organizations, and individual landowners. NCRWQCB, CDF&G, SCC, CDF, Sotoyome RCD, Mendocino CWA, Gualala Redwoods, Inc. (30,000 acres), Preservation Ranch (20,000 acres), Coastal Ridges (14,000 acres), Soper Wheeler (13,000 acres), Mendocino Redwood Company (5,000 acres), Kendall Jackson (700 acres), Redwood Coast Land Conservancy, members of Friends of the Gualala River, Gualala River Steelhead Project, Matrix of Change, Sea Ranch Water Company, and others. The GRWC has access agreements for monitoring and restoration work for approximately 70% of the 289 sq. mile watershed. GRWC projects are funded by: CDF&G, CDF, State Coastal Conservancy, and NCRWQCB with local contributions averaging 40%. Projects include: watershed planning, the development of an

Outreach & Education Program, a comprehensive two year study of the Gualala River Estuary, the development and implementation of a SWRCB and CalEPA approved Watershed Monitoring Program, a Sediment Source Assessment and Implementation Program that includes implementation of road improvement projects on industrial timber lands and rural private roads, and an In-stream Restoration Program that includes a state recognized LWD program.

### **Integration of Nonpoint Source Management Measures:**

SWRCB/RWQCBs program of outreach, education, technical assistance and financial incentives is supplemented by collaborative efforts with non-governmental organizations (NGOs) to help implement/coordinate programs that contribute to NPS control. GRWC is such an NGO coordinating a third party NPS implementation program consistent with the mandatory five key elements of an NPS implementation program. The project describes MPs to ensure attainments NPS objectives, provides quantifiable milestones, and provides feedback mechanisms to demonstrate effectiveness.

### **Monitoring Deliverables:**

Two types of monitoring are planned. First, 2 or 3 GRWC aquatic habitat monitoring sites will be established (some already exist in the Robinson Creek project area) in each of the project watersheds. The GRWC monitoring protocol has an approved QAPP. Second, implementation and effectiveness monitoring will be conducted by observations and photo monitoring of specific erosion control sites, aided by GRWC GIS data. Site specific monitoring of a random sample of sites will extend two years beyond project completion to observe site stabilization and revegetation.

### **Performance Measures:**

Existing instream monitoring protocols implemented by GRWC will be used to assess long-term aquatic habitat improvement in the subject watersheds. If implemented, the project will provide turbidity monitoring stations designed by the USDA Redwood Sciences Lab will be installed to measure long-term trends in sediment yield and water quality in the subject watersheds. Effectiveness of erosion control treatments will also be monitored at the site level, with the aid of GRWC GIS and photo monitoring to document improvement of conditions and site stabilization and revegetation.

### **Scientific Basis of Project:**

Watershed sediment sources have been previously analyzed in the NCWAP Gualala River report and the TMDL TSD. NCWAP data are in GIS used by GRWC, and the TSD identified the primary erosion processes to be treated by this project. Site specific sediment sources have been inventoried and analyzed in three prior GRWC sediment source control projects will help guide the implementation of this project. Existing GIS, to be expanded in this project, will be used to track project implementation and measure reductions in erosion in relation to landforms and geologic features.

**Project # 207 Title: Lower Fuller Creek Sediment Source Implementation Plan**

Entity Responsible for Implementation: Gualala River Watershed Council

Contact name: Kathleen Morgan, Program Coordinator

**County:** Sonoma Mendocino

**Disadvantaged community:** No

**NCIRWMP request:** \$171,429

**NCIRWMP recommended:** \$0

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs

**Project Summary:**

This project will complete the reduction of non-point sediment sources within the Fuller Creek watershed of the Gualala River, consistent with sediment TMDL findings in Gualala River Technical Support Document for Sediment (TSD), (NCRWQCB, 2000) and the North Coast Region Basin Plan (NCRWQCB, 1993). Non-point sediment source reductions will improve water quality and benefit and protect public and private water supplies and instream aquatic habitat for endangered anadromous fish. This project is the final phase of a project to implement road improvements throughout the Fuller Creek watershed and builds on 4 years of past funding from the SWRCB and DFG. Anticipated work will focus on reducing erosion from existing road networks through drainage improvements, removal of at-risk sidecast fill slopes, removal and repair of at risk stream crossings, and treatment of erosion sites. This proposal will integrate implementation, monitoring, and education projects in the Gualala River watershed based on recommendations made in the TSD, the North Coast Regional Basin Plan, and the Gualala Synthesis Report.

**Project Goals:**

Project goals include three major elements: reduction of non-point sediment sources consistent with Gualala TMDL TSD, effectiveness monitoring, and stakeholder education. Non-point sediment source reduction will result in improved water quality in a targeted high risk sub-basin and the Gualala River. This project will achieve the GRWC goal of completing non-point sediment source reduction for the remaining untreated 3.5 miles of road within the 7,000 acre Fuller Creek sub-basin. 40 miles of road treatment has been completed under the DFG & SWRCB grant programs. The effectiveness of these restoration strategies will be monitored. Systematic documentation and GIS mapping of erosion sites and treatments will be conducted. The GRWC Citizen Monitoring Program for in-stream aquatic habitat conditions will monitor project effectiveness and will be expanded, building on a 7-yr monitoring record within the Gualala watershed. Stakeholder education will focus on expanding the awareness and adoption of Best Management Practices for erosion control. This will be accomplished by continuing stakeholder outreach through the GRWC Education and Outreach Program.

### **Project Benefits:**

Project benefits include both broad and specific improvements in water quality, watershed management, and stakeholder participation. TMDL strategies will be implemented. Specific beneficial uses of water as defined by the North Coast Region Basin Plan will be protected, improved or enhanced. The Fuller Creek watershed is upstream from a municipal water diversions (MUN) and contains individual water supply systems for drinking water. Reduction of non-point sediment sources will potentially reduce turbidity in the Gualala estuary (Gualala Estuary Study, Keegan, 2003), resulting in improved estuarine habitat (EST). Improved drainage systems will aid in the freshwater replenishment (FRSH) for both sub-watersheds. The reduction of sediment will provide for less turbid receiving waters which will specifically enhance recreational fishing (REC-1). The Gualala lacks abundant cold water refugia for salmonids (COLD); reducing sediment loads will aide in the recovery of thermal refugia (deep pools). Fine sediment can impact the ability to spawn and the quantity of suitable spawning gravels for salmonids (SPWN); the project will reduce fine sediment inputs to spawning streams.

### **Collaborative Support:**

- ❑ California Department of Fish & Game
- ❑ North Coast Regional Quality Control Board
- ❑ Mendocino Redwood Company
- ❑ Gualala Redwoods, Inc.
- ❑ Pacific Watershed Associates
- ❑ Sotoyome Resource Conservation District
- ❑ Kashia Band of Pomo Indians Stewarts Point Rancheria
- ❑ Redwood Coast Land Conservancy
- ❑ Preservation Ranch
- ❑ US Geological Survey, WRD

### **Political Support:**

The GRWC has support from, and works collaboratively with a wide variety of agencies, local organizations, and individual landowners. NCRWQCB, CDF&G, SCC, CDF, Sotoyome RCD, Mendocino CWA, Gualala Redwoods, Inc. (30,000 acres), Preservation Ranch (20,000 acres), Coastal Ridges (14,000 acres), Soper Wheeler (13,000 acres), Mendocino Redwood Company (5,000 acres), Kendall Jackson (700 acres), Redwood Coast Land Conservancy, members of Friends of the Gualala River, Gualala River Steelhead Project, Matrix of Change, Sea Ranch Water Company, and others. The GRWC has access agreements for monitoring and restoration work for approximately 70% of the 289 sq. mile watershed. GRWC projects are funded by: CDF&G, CDF, State Coastal Conservancy, and NCRWQCB with local contributions averaging 40%. Projects include: watershed planning, the development of an Outreach & Education Program, a comprehensive two year study of the Gualala River Estuary, the development and implementation of a SWRCB and CalEPA approved Watershed Monitoring Program, a Sediment Source Assessment and Implementation Program that includes implementation of road improvement projects on industrial timber lands and rural private roads, and an In-stream Restoration Program that includes a state recognized LWD program.

### **Integration of Nonpoint Source Management Measures:**

SWRCB/RWQCBs program of outreach, education, technical assistance and financial incentives is supplemented by collaborative efforts with non-governmental organizations (NGOs) to help implement/coordinate programs that contribute to NPS control. GRWC is such an NGO coordinating a third party NPS implementation program consistent with the mandatory five key elements of an NPS implementation program. The project describes MPs to ensure attainments NPS objectives, provides quantifiable milestones, and provides feedback mechanisms to demonstrate effectiveness.

### **Monitoring Deliverables:**

Two types of monitoring are planned. First, 2 or 3 GRWC aquatic habitat monitoring sites will be established (some already exist in the lower Fuller Creek project area and pre-project data collection is an on-going process) in the project watershed. The GRWC monitoring protocol has an approved QAPP. Second, implementation and effectiveness monitoring will be conducted by observations and photo monitoring of specific erosion control sites, aided by GRWC GIS data. Site specific monitoring of a random sample of sites will extend two years beyond project completion to observe site stabilization and revegetation.

### **Performance Measures:**

Existing instream monitoring protocols implemented by GRWC will be used to assess long-term aquatic habitat improvement in the subject watersheds. If implemented, the project will provide turbidity monitoring stations designed by the USDA Redwood Sciences Lab will be installed to measure long-term trends in sediment yield and water quality in the subject watersheds. Effectiveness of erosion control treatments will also be monitored at the site level, with the aid of GRWC GIS and photo monitoring to document improvement of conditions and site stabilization and revegetation.

### **Scientific Basis of Project:**

Watershed sediment sources have been previously analyzed in the NCWAP Gualala River report and the TMDL TSD. NCWAP data are in GIS used by GRWC, and the TSD identified the primary erosion processes to be treated by this project. Site specific sediment sources have been inventoried and analyzed in three prior GRWC sediment source control projects will help guide the implementation of this project. Existing GIS, to be expanded in this project, will be used to track project implementation and measure reductions in erosion in relation to landforms and geologic features.

**Project # ICWMP - B Title:** Forsythe Creek Sediment Control Project

Entity Responsible for Implementation: Mendocino County RCD

Contact name: Jan Olave, Executive Director

**County:** Mendocino

**Disadvantaged community:** Partially

**NCIRWMP request:** \$2,523,651

**NCIRWMP recommended: \$2,523,651**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Support implementation of State Programs

**Project Summary:**

The Forsythe Creek Sediment Control Project will implement the recommended road sediment reduction strategies from the Forsythe Creek Watershed Assessment on five subwatersheds in the Forsythe Creek watershed. The Mendocino County Resource Conservation District (MCRCD) will implement prioritized road upgrades with California Department of Fish and Game (CDFG) recommended methods on approximately 50 miles of roads, preventing 139,423 cubic yards of sediment from entering the Russian River system. The cost effectiveness is \$18.10 per cubic yard. MCRCD will cooperate with landowners, other agencies, and contractors to maximize the benefits of the sediment control methods used throughout the watershed. This project meets the goals of the North Coast Integrated Regional Water Management Plan (NCIRWMP), has been approved by the locally led Russian River Watershed Adaptive Management Plan Technical Review Committee, and is fully supported by landowners and CDFG.

**Project Goals:**

The MCRCD will implement approximately 50 miles of prioritized road upgrades in five subwatersheds with CA DFG recommended methods preventing 139,423 cubic yards of sediment from entering the Russian River system. This project meets the goals of the North Coast IRWMP including conservation, collaboration, and environmental habitat protection and improvement.

**Project Benefits:**

The project will improve water quality for downstream beneficial uses including recreation, fish passage, and fish habitat, by upgrading 242 stream crossings. It will also improve water quality for downstream beneficial uses by treating 158 potential diversion sites, installing 4 bridges, and 91 culverts with plug potential. The Project will reduce sediment-related impacts to two Areas of Special Biological Significance (Gerstle Cove and Bodega Marine Life Refuge), as well as the following State Critical Coastal Areas: #18 Gerstle Cove, #19 Bodega Marine Life Refuge, #20 Estero Americano and #21 Estero de San Antonio

**Collaborative Support:**

- ❑ California Department of Fish & Game
- ❑ North Coast Regional Quality Control Board
- ❑ Natural Resources Conservation Service
- ❑ Mendocino County Department of Transportation
- ❑ CalTrans
- ❑ Bureau of Indian Affairs
- ❑ Bioengineering Institute Navarro Watershed Working Group

**Larger Project to which this Project Contributes:**

The Forsythe Creek Watershed Assessment (Bioengineering Institute)

**Description of Larger Project:**

The Bioengineering Institute submitted a proposal under the guidance and recommendation of CDFG in Spring 2007 to restore riparian habitat along Forsythe Creek that will provide shelter for migrating salmonids; establish pools for rearing salmonids; provide shade to lower water temps and improve habitat, reduce erosion to prevent sediment from entering stream, and improve water quality and fisheries habitat. Additionally, USDA-NRCS EQIP projects in Forsythe Creek currently include streambank stabilization, tree planting, livestock water development for livestock rotations, road upgrades, and cover cropping to control erosion. The Forsythe Creek Sediment Control Project will enhance and complement both organizations' restoration efforts and will demonstrate recommended land management practices to a minimum of 100 area residents.

**Political Support:**

This project meets the goals of the North Coast Integrated Regional Water Management Plan (NCIRWMP), has been approved by the locally led Russian River Watershed Adaptive Management Plan Technical Review Committee, and is fully supported by landowners and CDFG.

**Integration of Nonpoint Source Management Measures:**

The project is consistent with objectives as defined by the Non-Point Source Program. Forsythe Creek is a major sub basin of the Russian River watershed which is impaired under Section 303 (d) of the California Clean Water Act for excessive sediment. Road-related erosion is the most controllable source of excessive sediment. Road decommissioning is recognized as an effective management strategy for permanent reductions in non-point source sediment. These sediment reduction strategies are consistent with the State Water Resources Control Board Nonpoint Source Plan's Management Measures, including; 1. Agriculture: A. Erosion and sediment control; 2. Forestry: C. Road re-contouring, and D. Road management; 5 Sediment control--protection of instream riparian habitats. The Project will reduce sediment-related impacts to two Areas of Special Biological Significance (Gerstle Cove and

Bodega Marine Life Refuge), as well as the following State Critical Coastal Areas: #18 Gerstle Cove, #19 Bodega Marine Life Refuge, #20 Estero Americano and #21 Estero de San Antonio

**Scientific Basis of Project:**

The project design will reflect the recommendations for road sediment reduction as described in the individual road inventories funded through the CA Department of Fish and Game. These inventories were conducted by geologists and hydrologists on site, and reflect the best available science for developing road restoration strategies.

**Project # 39 Title: Raw & Recovered Water for Irrigating Public Agencies**

Entity Responsible for Implementation: Trinity County Waterworks District #1

Contact name: Craig Hair, District Manager

**County:** Trinity

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$1,350,000

**NCIRWMP recommended: \$912,219**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The proposed project is to create a new irrigation water resource for Hayfork's High School, Elementary School, Cemetery, Fairgrounds, and Park which currently use Hayfork Creek and treated water to meet their needs. Average peak use of treated water for irrigation use is 176,000 gallons per day (gpd) at the Fairgrounds, 90,000 gpd at the High School, 31,000 gpd at the Cemetery, 19,000 gpd at the Elementary School, and 3,000 gpd at the Park. The park, elementary school, and fairgrounds also use water acquired from Hayfork Creek through the use of riparian and appropriative water rights. During summer when peak use occurs, the elementary school and fairgrounds use treated water because the park has superior rights to the well that it shares with the school, and the fairgrounds does not utilize their right during low flow periods because of a required minimum bypass flow. The park is estimated to divert a maximum of 150 gpm from Hayfork Creek for use at the park and Elementary School. Hayfork Park and Hayfork Elementary School are estimated to utilize approximately 50 AF/year from Hayfork Creek direct diversions. The solution to switching these users from treated and creek water is to provide to them a reliable and cost effective alternative source for their needs. The proposed project will lessen the impacts these irrigators have upon Hayfork Creek, and to reduce the demand for treated water, thereby extending the life of the current treatment plant's capacity. The new source of water would come from a tie-in to the plant's raw water source at the Ewing Reservoir Pipeline, Regulation Reservoir outlet, and the treatment plant's backwash system. Backwash water is available for this use in the amount of 50,000 gpd which goes to waste during peak periods. The backwash system would tie into the raw water pipe via a distribution tank, and would be conveyed to the irrigators via metered pipe. Such a conveyance system would increase the amount of treated water available for domestic and economic uses while lessening impacts to the treatment plant and Hayfork Creek.

**Project Goals:**

The objective of this project is to relieve the water district of having to provide treated water for irrigation uses to the largest public users. Through this alternative, the goal of providing improved Hayfork Creek summer fishery flows can be achieved. Of importance as well is the efficiency of the

treatment plant to provide water for domestic and business use so the plant does not have to be substantially upgraded to meet the growing needs for water within Hayfork.

**Project Benefits:**

Benefits provided by this project would be numerous. Increased summer flows within Hayfork Creek for fisheries will improve habitat conditions for steelhead and possibly coho and spring Chinook downstream. Increased stream flow would be very beneficial during the summer months when peak irrigation use is greatest and water temperatures are highest. Also a desired benefit to the District would be higher carryover capacity for treated water use that would lessen operational costs during peak periods and the make available water to meet the needs for growth within Hayfork without having to make major improvements to the treatment plant. The untreated water source will also provide additional fire protection water supplies within TCWD#1.

**Political Support::**

Political support for this project is high and has been supported by the Board of Supervisors through the signing of the Memorandum of Mutual Understanding, involvement in the project identification process, and placing this project (in it's unrevised form) at the top of the priority list. Local support has been provided by the Trinity County Planning Department through meetings, updates, e-mailings, helping in the formation of project identification, refining project proposals, and uploading the proposal onto the IRWMP website. Within Hayfork, support is high for this project because it will benefit the community by creating a highly efficient distribution system that can meet the needs of irrigators, business, fire protection, and to conserve treated water for domestic uses.

**Monitoring Deliverables:**

Monitoring deliverables will be based upon past historical use which has been compiled and compared with the current use to determine how efficient the system is functioning.

**Performance Measures:**

Flow meters placed at the treatment plant and at each turnout will gauge daily usage. The information gathered from this source will be compared against historical use to ensure that the system is performing effectively.

**Scientific Basis of Project:**

Baseline data that will be used to manage this project is located within the District's files and will also be based off of the data presented within SHN's Feasibility Study. Technical knowledge of how the project will be managed will come from in-house District resources.

**Project # 74 Title: Willits Wastewater Treatment/ Water Reclamation Project**

Entity Responsible for Implementation: City of Willits

Contact name: Larry Moran, Utility Director

**County:** Mendocino

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$500,000

**NCIRWMP recommended:** \$0

**NCIRWMP Objectives Addressed:**

- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The project will provide long term wastewater treatment and the ability to discharge in all weather conditions through a wastewater system consisting of a network of facultative ponds and treatment wetlands for secondary treatment and enhancement wetlands to polish effluent before discharge during wet weather or irrigation during dry season. The project will do away with the present use of chlorine gas for disinfection and feature Ultraviolet light for more effective kill on viruses and microbials. The plant will reduce the volume of residuals generated by the plant and solids removal can be done on a 10-20 year cycle instead of yearly. There will be a new headworks with screening on the present plant grounds. The rest of the plant will stretch 1 1/2 miles in a northerly direction to the new point of discharge. The other components of the system will be facultative ponds with a digestion pit for solids capture, treatment wetlands, and enhancement wetlands. Each of these units is 1/2 mile in length. There will also be an irrigation pump station located near the discharge point.

**Project Goals:**

1. Replace existing wastewater treatment system for improved reliability and capacity to meet future demand. 2. Treating wastewater sufficiently to meet water quality standards. 3. Provide for expansion into city owned property to extend onsite retention and treatment. 4. Implementing the City's Long Term Wastewater Treatment and Effluent Management Plan. 5. Reucing energy, operations and maintenance costs in the long-term. 6. Provide recreation opportunities through access to onsite open space. 7. Disposing of reclaimed water in a manner that protects beneficial uses of receiving waters.

**Project Benefits:**

1. Avoidance of discharge violations through increased storage capacity and increased dilution rate(4%). 2. Lowered operational costs by use of passive systems which are less equipment intensive. 3. Lowered sludge disposal costs through enhanced digestion and lower generation of solids. 4.

Environmental benefits in changing disinfection system from chlorination-dechlorination to the use of ultra-violet light. 5. Increased high quality water for in-stream beneficial uses through storage. 6. Lowered staffing costs due to lowered number and grade level of operators. 7. Recreational and Educational benefits. The wetlands will have hiking trails and interpretive stops within them.

**Political Support:**

Senator Mike Thompson has given us his support and was very helpful in helping the City get a grant of \$303,600 from the EPA. We have had the support of the Mendocino County Board of Supervisors all through the Proposition 50 process and of course the support of our own City Council

**Monitoring Deliverables:**

Design and coordinate the mitigation monitoring plan for the special status botanical species for the California Department of Fish and Game

**Performance Measures:**

Much of the monitoring that will be done is that which would be done for an NPDES permit; BOD, NFR, Temperature, Dissolved Oxygen, Coliform. All of these measurements are reported to the Regional Board on a monthly basis.

**Scientific Basis of Project:**

The technical knowledge for the project is based on the system built in Arcata. It is the brainchild of Dr. Robert Gearheart and has been functioning well for over 25 years. Baseline data was aquired several years ago when the City conducted instream monitring for pH, conductivity, temperature, dissolved oxygen, and nutrients. Scientific analysis will be an ongoing thing, as it is in Arcata. The knowledge gained in that project will show us how we can do it better, without some of the land constraints that Arcata had.

**Project # 81 Title: Weaverville Sanitary District Water Reclamation Project**

Entity Responsible for Implementation: Weaverville Sanitary District

Contact name: Jim Cloud, General Manager

**County:** Trinity

Disadvantaged community: Entirely

**NCIRWMP request:** \$225,500

**NCIRWMP recommended: \$280,688**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

This project will recycle waste water for industrial uses while reducing water diversion from Weaver Creek, a coho salmon stream. It includes a feasibility and design study for extending recycled water for future irrigation uses This phase includes: installation of a 100,000 gallon tank and fencing on Weaverville Sanitary District (WSD) property; construction of 1,000 feet of 6" water main, valves and meters from the storage tank to industrial users; extension of the water main to the boundary of the Trinity Alps Golf Course (which would be served in Phase 2); and complete a Feasibility and Preliminary Design study for Phase 2. The use of the WSD waste water for gravel washing and concrete batch mixing will not require modification of WSD's waste discharge permit. The feasibility and preliminary design study will determine the cost and design necessary to treat and deliver WSD reclaimed water for incidental human contact uses (irrigation).

**Project Goals:**

The objective of this project is to reduce the diversion of surface water from Weaver Creek and replace it with reclaimed water from the WSD wastewater treatment plant. The reclaimed water will reduce late summer mortality to fish as well as provide the water purchasers with reliable and less expensive water (compared to purchasing treated water). The project is consistent with the Weaverville Community Plan (WCP) and CA Coho Recovery Plan as follows: "As the community grows, additional diversion..may occur. The reduction of flows in the creeks in the summer increases the water temperature and can result in adverse impacts to aquatic wildlife, as well as reduces the stream's ability to absorb and dissipate sediment/pollutants (WCP)." The Recovery Plan has the following region-wide recommendation RW-II-B-01 "...Develop incentives for water right holders to dedicate instream flows for the protection of coho salmon (Water Code §1707)."

### **Project Benefits:**

This project would increase summer water flow in Weaver Creek benefiting the State and Federally listed coho salmon and other fisheries. Direct benefits to the creek would be higher summer flows, lower water temperatures, and better biological conditions. It would also reduce demand on the Weaverville Community Services Districts treated water supplies. It would provide economic benefits to the reclaimed water users by providing reliable water (compared to summer flow levels in the creeks) at a lower price compared to purchasing treated water. This project would also demonstrate the potential for use of reclaimed water and set up opportunities to develop additional uses.

### **Collaborative Support:**

- Five Counties Salmonid Conservation Program

### **Political Support:**

Both Trinity County Board of Supervisors (BoS) and Weaverville Sanitary District Board of Directors signed on to the North Coast Integrated Regional Water Management Plan (IRWMP) Memorandum of Mutual Understanding. The BoS adopted a resolution designating WSD's water reclamation project as the 3rd highest priority project within Trinity County. The Weaverville-Douglas City Park and Recreation District has authorized the installation of reclaimed water irrigation lines and sprinklers in its park irrigation construction plan in anticipation of Phase 2 completion. Concrete Aggregate Products, a prospective industrial water purchaser, has committed in kind services to the project. The Trinity County Resource Conservation District has prepared a preliminary design to provide water to Trinity Alps Golf Course. The Trinity County Planning Department's Natural Resource Division has committed funding to assist in permitting, design, CEQA and overall project administration.

### **Monitoring Deliverables:**

The District has a water quality lab currently and performs water sampling for numerous other special districts and the public. The addition of reclaimed water system will be integrated into the current monitoring requirements of the District. Reclaimed water flow monitoring will be done as well.

### **Performance Measures:**

Water meters will be used to gauge water use.

### **Scientific Basis of Project:**

Baseline data to be used to analyze the efficiency of the project would be the monitoring of treated water use by industrial and irrigational users based upon historic use. Technical knowledge for this project would be based upon other similar projects from other regions, as well as the in-house knowledge of the sanitary district management.

**Project # ICWMP - A Title:** Salmon Creek Sediment Reduction and Water Conservation Program  
Entity Responsible for Implementation: Gold Ridge Resource Conservation District (RCD)  
Contact name: Lisa Hulette, Executive Director

**County:** Sonoma  
Disadvantaged community: No

**NCIRWMP request:** \$359,995  
**NCIRWMP recommended: \$359,995**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Provide adequate water supply with minimal water quality impacts
- Support implementation of State Programs

**Project Summary:**

The Gold Ridge RCD will work with local contractors and stakeholders to implement the Salmon Creek Sediment Reduction and Water Conservation Program that is focused on sediment reduction and water conservation throughout the Salmon Creek watershed. This project is a comprehensive program that addresses non-point source pollution reduction, storm water capture, water conservation, and water use efficiency. The proposed project will not only provide valuable information to help guide the 303 (d) listing and TMDL process in the Salmon Creek Watershed, but will also provide landowners with the information they need to manage water for long-term water supply security in an already water scarce area.

The first component of this project is to develop and give a series of public educational workshops on practical water conservation methods (including both evening educational lectures and 1/2 day field tours at local demonstration sites), produce and distribute an educational brochure on water conservation strategies and their importance in coastal areas for long-term water security and water quality conservation. Following the education program a community-based program to reduce dependence on instream flows during critical low-flow period will be implemented. The town of Bodega will serve as the model community to develop, design, and install appropriate off channel water storage projects that will support the retention of winter runoff and augmentation of dry season base flows in selected critical reaches of the watershed.

A second component of this project is to implement high priority road erosion sites as assessed by Pacific Watershed Associates in 2006/07 (PWA Report, APWA Report No. 07067001, April 2007).

**Project Goals:**

The projects of the Salmon Creek Enhancement Program will address the following goals:  
Conserve and enhance native salmonid populations by reducing non-point source pollution  
Protect and enhance drinking water quality to ensure public health

Ensure adequate and reliable water supply while minimizing environmental impacts  
Support implementation of Total Maximum Daily Loads (TMDLs), the North Coast Regional Water Quality Control Board's (NCRWQCB) Watershed Management Initiative, the Non- Point Source Program Plan and State species recovery plans

**Project Benefits:**

Project benefits include both broad and specific improvements in water quality, watershed management, and stakeholder participation. Through the education program and community water conversation practices, conceptual ideas and relationships will be developed to move forward with implementation projects to reduce the community's dependence on instream water and significantly improve critical summer habitat.

According to the Pacific Watershed Associates report, estimated sediment savings from the proposed road work on high and high-moderate priority treatments sites is approximately 8,065 cubic yards. The road remediation component of the project is aimed at treating high and high moderate treatment immediacy sites and their connected road reaches, as well as moderate stream crossing sites. The majority of these sites are located on old logging and ranch roads within riparian, lower hillslope, streamside, and inner gorge areas. These roads have been identified as the most common and important human-caused sources of sediment in the watershed assessment area. Roads are also the most easily and cost-effectively treated sediment source.

Both the road erosion implementation and the water conservation strategies will work towards established quantitative, numeric target values for the defined beneficial uses (COLD, RARE, MIGR, SPWN, and EST). The Project will reduce sediment-related impacts to two Areas of Special Biological Significance (Gerstle Cove and Bodega Marine Life Refuge), as well as the following State Critical Coastal Areas: #18 Gerstle Cove, #19 Bodega Marine Life Refuge, #20 Estero Americano and #21 Estero de San Antonio

**Collaborative Support:**

- ❑ State Coastal Conservancy
- ❑ Occidental Arts and Ecology Center
- ❑ Salmon Creek Watershed Council
- ❑ Prunuske Chatham, Inc

**Political Support:**

In 2006, the RCD received funding from the State Coastal Conservancy to implement riparian restoration projects that will address major sources of sedimentation and improve steelhead and historic coho riparian habitat on nine ranches in the Salmon Creek Watershed. The RCD will be constructing these projects during the summer and fall of 2007. It is imperative, while landowner momentum for projects remains high, that the road upgrades are implemented in timely manner. Having both the upland and riparian sources of sediment treated almost simultaneously will result in

both higher landowner buy-in for future restoration projects, and our current water quality monitoring program will be able to pick up what is sure to be a drastic change both in total suspended solids and turbidity measurements.

### **Integration of Nonpoint Source Management Measures:**

This project is a comprehensive program that addresses non-point source pollution reduction, storm water capture, water conservation, and water use efficiency. The proposed project will not only provide valuable information to help guide the 303 (d) listing and TMDL process in the Salmon Creek Watershed. The Project will reduce sediment-related impacts to two Areas of Special Biological Significance (Gerstle Cove and Bodega Marine Life Refuge), as well as the following State Critical Coastal Areas: #18 Gerstle Cove, #19 Bodega Marine Life Refuge, #20 Estero Americano and #21 Estero de San Antonio

### **Monitoring Deliverables:**

Two types of monitoring are planned. First, volunteer water quality monitoring data from 14 sites throughout the watershed. Includes temperature, DO, conductivity, pH, nitrates, phosphates, chlorine: compiled and analyzed based on beneficial use requirements (salmonid habitat and health). Second, implementation and effectiveness monitoring will be conducted by observations and photo monitoring of specific erosion control sites.

### **Performance Measures:**

Effectiveness of erosion control treatments will be monitored at the site level, with the aid of photo monitoring to document improvement of conditions and site stabilization and revegetation.

### **Scientific Basis of Project:**

Visual observations and baseline monitoring of Salmon Creek and its tributaries suggest that sediment-related and water quantity issues are the primary limiting factors for beneficial uses in the watershed. Multiple studies and assessments have been performed in the Salmon Creek watershed in to quantify the natural resource conditions in preparation for developing the proposed Integrated Watershed Management Plan.

Several assessments have been funded and completed, or are scheduled for completion, in the Salmon Creek watershed. A DFG funded watershed assessment included an erosion inventory for the watershed, a stream habitat inventory, and development of a volunteer water quality monitoring program. The Salmon Creek Watershed Assessment and Restoration Plan can be found at: [http://www.goldridgecd.org/pdf/DFG\\_Assessment\\_Report\\_Draft.pdf](http://www.goldridgecd.org/pdf/DFG_Assessment_Report_Draft.pdf) The Salmon Creek Estuary Study and Enhancement Plan was finalized in 2006. The draft and final plan can be found at <http://www.bodeganet.com/SalmonCreek/>. The Pacific Watershed Roads Assessment was completed May 2006 (*Salmon Creek Roads Assessment, APWA Report No. 07067001, April 2007*).

**Project # 89 Title: Covelo Wastewater Facilities Improvement Project**

Entity Responsible for Implementation: Covelo CSD (Community Services District)

Contact name: George J. Bennett, District Manager

**County:** Mendocino

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$3,231,700

**NCIRWMP recommended: \$1,065,591**

**NCIRWMP Objectives Addressed:**

- Protect and enhance drinking water quality
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

The overall project includes collection system upgrades, influent pump station and headworks modifications, primary pond improvements, secondary and holding pond improvements, sand filter rehabilitation, electrical and control system upgrades, construction of a new control and operations building, and a construction of a septage receiving station. This project would use a combination of ground infiltration and surface water discharge (describe below) to solve current treated effluent disposal issues facing the Covelo Community Services District. Both primary treatment ponds would be lined to prevent percolation of untreated influent. The first of two existing holding ponds would be lined to prevent percolation and would therefore provide additional detention time and treatment. The second holding pond would be used as a percolation basin. Flow in excess of the allowed percolation discharge and the available storage capacity of the system would be discharged to Grist Creek through the existing outfall. The treated effluent would be routed through the sand filters and into the disinfection process, followed by dechlorination in the manhole located just upstream of the outfall, prior to discharge.

**Project Goals:**

Covelo CSD is currently working under a Consent Decree and Order issued by United States Magistrate Judge Joseph C. Spero of the United States District Court, Northern District of California, Case No. C 01 3737 JCS filed October 3, 2001 by Jack Silver, Esq. (SBN 160575) Attorneys for Plaintiff, Northern California River Watch. The project goals are to address and correct the unpermitted discharges occurring from the collection system and treatment ponds specified in the Consent Decree Order; to restore the collection system and wastewater treatment facilities to operational compliance with ORDER NO. R1-2000-16, NPDES permit CA 0023574, I.D. NO. 1B83009OMEN WASTE DISCHARGE REQUIREMENTS FOR COVELO COMMUNITY SERVICES DISTRICT; to achieve compliance with State water quality standards; and resolve the various outstanding health and safety issues that are of concern to the community.

**Project Benefits:**

This project will restore and protect the quality of the water in the unconfined Covelo aquifer that supplies many of the older shallow wells in this small rural community in an economically depressed area; and it will restore and protect the quality of water in the Upper Eel River Watershed. The beneficial uses of area groundwater include: a. domestic water supply b. agricultural water supply c. industrial service supply d. industrial process supply The beneficial uses of the Eel River included: a. municipal and domestic supply b. agricultural supply c. industrial supply d. migration of aquatic organisms e. groundwater recharge f. marine habitat g. estuarine habitat h. water contact recreation i. non-water contact recreation j. commercial and sport fishing k. rare, threatened, or endangered species l. spawning, reproduction, and/or early development m. wildlife habitat.

**Performance Measures:**

The Wastewater Plant/Collection System improvement project will restore the ability of the Covelo Community Services District to operate the plant as designed and permitted, and in compliance with the Water Quality Control Plan for the North Coast Region (Basin Plan). The Project will enable the Covelo Community Services District to comply with the Discharge Prohibitions, Effluent Limitations, Receiving Water Limitations, and Solids Disposal requirements of our NPDES permit.

**Scientific Basis of Project:**

The Wastewater Plant/Collection System improvement project will restore the ability of the Covelo Community Services District to operate the plant as designed and permitted, and in compliance with the Water Quality Control Plan for the North Coast Region (Basin Plan). The Project will enable the Covelo Community Services District to comply with the Discharge Prohibitions, Effluent Limitations, Receiving Water Limitations, and Solids Disposal requirements of our NPDES permit.

**Project # ICWMP - C Title:** Big River Main Haul Road Phase I Restoration

Entity Responsible for Implementation: Mendocino Land Trust  
Contact name: Michael B. Miller, Big River Program Manager

**County:** Mendocino

**Disadvantaged community:** No

**NCIRWMP request:** \$1,876,028

**NCIRWMP recommended: \$1,876,028**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Protect and enhance drinking water quality
- Support implementation of State Programs

**Project Summary:**

The Big River Main Haul Road Phase I Restoration project proposes to:

- Remove ecological obstructions (crossing fills, culverts, and stored sediment) at 5 locations that threaten water quality in the lower Big River watershed.
- Restore sections of Class II tributary channels.
- Construct bridges high above the restored channels to maintain access for on-going restoration, compatible recreational use, and scientific study.
- Remove invasive weeds that threaten wetland, riparian, and forest habitats in both the Big River and watershed.

Remove ecological obstructions (crossing fills, culverts, and stored sediment) at 5 locations that threaten water quality in the lower Big River watershed.

Restore sections of Class II tributary channels.

Construct bridges high above the restored channels to maintain access for on-going restoration, compatible recreational use, and scientific study.

Remove invasive weeds that threaten wetland, riparian, and forest habitats in both the Big River and watershed.

Four roadway watercourse crossings and one fillslope failure along the main access road of the park are composed of significant volumes of fill, are actively eroding, and have trapped substantial volumes of sediment (approx. 14,000 cu. yds.) Culverts conveying water through the fill prisms were constructed high above the natural stream channel and are too small to convey the 100-yr flood. The fill prisms and stored sediments exist in Class II watercourses and represent an ecological obstruction between forested uplands and the Big River estuary and floodplain, which occur 100 to 300 feet downstream of the crossings. Non-native plants have invaded sensitive habitats, impacting listed species such as coho salmon and steelhead trout.

### **Project Goals:**

The goals and objectives of this project are to:

- ❑ Reduce sedimentation and improve water quality by removing fill material at crossings and stored sediment within four tributaries, and re-establishing the ecological connectivity between forested uplands and the Big River estuary and floodplain.
- ❑ Restore sensitive habitats by removing invasive plants and re-establishing native vegetation in areas where the recovery of wetland, riparian, and redwood forest communities is threatened.
- ❑ Facilitate access into the interior of the watershed to continue ongoing restoration activities and community involved scientific investigations, and access for equestrians, pedestrians, and bicyclists by constructing bridges high above the tributary channels.

### **Project Benefits:**

The primary project benefits will include:

- ❑ Facilitation of water quality restoration measures and objectives addressed in the Big River TMDL report by removing approximately 14,000 cubic yards of stored filled materials (a chronic source of sediment discharge to Big River) and reconnecting both terrestrial and aquatic habitat areas between four forested subwatersheds and the Big River floodplain and estuary.
- ❑ Recovery and restoration of sensitive habitats that support listed species, including coho and steelhead, by reducing sediment discharge from anthropogenic sources, and re-establishing native vegetation in impacted areas.
- ❑ Collaboration between public and private regional, scientific, and local community based entities involved in ecological restoration and protection activities.
- ❑ Reduction of potentially catastrophic road and crossing failures that result in costly road maintenance and repair.

### **Collaborative Support:**

- ❑ California State Parks
- ❑ California Geological Survey
- ❑ Mendocino Land Trust's Big River Stewards
- ❑ California Department of Fish and Game
- ❑ California Coastal Conservancy
- ❑ Jackson Demonstration Forest
- ❑ The Conservation Fund

### **Political Support:**

The Mendocino Land Trust has the support and will work in conjunction with California State Parks Mendocino District. All work associated with the implementation process will be in accordance with CA Parks rules and regulations. Mendocino Land Trust has a track record of assisting CA parks in developing and implementing projects.

### **Integration of Nonpoint Source Management Measures:**

Big River is a 303(d) listed stream for sediment. This project will not only address sediment loading into the basin, but will provide restoration to the main haul road, one of the primary arteries necessary to access other potential restoration sites. The Project is expected to reduce sediment impacts to the following Areas of Special Biological Significance and Critical Coastal Areas: #9 Pudding Creek; #10 Noyo River; #11 Pygmy Forest Ecological Staircase; #12 Big River; #13 Albion River.

### **Monitoring Deliverables:**

Mendocino Land Trust's Big River Stewards volunteers will continue photo monitoring of existing culverts, and invasive exotic vegetation removal sites. In addition the Big River Stewards will conduct snorkeling and birding surveys throughout the watershed.

The California Geological Survey (CGS) will conclude road baseline assessments within the Big River State Park. The final assessments will allow Mendocino Land Trust and CA Parks Mendocino District to prioritize future restoration projects.

### **Performance Measures:**

State Parks has an Inventory, Monitoring & Assessment Program (IMAP) that provides goals, guidance, and standards to systematically evaluate the vegetation, wildlife, and physical natural resources of Parks. IMAP is used to determine what should be monitored and which field methods are appropriate. Data is used to detect changes so that corrective management actions can be taken. IMAP coordinates with government agencies, including Fish & Game and Water Resources, to learn how information may be shared.

### **Scientific Basis of Project:**

The Big River Main Haul Road Phase I Restoration project is an integral component of ongoing and future restoration efforts within the Big River Watershed. Legacy roads have been identified by numerous agencies (EPA, CDFG) as the primary cause of sediment loading within the basin. Sediment has been identified as a limiting factor in coho salmon and steelhead trout reproduction. Coho salmon are a federally and state listed endangered species, steelhead trout are federally listed as threatened.

**Project # 55 Title: Crescent City Wastewater Treatment Plant Renovation**

Entity Responsible for Implementation: City of Crescent City

Contact name: David M. Wells, City Manager

**County:** Del Norte

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$7,000,000

**NCIRWMP recommended:** \$935,602

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

Renovation and expansion of the City of Crescent City wastewater treatment plant. The current facility is operating under a cease and desist order from the California Water Quality Control Board because it can no longer adequately meet the service area's need for safe and efficient treatment of wastewater. A new facility is critical to both current needs and anticipated growth for the next 20 years. A component of the project will install Membrane Bioreactor technology to treat wastewater to standards suitable for reuse in agricultural irrigation. This technology will allow a reduction in the potable water supply use for irrigation. The potable water supply is currently taken from the Smith River, a Federally designated Wild & Scenic river with critical salmon and steelhead trout habitat.

**Project Goals:**

Improve the capacity of the Crescent City wastewater treatment system to adequately treat wastewater to meet pollution control standards for water discharged into the Pacific Ocean habitat. Reduce the dependence on potable water taken from the Smith River habitat for agricultural irrigation.

**Project Benefits:**

Reduced pollution risk to the Pacific Ocean habitat, increased flow of water in the Smith River habitat due to use of recycled wastewater for irrigation.

**Political Support:**

This project is supported by the Del Norte County Board of Supervisors, the City of Crescent City Council, the Elk Valley Rancheria, the local Council of Economic Advisors, the Chamber of Commerce, and various other individuals and groups.

**Performance Measures:**

Performance measures to be used will include the testing and monitoring procedures required by the state for wastewater treatment plant discharge according to the terms of the City's permit.

**Scientific Basis of Project:**

Water quality and shellfish data were collected near the City's outfall, and wastewater collection system I/I testing and lateral/main rehabilitation were completed before construction of this project. These actions generated baseline data for analytical comparisons to ongoing wastewater effluent monitoring and reporting. Resulting information will assist in managing and gauging the project's impacts on both water quality and operating performance.

**Project # 153 Title: Water Supply Reliability Project**

Entity Responsible for Implementation: Westport County Water District

Contact name: Steve McHaney, District Engineer Westport County Water District

**County:** Mendocino

**Disadvantaged community:** Entirely

**NCIRWMP request:** \$553,500

**NCIRWMP recommended: \$374,241**

**NCIRWMP Objectives Addressed:**

- Salmonid conservation and enhancement
- Ensure adequate water supply
- Support implementation of State Programs
- Address environmental justice issues

**Project Summary:**

This project proposes to install a 100,000 gallon water storage tank and an ozone manganese treatment system for groundwater. The project would include surveying, geotechnical, site preparation, foundation construction, installation of the tank and water treatment system, and connections to the existing system. Water from the District's existing groundwater well exceeds the State's secondary MCL for manganese (50 ug/L), and recent sampling has show concentrations as high as 330 ug/L. The District uses the well as a back up source when they cannot meet their water right bypass flows in their water source Wages Creek. The additional water storage is needed to assure a reliable supply when the District cannot divert water. The new storage would increase the total storage to 200,000 gallons, providing enough storage for over 10 days. The additional storage is also important to provide water during emergencies, and for fire protection. Temporary water conservation is not a reliable option for addressing water shortages because the events cannot always be predicted, the duration is unknown, and notifying customers is costly and reduces customer confidence.

**Project Goals:**

The goals of this project are to improve the reliability of the Westport water system, assure California safe drinking water standards are being met, assure water right bypass flows are met and fisheries are protected, and to increase fire protection. Low creek flows can create water supply difficulties when the District cannot divert water. Treating the District's groundwater provides a safe back up water source that improves system reliability. The water storage provides enough water to maintain the District's water supply if groundwater production is seasonally low. Fisheries are protected through the District's maintenance of their water right bypass flows. Wages creek is a Coho Salmon stream. Westport is located along a grassy hillside with scattered forested areas. Additional stored water for fire protection is needed to protect the community.

### **Project Benefits:**

This project has multiple benefits. First this project provides a more reliable water supply for the Westport County Water District. Second it provides a safer water supply, by giving the District the treatment equipment it needs to meet California safe drinking water standards for Manganese. Third, this project enhances Wages Creek by allowing the District to use stored water and groundwater when the creek flows fall below the District's bypass flow requirements. Finally it increases the District's fire fighting capabilities, which benefits Westport and nearby area, who also use Westport's stored water for fire protection.

### **Monitoring Deliverables:**

**MONITORING AND REPORTING:** This task involves monitoring the project through photos taken of the project as it progresses. Once the project is complete a write up including the photo monitoring will be developed describing the improvements resulting from the project. **REPORTING AND ADMINISTRATION:** Periodic progress reports shall be generated and submitted based on a schedule provided by the funding organization. The District of Westport as the applicant will oversee the completion of the work and shall review and submit monthly reimbursement requests.

### **Performance Measures:**

The Westport County Water District records flow as part of its daily operation. This information is part of the District's annual report to the Department of Water Resources. Manganese sampling data is sent to the Department of Health Services, and tracked in their records. The State Water Resources Control Board conducts a periodic evaluation of the District water right permit. Information from the District's water production records will be included in that evaluation.

### **Scientific Basis of Project:**

The baseline data used to determine the improvement the project would make for the Westport County Water District would come from sampling at the groundwater well, in stream flow monitoring, and water plant records. The District water treatment plant operator is well trained to use this data to track the improvement in drinking water, in water supply reliability, and in meeting by-pass flow requirements.

## 7.1 ENVIRONMENTAL COMPLIANCE

The NCIRWMP Implementation grant proposal is exempt from the California Environmental Quality Act (CEQA) Guidelines §15262 (Feasibility and Planning Studies) and §15306 (Information Collection) because it consists of basic data collection and resource evaluation activities which would not result in the disturbance of any environmental resource and because it involves planning studies for possible future actions which the participating agencies have not yet approved. Potential environmental impacts of all individual projects listed in the North Coast IRWM Plan have been or will be evaluated in accordance with CEQA by the project proponents. This Plan does not legally bind participants to carry out projects listed in the plan.

The following table contains CEQA/NEPA status and other permitting required for each project as submitted by the project proponents.

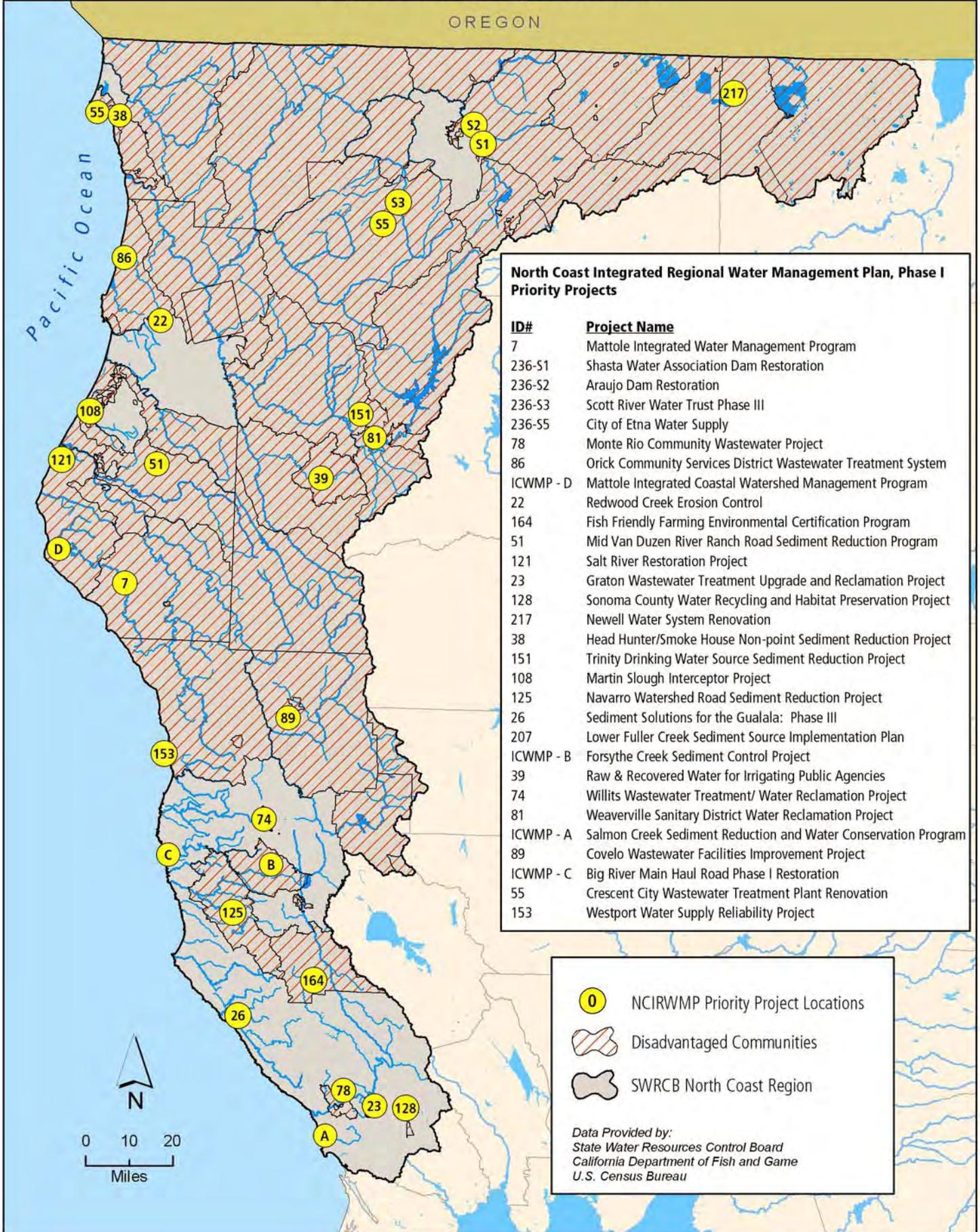
| <b>Table 9: Environmental Compliance Summary</b> |   |   |   |
|--|---|---|---|
| <b>ID</b>  | <b>Project Name</b>                         | <b>CEQA/NEPA Status</b>   | <b>Other Permitting Requirements</b>  |
| 7  | Mattole Integrated Water Management Program | CEQA to be completed by 6/15/2006.<br>NEPA review to be completed by 6/15/2006. | Section 1600/1603 Streambed Alteration Agreement<br>CWA Section 404 Certification   |
| 236  | S1 Shasta Water Association Dam Restoration | CEQA to be completed by 1/1/2008.   | DFG 1600 Permit<br>ACOE 404 Permit<br>NMFS<br>RWQ 401 Permit<br>County Building Permit  |
| 236  | S2 Aruja Dam Restoration                    | CEQA to be completed by 12/1/2007.  | DFG 1600 Permit<br>ACOE 404 Permit<br>NMFS<br>RWQ 401 Permit<br>County Building Permit  |
| 236  | S3 Scott River Water Trust                  | CEQA to be completed by 6/15/2007.  | SWRCB Beneficial use  |
| 236  | S5 City of Etna Water Supply                | CEQA to be completed by 12/1/2007   | US Army Corps of Engineers 404 Permit<br>Streambed Alteration Ag, 1601<br>NCRWQCB 401 Permit,<br>Landowner Access Ag              |
| 78   | Monte Rio Community Wastewater Project      | CEQA was completed 6/7/2001,<br>NEPA was completed 4/15/2005                    | Waste Discharge Permit, NCRWQCB<br>Grading, Building Permit<br>Monitoring Well Permit<br>Storm Water NPDES<br>Encroachment Permit |

| <b>Table 9: Environmental Compliance Summary</b> |   |   |  |
|--|---|---|--|
| <b>ID</b>  | <b>Project Name</b>   | <b>CEQA/NEPA Status</b>   | <b>Other Permitting Requirements</b>   |
| 86   | Orick Community Services District Wastewater Treatment Sys. | CEQA to be completed by 12/31/2006.<br>NEPA to be completed by 12/31/2006 | National Pollutant Discharge Elimination System (NPDES - Water Board)<br>Grading, Building Permits, Humboldt County<br>Stormwater Permits Humboldt County<br>Encroachment Permit (CA Dept. of Transportation)<br>CWA 404 wetlands permit (ACOE)<br>National Park Service Special Use Or Easement |
| ICWMP - D  | Mattole Integrated Coastal Watershed Management Program     | CEQA to be completed by 5/01/2008   | DFG 1600 Streambed Alteration Agreement  |
| 22   | Redwood Creek Erosion Control                               | CEQA to be completed by 5/15/2006   | Landowner Access Agreement<br>DFG 1600 Streambed Alteration Agreement<br>Water Quality 401 Certification<br>DFG Regional General Permit for Section 404 Permit   |
| 164  | Fish Friendly Farming Environmental Certification Program   | CEQA was completed 1/15/2001  | DFG 1600 Streambed Alteration Agreement  |
| 51   | Mid Van Duzen River Ranch Road Sediment Reduction Program   | CEQA will be completed by 6/1/2006.                                       | Water Board 401 Permit<br>CA DFG 1600 Streambed Permit   |
| 121  | Salt River Restoration Project                              | CEQA will be completed by 6/1/2007.<br>NEPA will be completed by 6/1/2007 | Streambed Alteration Agreement<br>US Army Corps of Engineers 404 Permit<br>Section 401 of the Clean Water Act<br>Coastal Development Permit States Lands Commission  |
| 23   | Graton Wastewater Treatment and Upgrade Reclamation Project | CEQA, as required; mitigated negative declaration expected                | Revised NPDES<br>Grading Permit  |
| 128  | Sonoma County Water Recycling and Habitat Preservation Proj | CEQA will be completed by 6/1/2006  | Grading Permit<br>Building Permit<br>Waste Discharge Requirements<br>Section 404/7/1601  |
| 217  | Newell Water System   | CEQA will be completed by 7/1/2006  | County Building Permits<br>CalTrans Encroachment Permit<br>Modoc County Roads Encroachment Permit  |

| <b>Table 9: Environmental Compliance Summary</b> |  |   |   |
|--|--|---|---|
| <b>ID</b>  | <b>Project Name</b>  | <b>CEQA/NEPA Status</b>   | <b>Other Permitting Requirements</b>  |
| 38   | Head Hunter/Smoke House Non-Point Sediment Reduction Project   | CEQA was completed by 4/29/2005                                 | Dept. of Fish and Game Stream Alteration Agreement  |
| 151  | Trinity Drinking Water Source Sediment Reduction Project       | CEQA will be completed by 6/15/2006                             | CDFG Streambed Alteration Agreement   |
| 108  | Martin Slough Interceptor                                      | CEQA was completed 10/51/2004.<br>NEPA was completed 3/15/2005. | Coastal Development Permit, City of Eureka and Humboldt County<br>Department of Transportation Encroachment Permit<br>U.S. Army Corps of Engineers 404/10 Permit<br>North Coast Regional Water Quality Control Board 401 Approval |
| 125  | Navarro Watershed Road Sediment Reduction Project              | CEQA will be completed by 7/15/2005.                            | Streambed Alteration Permit (1602)<br>Army Corps of Engineers (404)<br>Waste Discharge Permit (401)   |
| 26   | Sediment Solutions for the Gualala: Phase III                  | CEQA will be completed by 1/1/2006.                             | 1603 Streambed Alteration   |
| ICWMP - B  | Forsythe Creek Sediment Control Project                        | CEQA to be completed by 5/01/2008                               | CA DFG regional programmatic permit   |
| 39   | Raw & Recovered Water for Irrigating Public Agencies           | CEQA will be completed by 8/1/2005.                             | Trinity County Encroachment Permit, Pipes<br>CA DFG 1602 Stream Alteration Permit<br>Army Corp Of Engineers 404 Permit<br>Cal-Trans Encroachment Permit, Pipes  |
| 81   | Weaverville Sanitary District Water Reclamation Project        | CEQA was completed by 6/30/2005                                 | RWQCB Discharge Permit modification Engineering Report  |
| ICWMP - A  | Salmon Creek Sediment Reduction and Water Conservation Program | CEQA to be completed by 12/01/2008                              | North Coast Regional Water Quality Control Board 401 Approval<br>Army Corp Of Engineers 404 Permit<br>Streambed Alteration Permit (1602)  |

| <b>Table 9: Environmental Compliance Summary</b> |   |   |  |
|--|---|---|--|
| <b>ID</b>  | <b>Project Name</b>                                 | <b>CEQA/NEPA Status</b>   | <b>Other Permitting Requirements</b>   |
| 89   | Covelo Wastewater Facilities Improvement Project    | CEQA was completed by 6/30/2005.<br>NEPA was completed by 6/30/2005.  | NPDES Permit<br>Mendocino County DOT Encroachment Permit<br>CA DOT Encroachment Permit   |
| ICWMP - C  | Big River Main Haul Road Phase I Restoration        | CEQA is complete  | North Coast Regional Water Quality Control Board 401 Approval<br>Army Corp Of Engineers 404 Permit   |
| 55   | Crescent City Wastewater Treatment Plant Renovation | CEQA was completed 2/22/2005.<br>NEPA was completed 2/22/2005.<br>NOAA Fisheries NEPA Review/USACOE Permit<br>USFWS NEPA Review/USACOE Permit | City Encroachment Permit<br>City Coastal Permit<br>County Encroachment Permit<br>County Coastal Permit<br>Authority to Construct Permit to Operate<br>CIWMB/LEA Tier Determination<br>CIWMB/LEA Solid Waste Facility Permit<br>RWQCB NPDES Stormwater<br>RWQCB Construction Permit<br>RWQCB NPDES Wastewater<br>RWQCB Discharge Permit<br>RWQCB Clean Water Act Section 401<br>RWQCB Certification<br>SLC Land Use Lease<br>CCC Coastal Development Permit<br>DFG Agency Agreement<br>CalTrans Encroachment Permit<br>OHP ADEIR Review & Comment<br>NAHC ADEIR Review & Comment<br>USACOE Individual Permit<br>USACOE Nation-Wide Permit |
| 153  | Westport Water Supply Reliability Project           | CEQA will be completed by 4/30/2006.  | Encroachment Permit<br>Coastal Development Permit<br>NPDES SWPPP   |

**North Coast Integrated Regional Watershed Management Plan  
Map 16. Priority Project Locations**



**North Coast Integrated Regional Water Management Plan, Phase I  
Priority Projects**

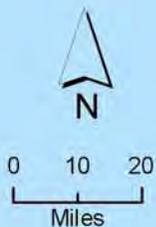
| <b>ID#</b> | <b>Project Name</b>  |
|------------|--|
| 7          | Mattole Integrated Water Management Program                    |
| 236-S1     | Shasta Water Association Dam Restoration                       |
| 236-S2     | Araujo Dam Restoration   |
| 236-S3     | Scott River Water Trust Phase III                              |
| 236-S5     | City of Etna Water Supply                                      |
| 78         | Monte Rio Community Wastewater Project                         |
| 86         | Orick Community Services District Wastewater Treatment System  |
| ICWMP - D  | Mattole Integrated Coastal Watershed Management Program        |
| 22         | Redwood Creek Erosion Control                                  |
| 164        | Fish Friendly Farming Environmental Certification Program      |
| 51         | Mid Van Duzen River Ranch Road Sediment Reduction Program      |
| 121        | Salt River Restoration Project                                 |
| 23         | Graton Wastewater Treatment Upgrade and Reclamation Project    |
| 128        | Sonoma County Water Recycling and Habitat Preservation Project |
| 217        | Newell Water System Renovation                                 |
| 38         | Head Hunter/Smoke House Non-point Sediment Reduction Project   |
| 151        | Trinity Drinking Water Source Sediment Reduction Project       |
| 108        | Martin Slough Interceptor Project                              |
| 125        | Navarro Watershed Road Sediment Reduction Project              |
| 26         | Sediment Solutions for the Gualala: Phase III                  |
| 207        | Lower Fuller Creek Sediment Source Implementation Plan         |
| ICWMP - B  | Forsythe Creek Sediment Control Project                        |
| 39         | Raw & Recovered Water for Irrigating Public Agencies           |
| 74         | Willits Wastewater Treatment/ Water Reclamation Project        |
| 81         | Weaverville Sanitary District Water Reclamation Project        |
| ICWMP - A  | Salmon Creek Sediment Reduction and Water Conservation Program |
| 89         | Covelo Wastewater Facilities Improvement Project               |
| ICWMP - C  | Big River Main Haul Road Phase I Restoration                   |
| 55         | Crescent City Wastewater Treatment Plant Renovation            |
| 153        | Westport Water Supply Reliability Project                      |

NCIRWMP Priority Project Locations

Disadvantaged Communities

SWRCB North Coast Region

*Data Provided by:  
State Water Resources Control Board  
California Department of Fish and Game  
U.S. Census Bureau*







## PROJECT INTEGRATION AND IMPLEMENTATION BENEFITS

### SECTION 8.0





## **SECTION 8.0**

### **PROJECT INTEGRATION AND IMPLEMENTATION: IMPACTS AND BENEFITS OF PLAN**

#### **8.1 PROJECT INTEGRATION WITH NCIRWMP OBJECTIVES**

The NCIRWMP project prioritization process was designed to select those projects within the region that meet local needs while addressing NCIRWMP objectives and state priorities (*see Section 6, Development Process for the NCIRWMP*). This section describes how DWR and SWRCB water management strategies, when implemented, will achieve NCIRWMP objectives and how specific prioritized projects execute the management strategies. Appendix O, NCIRWMP Project Integration with NCIRWMP Objectives and Appendix A, NCIRWMP Projects Integration with Statewide Goals describes the NCIRWMP objectives and state priorities that each prioritized project addresses. Throughout this section, it will be shown that each project provides multiple benefits and addresses multiple NCIRWMP objectives and state priorities. Collectively, these projects represent a first step towards regional integration and the provision of multiple benefits at the project site, local, and regional scales (*see Maps 17-22, Proposed Project Integration for each WMA*). In a truly bottom-up manner, these projects were proposed because of local need and have been identified as addressing regional goals through the NCIRWMP regional watershed planning process. They will be implemented at the basin scale by local entities in accordance with local jurisdictional planning.

#### **NCIRWMP OBJECTIVE 1: CONSERVE AND ENHANCE NATIVE SALMONID POPULATIONS BY PROTECTING AND RESTORING REQUIRED HABITATS, WATER QUALITY AND WATERSHED PROCESSES**

This objective will be met by projects that employ one or more of the following water management strategies:

- Ecosystem restoration
- Environmental and habitat protection and improvement
- Water supply reliability
- Storm water capture and management
- Water conservation
- Water quality protection and improvement
- Water recycling
- Wetlands enhancement and creation
- Land use planning
- NPS pollution control
- Surface storage
- Watershed planning
- Water and wastewater treatment projects

Ecosystem restoration, environmental and habitat protection and improvement, and wetlands enhancement and creation directly benefit salmonid species by improving habitat, stream canopy cover, or ecosystem function such as pollutant filtration. Water supply reliability, storm water capture and management, water conservation, water recycling, and surface storage benefit salmonid fisheries by decreasing the amount of water withdrawn from surface waters, thus increasing instream water -

which may remain at cooler temperatures during the summer - and providing for greater dilution of pollutants. Protection and improvement of water quality, NPS pollution control, and water and wastewater treatment improve the quality of surface water, which also improves salmonid habitat. NPS pollution control that addresses sediment reduction is particularly important for salmonid habitat restoration. Land use planning and watershed planning that factor these strategies into an integrated management framework will serve to protect and improve important habitat. Many of the prioritized projects implement these management strategies to the benefit of salmonids and other identified beneficial uses in the North Coast Region (*see Appendix P, NCIRWMP Projects Watershed Attributes*).

## **NCIRWMP OBJECTIVE 2: PROTECT AND ENHANCE DRINKING WATER QUALITY TO ENSURE PUBLIC HEALTH**

This objective will be met by projects that employ one or more of the following water management strategies:

- Ecosystem restoration
- Environmental and habitat protection and improvement
- Flood management
- Storm water capture and management
- Water quality protection and improvement
- Wetlands enhancement and creation
- Land use planning
- NPS pollution control
- Watershed planning
- Water and wastewater treatment projects

Through the implementation of ecosystem, habitat, and wetlands enhancement, restoration, and protection projects, water quality throughout the region will be enhanced due to increased environmental capacity to filter pollutants and sediment before they reach surface or groundwater supplies. Flood management and storm water capture and management will enhance water quality by limiting the amount of pollutants that reach surface or groundwater during storm events. Water quality protection and improvement, NPS pollution control, and water and wastewater treatment projects will directly improve surface and groundwater quality in the Region. Since the Region currently has several wastewater treatment plants operating under Cease and Desist orders from the NCRWQCB, implementation of wastewater treatment projects in those areas will greatly improve water quality and protect human health. Land use planning and watershed planning that factor these strategies into an integrated management framework will improve regional water quality and ensure that human health is protected throughout the region, especially in disadvantaged communities, which presently experience the worst of the water quality problems associated with bacterial pollution (*see Map 3, Impaired Waterbodies*). See Appendix P, NCIRWMP Projects Watershed Attributes for the specific prioritized projects that implement these water management strategies to protect water quality for the benefit of human health.

### **NCIRWMP OBJECTIVE 3: ENSURE ADEQUATE WATER SUPPLY WHILE MINIMIZING ENVIRONMENTAL IMPACTS**

This objective will be met by projects that employ one or more of the following water management strategies:

- Water supply reliability
- Storm water capture and management
- Water conservation
- Water recycling
- Land use planning
- Surface storage
- Watershed planning

Water supply reliability projects provide for adequate water supply and minimize environmental impacts by ensuring the wise utilization of water. Storm water capture and management, water recycling, and surface storage projects provide alternative water supplies to ground and surface water, thus ensuring that more water is available for environmental beneficial uses and in times of water shortage. Water conservation projects help to reduce demand, lessening the amount of water withdrawn from ground and surface water and leaving more water available for environmental and other beneficial uses. Land use planning and watershed planning projects help to ensure adequate water supply while minimizing environmental impacts through the integration of local, landscape level, projects that meet local and regional needs for water supply. The prioritized projects that implement these water management strategies are provided in Appendix O, NCIRWMP Projects Integration with NCIRWMP Objectives.

### **NCIRWMP OBJECTIVE 4: SUPPORT IMPLEMENTATION OF TMDLS, THE NCRWQCB WMI, AND THE NONPOINT SOURCE PROGRAM PLAN**

This objective will be met by projects that employ one or more of the following water management strategies:

- Ecosystem restoration
- Environmental and habitat protection and improvement
- Water supply reliability
- Flood management
- Recreation and public access
- Storm water capture and management
- Water conservation
- Water quality protection and improvement
- Water recycling
- Wetlands enhancement and creation
- Land use planning
- NPS pollution control
- Surface storage
- Watershed planning
- Water and wastewater treatment projects

Each of these strategies directly or indirectly supports goals of state agencies by reducing the amount of pollution reaching water bodies (ecosystem restoration, environmental and habitat protection and improvement, flood management, storm water capture and management, water quality protection and improvement, wetlands enhancement and creation, land use planning, NPS pollution control, water and wastewater treatment and watershed planning projects), increasing the available water supply (water supply reliability, storm water capture and management, water conservation, water recycling, land use planning, surface storage, and watershed planning), improving ecosystem function and habitat for threatened and endangered species (ecosystem restoration, environmental and habitat protection and improvement, and wetlands enhancement and creation) and promoting environmental justice (water supply reliability, water quality protection and improvement, recreation and public access, land use planning and watershed planning).

These strategies, as implemented by the projects listed in Appendix O, NCIRWMP Projects Integration with NCIRWMP Objectives, act synergistically to achieve multiple goals and provide multiple benefits on both a local and regional basis. For example, water and wastewater treatment projects improve water quality, which improves habitat for threatened and endangered species – including anadromous salmonids – which provide nourishment and the basis for the social structure of some of the disadvantaged communities in the northern part of the region. Additionally, water and wastewater treatment projects directly benefit disadvantaged communities throughout the region through the provision of clean drinking water and the availability of surface waters for recreation that do not threaten human health. Finally, the implementation of these water and wastewater treatment projects directly supports implementation of TMDLs and the goals of the NCRWQCB WMI by reducing bacterial and other pollutants in impacted waterways. Likewise, NPS pollution control strategies for sediment and flood management, which also reduce sedimentation, can be seen to benefit the environment and salmonids, disadvantaged communities, and support implementation of the NPS Program Plan. Many of the NCIRWMP projects include integration of several management strategies, however, even the projects that employ only one water management strategy provide multiple benefits at multiple scales, as described above.

#### **NCIRWMP OBJECTIVE 5: ADDRESS ENVIRONMENTAL JUSTICE ISSUES AS THEY RELATE TO DISADVANTAGED COMMUNITIES, DRINKING WATER QUALITY AND PUBLIC HEALTH**

This objective will be met by projects that employ one or more of the following water management strategies in or near disadvantaged communities:

- Ecosystem restoration
- Environmental and habitat protection and improvement
- Water supply reliability
- Flood management
- Recreation and public access
- Storm water capture and management
- Water conservation
- Water quality protection and improvement
- Water recycling
- Wetlands enhancement and creation

- Land use planning
- NPS pollution control
- Surface storage
- Watershed planning
- Water and wastewater treatment

By implementing water quality and water supply improvement projects, better quality water will be more readily available for the disadvantaged communities throughout the region that are currently experiencing supply and/or water quality problems (*see Section 3 – Existing Conditions*). Additionally, flood management, storm water capture and management, NPS pollution control, and water and wastewater treatment will improve water quality in areas of disadvantaged communities. Flood management will also protect low-lying communities from the danger of floods. Water conservation, water recycling, and surface storage will improve water supply reliability, which is a problem in some of the more remote areas of the region where the costs associated with providing a stable supply of clean water pose an economic hardship for residents. Ecosystem restoration and habitat and wetlands enhancement and protection will protect threatened and endangered species that support traditional subsistence and resource-based economies and may provide for new economic opportunities in the form of eco-tourism and recreational tourism. Recreation and public access provide opportunities for disadvantaged residents to enjoy the region’s natural beauty. Land use planning and watershed planning, when conducted through a framework that emphasizes environmental justice, will enable the NCRWMP to effectively strategize for equitable future growth while minimizing negative environmental impacts.

#### **NCIRWMP OBJECTIVE 6: PROVIDE AN ONGOING, INCLUSIVE FRAMEWORK FOR EFFICIENT INTRA-REGIONAL COOPERATION, PLANNING AND PROJECT IMPLEMENTATION**

This objective will be met by the NCIRWMP itself, implemented with the cooperation and participation of NCRWMP members, and through projects that employ one or more of the following water management strategies:

- Land use planning
- Watershed planning

As mentioned in Section 3, the North Coast Region consists of jurisdictional boundaries for local regulatory purposes and watershed boundaries for assessment and project implementation purposes. Decisions made at the local level regarding land use planning will have a watershed focus under the NCIRWMP framework to account for problems that cross jurisdictional boundaries such as sedimentation, nonpoint source pollution, and water diversions. This framework will allow for different jurisdictions to evaluate needs, conditions, and challenges at the watershed basin scale and to cooperatively determine the most favorable solutions. The process will remain transparent and inclusive and complement the already successful Five County Salmonid Conservation Program (5C) described in Appendix B, Existing Water And Watershed Management Plans & Programs.

The NCIRWMP framework will consist of an adaptive management approach, with regular monitoring of implemented projects according to state and federal guidelines (*see Section 9*), which will be used to inform subsequent planning efforts. This framework provides a new paradigm for water management

in the North Coast Region of California and the members of the North Coast Regional Water Management Group (NCRWVG) and collaborating entities are committed to making it succeed. This group will soon serve as a model for successful cooperative regional water management planning for other RWQCB regions in California and for inter-jurisdictional watershed-based planning for the entire west coast of the U.S.

## **8.2 WATER MANAGEMENT ISSUES ADDRESSED BY THE NCIRWMP**

As shown in Appendix A, NCIRWMP Projects Integration with Statewide Goals, implementation of NCIRWMP projects will address multiple DWR/SWRCB Program Preferences and Statewide Priorities, including integrated projects with multiple benefits, projects that improve water supply and quality, pollution reduction and implementation of TMDLs in impaired water bodies, reduction in conflict between water users, and the promotion of environmental justice throughout the region. Many of the projects serve to implement the Watershed Management Chapter written by the NCRWQCB for the WMI, which has as its primary goals to protect and enhance surface waters, groundwater quality and quantity, and fisheries.

The NCIRWMP contains several projects that provide NPS pollution control. These include sediment reduction projects, restoration and revegetation projects, and the implementation of best management practices for agricultural lands. NPS management measures defined by SWRCB that are implemented by these projects include: agricultural erosion and sediment control; nutrient management; pesticide management; irrigation water management and education and outreach; forestry road management and forest regeneration; urban areas; new and operating on-site disposal systems and road, highway, and ridge runoff systems; hydromodification; instream and riparian habitat restoration; physical and chemical characteristics of surface waters and educational programs; wetlands, riparian areas, and vegetated treatment systems protection and restoration; and vegetated treatment systems. Many of the projects build on existing NPS and TMDL projects or previous watershed or roads assessments (*see Section 7*) in order to most efficiently reduce sediment delivery to waterways.

Groundwater management is a strategy that is employed within the region by the Mendocino City Community Services District, which has a groundwater management plan used primarily to protect the Town of Mendocino's groundwater from overdraft (Mendocino City Community Services District 2003). Additionally, within the NCIRWMP, two project proponents – the Mattole Restoration Council and the Pacific Coast Fish, Wildlife and Wetlands Restoration Association – have expressed the intent to develop groundwater management plans by July 14, 2006 to support their project implementation. Regional prioritization of groundwater management plan development and implementation of local groundwater management planning – where applicable – is a goal of the NCRWVG.

### **8.2.1 MANAGEMENT STRATEGIES THAT ARE NOT APPLICABLE**

The following management strategies were considered for inclusion in the Plan, but found to be not applicable at this time:

- Conjunctive use
- Desalination
- Imported water
- Water transfers

Conjunctive use is not currently applicable for most of the Region due to the lack of sizeable groundwater basins except in the northeast and southern parts of the Region (*see Section 3*). Conjunctive use is a strategy that will likely be utilized in the future when groundwater assessments and capacity have been more accurately determined for these areas. Since the North Coast has a high incidence of rainfall and generally exports more water than is consumptively used (DWR 2005), desalination, imported water, and water transfers are not applicable water management strategies for water supply at this time.

### **8.2.2 ADDED BENEFITS OF INTEGRATION OF MULTIPLE WATER MANAGEMENT STRATEGIES**

The integration of multiple water management strategies through implementation of projects distributed throughout the region will provide long-term benefits to the environment and disadvantaged communities, and will protect and restore beneficial uses in the entire region. By evaluating local projects within a regional framework, the NCRWMP will be able to prioritize projects that address the most pressing water quality, environmental, human health, and water supply issues.

The twenty-three projects chosen as priorities for the NCRWMP work on both local and regional scales to meet local needs and assist the achievement of statewide objectives. For example, the Mattole Integrated Water Management Program improves salmonid habitat, water supply, and water quality locally through NPS reduction, water storage and conservation, education, invasive species removal, and habitat restoration while implementing CDFG recommendations for the Cape Mendocino Hydrologic Unit to meet regional coho recovery goals. Other projects (*see Section 7*) improve water quality through wastewater treatment plant repair and renovation, road repair and decommissioning, NPS pollution prevention, and upgrading or replacing water storage tanks. These projects, while improving local water quality, also act synergistically to improve regional habitat for salmonids throughout NOAA-designated ESUs (*see Map 4, Salmonid Evolutionarily Significant Units*) and CDFG-designated coho recovery units (*see maps 17-22*). Additionally, wastewater treatment plant renovations that contain a water recycling component and water storage tank projects provide a more reliable local water supply, that also benefit environmental and other beneficial uses while decreasing the amount of water that must be trucked to remote areas during the dry summer months, thus having a regional effect on water supply and air quality.

### **8.3 POTENTIAL IMPACTS AND BENEFITS**

#### ***8.3.1 POTENTIAL IMPACTS TO THE REGION AND ADJACENT AREAS***

Potential impacts to the region of not implementing the Plan (see below) are far greater than negative impacts that may occur due to implementation. However, since most of the prioritized projects involve some physical change to the environment, there is potential for unintended negative environmental effects. Because all of the prioritized projects must comply with the California Environmental Quality Act (CEQA) and must undergo CEQA review (*See Section 7*), which involves evaluation of alternatives and mitigation of impacts, potential negative impacts to the Region are expected to be minimal. Some of the prioritized projects will increase infrastructural capacity, allowing for increased development, which, if not well managed, could negatively impact water and air quality and cause increased sedimentation and other environmental degradation. Increased development can also increase demand for water, which could exacerbate existing tensions over supply in certain parts of the region. Awareness of these issues and strong support from the NCRWVG regarding land use planning (which is the intended result of receipt of any IRWM planning grant funds) will enable local jurisdictions to avoid such problems.

Due to the watershed nature of the region's boundaries, adjacent areas will most likely not experience negative environmental impacts from project implementation. However, in improving salmonid habitat in one part of a salmonid ESU, adjacent areas which are contained within the same ESU may receive some benefit in the form of genetic exchange from the occasional straying that occurs when salmonids return to other than their natal streams. Additionally, since portions of several counties participating in the NCIRWMP also occur outside of the region, those counties may choose to forge similar partnerships with adjacent jurisdictions in nearby regions, thereby benefiting adjacent areas.

#### ***8.3.2 ADVANTAGES OF A REGIONAL PLAN AS OPPOSED TO INDIVIDUAL LOCAL EFFORTS***

The regional plan provides added benefits not achieved by multiple local efforts because the regional framework provides the ability to view projects at a basin (sub watershed) scale, link them to the watershed scale, and finally, to consider them in a cooperative regional context. An example of this cooperative spirit was in evidence during the project prioritization process, when some members of the Policy Review Panel and Technical Peer Review Committee advocated for projects from different jurisdictions that had greater need and greater regional benefit than those from their own jurisdiction. By working cooperatively to improve the areas in greatest need, the NCRWVG will eventually achieve equity and an improved quality of life for all residents.

Additionally, the NCRWVG, as a cooperative coalition of jurisdictions representing the North Coast Region, possesses greater political significance and funding appeal than any of the entities on their own. The NCRWVG also serves as a point of contact for the entire region for state water management regulatory agencies, thus reducing their expenditures in disseminating information or technical assistance. The NCRWVG will also benefit local jurisdictions by ensuring that all members possess the most current regulatory information and technical expertise and by encouraging information exchange and cooperative planning efforts between jurisdictions. The NCIRWMP currently provides for the

coordination of efforts within and across local scales to build the necessary prioritization and implementation of projects and plans to accomplish state goals, and it will be strategically adapted to better serve local and state needs as the process moves forward.

### **8.3.3 CRITICAL IMPACTS OF NOT IMPLEMENTING THE IRWMP PROJECTS**

Collectively, the NCIRWMP projects contribute toward NCRWVG and state agency salmonid recovery, environmental justice, water quality, and water supply goals for the North Coast Region. Individually, each project, whether it contains single or multiple water management strategies, serves to address one or more pressing local needs. The impacts of not implementing these projects would be severe and result in greater need and more serious problems in the future. These negative impacts fall into four general categories: salmonid restoration, water quantity, water quality, and impacts to disadvantaged communities and are presented in greater detail below.

#### **Salmonid Restoration**

Portions of many of the basins within the region face water shortages exacerbated by recent drought conditions. Three listed salmonid species – coho, steelhead, and chinook – are harmed by water withdrawals from streams to alleviate drought conditions. Additionally, historic and present land-use practices throughout the region have resulted in degradation of water quality and aquatic habitats. Most of the region's rivers are on the CWA §303(d) list for excessive sedimentation and high summertime water temperatures (*See Appendix E, Summary of Current Status of TMDL Development and Implementation in the North Coast Region*). Without remedial action to improve water quality and habitat conditions, viable salmonid populations will not recover. Many roads in the Redwood Creek area, if not treated, have a high potential for failure during storm events and should an extremely stormy season occur, there is a potential for failures to “overwhelm” the system with road and hillslope failures. If the Siskiyou County project is not implemented, many water users in the Shasta and Scott Valleys could be in violation of the ESA for takings of coho salmon and all hopes for effective recovery could be taken out of local hands and voluntary compliance to rest with the federal government. In addition, streams such as Hayfork Creek, which becomes extremely warm and low due to water diversions, would see continued degradation of its available habitat for fish and wildlife, particularly steelhead.

#### **Water Quality**

The impacts of not implementing the NCIRWMP projects would lead to a significant delay in addressing the water quality impairments identified in the TMDLs. SWRCB and DWR supported implementation of the NCIRWMP projects offers an incentive based assurance of compliance with current water quality regulations without resorting to a more protracted and costly regulatory approach. Specific impacts of not implementing the projects include not reducing discharge of recycled water to the Laguna de Santa Rosa and Russian River (both impaired waters with pending TMDLs) during winter, continued siltation of the Salt River, and pollution delivery to numerous other rivers and creeks throughout the region.

### **Water Quantity**

Impacts of not implementing the NCIRWMP projects include potential drastic effects on the region's water supply reliability. Urban athletic fields, municipalities, and industrial areas would not have irrigation during droughts, causing potential damage to landscaping, which would incur financial hardship on county governments, municipalities, and local businesses. Additionally, local water supplies throughout the region would not be diversified, diminishing future supply reliability, and impeding carefully planned economic development.

### **Environmental Justice – Impacts to Disadvantaged Communities**

Because most of the region is considered a disadvantaged community, not implementing the NCIRWMP projects will have environmental justice consequences for much of the region. Conflicts will deepen if water shortages remain un-addressed, public health hazards will continue, water quality and recreational standards will continue to be in violation of the North Coast Regional Water Board Basin Plan in several waterways, and economic development will be curtailed. The next several paragraphs provide specific impacts of not implementing individual projects contained within the NCIRWMP plan.

If the Westport water storage and treatment project is not implemented, the Westport Community Service District's (CSD) water supply will continue to have reliability problems and the Westport CSD would continue to be in violation of California safe drinking water standards. The Westport CSD would also continue to experience periodic water shortages during low flow periods. Impacts to Weaver Creek due to not implementing the Weaver project would be continued low flows in the creek and impairment during the summer. When irrigators or industrial users have a problem extracting water from the creek, they then use treated water supplied by the Weaverville CSD to supplement their need. Use of treated drinking water from the Weaverville CSD tends to be expensive for businesses and reduces the reliable secure amount of treated water available to residents. The Hayfork community would continue to experience water distribution problems during peak summer months when demand is the highest and the amount of water available is limited. In Newell, the community faces the prospect that its water system will fail and become unusable, either due to unacceptable levels of contamination and operating costs or because of catastrophic failure.

If wastewater treatment plant upgrades contained within the IRWMP are not implemented, drinking water wells in the Russian River watershed will continue to be subject to direct and indirect contamination from numerous individual noncompliant septic system discharges. Pathogens from failing septic systems will continue to migrate into the Russian River and Dutch Bill Creek, making these waterways unsafe for recreational surface uses as well as posing a danger to drinking water. In communities such as Covelo, Graton, and Willits, existing on-site waste disposal systems will continue to degrade surface and/or ground water and pose risks to human health and continue to limit economic growth. If the Covelo project is not implemented, the threat to groundwater and Eel River surface waters will increase as the collection and treatment systems deteriorate, increasing the risk of an adverse impact on the health and sanitation of the users of these waters. Currently, waste treatment systems in Covelo are inadequate and oxidation ponds are unlined, allowing leakage into the unconfined Covelo aquifer. Additionally, the wastewater treatment ponds and several unpermitted collection system discharge sites are within 1000 feet of Town and Grist Creeks, which further threatens water quality in the Upper Eel River watershed and the groundwater in the Covelo aquifer.

The City of Crescent City must implement its project in order to comply with Cease and Desist Orders issued by the State Water Quality Control Board. Not implementing the City of Crescent City project would result in continued violations of discharge permits and continued pollution of the Pacific Ocean, which provides habitat, seafood harvesting, and recreation. Surface water will continue to be at risk of contamination from secondary effluent excursions and non-point source pollution. In Westport, if the CSD continues to use groundwater without treatment, it could endanger human health and incur fines from the California Department of Health Services. Without assistance in repairing the existing systems, several of the region's communities face the prospect that their water systems will fail or become unusable. Civil penalties could result, causing economic hardship and ultimately higher rates and lack of potable tap water. Alternative solutions would likewise cause additional economic hardship to the communities. For example, should valuable reclaimed wastewater be discharged out of a local basin – as could occur if the Graton project is not implemented – economic, hydrologic and ecological benefits will be lost.

If the Martin Slough project is not implemented, a building moratorium may need to be placed on development in the southeasterly Eureka area. The cost of upgrading the existing facilities to handle current and future flow conditions far exceeds the cost of the Martin Slough Interceptor project and will not relieve the current odor problems. In Hayfork, the limited capacity of the current treatment plant is the limiting factor for growth within Hayfork. Without this project, operational costs will remain high, and the amount of water available for domestic use will not increase to reflect increased demand and growth. In Westport, without increased water for fire protection, personal and property damage could escalate during a wildfire emergency. Finally, the impact of not implementing the Salt River project will result in continued Salt River siltation, causing increased flooding of farmland and infrastructure.

### **Additional Impacts Of Not Implementing The NCIWMP Projects**

Funding opportunities that make up a significant portion of the matching funds for several of the proposed projects may not be available or may not fully finance the project during future funding cycles. Currently, the NCIWMP has obtained matching funds of 75% to implement the prioritized projects in spite of its mostly disadvantaged status, indicating the merit of the proposed projects. To potentially lose these funding commitments would be a significant economic loss to the region. Also, areas where salmonid habitat restoration, NPS pollution control, or other water quality or water supply projects have begun will experience a loss of momentum and potential loss of landowner goodwill that fulfill the participatory goals of TMDL implementation and other state goals and priorities. Additionally, without at least some financial support, the incentive for landowners to voluntarily implement pollution reduction projects not required by regulations is minimal. For example, the Fish Friendly Farming Program is widely accepted by regional landowners, who share the cost of the program. Without the incentives and technical and financial assistance provided by the program, landowners are less likely to implement coordinated water quality and habitat improvements on a broad scale for basin-wide improvements to beneficial uses.

### **8.3.4 IMPACTS AND BENEFITS TO DISADVANTAGED COMMUNITIES**

Impacts to disadvantaged communities from *not* implementing the NCIRWMP projects are far greater and more detrimental than those that may occur from implementing the projects (see above). Potential impacts to disadvantaged communities due to project implementation are environmental impacts and social or economic impacts. Any potential negative environmental impacts are expected to be addressed through the CEQA/NEPA process, which is required for all projects that cause direct or foreseeable indirect changes in the local environment (California Resources Agency 2002). Social or economic impacts may occur if unplanned or poorly planned economic development occurs as a result of increased water treatment or delivery infrastructure. Often, such development may occur at the expense of disadvantaged communities. However, because the NCIRWMP has such a strong focus on environmental justice and the NCRWMP has a strong commitment to empowering and improving disadvantaged communities, it is far more likely that planning will integrate improvements to and opportunities for disadvantaged communities.

Potential benefits to disadvantaged communities from NCIRWMP project implementation are numerous. Improvements to salmonid fisheries, water quality, water supply, and compliance with state and federal regulations will directly and indirectly contribute toward the NCIRWMP goal of promoting environmental justice throughout the region.

Improvements to salmonid fisheries will increase recreational fishing tourism, invigorate and sustain historic social and economic structures related to fisheries – particularly Native American communities – and reduce the potential for conflict in the Klamath Basin. The provision of increased employment opportunities due to increases in recreational and commercial fishing will indirectly benefit disadvantaged communities, which are currently experiencing attrition in natural resource related jobs (*see Section 3*). Increases in fisheries will directly benefit Native American communities, which have traditionally relied on salmon for the majority of their nutritional needs and developed complex social structures based on salmon harvest. The recovery of salmonid fisheries in the Klamath watershed would dramatically reduce conflict between farmers and the federal government, which is responsible for enforcing the Endangered Species Act. Additionally, conflict would be reduced between farmers and tribes, which rely on salmon for a healthy diet, and those who endorse environmental beneficial uses of water. Some of the projects that support recovery of salmonid fisheries in the Klamath River and its tributaries would provide water from alternative sources for crop irrigation, thus ensuring a sustainable livelihood for farmers.

Improvements to surface and ground water quality that result from NCIRWMP project implementation would directly benefit disadvantaged communities. These benefits would include safe, clean drinking water with an acceptable taste provided at the tap, safe, clean water for recreational activities, and affordable water rates from water suppliers that are compliant with state regulations. Improvements to surface water quality would also indirectly benefit disadvantaged communities through the continuation of or increase in recreational tourism, which will almost certainly decline if water pollution worsens. Increased tourism provides opportunity for well-planned economic growth, which may provide employment and entrepreneurial opportunities.

NCIRWMP projects that improve water supply will directly benefit disadvantaged communities through the reliable provision of potable water at the tap at affordable rates. Currently, some residents of disadvantaged communities must buy potable water offsite during dry summer months. Indirect

benefits from reliable water supplies include increased employment and other economic opportunities that may arise from improvements to water supply infrastructure capacity. As mentioned above, counties and other jurisdictions must employ comprehensive, long-term planning with an environmental justice focus to ensure that disadvantaged communities benefit from, rather than suffer because of, economic development.

In addition to benefits from the completed projects, implementation of the NCIRWMP projects will provide employment for a variety of local people with differing professions and skill levels. Heavy equipment operators will be solicited for road removal work and construction projects, and construction and maintenance crews will be recruited from local job service rolls. Support services such as fuel and maintenance services for utilized equipment will be supplied from local vendors. Overnight lodging for any non-resident specialists – such as geologists, engineers, or biologists – during the work season will provide additional business for local proprietors. Additionally, improvements in fisheries and local water quality and quantity will raise community values and increase individual property values throughout the region.

A stated objective of the NCIRWMP is to “address environmental justice issues as they relate to disadvantaged communities, drinking water quality and public health” (*see Section 2*). This objective, as a guiding principle behind regional planning and project implementation, will ensure that disadvantaged communities continue to benefit from the NCIRWMP planning process long after any initial grant funds are exhausted. The cooperative, inclusive, multi-stakeholder structure of the regional group provides a forum in which the region’s most pressing needs relating to water management are prioritized and a framework for adaptively adjusting management as new information becomes available. The NCRWMPG, in its sincere efforts to provide information to the public through workshops and the NCIRWMP website and the public and transparent nature of the prioritization process, has demonstrated its cooperative spirit and intent to improve the quality of life in the region for all residents. The final objective of the Plan, to “provide an ongoing, inclusive framework for efficient intra-regional cooperation, planning and project implementation (*see Section 2*)” indicates the long-term vision of the NCRWMPG and its intent to remain transparent and work together to achieve its goals for the benefit of the entire region and, in so doing, benefit the State of California.

### **8.3.5 IMPACTS AND BENEFITS TO OTHER RESOURCES**

Impacts to other resources from NCIRWMP project implementation include a potential decline in air quality, and potential decline in energy provision capabilities. If improvements to surface waters and fisheries generate substantial increases in vehicle traffic, air quality could be negatively impacted. The expected benefits to water quality, quantity, salmonid fisheries, and disadvantaged communities are expected to outweigh these potential impacts, however, a more detailed analysis will be conducted in future iterations of this Plan in order to ensure the greatest good comes from water management project prioritization and implementation.

Implementation of NCIRWMP projects may have a beneficial impact for air quality in reducing consumer demand for out-of-basin water supplies, which must be trucked to individual holding tanks on private property. A reduction in trucks carrying water would result in a corresponding decrease in air pollution from exhaust. Additionally, wildlife other than salmonids and native plant species will

greatly benefit from plan implementation, particularly those that inhabit or utilize streams, rivers, or other waterways improved by project implementation. A list of state and federally listed plant and animal species that may occur in the North Coast Region are provided in Appendix D, North Coast Region Potential Federal and State Listed Species. Riparian and wetland communities, which provide habitat, shelter, and forage for many migratory and local animals will also benefit from implementation of the NCIRWMP projects. When implemented, the NCIRWMP projects will not only meet objectives and goals for water management of the NCRWMG, the state, and the federal government, but also will also enhance aesthetics and recreational opportunities and improve quality of life for all residents and visitors to the region.

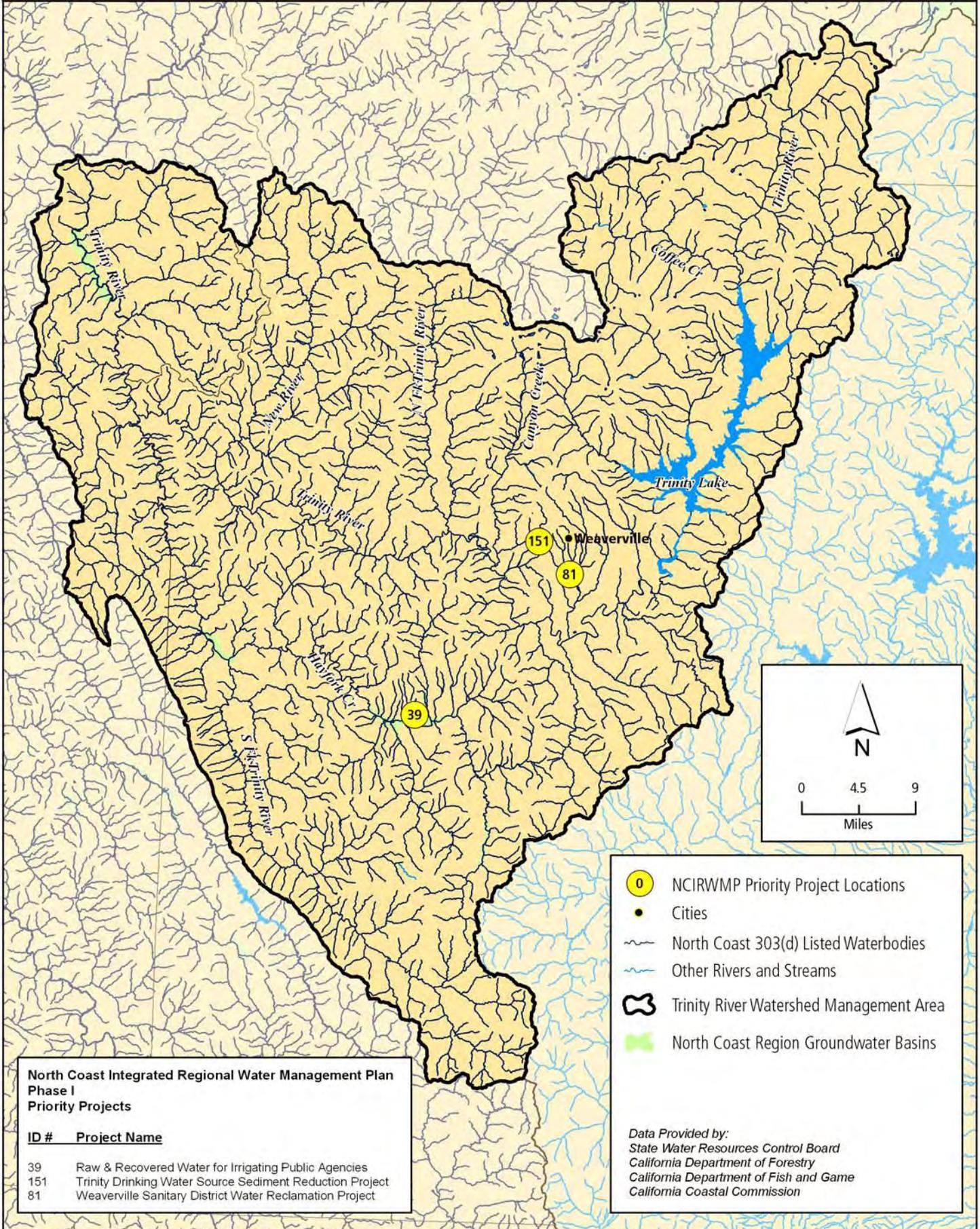
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**North Coast Integrated Regional Water Management Plan  
Phase I  
Priority Projects**

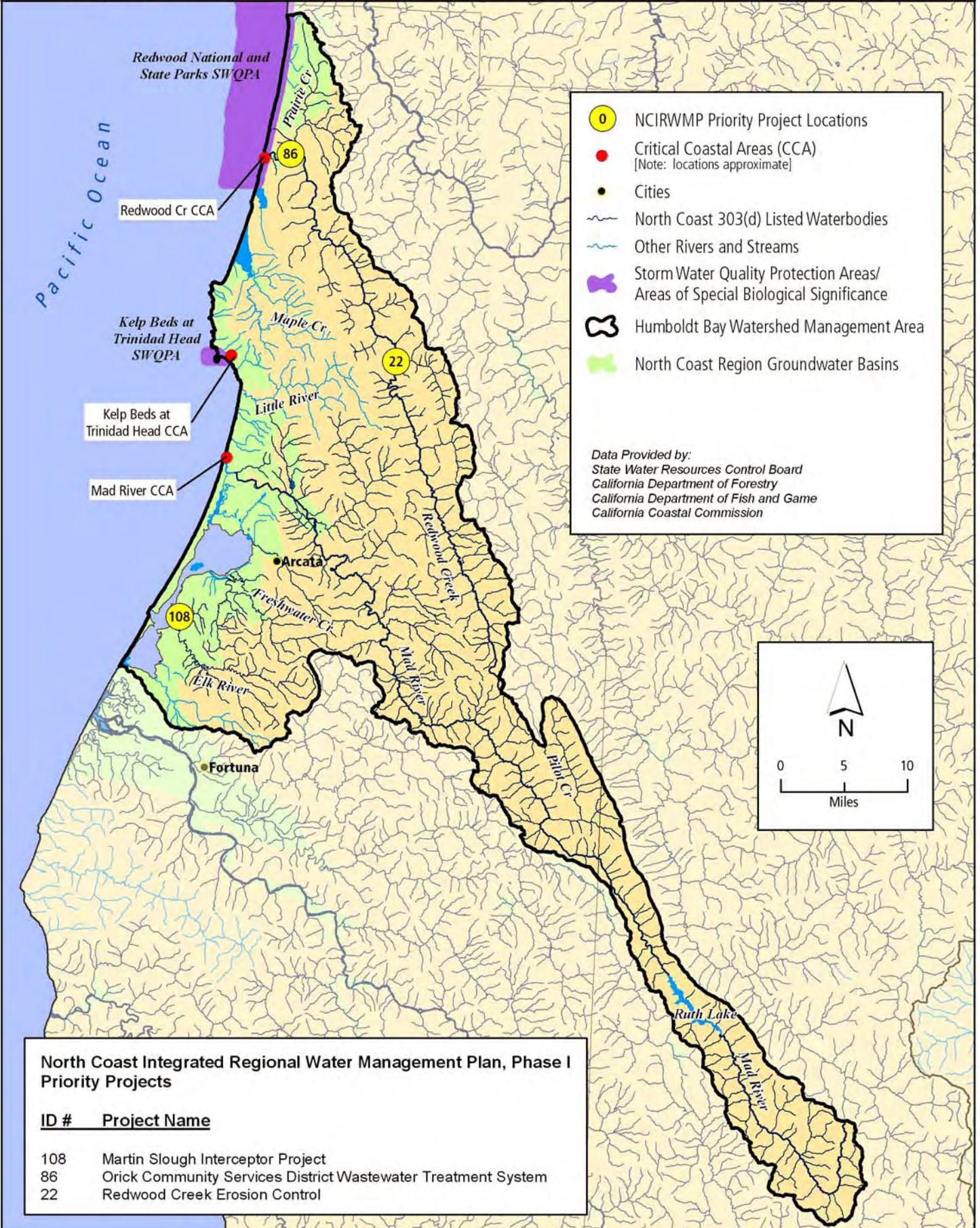
| ID # | Project Name   |
|------|--|
| 39   | Raw & Recovered Water for Irrigating Public Agencies     |
| 151  | Trinity Drinking Water Source Sediment Reduction Project |
| 81   | Weaverville Sanitary District Water Reclamation Project  |

- 0 NCIRWMP Priority Project Locations
- Cities
- North Coast 303(d) Listed Waterbodies
- Other Rivers and Streams
- Trinity River Watershed Management Area
- North Coast Region Groundwater Basins

Data Provided by:  
 State Water Resources Control Board  
 California Department of Forestry  
 California Department of Fish and Game  
 California Coastal Commission

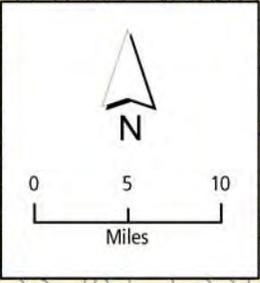
North Coast Integrated Regional Watershed Management Plan

Map 19. Priority Project Integration: Humboldt Bay Watershed Management Area



- 0 NCIRWMP Priority Project Locations
- Critical Coastal Areas (CCA)  
[Note: locations approximate]
- Cities
- North Coast 303(d) Listed Waterbodies
- Other Rivers and Streams
- Storm Water Quality Protection Areas/  
Areas of Special Biological Significance
- Humboldt Bay Watershed Management Area
- North Coast Region Groundwater Basins

Data Provided by:  
 State Water Resources Control Board  
 California Department of Forestry  
 California Department of Fish and Game  
 California Coastal Commission

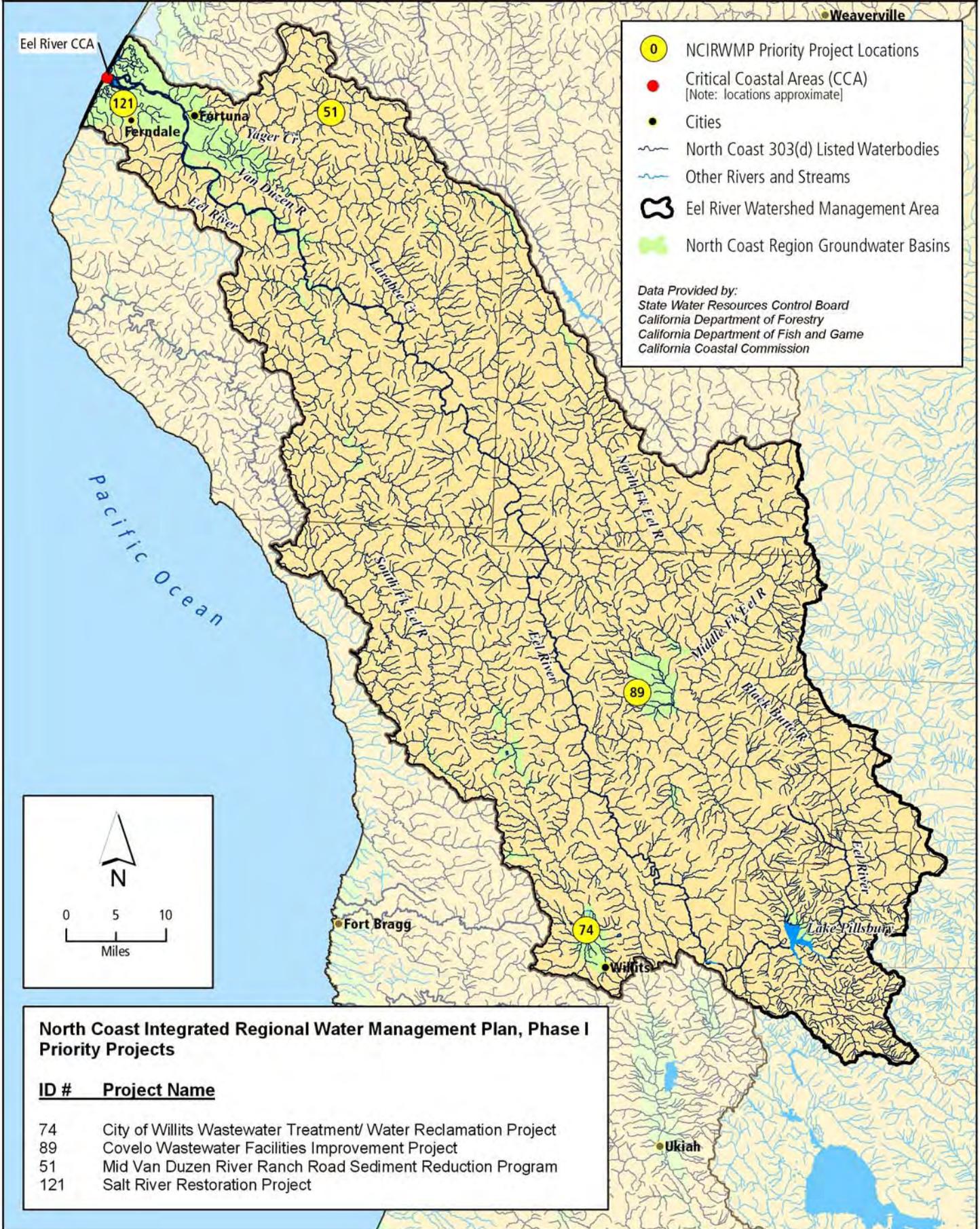


North Coast Integrated Regional Water Management Plan, Phase I  
 Priority Projects

| ID # | Project Name  |
|------|---|
| 108  | Martin Slough Interceptor Project                             |
| 86   | Orick Community Services District Wastewater Treatment System |
| 22   | Redwood Creek Erosion Control                                 |

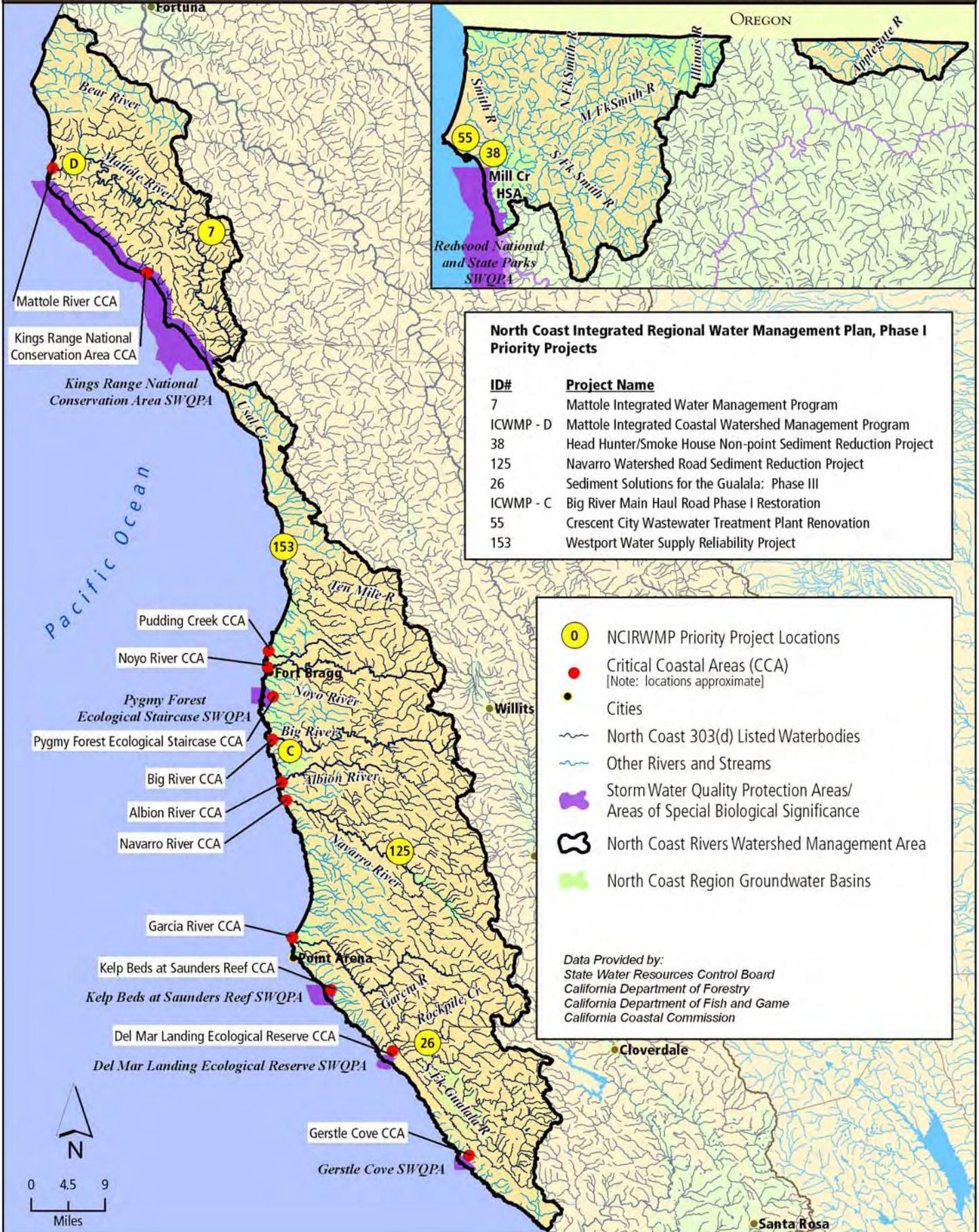
North Coast Integrated Regional Watershed Management Plan

Map 20. Priority Project Integration: Eel River Watershed Management Area



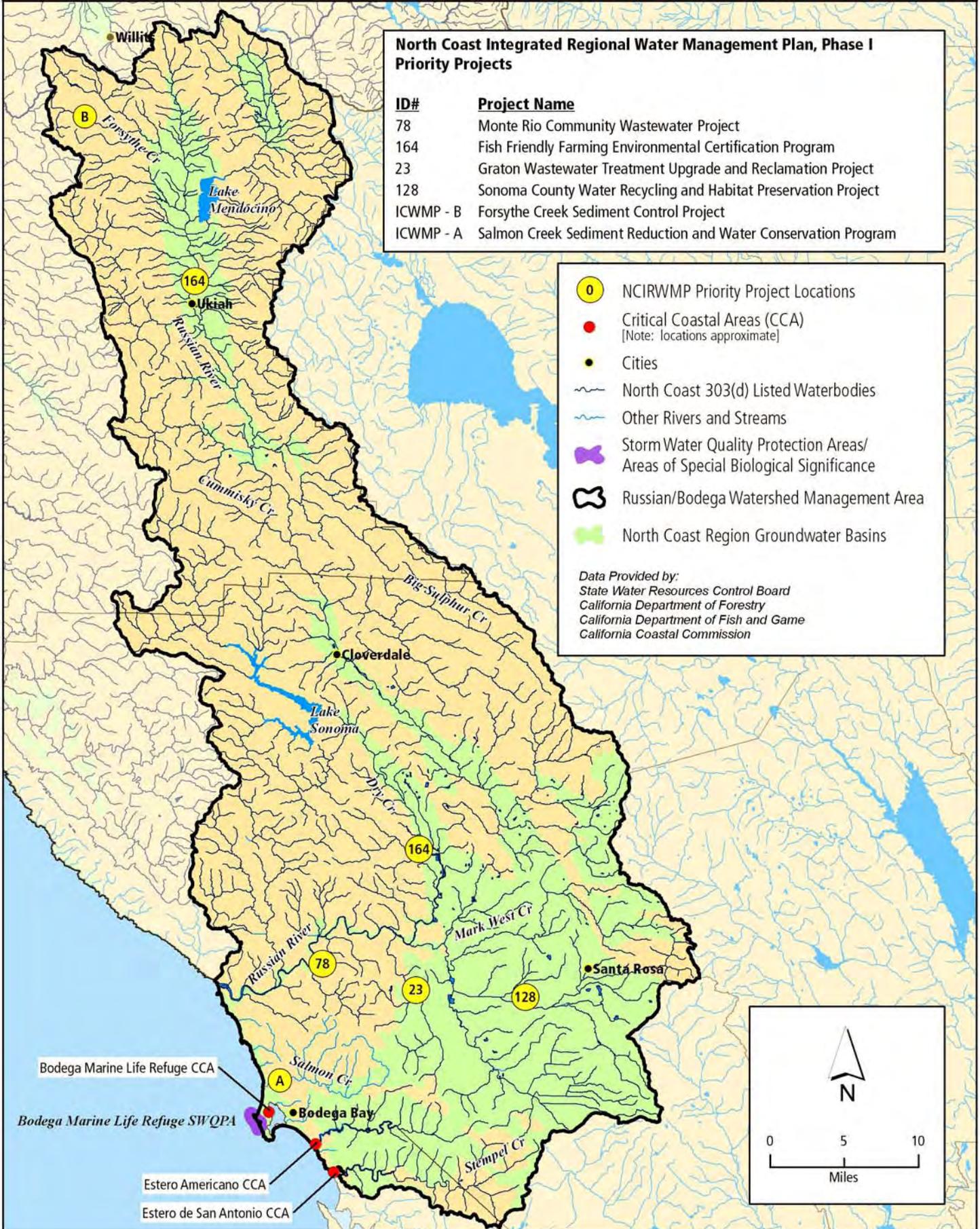
North Coast Integrated Regional Watershed Management Plan

Map 21. Priority Project Integration: North Coast Rivers Watershed Management Area



North Coast Integrated Regional Watershed Management Plan

Map 22. Priority Project Integration: Russian/Bodega Watershed Management Area



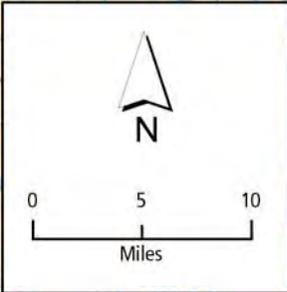
**North Coast Integrated Regional Water Management Plan, Phase I Priority Projects**

| ID#       | Project Name   |
|-----------|--|
| 78        | Monte Rio Community Wastewater Project                         |
| 164       | Fish Friendly Farming Environmental Certification Program      |
| 23        | Graton Wastewater Treatment Upgrade and Reclamation Project    |
| 128       | Sonoma County Water Recycling and Habitat Preservation Project |
| ICWMP - B | Forsythe Creek Sediment Control Project                        |
| ICWMP - A | Salmon Creek Sediment Reduction and Water Conservation Program |

**Legend**

- NCIRWMP Priority Project Locations
- Critical Coastal Areas (CCA)  
[Note: locations approximate]
- Cities
- North Coast 303(d) Listed Waterbodies
- Other Rivers and Streams
- Storm Water Quality Protection Areas/  
Areas of Special Biological Significance
- Russian/Bodega Watershed Management Area
- North Coast Region Groundwater Basins

*Data Provided by:*  
 State Water Resources Control Board  
 California Department of Forestry  
 California Department of Fish and Game  
 California Coastal Commission



Bodega Marine Life Refuge CCA  
 Bodega Marine Life Refuge SWOPA  
 Estero Americano CCA  
 Estero de San Antonio CCA



## EVALUATION AND MEASUREMENT MECHANISMS

### SECTION 9.0





## **9.0 NCIRWMP EVALUATION AND MEASUREMENT MECHANISMS**

This section describes existing statewide monitoring efforts, as well as the methods used to evaluate and measure the success of the prioritized water management projects at both the programmatic and project level.

### **9.1 STATUS OF EXISTING MONITORING EFFORTS**

Watershed and water quality monitoring is currently conducted by a number of state agencies, each with its programmatic mission to fulfill. Watershed and water quality monitoring in the North Coast is vital for evaluation of the effectiveness of sediment reduction programs, instream habitat restoration programs, fish passage projects and other watershed enhancement projects. On-going monitoring is critical to understanding how land use practices such as road building, timber harvest, irrigated agriculture, and land conversion impact the aquatic resources and habitats of the North Coast Region. Equally important is the compliance monitoring of public wastewater treatment facilities to ensure the health and safety of water quality for beneficial uses. The NCRWQG intends to use existing and proposed monitoring efforts to inform management decisions and guide changes to management, policy, and decision-making in the North Coast Region.

#### ***9.1.1 STATE WATER RESOURCES CONTROL BOARD MONITORING PROGRAMS***

##### **Surface Water Ambient Monitoring Program (SWAMP)**

Trends in surface water quality and habitat, the effectiveness of control strategies, TMDL implementation, and nonpoint source pollution are monitored as part of the statewide Surface Water Ambient Monitoring Program (SWAMP), which is administered by the SWRCB. The goals of the program include statewide monitoring that is consistent and objective through the development of data quality assurance protocols and centralized data management. The SWAMP database is currently being developed and will be designed to feed the U.S. EPA STORET water quality data management system. Other surface water monitoring programs that are managed as part of the SWAMP program include State Mussel Watch, Toxic Substance Monitoring Program, Toxicity Testing Program, and Coastal Fish Contamination Program.

The nine Regional Water Quality Control Boards implement monitoring activities through contracts with CDFG, U.S. Geologic Survey (USGS) and USEPA. The SWAMP monitoring approach utilized by the NCRWQCB incorporates both long-term trend monitoring at permanent monitoring stations and rotating site-specific monitoring closely related to the TMDL development and implementation schedule (NCRWQCB 2005).

The permanent monitoring stations established by the NCRWQCB includes sites located along the Smith, Klamath, Scott, Shasta, Trinity, Mad, Eel, Gualala and Russian Rivers and Redwood Creek (NCRWQCB 2005). These sites record core metrics that will be used for long-term water quality trend detection; they are sampled at the same frequency and time each year. Selection of these indicators is based on scientific, practical and programmatic objectives and the amount of available funding. The goal is to provide a broad, accurate view of water quality and watershed health in the region. The permanent stations' data will be applicable for trend analysis as well as testing yearly or seasonal

differences at station locations, among different reaches in a given watershed, and between watersheds.

Site-specific monitoring in the North Coast Region rotates among the NCRWQCB designated Watershed Management Areas (WMA) on a planned schedule to support remedial actions, develop TMDLs and collect information towards the potential listing or delisting of waterbodies under the Clean Water Act Section 303(d). Water quality parameters measured in each basin are based on specific watershed characteristics and water quality objectives identified in the individual WMA sections in the NCRWQCB Watershed Planning Chapter (NCRWQCB 2005). Water quality objectives for each WMA are provided in Appendix B, Existing Water and Watershed Management Plans & Programs.

### **Clean Water Team Citizen Monitoring Program**

Through a partnership with many local Resource Conservation Districts, the SWRCB is actively promoting volunteer monitoring among landowners, farmers, ranchers, and community members. The "Clean Water Team Citizen Monitoring Program" is a statewide program developed by the SWRCB Nonpoint Source Pollution Control Program to offer suggestions, guidelines and protocols for volunteer monitoring efforts. This program is increasingly being incorporated into the SWAMP monitoring program to complete site-specific monitoring in the North Coast Region.

### **National Pollutant Discharge Elimination System**

The National Pollutant Discharge Elimination System (NPDES) program is a federal program that is currently administered by the SWRCB to regulate wastewater discharge to surface waters, stormwater drains and groundwater. All wastewater discharges in the North Coast Region are regulated through NPDES permitting which requires self-monitoring of relevant water quality data to be submitted to the NCRWQCB for compliance evaluation in accordance to the "Waste Discharge Requirement, General Monitoring and Reporting Program". (SWRCB 1997)

## ***9.1.2 CALIFORNIA DEPARTMENT OF FISH AND GAME***

### **California Salmonid Habitat Restoration Manual**

Project evaluation and monitoring is outlined in the California Department of Fish and Game (DFG) California Salmonid Habitat Restoration Manual to measure whether specific restoration goals have been achieved through project implementation including upslope and road remediation monitoring. Several project proponents intend to use this manual to implement and monitor NCIRWMP salmonid habitat restoration projects.

### **Restoration Effectiveness Monitoring**

In 2003, the CDFG issued a report entitled the "Interim Restoration Effectiveness and Validation Monitoring Protocols, California Coastal Salmonid Restoration Monitoring and Evaluation Program" to provide protocols for monitoring the effectiveness of CDFG funded and other fish habitat restoration projects. The report is currently under scientific review and listed protocols are being field-tested. Other CDFG efforts are underway to develop a statistical sampling design for statewide coastal monitoring and a data management support system.

### **9.1.3 CALIFORNIA DEPARTMENT OF FORESTRY (CDF)/ BOARD OF FORESTRY**

In 1990 the Board of Forestry established the Monitoring Study Group (MSG) to evaluate the Forest Practice Rules protection of beneficial uses and water quality. Membership of the MSG is made up of representatives from agencies, CDF, the public and the timber industry. The long-term monitoring program includes hillslope monitoring of Timber Harvest Plan (THP) lands, Forest Practice Rule implementation and effectiveness monitoring, and the development of scientifically valid monitoring plans for 303(d) listed waterbodies.

### **9.1.4 CALIFORNIA DEPARTMENT OF HEALTH SERVICES**

California Department of Health Services is the lead agency responsible for developing and implementing the Drinking Water Source Assessment and Protection Program. The purpose of this program is to monitor and assess drinking water sources, both at surface water and groundwater level.

### **9.1.5 INTERAGENCY PROGRAMS**

#### **Ground-Water Ambient Monitoring and Assessment**

The Ground-Water Ambient Monitoring and Assessment program (GAMA) was developed through interagency cooperation to evaluate and monitor the quality of groundwater resources in California. Participating agencies include USGS, SWRCB, RWQCB, DWR, Department of Health Services, Lawrence Livermore National Laboratory, counties, and local water agencies.

The GAMA program goals include the establishment of baseline groundwater conditions, creation of a secure database to archive assessment data, provision of trend analysis for long-term groundwater management and assistance in the development of groundwater objectives at the regional or basin scale.

#### **Natural Resources Project Inventory**

Through a partnership of the California Biodiversity Council and the University of California at Davis, Information Center for the Environment, data is collected about restoration efforts occurring statewide. This information is available in a comprehensive electronic database titled the Natural Resources Project Inventory and accessed on the Internet.

#### **Pacific Northwest Aquatic Monitoring Partnership**

The stated purpose of the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) is "to provide a forum for coordinating state, federal, and tribal aquatic habitat and salmonid monitoring programs (REO 2005b)." The intent of the partnership is to improve communication, share resources and data, and use compatible monitoring protocols to increase scientific credibility and provide greater accountability to local stakeholders. PNAMP has developed five working groups; these groups focus on watershed condition monitoring, effectiveness monitoring, fish population monitoring, estuary monitoring, and data management.

The PNAMP provides an opportunity for local and regional planners to utilize monitoring protocols and data collection and storage techniques that are compatible with other agencies and that have undergone extensive scientific review specific to Pacific Northwest environmental conditions. The NCRWMP may consider joining the Partnership in addition to participating in SWRCB and DWR monitoring efforts in order to more fully engage the Northern California region in cooperative interstate monitoring efforts and to enable the group to bring the results of the partnerships' efforts to bear in local and regional monitoring planning activities.

## **9.2 NCIRWMP PROJECT AND PLAN EVALUATION AND MONITORING**

Evaluation and measurement mechanisms of the NCIRWMP will be based on an adaptive management approach. The short- and long-term needs within the North Coast Region are expected to change as funded projects have an impact on addressing needs and as new unexpected needs arise. This approach is flexible and iterative and provides the opportunity to introduce change as needed to accomplish the goals identified for each objective. Many of the performance measures data will be collected by projects that are implemented as part of the NCIRWMP. See Section 7 for a summary of NCIRWMP project monitoring activities.

The North Coast IRWMP project and plan performance evaluation process will include:

- Evaluation of project completeness
- Effectiveness monitoring of restoration projects
- Stream flow monitoring
- Temperature monitoring
- Sediment reduction assessment
- NPDES water quality monitoring
- Bioassessment monitoring
- Stream cross sectional monitoring
- Suspended sediment and bedload monitoring
- Site condition photo documentation
- GIS data compilation and analysis of benefited waterbodies and habitat
- Monitoring of TMDL parameters including temperature, sediment and dissolved oxygen
- Approved Quality Assurance Project Plans
- Internet publishing of restoration project data to the Natural Resources Project Inventory
- Internet publication of monitoring data into SWAMP databases for public review and analysis

Plan performance will be measured by:

- Number of improved habitat acres
- Length of 303 (d) listed stream enhanced
- Number of impaired waterbodies benefited
- Number of fish passage barriers removed
- Amount of change in stream flow regime
- Amount of improvement of water quality parameters
- Amount of sediment reduction achieved
- Amount of water conserved
- Number of wastewater discharge facilities that regain NPDES permit compliance

- Number of failing septic systems removed from the project area
- Number of new private property owners that incorporate Best Management Practices and adopted conservation action plans

The use of adaptive management for the North Coast Region will allow projects and planning efforts implemented under the Plan to fluctuate as needed to meet goals while producing beneficial outcomes.

Data gaps exist throughout the North Coast Region. Although numerous assessment efforts, such as the North Coast Watershed Assessment Program (NCWAP) and individual watershed assessments have been conducted, and the SWRCB, DWR, and NCRWQCB conduct monitoring on several waterways, most of the watersheds, rivers, and streams in the region have not been adequately assessed or monitored using standardized, scientifically accepted protocol. It is a goal of the NCRWMP to further identify these watersheds, rivers and streams and to prioritize them for future assessment and monitoring programs.

Challenges associated with the adaptive management approach for the North Coast Region include the difficulty of assessing cumulative impacts across the region, difficulty of assessment on a regional scale and the lack of sufficient data and the system complexity, which make it extremely difficult to integrate research results into a useful model. These limitations can be counter-acted by the implementation of adaptive management across the individual projects funded under the NCIRWMP Phase 1 and the ongoing refinement of the NCIRWMP, which is intended to be a “living document” that incorporates new information and monitoring feedback to reprioritize project needs, reanalyze policy, and make other changes to NCRWMP structure and function as necessary. The NCIRWMP projects will function as models for other projects and as a process for obtaining feedback. The feedback, information and data acquired during this process will be integrated into database management outlets and incorporated into geographic information systems that will serve not only the North Coast Region, but also the State of California and the Pacific Northwest.

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**APPENDICES**





**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX A: PROJECTS INTEGRATION WITH STATEWIDE GOALS**



## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix A: NCIRWMP Projects Integration with Statewide Goals

| Project ID | Project Name   | CWC Program Preferences                   |   |   |  |   | DWR & SWRCB Statewide Priorities    |                         |   |  |   |  |
|------------|--|---|---|---|--|---|-------------------------------------|-------------------------|---|--|---|--|
|            |  | Integrated project with multiple benefits | Support and improve local and regional water supply reliability | Contribute to long-term attainment and maintenance of water quality | Eliminate or reduce pollution in impaired waters and sensitive habitat | Safe drinking and water quality projects that serve disadvantaged communities | Reduce conflict between water users | Implementation of TMDLS | Implementation of RWQCB WMI Chapters, Plans, Policies | Implementation of SWRCB's NPS Pollution Plan | Implementation of floodplain management task force, recycling task force or state species recovery plan | Address environmental justice concerns |
| 7          | Mattole Integrated Water Management Program                          | X   | X   | X   | X  |   | X                                   | X                       | X   | X  |   | X                                      |
| 236        | Siskiyou County Integrated Water Management/Coho Recovery Project    | X   | X   | X   | X  | X   | X                                   | X                       | X   | X  |   | X                                      |
| 78         | Monte Rio Community Wastewater Project                               | X   | X   | X   | X  | X   |                                     | X                       | X   | X  | X   | X                                      |
| 86         | Orick Community Services District                                    | X   |   | X   | X  | X   |                                     |                         | X   | X  | X   | X                                      |
| ICWMP - D  | Mattole Integrated Coastal Watershed Management Program              | X   |   | X   | X  |   |                                     | X                       | X   | X  |   | X                                      |
| 22         | Redwood Creek Erosion Control  |   |   | X   | X  | X   |                                     | X                       | X   | X  | X   |  |
| 164        | California Fish Friendly Farming Environmental Certification Program | X   | X   | X   | X  | X   |                                     | X                       | X   | X  |   |  |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix A: NCIRWMP Projects Integration with Statewide Goals

|            |  | CWC Program Preferences                   |   |   |  |   | DWR & SWRCB Statewide Priorities    |                         |   |  |   |  |
|------------|--|---|---|---|--|---|-------------------------------------|-------------------------|---|--|---|--|
| Project ID | Project Name   | Integrated project with multiple benefits | Support and improve local and regional water supply reliability | Contribute to long-term attainment and maintenance of water quality | Eliminate or reduce pollution in impaired waters and sensitive habitat | Safe drinking and water quality projects that serve disadvantaged communities | Reduce conflict between water users | Implementation of TMDLS | Implementation of RWQCB WMI Chapters, Plans, Policies | Implementation of SWRCB's NPS Pollution Plan | Implementation of floodplain management task force, recycling task force or state species recovery plan | Address environmental justice concerns |
| 51         | Mid Van Duzen River Ranch Road Sediment Reduction Program      | X   |   | X   | X  |   |                                     | X                       | X   | X  | X   | X                                      |
| 121        | Salt River Restoration Project                                 | X   |   | X   | X  |   |                                     | X                       | X   | X  | X   | X                                      |
| 23         | Graton Wastewater Treatment Upgrade and Reclamation Project    | X   | X   | X   | X  | X   |                                     | X                       | X   | X  | X   | X                                      |
| 128        | Sonoma County Water Recycling and Habitat Preservation Project | X   | X   | X   | X  | X   | X                                   | X                       | X   |  | X   |  |
| 217        | Newell Water System Renovation                                 |   | X   | X   | X  | X   | X                                   | X                       |   |  |   |  |
| 38         | Head Hunter/Smoke House Nonpoint Sediment Reduction Project    | X   | X   | X   |  | X   |                                     |                         | X   | X  |   | X                                      |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix A: NCIRWMP Projects Integration with Statewide Goals

| Project ID | Project Name   | CWC Program Preferences                   |   |   |  |   | DWR & SWRCB Statewide Priorities    |                         |   |  |   |  |
|------------|--|---|---|---|--|---|-------------------------------------|-------------------------|---|--|---|--|
|            |  | Integrated project with multiple benefits | Support and improve local and regional water supply reliability | Contribute to long-term attainment and maintenance of water quality | Eliminate or reduce pollution in impaired waters and sensitive habitat | Safe drinking and water quality projects that serve disadvantaged communities | Reduce conflict between water users | Implementation of TMDLS | Implementation of RWQCB WMI Chapters, Plans, Policies | Implementation of SWRCB's NPS Pollution Plan | Implementation of floodplain management task force, recycling task force or state species recovery plan | Address environmental justice concerns |
| 151        | Trinity Drinking Water Source Sediment Reduction Project |   | X   |   | X  | X   |                                     | X                       | X   | X  |   |  |
| 108        | Martin Slough Interceptor Project                        |   |   | X   | X  | X   | X                                   |                         | X   |  |   | X                                      |
| 125        | Navarro Watershed Road Sediment Reduction Project        |   |   | X   | X  | X   |                                     | X                       | X   | X  |   |  |
| 26         | Sediment Solutions for the Gualala: Phase III            |   |   | X   | X  |   |                                     | X                       | X   | X  |   |  |
| 207        | Lower Fuller Creek Sediment Source Implementation Plan   |   |   | X   | X  |   |                                     | X                       | X   | X  |   |  |
| ICWMP - B  | Forsythe Creek Sediment Control Project                  | X   |   | X   | X  |   |                                     |                         | X   | X  |   |  |
| 39         | Raw and Recovered Water for Irrigating Public Agencies   |   | X   | X   | X  |   |                                     | X                       | X   |  |   | X                                      |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix A: NCIRWMP Projects Integration with Statewide Goals

|            |  | CWC Program Preferences                   |   |   |  |   | DWR & SWRCB Statewide Priorities    |                         |   |  |   |  |
|------------|--|---|---|---|--|---|-------------------------------------|-------------------------|---|--|---|--|
| Project ID | Project Name   | Integrated project with multiple benefits | Support and improve local and regional water supply reliability | Contribute to long-term attainment and maintenance of water quality | Eliminate or reduce pollution in impaired waters and sensitive habitat | Safe drinking and water quality projects that serve disadvantaged communities | Reduce conflict between water users | Implementation of TMDLS | Implementation of RWQCB WMI Chapters, Plans, Policies | Implementation of SWRCB's NPS Pollution Plan | Implementation of floodplain management task force, recycling task force or state species recovery plan | Address environmental justice concerns |
| 74         | Willits Wastewater Treatment/Water Reclamation Project         | X   |   | X   | X  |   |                                     | X                       |   |  |   | X                                      |
| 81         | Weaverville Sanitary District Water Reclamation Project        | X   | X   | X   | X  | X   |                                     | X                       |   |  |   | X                                      |
| ICWMP - A  | Salmon Creek Sediment Reduction and Water Conservation Program | X   | X   | X   | X  |   |                                     | X                       | X   | X  |   |  |
| 89         | Covelo Wastewater Facilities Improvement Project               |   |   | X   | X  | X   |                                     | X                       |   |  |   | X                                      |
| ICWMP - C  | Big River Main Haul Road Phase I Restoration                   | X   |   | X   | X  |   |                                     | X                       | X   | X  |   |  |

**North Coast Integrated Regional Water Management Plan, Phase 1**

**Appendix A: NCIRWMP Projects Integration with Statewide Goals**

| Project ID | Project Name  | CWC Program Preferences                   |   |   |  |   | DWR & SWRCB Statewide Priorities    |                         |   |  |   |  |
|------------|---|---|---|---|--|---|-------------------------------------|-------------------------|---|--|---|--|
|            |   | Integrated project with multiple benefits | Support and improve local and regional water supply reliability | Contribute to long-term attainment and maintenance of water quality | Eliminate or reduce pollution in impaired waters and sensitive habitat | Safe drinking and water quality projects that serve disadvantaged communities | Reduce conflict between water users | Implementation of TMDLS | Implementation of RWQCB WMI Chapters, Plans, Policies | Implementation of SWRCB's NPS Pollution Plan | Implementation of floodplain management task force, recycling task force or state species recovery plan | Address environmental justice concerns |
| 55         | Crescent City Wastewater Treatment Plant Renovation | X   | X   | X   | X  | X   |                                     |                         | X   |  |   | X                                      |
| 153        | Water Supply Reliability Project                    |   | X   | X   |  | X   |                                     |                         | X   |  |   | X                                      |



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PHASE 1**

**July 2007**

**APPENDIX B: EXISTING WATER & WATERSHED MANAGEMENT PLANS**



## APPENDIX B: EXISTING WATER AND WATERSHED MANAGEMENT PLANS & PROGRAMS

### 1.0 EXISTING WATER AND WATERSHED MANAGEMENT PLANS & PROGRAMS

There are numerous high quality planning efforts underway or completed in the North Coast region, ranging from federal, state and local agency plans, to efforts by tribal organizations, Resource Conservation Districts (RCDs), watershed groups and landowner groups. A summary of these efforts is included in Appendix F: Matrix of Existing Water Management Planning Efforts, and selected efforts are described below.

#### 1.1 FEDERAL PLANS AND PROGRAMS

##### 1.1.1 Clean Water Act § 303(d)

Section 303(d) of the federal Clean Water Act requires that all states in the U.S. identify waterbodies that do not meet specified water quality standards and that do not support intended beneficial uses. Identified waters are placed on the Section 303(d) List of Impaired Waterbodies. Once placed on this list, states are required to develop a water quality control plan - called a Total Maximum Daily Load (TMDL) - for each waterbody and each associated pollutant/stressor. For example, the Big River in the Mendocino Coast Hydrologic Unit (HU) and Big River Hydrologic Area (HA) has been listed as impaired because it exceeds thresholds set for temperature and sediment. Thus, two TMDLs are required for the Big River – one for temperature and one for sediment.

Within California, the Regional Water Quality Control Boards (RWQCB) generally prepares TMDLs for the impaired water bodies under its jurisdiction. Implementation of the TMDL is accomplished through amendments to the RWQCB Basin Plans, which are reviewed and if necessary, modified or amended triennially.

A TMDL is a calculation of the maximum amount of a given pollutant that a waterbody can receive and still meet water quality standards. TMDLs must be set at levels that achieve applicable water standards and must include a safety margin. After the state has determined the TMDL, it must allocate a portion of the TMDL – the “loading capacity” - to each source of that pollutant within each watershed. The “waste load allocation” is the portion allocated to point sources and the “load allocation” is allocated to nonpoint sources and naturally occurring background sources. Thus, a TMDL is federally defined as “the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background such that the capacity of the waterbody to assimilate pollutants (the Loading Capacity) is not exceeded (Orange County, 2005).”

The most current 303(d) List of Impaired Waterbodies for the North Coast Region California is the 2002 Section 303(d) List of Water Quality Limited Segments developed by the North Coast Regional Water Quality Control Board and available at: ([http://www.swrcb.ca.gov/tmdl/303d\\_lists.html](http://www.swrcb.ca.gov/tmdl/303d_lists.html)). Map 10 presents waterbodies currently on California’s 2002 Section 303(d) List of Water Quality Limited Segments that occur in the North Coast region. Appendix A provides the TMDL status, completion date, TMDL or target, priority, and potential sources. Most of the waterbodies in the North Coast Region are listed for sediment and/or temperature. However, there are also waterbodies listed for PCBs, nutrients, low dissolved oxygen, mercury, pathogens, and organic enrichment.

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**1.1.2 National Oceanic and Atmospheric Administration (NOAA) Fisheries Service**

Prior to 2003, NOAA Fisheries Service was known as the National Marine Fisheries Service. NOAA Fisheries is "dedicated to the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems" (NOAA Fisheries Service 2004). NOAA Fisheries Service actively conserves, protects, and manages living marine resources to ensure that marine ecosystems continue to properly function, to enable economic opportunity, and to enhance the American public's quality of life.

***Salmon Recovery Plan: Southern Oregon/Northern California Coast***

In 1991, NOAA Fisheries Service completed a comprehensive review of the status of salmonid populations in California, Washington, Oregon, and Idaho. As a result, 52 evolutionary significant units (ESUs) of salmonids were identified (NOAA Fisheries 1999). "An ESU is defined as a population that 1) is substantially reproductively isolated from conspecific populations and 2) represents an important component in the evolutionary legacy of the species (Johnson et al. 1994)." These ESUs are distributed throughout the Western U.S. and so to better address the regional needs of recovery planning, NOAA Fisheries created Recovery Planning Domains. There are nine regional Recovery Planning Domains in the western U.S. and NOAA Fisheries has appointed a Technical Recovery Team (TRT) for each recovery domain.

Of the 52 ESUs identified by NOAA, the North Coast region contains five ESUs that are listed as threatened or endangered by state and federal government (see Map 13, Salmonid Evolutionary Significant Units Map). These five ESUs are under the jurisdiction of two Technical Recovery Teams (TRTs) – the Oregon/Northern California Coast TRT and the North – Central California Coast TRT (see Table 1 TRTs and ESUs in the North Coast Region).

**Table 1. TRTs and ESUs in the North Coast Region**

| TRT                                  | ESU  | Federal Status | State Status |
|--------------------------------------|--|----------------|--------------|
| Oregon/Northern California Coast TRT | Southern Oregon/Northern California Coasts (SONCC) Coho Salmon ESU | threatened     | threatened   |
| North-Central California Coast TRT   | Central California Coast Coho Salmon ESU                           | threatened     | endangered   |
|                                      | California Coastal Chinook Salmon ESU                              | threatened     | threatened   |
|                                      | Northern California Steelhead ESU                                  | threatened     | threatened   |

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The Southern Oregon/Northern California Coast (SONCC) Workgroup is the committee of the Oregon/Northern California Coast TRT responsible for overseeing the recovery of the SONCC Coho ESU. The SONCC Workgroup is currently editing a draft of the population structure report for SONCC coho salmon. This document is scheduled to be available in August 2005 (NOAA/NMFS 1996).

The North-Central California Coast Technical Recovery Team has released a draft report on the historical population structure of all four listed ESUs in North-Central California Coast recovery domain. The draft report is available at: <http://santacruz.nmfs.noaa.gov/esa/salmonids/trt/nccc.php> and gives life history, historical population structure, and genetic information for all four species. A month long comment period on the draft ended on June 3, 2005 (NOAA 2005).

### 1.1.3 Environmental Protection Agency

#### ***EPA Underground Injection Control (UIC) Program***

The UIC Program works with state and local governments to regulate the underground injection of waste to prevent the contamination of underground drinking water resources. The EPA regulates injection wells by authority provided in Part C of the Safe Drinking Act and according to regulations located in the Code of Federal Regulations parts 144 –147. In California, the EPA and the state share primary responsibility for the UIC program for all classes of wells except oil and gas related wells. In California, some of the types of injection wells include stormwater wells, carwash wells, sewage treatment effluent wells, spent brine wells, aquaculture wells, aquifer remediation wells, geothermal electric power wells (such as the Geysers in Sonoma County), salt water intrusion barrier wells, and aquifer recharge wells (EPA 1999).

## 1.2 STATE PLANS

### 1.2.1 State Water Resources Control Board (SWRCB)

#### ***Water Management Initiative***

The Water Management Initiative (WMI) uses watershed management principals to provide an integrated approach to water resource protection, enhancement and restoration while balancing environmental and economic impacts. The proposed watershed management approach differs from earlier water management efforts as follows:

Water resource issues are identified and prioritized on the basis of water quality within individual watersheds. Local conditions are taken into account and local stakeholders are included in the process. Nonpoint sources of pollution will be addressed at the watershed scale.

The Regional Board will cooperate with local stakeholder groups to achieve improved coordination of overlapping federal, state, and local activities and programs, especially with regard to funding and regulations.

The integrated planning process, developed jointly by the SWRCB, Regional Water Quality Control Boards (RWQCBs), and EPA, directs state and federal funds to high priority activities and projects. The WMI is an effort to coordinate existing SWRCB programs to better support watershed management. The WMI Workgroup, tasked with planning and supporting implementation of the WMI, consists of representatives from the SWRCB, the nine RWQCBs, and the EPA.

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The initial focus of the WMI was on development of watershed management strategies for each of the nine RWQCB regions. Each RWQCB provides a chapter for the WMI Integrated Plan that contains strategies developed for the unique conditions in each priority watershed. Each RWQCB chapter identifies priorities, where baseline funding will be spent, and where additional resources are necessary. The plan is updated annually.

Ten WMI coordinators have been employed to carry out the WMI, one for the SWRCB and one for each of the nine RWQCBs. The WMI coordinators' major responsibility is to work with local stakeholders to improve public access to the Water Boards. Additionally, a WMI Workgroup, comprised of representatives from SWRCB, the nine RWQCBs, and EPA has been convened to plan and support implementation of the WMI.

The WMI supports goals in the SWRCB's 1997 Strategic Plan and the 2001 Strategic Plan. In implementing the WMI, the goals of both plans are addressed. These goals include:

- Preservation, enhancement and restoration of water resources while balancing environmental and economic impacts
- Promotion of cooperative relationships to improve support for the regulated community and public
- Encouragement of balanced and efficient water use
- Establishment of a stable, flexible pool of funding sources
- Responsive, effective and innovation management
- Promotion of safe surface and groundwater for drinking, recreation, ecosystem function, and other beneficial uses
- Education and outreach to stakeholders to obtain support for the WMI and understanding regarding individual roles in water quality
- Comprehensive measurement of water quality to evaluate effectiveness of implemented projects and programs (SWRCB and RWQCBs 2001).

The WMI for the North Coast has identified the following high priority activities (NC RWQCB 2005):

- Implementing TMDLs for sediment in 16 coastal watersheds
- Completing all Klamath Basin TMDLs by December 2005
- Maintaining the core regulatory program for regulated dischargers, including stormwater
- Developing a monitoring strategy for the region and integrating SWAMP with TMDL monitoring
- Regulating vineyards and timber activities
- Developing policies for runoff from roads
- Maintaining the ground water cleanup programs for high priority sites
- Improving outreach and community involvement in decisions
- Fostering watershed groups and citizen monitoring
- Protecting Critical Coastal Areas
- Promote water recycling activities
- Developing a freshwater beach program with the Sonoma Co. Health Dept. for the Russian River

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### ***Water Quality Control Plan for the Ocean Waters of California***

In 2001, the SWRCB updated the Ocean Plan to provide for control of discharge of waste to ocean waters and to set water quality objectives for ocean waters. Beneficial uses of ocean waters include industrial water supply, recreation, navigation, commercial and sport fishing, mariculture, preservation and enhancement of Areas of Special Biological Significance, marine habitat, fish migration and spawning and shellfish harvesting.

Guiding principles of the Ocean Plan include coordination between statewide water quality control plans and policies, attainment and maintenance of water quality standards, and a policy of applying the more stringent provision when two or more plans or policies conflict. The Ocean Plan also provides a program for implementation that provides general requirements for management of waste discharge to the ocean and specific effluent limitations. The Plan is applicable to point source discharges to the ocean only (SWRCB and CEPA 2001).

### ***Plan for California's Nonpoint Source Pollution Control Program***

Completed in 2000, the Plan for California's Nonpoint Source (NPS) Pollution Control Program is the first major revision of the program since it began in 1988. The NPS Control Program is required to conform to § 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) and the Clean Water Act (CWA). The EPA and NOAA have final approval of the Program Plan. The lead State agencies are SWRCB, the nine RWQCBs, and the California Coastal Commission (SWRCB and CCC 2000a). In May 2004, the SWRCB adopted the NPS Implementation and Enforcement Policy. The Policy requires the RWQCBs to regulate all nonpoint sources of pollution using authority provided by the Porter-Cologne Act. The permitting authorities available to the regional boards include Basin Plan prohibitions, Waste Discharge Requirements (WDRs), and waivers of WDRs.

The Plan adopts as goals 61 NPS management measures (MMs). It commits the state to implementing these MMs consistent with guidance from NOAA and the EPA, the "Three-Tiered Approach" adopted by the Program in 1988, and priorities identified by the RWQCBs in the WMI chapters by 2014. These MMs include erosion control, channelization, wetlands protection, storm water runoff, timber harvest, fuel station design, and waste management facilities. The Plan provides the first of three five-year implementation plans identifying activities for specific MMs consistent with State and regional priorities in specific watersheds and establishes mechanisms for coordination between agencies, public participation, technical and financial assistance, program reporting and effectiveness monitoring, and if necessary, adoption of additional MMs. The Plan also promotes long-term state, federal, and local interagency coordination and identifies back-up authorities and enforceable policies and mechanisms for implementing the 61 adopted MMs (SWRCB and CCC 2000b).

### ***Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California***

Adopted by the SWRCB in 1972 and subsequently updated, this Plan specifies water quality objectives, effluent quality limits, and discharge prohibitions that affect temperature of interstate waters and waste discharges into those waters (SWRCB undated).

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### ***Water Quality Control Policy for the Enclosed Bays and Estuaries of California***

The current Water Quality Control Policy for the Enclosed Bays and Estuaries of California was adopted by the SWRCB in 1995. It provides water quality guidelines to prevent water quality degradation and protect beneficial water uses in enclosed bays and estuaries in California. The SWRCB's policy is to phase out the discharge of municipal and industrial process wastewaters to enclosed bays and estuaries with the exception of the San Francisco Bay-Delta system, which has its own set of rules. The Plan stipulates that persistent or cumulative toxic substances must be removed from waste to the maximum practicable extent prior to discharge, that bay or estuarine outfall systems shall be designed for rapid initial dilution, waste must not be discharged into or next to areas "where the protection of beneficial uses requires spatial separation from waste fields (SWRCB 1995)," discharges must not block anadromous fish migratory passage, and nonpoint sources must be controlled as much as practicable. The Plan further sets water quality requirements for waste discharge to meet the limitations specified in the "Porter-Cologne Water Quality Control Act," the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California," specific standards set by Regional Boards, and other applicable state and federal regulations. Discharge prohibitions as set forth by the plan address disposal of sludge, rubbish, silt, sand, and soil in large quantities, petroleum industry products, radiological, chemical, or biological warfare agents, and untreated waste. The Plan also addresses administration of the Clean Water Grants Program, water rights, and effectiveness monitoring programs (SWRCB 1995a).

### ***Rangeland Water Quality Management Plan (RWQMP)***

The primary goal of this Plan is to maintain and improve the quality and associated beneficial uses of surface water as it passes through and out of rangeland resources in the state. Approved by the SWRCB in July of 1995, the plan was developed cooperatively by industry, conservation organizations, and state and federal agencies. It is a "Tier 1" voluntary effort at the local level for compliance with the Plan for California's Nonpoint Source Pollution Control Program. The plan also describes voluntary compliance with the Clean Water Act, the Coastal Zone Management Act, and the Porter-Cologne Act (SWRCB 1995b). The RWQMP could serve as an example of bringing stakeholders to the table for development of plans to address TMDL implementation prior to regulatory action. Where appropriate, efforts such as this could be incorporated by the Regional Board as a Certification of Compliance.

### ***California Pesticide Management Plan for Water Quality***

The Department of Pesticide Regulation (DPR) and the SWRCB cooperatively developed the California Pesticide Management Plan. The Plan aims to protect water quality from the potential negative effects of pesticides. The Plan explicitly recognizes the importance of water quality throughout the state and the importance of pesticides to a strong economy and potential impacts to public health. The Plan provides for outreach programs (education, training, and public information), water quality standards compliance, ground and surface water protection programs, regulatory compliance, interagency communication, and dispute/conflict resolution (CEPA 1997).

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### 1.2.2 North Coast Regional Water Quality Control Board

#### ***Water Quality Control Plan for the North Coast Region***

Adopted by the NCRWQCB in 1993, the goal of the Water Quality Control Plan is to “provide a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the North Coast Region (NCRWQCB 1993).” The Plan describes water quality and quantity problems in the two natural drainage basins in the North Coast – the Klamath River Basin and the North Coastal Basin (see maps 3 and 7, Klamath Watershed Management Area and North Coast Rivers Watershed Management Area).

The Plan describes present and potential beneficial uses of surface and ground waters. In addition to beneficial uses identified by the state, the North Coast RWQCB has identified additional beneficial uses:

- Three wetland beneficial uses: 1) Wetland habitat; 2) Water quality enhancement; and 3) Flood peak attenuation/flood water storage
- Native American cultural use
- Modification of the commercial and sport fishing use to include subsistence fishing (NCRWQCB 2003).

Implementation plans that include prohibitions, action plans, and policies by which the NCRWQCB intends to achieve water quality objectives to protect beneficial uses are provided in detail for specific industries or geographic areas. For example, some of the action plans address regulation of mining wastes, accidental spills, fish hatcheries and rearing facilities, and logging, construction, and related activities. Other action plans include the Action Plan for the Humboldt Bay Area, the Action Plan for the Santa Rosa Area, and the Action Plan for the Garcia River Watershed Sediment TMDL. The Garcia River Watershed Sediment TMDL is currently the only TMDL that has been implemented by adoption as an Action Plan in the Basin Plan. The other TMDLs are in varying states of completion as described in Appendix A. TMDL implementation is discussed below.

Adopted on October 6, 2004 by the NCRWQCB, the Triennial Review of the Basin Plan contains suggestions and prioritizations for action items to be included or updated in the Basin Plan. The Triennial Review goes through a public comment process. The highest priority issues are identified in order to direct staff planning efforts until the next review. Prioritization is based on many criteria including cost/benefit analysis, legal authority, public preferences, conformance to the Regional Water Board mission statement, and geographic scale (NCRWQCB 2004a). The priority issues are:

- Development of a region-wide sediment amendment
- Clarification of Anti-degradation Policy language
- Clarification of Seasonal Waste Discharge Prohibition for Incidental Runoff of Recycled Water and Potentially “Low Threat” Discharges
- Completion of an amendment to protect cold water salmonid habitat including dissolved oxygen and temperature objectives
- Regional update to water quality objectives for bacteria (to include Russian River)
- Amendment of Basin Plan to include TMDL implementation strategies for 303(d) listed waterbodies
- Consideration of inclusion of a policy regarding water quality-based effluent limitations and mixing zones
- Development of a wetland and riparian protection policy
- Addition of water quality objectives for ammonia

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- Consideration of site specific objectives for nutrients
- Consideration of policy describing implementation of narrative water quality objectives for surface and groundwater
- Completion of editorial revisions and minor clarifications or corrections to text including new laws, plans, and regulations
- Updating the water quality objectives for groundwater.

Should these prioritized issues be addressed prior to 2007, when the next Triennial Review will be completed, the staff will address the other issues in the order of their prioritization (NCRWQB 2004a).

Monitoring is considered an important part of any project and detailed descriptions of different monitoring programs are provided in the Basin Plan. Opportunities for public participation and conformance with CEQA and other environmental regulations are considered key elements in the Plan.

*Relation of Water Quality Control Plan for the North Coast Region to Local Water Management Efforts*  
The Plan serves as a framework for identifying water quality and quantity problems, objectives, and implementation activities for specific geographic areas in the North Coast Region. Local planning agencies can use the specific implementation activities proposed in the Plan as guidelines for their regulatory and planning activities. Additionally, the Plan identifies problem areas – these areas can be used as a starting point by local agencies for their water management implementation activities.

### ***North Coast Regional Water Quality Control Board Watershed Planning Chapter***

The North Coast Regional Water Quality Control Board Regional Planning Chapter is a part of the State Water Resources Control Board's Watershed Management Initiative (Section 4.2.2.1.1). In order to more effectively address point and nonpoint sources of pollution, a watershed management strategy has been implemented. To achieve this goal, the North Coast Region is divided into six major watershed management areas (WMAs):

- Russian River/Bodega Bay
- Klamath River
- North Coast Rivers
- Humboldt Bay
- Eel River
- Trinity River

The WMI process consists of first assessing and identifying problems, issues and concerns for each WMA. The next phase consists of designating goals for each WMA and then developing a strategy to address goal objectives and activities. The implementation phase comes next, followed by an evaluation step, which feeds back into the assessment and problem identification step.

- Primary goals for the Russian/Bodega WMA focus on protecting beneficial uses of surface and ground water, maintenance of point source waste discharge regulatory activities, and regulatory actions focusing on facilities with the highest threat or impact to water quality.
- Primary goals for the Klamath WMA include protection and enhancement of the salmonid fishery, protection and enhancement of coldwater, warm water, and endangered aquatic

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species, maintenance of agricultural timber and recreational uses, and protection of groundwater uses.

- Primary goals for the North Coast Rivers WMA include inspection of timber harvest plans and development of a Basin Plan amendment for TMDL reduction strategies for sediment.
- Primary goals for the Humboldt Bay WMA include improvement of coordination, education, outreach, assessment, and monitoring, protection of surface and ground water uses, and protection and enhancement of anadromous salmonid resources.
- Primary issues of the Eel River WMA include beneficial uses of the drinking water supply, recreation, and the salmonid fishery, temperature and sedimentation, and ground and surface water contamination.
- Primary goals of the Trinity River WMA include improvement of the anadromous fishery and maintenance of beneficial uses of surface and ground water.

The WMI Watershed Planning Chapter for the North Coast identifies the following as the highest priority activities for the North Coast:

- Implementation of TMDLs for sediment in 16 coastal watersheds
- Completion of all Klamath Basin TMDLs by December 2005
- Maintenance of the core regulatory program for regulated dischargers, including stormwater
- Development of a monitoring strategy for the region and integration of SWAMP with TMDL monitoring
- Regulation of vineyards and timber activities
- Development of policies to address road runoff
- Maintenance of ground water cleanup programs for high priority sites
- Improvement of outreach and community involvement in decision-making
- Encouragement of watershed groups and citizen monitoring
- Protection of Critical Coastal Areas
- Promotion of water recycling activities
- Collaborative development of a freshwater beach program with the Sonoma County Health Department for the Russian River (NCRWQCB 2005).

### *Relation of the North Coast Watershed Planning Chapter to Local Water Management Efforts*

Local and regional planners can incorporate the specific implementation recommendations for each WMA into their planning activities. These regional assessments provide guidance to local assessment, prioritization and funding efforts.

### ***Total Maximum Daily Loads***

The Garcia River Watershed Sediment TMDL has been implemented by adoption as an action plan into the NCRWQCB Water Quality Control Plan (1993). It is a priority for the NCRWQCB to include TMDL implementation strategies for all 303 (d) listed waterbodies as amendments to Section 4 of the Basin Plan (NCRWQCB 2004a).

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In November 2004, the NCRWQCB adopted Resolution Number R1-2004-0087, a policy statement applicable to all sediment impaired water bodies for implementation of sediment TMDLs. The goals are to meet TMDLs, water quality objectives and protect beneficial uses through reduction of sediment waste discharges to the impaired waterbodies. Numeric targets for sediment related to cold water fisheries are provided in Salmonid Freshwater Habitat Targets for Sediment-Related Parameters (NCRWQCB 2004b). These targets are intended to serve as numeric surrogates for the mostly narrative water quality objectives relating to sediment and turbidity with respect to coldwater fisheries. Targets are provide for benthic macroinvertebrate assemblages, cobble embeddedness, large woody debris, pool distribution, substrate composition, thalweg profile, and  $V^*$ , a measure of the fraction of a pool's volume filled by fine sediment. Types of monitoring are briefly defined.

### *Relation of TMDL implementation to Local Water Management Efforts*

The Plan serves as a framework for identifying specific water quality problems, objectives, target parameters and implementation activities for specific geographic areas in the North Coast Region.

### **1.2.3 Department of Water Resources**

#### ***California Water Plan***

The California Water Plan guides control, protection, conservation, development, management, and use of water resources of California. The first California Water Plan was published in 1957, and an update has been published approximately every five years. The California Water Plan Update 2005 Public Review Draft was released in April 2005; the public comment period lasts though July 22, 2005. Publication of the final Plan is expected in fall 2005.

As part of the water plan update, the DWR established an advisory committee composed of stakeholders, is conducting an open process with the opportunity for public review, has reported on development of local and regional water projects, and developed a new framework to planning California's water future. The purpose of the Plan is to provide policy makers, resource managers, water suppliers, and water users with a strategic plan for the next twenty-five years.

The Plan Update contains water data and regional descriptions, presents current challenges in water management, presents benefits and costs of 25 selected resource management strategies, and presents an approach to improve data management and analytical tools.

Recommended resource management strategy topics in the Plan Update include reduction in demand for water, improvement of operational efficiency and transfers, improvements to water quality, increases in water supply, and active practice of resource stewardship. By state statute, the California Water Plan cannot mandate actions nor authorize spending for its recommendations (DWR 2005).

Water management is accomplished by federal, state, and local agencies in the North Coast. The North Coast Regional Water Quality Control Board oversees water quality control and activities to protect beneficial uses of water throughout the North Coast. In the Klamath River watershed, federal agencies such as the U.S. Bureau of Reclamation, the Natural Resources Conservation Service, and the U.S. Fish and Wildlife Service conduct much of the planning due to the presence of large federal water projects and federal wildlife preserves. Additionally, the Northern California counties generally lack the

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resources to conduct regional planning at the level of funding federal agencies provide. Counties generally conduct planning in the central and southern part of the region with Sonoma County, the southernmost county in the region conducting planning that is at times closely associated with San Francisco Bay Area planning efforts.

### *Relation of California Water Plan Update to Local Water Management Efforts*

The California Water Plan provides recommended resource strategies and a framework to promote regional planning efforts to enhance interagency cooperation and support local planning and intra-regional cooperation.

#### **1.2.4 California Department of Fish and Game**

The mission of the California Department of Fish and Game (DFG) is to manage California's wildlife and plants and their habitats for ecological value and for use and enjoyment by the public. Relevant DFG planning documents focus on the recovery of coho salmon and steelhead populations and the restoration of their habitat (DFG 2005).

#### ***Recovery Strategy for Coho Salmon***

The California Department of Fish and Game (CDFG) created the Recovery Strategy for California Coho Salmon (Recovery Strategy) in 2004 to guide the process of recovering coho salmon on California's north and central coasts. The Strategy emphasizes cooperation and collaboration between multiple levels of government and private individuals. Its objective is to return coho salmon populations to sustained viability while protecting the genetic integrity of two distinct Evolutionarily Significant Units (ESUs). (see Map 13, Salmonid ESUs). It is DFGs intent to improve the populations to levels that are self-sustaining so that they can be delisted and regulations or other protections under the California Endangered Species Act will not be necessary. Secondly, DFG intends to achieve harvestable populations of coho for tribal, recreational, and commercial uses in order to protect the cultural heritage and enhance economic benefits for all Californians.

Six recovery goals were identified to achieve delisting:

1. Maintain and improve the number of key populations and increase the number of populations and cohorts
2. Maintain and increase the number spawning salmon
3. Maintain the range and within the range, maintain and increase coho distribution
4. Maintain existing essential habitat
5. Enhance and restore habitat with the range
6. Reach and maintain sustainable population levels to allow resumption of tribal, recreational, and commercial coho fisheries in California.

DFG established a Coho Salmon Recovery Team to focus on range-wide recovery and a Shasta-Scott Recovery Team to focus on water and land use with respect to agricultural uses in the Scott and Shasta valleys. Eighty-five range-wide recommendations and 320 watershed-specific recommendations for the SONCC ESU, 205 watershed recommendations for the Central California Coast ESU and 145 recommendations for the Shasta-Scott Pilot Program were developed. Implementation schedules have been developed to provide stakeholders with a clear understanding of what must be done to complete the recommended tasks and the time frame within which the tasks should be completed (DFG 2004).

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### *Relation of Recovery Strategy for California Coho Salmon to Local Planning Efforts*

Many of the projects proposed by the North Coast IRWMP will, when implemented, provide benefits to coho in the form of habitat restoration, reduction of sedimentation or pollutants, or an increase in instream flows. Because they will recover regionally with the successful implementation of local projects - as long as ocean conditions do not drastically deteriorate - coho, along with steelhead, have been chosen to serve as an indicator of watershed health for the North Coast Region. Projects that meet statewide priorities and serve local needs such as improvements to water quality, reduction in water withdrawals and riparian and instream habitat restoration, will benefit salmonid populations. As the salmon populations recover, disadvantaged communities, especially tribes, will directly benefit. Coho harvest is important economically and culturally to communities in Northern California. The multi-stakeholder focus of the IRWMP will incorporate stakeholder groups identified and formed in the development of the Recovery Strategy. These stakeholder groups will be invaluable partners in planning and project implementation to benefit local communities, and, regionally, to aid in recovery of coho fisheries.

### ***Steelhead Restoration and Management Plan for California***

Developed in 1996, the Steelhead Restoration and Management Plan for California focuses on restoration of native and naturally produced steelhead. Goals of the plan include increasing natural production to produce self-sustaining populations and enhancing fishing opportunities and other non-consumptive uses. Strategies to accomplish the goals are habitat restoration, restoration of historic fish passage, review of fishing regulations to ensure sustainable harvest, maintenance and improvement of hatchery runs where appropriate, and development and facilitation of research to address data gaps surrounding steelhead biology and ecology. The North Coast management strategy focuses on maintaining and increasing populations with an emphasis on natural stock, minimizing impacts from disturbance in the watershed, and restoring instream habitat. Recommendations for individual rivers in the North Coast include stream and watershed restoration, improving flows, biological and environmental assessments, policy suggestions, regulation suggests, and invasive species removal.

### *Relation of Steelhead Restoration and Management Plan for California to NCIRWMP*

As with coho, local planning efforts to enhance water quality and quantity will improve steelhead habitat and assist in the recovery of steelhead populations. Steelhead and coho have been chosen by the Policy Review Panel to serve as indicators of success in the IRWMP planning process. In implementing projects that meet local needs and meet statewide priorities, salmonid habitat throughout the region will be improved, supporting population recovery.

As steelhead populations recover, the recreational and commercial fishing industries and tribal fishing are expected to improve. Salmon are an important part of the culture of North Coast Native American Tribes and the restoration of salmonid populations, in terms of both cultural and economic use. Other communities in the North Coast Region will also benefit – increased salmon runs will bring increased recreational tourism and greater economic returns for the hospitality and service industries. Additionally, the commercial fishing industry may provide employment opportunities.

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### **1.2.5 California State Coastal Conservancy**

The California State Coastal Conservancy is in the process of finalizing a North Coast Enhancement Plan that will address coastal access and enhancement issues in the North Coast region.

### **1.2.6 California Department of Human Services Division of Drinking Water and Environmental Management Drinking Water Program**

The Department of Human Services Drinking Water Program consists of three branches. Two Field Operations Branches (FOBs) enforce state and federal safe drinking water regulations and the Technical Programs Branch maintains the scientific expertise and administers the Safe Drinking Water State Revolving Fund and the Small Water System Program.

The North Coast Region falls within the Northern California Field Operations Branch and contains parts of the following Drinking Water Program District Offices: Districts 01, 02, 03, 18, and 21. The Drinking Water FOBs work with the EPA, the SWRCB, and the RWQCBs and other agencies to ensure that drinking water supplies are safe. Locally, Drinking Water FOBs work with county health and planning departments and supervisory boards by providing oversight and technical assistance.

The Technical Programs Branch contains a Technical Operations Section, a fund administration section, and a Monitoring and Evaluation Unit. The Technical Operations Section administers certification programs that ensure that operators and water treatment devices meet state standards, develops water quality regulations and monitoring protocol, and reviews technological advancements. Additionally the Technical Operations Section administers the Drinking Water Treatment and Research Fund Program, and other programs and efforts that provide technical assistance with drinking water treatment and information regarding approved technology. It also publishes yearly reports and coordinates the Drinking Water Source Assessment and Protection Program, a Proposition 50 Program.

The Monitoring and Evaluation Unit of the Technical Operations Branch collects data regarding drinking water quality for public water systems and publishes reports, findings, and evaluations based on the analysis of the collected data (California Department of Health Services 2005).

#### **Relation of Drinking Water Program to Local Planning Efforts**

The Technical Programs Branch may provide funding to improve water quality in local communities and can provide technical assistance to local water supply operators regarding optimal technology, management, and monitoring techniques.

### **1.2.7 California Resources Agency**

#### ***Protecting Our Ocean California's Action Strategy***

The Protecting our Ocean California's Action Strategy was prepared by the California Resources Agency and the California Environmental Protection Agency and submitted to the Governor of California in September 2004. The Plan recommends initial actions for the state to pursue to manage and protect ocean and coastal resources.

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Goals of the plan are to:

- Increase abundance and diversity of aquatic life in the ocean, bays, estuaries, and coastal wetlands of California
- Improve water quality
- Provide a safe marine and estuarine environment for productive and recreational uses
- Support ocean-dependent economic activities

The Action Plan gives an overview of ongoing and recommended actions such as signing the California Ocean Policy Act into law, eliminating adverse impacts of offshore petroleum activities, implementing the Marine Life Protection Act Initiative, and developing an Ocean and Coastal Stewardship Campaign. It also provides a summary of important ocean and coastal issues such as offshore petroleum activities, fisheries activities, tourism and recreation, and water quality.

### ***California Coastal Salmon and Watersheds Program***

The goal of the California Coastal Salmon and Watersheds Program is to recover harvestable salmon and steelhead populations and restore watersheds, and by so doing, to contribute to healthy communities. Program priority actions include science-based watershed assessments, information dissemination to the public, expanding partnerships with local agencies, consistent rule enforcement, and continued support of ongoing restoration and assessment efforts.

### ***California Coastal Sediment Management Master Plan***

The Coastal Sediment Management Workgroup, a collaborative effort between federal, state, and local agencies and non-governmental organizations developed the California Coastal Sediment Management Master Plan. The purpose of the plan is to evaluate California's coastal sediment management needs on a regional, system-wide basis. Partners of the effort include the Army Corps, California Resources Agency, and the California Department of Boating and Waterways. This integrated approach will combine financial and intellectual resources.

The Plan consists of a series of independent projects that have been developed to streamline state, federal, and local management activities related to the California coast (U.S. Army Corps of Engineers 2003). It provides coastal managers with information that may assist with the identification and prioritization of sediment-related projects, regulatory review, development of beach nourishment programs, developing Environmental Impact Statements and Assessments, and assessing benefits and impacts of sediment-related projects. Sediment management issues may include coastal erosion, recreation, dredging, and sediment transport in coastal watersheds.

### **1.2.8 California Coastal Commission**

The primary mission of the California Coastal Commission is to plan for and regulate land and water use in the coastal zone consistent with the policies of the 1976 Coastal Act. The policies of the Coastal Act constitute the statutory standards applied to planning and regulatory decisions made by the Commission and by local governments. The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings,

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divisions of land, and activities that change the intensity of use of land or public access to coastal waters, require a coastal permit from either the Coastal Commission or the local government.

### ***Local Coastal Programs***

Implementation of Coastal Act policies is accomplished primarily through the preparation of local coastal programs (LCPs), required for each of the 15 counties and 59 cities located in whole or in part in the coastal zone. These plans contain the rules for future development and coastal resources, specifying appropriate location, type, and scale of new or changed uses of land or water on the coast. LCPs include a detailed chronological history, a land use plan, and measures – such as zoning or ordinances – to implement the plan.

Jurisdictions may submit LCPs in separate geographic units – called segments - or for the entire jurisdictional area. Completed LCPs must be submitted to the Commission for review and approval; once approved, jurisdictions possess regulatory authority as granted by the Coastal Commission. The Coastal Commission periodically updates its report on the status of each LCP in the state. The most current LCPs can be obtained on the Coastal Commission website at: <http://www.coastal.ca.gov/la/lcpstatus.html>. The CCC's North Coast District and the northern portion of the North Central Coast District encompass the North Coast IRWMP Region.

LCPs in the North Coast occur in the following jurisdictions: County of Del Norte (4 segments), Crescent City (2 segments), County of Humboldt (6 segments), City of Trinidad, City of Arcata, City of Eureka, County of Mendocino (3 segments), City of Fort Bragg, City of Point Arena, County of Sonoma, and County of Marin (2 segments, only Unit II (Northern Marin) is within the North Coast Region) (CCC 2004).

### ***California Coastal Access Action Plan***

The goal of the Coastal Access Action Plan is to maximize public access along the California coast and maximize public recreational opportunities in the coastal zone consistent with natural resource conservation private property rights.. The State Coastal Conservancy, State Lands Commission, and Department of Parks and Recreation are partners in providing access, while California's coastal cities and counties are local partners participating through the development and implementation of Local Coastal Programs (LCPs).

The top three priorities of the Coastal Access Action Plan are:

1. The Offer to Dedicate (OTD) Public Access Easement Program. OTDs are offers from private property owners to allow for future open access across their property. The Commission does not have the authority to accept or operate the easements, and so must find an accepting agency for each offered site. As of 1999, only 36% of OTDs had been accepted. Many of the offers have expiration dates, so locating accepting agencies is a high priority.
2. The California Coastal Trail. The ultimate goal of the Coastal Trail is to serve a continuous passage along the State's entire shoreline. It is intended to serve a variety of users and to connect existing trail networks. In 1999, the coastal trail was 65% complete after 25 years of effort.
3. Prescriptive Rights. These rights protect historic public right of access to the sea where acquired through use. The goal of the Prescriptive Rights Program is to identify all known

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historic trails and public use areas, prioritize those areas for studies to document the level of public use, and to work with the Attorney General’s Office to preserve any existing public access rights.

Other priorities in the Coastal Access Action Plan include shoreline armoring, providing public information, identification and removal of cumulative impacts to public access, provision of adequate parking, and improvements to water quality.

**California’s Critical Coastal Areas Program**

The purpose of California’s Critical Coastal Areas (CCA) Program is “to foster collaboration among local stakeholders and government agencies and better coordinate resources and efforts in coastal-zone watershed areas critically in need of protection from polluted runoff (CCC undated).” The North Coast is one of four regional pilot CCAs in which the CCA Program will form teams comprised of local stakeholders and state, federal, and local agencies to develop community-based action plans to reduce polluted runoff in coastal zone watershed areas. Public workshops were conducted in Humboldt County and Mendocino County in March 2005 to initiate the process.

**Table 2. North Coast Region Critical Coastal Areas.**

CCAs marked with an asterisk(\*) have been designated as Priority CCAs (CCC 2005). The numbers refer to the classification type:

1. 1998 303(d) listed waterbodies flowing into Marine Managed Areas
2. Stormwater Quality Protection Areas
3. Original 1995 CCA list consisting of 303(d) listed waterbodies

| <b>Waterbody</b>                       | <b>Classification type</b> |
|--|----------------------------|
| Klamath River                          | 1,2,3                      |
| Redwood Creek                          | 1,2,3                      |
| Redwood National Park*                 | 2                          |
| Kelpbeds at Trinidad Head              | 2                          |
| Mad River*                             | 3                          |
| Eel River*                             | 3                          |
| Mattole River*                         | 1,3                        |
| King Range National Conservation Area* | 2                          |
| Pudding Creek                          | 1                          |
| Noyo River*                            | 3                          |
| Pygmy Forest Ecological Staircase      | 2                          |
| Big River                              | 3                          |
| Albion River                           | 3                          |
| Navarro River*                         | 3                          |
| Garcia River*                          | 1,3                        |
| Kelpbeds at Saunders Reef              | 2                          |
| Del Mar Landing Ecological Reserve     | 2                          |
| Gerstle Cove                           | 2                          |
| Bodega Marine Life Refuge              | 2                          |
| Estero Americano*                      | 1,3                        |
| Estero de San Antonio*                 | 1,3                        |

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### ***California's Ocean and Coastal Resources Coastal Impact Assistance Program***

The Coastal Impact Assistance Program was authorized in Congress during fiscal year 2001 to help states mitigate the impacts associated with oil and gas production on the outer continental shelf. California received a one-time disbursement of approximately \$15.5 million. Sixty-five percent of the money was distributed to the state for planning and management expenses and the remaining 35% was distributed to local coastal political jurisdictions and counties. Authorized uses of the funds included wetlands protection, conservation, and restoration, implementation of federally approved management plans, mitigation of impacts from offshore drilling and transport, administrative costs, oil spill removal and contingency planning, and other uses such as research, assessment, water quality enhancement activities, erosion control, and watershed protection. The monies were allocated among the 20 eligible counties in April 2002.

## **1.3 INTER-REGIONAL AND MULTI-WATERSHED MANAGEMENT AREA PLANS**

### **1.3.1 Forest Land And Resource Management Plans**

#### ***Northwest Forest Plan***

Adopted in 1994, the Northwest Forest Plan (NWFP) has as its mission to adopt coordinated direction for USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) lands and complimentary direction for other federal agencies within the range of the northern spotted owl (NSO). The five key principles of the NWFP are:

Remember human and economic dimensions of issues

Protect long-term health of forests, wildlife, and water bodies

Focus on scientifically sound and legally responsible strategies and implementation

Produce a predictable and sustainable level of timber and non-timber resources

Ensure cooperation and coordination between federal agencies (REO 2005a).

The NWFP focuses on the achievement of two goals: cooperative planning, improved decision-making, and coordinated implementation of forest ecosystem management within the range of NSO on federal lands, and improved coordination and collaboration with state, tribal, and local governments which implement management strategies that support or complement NWFP goals.

Since its inception, the NWFP has conducted interagency regional monitoring focused on regional questions about vegetation change, NSO and marbled murrelet populations, aquatic and riparian conditions, federal agency-tribal relationships, and socio-economic conditions in communities near federal lands. Implementation, effectiveness, and validation monitoring have been conducted. Recommendations from a ten-year draft review of the monitoring program include improvements to implementation monitoring, development of an activities database to track accomplishment, improvements in follow-up and distribution of compliance monitoring results, increased monitoring participation, establishment of a mandate and support for implementation monitoring in field units, and improvements to the general program design (REO 2005 a).

#### ***Relation of Northwest Forest Plan to Local Planning Efforts***

The NWFP has established cooperative relationships between federal land managers, tribal, state, and local governments. There may be an opportunity for the NC Regional Water Management Group to participate in the NWFP planning process, specifically as implementation activities relate to local communities and local watershed health. The combined regional effort would benefit the NWFP by

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providing a unified vision and cooperative effort from the local communities. Additionally, the NC Regional Water Management Group may be able to utilize the already existing professional network to advance priority projects and goals of the NCIRWMP.

There is also a potential opportunity to maximize aquatic monitoring efforts by coordinating sampling events, protocol, and data capture and storage. Data already collected by the NWFP, if available, could serve as an indicator of existing conditions of subwatersheds within the Region. Additionally, information about NSO and marbled murrelet locations and populations could inform county planning and zoning decisions.

### ***Pacific Northwest Aquatic Monitoring Partnership***

The stated purpose of the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) is “to provide a forum for coordinating state, federal, and tribal aquatic habitat and salmonid monitoring programs (REO 2005b).” The intent of the partnership is to improve communication, share resources and data, and use compatible monitoring protocols to increase scientific credibility and provide greater accountability to local stakeholders. PNAMP has developed five working groups:

1. Watershed condition monitoring
2. Effectiveness monitoring
3. Fish population monitoring
4. Estuary monitoring
5. Data management (REO 2005b).

In the PNAMP strategy, which was finalized in February 2005, development of a regional framework for determining effective habitat projects is supported. The strategy provides explicit goals for the PNAMP, identifies the five types of monitoring encompassed by the Strategy (implementation, project scale effectiveness, validation, status and trends, and compliance), and actions necessary to achieve Strategy objectives. The California Department of Fish and Game is currently the only California State agency within the partnership.

### ***Relation of PNAMP to Local Planning Efforts***

The PNAMP provides an opportunity for local and regional planners to utilize monitoring protocols and data collection and storage techniques that are compatible with other agencies and that have undergone extensive scientific review. Additionally, the NC Regional Water Management Group may want to consider joining the Partnership if given the option in order to more fully engage the Northern California community and to bring the byproducts of the partnerships’ efforts into local and regional monitoring planning efforts.

### ***Five Counties Salmonid Conservation Program***

The Five Counties Salmonid Conservation Program (5C) was initiated in 1997 when the counties of Del Norte, Humboldt, Mendocino, Siskiyou and Trinity decided to collaborate to provide a proactive, positive response to the federal listings of several species of salmonids as threatened under the Endangered Species Act (ESA). The stated goal of 5C is to “seek opportunities to contribute to the long-term recovery of salmon and steelhead in Northern California (5C undated).”

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The Program has been very effective and all five counties have participated since its inception. Completed projects include an assessment of the effects of county land use regulations and management on salmonids and salmonid habitat, the completion of a roads maintenance manual, an inventory of selected watersheds for road erosion, a migration barrier inventory and 30 migration barrier removal projects, and development of a draft road grading ordinance which has been used by three counties. Ongoing programs include a sediment reduction program and policy and planning development. In 2003, 5C received the Governor's Economic and Environmental Leadership Award for Watershed and Ecosystem Restoration and the Clean Water Partnership Award from the EPA.

### *Relation of 5C to Local Planning Efforts*

5C is comprised of five of the seven counties making up the membership of the NC Regional Water Management Group. Its demonstrated success in cooperative salmonid recovery planning and coordinated policy planning and implementation will enhance state, tribal, and federal agencies' perception of the NC Regional Water Management Group. Additionally, 5C has faced many of the "growing pains" associated with inter-jurisdictional cooperative and coordination efforts and it can bring its expertise and problem-solving skills to bear on challenges faced by the NC Regional Water Management Group. Many of the existing programs, projects, and publications developed by 5C can be distributed to a larger area or, when appropriate, expanded upon to address issues facing other locals.

### ***Mendocino National Forest Land and Resource Management Plan***

The Mendocino National Forest Plan was completed in 1996. The plan specifies guiding policy for activities within the forest. Project-level decisions require environmental review and further public comment, but the National Forest Management Act requires that all plans and projects subsequent to the Forest Plan be consistent with it.

The Mendocino National Forest or adjacent areas contain seventeen known or suspected threatened or endangered plant species. It also contains several rivers that have been designated as Wild and Scenic which are governed by guidelines for the management of Wild and Scenic Rivers.

With respect to water quality, the Plan imposes limitations on activities within designated riparian reserves and key watersheds. These limitations include exclusion of regularly scheduled timber harvest. Overall conditions in the watershed and riparian and aquatic ecosystems are expected to improve due to direct watershed improvement projects and reduction in timber harvest and road construction. Best Management Practices (BMPs), the adoption of nine aquatic conservation strategy objectives, and the designation of riparian reserves are additional tools for improving and maintaining water quality. The primary surface water quality problem in the Forest is sediment. These loads are high during winter because of geologic instability, past management practices, and large storm events (USDA Forest Service 1996).

### ***Shasta-Trinity National Forest Land and Resource Management Plan***

The management philosophy of the Shasta-Trinity National Forest is to manage resources utilizing ecosystem principles. Preservation, biodiversity, and sustainable management for recreational activities and resource extraction form the basis for management decisions.

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Within the Forest, sport fisheries are a major recreational activity and expansion of the fishery was identified as a goal to enhance recreation. Protection, maintenance, and restoration, of steelhead and chinook habitat are management activities that support this goal.

Specific project implementation is to be accomplished through the development of watershed or ecosystem analysis in compliance with relevant federal regulations. These analyses must take local conditions and the landscape scale into account in order to ensure consideration of regional impacts such as cumulative effects, connectivity, and fragmentation. Site-specific project analysis is to include collaboration with other agencies and inclusion of the public (USDA Forest Service 1995a).

### ***Klamath National Forest Land and Resource Management Plan***

The Klamath Forest Plan takes an ecosystem and adaptive management approach to Forest management. This includes setting aside reserves of late-successional forest, an aquatic conservation strategy that sets aside riparian reserves, and a continual process of planning, monitoring, evaluating, and adjusting to ensure that activities are meeting Plan objectives.

Several threatened or endangered birds inhabit all stages of successional forest and management will ensure such habitat exists through the designation of Special Habitat Management Areas. Big game is a recreational resource for which Big Game and Forage Management Areas have been established. Fisheries management will encompass all aquatic species and ecosystem health.

The Plan includes a Rural Development Program to offset any adverse effects to local communities from reductions in timber harvest. Specific activities and projects to carry out the Forest Plan objectives will undergo environmental analysis as required by federal regulations. Proposed activities that are not consistent with the Plan will be voided, revised, or will result in an amendment to the Plan in order to allow for them (USDA Forest Service 1995b).

### ***Land and Resource Management Plan Six Rivers National Forest***

Six Rivers National Forest is located within Del Norte, Humboldt, Siskiyou, and Trinity Counties. The Plan states that the forest will be managed "to maintain ecosystem components, structure and processes (USDA 1995c)." Connectivity for dispersal, disturbance, and preservation of late-successional forest are maintained through the designation of Managed Habitat and Special Habitat Management Areas. The Plan also seeks to provide a sustainable, long-term timber supply to support local economies.

The Plan includes an aquatic conservation strategy that designates riparian reserves, establishes key watersheds, requires watershed analysis prior to management activities in specified watersheds, and provides for restoration of watershed health and aquatic ecosystems. The purpose of key watersheds is to provide essential habitat for at-risk fish. To improve water quality, riparian reserves are established and additionally, unstable areas adjacent to streams have been identified and withdrawn from regulated timber harvest (USDA 1995c).

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### ***Redwood National and State Parks Strategic Plan***

Redwood National and State Parks (RNSP) is the result of the integration of Redwood National Park with three California State Parks – Prairie Creek Redwoods, Jedediah Smith Redwoods, and Del Norte Redwoods State Parks - in 1994. The RNSP Strategic Plan is a precursor to a series of annual performance plans that will serve as increments to the RNSP Strategic Plan. Each annual work plan describes specific activities to be carried out to achieve long-term goals.

Although more than one third of the land within the Parks has been logged, the RNSP contains the largest contiguous section of old-growth redwood forest remaining, and plans are in place to restore the impacted timber harvest lands. Water quality and aquatic resources have been adversely affected by erosion and sedimentation from past timber harvest management practices. Redwood Creek is listed as impaired under 303 (d) of the CWA for sediment that originates within and outside of the Parks. Additionally, the Redwood Creek estuary has been adversely impacted from upstream and adjacent land uses and the construction of flood control structures that protect the town of Orick. The NPS and the public have identified the estuary as a high priority for restoration of ecological function (RNSP 2001).

Results measurement tools include data inventories, site inspections, and biological and ecological assessments, but no formal monitoring program is in place. Goals for RNSP include preservation of park resources, provision of accessibility, recreational opportunities, and quality services for a diverse range of visitors, and attainment of organizational effectiveness (RNSP 2001).

### **1.3.2 Resource Conservation District (RCD) Long-Range Plans**

The North Coast Region contains all or a portion of fourteen RCDs. The six RCDs entirely within the Region include the Siskiyou RCD, Humboldt County RCD, Trinity County RCD, Mendocino County RCD, Sotoyome RCD, and Gold Ridge RCD. Large portions of Shasta Valley RCD and Lava Beds-Butte Valley RCD are contained within the Region. Additionally, the Region contains small portions of six RCDs; these are Central Modoc RCD, Goose Lake RCD, Glenn RCD, West Lake RCD, Southern Sonoma County RCD, and Marin County RCD. Del Norte County and a small portion of Mendocino County are not served by an RCD (See Map 9, Resource Conservation District Boundaries).

Each RCD creates five-year plans called Long Range Plans. These LRPs differ in content, but usually contain a mission statement, goals, and actions by which goals will be accomplished. The LRP for each of the fourteen RCDs is briefly summarized below (CARCD 2002).

#### ***Gold Ridge RCD***

The mission of the Gold Ridge RCD is to assist landowners address environmental concerns by active involvement in natural resources conservation projects, involving landowners in Natural Resources Conservation Service (NRCS) projects, and providing a means for landowners to obtain funding to implement restoration programs. Projects within the District include the Green Valley and Dutch Bill Creek Watershed Enhancement Program, Green Valley Creek Pool Habitat Improvement Project, Dutch Bill Creek Fish Habitat Improvement Project, Green Valley Creek Fish Passage Improvement Project, and the Salmon Creek Watershed Enhancement Program. The District has also conducted watershed inventories of the Estero Americano, Salmon Creek, Willow Creek, Dutch Bill Creek, Green Valley Creek,

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Laguna de Santa Rosa, and Russian River Watersheds. The District has extensive experience working in partnership with other groups and agencies.

### ***Humboldt County RCD***

The Humboldt County RCD Long Range Plan 1999 contains five goals. These are:

1. Maintain a local Soil Survey Office to complete a soil survey of Humboldt and Del Norte Counties by 2008
2. Provide soil and water conservation and management practice technical assistance to local landowners
3. Maintain Sustainable Agriculture Committee to identify resource issues on range forest and farmland including nonpoint source pollution and fisheries habitat issues
4. Work with University of California Cooperative Extension to research and identify deficiencies in Humboldt County range, forest, and farmland and develop and deliver a long-term soil nutrient education program for landowners
5. Cultivate community interest and involvement in soil and water resource conservation programs by highlighting public information, education and communication.

### ***Mendocino County RCD***

The mission of the Mendocino County RCD is to “provide local leadership in the conservation of soil, water, and related natural resources through programs and partnerships (CARCD 2002).” Goals to support this mission include improving coordination in river basins, improving resource conservation and road management education, and implementing cost-effective erosion control measures. Activities to support the goals include funding River Basin Coordinators for each river system, promotion of Fish Friendly Farming techniques (see Sotoyome RCD description), revising and upgrading the RCD website, improving road drainage, implement riparian restoration and revegetation, and improve instream fish habitat, developing an erosion control video, increasing partnering with other organizations, and increasing political activity.

### ***Shasta Valley RCD***

The mission of the Shasta Valley RCD is “to enhance the conservation and economic stability of natural resources by coordinating and supporting landowner activities (CARCD 2005),” and by providing information and project implementation assistance to all residents in the District. Goals to support this mission include obtaining adequate funding, continuing to act as the lead agency for conservation partnerships, enhancing education activities, developing and disseminating technical assistance, promotion of stewardship compatible with agricultural productivity, promotion of the efficient use and improved water quality of ground and surface waters, and promotion of the restoration, conservation, and enhancement of wildlife habitat and resources. The portions of the Middle Klamath Sub-basin contained within the boundaries of the District are a high priority for district activities.

### ***Siskiyou RCD***

The mission of the Siskiyou RCD is to identify conservation needs and offer landowners assistance to meet those needs. Resource objectives include water conservation, water quality improvements, soil erosion reduction, fisheries and other wildlife habitat improvement and increased community

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awareness of resource conservation issues. Some of the projects that have been promoted include promoting NRCS irrigation systems, implementing fencing and revegetation, water quality monitoring, encouraging appropriate forestry practices and road improvements and maintenance, installing fish screens, providing administrative support for the Scott River Watershed Council and presentation of public workshops.

### ***Sotoyome RCD***

The mission of the Sotoyome RCD is to improve the sustainability of natural resources through the development of leadership, information exchange, provision of technical assistance, and implementation of projects that balance the environment with economics. Objectives to support the mission include expanding educational outreach regarding watershed issues, becoming a clearinghouse for natural resource information, developing and securing funding for partnerships with other organizations and agencies, and increasing public awareness about RCD activities. Strategies to achieve these objectives include obtaining additional funding, expanding outreach and soliciting feedback, developing and maintaining a resource library, increasing collaboration with other organizations with regards to obtaining funding and issues identification, and increase outreach to the media.

Existing programs of the District that support improvements to water quality and water supply include the *Arundo donax* Removal Program, the Environmental Quality Incentives Program, the Creek Stewardship Program, and the Fish Friendly Farming Program. The Fish Friendly Farming Program was developed cooperatively with local vineyards, government agencies, and environmental organizations by the District and Laurel Marcus & Associates. It is a certification program that educates farmers and provides funding for implementing BMPs to improve fish habitat (Southern Sonoma County RCD 2005).

### ***Trinity County RCD***

The mission of the Trinity County RCD is to provide information, education, and assistance that enable people to protect, manage, conserve, and restore the natural resources of Trinity County. Goals to achieve this mission include obtaining adequate funding, developing partnerships, increasing public awareness of RCD programs, implementing stream restoration and erosion control projects, promoting the use of native plants, facilitating a county-wide strategic plan for fuel reduction on private lands, promoting voluntary application of Best Management Practices (BMPs), and sponsoring District-wide trail systems. Action items to accomplish these goals include public outreach, participation in the Trinity River Restoration Program, provision of technical assistance to agencies implementing TMDLs, participation in the implementation of 5C programs, developing a native plant nursery, creating native plant landscaping demonstration sites, coordinating with the County to develop joint projects addressing integrated pest management and invasive plant species, developing timber management plans with landowners, facilitating neighborhood meetings to plan fuels reduction projects, and providing technical assistance to promote voluntary conservation management on rangeland. The District has ongoing watershed restoration projects in the Grass Valley Creek and South Fork Trinity River Watersheds (Trinity County RCD 2005).

### ***Relation of RCD Long Range Plans to Local Planning Efforts***

RCDs have assisted landowners in California since the 1940s and many of those contained within the North Coast Region have extensive experience working in multi-stakeholder groups and conducting

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stakeholder outreach (CACRCD 2002). These RCDs could be powerful partners in the NC Regional Water Management Group in assisting with stakeholder outreach and local implementation of regional and statewide priorities.

### 1.4 REGIONAL PLANS

#### 1.4.1 Watershed Management Areas

##### ***Russian/Bodega Water Management Area***

###### *North Coast RWQCB*

The nine goals identified by the NCRWQCB (2005) for the Russian/Bodega WMA are:

1. Protect municipal, recreational uses
2. Protect and maintain ground water quality and quantity for domestic, municipal, agricultural, and industrial uses
3. Protect and enhance cold water fisheries
4. Protect and enhance warm water fisheries
5. Protect aquatic life and public health in Bodega Harbor
6. Attain objectives for the Laguna de Santa Rosa
7. Americano and Stemple Creek waste reduction strategies
8. Coordinate water rights
9. Assess Salmon Creek and other tributaries (NCRWQCB 2005).

###### *Watershed Plans*

Several plans have been developed for the Russian River that address the need for salmonid habitat recovery. They describe the need and provide specific steps by which habitat restoration may proceed. A partial list is provided below.

- Russian River Basin Fisheries Restoration Plan, DFG 2002
- Russian River Action Plan, SCWA, 2003  
In this plan, the Sonoma County Water Agency responds to the recent listing of coho as threatened under the federal Endangered Species Act (ESA). In this action plan, specific projects that have been accomplished to support salmonid recovery are described and additional projects needed to further improve habitat are identified and summarized.
- Russian River Plan of Action, Russian River Watershed Council, 2004

###### *Stakeholder Group Plans*

- Alexander Valley Management Plan, Russian River Property Owners
- Tomales Bay Watershed Stewardship Plan: A framework for action  
<http://www.tomalesbaywatershed.org/>
- Upper Lagunitas Management Plan <http://www.tomalesbaywatershed.org/>

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### *Restoration Plans*

- Laguna de Santa Rosa Ecosystem Restoration and Management Plan, Laguna de Santa Rosa Foundation, in progress expected in 2006.  
The Laguna Foundation is developing a comprehensive plan for restoring and managing resources with funding from California Coastal Conservancy, Sonoma County Water Agency, City of Santa Rosa, and the Community Foundation of Sonoma.
- *Ludwigia hexapetala* Management Plan for the Laguna de Santa Rosa, Laguna de Santa Rosa Foundation, February 2005  
This plan addresses public health and standing water. Its intent is to reduce risk of West Nile virus and other mosquito-borne diseases. It sets priorities to sharply reduce Ludwigia populations, alleviate negative impacts on the Laguna ecosystem, provide measurable water quality improvement, and reduce sedimentation and local flooding
- Laguna de Santa Rosa Weed Management Plan, Laguna de Santa Rosa Foundation (in progress in 2005)
- Bridge Upper Mill and Anderson Creeks Restoration Plan

### *Preservation Plans*

- Laguna de Santa Rosa Resource Atlas and Protection Plan
- Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan  
<http://www.spn.usace.army.mil/regulatory/srp.htm>

### *Creek and River Plans*

- Santa Rosa Creek Master Plan
- Santa Rosa Headwaters Assessment and Planning Report
- Santa Rosa Waterways Plan
- Draft Willow Creek Watershed Management Plan January 2005  
(<http://www.stewardsofthecoastandredwoods.org/Draft%20WCWMP%202.1.05.pdf>)  
This plan sets goals for watershed health, function, and enhancement projects. It contains a long-term vision, considering public access, recreation, and agricultural uses over the next 50 years. It contains programs for volunteers, education, and monitoring.

## ***Klamath Watershed Management Area***

### *NCRWQCB*

The primary water quality goals identified by the NCRWQCB (2005) for the Klamath WMA are listed below.

- Protect and enhance the salmonid fishery
- Protect and enhance warm water and endangered aquatic species
- Maintain the viability of agriculture and timber uses
- Maintain recreational opportunities
- Protect groundwater uses
- Protect Critical Coastal Areas

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### *Watershed Plans*

- The Klamath River Basin Fisheries Restoration Program  
<http://ipl.unm.edu/cwl/fedbook/klamfish.html>
- Natural Resource Conservation Service Work Plan for Adaptive Management of Klamath River Basin Oregon and California
- The Work Plan for Adaptive Management of the Klamath River Basin  
The Plan was developed in response to the regional drought in 2001 that impacted several endangered species and caused US Bureau of Reclamation agents to temporarily discontinue irrigation water to farms and ranches in the basin so that water flows would be adequate for survival of the threatened wildlife. Resource Conservation Districts have partnered with local stakeholders in the basin to focus on four resource concerns that have been identified to alleviate the effects of drought on agriculture. These focus areas are:
  - Decrease agricultural demand for water
  - Increase water storage
  - Improve water quality
  - Develop fish and wildlife habitat (NRCS 2004)The Plan has implemented Rapid Sub-basin Assessments and preliminarily identified basin needs. It calls for cooperation between local RCDs and NRCS and other agencies and stakeholder groups.
- Lower Klamath River Sub-basin Watershed Restoration Plan 2003
- Long Range Plan for Klamath River 1991

### ***North Coast Rivers Watershed Management Area***

#### *Smith River Watershed*

##### *Watershed Plans*

- Lake Earl Management Plan, DFG <http://www.dfg.ca.gov/lewa/>
- Point Saint George Draft Management Plan <http://copia2.copia.net/cgi-bin/Bulletin.mcgi?UF.profile=georgeplan>
- Smith River Action Plan 2002

#### *Mattole River Watershed*

##### *NCRWQCB*

Primary water quality goals in the Mattole River Watershed have been identified by the NCRWQCB (2005), and include:

1. Protect and enhance salmonid resources
2. Protect all other surface water uses

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### *Watershed Plans*

- Draft Mattole Watershed Plan 2004  
This plan was developed by an alliance of Mattole watershed groups. It contains a 30-year planning framework including a 5-year implementation plan that includes riparian planting, instream enhancement, sediment reduction, removal of exotic invasives, fuel load reduction, channel monitoring, salmonid rearing and watershed restoration.  
<http://www.treesfoundation.org/publications/article-135>

### *Ten Mile River Watershed*

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Ten Mile River Watershed. They are listed below.

1. Protect surface and ground water municipal, domestic, and recreational beneficial uses
2. Protect and enhance beneficial uses associated with anadromous fish

#### *Watershed Plans*

No watershed plans have been identified for this watershed.

### *Noyo River Watershed*

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Noyo River Watershed. They are listed below.

1. Protect surface and ground water municipal, domestic, and recreational beneficial uses
2. Protect and enhance beneficial uses associated with anadromous fish

#### *Watershed Plans*

No watershed plans have been identified for this watershed.

### *Big River Watershed*

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Big River Watershed. They are listed below.

1. Protect surface and ground water municipal, domestic, and recreational beneficial uses
2. Protect and enhance beneficial uses associated with anadromous fish

#### *Watershed Plans*

- Big River Preliminary Plan – Mendocino Land Trust, California Department of Parks and Recreation and California State Coastal Conservancy  
<http://www.mendocinolandtrust.org/projects/brpp.shtml>

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### Albion River Watershed

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Albion River Watershed. They are listed below.

1. Protect surface and ground water municipal, domestic, and recreational beneficial uses
2. Protect and enhance beneficial uses associated with anadromous fish

#### *Watershed Plans*

No watershed plans have been identified for this watershed.

### Greenwood Creek Watershed

#### *Watershed Plans*

No watershed plans have been identified for this watershed.

### Navarro River Watershed

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Navarro River Watershed. They are listed below.

1. Protect surface and ground water municipal, domestic, and recreational beneficial uses
2. Protect and enhance beneficial uses associated with anadromous fish

#### *Watershed Plans*

- Navarro Watershed Restoration Plan 1998  
This plan describes State water quality standards and their applicability to salmonids, sediment and temperature. <http://www.andersonvalleychamber.com/services.html>

### Garcia River Watershed

#### *NCRWQCB*

The NCRWQCB (2005) has identified several important water quality goals in the Garcia River Watershed. They are listed below.

1. Protect and enhance salmonid resources
2. Protect and enhance ground water resources and other high beneficial uses
3. Protect all other surface water uses

#### *Watershed Plans*

- Action Plan For The Garcia River Watershed Sediment TMDL, North Coast Regional Water Quality Control Board, 2001  
In 1996, California identified the Garcia River as a high-priority waterbody according to Section 303(d) of the Clean Water Act (CWA), because of excessive sedimentation. Accelerated erosion was identified as significantly affecting the migration, spawning,

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reproduction, and early development of salmonids. The analysis of sediment sources is divided into three parts: mass wasting, fluvial erosion, and surface erosion. Primary goals for the Garcia River Watershed include protection and enhancement of salmonid resources, protection and enhancement of ground water resources, and protection of all other surface water uses (NCRWQCB 2005).

- Garcia River Watershed Enhancement Plan, Mendocino RCD  
<http://endeavor.des.ucdavis.edu/cepi/ProjectDescription.asp?ProjectPK=4441>  
The objectives of this project are to implement streambank stabilization and erosion control treatments, install fish habitat improvement structures, provide education, training and technical assistance for fish habitat improvement structure installation and best management practices for road construction and maintenance on lands not subject to the Forest Practice Rules, and to strengthen public outreach and citizen monitoring activities through the local Adopt-A-Watershed program.
- Garcia River Watershed Assessment and Monitoring Plan/Watershed Assessment and Cooperative Instream Monitoring Plan for the Garcia River 1998  
[http://www.krisweb.com/biblio/garcia\\_mrcrd\\_euphratetal\\_1998\\_wa.pdf](http://www.krisweb.com/biblio/garcia_mrcrd_euphratetal_1998_wa.pdf)  
This is an instream monitoring plan, which estimates sediment sources, synthesizes impact and sensitivity data, evaluates present information and data collection needs, proposes data collection protocols, an implementation plan and budget and suggests sites for conjunctive hillslope-instream monitoring.
- Garcia River Watershed Enhancement Plan 1992, Mendocino County RCD  
[http://www.krisweb.com/biblio/garcia\\_mrcrd\\_monschkeetal\\_1992\\_wep.pdf](http://www.krisweb.com/biblio/garcia_mrcrd_monschkeetal_1992_wep.pdf)

### *Gualala River Watershed*

#### *NCRWQCB*

- Gualala River Total Maximum Daily Load for Sediment, USEPA  
The Gualala River Total Maximum Daily Load (TMDL) for sediment needs to be established, however it has been determined that the water quality standards for the Gualala River are exceeded due to excessive sediment. The TMDL summarizes how sediment is affecting the beneficial uses associated with the decline of the cold water salmonid fishery in the Gualala River and its tributaries. It includes a description of the water quality standards and salmonid habitat requirements related to sediment, and a qualitative assessment of existing instream and watershed conditions in the Gualala River basin.
- Primary goals of the NCRWQCB for the Gualala are to protect the surface and groundwater for domestic and recreational beneficial uses and to protect and enhance beneficial uses associated with anadromous fisheries (NCRWQCB 2005).

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### *Watershed Plans*

- Gualala River Watershed Management Plan, Gualala River Watershed Council, completion expected 5/06
- Gualala River Watershed Assessment Report, NCWAP, 2003  
[http://www.ncwatershed.ca.gov/gualala/gualala\\_river.html](http://www.ncwatershed.ca.gov/gualala/gualala_river.html)  
The report provides the following information:
  - Stream flow condition is mixed, additional study is required
  - Fish Passage is favorable
  - Water temperature is primarily unfavorable for anadromous salmonids, although riparian cover conditions have been improving 1964-2001
  - In-stream sediment conditions are mixed or indeterminate for salmonids, but there has been a positive trend 1984-2000
  - Escape cover and pool conditions are not suitable for anadromous salmonids, implementation recommendations apply

### ***Humboldt Bay Watershed Management Area***

#### *NCRWQCB*

The NCRWQCB (2005) has multiple goals for the Humboldt Bay WMA. They are listed below.

1. Protect multiple beneficial surface water uses
2. Protect multiple beneficial groundwater uses
3. Increase and continue monitoring
4. Protect and enhance cold water fisheries
5. Protect commercial and recreational shellfish uses

### *Watershed Plans*

- Humboldt Bay Watershed Action Plan and Enhancement Plan  
The focus of this citizen-led plan is on salmonid and other fisheries. DFG provides technical assistance and the project has received two consecutive 319 (h) grants
- Humboldt Bay Water Quality Improvement Program(HBWQIP)  
Several cooperating agencies participate in this program. They are the City of Arcata, City of Eureka, Salmon Forever, the Humboldt Bay Watershed Advisory Committee, and the Institute for Riverine Ecosystems. The goal of the HBWQIP is "to protect and improve the water quality and environment of the Humboldt Bay and its tributaries through: (1) coordinated monitoring of nonpoint source pollution; and (2) conducting public education, outreach, and participation program to reduce pollution from urban runoff and septic systems."

As part of the HBWQIP, NRS works with experts from Humboldt State University, Redwood Sciences Lab, and Pacific Lumber Company to develop a Coordinated Monitoring Program (CMP). The CMP will describe the status of monitoring in the watershed, map locations of current monitoring stations, identify monitoring gaps, determine mechanisms for coordination between entities conducting monitoring, identify ways to improve data compatibility and data sharing; and describe a strategy for long-term water quality monitoring. The CMP will prioritize monitoring sites for priority parameters. Public outreach will be conducted to maximize community education and

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NRS will engage the public in hands-on nonpoint source pollution reduction projects. Planned activities include, First Flush water quality monitoring, restoration work days, and stream cleanup days.”

- Humboldt Bay Coordinated Research and Monitoring Plan – Draft
- Humboldt Bay Watershed Salmon and Steelhead Conservation Plan, SSC
- Integrated Watershed Strategy for Redwood Creek, in progress
- Upper Redwood Creek Watershed Road Assessment Summary Report, 2003
- Upper Redwood Creek Watershed Road Assessment: Updated Summary Report, 2004

### ***Eel River Watershed Management Area***

#### *NCRWQCB*

The NCRWQCB (2005) has multiple goals for the Eel River WMA. They are listed below.

1. Protect and enhance salmonid resources
2. Protect other beneficial surface water uses
3. Protect beneficial groundwater uses
4. Protect warm water fishery resources

#### *Watershed Plans*

- Eel River Restoration (Action) Plan, DFG
- South Fork Eel River (Resource Conservation Strategy) Plan, Humboldt County RCD
- Eel River Salmon and Steelhead Restoration Action Plan, CDFG Inland Fisheries Division

### ***Trinity River Watershed Management Area***

#### *NCRWQCB*

The NCRWQCB (2005) has multiple goals for the Trinity River WMA. They are listed below.

1. Protect and enhance salmonid resources
2. Protect and enhance groundwater resources and beneficial uses
3. Protect all other surface water uses

#### *Watershed Plans*

- South Fork Trinity Restoration Action Plan 1994  
A restoration plan for the watershed and fisheries. Goals include compiling and cataloging existing watershed documents, analyzing data to determine limiting factors to fisheries recovery, and recommending strategies for watershed and fisheries restoration

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### 1.4.2 Advocacy, Research, and Outreach Plans

#### ***Conservation Vision and Blueprint for the Klamath River***

<http://www.onrc.org/programs/klamath/klamathupdate.html>

#### ***Institute for Fisheries Resources Pacific Salmon Restoration Program***

The Institute for Fisheries Resources Pacific Salmon Restoration Program advocates for reforms in land use practices that have negative impacts on salmonid habitat. The Program was responsible for the creation of the Klamath Resource Information System (KRIS), which integrates fishery and watershed information and is available online.

#### ***Institute for Fisheries Resources Sustainable Fisheries Program***

The Institute for Fisheries Resources Sustainable Fisheries Program was developed to involve fishery stakeholders in the process that manages state, federal, and international fisheries. The Program provides support for working fishers and serves as a networking center to enable collaboration between fishermen, scientists, policy makers, and consumers.

#### ***The Water Bond Coalition***

The Water Bond Coalition is a network of more than 200 cities, counties, and special districts in Northern and Coastal California that was created in response to the need for equity in water-related funding decisions and the need to maximize benefits from limited financial resources. The Coalition was initiated in 2002 and has identified high-priority projects for immediate implementation. Priority projects and funding needs are listed by county and projects advocated by the Coalition have strong local support and meet local and regional needs.

#### ***Pacific Coast Joint Venture Strategic Plan***

#### ***The Master Plan for the Redwoods, Save-the-Redwoods League, in draft 2/05***

<http://www.savetheredwoods.org/protecting/masterplan.shtml>

The goal of this plan is to provide a science-based conservation strategy for the redwood ecosystems along the coastal redwood belt. Its intent is to set priorities for land acquisition, stewardship and restoration and to integrate planning.

#### ***Multi-species Conservation Plans***

- Southern Pacific Shorebird Conservation Plan  
(<http://shorebirdplan.fws.gov/RegionalShorebird/RegionalPlans.htm>)
- Joint Venture Implementation Plans Klamath Basin 3/01 (<http://www.ohjv.org/plans.html>)
- Salmon and Steelhead Conservation Plan 2004
- PRBO Oak Woodland Bird Conservation Plan
- PRBO Riparian Bird Conservation Plan
- Watershed Research and Training Center

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### 1.5 MUNICIPAL PLANS

#### 1.5.1 County General Plans

##### ***Del Norte County***

The Del Norte County Board of Supervisors adopted the General Plan on January 28, 2004. Water management issues which the plan addresses are Water Supply and Delivery; Wastewater Treatment, Collection, and Disposal; Solid Waste Disposal, and Storm and Surface Drainage.

The goal for water supply and delivery is to ensure an adequate and safe high quality water supply. To accomplish this, the County plans to restrict public water services in resource land use areas and in the coastal zone except for special circumstances, to consider provision of a public water system to designated urban areas, and to encourage public water providers to plan for development in accordance with the General Plan.

The goal for wastewater treatment is to ensure adequate wastewater collection, treatment and disposal. The County plans to promote efficient water and reduced wastewater system use, investigate establishing or updating satellite wastewater treatment facilities, consider sewer system improvements in the Crescent City urban area, and to plan for additional sewage facilities and upgrades to accommodate future growth.

The goal for solid waste disposal is to ensure safe and efficient disposal or recycling of solid waste. To this end, the County will ensure that solid waste facilities do not contaminate ground or surface water, investigate options for waste disposal after the Crescent City Landfill is full, and promote waste reduction, recycling, composting and environmentally responsible waste transformation.

The goal for storm and surface drainage is to ensure provision of effective, efficient, storm and surface drainage systems for new and existing development. The County will continue the requirement for storm and surface drainage plans for all development, will utilize natural drainage rather than channelization, will require new development to occur outside of 100 year storm drainage flow and retention areas (except road crossings), and will continue to maintain natural and manmade storm drainage courses.

##### ***Humboldt County***

The Humboldt County Board of Supervisors adopted the Humboldt County General Plan in 1984. The Plan is currently under revision to reflect changed issues and conditions over the past two decades (Humboldt County 2005). In the 1984 Plan, water resources are identified and addressed as they pertain to quantity and quality of domestic, agricultural and industrial supply, provision of wildlife habitat, and the hazards associated with flooding and dam failure.

With respect to water quality, the County's goal is to maintain or enhance water quality. Policies to support this goal include ensuring that land use decisions consider the long-term value of water resources, and regulating development that would pollute the watersheds. With respect to water quantity, the County's goal is to maintain a dependable water supply that will meet existing and future domestic, agricultural, and industrial demand. Policies enacted to support this goal include ensuring that intensity and timing of development will not exceed water supplies, encouraging the use of water

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conservation techniques, participation in state, regional, or local water resource planning, and encouraging further research into County water resources by state and federal agencies.

To enhance and protect wildlife habitat, the County will enact policies supporting reservoir flow releases to maintain or enhance fisheries, supporting development of fisheries enhancement projects on small streams, and ensure that projects located within designated Wild and Scenic or recreation river basins are consistent with state guidelines. To protect against hazards associated with flooding, the County will regulate land use in flood zones.

In addition to the General Plan, Humboldt County has several community plans with more specific and detailed analyses and recommendations. There are Community Plans for the communities of Eureka; Fortuna; Garberville, Redway, Benbow and Alderpoint; Hydesville-Carlotta; Jacoby Creek; McKinleyville; Orick; Willow Creek; Avenue of the Giants, and Freshwater. Copies of each of these plans are available on the County Website at: <http://www.co.humboldt.ca.us/planning/Genplan/Freshwt/index.htm>.

### ***Mendocino County***

The Mendocino County General Plan was approved by the Mendocino County Board of Supervisors in 1981. The Plan is currently being updated to reflect changing conditions, and the current desired direction for the future through 2025 (Mendocino County 2005). In the 1981 Plan, water resources goals and policies to support those goals concern water quality, flooding, and water supply. Additional goals and policies that involve water management can be found in the Natural Areas, Vegetation and Wildlife, and Public Services Elements (Mendocino County 1981).

The first goal regarding water quality is to ensure that wastewater disposal will not contaminate ground or surface water. Policies to support this goal include the requirement of wastewater management districts where warranted, the promotion of alternative wastewater disposal methods for rural development, ensuring that local ordinances are compatible with NCRWQCB waste treatment policy, coordinated review of septic tanks between Environmental Health and Planning Departments, and proof of adequate waste disposal system prior to approval of development permits. The second goal for water quality is to enact those land management practices that will most effectively reduce water pollution. Policies that support this goal include engaging with the Mendocino County Resource Conservation District, the US Natural Resource Conservation Service, and other entities that provide technical assistance and seeking financial assistance from state and federal agencies that provide funding for water quality improvement. Additionally, the County intends to adopt an effective grading ordinance, will prohibit aerial application of phenoxy herbicides or any substance containing dioxin, and supporting regular monitoring of pesticides and other permitted agricultural chemicals. The third water quality goal is protection of ground and surface waters from contamination by industrial waste. To achieve this goal, the County intends to require Environmental Impact Reports for industrial site development with potential for significant water quality impact, and to monitor drinking water supplies near and downstream from industrial sites with potential to cause water contamination.

With regard to flooding, the County's goal is to reduce life and property loss to flooding and protect the integrity of the flood plain. To support this goal, the County will enact the following policies: revision of the County Flood Plain Zoning Ordinance, use of the FEMA flood plain hazard maps and most recent technical information to define flood-prone areas, protection of riparian vegetation, and encouragement of compatible uses of the flood plain such as agriculture, forestry, and recreation.

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The first water supply goal is for the County to make optimum use of its water supplies and to seek dependable water supply that will meet domestic, agricultural, and industrial needs. Policies to support this goal include initiating and supporting detailed groundwater basin studies – including the identification of aquifer recharge areas - with appropriate state and federal partners, provision of incentives for water conservation practices by all users, encouragement of the State to revise water laws to facilitate coordinated management and reserve adequate stream flows, determine the quantity of water necessary to maintain and enhance agricultural uses, promote the use of wastewater for irrigation where feasible, and support an inventory of available water, existing water rights, and current and potential demand for water. Additional policies include: putting a moratorium on water diversions that export water to areas outside the County, encouraging the construction of water storage facilities, and the inclusion of mitigation and fish and wildlife enhancement measures in water development plans. The second water supply goal is to ensure that development is consistent with limitations to the water supply. To this end, policies will be enacted to limit development unless it can be proven that there is adequate water to supply it, to limit land and use permits unless it is proven that potable water is available, and to ensure that existing water uses have priority over uses for new development. The third water quality goal is to maintain the Wild and Scenic characteristics of the Eel River and its major tributaries and ensure that they remain free flowing. To this end, the County will adopt an ordinance protecting the Eel River, actively seek state legislation to protect the Eel River, and taken any means necessary to prevent flooding in the Round Valley.

Another goal in the Land Use Element is to protect and maintain native vegetation and wildlife within the County. To that end, the County will adopt and implement a County Grading Ordinance to retain and restore riparian vegetation and protect and maintain natural vegetation to the extent possible, develop protection and mitigation methods when considering new development, encourage land uses that provide natural diversity of habitat, adopt zoning to protect rare and unique vegetation, and give private property owners who have rare and endangered species on their land special recognition.

To protect water supply, the County will not allow new development in the service area of a water purveyor unless an adequate quantity of water of adequate quality will be available. Additionally, no new developments will be allowed within a sewer district unless adequate sewage treatment capacity is available.

Mendocino County adopted a Coastal Element to the General Plan in 1985 (Mendocino County 1985). The Coastal Element (Element) is more detailed and specific than the General Plan, covering issues such as access, visual resources, and urban/rural boundaries and has been approved by the Coastal Commission. The Element divides the Mendocino coast into thirteen planning areas for which specific policies have been developed to conform to Coastal Commission regulations. Some of the recommendations in the Coastal Plan include the acquisition of easements in and around the Ten Mile Estuary, near Fort Bragg, between parks and preserves in the Caspar Creek, Little River, and Albion watersheds, the Elk Creek Estuary, and between Point Arena and Manchester. Other recommendations are to prepare watershed assessments for the Big River and Ten Mile Watersheds and implement restoration projects within those watersheds to improve fish habitat.

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### ***Modoc County***

The Modoc County Board of Supervisors adopted the Modoc County General Plan in September 1988. The County's water policy is addressed in the Conservation and Open Space Element of the Plan. The rivers, streams, lakes, and reservoirs within the County are recognized as providing substantial fisheries resources, which enhance recreational tourism. The most important water issue for the county is the need for increased surface water storage capacity to provide irrigation for agriculture during the dry summer months. Another water issue identified in the Plan is declining groundwater levels in Surprise Valley due to installation of high-capacity irrigation wells and the channelization of streams, which has reduced recharge. Water quality problems occur in some of the wells in Surprise and Goose Valleys, which have high boron concentrations, and from septic systems. Policies to address these concerns include encouraging the increased development and use of surface water, cooperating with other agencies to solve water quality problems associated with septic tanks, working with the agricultural community to resolve groundwater overdraft, adopting the designation of Groundwater Recharge Protection Areas in Surprise Valley, and to require that rural subdivisions acquire adequate domestic water supply.

Modoc County recognizes that information contained in the 1988 General Plan is not current and is working to update that information.

### ***Siskiyou County***

The Siskiyou County General Plan Elements were adopted by the County Board of Supervisors in June 1974. The plan elements that relate to water include the Energy Element (March 1993), the Conservation Element, and the Housing Element Update (May 2004).

The Energy Element advocates small and moderate-sized facilities as viable energy sources for remote agricultural or residential needs. In 1993, there were four moderate sized hydroelectric facilities and about 100 small and micro-sized facilities (ranging from on megawatt to 20 watts). The moderate-sized facilities can impact instream conditions including stream flow, thermal regime, sediment load, and fish passage. Additionally, multiple hydroelectric facilities in a watershed may have cumulative effects.

According to the Housing Element, most residential development in the County relies on private water wells although housing developments require water from Community Service Districts, Water Districts, and public water system. This limits the development of rural subdivisions. Additionally, the Housing Element Update lists septic tank limitations and water quality as environmental constraints for housing development. In some areas, the soil is not suitable for septic drain fields due to impermeable surfaces, high groundwater levels, or steep slopes. Development in these areas would not be possible. Additionally, some areas in the County contain groundwater with heavy metals or toxic minerals such as arsenic, sodium, chloride, and boron. In these areas, groundwater cannot be used as a source of domestic water.

### ***Sonoma County***

Sonoma County is in the process of updating its General Plan to reflect changes in conditions, issues, and regulations (Sonoma County 2005). The current Plan was approved by the Sonoma County Board

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of Supervisors in 1989 and contains specific goals and policies regarding water resources in the Land Use, Resources Conservation and Public Facilities Elements.

In the Land Use Element, water is considered as it constrains development potential. Natural resource constraints are addressed by an objective that restricts development in areas constrained by limitations such as flood, fire, groundwater availability and suitability for septic. To address the constraints due to water, policies are presented that stipulate avoidance of any additional development in flood plains, wetland, or the floodway. Only low intensity, non-permanent structures should be constructed in these areas and any development within the flood plain must be raised above the 100-year flood elevation.

The Resource Conservation Element describes the importance of water quality and quantity to the County and several objectives are provided that support the goal of conserving, enhancing, and managing water resources to protect water quality and ensure an adequate supply long-term. These objectives include preserving groundwater recharge areas by preventing placement of pollution sources in such areas, developing standards for development in recharge areas, preserving and enhancing water quality, and ensuring that rural land use is consistent with available groundwater. Several policies to attain these objectives are set forth. They include ensuring that construction activities do not reduce or divert streamflow that contributes to groundwater recharge, requiring groundwater monitoring programs for large scale commercial and industrial wells, encouraging research regarding water resources, encouraging the construction of water recycling projects where appropriate, encouraging wastewater disposal methods that minimize reliance on discharges into waterways, reviewing subdivision septic systems and considering wastewater management districts where septic causes problems, and pursuing the abatement of failing septic systems near waterways.

In the Public Facilities and Services Element, the importance of an adequate water supply is stressed for the County's continued prosperity. The primary goal is to ensure that water supply and wastewater facilities are adequate for present and future needs and that they are provided in a way that preserves environmental quality. Policies to support this goal including planning and designing water services to accommodate projected growth, ensuring that development of facilities for water supply and wastewater occur in accordance with local planning and while protecting services to existing residents, requiring certification that discretionary projects occur where existing services are available, avoiding extension of waste or domestic water service outside of urban service areas except in cases where public health is already at risk, encourage water conservation through requirements for new development and education and incentive programs, monitoring groundwater, and encouraging pretreatment of commercial and industrial wastes that enter sewage systems.

In addition to the General Plan, Sonoma County has also developed the Sonoma County Agricultural Preservation and Open Space District Acquisition Plan 2000.

### ***Trinity County***

In 1979 by the Trinity County Board of Supervisors adopted the Trinity County General Plan. The Land Use Element, Conservation Element, and Housing Element address water management. Additionally, Trinity County has prepared community plans for Douglas City, Hayfork, Lewiston, Junction City, and Weaverville.

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In the Land Use Element, hydroelectric power is addressed and the County identifies a goal to protect and enhance the environment with respect to hydropower. To this end, it plans to ensure that only environmentally acceptable hydroelectric facilities are developed through active participation in Federal Energy Regulatory Commission and SWRCB proceedings, especially those which occur in designated wilderness areas which would adversely impact anadromous fisheries, or that would impact significant archaeological or historic sites. The Land Use Element generally discourages residential growth in remote regions while resource production is encouraged. Along the state highway near the Trinity River, the Trinity River, the North Lake Area, and the Mad and Van Duzen Rivers, residential growth is encouraged, especially recreational growth that is consistent with the land capacity. To support growth near the Trinity River, water supply services may be improved in the down-river area. The Plan stipulates that no development should interfere with the restoration, enhancement, or protection of the Trinity River fishery. In the North Lake Area, septic tanks need to be monitored for failure and the County plans to investigate alternatives to septic.

In the Housing Element (2003), the County identifies geologic hazards, soils with low permeability, excessive slopes, and water quality as limitations to development. Wet season landslides can occur, especially where human activities occur. Septic systems cannot be supported where soils are not permeable and when slopes are greater than 20 percent, accessibility, site preparation, and sewage disposal are very difficult. In some areas, there is insufficient water and in others where water supply is sufficient, heavy metals or toxic minerals such as arsenic, mercury, sodium, chloride, or boron contaminate it. Additionally, flood and fire limit the areas where homes can be safely built. Many areas of the county lack reliable water supply and some residents must haul water for domestic use during part of the year. Some communities have Community Service Districts or private companies that provide water. Most of Trinity County is served by individual sewage disposal systems; however, the communities of Weaverville, Hayfork, and Lewiston are served by sewer systems. The County, through its permit review process, will limit development to land that can support the development.

In the Safety Element, the County identifies ensuring water quality as an objective. To meet this objective, it will implement the following policies: maintain the underground storage tank program, implement a water quality monitoring program, and annual review of the Emergency Action Plan for hazardous material incidents. The Plan also identifies dam failure as a risk to safety and has policies to discourage high-density development in areas at risk from failure for any of the five dams in the County: Lewiston, Buckhorn, Trinity, Matthews, and Ewing.

The Conservation Element has as an objective to preserve the quantity and quality of the water supply and to plan for the expansion of retention of valuable water supplies. To this end, the County proposes to conduct investigation to determine amount of water to reserve for present and future County use, screen all sewage disposal facilities to maintain water quality, and to disapprove of developments that may adversely impact water quality. Another objective is the conservation and maintenance of streams, lakes, and forest open space to provide wildlife habitat. Recommendations to achieve this objective include encouraging the enhancement of wildlife habitat through land management methods and preventing land uses that contribute sedimentation or other pollution.

The Hayfork Plan was developed for the Hayfork Community and contains site-specific recommendations. The Hayfork Valley, because of limited surface waters, has been designated a Critical Water Resources zone. This designation means that a source of water other than a surface stream must be developed or provided for each land parcel created in a subdivision. Underground

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water supply is also limited in the Hayfork Valley and some of those that exist contain high levels of mineral contaminants. Sewage waste is treated on-site in septic systems and the County Health Department has identified several suspected problem areas, mostly due to high groundwater levels and slow draining soils. The County conducts water quality sampling in Hayfork Creek to monitor this potential health risk. Additionally, the Plan stipulates that the County should provide for development densities and land uses that are consistent with the availability of community services. The Plan also recommends efforts to improve water quality in Hayfork Creek to provide for recreational uses, safe drinking water and to protect wildlife habitat and fisheries.

In the Douglas Community Plan and Junction City Plan, goals that increase recreational use while protecting wildlife habitat and fisheries are presented. In order to protect the River's quality, the Plan calls for the requirement to develop and maintain sanitary services at river, utilization of foot trails instead of additional public roads, and to continue to monitor recreation use of the river. The Plan also seeks to maintain and enhance the area's natural resources through development consistent with soil capability to accommodate septic, to make sure that growth does not over-use surface and ground waters, to encourage the implementation of stream restoration projects in the area and to make sure that future growth does not exceed the carrying capacity of the area.

Like the Douglas Community and Junction City Plans, the Lewiston Community Plan recommends developing recreational use of the Trinity River while protecting wildlife and fisheries as an objective. In addition, the Plan seeks to identify and protect special habitat areas that support Bald Eagle, Great Blue Heron, and other wildlife including fish. Recommendations to support this goal include retention of riparian habitat, clustering development, and the development and implementation of stream restoration projects and watershed management plans. The Plan also discourages development on steep, erosion-prone hill slopes and recommends incorporation of flood hazard zoning.

The Weaverville Community Plan makes distribution of services to existing vacant lots and service-deficient areas a priority over the distribution of services to undivided tracts. The Plan also recommends support for the Weaverville Community Services District in its effort to develop a major water supply project. To preserve open space, riparian zones, enhancement of wildlife habitat through management efforts, homesite clustering, and fencing are recommended. To provide wildlife and fisheries habitat, the Plan recommends considering any projects that will alter the environment on the basis of protecting fish, wildlife, and habitat. It also recommends non-motorized public access development and retention of wetlands and riparian corridors. To preserve water quality and quantity for future needs, the Plan recommends implementation of land use regulations, sewage disposal facility screens, and support for federal and private actions to prevent water quality degradation in the watersheds that provide Weaverville's domestic water.

### **1.5.2 Urban Water Management Plans**

The California State Legislature passed the Urban Water Management Planning Act (CWC §§ 10610 - 10656) in 1983. The Urban Water Management Planning Act requires that every urban water supplier which provides water to 3,000 or more customers, or provides over 3,000 acre-feet of water annually, take action to ensure reliability in its water service sufficient to meet customer needs during normal, dry, and multiple dry years. To this end, urban water suppliers who meet the above criteria must complete an Urban Water Management Plan. The Act specifies the contents of Urban Water

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Management Plans and instructs urban water suppliers how to adopt and implement them. The State Water Resources Control Board provides assistance to urban water suppliers developing Urban Water Management Plans (UWMPs).

### ***City of Arcata Urban Water Management Plan 2000***

The City of Arcata UWMP was amended in 2005 to clarify sections of the 2000 UWMP. The amendment updates information on water supply, wastewater and recycled water, the supply and demand comparison, the water shortage contingency plan, and demand management measures. The city currently doesn't reuse water from wastewater treatment operations, because potential users of recycled water are located away from and at higher elevations than the treatment plant. The City is designing a brackish water marsh estuary project to reuse discharge wastewater for habitat and recreational use enhancement that is scheduled for completion in 2007. The 2005 supply and demand comparison indicates that there is sufficient water to supply demand through 2020. Although supplies are sufficient to meet current demand, water conservation is an important part of City management strategies to reduce greenhouse gas emissions. Pumping water produces large amounts of greenhouse gas through the use of electricity. The City hasn't pursued any projects to increase water supply because it has ample supply for projected water use.

### ***City of Crescent City Urban Water Management Plan***

The City of Crescent City UWMP describes the service area, its water source and past, current, and projected use and a supply and demand analysis. Management strategies for ensuring a reliable water supply, water demand management, water shortages, and water recycling are also provided in the Plan.

With regard to water supply, the City maintains and periodically updates an emergency response plan describing how the City would respond if the water supply were interrupted due to an unforeseen catastrophe. In the event of power outages, system pumps are equipped with emergency generators and in the event of localized disaster, the City maintains repair supplies such as pipe or valves in stock.

To conserve water, the City has enacted water demand management measures that include a low-flow toilet rebate program, leak detection and repair service, metered service, and public information programs.

In the event of a water shortage, the City has developed a four stage rationing plan that includes voluntary and mandatory rationing. Stages are determined by water levels in the City's two storage facilities. Stage one involves voluntary conservation measures, stage two invokes mandatory conservation measures, stage three is considered a serious water shortage and brings on mandatory use reductions and a halt in production for industrial users. Stage four is considered disaster rationing and all water use will be limited to human consumption, sanitation, and fire protection.

Although the City manages wastewater collection and treatment for several communities, it does not participate in and recycled water planning programs. The City is considering implementation of a demonstration landscape irrigation project using membrane bioreactor technology on Beach Front Park.

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### ***City of Eureka Urban Water Management Plan***

In the UWMP, the City of Eureka expresses an interest in coordinating future UWMP development with all Humboldt Bay area water purveyors to produce one single document that addresses the needs of the entire region (City of Eureka 2000). The Plan describes the service area, water supply reliability, water use, and conducts an analysis of reliability and a comparison of supply and demand. It also presents management strategies for water demand management, water shortage, and water recycling.

To conserve water, the City has implemented water demand management measures including metering, providing informational inserts with bills, and encouraging the use of water efficient landscapes. The City is a member of the voluntary organization of municipal users of the Humboldt Bay Water District formed to address problems arising from potential water shortages. The organization developed a five-stage contingency plan that is implemented according to water levels in the Ruth Lake reservoir. Stage one is in effect at all times, stage two initiates voluntary water conservation, and stage three requires customers to reduce usage by at least 10% of the previous two-year average. Stages four and five involve increasingly stringent rations reaching up to 50% reduction in use during stage five. Priorities for use have been established with health and safety of citizens and care facilities within City limits being the first priority, commercial, industrial and government operations being second priority, and large landscaped areas and new connections being third and fourth priorities respectively. The City uses reclaimed water in some of the processes at the wastewater treatment plant and for landscaping the wastewater treatment facility.

### ***City of Fortuna Urban Water Management Plan***

The City of Fortuna Urban Water Management Plan provides a history and description of the service area, potable water facilities, and wastewater treatment. The Plan provides past and current water use and gives projections for future use, and analyzes supply and demand. Management strategies for water conservation and water shortage are presented.

To conserve water, the City has implemented water management measures including a comprehensive leak detection survey in 1986, and distribution of water conservation information to the public. In the event of a water shortage, the City has a water shortage contingency plan based upon the amount of water left in storage. If a disaster were to occur in which the water supply was in question, water supply would be terminated. In any other event, City staff would determine the amount of water available and institute rationing measures to conserve the supply. The City plans to upgrade the water system in the future to meet projected growth demands.

### ***Humboldt Bay Municipal Water District Urban Water Management Plan***

The Humboldt Bay Municipal Water District (HBMWD) supplies water to several suppliers in the Humboldt Bay area. The HBMWD indicated that it would be advantageous to produce a single, regional plan in 2005 that includes all of its wholesale customers. The 2000 plan describes the service area, water supplies, supply reliability, and presents a supply and demand comparison. The supply and demand comparison shows that supplies are sufficient to meet current and projected demand, indicating that Demand Management Measures additional to those already in place are not necessary. Demand Management Measures currently implemented by the HBMWD include auditing the distribution system for leaks and repairing them, and providing information to the public and education for schools. Since the HBMWD does not operate wastewater treatment facilities, it does not currently

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possess any plans for water recycling. The UWMP contains a Water Shortage Contingency Plan that implements activities as stages of water shortage progress. At stage one, hydroelectric releases from the Ruth Dam are halted, at stage two, the HBMWD asks for voluntary conservation and reduces peaking by wholesale industrial consumers. In stages three and four, wholesale and retail customers will be required to use less water and at stage five, water is rationed. Successful implementation of these stages will result in conserving the water supply for about two years without any inflow into the system.

### ***Humboldt Community Services District 2000 Urban Water Management Plan Update***

The Humboldt Community Services District UWMP provides background information about the history and climate of the service area, water facilities and wastewater treatment, past, current, and projected water usage, an analysis of demand and supply, and management strategies for water conservation and water shortages.

The District has implemented water conservation efforts that include water audits with leak detection and repair programs, completion of a comprehensive leak detection survey in 1994, fifteen miles of steel main replacement, and programs to provide education to the public regarding economic, environmental, health, and technological aspects of water conservation.

An association of municipal users of the Humboldt Bay Water District cooperatively developed the Water Shortage Contingency Plan. The plan is a five stage rationing system based on the amount of water remaining in the Ruth Lake storage reservoir. The plan is described in greater detail above, in the HBMWD UWMP plan description.

### ***McKinleyville Community Services District Urban Water Management Plan***

The McKinleyville UWMP provides general background information about the service area, water use projections, an analysis of supply and demand, wastewater reclamation efforts, and management planning regarding water conservation and water shortages.

The District provides recycled water for pastureland during the dry summer months in part because discharges to the Mad River between May 15 and October 15 are prohibited. During the winter rainy season, pasture is inundated and treated effluent is then discharged to the Mad River. About 50% of reclaimed water is used for pasture irrigation; other options such as landscape irrigation are currently cost prohibitive, but the City is considering alternatives such as creating a marsh environment to improve wildlife habitat.

Water conservation measures to reduce demand include a consumptive use fee, water auditing, water efficient landscape standards for new development, public education, rules to prohibit the wasteful use of water, and promotion of water conserving plumbing fixtures.

To address the possibility of a prolonged water shortage, the District has developed five water shortage action stages. These stages begin with voluntary domestic water conservation at stage two and gradually increase to as much as 50% rationing at stage five. The plan is described in greater detail in the HBMWD UWMP plan description.

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### ***Sonoma County Water Agency Urban Water Management Plan***

The Sonoma County Water Agency (SCWA) 2000 Urban Water Management Plan (UWMP) serves as the UWMP for the SCWA and its eight primary water contractors: the cities of Santa Rosa, Rohnert Park, Petaluma, Cotati, and Sonoma, and the North Marin, Valley of the Moon, and Forestville Water Districts. Of these contractors, all except the Valley of the Moon Water District are contained partially or entirely within the North Coast Region. The UWMP is updated every 5 years according to California State law and describes water sources and projected supply and demand; planning strategies for reliability and water shortages; and water conservation and recycling management plans and practices.

A reliability analysis showed that no water shortages are expected in the next 20 years given no changes in the regulatory or physical landscape. Water exchange and transfer opportunities are not necessary for the SCWA, but they do occur among the contractors to improve supply reliability to contractor service areas. These exchanges are coordinated and cooperative. The SCWA has not identified its source of water as inconsistent, but some of the water contractors may consider the SCWA transmission system an inconsistent source during months of peak demand. To alleviate this problem, the SCWA requested that the contractors locate additional water supply to reduce demand on the SCWA transmission system during peak demand.

In the event of a water shortage, the SCWA has prepared a water shortage contingency plan. Should unpredicted catastrophic events occur that impact water delivery, the SCWA and each of its contractors has prepared Emergency Operation Plans. In response to a regional water shortage, the contractors and SCWA cooperatively developed a Model Water Shortage Emergency Ordinance that is flexible and addresses the different needs of the contractors. Each contractor adopted all or part of the model ordinance. The implementation of the ordinance occurs in stages with the first calling for voluntary reduction, the second involving mandatory rationing, and the third requiring mandatory rationing with penalties. During shortages, water waste prohibitions may go into effect that prohibit certain activities such as washing sidewalks, driveways, or parking lots, irrigation that results in excessive runoff, vehicle washing without a hose with a shutoff nozzle, and using water in decorative, non-recycling water fountains. Reductions in water use will be implemented in stages with new connections to water supply restricted in stages two and three.

The UWMP identifies wastewater as having the potential to reduce demand in peak summer months for potable water. There are currently several wastewater recycling projects in the area and the opportunity for greater use of wastewater exists. Urban and commercial landscaping offers great opportunity for recycled wastewater and SCWA has identified the potential for recycled water to be supplied for wildlife and wetlands enhancement in the Nap-Sonoma Marsh Wildlife Area. Although this Wildlife Area is not in the North Coast Region, if it is successful, it may have applications for natural areas within the Region.

SCWA and the contractors are signatories to the California Urban Water Conservation Council's Memorandum of Understanding regarding Urban Water Conservation and have committed to implementing its 14 Best Management Practices (BMPs). SCWA implements water conservation BMPs and assists the contractors with implementation of water conservation programs. The BMPs include systems water audits and leak detection and repair, rebate programs, residential and commercial audit programs, public information and school education programs, and it employs a full-time Water Conservation Coordinator and six full-time Water Conservation Specialists.

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### ***Town of Windsor Urban Water Management Plan***

The Town of Windsor Water District is subsidiary district operated by the Town of Windsor that supplies water supply, wastewater collection, treatment, and reclamation services to area customers. The UWMP gives background information about the District and past and projected water demand, and provides management strategies and a water shortage contingency plan.

The District has implemented several water conservation efforts, including metering, a conservation-oriented rate structure, leak detection and repair, ultra-low flush toilet installations, public education programs including school programs, and wastewater reclamation. Additionally, in 1990, the District installed an irrigation information management station at a site southwest of the wastewater reclamation plant that is used to develop daily wastewater irrigation plans.

Demand management programs meet BMP criteria. These include water survey programs for residential customers who experience unexplained increases in water use, providing residential plumbing retrofits, providing leak detection and repair, and large landscape conservation programs and incentives. The District also began a high-efficiency washing machine rebate program in 2000, has an on-going public information program to educate school children and other citizens about local water issues and encourage conservation, and engages in conservation programs for commercial, industrial and institutional customers.

The wastewater reclamation plant underwent expansion in 2000 and further expansion was in the planning stages to ensure that the plant will have the capacity to serve the "build-out" population of Windsor (Town of Windsor 2000). The Town has established priorities with regard to wastewater use: the first priority is to reuse water within the Town or its sphere of influence, the second is to provide for agricultural uses outside of Windsor or to Santa Rosa's Geysers pipeline, the third priority is reuse in the steam fields at the Geysers, and the fourth priority is discharge to Mark West Creek. In the future, all feasible opportunities for water reuse will be considered, especially those uses that would lower demand for potable water.

The water shortage contingency plan provides a staged response for water supply shortages. The District has dealt with supply shortages in the past and in the future will implement water conservation measures that result in use restrictions that are proportional to the amount of reduction necessary. Currently, the District has a three stage plan that implements increasingly stringent measures with stage one being voluntary, stage two involving mandatory rationing and stage three involving mandatory rationing and penalties.

### ***Ukiah Urban Water Management Plan***

The Ukiah Urban Water Management Plan describes the service area, water supply and supply reliability, wastewater and water recycling, water use, supply and demand comparison, and strategies for water demand management and water shortages.

Water demand management measures implemented by the City include water surveys of residential meters upon request, leak detection and repair, metering, public information and school education programs, conservation pricing, and regulations to prohibit water waste.

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In the event of a water shortage, the City will implement its Water Shortage Emergency Plan, which is divided into three stages. The first stage involves voluntary reductions; the second stage involves mandatory water conservation measures and prohibitions of certain nonessential water use such as exterior irrigation, and washing of sidewalks. The third stage involves water use restrictions with daily rations for residences and 50% reductions for all other uses. The City has prioritized uses for water demands during water shortages with health and safety uses having the highest priority and new customers receiving the lowest prioritization. During shortages, excessive use penalties may be implemented.

### 1.5.3 City Plans

#### ***Santa Rosa 2020 General Plan***

The City of Santa Rosa has worked to expand its water supply, sewer treatment, and solid waste collection systems to meet growth demands. Additionally, the City has incorporated conservation measures. Where appropriate, new developments use natural drainage systems, and when possible, capacity of the storm water system has been increased to avoid flooding potential.

The City's potable water supply comes from the Russian River watershed and is delivered by the Sonoma County Water Agency (SCWA). Anticipated population and employment growth are projected to result in an average-day peak month demand reaching 50 mgd (West Yost & Associates, 2001 in City of Santa Rosa 2002). In the long-term, the water supply from SCWA will not be sufficient to meet this projected demand, so additional sources will need to be developed. These could include using groundwater and/or securing additional water supply from the SCWA.

City sewage is transported to the Laguna Subregional Wastewater Treatment Plant (WTP) for treatment and disposal. Approximately half of the wastewater treated at the Laguna WTP is reused for urban and agricultural irrigation. Growth projections indicate that City will need to develop and implement an expansion strategy that will meet future wastewater needs.

Stormwater discharge and maintenance activities are regulated and monitored under a National Pollutant Discharge Elimination System (NPDES) permit. Reduced discharge of nonpoint source pollutants into the storm drain system is essential to the City's surface water quality.

Goals for waterways include encouraging multiple use of waterways, including flood control, wildlife habitat, pedestrian and bicycle trails, and other compatible outdoor uses. Water supply goals include ensuring an adequate supply for present and future needs, ensuring that water capacity is in place prior to new development, developing groundwater resources to serve as an emergency supply, preserving and improving existing infrastructure, avoiding extending services beyond the Urban Growth Boundary, developing new sources of supply and enacting conservation and re-use measures. Wastewater goals include ensuring that there is adequate sewer capacity for present and future needs, developing new uses for treated wastewater, maintaining and improving current infrastructure, avoiding extending services beyond the Urban Growth Boundary except in predetermined places or where health hazards require.

Goals that address stormwater management include maintaining and improving stormwater drainage and capacity, requiring developers to pay the costs of drainage facilities needed for new development,

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requiring erosion and sedimentation control measures, conducting regular assessment of drainage facilities, raising public awareness about the need to reduce nonpoint source pollutants in the drainage system, and requiring implementation of Best Management Practices to reduce nonpoint source pollutants.

To protect biological resources, policies have been developed to conserve wetlands, vernal pools, and waterways or use existing regulations to achieve no net loss of wetlands. The City plans to preserve and restore wildlife habitats and corridors and wetlands by continuing to consult with DFG to identify priority land for acquisition and preservation and with NCRWQCB staff to identify wetland and vernal pool habitat that has potential for restoration or protection and to aid in determining appropriate locations for mitigation banking. Educational programs, rehabilitation and restoration are additional policies set forth to protect and enhance wildlife habitat. Other policies include ensuring construction adjacent to creek channels is does not damage the natural environment or disrupt or pollute the waterway, and ensuring that new development along channelized waterways provides an ecological buffer, and ensuring that new development along channelized waterways meets the 100-year flood elevation.

To conserve and maintain water quality, the City provides policies that include monitoring, requiring non-residential projects to provide water-efficient landscaping, promoting water conservation through education and information services, and considering water conservation requirements for new developments.

Additional plans that involve water quality and quantity in the City include the City of Santa Rosa Kelly Farm Ranch Plan and the City of Santa Rosa Stone Farm Ranch Plan.

### ***City of Petaluma General Plan***

The general plan for the City of Petaluma is available on the web at: <http://cityofpetaluma.net/genplan/reports.html>. It provides an overview of current status, challenges, and opportunities related to water resource management.

### ***City of Rohnert Park General Plan***

<http://www.rpcity.org/cityhall/generalplan.cfm>

### ***Town of Windsor General Plan***

<http://www.ci.windsor.ca.us/3102-GeneralPlan.pdf>

### ***Other Plans developed by Cities in the North Coast Region***

- City of Sebastopol Laguna Park Master Plan

## **1.6 TRIBAL PLANS**

### ***Hoopa Valley Indian Reservation Water Quality Control Plan***

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**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX C: MEMORANDUM OF MUTUAL UNDERSTANDINGS**



# North Coast Integrated Regional Water Management Plan, Phase 1

## Appendix C

### Integrated Regional Water Management Plan Memorandum of Mutual Understandings

1. **PURPOSE** The purpose of this document is to establish the mutual understandings of North Coast area agencies with respect to their joint efforts towards developing a North Coast Integrated Regional Water Management Plan (IRWMP) that will increase regional coordination, collaboration and communication and help in obtaining funding for water-related projects.
2. **GOALS** The goals of the IRWMP are:
  - 2.1. To develop a comprehensive plan to facilitate regional cooperation in providing water supply reliability, water recycling, water conservation, water quality improvement, storm water capture and management, flood management, wetlands enhancement and creation, and environmental and habitat protection and improvement.
  - 2.2. To foster coordination, collaboration and communication between North Coast agencies responsible for water-related issues and interested stakeholders, to achieve greater efficiencies, enhance public services, and build public support for vital projects.
  - 2.3. To improve regional competitiveness for State and Federal grant funding.
3. **DEFINITIONS**
  - 3.1. **Integrated Regional Water Management Plan.** The plan envisioned by state legislators and state resource agencies that integrates the projects and management plans of all water-related agencies and stakeholders in a region, in this case the North Coast Region, in order to foster coordination, collaboration and communication among those entities and to assist decision-makers in awarding grants and other funding. The plan will address water supply, water quality, wastewater, stormwater/flood control, watershed planning and aquatic habitat protection and restoration.
  - 3.2. **Agency.** A public entity, be it a special district, city or other governmental entity, responsible for providing one or more services in the areas of water supply, water quality, wastewater, recycled water, water conservation, stormwater/flood control, watershed planning and aquatic habitat protection and restoration.
  - 3.3. **Service function.** A water-related individual service function provided by an agency, i.e. water supply, water quality, wastewater, recycled water, water conservation, stormwater/flood control, watershed planning, and aquatic habitat protection and restoration.
  - 3.4. **Project.** A comprehensive list of resource projects or programs, in need of funding that addresses: water supply, water quality, wastewater, stormwater/flood control, watershed planning or aquatic habitat protection and restoration.
  - 3.5. **Management plan.** An agency's or organization's plan, based in part on the land-use plans within the entity's jurisdiction, that addresses how that entity will provide service in the future in one or more of the following service functions: water supply, water quality, wastewater, recycled water, water conservation,

stormwater/flood control, watershed planning or aquatic habitat protection and restoration.

3.6. **Integration.** Assembling into one document the water-related management strategies, projects and plans in the North Coast Region. The first phase would be to identify water management strategies for the region and the priority projects that work together to demonstrate how these strategies work together to provide reliable water supply, protect or improve water quality, provide watershed protection and planning, and provide environmental restoration and fisheries protection. Projects and plans would be categorized and opportunities to identify regional benefits of linkages between multiple water management strategies among projects and plans of separate service functions and to see where projects and plans of separate service functions may further interrelate, e.g. wastewater treatment and water recycling or habitat restoration.

3.7. **North Coast Technical Review Panel.** The panel comprised of representatives from each North Coast County appointed by IRWMP participants in the North Coast Region to compile and integrate projects and management plans of the North Coast region. Review panel members will define the process of compilation and integration including format, schedules and ground rules to ensure process consistency and uniformity.

#### **4. IRWMP PROJECT PARTICIPANTS**

4.1. **Public agencies.** Public agencies, which have developed projects and management plans, are responsible to their respective electorates, and are devoting staff to the process, will take the lead as described in "Approach to developing the IRWMP" below. These agencies will be the signatories to this memorandum of mutual understandings.

4.2. **Contributing entities.** Other entities, such as business and environmental groups, are considered valuable contributors and will continue to be invited and encouraged to participate and will be invited to be signatories to this memorandum of mutual understandings.

4.3. **Regulatory agencies.** These agencies, such as the North Coast Regional Water Quality Control Board, Coastal Conservancy, and Department of Fish and Game, will be invited to participate. If they cannot participate in work meetings, representatives of the technical review panel will keep them advised of project and plan progress and seek guidance as needed.

#### **5. MUTUAL UNDERSTANDINGS**

##### **5.1. Need for a North Coast IRWMP**

5.1.1. To foster increased coordination, collaboration and communication between North Coast water-related agencies and interested stakeholders that may result in more effectively managed resources, cost efficiencies and better service to the public.

5.1.2. Also, representatives of state resource agencies and state legislators have suggested that qualification of some state grants and other funding criteria will require development and implementation of Integrated Regional Water Management Plans.

5.2. **Subject matter scope of the IRWMP.** The IRWMP will include, but may not necessarily be limited to, water supply, water quality, wastewater, recycled water, water conservation, stormwater/flood control, watershed planning and aquatic habitat protection and restoration. It is acknowledged that the management plans of each individual public agency are based, in part, on the land-use plans within an agency's jurisdiction. Therefore, the resultant IRWMP will by design have incorporated the land-use plans and assumptions intrinsic to the respective water-related service function.

5.3. **Geographical scope of the IRWMP.** The North Coast Region for this Memorandum is defined as the seven North Coast counties – Del Norte, Siskiyou, Humboldt, Trinity, Lake, Mendocino and Sonoma – even though some areas of some counties and individual agencies may lay outside the North Coast hydrologic region.

#### 5.4. **Approach to developing the IRWMP**

5.4.1. A reasonable approach towards developing the IRWMP is first for the participants involved to create a technical review panel whose members work together to compile their individual projects and management plans to see where cooperative efforts could be employed. The panel would also work to identify needs and list projects that may qualify for funding under various state and federal grant and loan programs.

5.4.2. The proposed forum for this regional planning effort is through the associations, coalitions, or other entities to which the majority belong, inviting others agencies and entities to participate in the effort.

5.4.3. The technical review panel should refer to any already completed and ongoing compilation efforts for information and input.

5.4.4. Once there has been a compilation of projects and plans for the separate, service function areas, the North Coast technical review panel will place all the projects and plans into one integrated document. As stated above in "definitions," the first phase would be to identify water management strategies for the region and the priority projects that work together to demonstrate how these strategies work together to provide reliable water supply, protect or improve water quality, provide watershed protection and planning, and provide environmental restoration and fisheries protection. Projects and plans would be categorized and opportunities to identify regional benefits of linkages between multiple water management strategies among projects and plans of separate service functions and to see where projects and plans of separate service functions may further interrelate, e.g. wastewater treatment and water recycling or habitat restoration. 5.5. **Decision-making.** Consensus will be sought in the event the need for a decision arises.

5.6. **Approval of the IRWMP.** IRWMP approval and adoption will occur by participating agency and organization signatures on the IRWMP.

5.7. **Non-binding nature.** This document and participation in this IRWMP effort are nonbinding, and in no way suggest that an agency may not continue its own planning and undertake efforts to secure project funding from any source. An agency may withdraw from participation at any time.

5.8. **Personnel and financial resources.** It is expected that agencies and organizations will contribute the personnel and financial resources necessary to develop the IRWMP.

5.9. **Other on-going regional efforts.** Development of the IRWMP is separate from efforts of other organizations to develop water-related plans on a regional basis. These other plans include, but are not limited to, Pacific Coastal Salmon Recovery Program, Eel Russian River Commission, and Department of Water Resources (DWR) Bulletin 160 development. As the IRWMP is developed, work products can be shared with these separate efforts to provide them with current information.

5.10. **Reports and communications.** The North Coast technical review panel will regularly report on their progress to the agencies and stakeholders they represent and the associations or organizations to which they belong that are involved in the IRWMP process.

5.11. **Termination.** Because the IRWMP will require periodic review and updating for use into the future, it is envisioned that the joint efforts of those involved will be ongoing in maintaining a living document. Thus this document will remain as a reflection of the understandings of the participants. As indicated, individual signatories of this Memorandum may terminate their involvement at any time.

**6. SIGNATORIES TO THE MEMORANDUM OF MUTUAL UNDERSTANDINGS**

We, the undersigned representatives of our respective agencies, acknowledge the above as our understanding of how the North Coast Integrated Regional Water Management Plan will be developed. \_\_\_\_\_ signature

\_\_\_\_\_ printed name

\_\_\_\_\_ agency

\_\_\_\_\_ date

**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX D: POTENTIAL FEDERAL & STATE LISTED SPECIES**



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Appendix D

| North Coast Region Potential Federally and State Listed Species |                                 |                                       |   |
|---|---------------------------------|---------------------------------------|---|
| Scientific Name   | Common Name                     | Fed Status                            | State Status                                      |
| <b>Plants</b>   |                                 |                                       |   |
| <i>Alopecurus aequalis</i> var. <i>sonomensis</i>               | Sonoma Alopecurus               | Endangered                            |   |
| <i>Arabis macdonaldiana</i>                                     | McDonald's Rock Cress           | Endangered                            | Endangered  |
| <i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i>                 | Bakers Manzanita                |                                       | Rare  |
| <i>Arctostaphylos bakeri</i> ssp. <i>Sublaevis</i>              | The Cedars Manzanita            |                                       | Rare  |
| <i>Arctostaphylos densiflora</i>                                | Vine Hill Manzanita             |                                       | Endangered  |
| <i>Astragalus agnicidus</i>                                     | Humboldt Milk-vetch             |                                       | Endangered  |
| <i>Astragalus claranus</i>                                      | Clara Hunt's Milk-vetch         | Endangered                            | Threatened  |
| <i>Bensoniella oregana</i>                                      | Bensoniella                     |                                       | Rare  |
| <i>Blennosperma bakeri</i>                                      | Sonoma Sunshine                 | Endangered                            | Endangered  |
| <i>Blennosperma nanum</i> var. <i>robustum</i>                  | Point Reyes Blennosperma        |                                       | Rare  |
| <i>Calochortus persistens</i>                                   | Siskiyou Mariposa Lily          |                                       | Rare  |
| <i>Carex albida</i>   | White Sedge                     | Endangered                            | Endangered  |
| <i>Castilleja uliginosa</i>                                     | Pitkin Marsh Indian Paintbrush  |                                       | Endangered  |
| <i>Catostomus microps</i>                                       | Modoc Sucker                    | Endangered                            | Endangered  |
| <i>Chorizanthe howellii</i>                                     | Howell's Spineflower            | Endangered                            | Threatened  |
| <i>Chorizanthe valida</i>                                       | Sonoma Spineflower              | Endangered                            | Endangered  |
| <i>Cirsium ciliolatum</i>                                       | Ashland Thistle                 |                                       | Endangered  |
| <i>Clarkia imbricata</i>  | Vine Hill Clarkia               | Endangered                            | Endangered  |
| <i>Cordylanthus mollis</i> ssp. <i>mollis</i>                   | Soft Bird's-beak                | Endangered                            | Rare  |
| <i>Cordylanthus tenuis</i> ssp. <i>capillaris</i>               | Pennell's Bird's-beak           | Endangered                            | Rare  |
| <i>Delphinium bakeri</i>  | Baker's Larkspur                | Endangered                            | Rare  |
| <i>Delphinium luteum</i>  | Yellow Larkspur                 | Endangered                            | Rare  |
| <i>Dichanthelium lanuginosum</i> var. <i>thermale</i>           | Geysers Dichanthelium           |                                       | Endangered  |
| <i>Eriastrum tracyi</i>   | Tracy's Eriastrum               |                                       | Rare  |
| <i>Eriogonum alpinum</i>  | Trinity Buckwheat               |                                       | Endangered  |
| <i>Eriogonum kelloggii</i>                                      | Kellogg's Buckwheat             | Candidate                             | Endangered  |
| <i>Eryngium constancei</i>                                      | Loch Lomond Button-celery       | Endangered                            | Endangered  |
| <i>Erysimum menziesii</i> ssp. <i>eurekaense</i>                | Humboldt Bay Wallflower         | Endangered                            | Endangered  |
| <i>Erysimum menziesii</i> ssp. <i>menziesii</i>                 | Menzies's Wallflower            | Endangered                            | Endangered  |
| <i>Fritillaria gentneri</i>                                     | Gentner's Fritillary            | Endangered                            |   |
| <i>Fritillaria roderickii</i>                                   | Roderick's Fritillary           |                                       | Endangered  |
| <i>Gratiola heterosepala</i>                                    | Boggs Lake Hedge-hyssop         |                                       | Endangered  |
| <i>Howellia aquatilis</i>                                       | Water Howellia                  | Threatened                            |   |
| <i>Lasthenia burkei</i>   | Burke's Goldfields              | Endangered                            | Endangered  |
| <i>Lasthenia conjugens</i>                                      | Contra Costa Goldfields         | Endangered                            |   |
| <i>Layia carnosa</i>  | Beach Layia                     | Endangered                            | Endangered  |
| <i>Lilium occidentale</i>                                       | Western Lily                    | Endangered                            | Endangered  |
| <i>Lilium pardalinum</i> ssp. <i>pitkinense</i>                 | Pitkin Marsh Lily               | Endangered                            | Endangered  |
| <i>Limnathes bakeri</i>   | Baker's Meadowfoam              |                                       | Rare  |
| <i>Limnathes vinculans</i>                                      | Sebastopol Meadowfoam           | Endangered                            | Endangered  |
| <i>Lupinus milo-bakeri</i>                                      | Milo Baker's Lupine             |                                       | Threatened  |
| <i>Lupinus tidestromii</i>                                      | Tidestrom's Lupine              | Endangered                            | Endangered  |
| <i>Navarretia leucocephala</i> ssp. <i>plieantha</i>            | Many-flowered Navarretia        | Endangered                            | Endangered  |
| <i>Orcuttia tenuis</i>  | Slender Orcutt Grass            | Threatened                            | Endangered  |
| <i>Phlox hirsuta</i>  | Yreka Phlox                     | Endangered                            | Endangered  |
| <i>Pleuropogon hooverianus</i>                                  | North Coast Semaphore Grass     |                                       | Threatened  |
| <i>Potentilla hickmanii</i>                                     | Hickman's Cinquefoil            | Endangered                            | Endangered  |
| <i>Sidalcea oregana</i> ssp. <i>valida</i>                      | Kenwood Marsh Checkerbloom      | Endangered                            | Endangered  |
| <i>Thlaspi californicum</i>                                     | Kneeland Prairie Pennycress     | Endangered                            |   |
| <i>Trifolium amoenum</i>  | Showy Indian Clover             | Endangered                            |   |
|   | <b>Totals All Plants</b>        | <b>30 Endangered<br/>2 Threatened</b> | <b>29 Endangered<br/>4 Threatened<br/>11 Rare</b> |
| <b>Invertebrates</b>  |                                 |                                       |   |
| <i>Lepidurus packardii</i>                                      | Vernal Pool Tadpole Shrimp      | Endangered                            |   |
| <i>Monadenia setosa</i>   | Trinity Bristle Snail           |                                       | Threatened  |
| <i>Syncaris pacifica</i>  | California Freshwater Shrimp    | Endangered                            | Endangered  |
|   | <b>Totals All Invertebrates</b> | <b>2 Endangered</b>                   | <b>1 Endangered<br/>1 Threatened</b>              |
| <b>Lepidopterans</b>  |                                 |                                       |   |
| <i>Lycaeides argyrognomon lotis</i>                             | Lotis Blue Butterfly            | Endangered                            |   |
| <i>Speyeria callippe callippe</i>                               | Callippe Silverspot Butterfly   | Endangered                            |   |
| <i>Speyeria zerene behrensii</i>                                | Behren's Silverspot Butterfly   | Endangered                            |   |
| <i>Speyeria zerene hippolyta</i>                                | Oregon Silverspot Butterfly     | Threatened                            |   |
| <i>Speyeria zerene myrtleae</i>                                 | Myrtle's Silverspot             | Endangered                            |   |
|   | <b>Totals All Lepidopterans</b> | <b>4 Endangered<br/>1 Threatened</b>  |   |

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| North Coast Region Potential Federally and State Listed Species |                                  |                                      |   |
|---|----------------------------------|--------------------------------------|---|
| Scientific Name   | Common Name                      | Fed Status                           | State Status                                    |
| <b>Fish</b>   |                                  |                                      |   |
| <i>Catostomus microps</i>                                       | Modoc Sucker                     | Endangered                           | Endangered                                      |
| <i>Chasmistes brevirostris</i>                                  | Shortnose Sucker                 | Endangered                           | Endangered                                      |
| <i>Deltistes luxatus</i>  | Lost River Sucker                | Endangered                           | Endangered                                      |
| <i>Oncorhynchus kisutch</i>                                     | Coho Salmon-S.Or/N. CA ESU       | Threatened                           | Threatened                                      |
| <i>Oncorhynchus kisutch</i>                                     | Coho Salmon-Central CA Coast ESU | Endangered                           | Threatened                                      |
| <i>Oncorhynchus mykiss</i>                                      | Steelhead-Northern CA ESU        |                                      | Threatened                                      |
| <i>Oncorhynchus mykiss</i>                                      | Steelhead-Central CA Coast ESU   |                                      | Threatened                                      |
| <i>Oncorhynchus tshawytscha</i>                                 | Chinook Salmon-Central CA ESU    |                                      | Threatened                                      |
| <i>Salvelinus confluentus</i>                                   | Bull Trout                       | Threatened                           | Endangered                                      |
|   | <b>Totals All Fish</b>           | <b>4 Endangered<br/>2 Threatened</b> | <b>4 Endangered<br/>5 Threatened</b>            |
| <b>Amphibians</b>   |                                  |                                      |   |
| <i>Ambystoma californiense</i>                                  | California Tiger Salamander      | Threatened                           | SSC   |
| <i>Ambystoma macrodactylum</i>                                  | Long-toed Salamander             | Endangered                           | Endangered                                      |
| <i>Ascaphus truei</i>   | Tailed Frog                      |                                      | SSC   |
| <i>Ensatina eschscholtzii</i>                                   | Ensatina                         |                                      | SSC   |
| <i>Plethodon elongatus</i>                                      | Del Norte Salamander             |                                      | SSC   |
| <i>Plethodon stormi</i>   | Siskiyou Mountains Salamander    |                                      | Threatened                                      |
| <i>Rana aurora draytonii</i>                                    | California Red-legged Frog       | Threatened                           | SSC   |
| <i>Rana boylei</i>  | Foothill Yellow-legged Frog      |                                      | SSC   |
| <i>Rana cascadae</i>  | Cascades Frog                    |                                      | SSC   |
| <i>Rana pipiens</i>   | Northern Leopard Frog            |                                      | SSC   |
| <i>Rana pretiosa</i>  | Spotted Frog                     |                                      | SSC   |
| <i>Rhyacotriton variegatus</i>                                  | Southern Seep Salamander         |                                      | SSC   |
| <i>Taricha torosa</i>   | California Newt                  |                                      | SSC   |
|   | <b>Totals All Amphibians</b>     | <b>1 Endangered<br/>2 Threatened</b> | <b>1 Endangered<br/>1 Threatened<br/>11 SSC</b> |
| <b>Reptiles</b>   |                                  |                                      |   |
| <i>Charina bottae</i>   | Rubber Boa                       |                                      | Threatened                                      |
| <i>Clemmys marmorata</i>  | Western Pond Turtle              |                                      | SSC   |
| <i>Eumeces skiltonianus</i>                                     | Western Skink                    |                                      | SSC   |
| <i>Lampropeltis zonata</i>                                      | California Mountain Kingsnake    |                                      | SSC   |
| <i>Masticophis lateralis</i>                                    | Striped Racer                    | Threatened                           | Threatened                                      |
| <i>Thamnophis sirtalis</i>                                      | Common Garter Snake              | Endangered                           | Endangered                                      |
|   | <b>Totals All Reptiles</b>       | <b>1 Endangered<br/>1 Threatened</b> | <b>1 Endangered<br/>2 Threatened<br/>3 SSC</b>  |

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| North Coast Region Potential Federally and State Listed Species |                              |                                      |  |
|---|------------------------------|--------------------------------------|--|
| Scientific Name   | Common Name                  | Fed Status                           | State Status                                     |
| <b>Birds</b>  |                              |                                      |  |
| <i>Accipiter cooperii</i>                                       | Cooper's Hawk                |                                      | SSC  |
| <i>Accipiter gentilis</i>                                       | Northern Goshawk             |                                      | SSC  |
| <i>Accipiter striatus</i>                                       | Sharp-shinned Hawk           |                                      | SSC  |
| <i>Agelaius tricolor</i>  | Tricolored Blackbird         |                                      | SSC  |
| <i>Aimophila ruficeps</i>                                       | Rufous-crowned Sparrow       |                                      | SSC  |
| <i>Amphispiza belli</i>   | Sage Sparrow                 | Threatened                           | SSC  |
| <i>Aphelocoma californica</i>                                   | Western Scrub-Jay            |                                      | SSC  |
| <i>Aquila chrysaetos</i>  | Golden Eagle                 |                                      | SSC  |
| <i>Asio flammeus</i>  | Short-eared Owl              |                                      | SSC  |
| <i>Asio otus</i>  | Long-eared Owl               |                                      | SSC  |
| <i>Athene cunicularia</i>                                       | Burrowing Owl                |                                      | SSC  |
| <i>Bonasa umbellus</i>  | Ruffed Grouse                |                                      | SSC  |
| <i>Brachyramphus marmoratus</i>                                 | Marbled Murrelet             | Threatened                           | Endangered                                       |
| <i>Bucephala islandica</i>                                      | Barrow's Goldeneye           |                                      | SSC  |
| <i>Buteo regalis</i>  | Ferruginous Hawk             |                                      | SSC  |
| <i>Buteo swainsoni</i>  | Swainson's Hawk              |                                      | Threatened                                       |
| <i>Calidris bairdii</i>   | Baird's Sandpiper            |                                      | SSC  |
| <i>Centrocercus urophasianus</i>                                | Sage Grouse                  |                                      | SSC  |
| <i>Cerorhinca monocerata</i>                                    | Rhinoceros Auklet            |                                      | SSC  |
| <i>Chaetura vauxi</i>   | Vaux's Swift                 |                                      | SSC  |
| <i>Charadrius alexandrinus nivosus</i>                          | Western Snowy Plover         | Threatened                           |  |
| <i>Chlidonias niger</i>   | Black Tern                   |                                      | SSC  |
| <i>Circus lyaneus</i>   | Northern Harrier             |                                      | SSC  |
| <i>Coccyzus americanus occidentalis</i>                         | Western Yellow-billed Cuckoo | Candidate                            | Endangered                                       |
| <i>Colaptes auratus</i>   | Northern Flicker             |                                      | Endangered                                       |
| <i>Cypseloides niger</i>  | Black Swift                  |                                      | SSC  |
| <i>Dendroica petechia</i>                                       | Yellow Warbler               |                                      | SSC  |
| <i>Elanus leucurus</i>  | White-tailed Kite            | Threatened                           | Endangered                                       |
| <i>Empidonax traillii</i>                                       | Willow Flycatcher            | Endangered                           | Endangered                                       |
| <i>Eremophila alpestris</i>                                     | Horned Lark                  |                                      | SSC  |
| <i>Falco columbarius</i>  | Merlin                       |                                      | SSC  |
| <i>Falco mexicanus</i>  | Prairie Falcon               |                                      | SSC  |
| <i>Falco peregrinus anatum</i>                                  | American Peregrine Falcon    | Delisted                             | Endangered                                       |
| <i>Gavia immer</i>  | Common Loon                  |                                      | SSC  |
| <i>Geothlypis trichas</i>                                       | Common Yellowthroat          |                                      | SSC  |
| <i>Grus canadensis tabida</i>                                   | Greater Sandhill Crane       |                                      | Threatened                                       |
| <i>Haliaeetus leucocephalus</i>                                 | Bald Eagle                   | Threatened                           | Endangered                                       |
| <i>Histrionicus histrionicus</i>                                | Harlequin Duck               |                                      | SSC  |
| <i>Icteria virens</i>   | Yellow-breasted Chat         |                                      | SSC  |
| <i>Ixobrychus exilis</i>  | Least Bittern                |                                      | SSC  |
| <i>Junco hyemalis</i>   | Dark-eyed Junco              |                                      | SSC  |
| <i>Lanius ludovicianus</i>                                      | Loggerhead Shrike            | Endangered                           | SSC  |
| <i>Larus californicus</i>                                       | California Gull              |                                      | SSC  |
| <i>Laterallus jamaicensis jamaicensis</i>                       | Black Rail                   |                                      | Threatened                                       |
| <i>Laterallus jamaicensis coturniculus</i>                      | California Black Rail        |                                      | Threatened                                       |
| <i>Melospiza melodia</i>  | Song Sparrow                 |                                      | SSC  |
| <i>Mycteria americana</i>                                       | Wood Stork                   |                                      | SSC  |
| <i>Numenius americanus</i>                                      | Long-Billed Curlew           |                                      | SSC  |
| <i>Oceanodroma furcata</i>                                      | Fork-tailed Storm-Petrel     |                                      | SSC  |
| <i>Oceanodroma homochroa</i>                                    | Ashy Storm-Petrel            |                                      | SSC  |
| <i>Oceanodroma melania</i>                                      | Black Storm-Petrel           |                                      | SSC  |
| <i>Pandion haliaetus</i>  | Osprey                       |                                      | SSC  |
| <i>Passerculus sandwichensis</i>                                | Savannah Sparrow             |                                      | Endangered                                       |
| <i>Pelecanus erythrorhynchos</i>                                | American White Pelican       |                                      | SSC  |
| <i>Pelecanus occidentalis</i>                                   | Brown Pelican                | Endangered                           | Endangered                                       |
| <i>Phalacrocorax auritus</i>                                    | Double-crested Cormorant     |                                      | SSC  |
| <i>Pipilo crissalis</i>   | California Towhee            | Threatened                           | Endangered                                       |
| <i>Pipilo maculatus</i>   | Spotted Towhee               |                                      | SSC  |
| <i>Plegadis chihi</i>   | White-faced Ibis             |                                      | SSC  |
| <i>Poecile atricapillus</i>                                     | Black-capped Chickadee       |                                      | SSC  |
| <i>Progne subis</i>   | Purple Martin                |                                      | SSC  |
| <i>Rallus longirostris obsoletus</i>                            | California Clapper Rail      | Endangered                           | Endangered                                       |
| <i>Riparia riparia</i>  | Bank Swallow                 |                                      | Threatened                                       |
| <i>Sterna elegans</i>   | Elegant Tern                 |                                      | SSC  |
| <i>Strix nebulosa</i>   | Great Gray Owl               |                                      | Endangered                                       |
| <i>Strix occidentalis</i>                                       | Spotted Owl                  | Threatened                           | SSC  |
| <i>Toxostoma redivivum</i>                                      | California Thrasher          | Threatened                           |  |
|   | <b>Totals All Birds</b>      | <b>4 Endangered<br/>8 Threatened</b> | <b>12 Endangered<br/>5 Threatened<br/>48 SSC</b> |

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| North Coast Region Potential Federally and State Listed Species |                             |  |   |
|---|-----------------------------|--|---|
| Scientific Name   | Common Name                 | Fed Status                             | State Status  |
| <b>Mammals</b>  |                             |  |   |
| <i>Antrozous pallidus</i>                                       | Pallid Bat                  |  | SSC   |
| <i>Apodontia rufa nigra</i>                                     | Point Arena Mountain Beaver | Endangered                             | SSC   |
| <i>Arborimus albipes</i>  | White-footed Vole           |  | SSC   |
| <i>Arborimus pomo</i>   | California Red Tree Vole    |  | SSC   |
| <i>Dipodomys deserti</i>  | California Kangaroo Rat     |  | SSC   |
| <i>Euderma maculatum</i>  | Spotted Bat                 |  | SSC   |
| <i>Eumops perotis</i>   | Western Mastiff Bat         |  | SSC   |
| <i>Glaucomys sabrinus</i>                                       | Northern Flying Squirrel    |  | SSC   |
| <i>Gulo gulo</i>  | California Wolverine        |  | Threatened  |
| <i>Lepus americanus</i>   | Snowshoe Hare               |  | SSC   |
| <i>Lepus californicus</i>                                       | Black-tailed Jackrabbit     |  | SSC   |
| <i>Lepus townsendii</i>   | White-tailed Jackrabbit     |  | SSC   |
| <i>Lutra canadensis</i>   | Northern River Otter        |  | SSC   |
| <i>Martes americana</i>   | American Marten             |  | SSC   |
| <i>Martes pennanti</i>  | Fisher                      |  | SSC   |
| <i>Microtus californicus</i>                                    | California Vole             | Endangered                             | Endangered  |
| <i>Neotoma fuscipes</i>   | Dusky-footed Woodrat        | Endangered                             | SSC   |
| <i>Neotoma lepida</i>   | Desert Woodrat              |  | SSC   |
| <i>Ovis canadensis californiana</i>                             | California Bighorn Sheep    | Endangered                             | Endangered  |
| <i>Panthera concolor</i>  | Mountain Lion               |  | SSC   |
| <i>Perognathus longimembris</i>                                 | Little Pocket Mouse         | Endangered                             | SSC   |
| <i>Peromyscus maniculatus</i>                                   | Deer Mouse                  |  | SSC   |
| <i>Plecotus townsendii</i>                                      | Townsend's Big-eared Bat    |  | SSC   |
| <i>Reithrodontomys raviventris</i>                              | Salt-marsh Harvest Mouse    | Endangered                             | Endangered  |
| <i>Scapanus latimanus</i>                                       | Broad-footed Mole           |  | SSC   |
| <i>Sorex ornatus</i>  | Ornate Shrew                |  | SSC   |
| <i>Sorex vagrans</i>  | Vagrant Shrew               |  | SSC   |
| <i>Spilogale gracilis</i>                                       | Western Spotted Skunk       |  | SSC   |
| <i>Sylvilagus bachmani</i>                                      | Brush Rabbit                | Endangered                             | Endangered  |
| <i>Sylvilagus idahoensis</i>                                    | Pygmy Rabbit                |  | SSC   |
| <i>Zapus trinotatus</i>   | Pacific Jumping Mouse       |  | SSC   |
|   | <b>Totals All Mammals:</b>  | <b>7 Endangered</b>                    | <b>4 Endangered<br/>1 Threatened<br/>26 SSC</b>               |
| <b>SSC=California Species of Special Concern</b>                |                             |  |   |
|   | <b>Totals All Species</b>   | <b>53 Endangered<br/>16 Threatened</b> | <b>51 Endangered<br/>19 Threatened<br/>88 SSC<br/>11 Rare</b> |

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WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX E: SUMMARY OF CURRENT STATUS OF TMDL  
DEVELOPMENT AND IMPLEMENTATION**



## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody  | TMDL                  | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                                | Potential Sources   |
|--|-----------------------|-------------|---|------------------------------------|--|---|
| Albion River   | Sediment              | Complete    | 2001  | 2004 <sup>1</sup>                  | 412 tons/mi <sup>2</sup> /yr <sup>2</sup>  | Silviculture, Logging, Nonpoint Source  |
| Albion River   | Temperature           | Not Started | 2019  |                                    | -  | Source Unknown  |
| Americano Creek  | Nutrients             | Not Started | 2019  |                                    | -  | Pasture Grazing - Riparian and/or Upland, Range Grazing - Riparian, Range Grazing - Upland, Intensive Animal Feeding Operations Manure Lagoons, Dairies   |
| Big River  | Sediment              | Complete    | 2001  | 2004 <sup>1</sup>                  | 393 tons/mi <sup>2</sup> /yr <sup>2</sup>  | Silviculture, Logging, Road Construction/Maintenance, Road Construction, Disturbed Sites (Land Develop.), Nonpoint Source, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Erosion/Siltation |
| Big River  | Temperature           | Not Started | 2019  |                                    | -  | Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling of Wetlands, Erosion/Siltation, Nonpoint Source   |
| Big Sulphur Creek  | Specific conductivity | Not Started | Unknown   |                                    | -  |   |
| Big Sulphur Creek  | Sediment              | Not Started | Unknown   |                                    | -  |   |
| Big Sulphur Creek  | Temperature           | Not Started | Unknown   |                                    | -  |   |
| Bodega Harbor  | Exotic Species (crab) | Not Started | 2019  |                                    | -  | Source Unknown  |
| Butte Valley   | Nutrients             | Not Started | Unknown   |                                    | -  |   |
| Butte Valley   | Temperature           | Not Started | Unknown   |                                    | -  |   |
| Eel River, Lower Mainstem  | Sediment              | In progress | 2019  |                                    | -  | Range Grazing-Riparian and/or Upland, Siviculture, Nonpoint Source  |
| Eel River, Lower Mainstem  | Temperature           | In progress | 2019  |                                    | -  | Removal of Riparian Vegetation, Nonpoint Source   |
| Eel River (North Fork)   | Sediment              | Complete    | 2002  | 2004 <sup>1</sup>                  | 1038 tons/mi <sup>2</sup> /yr <sup>2</sup> | Silviculture, Logging, Erosion, Nonpoint Source   |
| Eel River (North Fork)   | Temperature           | Complete    | 2002  |                                    | 409 langley(ly)/day                        | Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Nonpoint Source  |
| Eel River (Middle Fork) Middle Fork Eel basin tributaries <sup>3</sup> | Temperature           | Complete    | 2003  |                                    | 109 ly/day                                 | Removal of Riparian Vegetation, Nonpoint Source   |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody   | TMDL        | Status   | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                    | Potential Sources  |
|---|-------------|----------|---|------------------------------------|--------------------------------|--|
| Eel River (Middle Fork) Upper Black Butte subarea                       | Temperature | Complete | 2003  |                                    | 100 ly/day                     | Removal of Riparian Vegetation, Nonpoint Source  |
| Eel River (Middle Fork) North Fork Middle Fork subarea                  | Temperature | Complete | 2003  |                                    | 118 ly/day                     | Removal of Riparian Vegetation, Nonpoint Source  |
| Eel River (Middle Fork) Upper Middle Fork Eel River and its tributaries | Sediment    | Complete | 2003  | 2004 <sup>1</sup>                  | 420 tons/mi <sup>2</sup> /yr   | Erosion/Siltation  |
| Eel River (Middle Fork) Black Butte subwatershed                        | Sediment    | Complete | 2003  | 2004 <sup>1</sup>                  | 740 tons/mi <sup>2</sup> /yr   | Erosion/Siltation  |
| Eel River (Middle Fork) Elk Creek subwatershed                          | Sediment    | Complete | 2003  | 2004 <sup>1</sup>                  | 1,112 tons/mi <sup>2</sup> /yr | Erosion/Siltation  |
| Eel River (Middle Fork) Round Valley subwatershed                       | Sediment    | Complete | 2003  | 2004 <sup>1</sup>                  | 393 tons/mi <sup>2</sup> /yr   | Erosion/Siltation  |
| Eel River (Middle Fork) Williams/Thatcher subwatershed                  | Sediment    | Complete | 2003  | 2004 <sup>1</sup>                  | 438 tons/mi <sup>2</sup> /yr   | Erosion/Siltation  |
| Eel River (Middle Main)   | Sediment    | Complete | 2005  | 2004 <sup>1</sup>                  | 645 tons/mi <sup>2</sup> /yr   | Range Grazing-Riparian, Range Grazing-Upland, Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Construction/Land Development, Land Development, Hydromodification, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Erosion/Siltation |
| Eel River (Middle Main)   | Temperature | Complete | 2005  |                                    | 645 tons/mi <sup>2</sup> /yr   | Upstream Impoundment, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Channel Erosion, Erosion/Siltation  |
| Eel River (South Fork)  | Sediment    | Complete | 1999  | 2004 <sup>1</sup>                  | 473 tons/km <sup>2</sup> /yr   | Range Grazing-Riparian and/or Upland, Silviculture, Logging Road Construction/Maintenance, Resource Extraction, Hydromodification, Flow Regulation/Modification, Removal of Riparian Vegetation, Erosion/Siltation, Nonpoint Source  |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody                 | TMDL        | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target  | Potential Sources   |
|---------------------------|-------------|-------------|---|------------------------------------|--|---|
| Eel River (South Fork)    | Temperature | Complete    | 1999  |                                    | Expressed as percent effective shade for individual stream segments <sup>4</sup> | Hydromodification, Flow Regulation/Modification, Removal of Riparian Vegetation, Erosion/Siltation, Nonpoint Source   |
| Eel River, Upper Mainstem | Temperature | Complete    | 2004  |                                    | 289 ly/day <sup>5</sup>  | Channelization, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Nonpoint Source  |
| Eel River, Upper Mainstem | Sediment    | Complete    | 2004  | 2004 <sup>1</sup>                  | 388 tons/mi <sup>2</sup> /yr   | Agriculture-grazing, Silviculture, Harvesting, Restoration, Residue Management Logging Road Construction/Maintenance, Silvicultural Point Sources Construction/Land Development, Highway/Road/Bridge Construction, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Erosion/Siltation |
| Elk River                 | Sediment    | In progress | 2005  |                                    | -  | Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Removal of Riparian Vegetation Streambank Modification/Destabilization, Erosion/Siltation, Natural Sources, Nonpoint Source   |
| Estero Americano          | Sediment    | Not Started | Unknown   |                                    | -  |   |
| Estero Americano          | Mitroemts   | Not Started | Unknown   |                                    | -  |   |
| Freshwater Creek          | Sediment    | In progress | 2019  |                                    | -  | Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Removal of Riparian Vegetation Streambank Modification/Destabilization, Erosion/Siltation, Natural Sources, Nonpoint Source   |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody     | TMDL          | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target   | Potential Sources  |
|---------------|---------------|-------------|---|------------------------------------|---|--|
| Garcia River  | Sediment      | Complete    | 1998  | 2001                               | Target for mean particle size diameter is $\geq 69$ mm with a minimum of $\geq 37$ mm | NA   |
| Garcia River  | Temperature   | Not Started | 2019  | -                                  | -   | Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Nonpoint Source   |
| Gualala River | Sediment      | Complete    | 2001  | 2004 <sup>1</sup>                  | 475 tons/mi <sup>2</sup> /yr  | Specialty Crop Production, Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Highway/Road/Bridge Construction, Land Development, Disturbed Sites (Land Develop.), Erosion/Siltation, Nonpoint Source   |
| Gualala River | Temperature   | Not Started | 2019  | -                                  | -   | Removal of Riparian Vegetation, Streambank Modification/Destabilization, Channel Erosion, Erosion/Siltation, Nonpoint Source   |
| Humboldt Bay  | PCBs          | Not Started | 2019  | -                                  | -   | Source Unknown   |
| Humboldt Bay  | Dioxin Toxics | Not Started | 2019  | -                                  | -   | Source Unknown   |
| Jacoby Creek  | Sediment      | Not Started | 2019  | -                                  | -   | Silviculture, Road Construction, Land Development, Disturbed Sites (Land Develop.), Urban Runoff/Storm Sewers, Hydromodification, Channelization, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Channel Erosion, Erosion/Siltation, Sediment Resuspension, Natural Sources, Nonpoint Source |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody     | TMDL             | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan TMDL/Target Completed | Potential Sources  |
|---------------|------------------|-------------|---|--|--|
| Klamath River | Nutrients        | In progress | 2019  | -  | Nonpoint Source, Hydromodification, Agriculture, Specialty Crop Production, Habitat Modification, Removal of Riparian Vegetation Drainage/Filling Of Wetlands, Industrial Point Sources, Municipal Point Sources, Irrigated Crop Production, Specialty Crop Production, Pasture Grazing-Riparian and/or Upland, Range Grazing-Riparian, Intensive Animal Feeding Operations, Out-of-state source Nonpoint/Point Source, Industrial Point Sources, Municipal Point Sources, Specialty Crop Production, Internal Nutrient Cycling (primarily lakes), Natural Sources, Nonpoint Source, Wastewater - land disposal, Upstream Impoundment, Natural Sources, Nonpoint Source, Out-of-state source |
| Klamath River | Temperature      | In progress | 2019  | -  | Nonpoint Source, Hydromodification, Dam Construction, Upstream Impoundment, Flow Regulation/Modification, Water Diversions, Channelization, Flow Regulation/Modification, Water Diversions, Habitat Modification, Removal of Riparian Vegetation, Drainage/Filling Of Wetlands, Nonpoint Source, Hydromodification, Dam Construction, Habitat Modification, Channel Erosion, Hydromodification, Upstream Impoundment, Dam Construction, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Natural Sources   |
| Klamath River | Dissolved Oxygen | In progress | 2006  | -  | Industrial Point Sources, Municipal Point Sources, Agriculture, Irrigated Crop Production, Specialty Crop Production, Range Grazing-Riparian, Agriculture-storm runoff, Agriculture-subsurface drainage, Agriculture-irrigation tailwater, Agriculture-animal, Upstream Impoundment Flow, Regulation/Modification, Out-of-state source, Out-of-state source, Nonpoint/Point Source, Industrial Point Sources, Municipal Point Sources, Combined Sewer Overflow, Upstream Impoundment, Flow Regulation/Modification, Out-of-state source  |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody                              | TMDL             | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan TMDL/Target Completed | Potential Sources   |
|--|------------------|-------------|---|--|---|
| Klamath River, downstream of Weitchpec | Nutrients        | Not Started | 2006  | -  | Industrial Point Sources, Major Industrial Point Source, Minor Industrial Point Source, Municipal Point Sources, Major Municipal Point Source - dry and/or wet weather discharge, Agriculture, Irrigated Crop Production, Specialty Crop Production, Pasture Grazing - Riparian and/or Upland, Range Grazing - Riparian, Intensive Animal Feeding Operations, Agriculture - storm runoff, Agriculture - Subsurface drainage, Agriculture - irrigation tailwater |
| Klamath River, downstream of Weitchpec | Temperature      | Not Started | 2006  | -  | Hydromodification, Dam Construction, Upstream Impoundment, Flow Regulation/Modification, Water Diversions, Habitat Modification, Removal of Riparian Vegetation, Channel Erosion  |
| Klamath River, downstream of Weitchpec | Dissolved Oxygen | Not Started | 2006  | -  | Industrial Point Sources, Municipal Point Sources, Agriculture, Irrigated Crop Production, Specialty Crop Production, Range Grazing - Riparian, Agriculture-storm runoff, Agriculture-irrigation tailwater, Agriculture-animal, Upstream Impoundment, Flow Regulation/Modification, Out-of-state source   |
| Klamath River, downstream of Weitchpec | Sediment         | Not Started | 2019  | -  | Source Unknown  |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody            | TMDL               | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target | Potential Sources  |
|----------------------|--------------------|-------------|---|------------------------------------|-------------|--|
| Laguna de Santa Rosa | Sediment           | Complete    | 1995 / 2019 <sup>6</sup>                        | 1995 <sup>7</sup>                  | -           | Silviculture, Agriculture, Agriculture-grazing, Agriculture-storm runoff, Bridge Construction, Channel Erosion, Channelization, Construction/Land Development, Dam Construction, Drainage/Filling Of Wetlands, Erosion/Siltation, Flow Regulation/Modification, Geothermal Development, Habitat Modification, Harvesting, Restoration, Residue Management, Highway Maintenance and Runoff, Hydromodification, Intensive Animal Feeding Operations, Irrigated Crop Production, Logging Road Construction/Maintenance, Natural Sources, Nonirrigated Crop Production, Nonpoint Source, Other Urban Runoff, Range Grazing-Riparian and/or Upland, Removal of Riparian Vegetation, Resource Extraction, Specialty Crop Production, Streambank Modification/Destabilization, Surface Runoff, Upstream Impoundment |
| Laguna de Santa Rosa | Nitrogen           |             | 1995 / 2019 <sup>6,8</sup>                      | 1995 <sup>7</sup>                  | -           | Internal Nutrient Cycling (primarily lakes), Nonpoint Source, Point Source   |
| Laguna de Santa Rosa | Phosphorous        |             | 2019  |                                    | -           | Internal Nutrient Cycling (primarily lakes), Nonpoint Source, Point Source   |
| Laguna de Santa Rosa | Dissolved Oxygen   | In progress | 2008  |                                    | -           | Internal Nutrient Cycling (primarily lakes), Nonpoint Source, Point Source   |
| Laguna de Santa Rosa | Temperature        | In progress | 2008  |                                    | -           | Hydromodification, Upstream Impoundment Removal of Riparian Vegetation, Streambank Modification/Destabilization Nonpoint Source  |
| Laguna de Santa Rosa | Mercury            | In progress | 2019  |                                    | -           | Source Unknown   |
| Lake Mendocino       | Mercury            | In progress | 2019  |                                    | -           | Resource Extraction, Nonpoint Source   |
| Lake Pillsbury       | Mercury            | In progress | 2019  |                                    | -           | Inactive Mining, Natural Sources, Nonpoint Source  |
| Lake Sonoma          | Mercury            | In progress | 2019  |                                    | -           | Resource Extraction, Nonpoint Source   |
| Lower Lost River     | Nutrients          | In progress | Unknown   |                                    | -           | NA   |
| Mad River            | Sediment/Turbidity | In progress | 2019  |                                    | -           | Silviculture, Resource Extraction, Nonpoint Source   |

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| Waterbody     | TMDL        | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                                | Potential Sources  |
|---------------|-------------|-------------|---|------------------------------------|--|--|
| Mad River     | Temperature | Not Started | 2019  |                                    | -  | Upstream Impoundment, Flow Regulation/Modification, Habitat Modification, Removal of Riparian Vegetation, Nonpoint Source, Unknown Nonpoint Source   |
| Mattole River | Sediment    | Complete    | 2003  | 2004 <sup>1</sup>                  | 3600 tons/mi <sup>2</sup> /yr              | Specialty Crop Production, Range Grazing-Riparian and/or Upland, Range Grazing-Riparian, Silviculture, Road Construction, Hydromodification, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Erosion/Siltation  |
| Mattole River | Temperature | Complete    | 2003  |                                    | See note 9                                 | Range Grazing-Riparian and/or Upland, Silviculture, Road Construction, Habitat Modification, Removal of Riparian Vegetation, Natural Sources, Nonpoint Source  |
| Navarro River | Temperature | Complete    | 2000 <sup>11</sup>                              |                                    | See note 10                                | Agriculture, Agricultural Return Flows Resource Extraction, Flow Regulation/Modification, Water Diversions, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Nonpoint Source   |
| Navarro River | Sediment    | Complete    | 2000  | 2004 <sup>1</sup>                  | 1463 tons/mi <sup>2</sup> /yr for sediment | Agriculture, Nonirrigated Crop Production, Irrigated Crop Production, Specialty Crop Production, Range Grazing-Riparian and/or Upland, Range Grazing-Riparian, Range Grazing-Upland, Agriculture-grazing Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Silvicultural Point Sources, Construction/Land Development, Highway/Road/Bridge Construction, Land Development, Disturbed Sites (Land Develop.), Resource Extraction, Flow Regulation/Modification, Water Diversions, Habitat Modification, Removal of Riparian Vegetation, Streambank, Modification/Destabilization, Drainage/Filling Of Wetlands, Channel Erosion, Erosion/Siltation, Nonpoint Source |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody           | TMDL        | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                                 | Potential Sources  |
|---------------------|-------------|-------------|---|------------------------------------|---|--|
| Noyo River          | Sediment    | Complete    | 1999  | 2004 <sup>1</sup>                  | 470 tons/mi <sup>2</sup> /yr <sup>12</sup>  | Silviculture, Nonpoint Source  |
| Noyo River          | Temperature | Not Started | 2019  |                                    | -   | Source Unknown   |
| Pudding Creek       | Temperature | Not Started | 2019  |                                    | -   | Source Unknown   |
| Pocket Canyon Creek | pH          | Not Started | Unknown   |                                    | -   |  |
| Pocket Canyon Creek | Sediment    | Not Started | Unknown   |                                    | -   |  |
| Pocket Canyon Creek | Temperature | Not Started | Unknown   |                                    | -   |  |
| Redwood Creek       | Sediment    | Complete    | 1998  | 2004 <sup>1</sup>                  | 1900 tons/mi <sup>2</sup> /yr <sup>13</sup> | Range Grazing-Riparian, Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance, Construction/Land Development, Disturbed Sites (Land Develop.), Removal of Riparian Vegetation, Streambank Modification/Destabilization, Erosion/Siltation, Natural Sources  |
| Redwood Creek       | Temperature | Not Started | 2019  |                                    | -   | Logging Road Construction/Maintenance, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Erosion/Siltation, Natural Sources, Nonpoint Source  |
| Russian River       | Sediment    | Not Started | 2019  |                                    | -   | Silviculture, Agriculture, Agriculture-grazing, Agriculture-storm runoff, Bridge Construction, Channel Erosion, Channelization, Construction/Land Development, Dam Construction, Drainage/Filling Of Wetlands, Erosion/Siltation, Flow Regulation/Modification, Geothermal Development, Habitat Modification, Harvesting, Restoration, Residue Management, Highway Maintenance and Runoff, Hydromodification, Intensive Animal Feeding Operations, Irrigated Crop Production, Logging Road Construction/Maintenance, Natural Sources, Nonirrigated Crop Production, Nonpoint Source, Other Urban Runoff, Range Grazing-Riparian and/or Upland, Removal of Riparian Vegetation, Resource Extraction, Specialty Crop Production, Streambank Modification/Destabilization, Surface Runoff, Upstream Impoundment |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody   | TMDL        | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target | Potential Sources   |
|---|-------------|-------------|---|------------------------------------|-------------|---|
| Russian River   | Temperature | Not Started | 2019  |                                    | -           | Flow Regulation/Modification, Habitat Modification, Hydromodification, Nonpoint Source, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Upstream Impoundment   |
| Russian River (Monte Rio and Healdsburg Memorial Beach) | Pathogens   | In progress | 2008  |                                    | -           | Nonpoint/Point Source   |
| Salmon River  | Temperature | Complete    | 2005  | 2005                               | See note 9  | NA  |
| Santa Rosa Creek  | Pathogens   | In progress | 2008  |                                    | -           | Nonpoint Source, Point Source   |
| Santa Rosa Creek  | Sediment    | Not Started | 2019  |                                    | -           | Agriculture, Nonirrigated Crop Production, Irrigated Crop Production, Specialty Crop Production, Pasture Grazing-Riparian and/or Upland, Range Grazing-Riparian, Range Grazing-Upland, Dairies, Construction/Land Development, Highway/Road/Bridge Construction, Land Development, Urban Runoff/Storm Sewers, Urban Runoff--Non-industrial Permitted, Other Urban Runoff, Surface Runoff, Hydromodification, Channelization, Bridge Construction, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling of Wetlands, Channel Erosion, Erosion/Siltation, Natural Sources, Nonpoint Source |
| Santa Rosa Creek  | Temperature | Not Started | Unknown   |                                    | -           |   |
| Scott River   | Sediment    | Complete    | 2006  | 2006                               | -           | Irrigated Crop Production, Pasture Grazing-Riparian and/or Upland, Silviculture, Resource Extraction, Mill Tailings Natural Sources, Nonpoint Source  |
| Scott River   | Temperature | Complete    | 2006  | 2006                               | -           | Irrigated Crop Production, Pasture Grazing-Riparian and/or Upland, Agricultural Return Flows, Silviculture, Flow Regulation/Modification, Water Diversions, Habitat Modification Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands  |

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody                             | TMDL             | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target  | Potential Sources  |
|---------------------------------------|------------------|-------------|---|------------------------------------|--|--|
| Shasta River                          | Dissolved Oxygen | Complete    | 2007  | 2007                               | -  | Minor Municipal Point Source-dry and/or wet weather discharge, Agriculture-storm runoff, Agriculture-irrigation tailwater, Dairies, Hydromodification, Dam Construction, Flow Regulation/Modification, Habitat Modification  |
| Shasta River                          | Temperature      | Complete    | 2007  | 2007                               | See note 14  | Agriculture-irrigation tailwater, Flow Regulation/Modification, Habitat Modification, Removal of Riparian Vegetation, Drainage/Filling Of Wetlands   |
| Stemple Creek & Estero de San Antonio | Sediment         | Complete    | 1997  | 1997 <sup>14</sup>                 | Target for sediment is 12,760 tons per year by the year 2004                     | Agriculture, Grazing-Related Sources, Land Development, Erosion/Siltation, Nonpoint Source   |
| Stemple Creek & Estero de San Antonio | Nutrients        | Complete    | 1997  | 1997 <sup>14</sup>                 | The target for un-ionized ammonia is 0.025 mg/L as NH <sub>3</sub> <sup>15</sup> | Agriculture, Irrigated Crop Production, Pasture Grazing-Riparian and/or Upland, Range Grazing-Riparian, Concentrated Animal Feeding Operations (permitted, point source), Land Development, Hydromodification, Channelization, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Drainage/Filling Of Wetlands, Channel Erosion, Natural Sources |
| Ten Mile River                        | Sediment         | Complete    | 2000  | 2004 <sup>1</sup>                  | 390 tons/mi <sup>2</sup> /yr <sup>16</sup>                                       | Silviculture, Harvesting, Restoration, Residue Management, Logging Road Construction/Maintenance   |
| Ten Mile River                        | Temperature      | Not Started | 2019  |                                    | -  | Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Nonpoint Source   |
| Trinity Lake                          | Mercury          | Not Started | 2019  |                                    | -  | Source Unknown   |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody   | TMDL     | Status   | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                   | Potential Sources  |
|---|----------|----------|---|------------------------------------|-------------------------------|--|
| Trinity River Upper area reference subwatersheds                            | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 1406 tons/mi <sup>2</sup> /yr | Channel Erosion, Dam Construction, Drainage/Filling Of Wetlands, Erosion/Siltation, Flow Regulation/Modification, Habitat Modification, Harvesting, Restoration, Residue Management, Hydromodification, Logging Road Construction/Maintenance, Mine Tailings, Natural Sources, Nonpoint Source, Placer Mining, Removal of Riparian Vegetation, Resource Extraction, Silvicultural Point Sources, Silviculture, Streambank Modification/Destabilization, Surface Mining, Upstream Impoundment |
| Trinity River Westside Tributaries subwatershed                             | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 526 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Upper Trinity subwatershed                                    | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 3449 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed  |
| Trinity River East Fork Tributaries subwatershed                            | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 323 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River East Side Tributaries subwatershed                            | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 301 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Weaver and Rush Creeks subwatershed                           | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 844 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Deadwood Creek, Hoadley Gulch and Poker Bar Area subwatershed | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 341 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Lewiston Lake Area subwatershed                               | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 244 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Grass Valley Creek subwatershed                               | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 219 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Indian Creek subwatershed                                     | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 405 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Reading and Browns Creek subwatershed                         | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 329 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed  |
| Trinity River Lower Middle area subwatershed                                | Sediment | Complete | 2001  | 2004 <sup>1</sup>                  | 1592 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed  |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody  | TMDL        | Status      | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target                   | Potential Sources   |
|--|-------------|-------------|---|------------------------------------|-------------------------------|---|
| Trinity River Canyon Creek subwatershed                            | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 1628 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Upper tributaries of lower middle area subwatershed  | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 335 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Middle tributaries of lower middle area subwatershed | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 263 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Lower tributaries of lower middle area subwatershed  | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 276 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Lower area reference subwatershed                    | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 2638 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Mill Creek and Tish Tang subwatershed                | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 1049 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Willow Creek subwatershed                            | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 468 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Campbell Creek and Supply Creek subwatershed         | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 9806 tons/mi <sup>2</sup> /yr | Same as Trinity River Upper area reference subwatershed   |
| Trinity River Lower mainstem area and Coon Creek subwatershed      | Sediment    | Complete    | 2001  | 2004 <sup>1</sup>                  | 315 tons/mi <sup>2</sup> /yr  | Same as Trinity River Upper area reference subwatershed   |
| Trinity River (South Fork)   | Sediment    | Complete    | 1998  | 2004 <sup>1</sup>                  | 737 tons/mi <sup>2</sup> /yr  | Range Grazing-Riparian, Silviculture, Nonpoint Source   |
| Trinity River (South Fork)   | Temperature | Not Started | 2019  | -                                  | -                             | Range Grazing-Riparian, Water Diversions, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization |
| Trinity River, East Fork   | Mercury     | Not Started | 2019  | -                                  | -                             | Source Unknown  |
| Tule Lake & Lower Klamath National Wildlife Refuge                 | pH          | Not Started | 2006  | -                                  | -                             | Internal Nutrient Cycling (primarily lakes), Nonpoint Source  |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| Waterbody       | TMDL     | Status   | Date TMDL Completed or Scheduled for Completion | Date Implementation Plan Completed | TMDL/Target  | Potential Sources   |
|-----------------|----------|----------|---|------------------------------------|--|---|
| Van Duzen River | Sediment | Complete | 1999  | 2004 <sup>1</sup>                  | 1358 yds <sup>3</sup> /mi <sup>2</sup> /yr <sup>17</sup> | Range Grazing-Riparian, Range Grazing-Upland, Silviculture, Harvesting, Restoration, Residue Management, Logging, Road Construction/Maintenance, Silvicultural Point Sources, Construction/Land Development, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, Channel Erosion, Erosion/Siltation, Natural Sources |

#### Notes:

- 1 In 2004, the Regional Water Board adopted Resolution R1-2004-0087 as a regional sediment TMDL implementation plan, however, the EPA does not consider the Resolution to equal final completion of the TMDL process. Final completion will occur when watershed-specific implementation plans are amended into the Basin Plan.
- 2 Equal to loading capacity.
- 3 Except for the Upper Black Butte subarea and the North Fork Middle Fork subarea.
- 4 Measured using solar pathfinders or fish eye lenses; individual stream segments are categorized by vegetation type and stream width.
- 5 Based on this TMDL value, average shade allocation for the watershed was calculated as 49 – 50% shade for all stream segments.
- 6 The TMDLs for the Laguna de Santa Rosa will be redeveloped by the RWB
- 7 TMDL implementation plans for the Laguna de Santa Rosa and Stemple Creek/Estero de San Antonio were completed but not adopted into the Basin Plan
- 8 The Laguna was removed from the 303(d) list for low dissolved oxygen in 1998, but subsequently relisted.
- 9 Given as a graph that shows adjusted potential shade aggregated into a cumulative frequency curves for a set of stream reaches.
- 10 Effective shade values are the amounts of effective shade calculated to meet water quality standards for temperature.
- 11 Temperature TMDLs have been developed for the area tributary to and including the Navarro River above Philo and the area tributary to and including the Navarro River below Philo
- 12 Target for turbidity  $\leq$  20% above background; target mean percent fines < 0.85 mm is 14% as wet volume.
- 13 Target percent fines < 0.85 mm is < 14%; Target percent fines < 6.5 mm is < 30%.
- 14 Given as potential solar radiation transmittance, reach average potential shade, and increases in stream temperatures from tailwater flows and other discharges
- 15 Target ranges for temperature and pH must be achieved for the target for total ammonia to apply:  
Targets for temp are seasonal and apply to Stemple Creek and Estero de San Antonio. Targets (2004) are 20 ° C May - Nov and 13.8° C Dec - Apr.  
Target range for pH applies during late spring and early summer and is 7.0 to 8.5.
- 16 Target percent fines < 0.85 mm is < 14%.
- 17 Target percent fines 14% as wet volume.

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### Appendix E: Summary of Current Status of TMDL Development and Implementation in the North Coast Region.

| <b>Waterbody</b> | <b>TMDL</b> | <b>Status</b> | <b>Date TMDL Completed or Scheduled for Completion</b> | <b>Date Implementation Plan TMDL/Target Completed</b> | <b>Potential Sources</b> |
|------------------|-------------|---------------|--|---|--------------------------|
|------------------|-------------|---------------|--|---|--------------------------|

Table developed with using information compiled from:

NCRWQCB. 2006. TMDL Project List [web page available at: <http://www.waterboards.ca.gov/northcoast/programs/tmdl/Status.html>]

NCRWQCB. 2006. Proposed CWA Section 303(d) List of Water Quality Limited Segments.

NCRWQCB. 2003. 2002 CWA Section 303(d) List of Water Quality Limited Segment



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**APPENDIX F: CALIFORNIA DEPARTMENT OF FISH AND GAME COHO RECOVERY  
UNITS IN THE NORTH COAST REGION**



**Appendix F: California Department of Fish and Game Coho Recovery Units in the North Coast Region**

**Recovery Units in the Southern Oregon/Northern California Coast Coho ESU**

Rogue River and Winchuck River Hydrologic Units

Illinois River HSA

Winchuck River HSA

Smith River Hydrologic Unit

Mill Creek HSA

Wilson Creek HSA

Klamath River Hydrologic Unit

Klamath Glen HSA

Orleans HSA

Ukonom HSA

Happy Camp HSA

Seiad Valley HSA

Beaver Creek HSA

Hornbrook HSA

Iron Gate HSA

Copco Lake HSA

Salmon River Hydrologic Area

Lower Salmon HSA

Wooley Creek HSA

Sawyers Bar HSA

Cecilville HSA

Shasta Valley Hydrologic Area

Scott River Hydrologic Area

Trinity River Hydrologic Unit

Douglas City HSA

Grouse Creek HSA

Hyampom HSA

Hayfork HSA

Mad River Hydrologic Unit

Redwood Creek Hydrologic Unit

Trinidad Hydrologic Unit

Big Lagoon HSA

Little River HSA

Eureka Plain Hydrologic Unit

Eel River Hydrologic Unit

Ferndale HSA

Scotia HSA

South Fork Eel River HA

Weott HSA

Benbow HSA

Laytonville HSA

Outlet Creek HSA

Cape Mendocino Hydrologic Unit

Northern Subbasin of Mattole HSA

Eastern Subbasin of Mattole HSA

Southern Subbasin of Mattole HSA

Western Subbasin of Mattole HSA

Estuary Subbasin of Mattole HSA

**Appendix F: California Department of Fish and Game Coho Recovery Units in the North Coast Region**

**Recovery Units in the Central California Coast Coho ESU**

Mendocino Coast Hydrologic Unit

Albion River HSA

Big River HSA

Garcia River HSA

Navarro River HSA

Noyo River HSA

Ten Mile River HSA

Gualala River HSA

Russian River Hydrologic Unit

Russian River Mainstem

Guerneville HSA

Austin Creek HSA

Warm Springs HSA

Mark West Creek HSA

Santa Rosa Creek HSA

Forsythe Creek HSA

Geyserville HSA

Bodega and Marin Coastal Hydrologic Units

Salmon Creek HSA

Walker Creek HSA

Lagunitas Creek HSA

Bolinas HSA

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**APPENDIX G: GROUNDWATER BASINS**



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APPENDIX G: Groundwater Basins in the North Coast Region

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Go to the above link to get an interactive table.

| <b>Del Norte</b>                                   |          |        | <a href="#">Top of Page</a> |
|--|----------|--------|-----------------------------|
| Groundwater Basin                                  | Subbasin | Number | Updated                     |
| <a href="#">Smith River Plain</a> (167K)           |          | 1-1    | 2/27/04                     |
| <a href="#">Lower Klamath River Valley*</a> (139K) |          | 1-14   | 2/27/04                     |
| <a href="#">Prairie Creek Area*</a> (121K)         |          | 1-25   | 2/27/04                     |

| <b>Glenn</b>                                |                                    |         | <a href="#">Top of Page</a> |
|---|------------------------------------|---------|-----------------------------|
| Groundwater Basin                           | Subbasin                           | Number  | Updated                     |
| Sacramento Valley                           | <a href="#">Corning*</a> (172K)    | 5-21.51 | 2/27/04                     |
| Sacramento Valley                           | <a href="#">Colusa*</a> (182K)     | 5-21.52 | 2/27/04                     |
| Sacramento Valley                           | <a href="#">West Butte*</a> (155K) | 5-21.58 | 2/27/04                     |
| <a href="#">Chrome Town Area</a> (96K)      |                                    | 5-61    | 2/27/04                     |
| Elk Creek Area                              |                                    | 5-62    | 2/27/04                     |
| <a href="#">Stonyford Town Area*</a> (114K) |                                    | 5-63    | 2/27/04                     |
| <a href="#">Stony Gorge Reservoir</a> (97K) |                                    | 5-88    | 2/27/04                     |
| <a href="#">Squaw Flat</a> (95K)            |                                    | 5-89    | 2/27/04                     |
| <a href="#">Funks Creek*</a> (96K)          |                                    | 5-90    | 2/27/04                     |

| <b>Humboldt</b>                                    |   |        | <a href="#">Top of Page</a> |
|--|---|--------|-----------------------------|
| Groundwater Basin                                  | Subbasin  | Number | Updated                     |
| <a href="#">Hoopa Valley</a> (138K)                |   | 1-7    | 2/27/04                     |
| Mad River Valley                                   | <a href="#">Mad River Lowland</a> (167K)        | 1-8.01 | 2/27/04                     |
| Mad River Valley                                   | <a href="#">Dows Prairie School Area</a> (158K) | 1-8.02 | 2/27/04                     |
| <a href="#">Eureka Plain</a> (161K)                |   | 1-9    | 2/27/04                     |
| <a href="#">Eel River Valley</a> (163K)            |   | 1-10   | 2/27/04                     |
| <a href="#">Lower Klamath River Valley*</a> (139K) |   | 1-14   | 2/27/04                     |
| <a href="#">Prairie Creek Area*</a> (121K)         |   | 1-25   | 2/27/04                     |
| <a href="#">Redwood Creek Area</a> (147K)          |   | 1-26   | 2/27/04                     |
| <a href="#">Big Lagoon Area</a> (142K)             |   | 1-27   | 2/27/04                     |
| <a href="#">Mattole River Valley</a> (124K)        |   | 1-28   | 2/27/04                     |
| <a href="#">Honeydew Town Area</a> (122K)          |   | 1-29   | 2/27/04                     |
| <a href="#">Pepperwood Town Area</a> (124K)        |   | 1-30   | 2/27/04                     |
| <a href="#">Weott Town Area</a> (131K)             |   | 1-31   | 2/27/04                     |
| <a href="#">Garberville Town Area</a> (132K)       |   | 1-32   | 2/27/04                     |
| <a href="#">Larabee Valley</a> (121K)              |   | 1-33   | 2/27/04                     |
| <a href="#">Dinsmores Town Area*</a> (124K)        |   | 1-34   | 2/27/04                     |

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| Lake  |          |        | <a href="#">Top of Page</a> |
|---|----------|--------|-----------------------------|
| Groundwater Basin                                 | Subbasin | Number | Updated                     |
| <a href="#">Gravelly Valley</a> (122K)            |          | 1-48   | 2/27/04                     |
| <a href="#">Upper Lake Valley</a> (161K)          |          | 5-13   | 2/27/04                     |
| <a href="#">Scotts Valley</a> (163K)              |          | 5-14   | 2/27/04                     |
| <a href="#">Big Valley</a> (165K)                 |          | 5-15   | 2/27/04                     |
| <a href="#">High Valley</a> (157K)                |          | 5-16   | 2/27/04                     |
| <a href="#">Burns Valley</a> (143K)               |          | 5-17   | 2/27/04                     |
| <a href="#">Coyote Valley</a> (159K)              |          | 5-18   | 2/27/04                     |
| <a href="#">Collayomi Valley</a> (158K)           |          | 5-19   | 2/27/04                     |
| <a href="#">Lower Lake Valley</a> (137K)          |          | 5-30   | 2/27/04                     |
| <a href="#">Long Valley</a> (106K)                |          | 5-31   | 2/27/04                     |
| <a href="#">Little Indian Valley</a> (122K)       |          | 5-65   | 2/27/04                     |
| <a href="#">Clear Lake Cache Formation</a> (117K) |          | 5-66   | 2/27/04                     |
| <a href="#">North Fork Cache Creek</a> (95K)      |          | 5-93   | 2/27/04                     |
| <a href="#">Middle Creek</a> (101K)               |          | 5-94   | 2/27/04                     |

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| <b>Mendocino</b>   |          |        | <a href="#">Top of Page</a> |
|--|----------|--------|-----------------------------|
| Groundwater Basin  | Subbasin | Number | Updated                     |
| <a href="#">Covelo Round Valley</a> (157K)                         |          | 1-11   | 2/27/04                     |
| <a href="#">Laytonville Valley</a> (156K)                          |          | 1-12   | 2/27/04                     |
| <a href="#">Little Lake Valley</a> (144K)                          |          | 1-13   | 2/27/04                     |
| <a href="#">Anderson Valley</a> (155K)                             |          | 1-19   | 2/27/04                     |
| <a href="#">Garcia River Valley</a> (138K)                         |          | 1-20   | 2/27/04                     |
| <a href="#">Fort Bragg Terrace Area</a> (162K)                     |          | 1-21   | 2/27/04                     |
| <a href="#">Cottoneva Creek Valley</a> (133K)                      |          | 1-37   | 2/27/04                     |
| <a href="#">Lower Laytonville Valley</a> (134K)                    |          | 1-38   | 2/27/04                     |
| <a href="#">Branscomb Town Area</a> (133K)                         |          | 1-39   | 2/27/04                     |
| <a href="#">Ten Mile River Valley</a> (133K)                       |          | 1-40   | 2/27/04                     |
| <a href="#">Little Valley</a> (131K)                               |          | 1-41   | 2/27/04                     |
| <a href="#">Sherwood Valley</a> (131K)                             |          | 1-42   | 2/27/04                     |
| <a href="#">Williams Valley</a> (135K)                             |          | 1-43   | 2/27/04                     |
| <a href="#">Eden Valley</a> (131K)                                 |          | 1-44   | 2/27/04                     |
| <a href="#">Big River Valley</a> (134K)                            |          | 1-45   | 2/27/04                     |
| <a href="#">Navarro River Valley</a> (133K)                        |          | 1-46   | 2/27/04                     |
| <a href="#">Annapolis Ohlson Ranch Formation Highlands*</a> (158K) |          | 1-49   | 2/27/04                     |
| <a href="#">Potter Valley</a> (154K)                               |          | 1-51   | 2/27/04                     |
| <a href="#">Ukiah Valley</a> (169K)                                |          | 1-52   | 2/27/04                     |
| <a href="#">Sanel Valley</a> (157K)                                |          | 1-53   | 2/27/04                     |
| <a href="#">McDowell Valley</a> (137K)                             |          | 1-56   | 2/27/04                     |
| <a href="#">Fort Ross Terrace Deposits*</a> (162K)                 |          | 1-61   | 2/27/04                     |

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| <b>Modoc</b>                                |  |        | <a href="#">Top of Page</a> |
|---|--|--------|-----------------------------|
| Groundwater Basin                           | Subbasin                                       | Number | Updated                     |
| <a href="#">Fairchild Swamp Area</a> (112K) |  | 1-22   | 2/27/04                     |
| Goose Lake Valley                           | <a href="#">Lower Goose Lake Valley</a> (151K) | 5-1.01 | 2/27/04                     |
| Goose Lake Valley                           | <a href="#">Fandango Valley</a> (142K)         | 5-1.02 | 2/27/04                     |
| Alturas Area                                | <a href="#">South Fork Pitt River*</a> (145K)  | 5-2.01 | 2/27/04                     |
| Alturas Area                                | <a href="#">Warm Springs Valley</a> (144K)     | 5-2.02 | 2/27/04                     |
| <a href="#">Jess Valley</a> (112K)          |  | 5-3    | 2/27/04                     |
| <a href="#">Big Valley*</a> (158K)          |  | 5-4    | 2/27/04                     |
| <a href="#">Round Valley</a> (124K)         |  | 5-36   | 2/27/04                     |
| <a href="#">Hot Springs Valley*</a> (105K)  |  | 5-40   | 2/27/04                     |
| <a href="#">Egg Lake Valley</a> (109K)      |  | 5-41   | 2/27/04                     |
| <a href="#">Rock Prairie Valley</a> (94K)   |  | 5-43   | 2/27/04                     |
| <a href="#">Long Valley*</a> (102K)         |  | 5-44   | 2/27/04                     |
| <a href="#">Joseph Creek</a> (96K)          |  | 5-86   | 2/27/04                     |
| <a href="#">Surprise Valley*</a> (144K)     |  | 6-1    | 2/27/04                     |
| <a href="#">Cow Head Lake Valley</a> (104K) |  | 6-91   | 2/27/04                     |

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| <b>Shasta</b>                                  |                                   |        | <u>Top of Page</u> |
|--|-----------------------------------|--------|--------------------|
| Groundwater Basin                              | Subbasin                          | Number | Updated            |
| <a href="#">Fall River Valley*</a> (169K)      |                                   | 5-5    | 2/27/04            |
| Redding  | <a href="#">Anderson</a> (165K)   | 5-6.03 | 2/27/04            |
| Redding  | <a href="#">Enterprise</a> (162K) | 5-6.04 | 2/27/04            |
| Redding  | <a href="#">Millville</a> (165K)  | 5-6.05 | 2/27/04            |
| Pondosa Town Area*                             |                                   | 5-38   | 2/27/04            |
| <a href="#">Hot Springs Valley*</a> (105K)     |                                   | 5-40   | 2/27/04            |
| <a href="#">Cayton Valley</a> (105K)           |                                   | 5-45   | 2/27/04            |
| <a href="#">Lake Britton Area</a> (96K)        |                                   | 5-46   | 2/27/04            |
| <a href="#">Goose Valley</a> (95K)             |                                   | 5-47   | 2/27/04            |
| <a href="#">Burney Creek Valley</a> (113K)     |                                   | 5-48   | 2/27/04            |
| <a href="#">Dry Burney Creek Valley</a> (93K)  |                                   | 5-49   | 2/27/04            |
| <a href="#">North Fork Battle Creek</a> (127K) |                                   | 5-50   | 2/27/04            |

| <b>Siskiyou</b>                             |                                      |        | <u>Top of Page</u> |
|---|--------------------------------------|--------|--------------------|
| Groundwater Basin                           | Subbasin                             | Number | Updated            |
| Klamath River Valley                        | <a href="#">Tule Lake</a> (155K)     | 1-2.01 | 2/27/04            |
| Klamath River Valley                        | <a href="#">Lower Klamath</a> (154K) | 1-2.02 | 2/27/04            |
| <a href="#">Butte Valley</a> (169K)         |                                      | 1-3    | 2/27/04            |
| <a href="#">Shasta Valley</a> (164K)        |                                      | 1-4    | 2/27/04            |
| <a href="#">Scott River Valley</a> (161K)   |                                      | 1-5    | 2/27/04            |
| <a href="#">Happy Camp Town Area</a> (117K) |                                      | 1-15   | 2/27/04            |
| <a href="#">Seiad Valley</a> (141K)         |                                      | 1-16   | 2/27/04            |
| <a href="#">Bray Town Area</a> (122K)       |                                      | 1-17   | 2/27/04            |
| <a href="#">Red Rock Valley</a> (123K)      |                                      | 1-18   | 2/27/04            |
| <a href="#">McCloud Area</a> (112K)         |                                      | 5-35   | 2/27/04            |
| <a href="#">Toad Well Area</a> (93K)        |                                      | 5-37   | 2/27/04            |
| Pondosa Town Area*                          |                                      | 5-38   | 2/27/04            |

North Coast Integrated Regional Water Management Plan  
Phase I

APPENDIX G: Groundwater Basins in the North Coast Region

These tables are a Word document from:  
[http://www.groundwater.water.ca.gov/bulletin118/basin\\_desc/basins](http://www.groundwater.water.ca.gov/bulletin118/basin_desc/basins)  
 Go to the above link to get an interactive table.

| <b>Sonoma</b>  |   |         | <u>Top of Page</u> |
|--|---|---------|--------------------|
| Groundwater Basin  | Subbasin                                    | Number  | Updated            |
| <a href="#">Annapolis Ohlson Ranch Formation Highlands*</a> (158K) |   | 1-49    | 2/27/04            |
| <a href="#">Knights Valley</a> (136K)                              |   | 1-50    | 2/27/04            |
| Alexander Valley   | <a href="#">Alexander Area</a> (158K)       | 1-54.01 | 2/27/04            |
| Alexander Valley   | <a href="#">Cloverdale Area</a> (158K)      | 1-54.02 | 2/27/04            |
| Santa Rosa Valley  | <a href="#">Santa Rosa Plain</a> (160K)     | 1-55.01 | 2/27/04            |
| Santa Rosa Valley  | <a href="#">Healdsburg Area</a> (156K)      | 1-55.02 | 2/27/04            |
| Santa Rosa Valley  | <a href="#">Rincon Valley</a> (155K)        | 1-55.03 | 2/27/04            |
| <a href="#">Bodega Bay Area</a> (158K)                             |   | 1-57    | 2/27/04            |
| Wilson Grove Formation Highlands*                                  |   | 1-59    | 2/27/04            |
| <a href="#">Lower Russian River Valley</a> (153K)                  |   | 1-60    | 2/27/04            |
| <a href="#">Fort Ross Terrace Deposits*</a> (162K)                 |   | 1-61    | 2/27/04            |
| <a href="#">Petaluma Valley*</a> (17K)                             |   | 2-1     | 2/27/04            |
| Napa-Sonoma Valley   | <a href="#">Sonoma Valley</a> (129K)        | 2-2.02  | 2/27/04            |
| Napa-Sonoma Valley   | <a href="#">Napa-Sonoma Lowlands*</a> (12K) | 2-2.03  | 2/27/04            |
| <a href="#">Kenwood Valley</a> (12K)                               |   | 2-19    | 2/27/04            |

| <b>Trinity</b>                              |          |        | <u>Top of Page</u> |
|---|----------|--------|--------------------|
| Groundwater Basin                           | Subbasin | Number | Updated            |
| <a href="#">Hayfork Valley</a> 136(K)       |          | 1-6    | 2/27/04            |
| <a href="#">Dinsmores Town Area*</a> (124K) |          | 1-34   | 2/27/04            |
| <a href="#">Hyampom Valley</a> (140K)       |          | 1-35   | 2/27/04            |
| <a href="#">Hettenshaw Valley</a> (124K)    |          | 1-36   | 2/27/04            |
| <a href="#">Wilson Point Area</a> (123K)    |          | 1-62   | 2/27/04            |

**NORTH COAST INTEGRATED REGIONAL  
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PHASE 1**

**July 2007**

**APPENDIX H: MATRIX OF WATER MANAGEMENT PLANNING EFFORTS**



**North Coast Integrated Regional Water Management Plan, Phase 1  
Appendix H**

**Matrix of Existing Water Management Planning Efforts**

|  | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            |                                  | Clean water and water recycling (as defined by the Water Bond Coalition) |              |              |               |                                   |             |
|--|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|----------------------------------|--|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment | Groundwater Management   | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Federal Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| NOAA Fisheries Salmon Recovery Plans   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Southern Oregon/Northern California Coast & North-Central California Coast TRTs  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  | X  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| <b>Environmental Protection Agency</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| EPA Underground Injection Control Program  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            | X                                | X  |              |              | X             |                                   |             |
| <b>State Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| State Water Resources Control Board  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Watershed Management Initiative (WMI)  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  |  |                       |                                   |                      | X                  | X                | X                     | X                  | X                     | X                | X                            | X                        | X                        |            |                                  |  |              |              |               |                                   |             |
| Water Quality Control Plan for the Ocean Waters of California  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              | X             |                                   |             |
| Nonpoint Source Program Strategy and Implementation Plan   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  |  |                       |                                   |                      | X                  | X                | X                     | X                  |                       |                  | X                            |                          |                          | X          | X                                |  |              |              | X             |                                   |             |
| Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  | X  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              | X             |                                   |             |
| Water Quality Control Policy for the Enclosed Bays and Estuaries of California   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  | X  | X                     | X                                 |                      | X                  | X                | X                     | X                  |                       |                  |                              | X                        |                          | X          |                                  |  |              |              | X             | X                                 |             |
| Rangeland Water Quality Management Plan  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
|  |  |                       |                                   |                      | X                  |                  | X                     | X                  |                       | X                |                              |                          |                          |            |                                  |  |              |              | X             |                                   |             |

**North Coast Integrated Regional Water Management Plan, Phase 1  
Appendix H**

**Matrix of Existing Water Management Planning Efforts**

|  | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            |                                  |                        | Clean water and water recycling (as defined by the Water Bond Coalition) |              |               |                                   |             |
|--|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|----------------------------------|------------------------|--|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment | Groundwater Management | Water Supply   | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>State Water Resources Control Board</b>                                 |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| California Pesticide Management Plan for Water Quality                     |  |                       |                                   |                      |                    |                  |                       | X                  | X                     | X                |                              |                          |                          | X          | X                                |                        |  |              | X             |                                   |             |
| <b>North Coast Regional Water Quality Control Board</b>                    |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| Water Quality Control Plan for the North Coast Region                      | X  | X                     | X                                 |                      |                    | X                | X                     | X                  | X                     | X                | X                            | X                        | X                        | X          | X                                |                        |  |              | X             | X                                 |             |
| TMDLs  |  |                       |                                   |                      |                    | X                | X                     | X                  | X                     | X                | X                            | X                        | X                        | X          | X                                | X                      |  |              | X             |                                   |             |
| <b>Department of Water Resources</b>                                       |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| California Water Plan  | X  | X                     | X                                 | X                    | X                  | X                | X                     | X                  | X                     | X                | X                            | X                        | X                        | X          | X                                | X                      | X  | X            | X             | X                                 | X           |
| Fish Passage Improvement Program   |  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| <b>California Coastal Commission</b>                                       |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| Local Coastal Programs   | X  | X                     | X                                 |                      | X                  | X                | X                     | X                  | X                     | X                | X                            | X                        | X                        |            | X                                | X                      | X  |              | X             |                                   | X           |
| California's Critical Coastal Areas Program                                | X  |                       |                                   |                      |                    | X                | X                     | X                  | X                     | X                | X                            | X                        |                          |            |                                  |                        |  |              | X             |                                   |             |
| Coastal Access Action Plan   |  |                       |                                   |                      |                    |                  |                       |                    |                       | X                |                              | X                        |                          |            |                                  |                        |  |              |               |                                   |             |
| California's Ocean and Coastal Resources Coastal Impact Assistance Program | X  |                       |                                   |                      | X                  | X                | X                     | X                  |                       | X                |                              |                          |                          |            |                                  |                        |  |              | X             |                                   |             |
| <b>California Department of Fish and Game</b>                              |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |                        |  |              |               |                                   |             |
| Recovery Strategy for California Coho Salmon                               |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X                        | X          |                                  |                        |  |              | X             |                                   |             |
| Steelhead Restoration and Management Plan for California                   |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X                        | X          |                                  |                        |  |              | X             |                                   |             |

**North Coast Integrated Regional Water Management Plan, Phase 1  
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**Matrix of Existing Water Management Planning Efforts**

|  | Environmental Restoration and Fisheries Protection |                       |                     | Watershed Protection and Planning |                    |                  |                       |                    |                       |                  | Water Supply Reliability     |                          |               |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|--|--|-----------------------|---------------------|-----------------------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration | Water Use Efficiency              | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>California Resources Agency</b>                           |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Protecting Our Ocean California's Action Strategy            |  | X                     | X                   |                                   |                    | X                |                       | X                  |                       | X                |                              | X                        |               |            |  |                        |              | X            |               | X                                 |             |
| California Coastal Salmon and Watersheds Program             | X  | X                     | X                   |                                   |                    |                  | X                     |                    |                       | X                | X                            | X                        |               |            |  |                        |              |              |               |                                   |             |
| Sediment Master Plan   | X  |                       |                     |                                   |                    |                  | X                     | X                  |                       | X                | X                            | X                        |               |            |  |                        |              |              |               |                                   |             |
| <b>Regional Plans</b>  |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| <b>Forest Plans</b>  |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Northwest Forest Plan  |  |                       | X                   |                                   |                    |                  | X                     |                    |                       |                  |                              |                          |               | X          |  |                        |              |              |               |                                   |             |
| Klamath National Forest                                      |  | X                     |                     |                                   |                    |                  | X                     |                    |                       |                  |                              | X                        | X             |            |  |                        |              |              |               |                                   |             |
| Mendocino National Forest                                    |  |                       |                     |                                   |                    |                  | X                     | X                  |                       |                  |                              | X                        |               |            |  |                        |              |              |               |                                   |             |
| Shasta-Trinity National Forest                               |  | X                     |                     |                                   |                    |                  | X                     |                    |                       |                  |                              | X                        |               |            |  |                        |              |              |               |                                   |             |
| Six Rivers National Forest                                   |  | X                     | X                   |                                   |                    |                  | X                     | X                  |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Pacific Northwest Aquatic Monitoring Partnership             |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               | X          |  |                        |              |              |               |                                   |             |
| Redwood National and State Park General Management Plan 1999 | X  |                       | X                   |                                   |                    |                  |                       |                    |                       |                  |                              | X                        |               |            |  |                        |              |              | X             |                                   |             |
| <b>Resource Conservation District Plans</b>                  |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Gold Ridge RCD Long Range Plan 1999 – 2005                   |  | X                     | X                   |                                   |                    |                  |                       |                    |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Humboldt County RCD Long Range Plan 1999                     |  |                       |                     |                                   |                    |                  |                       | X                  |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |

**North Coast Integrated Regional Water Management Plan, Phase 1  
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**Matrix of Existing Water Management Planning Efforts**

|   | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  | Water Supply Reliability     |                          |               |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|---|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Resource Conservation District Plans (continued)</b>                   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Mendocino County RCD Long Range Plan 2001 - 2005                          | X  | X                     |                                   |                      |                    |                  |                       | X                  |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Shasta Valley RCD Long Range Plan 2001 – 2005                             |  |                       | X                                 | X                    |                    |                  |                       |                    |                       |                  | X                            |                          |               |            |  |                        |              |              | X             |                                   |             |
| Siskiyou County RCD Long Range Plan 2001 – 2004                           |  |                       | X                                 |                      | X                  |                  |                       |                    |                       |                  | X                            |                          |               |            |  |                        |              |              | X             |                                   |             |
| Sotoyome RCD Long Range Plan 2000 – 2005                                  | X  | X                     |                                   |                      |                    |                  | X                     |                    |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Trinity County RCD Long Range Plan  |  |                       | X                                 |                      |                    |                  |                       | X                  |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| <b>Natural Resource Conservation Service</b>                              |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Work Plan for Adaptive Management Klamath River Basin Oregon & California | X  |                       |                                   | X                    | X                  | X                |                       | X                  |                       |                  |                              |                          |               |            |  | X                      |              |              |               |                                   |             |
| <b>Other Regional Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Five Counties Salmonid Conservation Program                               | X  | X                     |                                   |                      |                    |                  | X                     | X                  |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Klamath Project 2005 Operations Plan                                      |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  | X                      |              |              |               |                                   |             |
| <b>Tribal/Reservation Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Hoopa Valley Indian Reservation Water Quality Control Plan 2001           |  |                       |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X             | X          | X  | X                      |              |              | X             | X                                 |             |

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**Matrix of Existing Water Management Planning Efforts**

|   | Environmental Restoration and Fisheries Protection |  | Watershed Protection and Planning |                    |                  |                       |                    |                       |                  |                              | Water Supply Reliability |               |            |                                  | Clean water and water recycling (as defined by the Water Bond Coalition) |              |              |               |                                   |             |
|---|--|--|-----------------------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|------------|----------------------------------|--|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement<br>Habitat Restoration | Water Use Efficiency              | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring | Drinking Water - Water Treatment | Groundwater Management   | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Local Plans</b>  |  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| City of Arcata Urban Water Management Plan 2000                   | X  |  | X                                 | X                  |                  |                       |                    |                       |                  |                              |                          |               |            | X                                | X  |              |              |               |                                   |             |
| City of Crescent City Urban Water Management Plan                 |  |  | X                                 | X                  |                  |                       |                    |                       |                  |                              |                          |               |            | X                                | X  |              |              |               | X                                 | X           |
| City of Eureka Urban Water Management Plan                        |  |  | X                                 | X                  |                  |                       |                    |                       |                  |                              |                          |               |            | X                                | X  |              |              |               | X                                 | X           |
| City of Fortuna Urban Water Management Plan                       |  |  |                                   | X                  |                  |                       |                    |                       |                  |                              |                          |               |            | X                                | X  |              |              |               |                                   |             |
| Del Norte County General Plan 2003                                |  |  | X                                 |                    | X                | X                     |                    |                       |                  |                              |                          |               |            |                                  | X  |              |              |               | X                                 |             |
| Del Norte County Local Coastal Plan                               | X  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          | X             |            |                                  |  |              |              |               |                                   |             |
| Gerber Irrigation District Plan                                   |  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  | X  |              |              |               |                                   |             |
| Hayfork Community Plan 1996, Trinity County Planning Dept         |  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          | X             |            |                                  | X  |              |              |               | X                                 |             |
| Horsefly Irrigation District Plan                                 |  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  | X  |              |              |               |                                   |             |
| Humboldt County General Plan 1984                                 | X  |  | X                                 |                    |                  |                       |                    | X                     |                  |                              |                          |               |            | X                                |  |              |              | X             |                                   |             |
| Humboldt Bay Watershed Action Plan and Enhancement Plan           | X  | X  |                                   |                    |                  |                       |                    |                       | X                |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| Humboldt Bay Municipal Water District Urban Water Management Plan |  |  |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            | X                                | X  |              |              |               |                                   |             |

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**Matrix of Existing Water Management Planning Efforts**

|   | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|---|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| Local Plans (continued)   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Humboldt Community Services District 2000 Urban Water Management Plan Update          |  |                       |                                   | X                    |                    |                  |                       |                    |                       |                  |                              |                          |                          |            | X  | X                      |              |              |               | X                                 |             |
| Hydesville County Water District Drinking Water Source Assessment and Protection Plan |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            | X  | X                      |              |              | X             |                                   |             |
| Klamath Irrigation District Plan  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  | X                      |              |              |               |                                   |             |
| McKinleyville Community Services District Urban Water Management Plan                 |  |                       |                                   | X                    | X                  |                  |                       |                    |                       |                  |                              |                          |                          |            | X  | X                      |              |              |               | X                                 | X           |
| Mendocino County General Plan 1981  | X  | X                     | X                                 | X                    | X                  |                  | X                     | X                  | X                     |                  |                              | X                        | X                        | X          | X  | X                      | X            |              | X             | X                                 | X           |
| Modoc County General Plan 1988  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            | X  | X                      | X            |              | X             |                                   |             |
| Orick Community Plan  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               | X                                 |             |
| Santa Rosa 2020 General Plan  | X  | X                     | X                                 | X                    |                    | X                |                       | X                  |                       |                  | X                            | X                        | X                        | X          | X  | X                      | X            |              | X             | X                                 |             |
| Tule Lake Irrigation District Plan  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  | X                      |              |              |               |                                   |             |
| Siskiyou County General Plan 1973   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  | X                      |              |              |               |                                   |             |
| Sonoma County Agricultural Preservation and Open Space District Acquisition Plan 2000 |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              | X                        |                          |            |  |                        |              |              |               |                                   |             |
| Sonoma County General Plan 1989   |  |                       |                                   | X                    | X                  |                  |                       |                    |                       | X                |                              |                          | X                        | X          | X  | X                      |              | X            | X             | X                                 | X           |
| Sonoma County Water Agency Action Plan  | X  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix H**

**Matrix of Existing Water Management Planning Efforts**

|   | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  | Water Supply Reliability     |                          | Clean water and water recycling (as defined by the Water Bond Coalition) |            |                                  |                        |              |              |               |                                   |             |
|---|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--|------------|----------------------------------|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access  | Monitoring | Drinking Water - Water Treatment | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Local Plans (continued)</b>  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |  |            |                                  |                        |              |              |               |                                   |             |
| Sonoma County Water Agency Urban Water Management Plan                  | X  |                       |                                   | X                    | X                  |                  |                       |                    |                       |                  |                              |                          |  |            | X                                | X                      |              |              |               | X                                 | X           |
| Town of Windsor Urban Water Management Plan                             |  |                       |                                   | X                    | X                  |                  |                       |                    |                       |                  |                              |                          |  |            | X                                | X                      |              |              |               | X                                 | X           |
| Trinity County General Plan   |  |                       |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X  |            |                                  | X                      |              |              | X             | X                                 |             |
| Ukiah Urban Water Management Plan                                       |  |                       |                                   | X                    | X                  |                  |                       |                    |                       |                  |                              |                          |  |            | X                                | X                      |              |              |               | X                                 | X           |
| Weaverville Community Plan 1990   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              | X                        |  |            |                                  | X                      |              |              | X             | X                                 |             |
| Weaverville Community Services District Master Plan                     |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |  |            |                                  | X                      |              | X            | X             |                                   |             |
| <b>Watershed Plans</b>  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |  |            |                                  |                        |              |              |               |                                   |             |
| Garcia River Watershed Assessment and Monitoring Plan 1998              |  |                       | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |  | X          |                                  |                        |              |              |               |                                   |             |
| Garcia River Watershed Enhancement Plan                                 |  | X                     |                                   |                      |                    |                  |                       | X                  |                       | X                |                              |                          |  |            |                                  |                        |              |              |               |                                   |             |
| Gualala River Watershed Management Plan, GRWC, completion expected 5/06 |  |                       |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |  |            |                                  |                        |              |              |               |                                   |             |
| Humboldt Bay Water Quality Improvement Program                          |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       | X                |                              |                          | X  |            |                                  |                        |              |              | X             |                                   |             |
| Lower Klamath River Sub-basin Watershed Restoration Plan (draft) 2003   | X  | X                     |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |  |            |                                  |                        |              |              |               |                                   |             |
| Mattole Watershed Plan 2004 (draft)                                     |  | X                     | X                                 |                      |                    |                  |                       | X                  | X                     |                  |                              |                          | X  |            |                                  |                        |              |              |               |                                   |             |
| Navarro Watershed Restoration Plan 1998                                 |  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |  |            |                                  |                        |              |              | X             |                                   |             |

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|   | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  | Water Supply Reliability     |                          |               | Clean water and water recycling (as defined by the Water Bond Coalition) |                                  |                        |              |              |               |                                   |             |
|---|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|--|----------------------------------|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring   | Drinking Water - Water Treatment | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Watershed Plans (continued)</b>  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              |               |                                   |             |
| Russian River Basin Plan 2002, CDFG   | X  | X                     |                                   |                      |                    |                  | X                     |                    |                       | X                |                              |                          |               | X  |                                  |                        |              |              |               |                                   |             |
| Scott Watershed Strategic Action Plan   | X  | X                     |                                   | X                    |                    |                  |                       | X                  |                       | X                |                              |                          |               |  |                                  | X                      |              |              | X             |                                   |             |
| Willow Creek Watershed Management Plan 2005 (draft)   | X  | X                     |                                   |                      |                    |                  | X                     |                    |                       | X                |                              |                          |               |  |                                  |                        |              |              |               |                                   |             |
| Alexander Valley Management Plan, Russian River Property Owners Watershed Assessment and Erosion Prevention Plan for the South Fork Big River |  |                       |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   |             |
| Bridge Upper Mill and Anderson Creeks Restoration Plan  |  |                       | X                                 |                      |                    |                  | X                     |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              |               |                                   |             |
| <b>River/Creek Restoration/Management Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              |               |                                   |             |
| City of Santa Rosa Kelly Farm Ranch Plan  | X  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   | X           |
| City of Santa Rosa Stone Farm Ranch Plan  | X  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   | X           |
| City of Sebastopol Laguna Park Master Plan  | X  |                       | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   |             |
| Conservation Vision and Blueprint for the Klamath River   |  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |               |  |                                  | X                      |              |              | X             |                                   |             |
| Eel River Restoration (Action) Plan, DFG  |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   |             |
| Erosion Prevention Planning Project for the Middle Van Duzen River 2003   |  |                       |                                   |                      |                    |                  | X                     |                    |                       |                  |                              |                          |               |  |                                  |                        |              |              | X             |                                   |             |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
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**Matrix of Existing Water Management Planning Efforts**

|  | Environmental Restoration and Fisheries Protection |                       |                     | Watershed Protection and Planning |                    |                  |                       |                    |                       |                  | Water Supply Reliability     |                          |               |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|--|--|-----------------------|---------------------|-----------------------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration | Water Use Efficiency              | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| River/Creek Restoration/Management Plans (continued)                         |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Humboldt Bay Coordinated Research and Monitoring Plan – Draft                |  |                       |                     |                                   |                    |                  |                       | X                  |                       |                  |                              |                          | X             |            |  |                        |              |              | X             |                                   |             |
| French Creek Fire and Fuel Management Plan                                   |  |                       |                     |                                   |                    |                  | X                     |                    |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| French Creek Monitoring Plan   |  |                       |                     |                                   |                    |                  | X                     |                    |                       | X                |                              |                          | X             |            |  |                        |              |              |               |                                   |             |
| French Creek Road Management Plan  |  |                       |                     |                                   |                    |                  | X                     | X                  |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Garcia River Watershed Enhancement Plan 1992, Mendocino County RCD           |  | X                     | X                   |                                   |                    |                  | X                     |                    |                       |                  |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Long Range Plan for Klamath River 1991                                       |  | X                     | X                   |                                   |                    |                  | X                     |                    |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Laguna de Santa Rosa Ecosystem Restoration and Management Plan (in progress) | X  |                       | X                   |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |  |                        |              |              | X             |                                   |             |
| Laguna de Santa Rosa Resource Atlas and Protection Plan                      | X  |                       |                     |                                   |                    |                  |                       | X                  |                       | X                |                              |                          |               |            |  |                        |              |              |               |                                   |             |
| Laguna de Santa Rosa Weed Management Plan (in progress)                      |  |                       | X                   |                                   |                    |                  |                       |                    |                       | X                |                              |                          |               |            |  |                        |              |              | X             |                                   |             |
| Ludwigia hexapetala Management Plan for the Laguna de Santa Rosa             |  |                       | X                   |                                   |                    |                  |                       |                    | X                     |                  |                              |                          |               |            |  |                        |              |              | X             |                                   |             |
| Lake Earl Management Plan, DFG   | X  | X                     | X                   |                                   |                    |                  | X                     |                    |                       | X                |                              | X                        |               |            |  |                        |              |              |               |                                   |             |
| Draft Mill Creek Community Management Plan 2004                              |  |                       | X                   |                                   |                    |                  |                       |                    |                       | X                |                              | X                        |               |            |  |                        |              |              | X             |                                   |             |

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**Matrix of Existing Water Management Planning Efforts**

|  | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            |                                  | Clean water and water recycling (as defined by the Water Bond Coalition) |              |              |               |                                   |             |
|--|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|----------------------------------|--|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment | Groundwater Management   | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| River/Creek Restoration/Management Plans (continued)                             |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Point Saint George Draft Management Plan   |  | X                     |                                   |                      |                    |                  | X                     |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Prince Memorial Greenway Pierson Reach Concept Plan                              |  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  | X                            | X                        |                          |            |                                  |  |              |              |               | X                                 |             |
| Draft Redwood Creek Water Quality Attainment Strategy for Sediment 1998, NCRWQCB |  |                       |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          | X          |                                  |  |              |              |               | X                                 |             |
| Upper Redwood Creek Watershed Updated Summary Report 2004, Redwood National Park |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          | X          |                                  |  |              |              |               | X                                 |             |
| Russian River Enhancement Plan, SCC  |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Russian River Plan of Action 2004, RRWC  |  | X                     | X                                 |                      |                    |                  | X                     | X                  |                       | X                |                              |                          | X                        |            |                                  |  |              |              |               | X                                 |             |
| Salmon River Restoration Plan 2002   |  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| South Fork Eel River (Resource Conservation Strategy) Plan Humboldt County RCD   |  |                       | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  | X  |              |              |               | X                                 |             |
| Salt River Enhancement Plan  |  |                       |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |                                  |  |              |              |               |                                   |             |
| Salt River Local Implementation Plan (USDA)                                      |  |                       |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |                                  | X  |              |              |               | X                                 |             |
| Santa Rosa Creek Master Plan   |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       | X                |                              | X                        |                          |            |                                  |  |              |              |               |                                   |             |
| Santa Rosa Headwaters Assessment and Planning Report                             |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |                                  | X  |              |              |               | X                                 |             |

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|   | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|---|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|   | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>River/Creek Restoration/Management Plans (continued)</b>             |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan                | X  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Santa Rosa Waterways Plan   |  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  | X                            | X                        |                          |            |  |                        |              |              | X             |                                   |             |
| South Fork Trinity Restoration Action Plan 1994                         |  | X                     | X                                 |                      |                    |                  | X                     |                    |                       | X                |                              |                          | X                        |            |  |                        |              |              | X             |                                   |             |
| Smith River Action Plan 2002  |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |  |                        |              |              | X             |                                   |             |
| Stone Lagoon Draft Management Plan 1997                                 |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Tomales Bay Watershed Stewardship Plan: A framework for action          |  | X                     | X                                 |                      |                    |                  |                       |                    |                       |                  |                              | X                        | X                        |            |  |                        |              |              | X             |                                   |             |
| Upper Lagunitas Management Plan   |  | X                     | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |  | X                      |              |              | X             |                                   |             |
| Van Duzen River Resource Conservation Strategy 2002, HCRCD              |  | X                     |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          |                          |            |  | X                      |              |              | X             |                                   |             |
| Erosion Prevention Planning Project for the Middle Van Duzen River 2003 |  | X                     |                                   |                      |                    |                  | X                     |                    |                       |                  |                              |                          |                          |            |  |                        |              |              | X             |                                   |             |
| <b>Categorical Plans</b>  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| <b>Habitat Conservation Plans</b>                                       |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Simpson Timber Aquatic Habitat Conservation Plan                        |  | X                     |                                   |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X                        |            |  |                        |              |              | X             |                                   |             |
| Simpson Timber Company HCP  |  |                       | X                                 |                      |                    |                  |                       | X                  |                       |                  |                              |                          | X                        |            |  |                        |              |              | X             |                                   |             |
| Pacific Lumber Company HCP  |  |                       | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |

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|  | Environmental Restoration and Fisheries Protection |                       | Watershed Protection and Planning |                      |                    |                  |                       |                    |                       |                  |                              |                          | Water Supply Reliability |            | Clean water and water recycling (as defined by the Water Bond Coalition) |                        |              |              |               |                                   |             |
|--|--|-----------------------|-----------------------------------|----------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|--------------------------|------------|--|------------------------|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration               | Water Use Efficiency | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access            | Monitoring | Drinking Water - Water Treatment   | Groundwater Management | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Multi-species Conservation Plans</b>  |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Southern Pacific Shorebird Conservation Plan   |  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| Joint Venture Implementation Plans<br>Klamath Basin 3/01                               | X  | X                     |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  | X                      |              |              | X             |                                   |             |
| Salmon and Steelhead Conservation Plan 2004  |  | X                     | X                                 |                      |                    |                  | X                     | X                  |                       |                  |                              |                          | X                        |            |  | X                      |              |              | X             |                                   |             |
| Russian River Basin Fisheries Restoration Plan 2002 CDFG                               |  | X                     | X                                 |                      |                    |                  | X                     | X                  |                       |                  |                              |                          | X                        |            |  | X                      |              |              | X             |                                   |             |
| Humboldt Bay Watershed Salmon and Steelhead Conservation Plan, SSC                     |  | X                     | X                                 |                      |                    |                  | X                     | X                  |                       |                  |                              |                          | X                        |            |  | X                      |              |              | X             |                                   |             |
| PRBO Oak Woodland Bird Conservation Plan   |  |                       | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          | X                        |            |  |                        |              |              |               |                                   |             |
| PRBO Riparian Bird Conservation Plan   |  |                       | X                                 |                      |                    |                  |                       |                    |                       |                  |                              |                          | X                        |            |  |                        |              |              |               |                                   |             |
| Eel River Salmon and Steelhead Restoration Action Plan, CDFG Inland Fisheries Division |  | X                     | X                                 |                      |                    |                  | X                     | X                  |                       |                  |                              |                          | X                        |            |  | X                      |              |              | X             |                                   |             |
| <b>Stormwater Management Plans</b>   |  |                       |                                   |                      |                    |                  |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   |             |
| City of Eureka Stormwater Management Plan  |  |                       |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   | X           |
| City of Arcata Stormwater Management/Master Plan                                       |  |                       |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   | X           |
| Arcata Drainage Master Plan  |  |                       |                                   |                      |                    | X                |                       |                    |                       |                  |                              |                          |                          |            |  |                        |              |              |               |                                   | X           |

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|  | Environmental Restoration and Fisheries Protection |                       |                     | Watershed Protection and Planning |                    |                  |                       |                    |                       |                  |                              | Water Supply Reliability |               |            |                                  | Clean water and water recycling (as defined by the Water Bond Coalition) |              |              |               |                                   |             |
|--|--|-----------------------|---------------------|-----------------------------------|--------------------|------------------|-----------------------|--------------------|-----------------------|------------------|------------------------------|--------------------------|---------------|------------|----------------------------------|--|--------------|--------------|---------------|-----------------------------------|-------------|
|  | Wetlands   | Fisheries Enhancement | Habitat Restoration | Water Use Efficiency              | Water Conservation | Water Management | Stormwater Management | Watershed Planning | NPS Pollution Control | Flood Protection | Watershed Education/Outreach | Urban Stream Restoration | Public Access | Monitoring | Drinking Water - Water Treatment | Groundwater Management   | Water Supply | Desalination | Water Quality | Sanitation - Wastewater Treatment | Water Reuse |
| <b>Advocacy, Research, and Outreach Plans</b>                        |  |                       |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| Institute for Fisheries Resources Pacific Salmon Restoration Program | X  | X                     |                     |                                   |                    |                  | X                     | X                  |                       | X                |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| Institute for Fisheries Resources Sustainable Fisheries Program      |  | X                     |                     |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| The Water Bond Coalition   | X  |                       |                     | X                                 | X                  | X                | X                     | X                  | X                     | X                | X                            |                          |               | X          | X                                | X  | X            |              | X             | X                                 | X           |
| Pacific Coast Joint Venture Strategic Plan                           |  |                       | X                   |                                   |                    |                  |                       |                    |                       |                  | X                            |                          |               |            |                                  |  |              |              |               |                                   |             |
| The Master Plan for the Redwoods                                     |  |                       | X                   |                                   |                    |                  |                       |                    |                       |                  |                              |                          |               |            |                                  |  |              |              |               |                                   |             |
| California North Coast Ecoregional Plan, TNC                         |  |                       |                     |                                   |                    |                  | X                     |                    |                       |                  |                              |                          |               |            |                                  |  |              |              |               |                                   |             |



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX I: AUTHORIZING DOCUMENTATION  
AND ELIGIBLE APPLICANT DOCUMENTATION**



## Appendix I: Authorizing Documentation and Eligible Applicant Documentation

Below is the eligible applicant documentation for the County of Humboldt. This documentation describes the institutional structure with which the NCIRWMP will be implemented. The authorizing documentation from the Board of Supervisors of the County of Humboldt, as well as the resolutions authorizing Humboldt County to submit the application on behalf of the seven north coast counties, is included on the following pages.

1. Is the applicant a public agency as defined in Section III of the [Guidelines](#)? Please explain.

**Response:** The applicant is Humboldt County, a public agency, acting on behalf of the North Coast IRWMP Regional Water Management Group, which is comprised of Humboldt, Siskiyou, Mendocino, Del Norte, Siskiyou, Trinity and Sonoma Counties. The Group includes at least three public agencies, two of which (County of Humboldt and Sonoma County Water Agency) have statutory authority over water management as defined in Section III of the Guidelines. What is the statutory or other legal authority under which the applicant was formed and is authorized to operate?

**Response:** The Regional Water Management Group was formed from mutual interest and benefit and by County Board Resolutions, Mendocino County Authorizing Resolution No. 07-151, Humboldt County Authorizing Resolution No. 07-61, Siskiyou County Authorizing Resolution No. 07-128, Sonoma County Authorizing Resolution No. 07-625, Del Norte County Authorizing Resolution No. 2007-048, and Trinity County Authorizing Resolution No. 07-79.

2. Does the applicant have legal authority to enter into a grant agreement with the State of California, DWR or State Water Board?

**Response:** Yes. The Applicant was designated by the RWM Group to enter into a grant agreement with the State of California DWR and State Water Resources Control Board. The County of Humboldt has legal standing to enter into contractual relationships with the State of California, DWR and the State Water Resources Control Board. On July 24, 2007 the County of Humboldt Board of Supervisors adopted the authorizing Resolution No. 07-61 giving explicit authority to submit this Implementation Grant, Step 1 application and enter into and implement the grant agreement on behalf of the Integrated Regional Water Management Plan for the Counties of Humboldt, Sonoma, Lake, Mendocino, Trinity, Del Norte, Siskiyou, Glenn and Modoc.

3. Describe any legal agreements among partner agencies and/or organizations that ensure performance of the proposal and tracking of funds.

**Response:** If the State awards grant for proposal implementation, the RWM Group will negotiate subsequent agreements with the County of Humboldt with participating entities for administration of the grant to ensure performance of the proposal and tracking of funds. All work conducted under the grant agreement with partner agencies and organizations will be executed by contract with the County of Humboldt. Contract agreements with partner agencies will include DWR and State Water Resources Control Board required provisions and will be consistent with the grant agreement. Humboldt County currently maintains a NCIRWMP contracting framework on behalf of the North Coast RWMG, and currently has contracts with DWR, SWRCB and sub-contract agreements with implementation partners to implement elements of the North Coast Integrated Regional Water Management Plan.

BOARD OF SUPERVISORS, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA  
Certified Copy of Portion of Proceedings, Meeting of Tuesday, July 24, 2007

**RESOLUTION No. 07-61**

RESOLUTION OF THE BOARD OF SUPERVISORS  
OF THE COUNTY OF HUMBOLDT

AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AUTHORIZING THE COMMUNITY DEVELOPMENT SERVICES DIRECTOR TO ADMINISTER THE GRANT AGREEMENT AFTER REVIEW AND APPROVAL BY THE BOARD; AND, REQUIRING THAT ALL CONTRACTS AND AGREEMENTS COME BEFORE THE BOARD FOR REVIEW AND APPROVAL PRIOR TO THE COMMUNITY DEVELOPMENT SERVICES DIRECTOR EXECUTING THE AGREEMENTS

WHEREAS, the Board of Supervisors entered into a Memorandum of Mutual Understanding on October 26, 2004, to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the Counties of Humboldt, Sonoma, Lake, Mendocino, Trinity, Del Norte, Siskiyou and Modoc; and,

WHEREAS, the Board of Supervisors also agreed to participate with these regional partners in the submittals of Proposition 50 Planning and Implementation Grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and funding for projects in need of funding throughout the North Coast; and,

WHEREAS, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one County in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50 – Chapter 8 funding; and,

WHEREAS, the County of Humboldt is prepared to act in a regional administrative and coordinating capacity to implement Phase 1 of the North Coast IRWM Plan, July 2007.

NOW, THEREFORE, BE IT RESOLVED that an application made to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management Implementation Grant pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.), and to enter into an agreement to receive the Grant.

BE IT FURTHER RESOLVED, that the Community Development Services Director is authorized to prepare the necessary data, conduct investigations, file the application to enter into and, after review and approval by the Board, sign the Grant agreement and any amendments thereto with the State of California for the purposes of this Grant.

BE IT FURTHER RESOLVED, that the Community Development Services director is authorized to sign any contracts or agreements to carry out the activities of the Grant, after review and approval by the Board.

  
\_\_\_\_\_  
Chair, Humboldt County Board of Supervisors

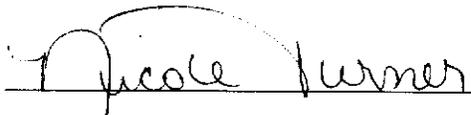
Adopted on motion by Supervisor Geist, seconded by Supervisor Woolley, and the following vote:

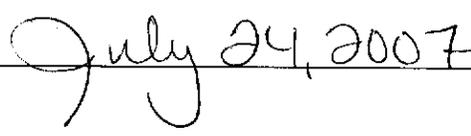
AYES:  
NOES:  
ABSENT:  
ABSTAIN:

STATE OF CALIFORNIA  
County of Humboldt

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board of Supervisors.

**KATHY HAYES**  
Clerk of the Board of Supervisors of the County of Humboldt, State of California

By:   
\_\_\_\_\_

Date:   
\_\_\_\_\_

THE WITHIN INSTRUMENT IS A CORRECT COPY  
OF THE ORIGINAL ON FILE IN THIS OFFICE.

ATTEST: JUL 17 2007

ROBERT DEIS, Clerk of the Board of Directors of  
the SONOMA COUNTY WATER AGENCY  
BY [Signature]  
DEPUTY CLERK

#2  
Resolution No. 07-0625  
County Administration Bldg.  
Santa Rosa, CA

Date: July 17, 2007

CONCURRENT RESOLUTION OF THE BOARD OF DIRECTORS OF THE SONOMA COUNTY WATER AGENCY AND THE BOARD OF SUPERVISORS FOR THE COUNTY OF SONOMA AS MEMBERS OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP, AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, CLEAN DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AUTHORIZING THE COUNTY OF HUMBOLDT TO ADMINISTER AND EXECUTE THE GRANT AGREEMENT ON BEHALF OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP; AND AUTHORIZING THE AGENCY'S GENERAL MANAGER/CHIEF ENGINEER TO NEGOTIATE A SUBSEQUENT AGREEMENT FOR ADMINISTRATION OF THE GRANT, AS NECESSARY.

WHEREAS, the Board of Directors of the Sonoma County Water Agency and the Board of Supervisors for the County of Sonoma entered into a Memorandum of Mutual Understandings on October 5, 2004, to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Siskiyou, and Modoc; and

WHEREAS, both Boards also agreed to participate with these regional partners in the submittals of Proposition 50 planning and implementation grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and garner funding for projects in need of funding throughout the North Coast; and

WHEREAS, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one county in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50's Chapter 8 funding; and

WHEREAS, the Sonoma County Water Agency and County of Sonoma in collaboration with the North Coast Regional Water Management Group are prepared to act in a regional coordinating capacity to implement Phase I of the North Coast IRWM Plan, July 2007.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Sonoma County Water Agency and the Board of Supervisors of the County of Sonoma hereby find, determine, and declare as follows:

1. All of the above recitals are true and correct.
2. The North Coast Regional Water Management Group is authorized to apply to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management Implementation Grant Pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.).

3. The County of Humboldt is authorized to enter into an agreement with the State of California on behalf of the North Coast Regional Water Management Group to receive a grant for the implementation of projects included within the North Coast IRWM Plan.
4. The Community Development Services Director for the County of Humboldt is authorized to prepare the necessary data, conduct investigations, file the application, enter into and sign the grant agreement and any amendments thereto with the State of California on behalf of the North Coast Regional Water Management Group for the purposes of receiving a grant for the implementation of projects included within the North Coast IRWM Plan.
5. If the State of California awards a grant for the implementation of projects included within the North Coast IRWM Plan, the General Manager/Chief Engineer is authorized and directed to negotiate an agreement with the County of Humboldt (or another entity designated by the North Coast Regional Water Management Group to administer the grant) for the administration of the grant, and to return to the Board for approval of the agreement.

SUPERVISORS / DIRECTORS:

KERNS   Aye   SMITH   Aye   KELLEY   Aye   REILLY   Aye   BROWN  Absent 

Ayes   4   Noes        Absent   1   Abstain       

SO ORDERED.

CONCURRENT RESOLUTION OF THE BOARD OF SUPERVISORS FOR THE COUNTY OF SISKIYOU AS MEMBERS OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP, AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, CLEAN DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AUTHORIZING THE COUNTY OF HUMBOLDT TO ADMINISTER AND EXECUTE THE GRANT AGREEMENT ON BEHALF OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP; AND AUTHORIZING THE AGENCY'S GENERAL MANAGER/CHIEF ENGINEER TO NEGOTIATE A SUBSEQUENT AGREEMENT FOR ADMINISTRATION OF THE GRANT, AS NECESSARY.

WHEREAS, the Board of Supervisors for the County of Siskiyou entered into a Memorandum of Mutual Understandings on October 5, 2004, to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Siskiyou, and Modoc; and

WHEREAS, the County of Siskiyou also agreed to participate with these regional partners in the submittals of Proposition 50 planning and implementation grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and garner funding for projects in need of funding throughout the North Coast; and

WHEREAS, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one county in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50's Chapter 8 funding; and

WHEREAS, the County of Siskiyou in collaboration with the North Coast Regional Water Management Group are prepared to act in a regional coordinating capacity to implement Phase I of the North Coast IRWM Plan, July 2007.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of the County of Siskiyou hereby finds, determines, and declares as follows:

1. All of the above recitals are true and correct.
2. The North Coast Regional Water Management Group is authorized to apply to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management Implementation Grant Pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.).

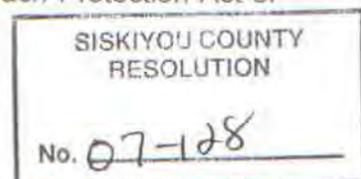
This instrument is a correct copy of the original on file in this office.

ATTEST:

COLLEEN SETZER

County Clerk  
of the State of California  
in and for the County of Siskiyou.

By:   
Deputy



3. The County of Humboldt is authorized to enter into an agreement with the State of California on behalf of the North Coast Regional Water Management Group to receive a grant for the implementation of projects included within the North Coast IRWM Plan.
4. The Community Development Services Director for the County of Humboldt is authorized to prepare the necessary data, conduct investigations, file the application, enter into and sign the grant agreement and any amendments thereto with the State of California on behalf of the North Coast Regional Water Management Group for the purposes of receiving a grant for the implementation of projects included within the North Coast IRWM Plan.
5. If the State of California awards a grant for the implementation of projects included within the North Coast IRWM Plan, the General Manager/Chief Engineer is authorized and directed to negotiate an agreement with the County of Humboldt (or another entity designated by the North Coast Regional Water Management Group to administer the grant) for the administration of the grant, and to return to the Board for approval of the agreement.

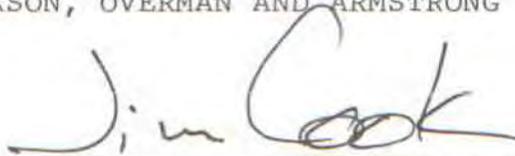
Passed and adopted this 17<sup>th</sup> day of July, 2007.

AYES: SUPERVISORS COOK, ERICKSON, OVERMAN AND ARMSTRONG

NOES: NONE

ABSENT: NONE

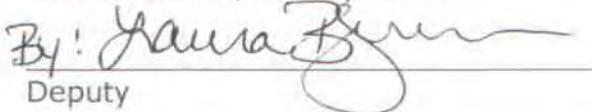
ABSTAIN: SUPERVISOR KOBSEFF



Jim Cook, Chair  
Siskiyou County Board of Supervisors

ATTEST:

Colleen Setzer, County Clerk

By:   
Deputy

RESOLUTION NO. 07-151

**CONCURRENT RESOLUTION OF THE MENDOCINO COUNTY BOARD OF SUPERVISORS AND THE MENDOCINO COUNTY WATER AGENCY BOARD OF DIRECTORS AS MEMBERS OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP, AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, CLEAN DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AUTHORIZING THE COUNTY OF HUMBOLDT TO ADMINISTER AND EXECUTE THE GRANT AGREEMENT ON BEHALF OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP; AND AUTHORIZING THE AGENCY'S GENERAL MANAGER TO NEGOTIATE A SUBSEQUENT AGREEMENT FOR ADMINISTRATION OF THE GRANT, AS NECESSARY**

WHEREAS, the Mendocino County Board of Supervisors and the Mendocino County Water Agency Board of Directors entered into a Memorandum of Mutual Understandings on December 7, 2004 and December 14, 2004, respectively, to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Siskiyou, and Modoc; and

WHEREAS, both Boards also agreed to participate with these regional partners in the submittals of Proposition 50 planning and implementation grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and garner funding for projects in need of funding throughout the North Coast; and

WHEREAS, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one county in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50's Chapter 8 funding; and

WHEREAS, the Mendocino County Water Agency and County of Mendocino in collaboration with the North Coast Regional Water Management Group are prepared to act in a regional coordinating capacity to implement Phase I of the North Coast IRWM Plan, July 2007.

NOW, THEREFORE, BE IT RESOLVED that the Mendocino County Board of Supervisors and the Mendocino County Water Agency Board of Directors hereby find, determine, and declare as follows:

1. All of the above recitals are true and correct;
2. The North Coast Regional Water Management Group is authorized to apply to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management Implementation Grant Pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.);
3. The County of Humboldt is authorized to enter into an agreement with the State of California on behalf of the North Coast Regional Water Management Group to receive a grant for the implementation of projects included within the North Coast IRWM Plan;
4. The Community Development Services Director for the County of Humboldt is

authorized to prepare the necessary data, conduct investigations, file the application, enter into and sign the grant agreement and any amendments thereto with the State of California on behalf of the North Coast Regional Water Management Group for the purposes of receiving a grant for the implementation of projects included within the North Coast IRWM Plan.

5. If the State of California awards a grant for the implementation of projects included within the North Coast IRWM Plan, the Mendocino County Water Agency General Manager is authorized and directed to negotiate an agreement with the County of Humboldt (or another entity designated by the North Coast Regional Water Management Group to administer the grant) for the administration of the grant, and to return to the Board for approval of the agreement.

The foregoing Resolution introduced by Supervisor Delbar, seconded by Supervisor Pinches, and carried this 17<sup>th</sup> day of July 2007, by the following vote:

AYES: Supervisors Delbar, Pinches, Colfax, and Smith  
NOES: None  
ABSENT: Supervisor Wattenburger

WHEREUPON, the Chair declared said Resolution adopted and SO ORDERED.

*Kendall Smith*

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KENDALL SMITH, Chair  
Mendocino County Board of Supervisors  
Mendocino County Water Agency Board of Directors

ATTEST: KRISTI FURMAN  
Clerk of the Board

*Adrienne Moore* Deputy

APPROVED AS TO FORM:  
JEANINE B. NADEL, County Counsel

*Jeanine B. Nadel*

I hereby certify that according to the provisions of Government Code Sections 25103, delivery of this document has been made.

KRISTI FURMAN  
Clerk of the Board

By: *Adrienne Moore*  
DEPUTY

**BOARD OF SUPERVISORS**

**COUNTY OF TRINITY, STATE OF CALIFORNIA**

**17<sup>TH</sup> DAY OF JULY 2007**

**RESOLUTION NO. 2007-79**

**RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF TRINITY AS MEMBERS OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP, AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, CLEAN DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AND AUTHORIZING THE COUNTY OF HUMBOLDT TO ADMINISTER AND EXECUTE THE GRANT AGREEMENT ON BEHALF OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP.**

WHEREAS, the Board of Supervisors for the County of Trinity entered into a Memorandum of Mutual Understandings on October 5, 2004, to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Siskiyou, and Modoc; and

WHEREAS, the Board of Supervisors also agreed to participate with these regional partners in the submittals of Proposition 50 planning and implementation grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and garner funding for projects in need of funding throughout the North Coast; and

WHEREAS, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one county in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50's Chapter 8 funding; and

WHEREAS, the County of Trinity in collaboration with the North Coast Regional Water Management Group are prepared to act in a regional coordinating capacity to implement Phase I of the North Coast IRWM Plan, July 2007.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of the County of Trinity hereby find, determine, and declare as follows:

1. All of the above recitals are true and correct.
2. The North Coast Regional Water Management Group is authorized to apply to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management Implementation Grant Pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.).

3. The County of Humboldt is authorized to enter into an agreement with the State of California on behalf of the North Coast Regional Water Management Group to receive a grant for the implementation of projects included within the North Coast IRWM Plan.
4. The Community Development Services Director for the County of Humboldt is authorized to prepare the necessary data, conduct investigations, file the application, enter into and sign the grant agreement and any amendments thereto with the State of California on behalf of the North Coast Regional Water Management Group for the purposes of receiving a grant for the implementation of projects included within the North Coast IRWM Plan.

Upon motion of Supervisor Reiss, seconded by Supervisor Pflueger on this 17th day of July, 2007, and on the following roll call vote, to-wit:

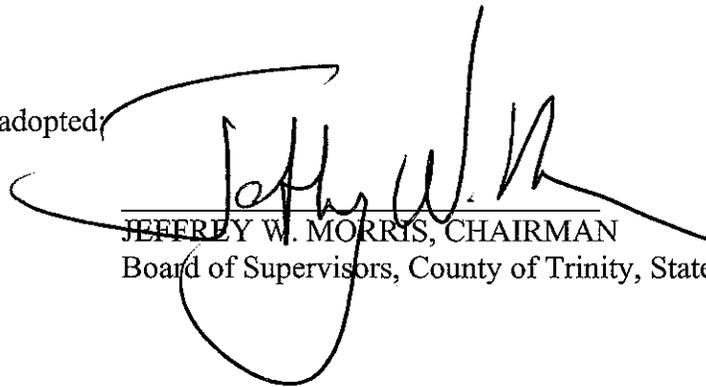
**AYES: Supervisors Pflueger, Reiss, Freeman, Jaegel, and Morris – Aye**

**NOES: None**

**ABSENT: None**

**ABSTAINING: None**

The foregoing resolution is hereby adopted,



JEFFREY W. MORRIS, CHAIRMAN  
Board of Supervisors, County of Trinity, State of California

ATTEST:

WENDY TYLER  
Clerk of the Board of Supervisors,  
County of Trinity, State of California

By: \_\_\_\_\_  
Deputy Clerk

APPROVED AS TO FORM AND LEGAL EFFECT:



Jeanette Palla, County Counsel,  
County of Trinity, State of California

Dated: \_\_\_\_\_  
Planning: TS

BOARD OF SUPERVISORS  
COUNTY OF DEL NORTE  
STATE OF CALIFORNIA

RESOLUTION 2007- 048

**RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF DEL NORTE AS MEMBERS OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP, AUTHORIZING THE REGIONAL SUBMISSION OF AN APPLICATION TO OBTAIN AN INTEGRATED REGIONAL WATER MANAGEMENT IMPLEMENTATION GRANT ON BEHALF OF INTEGRATED COASTAL WATERSHED MANAGEMENT PLANNING EFFORTS THROUGHOUT THE NORTH COAST REGION PURSUANT TO THE WATER SECURITY, CLEAN DRINKING WATER, COASTAL AND BEACH PROTECTION ACT OF 2002 (WATER CODE SECTION 79560 ET SEQ.); AUTHORIZING THE COUNTY OF HUMBOLDT TO ADMINISTER AND EXECUTE THE GRANT AGREEMENT ON BEHALF OF THE NORTH COAST REGIONAL WATER MANAGEMENT GROUP; AND AUTHORIZING THE AGENCY'S GENERAL MANAGER/CHIEF ENGINEER TO NEGOTIATE A SUBSEQUENT AGREEMENT FOR ADMINISTRATION OF THE GRANT, AS NECESSARY.**

**WHEREAS**, the Board of Supervisors for the County of Del Norte entered into a Memorandum of Mutual Understandings to participate in the development of a North Coast Integrated Regional Water Management Plan (North Coast IRWM Plan) for the counties of Sonoma, Mendocino, Humboldt, Del Norte, Trinity, Siskiyou, and Modoc; and

**WHEREAS**, the Board also agreed to participate with these regional partners in the submittals of Proposition 50 planning and implementation grants to conduct local and regional planning necessary to enhance the North Coast IRWM Plan and garner funding for projects in need of funding throughout the North Coast; and

**WHEREAS**, on May 17, 2007, the North Coast IRWM Plan Policy Review Panel unanimously approved the North Coast Regional Water Management Group, comprised of at least one county in the North Coast region and at least two public agencies that have statutory authority over water management, to submit and administer the North Coast IRWM Plan Implementation Grant application for Round 2 of Proposition 50's Chapter 8 funding; and

**WHEREAS**, the County of Del Norte in collaboration with the North Coast Regional Water Management Group are prepared to act in a regional coordinating capacity to implement Phase I of the North Coast IRWM Plan, July 2007 .

**NOW, THEREFORE, BE IT RESOLVED** that the Board of Supervisors of the County of Del Norte hereby find, determine, and declare as follows:

- All of the above recitals are true and correct.
- The North Coast Regional Water Management Group is authorized to apply to the California Department of Water Resources and State Water Resources Control Board to obtain an Integrated Regional Water Management

Implementation Grant Pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Water Code Section 79560 et seq.).

- The County of Humboldt is authorized to enter into an agreement with the State of California on behalf of the North Coast Regional Water Management Group to receive a grant for the implementation of projects included within the North Coast IRWM Plan.
- The Community Development Services Director for the County of Humboldt is authorized to prepare the necessary data, conduct investigations, file the application, enter into and sign the grant agreement and any amendments thereto with the State of California on behalf of the North Coast Regional Water Management Group for the purposes of receiving a grant for the implementation of projects included within the North Coast IRWM Plan.
- If the State of California awards a grant for the implementation of projects included within the North Coast IRWM Plan, the General Manager/Chief Engineer is authorized and directed to negotiate an agreement with the County of Humboldt (or another entity designated by the North Coast Regional Water Management Group to administer the grant) for the administration of the grant, and to return to the Board for approval of the agreement.

**PASSED AND ADOPTED** this 24<sup>th</sup> of July 2007 by the following polled vote:

AYES: Supervisor Hemmingsen, Sullivan, McNamer, McClure and Finigan

NOES: None

ABSENT: None

ABSTAIN: None



David Finigan, Chair  
Del Norte County Board of Supervisors

ATTEST:



Sherri Adams  
Clerk of the Board of Supervisors  
County of Del Norte  
State of California



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX J: NCIRWMP SCORE SHEET**



| Pro_ID | PI_1_ProName   | Scoring   | Project Info & Supporting Docs   |  |   | Permit   | CP  | Management Strategies & Statewide Evaluation  |  |   |   |   |  | State Guidelines - Statewide Priorities               |  |  |   |   |   | Project Score   |                         |                                     |     |
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|        |  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     | DAC |
| 1      | Loleta I&I   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 2      | Hayfork Forest Health Phase II                               |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 7      | Mattole Integrated Water Management Program                  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 12     | Laguna de Santa Rosa Riparian and Wetland Restoration        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 13     | Dutch Bill Watershed Literacy Project: No Coho Left Behind   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 15     | California Forest Improvement Program                        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 17     | BMPs for Invasive Plant Control in Coastal Watersheds        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 19     | Camp Meeker-Occidental Joint Wastewater Reclamation Project  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 22     | Redwood Creek Erosion Control                                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 23     | Graton Wastewater Treatment Upgrade and Reclamation Project  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 24     | Hollow Tree Road Improvement Project                         |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 26     | Sediment Solutions for the Gualala: Phase III                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 27     | Dam Failure Prevention & Sediment Reduction Santa Rosa Creek |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 28     | Cloverdale River Park, Russian River Bank Restoration        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |
| 29     | Citywide Creek Master Plan                                   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |     |

| Pro_ID | PI_1_ProName   | Scoring   | Project Info & Supporting Docs   |  |   | Permit   | CP  | Management Strategies & Statewide Evaluation  |  |   |   |   |  | DAC   | State Guidelines - Statewide Priorities  |  |   |   |   |   |          | Sub-Total Funding Score | Maximum Total Score 100 TOTAL SCORE |
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| 30     | Colgan Creek Restoration                                     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 33     | Dutch Bill Creek Coho Habitat Enhancement                    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 35     | Salmon Creek Watershed Assessment and Implementation         |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 38     | Head Hunter/Smoke House Non-point Sediment Reduction Project |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 39     | Raw & Recovered Water for Irrigating Public Agencies         |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 41     | Mendocino County Water Quality/Supply Database (KRIS)        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 42     | Wastewater Secondary Treatment Upgrade                       |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 49     | Water Filtration Plant                                       |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 50     | Ranney Collectors Rehabilitation/Upgrade                     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 51     | Mid Van Duzen River Ranch Road Sediment Reduction Program    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 55     | Crescent City Wastewater Treatment Plant Renovation          |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 56     | East Weaver Creek Booster Pump Station                       |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 59     | Water Storage improvement Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 61     | Samoa Peninsula Pipeline Replacements                        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |
| 64     | Middle Reach Russian River Citizen Monitoring Project        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |          |                         |                                     |



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| 94     | Wages Creek Source Water Protection                          |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 95     | Implementing an Effective Storm Water Management Program     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 98     | Gasquet Community Services District Water System Upgrade     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 99     | Development of Standby Water Supply Wells                    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 102    | Water Storage Improvement Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 104    | Sensitive Watershed Monitoring and Mapping Resource          |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 106    | KRIS Humboldt Bay  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 108    | Martin Slough Interceptor Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 113    | Water Supply   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 114    | Garcia Effectiveness Monitoring                              |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 118    | KRIS Mad River   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 121    | Salt River Restoration Project                               |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 123    | Sinkyone Road Restoration Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 124    | 2005 River Clean-up and River Education in Schools           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 125    | Navarro Watershed Road Sediment Reduction Project            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 126    | Laguna de Santa Rosa Cotati Reach Restoration                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 127    | Sonoma County Airport Area Recycled Water Irrigation-Phase 1 |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |

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| 128    | Sonoma County Water Recycling and Habitat Preservation Proj |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 131    | Arcata Watershed Enhancement through I & I Reduction        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 133    | Wastewater Disposal Project                                 |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 134    | Networked Watershed Library for the North Coast Region      |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 137    | Walker Creek Restoration Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 139    | East Branch Irrigation Ditch Piping Project                 |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 140    | Santa Rosa Creek B Street Outfall Retrofit Project          |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 141    | Ferndale Wastewater Treatment Plant Improvements            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 147    | Water Storage improvement Project                           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 148    | Upper Rancheria Creek Riparian Enhancement Project          |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 149    | Ferndale Infiltration & Inflow Reduction                    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 151    | Trinity Drinking Water Source Sediment Reduction Project    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 152    | Ten Mile Creek Watershed Outreach and Organizing Project    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 153    | Water Supply Reliability Project                            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |
| 155    | Development of Mendocino County Grading Ordinance           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |



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| 183    | Storm Water System and Natural Resource Inventory            |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 184    | Valve and Fire Hydrant Replacement Project                   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 185    | Wastewater Master Plan and Inflow and Infiltration Study     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 186    | Groundwater Studies in the Sebastopol Area                   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 187    | Sediment Reduction and Habitat Improvements - 4 RRiver tribs |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 188    | Reading Creek Water Conservation Project                     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 189    | Robinson Creek Restoration Demonstration Project             |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 190    | Klamath-Trinity Water Quality and Water Supply Database and  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 191    | Eureka Inflow and Infiltration Reduction Project             |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 192    | Stormwater Master Plan                                       |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 193    | U. S. Army Corps Coyote Valley Dam Feasibility Study         |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 194    | Humboldt Bay Water Quality Improvement Program               |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 196    | Inflow and Infiltration Reduction Project                    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 197    | Eel River Basin KRIS database                                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |
| 200    | Luffenholtz Creek Barrier Modification Designs and Sediment  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |          |

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| 201    | Russian River Basin KRIS Database                           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 203    | Shiloh Ranch & Foothill Regional Parks Erosion Prevention   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 205    | Six Rivers to the Sea                                       |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 206    | BMP for Control of Invasive Plants in Northcoast Watersheds |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 207    | Lower Fuller Creek Sediment Source Implementation Plan      |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 212    | CR Transmission Main  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 213    | Steel Water Main Replacement                                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 216    | Big River/Salmon Creek Watershed Restoration Project        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 217    | Newell Water System Renovation                              |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 226    | Big River Focused Landform and Habitat Restorations         |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 231    | Wastewater Treatment Plant Improvements                     |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 232    | Garberville Water Supply Reliability Project                |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 236-S1 | Shasta Water Association Dam Restoration                    |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 236-S2 | Araujo Dam Restoration                                      |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 236-S3 | Scott River Water Trust Phase III                           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |
| 236-S5 | City of Etna Water Supply                                   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                         |                                     |  |

| Pro_ID  | PI_1_ProName   | Scoring   | Project Info & Supporting Docs   |  |   | Permit   | CP  | Management Strategies & Statewide Evaluation  |  |   |   |   |  | State Guidelines - Statewide Priorities               |  |  |   |   |   | Sub-Total Funding Score   | Maximum Total Score 100 TOTAL SCORE |  |  |
|---------|--|---|--|--|---|--|---|---|--|---|---|---|--|---|--|--|---|---|---|---|-------------------------------------|--|--|
|         |  |   | Criteria   | DAC  | Criteria  |  |   | DAC   | Criteria   | DAC   | Criteria  | DAC   | Criteria   | DAC   | Criteria   | DAC  |   |   |   |   |                                     |  |  |
|         |  | Score the columns ranking as 1 = lowest agreement 5 = highest agreement | Did the project include a good description of the proposal for which funding is requested? | How well were the goals and objectives of the proposal identified? | To what degree are there critical negative impacts that would result from not completing the project? | Does the proposal include a plan for compliance with all applicable environmental review requirements? | Does the project show Collaborative Partnerships? | How well does the project show integration of management priorities with multiple benefits? | How well does the project support and improve local and regional water supply reliability? | How well does project contribute expeditiously and measurably to the long-term attainment and maintenance of water quality standards? | How well does the project eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including ASBS? | How well does the project use sound scientific basis for data acquisition & project management? | How well does the proposal show direct benefit to a disadvantaged community? | Is the proposal located in a disadvantaged community? | How well does the project address conflict between water users or resolve water rights disputes? | How well does the project address implementation of TMDLs that are established or under development? | How well does the project address implementation of RWQCB WMI Chapters, Plans and policies? | How well does the project address implementation of the SWRCB NPS Pollution Plan? | How well does the project address implementation of recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan? | How well does the project address environmental justice concerns? |                                     |  |  |
| 238     | Sebastopol MWS Groundwater Management Program                  |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |
| 239     | Blue Lake Wastewater Treatment Plant                           |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |
| ICWMP A | Salmon Creek Sediment Reduction and Water Conservation Program |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |
| ICWMP B | Forsythe Creek Sediment Control Project                        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |
| ICWMP C | Big River Main Haul Road Phase I Restoration                   |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |
| ICWMP D | Mattole Integrated Coastal Watershed Management Program        |   |  |  |   |  |   |   |  |   |   |   |  |   |  |  |   |   |   |   |                                     |  |  |



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX K: NCIRWMP INTERVIEW RESPONSES**



Public Review Panel and Technical Peer Review Panel Interview Summary  
June 6-22, 2005

**1. What are the major water resource and water management issues in your area?**

- 1.1. Setting aside the issue of the Trinity River Diversion to the Central Valley Project, the major issues of concern are quantity. Some streams are overdrawn from development and run dry especially in the summer. This leads to conflicts between human consumptive uses, wildlife uses, and fire protection needs. Because of the very rural nature of the county, the vast majority of the areas outside of the major towns are not served by water districts and many water users tend to rely on individual wells or surface water diversions. Consequently, streams are over tapped with riparian diversions.
- 1.2. Water shortage, for all needs in the area. Whether it is community needs, Ag needs or naturally related it all ties back to a water storage issue. Part of the solution could be the development of offsite storage. Water adjudication and distribution. Is water over adjudicated within Klamath? What are the end uses? There are old water quality issues for domestic water use such as contamination by lead and manganese. There is a big problem with infrastructure for water delivery systems. For one community in particular for every gallon that is used a gallon is lost.
- 1.3. No major resource issues. County is not a water purveyor. City provides water. Tiny System only at 75% capacity. Special districts no problem.
- 1.4. The Newell Water Project is the project that has moved forward from Modoc County. North County area that is encompassed by this region in the Tule Lake area. Service water delivery out of Klamath Lake is an issue. There has been conflict, but it is currently shifting to an ongoing work in process. Resolution is a concern of the constituents who want to see a resolution to the Klamath issue. This is a very large issue from standpoint on the Ag community who have relied on Klamath Lake water. Endangered species have made their homes in those waterways that are man made and that service Ag. Many issues with regard to Federal agencies as it relates to downstream. Many issues with regard to water users particularly as it impacts ag. irrigation. When the irrigation district were cut off there was an emphasis and funding directed towards development of many high output wells. There is current concern about the impact of those wells to the groundwater aquifer. The amount of information available and study of those impacts is limited. The long-term impacts and consequences to the resources are still unknown.
- 1.5. Regional concepts are not well accepted by folks in Siskiyou. There were problems at meeting last Wednesday in Fortuna Plans/ideas best started at bottom. Not top down as this appears. Concern on inland side (Siskiyou) that water will be used to mitigate coastal problems. Trust is issue, Scott Valley, upper basin afraid of regional government. Polarizing to county. Upper basin don't trust rest of County. For almost a year and year and a half folks from upper wouldn't talk to lower.

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Currently involved with Siskiyou and Klamath: 2 state governments, 11 counties, 5 federal agencies, 7 tribes who don't like each other, but for this issue they will join the fight. Not getting any better really worse.

Issues are primarily ag related, not related to small water districts. Lake Shastina owned by irrigation District 1,000 homes being built around lake, some worth at least worth 1.5 mill. Issue is removal of dam for fish passage. Homes would become worthless. If Lionell dam were removed all the farm land south Granda to Montague will go dry. 50 – 70,000 acres of farmland. Impacts on county huge. Ag and homeowners are drivers.

Focus is not on failing water and sewer systems. Failing septic not of as much concern at a county level. Locally on a different plain.

- 1.6. The major water resource and water management issues are:
- Diversion of the Trinity River to the CVP and its impacts on local economies and fisheries
  - Adequate water supplies for community growth, and conflicts with fish and wildlife habitat
- 1.7. From my perspective, the primary challenges facing this region are protecting source water quality from degradation and developing our water resources to support the regional economy in a sustainable way while protecting the beneficial uses.

Protection of source water quality involves reducing or eliminating point and non-point sources of pollution into the water sources that humans and wildlife share. The challenge of water resource management is developing water sources to sustain economic growth and support the growing regional population, while at the same time ensuring that these needs are balanced in a sustainable way with the other beneficial uses such as irrigation, recreation and fisheries.

Groundwater management is also becoming more important as more demands are put on our groundwater resources and water tables are dropping.

- 1.8. Compliance with new state and federal water quality regulations mandated by the US EPA and California Department of Health Services and US Forest Service Plan, Endangered Species Act.

- 1.9. Water resource issues:
- State water diversion policies

Water management issues:

- Ground water use and water draw-down
- Water transportation
- Expansion of water infrastructure for transportation and reclamation

- 1.10. The major water resource and water management issues are:
- Watermaster Service Fees: The Department of Water Resources proposed budget increases fees county-wide an average of 250%, and twice that for the Scott River water mastered areas.
  - Incidental Take Permit (ITP): Now that the Southern Oregon-Northern California (SONC) Coho salmon has been listed as threatened under the California Endangered Species Act,

the Siskiyou (Scott River) and Shasta Valley RCDs have taken on additional responsibilities in helping landowners comply with regulatory requirements that accompany the listing. For the past year and a half, the RCD's have been working with the Department of Fish and Game in the development of a watershed-wide Incidental Take Permit (ITP).

- Streambed Alteration Agreements: (1602): Now that the SONC coho has been listed, both the Incidental Take Permit and 1602-Streambed Alteration Notification are required from all those substantially diverting water from coho inhabited streams. Currently the Siskiyou and Shasta Valley RCD's are developing an MOU between the Districts and the Department of Fish and Game to assist landowners in submitting 1602 Streambed Alteration Notifications.
- Validity of Streambed Alteration Agreements (1603): It is uncertain at this time how the Department of Fish and Game will view the validity of the existing 1603 permits.

1.11. The major water resource and water management issues are:

- Availability of water and a growing population
- Wildlife and fisheries protection for future generations
- Water conservation management
- Water quality: temperature, nutrients, sediment

1.12. The major water resource and water management issues are:

- Water supply
- Lack of water supply storage facilities
- Coastal drainages TMDLs as the result of the timber industry
- Potter Valley/FERC decision impact to water supply
- Coyote Dam, Section 7 consultation between SCWA and NMFS

1.13. Three regional boards split Modoc County, for this conversation answers will be geared towards North Coast area. All 3 boards are uniquely different. Lahontan focused on Lake Tahoe. Central Valley on Irrigated ag/waiver. The North Coast for granting process is refreshing. Last round of Prop 50 water board staff contacted Modoc.

Water issues in basin are quantity and quality w/regards to management. Is there enough and is it of the quality that is needed. Agriculture; wild life both with regards to instream flow for salmon as well as the wildlife refuges. Quantity as related to ag and wildlife. Farmers have a quantity that they need which is interrelated to stream flow (Salmonid habitat) and lake levels, which affect the two species of endangered sucker.

Storage facilities have endangered suckers that require minimum levels and warmer temperatures. However, instream flows have water quality issues with regards to temperature being too high for salmon.

Farmer needs and wildlife refuge tied to farmers in Tule Lake. Refuge comes from irrigation. If there is not enough water for farmers there is not enough for the Refuges. It seems ironic that water diverted from the farmer for lake and stream flow = diversion from refuge. How do you balance those needs when you need down river water, lake level for sucker, irrigation for farmers that also means water for refuge. Conflicts are often more emotional than realistic. Wrong temperature water being sent down stream doesn't do salmon any good. Folks feel better if water is sent anyway. Ongoing issue. There is not enough water of any temperature.

More storage of cold water for fish is needed. There are areas where additional supply could be provided. Example: Long valley project; during winter hi flow water could be pumped and stored without dams. Deep and narrow valley would be able to release downstream, cold water at the appropriate time. Warm water that is currently being released could be used for irrigation as well as the refuge. Involves expense but has potential for a real solution, but not popular with some environmental groups because it doesn't revert the basin back to a wetlands. In the long-term the Bureau of reclamation is doing a feasibility study. The only proposals that have been implemented are in Oregon and just involve buying more land and taking it out of production. The Klamath Project is 97% efficient. In reality, taking land out of production will save not much water.

## **2. What are the major water related problems and conflicts in your region?**

- 2.1. Aside from the huge issue of the Trinity River Diversion, the local issues and conflicts largely arise from a lack of water supply planning and infrastructure. When many of the smaller communities first formed, the tools and procedures were not in place to allow planning to properly accommodate growth within available resources. In many towns, there is no adequate water supply infrastructure to serve the needs of the entire community. The community of Lewiston is one example. There are numerous small water providers and sewer districts that serve specific, discrete areas. Many of these have deficient and deteriorating infrastructure. It would be ideal to have all of the small subdivisions under one district to provide existing users with better service and the infrastructure necessary to accommodate future growth. However, the local coordination and interest required to achieve that is not yet in place. When that planning has occurred, financial resources would then have to be pursued.

A lack of adequate water use budgets in nearly all streams within the county makes it more difficult to manage water resources and plan growth.

- 2.2. Due to demand, and distribution, there have been increased demands placed on groundwater. Water bank created by Bureau of Reclamation that banks 20,000-acre ft. was actually replaced with ground water – could be conflict down road with regard to use and recharge of groundwater. Water bank with fallowing land 20,000-acre ft. Could be conflict there it was document that when the water got cut off – there was a loss of wildlife habit. Conflict to put more water down river. Directly for fish or farming. Conflict also for Modoc sucker in lake and habitat locally. Cold water is needed by the salmonids downstream, and when the lake is released that water is too warm water. Furthermore the lake needs to be full t provide habitat for the sucker. There is an effort to try to hold lake level high all year long. Fallowing ground has lead to an economic job loss to community which is a related problem.
- 2.3. Some systems may work off of wells that affect surface water streams. Limitation on development within city for hook ups on wastewater treatment plant for City of Crescent City system. Rural Subdivision cluster considerable, improvements needed for community water systems. New systems or annexation. City looking at expanding policy to open areas for development. There has been concern expressed by some with regard to Urban sprawl into areas that are not close to urban center of Crescent City. Some of these areas are parcels that will be developed into 3-acre parcels. Sprawl does not seem to be a valid concern at this point in time. Development is being maximized around urban areas. There is some difficulty with

regard to development in outlying areas, again due to necessary community services that are needed.

2.4. There is realization from all sides, tribes, fisherman, ag folks etc. who's views and solutions can all be considered radical by the other at times, that the solutions require finding the middle ground. There is a growing environment of recognizing differing view points and acknowledging that the problems of all of the stakeholders must be addressed if a solution is to be reached. This has led, I believe, to the stakeholders coming to the table searching for that middle ground. Don't know if all realistic solutions have come forth yet.

2.5. Don't know if there are any clear cut answers. Up until a couple of years ago they could deal with it. Too many outside driving forces.

Siskiyou is a frontier County, with those values, deal better with issues internally too much external input recently. That's where regional planning takes a beating. Generational families who fought the last Indian wars in 1870s. Siskiyou county claim to fame. All the army unit came out of Yreka to fight. Still wild and wooly.

2.6. Same as above and also water withdrawals for summer dust abatement is causing some streams to dry up.

2.7. Non-point source pollution of sediment in many watersheds. Continued development requires water, and balancing that need with the needs of threatened and endangered species is a major challenge. This has made illegal diversions, especially on the Russian River, increasingly contentious as you have more competing demands for a finite amount of water. It has also made recycling and reuse a much higher priority, to offset the need for more potable water in non-potable uses (landscaping, etc.). Another major issue in the Santa Rosa area is the drawing down of groundwater levels beyond the natural ability of the aquifer to recharge.

2.8. Compliance with new state and federal water quality regulations mandated by the US EPA and California Department of Health Services and US Forest Service Plan, Endangered Species Act.

2.9. Major water related problems and conflicts include:

- Fisheries habitat vs. agricultural, industrial and municipal use of water through water diversion policies
- At the local level – effective water use management vs. population growth

2.10. Major water related problems and conflicts include:

- Agricultural water rights and their resulting uses vs. the biological needs of salmonids (especially coho salmon listed as threatened by the State and NOAA).
- Conflicting codes and regulations: Private water rights vs. listed species regulations.
- High cost of restoration, habitat improvement, avoidance, minimization, and mitigation associated with listed species.

2.11. Major water related problems and conflicts include:

- Water supply
- Surface flow development
- Humans compete with fish and wildlife for limited resource

- 2.12. Major water related problems and conflicts include:
- Numerous tiny community service districts that have inadequate monetary resources to plan and maintain resources/facilities
  - Pending decision by SWRCB regarding ground water determination (percolated ground water or under-ground flow) in the Ukiah Valley. Currently the ground water in Ukiah Valley is considered percolated ground water, which does not require a water rights permit.
  - Numerous illegal water diversions (stock ponds, dams)
  - Limited resources available to the SWRCB for enforcement
  - Lack of water supply analysis and water management plan for Mendocino County
- 2.13. Some animosity caused by formation of the refuge system. Only refuge in the Nation that has irrigation mandated as part of the system. When the refuge was formed there was a discussion as to whether or not it should open to homesteading, with 20,000 acres farmed every year. It was stipulated that the farming need not be to just wildlife friendly crops such as grain. 25% would be row crops. There has been many efforts to overturn that mandate. Directly by environmental groups, and indirectly by Fish and wildlife service, by mandating farming practices that aren't practical. None have been successful. Not a major issue but continues to fuel fire. To have any farming on refuge is abhorrent to some – this was the Keigel act of early 1960's. To the county the farming is a valuable part of refuge. County gets part of paid leases. In addition lots of farmers can start farming – like internship.

When dam was built on lower Klamath 50 yrs ago. The natural geological landscape included a natural reef did not allow lake to go below naturally. The dam was built in front of the reef, and then the reef was dynamited out. The purpose was so that water could be held higher and taken out lower. Also put in a power plant. The exchange gave water users an incredible power use contract. Got irrigation power at 10% of rate. That contract is up. Power Company now wants rate to go to what they could get on open market. Water users believe that contract should be renegotiated as it is. Looking at 1,000% increase in cost. Environmental groups use this as opposition, and jump on side of the power company. Maybe resolved legislatively through mandating the power rates. Goes back to social economy. Power rates affect profitability of agriculture. From government standpoint, 2 branches of Fish and Wildlife Service are fighting. The future of the Refuge and water flow is tied to farmers and irrigation. On the other hand the endangered species side of the service is zealous in its approach to endangered species. Those 2 branches are in conflict. Not well integrated.

Lots of conflict between the upstream and the downstream. Trend is towards improvement and understanding. The upstream is the not sole answer or cause of problem; it should be approached by looking at a rivershed solution. 3<sup>rd</sup> party folks continue debate without solutions offered. Some have an entirely different agenda. Not true of all, but of some who are very active. Want all money that the Feds offer to go towards land purchase only for reversion to seasonal wetlands. Therefore working out of problems for upstream and downstream doesn't meet their goal.

### **3. What documents do you use for water management and planning in your area?**

- 3.1. The Trinity River Record of Decision (TRROD) from the Bureau of Reclamation obviously influences river flows. The Open Space and Conservation element of the county General Plan

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- contains policies to retain streams for fisheries and wildlife benefits. The South Fork Trinity River TMDLs also relate to water temperatures, which are directly related to flows, impoundments, and diversions. Department of Fish & Game local stream reports have also been used for water management and planning. With the exception of the TRROD, these documents are largely underutilized.
- 3.2. Managed by Bureau of Reclamation, historical data stream flows used by county.
  - 3.3. From County Del Norte Co. Local Coastal Plan and General Plan. The city may have own policies re: water management.
  - 3.4. The County has no legal authority over water. However we have adopted an ordinance having to do with the control of ground water. If this ordinance were contested, we have been told it would not hold up in court. The purpose is to regulate the export of ground water. IE: The purchase of property, drill well pump the ground water to the tributaries and sell to outside the county users. The county does not have a ground water management plan. Red Band Trout document by special commission for Clear Lake County was one of stakeholder. Never adopted as county document.
  - 3.5. The holy Bible - the Adjudicated water rights. Scott Valley has its own plan.
  - 3.6. Trinity River Record of Decision and associated documents; Trinity County General Plan and Zoning Ordinance
  - 3.7. Urban watershed management plans. North Coast Regional Quality Control Board Basin Plan. County General Plans to project growth, and therefore future water needs.
  - 3.8. Weaverville Community Services District Master Plan
  - 3.9. Documents include:
    - State water appropriation, extraction and water use plans (DWR, SWQCB)
    - Federal energy regulatory plans
    - Local community planning documents and Humboldt County General Plan (in the process of being updated)
  - 3.10. Documents include:
    - Ground water management is Siskiyou County's area of jurisdiction.
    - Scott Watershed Strategic Action Plan (submitted with the proposals).
    - Siskiyou RCD Long Range Plan 2005-2009.
    - Water Balance Model for the Scott River Watershed. The Scott River Watershed Council (SRWC) has committed to developing a Water Balance Model for the Scott River Watershed. The goal of the study is to better understand the hydrologic system when making water management and habitat restoration decisions. An additional goal is to provide a tool for optimum water management to the benefit of all users. To further this goal, the SRWC and cooperators have been compiling historical water related data. Data collection efforts include daily streamflow and precipitation.
  - 3.11. Navarro River Watershed Management Plan; Coho Recovery Plan; CDFG, California Salmonid Stream Restoration Manual; Hagans and Weaver, Handbook for Forest & Ranch Roads

- 3.12. Mendocino County General Plan and local watershed plans
- 3.13. Primary document is the Bureau of Reclamations Klamath Project Plan. This plan encompasses the entire system of reservoirs and delivery, including lower lake level and downstream. Takes into account other documents such as the biological opinions on Salmon and on endangered suckers.

Tiered under that plan are the irrigation District plans. There are 2 big ones Tule Lake, and Klamath, then upstream in the basin 3 small districts: Horse fly Gerber, Rancho Valley. All have smaller storage facilities with an intermix water rights. 95% of the water delivery comes from surface water. All are dependant on storage and delivery system such as canals etc. Following ground, drilling of wells that, development of water banking play an important role in management of water resources.

To a certain extent use of County general plans with land use plan for fed management plans, allows county to work with FED agencies= BR and Forest Service.

**4. How would you describe the social and cultural makeup of the community in your region?**

- 4.1. Communities are closely knit. There is a mix of long-term residents with an influx of new residents. The population of the county was declining between 1980 and 2000 but over the past five years growth has resulted at levels similar to those in 1980. The communities are, in general, low income and culturally homogeneous. Aside from the typical community service, educational, and retail workers there are many artists, government employees, and those who make their living from natural resource extraction. As a result of the mixture of these types of people, the region is socially diverse. Many communities have been affected by the decline of natural resource intensive industries upon which their economic base largely depended. The town of Hayfork is one example where the closure of a mill led to a depressed local economy. Because no other economies were developed in the region, many families felt they had no choice but to move away. Hayfork and surrounding communities are currently trying to develop other economic bases such as vineyards and tourism but still struggle with the loss of the resource extraction income that built that community.
- 4.2. Tule lake basin primarily Ag based. Most farms still family farms that go back to homesteaders. Hispanic population is increasing in the summer. Provide labor in fields. County does administer a migrant labor housing camp that serves the migrant population well and provides good housing.
- 4.3. Quite diverse. Rural County all development is in a strip by hwy 101, the rest is park. Many small non-incorporated areas. Communities have need for with urban services for water, not sewer.
- 4.4. Demographic getting older. Seems to be movement, not formal survey, comes from assessor of properties being sold. Appears to be large movement of retirees to the area. They sell their homes at inflated values elsewhere and are buying homes in the area. Conversely, because of lack of employment, young folks are moving out.

- 4.5. Extremely wealthy, extremely poor and a wide stripe between. Wide diversity of European, large Asian, African, Hispanic, Native American population.
- 4.6. Diverse- conservative and liberal. Generally very poor, with some major exceptions. Mostly Caucasian.
- 4.7. I would describe this region as primarily rural, and underprivileged with the exception of large population centers in the Santa Rosa area, and to a lesser extent Eureka and Ukiah. The "culture" of the region is mostly rural with a historical economy geared towards fishing and production of lumber and wood products. Due to the geographic isolation of much of the region, it seems that people in this region are generally very independent and small-government. More recently (probably post Vietnam), it seems various parts of the region have become more culturally "progressive".
- 4.8. The economy is changing from being resource based to recreation and service based. This will not have any impact on water supply/quality.
- 4.9. Humboldt County is made up of a diverse population along a wide spectrum between two extremes. At one extreme are no growth supporters and at the other extreme are supporters of rapid growth/development. Rural residents often want to preserve the agricultural heritage, while residents in the urban areas tend to support some growth and natural resource protection.
- 4.10. The social and cultural makeup of the community can be summarized as:
  - The entire area qualifies as disadvantaged. The Scott Valley area has lost almost 50% of its school (K-12) population in the past few years since the spotted owl and other environmental issues almost closed down the lumber industry. Families moved away, and are being replaced by well-to-do retired people from Southern CA/Bay Area. Real estate prices have escalated enormously, and an average family can't afford decent housing. Because of the high costs that new regulations have placed on agriculture, some ranchers have seriously considered working through the process of changing from agriculture to dividing the ranch for development. Shasta Valley faces some of the same problems, but is experiencing even more of a population change due to some very large development communities in that area. There is an amazing spirit of "We will make this work, no matter how tough" in the entire agricultural community in the Shasta/Scott area. There is a strong Native American presence in the Scott/Klamath region who are demanding their 'rights' to water quality as related to fish.
  - The agricultural restrictions have had an noticeable effect on businesses in the small towns.
- 4.11. The social and cultural makeup of the community can be summarized as:
  - Retired
  - People who have recently moved to Mendocino County from more urbanized settings
  - Long-time residents who have been involved in the fishing, grape and timber industries
  - Temporary workers in the above industries
- 4.12. The population of Mendocino County can be characterized as a disadvantaged community with pockets of affluence. The Ukiah area is in transition, as more and more residents are

working outside of the county, resulting in a growth in the service industry and increased development pressure.

- 4.13. In Tule lake basin the Siskiyou/Modoc county line runs through the middle. There are 2 small communities in this part of Modoc county; they are Tule Lake and Newell. Both are low income. Entirely dependant on agriculture in the basin for economy. Newell has a County operated migrant camp. Both incredibly hard hit by water cutoff in 2001. Neither have recovered, even though Feds have pumped in \$. High Hispanic population, most of which are farm workers, many are residents.

**5. What socioeconomic trends are taking place in your region? How will this trend impact water supply and water quality in the future?**

- 5.1. The growing rural subdivision development has led to an increased need for and demand of surface water. Consequently, there are more stream withdrawals and diversions. As growth occurs in nearby areas such as Redding, some areas of Trinity County are being looked to as bedroom communities. Lewiston, for example (discussed above), because of its proximity to Redding and available private land, is an example of a community that will have large growth rates in the near future. However, it lacks the infrastructure and services to properly accommodate that growth.
- 5.2. More permanent housing. Migrants are becoming permanent. This will increase the need for domestic water use. Hispanics have assimilated well into the community. Many local community events have Hispanic themes. Is there a need to preserve Ag use of land because of the increase in labor force? Tough for the county to balance. County does want to preserve Ag. No trends for industry to come into the County.
- 5.3. Del Norte County is growing rapidly. Significant real estate sales over the last 4 – 5 years. Development is growing. Puts stress on water supply. Couple of subdivisions don't have community water systems. Given the park and its ownership, availability for land to be developed is limited. Biggest subdivision is 100 parcels, generally around 4-parcels/per subdivisions.
- 5.4. Economic trends remain flat. Depressed area job market wise. Social wise same as forever, great if you like outdoor activities. Good area to raise kids. Don't see any impact to water supply or quality.
- 5.5. Dramatic change from blue collar work both ag and timber to 50% is retirees. Has led to a tremendous draw on public services and not real input back in. Want quite communities. Most who oppose growth are primarily "smoke stack" folks who worked in industries. School systems struggling. Affordable housing hi, and lots of tourism so rental pool has grown for vacationers, depleting the pool for residents.
- 5.6. More and more retirees are moving into the area. Vinyards are also springing up, which can cause conflicts over water supply if it is a new use of water. More homes are being built in areas which could cause environmental impacts such as water quality and water quantity.

North Coast Integrated Regional Water Management Plan, Phase 1  
Appendix K

- 5.7. Like all regions of California, this region will continue to add population which will challenge our ability to provide water for all of the competing needs. This will be particularly true in the Russian River watershed. As the urban areas become more densely populated (with smaller lots), the per capita water use is decreasing, but the overall water use continues to increase. Balancing this demand with the other needs will continue to become more difficult. It will also challenge our ability to maintain the quality of source waters, both surface and groundwater.
- 5.8. The economy is changing from being resource based to recreation and service based. This will not have any impact on water supply/quality.
- 5.9. Actual economic growth is small. Lumber and pulp mills are either closing or consolidating. This reduces the water usage by industry and provides more water to the municipalities. As the population grows, there is increased pressure for development in alluvial floodplains, impacting the quality of riparian habitat.
- 5.10. The social and cultural makeup of the community can be summarized as:
- The entire area qualifies as disadvantaged. The Scott Valley area has lost almost 50% of its school (K-12) population in the past few years since the spotted owl and other environmental issues almost closed down the lumber industry. Families moved away, and are being replaced by well-to-do retired people from Southern CA/Bay Area. Real estate prices have escalated enormously, and an average family can't afford decent housing. Because of the high costs that new regulations have placed on agriculture, some ranchers have seriously considered working through the process of changing from agriculture to dividing the ranch for development. Shasta Valley faces some of the same problems, but is experiencing even more of a population change due to some very large development communities in that area. There is an amazing spirit of "We will make this work, no matter how tough" in the entire agricultural community in the Shasta/Scott area. There is a strong Native American presence in the Scott/Klamath region who are demanding their 'rights' to water quality as related to fish.
  - The agricultural restrictions have had a noticeable effect on businesses in the small towns.
- 5.11. Trends include:
- Need for 'smart growth' planning -not enough planning is occurring in relation to the development pressures of a growing population
  - No control of ranchette development
  - Need for affordable housing
  - Need for conservation of large tracts of land
  - Need for management of large tracts of land using 'best management practices'
  - Reduction of impervious surface development that leads to reduced water quality.
- 5.12. The economy is transitioning from being resource-based to a tourism and service-based economy. There is a need for population growth planning to maximize future water quantity and quality.
- 5.13. At this point in time there is little or no growth. There is little incentive for folks move to. Not seeing any growth issues. There are some radical environmentalists. The desire is to drive conversion from irrigated ag community to a community where ground basin goes back to

intermittent wetlands of pre 1900. They see conflict as a way to push that agenda. There is an agenda towards not solving problems this impacts supply.

**6. What do you see as effective water related opportunities for integration in your region? What beneficial uses would result from this integration?**

- 6.1. Addressing the concerns for proper infrastructure and planning discussed above is one large opportunity. Focusing growth in areas with adequate services for water and sewer is key. Water conservation, recycling, and reuse are others. All of these efforts will result in better water management, especially in critical dry months, and will minimize the adverse effects on the wildlife and riparian water uses. The end result would be a balance between human consumptive uses and other beneficial uses.
- 6.2. There is an opportunity for integration, for management of Klamath River from the origin to the ocean. There would be an advantage if all agencies integrated into plan, would make more sense. The Klamath Collaborative group that has made some inroads.
- 6.3. Any funding that may allow folks to expand a water system would be effective. On sight sewage disposal systems work for most of the small subdivisions, however there is a need to develop water supplies that come from a different site than wells on same property where septic sites are located. Maintenance of projects that need upgrades, as well as inclusion of existing projects.
- 6.4. The integration that was developed through the IRWMP, specifically as it pertained to the work of the Technical Peer Review Committee.
- 6.5. "We will let that one fly"
- 6.6. Water recycling and use of untreated water for irrigation within our water districts could help reduce summer demands on creeks, while also providing a reliable and affordable source of water. More use of Trinity River water under county of origin statutes would also reduce impacts on tributary streams.
- 6.7. Increasing water conservation, recycling and reuse or groundwater recharge to minimize the demand that a growing population is putting on our finite water resources. This would also reduce or eliminate discharges of treated effluent from the wastewater treatment plants into waterways.

Reducing sanitary sewer overflows protects humans, and reduces bacterial and nutrient pollution in waterways if the sanitary sewer overflows go into water ways directly or via stormdrains.

Sediment reduction projects, especially done in a coordinated manner watershed wide, will assist in reducing flooding and will protect salmonid spawning areas from being choked in sediment. These watershed-wide projects should incorporate education components and encourage landowner involvement and at least partial funding of projects so they are more inclined to protect the investment.

- 6.8. Market forces – High water rates charged to customers result in lower water use.
- 6.9. Improvement of water quality in adjacent counties (Trinity, Del Norte, Siskiyou) through increased water treatment and water re-use.
- Improvement of water quantity in the Upper Eel (Mendocino County) through water conservation and better winter storage.
- Enhancement of marine resources and protection through energy efficient and improved waste water systems and water transportation systems.
- 6.10. I see a cooperative effort among agricultural users, Fish and Game, Native American groups and (recently) the business community to work together for beneficial water uses for all parties, but the frustration level is high because of the enormous costs in money, time, and energy.
- 6.11. Effective water related opportunities for integration include:
- Water-based curriculum for local youth
  - Incentive based cooperative programs to allow local residents to have a voice and carry the responsibility of decisions
  - Utilize innovative and progressive models for grey water usage (permaculture)
- 6.12. Effective water related opportunities for integration include:
- Redesigning the operation of Coyote Dam to change the flow regime.
  - New approaches to water supply and storage
  - Implementation of water conservation and water recycling/reclamation program in the Ukiah Valley to reduce the need for Russian River surface waters and ground water extraction.
  - Potential ground water development in sparsely populated areas
- 6.13. Well organized at basin level across spectrum of folk, not all farmers. Klamath falls right across state line – there are folks who are adamant that refuges accomplish mission and that plenty of water is supplied to the refuge.
- Agreement between water users and fisherman have developed over the last several months. There is improvement in spawning streams in watershed particularly above the larger storage areas due to improved grazing on forest service lands. Sucker population up due to improved grazing. Lots of cooperative work.

## **7. Where do you see effective integration across multiple water management strategies occurring now? What beneficial uses result from this integration?**

- 7.1. County planning has used critical water resource overlay zones to partially protect certain areas. The zoning designates areas with few, critical water resources that won't support much more growth because of adverse impacts on those water resources. Planners and developers

can use the critical water overlay zones to redirect development away from those areas and/or require developers to make special provisions for water supply.

- 7.2. Need to integrate Trinity River into system. That would assure the system of cold water. That needs to be part of a whole integrated plan. If we had collaboration and integration we could work on a single purpose rather than at cross-purposes.

Solutions:

- More storage would help. Environmentally very touchy subject is that the Long Lake could serve as cold-water storage, private land. Bureau of Reclamation has paid to fallow land and pump water. Storage could be more balanced with times of need for more water.
- Basis for decision-making must be good science. There must be agreement by all the agencies that will do that – all the water management agencies.
- Water conservation needed because there is waste in all areas. Framing, urban, landscape, wetlands. Good water conservation is needed at critical times.
- True Cause of ESA problems. Not sure we have found true cause many assumptions have been made.

- 7.3. Real integration has been between the city and county with regard to water systems, because of the city providing service to unincorporated small subdivision areas outside of city boundaries. This has developed into a win win situation for both the city and the county. The city has initiated service areas that traditionally haven't had city water. Allowing development where it wasn't allowed in first place. Full development around urban areas has been effective.

- 7.4. The integration that was developed through the IRWMP, specifically as it pertained to the work of the Technical Peer Review Committee.

Regarding work on the Technical Peer Review Committee:

- Diversity of the group led to a broad exchange of viewpoints.
- When evaluating projects with regard to environmental justice, although some of the specific projects may not have addressed that goal as the State Board envisions environmental justice the process set up by North Coast IRWMP played right into that state goal. Many of the members of the Tech. Peer Review Committee were very involved with their communities and participated in multiple community meetings. As a result they were able to bringing forth concerns that had come at town meetings where projects had been locally developed. If nothing else comes out of it that was very worthwhile.
- Modoc County has in the past experienced frustration in dealing with Fed agencies not considering meaningful input in the process of developing policy. This process gave a good forum for bringing meaningful input to regulatory agencies from those they regulate. The input was not of a process/procedural nature, but rather ideas about areas of need/projects/and issues that were coming from local communities.
- Some of the projects were identified as important even if they didn't do well in application review. It was clearly identified through the review process that there is a major need for technical assistance at all levels for small districts and communities who provide services. They can't write grants, or evaluate criteria at a very basic level. Often times they don't even know what the specific problems are that they need technical assistance with. In many instances we are talking about assistance with regard to infrastructure needs that are crumbling. There was a clear tie, in my opinion, to failing infrastructure and how

those failures are impacting natural resources. The technical review committee had members with skills and expertise in the natural resource arena as well as water and waste water infrastructure. When many of the public works projects were developed they built to standards that are different than they are today. As a result with today's higher standards and age of those plants, they can't meet the needs of today.

- The issue of failing infrastructure and the challenges faced by small public works and districts was recognized by the committee as being one of the areas needing help with this IRWMP process.

7.5. none

7.6. Providing for water recycling and/or use of untreated water for irrigation are plans we have, but no real integration has occurred yet due to funding constraints. Prop 50 could really help with that.

7.7. More recently, restoration has been occurring with the larger watershed perspective. Prior to that, it seemed that restoration projects largely happen in a vacuum. For effective restoration, the watershed as a whole should be first assessed (to the degree that landowners participate), areas for restoration prioritized, and then funding (with partial funding by the landowners) and restoration systematically target the highest to lowest priority areas.

7.8. Questions the cost benefit of current salmon recovery and habitat restoration efforts.

7.9. The Humboldt Bay Management Plan is a model for comprehensive planning that provides a framework for local economic needs of the local community, future water supply and conservation/protection of natural resources.

The increased flow in the Trinity River mandated through Federal/Tribal agreements, improved the local economy, natural resources and fisheries.

Agricultural wastewater containment facilities constructed on private property on the Eel and Trinity rivers have provided an alternative model for dealing with wastewater management. Information exchange regarding the permitting and construction of these facilities, by the UC Extension, RCD, NRCS and the dairy industry have facilitated the education and outreach to agricultural landowners.

7.10. I see a cooperative effort among agricultural users, Fish and Game, Native American groups and (recently) the business community to work together for beneficial water uses for all parties, but the frustration level is high because of the enormous costs in money, time, and energy.

7.11. The Navarro River Watershed Management Plan provides a model for stream education and restoration programs, rural road management and cultivating local leadership

7.12. Effective local models occur at the Noyo River (Fort Bragg) and Forsythe Creek, that address sediment TMDLs, fish habitat improvement for coho recovery, erosion control, and source water protection.

- 7.13. No way to solve individual problem individually. All intertwined with universal solution. Without the Klamath Project there would be no water to send downstream when fisheries need it. The largest quality issue is temperature. No one solution that fits everything. Solutions are going to involve rational people with rational discussions and better communication.

Improved Klamath Project management. Option for water banking so that water is available for other irrigators, downstream of the refuge. Some ground water wells perhaps only temporary. Recharge may be issue in future supply. Bureau of Reclamation needs to work with Fish and Wildlife Service who in turn need to work with irrigators as well as work with tribes. The issue the California Oregon state line is complex. Toss into all downstream: commercial fishermen, tribes, Trinity County to CVP when naturally ran into Klamath – should it come back. Conflicting endangered species need, water in lake for suckers when maybe it should go downstream.

## **8. What are specific water management strategies or actions that would contribute to the recovery of endangered and threatened salmonids in the North Coast Region?**

- 8.1. Many of the strategies described above will also benefit salmonid populations and other natural resources. This includes: directing new development and human consumption so that it doesn't adversely impact salmonid habitat; providing for off stream water development; and continuing watershed restoration with regard to water quality (e.g., reducing sediment impairment and restoring impacted urban streams).
- 8.2. none
- 8.3. IRWMP serving needs of Community: Involvement we can help other entities for future projects that need to be developed and funded. The IRWMP could help others who have not as of yet brought projects forward. Community development projects that could be used for development in a positive manner that helps Del Norte County.
- 8.4. none
- 8.5. none
- 8.6. Reduction of diversions from streams by expansion of water districts/water companies to provide water from winter storage; providing places for water trucks to fill up without dewatering small tributaries; riparian setback ordinances; no creation of new riparian water rights.
- 8.7. Reduce pollution (sediment, nutrients, etc.). Increase conservation of water through recycling, reuse and reduce illegal diversions with the goal of maintaining sustainable in-stream flows. Remove barriers to spawning grounds, or provide fish ladders or other means for the fish to bypass the barriers. Possibly create conservation easements along fish bearing streams to maintain canopy, cool micro-climates, and natural configuration/complexity of channels, while actively encouraging landowners to manage non-fish bearing streams that are tributary to reduce sediment input and maintain cooler water temperatures to the extent feasible.

Educate landowners on sustainable land management, and create design standards for outloped roads, stream crossings, etc. to assist in long term land management.

Of course, the other side of it is sustainable fishing so that a sufficient number of salmonids return to spawn....

8.8. none

8.9. These strategies include:

- Consolidated planning
- Reuse of agricultural tail waters
- Improved septic systems
- Larger winter storage tanks/facilities
- Stream-lined permitting for wastewater containment facilities
- Long-term reduction of water diversions
- Effective planning and working relations with tribes, NOAA and local agencies on Trinity and Eel river issues
- Enhancement of the tidal prism for Redwood Creek and Eel River estuaries

8.10. These strategies include:

- Fully fund: Fund for Scott River Water Trust
- Fund: Verification of Scott River Water Rights
- Scott River Watershed Monitoring Program
- Improvement of Scott River Spawning Habitat

8.11. Purchase water rights and create incentive-based water quality compliance programs (TMDL program is punitive)

8.12. Implementation of TMDLs, re-operation of Coyote Dam, and implementation of site specific recommendations from the Coho Recovery Plan.

8.13. IRWMP to serve community:

Directly community needs stable supply of irrigation that in turn will drive the economy.

Refuge also important as well for hunting

Community acknowledges environmental contributions. Locals find that winter habitat for Bald Eagles is important to the community. Stable environment to deal with issues and challenges in a logical manner, without the presence of undo influence from the outside. The answers will involve additional storage, some realization that there won't be an ideal situation for everything. Ideal sucker habitat will negatively impact salmon habitat. Ideal salmon impacts farmers. Getting there will be a money issue. New storage is not free. Probably wasted enough money to fix. Reacting to the situation emotionally has wasted funds. But perhaps this was needed for long-term solutions.

#### GENERAL INFORMATION:

PROP 50: Logistics of putting grant together for Prop 50 was difficult. Grant application was unwieldy for Prop 50, spent a lot of time working off of the instructions that were difficult to follow. Experienced at writing grants for novices would be difficult. As a consequence did not submit Resource grants, however did submit for Municipality.



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX L: NCIRWMP PROJECT LIST AND SCORES**



**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| Project ID # | Organization Name   | Project Name   | Project County Location    | Avg Score                     | Max  | Min  | Standard Deviation | Prop 50 Fund Request |
|--------------|---|--|----------------------------|-------------------------------|------|------|--------------------|----------------------|
| 7            | Mattole Restoration Council                                       | Mattole Integrated Water Management Program                  | HUMBOLDT MENDOCINO         | 75                            | 86   | 64   | 8                  | \$2,897,690          |
| 236          | Siskiyou County   | Siskiyou Co. Integrated Water Mgt/Coho Recovery Project      | SISKIYOU                   | 73                            | 91   | 54   | 11                 | \$14,431,517         |
| 78           | Sonoma County   | Monte Rio Community Wastewater Project                       | SONOMA                     | 69                            | 88   | 51   | 15                 | \$9,487,000          |
| 86           | Orick Community Services District                                 | Orick Community Services District Wastewater Treatment Sys.  | HUMBOLDT                   | 69                            | 81   | 54   | 9                  | \$4,156,225          |
| ICWMP-D      | Mattole Restoration Council                                       | Mattole Integrated Coastal Watershed Management Program      | HUMBOLDT                   | 68                            | 80   | 53   | 10                 | \$1,235,206          |
| 22           | Pacific Coast Fish, Wildlife and Wetlands Restoration Association | Redwood Creek Erosion Control                                | HUMBOLDT                   | 67                            | 77   | 50   | 10                 | \$1,325,000          |
| 164          | California Land Stewardship Institute                             | Fish Friendly Farming Environmental Certification Program    | MENDOCINO NAPA SONOMA LAKE | 65                            | 82.5 | 50.5 | 11                 | \$3,000,000          |
| 51           | Humboldt County Resource Conservation District                    | Mid Van Duzen River Ranch Road Sediment Reduction Program    | HUMBOLDT                   | 64                            | 75   | 49.5 | 9                  | \$810,000            |
| 121          | Humboldt County Resource Conservation District                    | Salt River Restoration Project                               | HUMBOLDT                   | 64                            | 75   | 54   | 7                  | \$5,950,000          |
| 23           | Graton Community Service District                                 | Graton Wastewater Treatment Upgrade and Reclamation Project  | SONOMA                     | 64                            | 84   | 46   | 11                 | \$1,332,400          |
| 128          | City of Santa Rosa  | Sonoma County Water Recycling and Habitat Preservation Proj  | SONOMA                     | 64                            | 80   | 48   | 11                 | \$50,000,000         |
| 217          | Modoc County  | Newell Water System Renovation                               | MODOC                      | 64                            | 79   | 37   | 13                 | \$1,815,127          |
| 38           | California State Parks - North Coast Redwoods District            | Head Hunter/Smoke House Non-point Sediment Reduction Project | DEL NORTE                  | 64                            | 74   | 50   | 8                  | \$871,318            |
| 151          | Trinity County  | Trinity Drinking Water Source Sediment Reduction Project     | TRINITY                    | 62                            | 76   | 46   | 10                 | \$300,015            |
| 108          | City of Eureka  | Martin Slough Interceptor Project                            | HUMBOLDT                   | 62                            | 74   | 42   | 11                 | \$5,598,500          |
| 77           | Humboldt County Resource Conservation                             | Eel River Cooperative Sediment Reduction Program             | HUMBOLDT                   | 62                            | 68   | 50.5 | 6                  | \$1,655,000          |
| 123          | Mendocino County RCD  | Sinkyone Road Restoration Project                            | MENDOCINO HUMBOLDT         | withdrawn-other funding rcv'd |      |      |                    | \$654,316            |
| 125          | Mendocino County RCD  | Navarro Watershed Road Sediment Reduction Project            | MENDOCINO                  | 61                            | 76   | 50   | 9                  | \$1,415,427          |
| 26           | Gualala River Watershed Council                                   | Sediment Solutions for the Gualala: Phase III                | MENDOCINO SONOMA           | 60                            | 76   | 39.5 | 11                 | \$1,132,445          |
| 42           | City of Ukiah   | Wastewater Secondary Treatment Upgrade                       | MENDOCINO                  | 60                            | 76   | 46   | 10                 | \$9,227,089          |
| 75           | City of Ukiah   | Reclaimed Water System                                       | MENDOCINO                  | 59                            | 77   | 41   | 12                 | \$7,290,000          |
| 19           | Occidental County Sanitation District                             | Camp Meeker-Occidental Joint Wastewater Reclamation Project  | SONOMA                     | 58                            | 69   | 40   | 10                 | \$5,495,000          |
| 27           | LandPaths   | Dam Failure Prevention & Sediment Reduction Santa Rosa Creek | SONOMA                     | 58                            | 68   | 47   | 8                  | \$1,365,000          |
| 2            | The Watershed Research and Training Center                        | Hayfork Forest Health Phase II                               | TRINITY                    | 58                            | 80   | 34   | 13                 | \$515,000            |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| Project ID # | Organization Name   | Project Name   | Project County Location                                  | Avg Score | Max | Min  | Standard Deviation | Prop 50 Fund Request |
|--------------|---|--|--|-----------|-----|------|--------------------|----------------------|
| 148          | Mendocino County Resource Conservation District           | Upper Rancheria Creek Riparian Enhancement Project             | MENDOCINO  | 58        | 80  | 41.5 | 13                 | \$82,440             |
| 207          | Gualala River Watershed                                   | Lower Fuller Creek Sediment Source Implementation Plan         | SONOMA<br>MENDOCINO                                      | 58        | 75  | 35.5 | 13                 | \$171,429            |
| ICWMP-B      | Mendocino County RCD                                      | Forsythe Creek Sediment Control Project                        | MENDOCINO  | 58        | 75  | 46   | 11                 | \$2,523,651          |
| 83           | Sotoyome Resource Conservation District                   | Russian River Arundo Removal and Habitat Restoration Project   | MENDOCINO<br>SONOMA                                      | 58        | 76  | 41.5 | 11                 | \$2,800,000          |
| 74           | City of Willits   | Willits Wastewater Treatment/ Water Reclamation Project        | MENDOCINO  | 57        | 66  | 45   | 9                  | \$500,000            |
| 33           | Gold Ridge Resource Conservation District                 | Dutch Bill Creek Coho Habitat Enhancement                      | SONOMA   | 57        | 72  | 42.5 | 11                 | \$155,000            |
| 39           | Trinity County Waterworks                                 | Raw & Recovered Water for Irrigating Public Agencies           | TRINITY  | 57        | 76  | 45   | 9                  | \$1,350,000          |
| 81           | Weaverville Sanitary District                             | Weaverville Sanitary District Water Reclamation Project        | TRINITY  | 57        | 73  | 42   | 10                 | \$225,500            |
| 168          | Redwood Community Action Agency                           | Humboldt Bay Watershed Plan Implementation                     | HUMBOLDT   | 57        | 73  | 32   | 14                 | \$240,000            |
| 188          | Trinity County Resource Conservation District             | Reading Creek Water Conservation Project                       | TRINITY  | 57        | 69  | 41.5 | 9                  | \$46,000             |
| ICWMP-A      | Gold Ridge RCD  | Salmon Creek Sediment Reduction and Water Conservation Program | SONOMA   | 56        | 72  | 39   | 11                 | \$359,995            |
| 139          | Trinity County Resource Conservation District             | East Branch Irrigation Ditch Piping Project                    | TRINITY  | 56        | 69  | 38.5 | 9                  | \$38,650             |
| 174          | City of Ukiah   | Water Treatment Plant Improvement Project                      | MENDOCINO  | 56        | 74  | 43   | 9                  | \$8,581,908          |
| 94           | Westport County Water District                            | Wages Creek Source Water Protection                            | MENDOCINO  | 56        | 69  | 37.5 | 11                 | \$166,500            |
| 131          | City of Arcata Environmental Services Department          | Arcata Watershed Enhancement through I & I Reduction           | HUMBOLDT   | 56        | 72  | 34   | 12                 | \$495,000            |
| 189          | Mendocino County Resource Conservation District           | Robinson Creek Restoration Demonstration Project               | MENDOCINO  | 56        | 74  | 39.5 | 11                 | \$244,436            |
| 90           | City of Arcata Environmental Services Department          | Arcata Storm Water Master Plan Elements                        | HUMBOLDT   | 56        | 69  | 38   | 11                 | \$500,000            |
| 15           | California Department of Forestry                         | California Forest Improvement Program                          | SISKIYOU TRINITY<br>HUMBOLDT<br>SONOMA<br>MENDOCINO NAPA | 56        | 69  | 47.5 | 7                  | \$873,230            |
| 70           | City of Santa Rosa  | Prince Memorial Greenway Pierson Reach Restoration             | SONOMA   | 56        | 67  | 38   | 10                 | \$1,827,750          |
| 231          | Garberville Sanitary District (Garberville Water Company) | Wastewater Treatment Plant Improvements                        | HUMBOLDT   | 56        | 67  | 45   | 8                  | \$1,860,827          |
| 72           | City of Rohnert Park                                      | Rohnert Park/Cotati Urban Recycled Water System Expansion      | SONOMA   | 55        | 68  | 25   | 13                 | \$4,000,000          |
| 141          | City of Ferndale  | Ferndale Wastewater Treatment Plant Improvements               | HUMBOLDT   | 55        | 69  | 39   | 9                  | \$3,175,000          |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| Project ID # | Organization Name                                | Project Name   | Project County Location                   | Avg Score | Max | Min  | Standard Deviation | Prop 50 Fund Request |
|--------------|--|--|---|-----------|-----|------|--------------------|----------------------|
| 226          | California State Parks Mendocino District        | Big River Focused Landform and Habitat Restorations          | MENDOCINO                                 | 55        | 77  | 39.5 | 10                 | \$1,510,000          |
| 30           | City of Santa Rosa                               | Colgan Creek Restoration                                     | SONOMA                                    | 55        | 69  | 39   | 11                 | \$1,000,000          |
| 89           | Covelo CSD (Community Services District)         | Covelo Wastewater Facilities Improvement Project             | MENDOCINO                                 | 55        | 69  | 38   | 11                 | \$3,231,700          |
| 140          | City of Santa Rosa                               | Santa Rosa Creek B Street Outfall Retrofit Project           | SONOMA                                    | 55        | 68  | 37   | 10                 | \$396,000            |
| 12           | Laguna de Santa Rosa Foundation                  | Laguna de Santa Rosa Riparian and Wetland Restoration        | SONOMA                                    | 54        | 71  | 40   | 9                  | \$488,000            |
| 205          | North Coast Regional Land Trust                  | Six Rivers to the Sea  | HUMBOLDT                                  | 54        | 78  | 37.5 | 13                 | \$11,681,500         |
| 28           | Sonoma County Regional Parks                     | Cloverdale River Park, Russian River Bank Restoration        | SONOMA                                    | 54        | 65  | 42.5 | 7                  | \$500,000            |
| 29           | City of Santa Rosa                               | Citywide Creek Master Plan                                   | SONOMA                                    | 53        | 69  | 27   | 15                 | \$745,720            |
| 196          | City of Ukiah                                    | Inflow and Infiltration Reduction Project                    | MENDOCINO                                 | 53        | 73  | 36   | 11                 | \$20,925,000         |
| 24           | E Center, Mendocino Fisheries Program            | Hollow Tree Road Improvement Project                         | MENDOCINO                                 | 53        | 69  | 33   | 12                 | \$294,923            |
| 194          | Redwood Community                                | Humboldt Bay Water Quality Improvement Program               | HUMBOLDT                                  | 53        | 78  | 32.5 | 15                 | \$210,000            |
| 133          | City of Rio Dell                                 | Wastewater Disposal Project                                  | HUMBOLDT                                  | 53        | 65  | 39   | 10                 | \$2,430,000          |
| ICWMP-C      | Mendocino Land Trust                             | Big River Main Haul Road Phase I                             | MENDOCINO                                 | 52        | 69  | 39   | 11                 | \$1,876,028          |
| 200          | Redwood Community Action Agency                  | Luffenholtz Creek Barrier Modification Designs and Sediment  | HUMBOLDT                                  | 52        | 76  | 37   | 12                 | \$103,375            |
| 187          | California Land Stewardship Institute            | Sediment Reduction and Habitat Improvements - 4 RRiver tribs | MENDOCINO SONOMA                          | 52        | 76  | 32.5 | 12                 | \$620,000            |
| 98           | Gasquet Community Services District              | Gasquet Community Services District Water System Upgrade     | DEL NORTE                                 | 52        | 63  | 37   | 8                  | \$966,420            |
| 191          | City of Eureka                                   | Eureka Inflow and Infiltration Reduction Project             | HUMBOLDT                                  | 52        | 68  | 34   | 11                 | \$7,240,500          |
| 55           | City of Crescent City                            | Crescent City Wastewater Treatment Plant Renovation          | DEL NORTE                                 | 52        | 70  | 5    | 18                 | \$7,000,000          |
| 161          | Hoopa Valley Tribal Protection Agency            | Klamath-Trinity Water Quality and Water Supply Database and  | HUMBOLDT DEL NORTE MODOC SISKIYOU TRINITY | 52        | 75  | 30   | 16                 | \$350,000            |
| 106          | Redwood Community Action Agency                  | KRIS Humboldt Bay  | HUMBOLDT                                  | 52        | 73  | 24   | 16                 | \$362,250            |
| 153          | Westport County Water District                   | Water Supply Reliability Project                             | MENDOCINO                                 | 52        | 68  | 37   | 12                 | \$553,500            |
| 95           | Sonoma County                                    | Implementing an Effective Storm Water Management Program     | SONOMA                                    | 51        | 69  | 21   | 16                 | \$125,000            |
| 137          | Bioengineering Institute                         | Walker Creek Restoration Project                             | MENDOCINO                                 | 51        | 76  | 33   | 13                 | \$283,976            |
| 160          | Mendocino County Resource Conservation District  | Navarro Watershed Upslope Road Inventory Project             | MENDOCINO                                 | 51        | 81  | 35.5 | 15                 | \$51,175             |
| 114          | Mendocino County RCD                             | Garcia Effectiveness Monitoring                              | MENDOCINO                                 | 51        | 71  | 29   | 13                 | \$200,800            |
| 126          | Laguna de Santa Rosa Foundation                  | Laguna de Santa Rosa Cotati Reach Restoration                | SONOMA                                    | 51        | 67  | 32   | 11                 | \$341,500            |
| 91           | City of Arcata Environmental Services Department | Jolly Giant Dam Retrofit                                     | HUMBOLDT                                  | 51        | 67  | 34   | 11                 | \$80,000             |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| Project ID # | Organization Name   | Project Name   | Project County Location  | Avg Score | Max | Min  | Standard Deviation | Prop 50 Fund Request |
|--------------|---|--|--|-----------|-----|------|--------------------|----------------------|
| 134          | Institute for Fisheries Resources                         | Networked Watershed Library for the North Coast Region       | DEL NORTE GLENN<br>HUMBOLDT LAKE<br>MENDOCINO<br>MODOC SISKIYOU<br>SONOMA TRINITY  | 50        | 72  | 26   | 14                 | \$280,000            |
| 127          | Town of Windsor   | Sonoma County Airport Area Recycled Water Irrigation-Phase 1 | SONOMA   | 50        | 61  | 34   | 10                 | \$1,494,000          |
| 201          | Mendocino County Water Agency                             | Russian River Basin KRIS Database                            | MENDOCINO<br>SONOMA  | 50        | 74  | 24   | 16                 | \$108,000            |
| 104          | California Department of Forestry                         | Sensitive Watershed Monitoring and Mapping Resource          | COLUSA DEL NORTE<br>GLENN HUMBOLDT<br>LAKE MARIN<br>MENDOCINO<br>MODOC NAPA<br>SHASTA SISKIYOU<br>SONOMA TEHAMA<br>TRINITY | 50        | 75  | 30   | 14                 | \$300,000            |
| 50           | Humboldt Bay Municipal Water District                     | Ranney Collectors Rehabilitation/Upgrade                     | HUMBOLDT   | 50        | 60  | 39   | 7                  | \$3,802,500          |
| 87           | Willow Creek Community Services District                  | Hwy 96 Stormceptor   | HUMBOLDT   | 50        | 69  | 34   | 12                 | \$69,000             |
| 82           | Gold Ridge Resource Conservation District                 | Laguna de Santa Rosa Restoration Program                     | SONOMA   | 50        | 64  | 37   | 10                 | \$370,000            |
| 118          | Redwood Community Action Agency                           | KRIS Mad River   | HUMBOLDT   | 50        | 73  | 24   | 16                 | \$205,000            |
| 232          | Garberville Sanitary District (Garberville Water Company) | Garberville Water Supply Reliability Project                 | HUMBOLDT   | 50        | 64  | 38   | 10                 | \$268,237            |
| 238          | City of Sebastopol  | Sebastopol MWS Groundwater Management Program                | SONOMA   | 49        | 59  | 38   | 6                  | \$1,864,000          |
| 41           | Mendocino County Water Agency                             | Mendocino County Water Quality/Supply Database (KRIS)        | MENDOCINO  | 49        | 70  | 24   | 15                 | \$195,000            |
| 216          | The Conservation Fund                                     | Big River/Salmon Creek Watershed Restoration Project         | MENDOCINO  | 49        | 72  | 35   | 13                 | \$35,000,000         |
| 197          | Mendocino County Water Agency                             | Eel River Basin KRIS database                                | GLENN HUMBOLDT<br>LAKE MENDOCINO<br>SONOMA TRINITY   | 49        | 69  | 24   | 15                 | \$250,000            |
| 61           | Humboldt Bay Municipal Water District                     | Samoa Peninsula Pipeline Replacements                        | HUMBOLDT   | 48        | 66  | 37   | 9                  | \$10,530,000         |
| 66           | Humboldt Bay Municipal Water District                     | Water Supply Interties                                       | HUMBOLDT   | 48        | 61  | 36   | 8                  | \$1,495,000          |
| 149          | City of Ferndale  | Ferndale Infiltration & Inflow Reduction                     | HUMBOLDT   | 48        | 66  | 32   | 12                 | \$160,500            |
| 159          | City of Ferndale  | Ferndale Drainage Improvements                               | HUMBOLDT   | 48        | 60  | 33   | 10                 | \$981,400            |
| 173          | City of Eureka  | Mad River Pipeline Improvements                              | HUMBOLDT   | 48        | 63  | 33.5 | 11                 | \$7,200,000          |
| 56           | Weaverville Community                                     | East Weaver Creek Booster Pump Station                       | TRINITY  | 47        | 65  | 25   | 14                 | \$1,404,000          |
| 68           | Hydesville County Water District                          | Infrastructure Upgrade                                       | HUMBOLDT   | 47        | 62  | 28.5 | 12                 | \$425,000            |
| 183          | Sonoma County Regional Parks                              | Storm Water System and Natural Resource Inventory            | SONOMA   | 46        | 63  | 32   | 11                 | \$36,000             |
| 49           | Willow Creek Community Services District                  | Water Filtration Plant                                       | HUMBOLDT   | 46        | 62  | 33   | 11                 | \$1,809,000          |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| Project ID # | Organization Name                                       | Project Name  | Project County Location                   | Avg Score | Max | Min  | Standard Deviation | Prop 50 Fund Request |
|--------------|---|---|---|-----------|-----|------|--------------------|----------------------|
| 165          | Community Clean Water Institute                         | Humboldt Bay Regional Water Quality Monitoring Project        | HUMBOLDT                                  | 46        | 64  | 31   | 10                 | \$216,000            |
| 206          | Humboldt County Department of Agriculture               | BMP for Control of Invasive Plants in Northcoast Watersheds   | DEL NORTE HUMBOLDT                        | 46        | 57  | 27   | 11                 | \$30,000             |
| 190          | Hoopa Valley Tribal Protection Agency                   | Klamath-Trinity Water Quality and Water Supply Database and   | DEL NORTE HUMBOLDT MODOC SISKIYOU TRINITY | 46        | 68  | 5    | 22                 | \$350,000            |
| 99           | City of Santa Rosa                                      | Development of Standby Water Supply Wells                     | SONOMA                                    | 45        | 55  | 34   | 8                  | \$4,620,000          |
| 13           | Occidental Arts and Ecology Center's WATER Institute    | Dutch Bill Watershed Literacy Project: No Coho Left Behind    | SONOMA                                    | 45        | 65  | 27   | 14                 | \$18,000             |
| 166          | Sonoma County Water Agency                              | Cook Creek Restoration Project                                | SONOMA                                    | 44        | 57  | 29.5 | 11                 | \$2,855,000          |
| 59           | City of Trinidad  | Water Storage improvement Project                             | HUMBOLDT                                  | 44        | 62  | 26   | 11                 | \$930,319            |
| 158          | North Coast Resource Conservation & Development Council | Rural Municipal Service Provider Technical Assistance Program | LAKE MARIN MENDOCINO SONOMA               | 44        | 77  | 16   | 18                 | \$160,000            |
| 35           | Gold Ridge Resource Conservation District               | Salmon Creek Watershed Assessment and Implementation          | SONOMA                                    | 44        | 60  | 28.5 | 11                 | \$235,000            |
| 102          | Westhaven Community                                     | Water Storage Improvement Project                             | HUMBOLDT                                  | 44        | 64  | 27   | 12                 | \$100,000            |
| 180          | Mendocino National Forest                               | Soda Creek Riparian Improvement                               | LAKE                                      | 44        | 68  | 19   | 14                 | \$55,000             |
| 182          | City of Rio Dell  | Water Treatment System Improvements                           | HUMBOLDT                                  | 43        | 64  | 24   | 14                 | \$3,146,850          |
| 64           | Community Clean Water Institute                         | Middle Reach Russian River Citizen Monitoring Project         | SONOMA                                    | 42        | 58  | 25   | 11                 | \$99,000             |
| 1            | Loleta Community Services District                      | Loleta I&I  | HUMBOLDT                                  | 42        | 74  | 21   | 20                 | \$150,000            |
| 124          | Russian River Unlimited                                 | 2005 River Clean-up and River Education in Schools            | MENDOCINO                                 | 42        | 60  | 19   | 13                 | \$0                  |
| 213          | Humboldt Community Services District                    | Steel Water Main Replacement                                  | HUMBOLDT                                  | 41        | 59  | 21.5 | 12                 | \$2,220,000          |
| 152          | Bioengineering Institute                                | Ten Mile Creek Watershed Outreach and Organizing Project      | MENDOCINO                                 | 41        | 67  | 22   | 12                 | \$129,241            |
| 212          | Humboldt Community Services District                    | CR Transmission Main  | HUMBOLDT                                  | 41        | 56  | 24.5 | 10                 | \$525,000            |
| 155          | Mendocino County  | Development of Mendocino County Grading Ordinance             | MENDOCINO                                 | 40        | 60  | 19   | 14                 | \$200,000            |
| 113          | Loleta Community Services District                      | Water Supply  | HUMBOLDT                                  | 40        | 63  | 22   | 13                 | \$1,300,000          |
| 239          | City of Blue Lake                                       | Blue Lake Wastewater Treatment Plant                          | HUMBOLDT                                  | 39        | 69  | 17   | 18                 | \$600,000            |
| 186          | Sebastopol Water Information Group (SWIG)               | Groundwater Studies in the Sebastopol Area                    | SONOMA                                    | 39        | 53  | 30.5 | 8                  | \$200,200            |
| 17           | Mendocino County Resource Conservation District         | BMPs for Invasive Plant Control in Coastal Watersheds         | MENDOCINO SONOMA HUMBOLDT DEL NORTE       | 39        | 56  | 17   | 14                 | \$50,000             |
| 176          | McKinleyville Community Services District               | Sewer Main Construction                                       | HUMBOLDT                                  | 39        | 55  | 17.5 | 14                 | \$225,000            |
| 147          | Fieldbrook Community Services District                  | Water Storage Improvement Project                             | HUMBOLDT                                  | 38        | 52  | 26.5 | 9                  | \$549,272            |

**North Coast Integrated Regional Water Management Plan, Phase 1**  
**Appendix L: NCIWMP Project List and Scores**

| <b>Project ID #</b>          | <b>Organization Name</b>     | <b>Project Name</b>                                       | <b>Project County Location</b> | <b>Avg Score</b> | <b>Max</b> | <b>Min</b> | <b>Standard Deviation</b> | <b>Prop 50 Fund Request</b> |
|------------------------------|------------------------------|---|--------------------------------|------------------|------------|------------|---------------------------|-----------------------------|
| 184                          | City of Rio Dell             | Valve and Fire Hydrant Replacement Project                | HUMBOLDT                       | 38               | 61         | 21         | 13                        | \$900,000                   |
| 175                          | City of Cotati               | Low Water Use Demonstration Program                       | SONOMA                         | 37               | 60         | 23         | 12                        | \$195,000                   |
| 181                          | City of Rio Dell             | Sludge Disposal and Handling Improvement Project          | HUMBOLDT                       | 37               | 57         | 21         | 13                        | \$450,000                   |
| 185                          | City of Rio Dell             | Wastewater Master Plan and Inflow and Infiltration Study  | HUMBOLDT                       | 36               | 62         | 18         | 14                        | \$315,000                   |
| 193                          | Mendocino County Water       | U. S. Army Corps Coyote Valley Dam Feasibility Study      | MENDOCINO                      | 35               | 63         | 21         | 13                        | \$2,000,000                 |
| 192                          | City of Rio Dell             | Stormwater Master Plan                                    | HUMBOLDT                       | 34               | 60         | 19         | 14                        | \$202,500                   |
| 203                          | Sonoma County Regional Parks | Shiloh Ranch & Foothill Regional Parks Erosion Preventior | SONOMA                         | 34               | 46         | 14         | 12                        | \$107,000                   |
| <b>TOTAL REQUESTED FUNDS</b> |                              |   |                                |                  |            |            |                           | <b>\$317,123,977</b>        |

**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX M: NCIRWMP PROJECT BUDGETS**



**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 164 – Fish Friendly Farming Environmental Certification Program**

| Budget Category  |   | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|--|---|---|---------------------------------|-------------------------|--------------|-----------------|
| (a)  | Direct Project Administration Costs   |   |                                 | \$5,000.00              | \$5,000.00   |                 |
| (b)  | Land Purchase/Easement  |   |                                 | \$0.00                  | \$0.00       |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |   |                                 | \$53,000.00             | \$53,000.00  |                 |
| (d.1)  | Construction/Implementation : Labor   |   | \$21,000.00                     | \$58,000.00             | \$79,000.00  |                 |
| (d.2)  | Construction/Implementation : Materials   |   |                                 | \$55,510.00             | \$55,510.00  |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |   |                                 | \$0.00                  | \$0.00       |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |   |                                 | \$0.00                  | \$0.00       |                 |
| (f)  | Construction Administration   |   |                                 | \$14,000.00             | \$14,000.00  |                 |
| (g.1)  | Other Costs: Labor  |   |                                 | \$22,000.00             | \$22,000.00  |                 |
| (g.2)  | Other Costs: Materials  |   |                                 | \$3,000.00              | \$3,000.00   |                 |
| (h)  | Construction/Implementation Contingency   |   |                                 | \$0.00                  | \$0.00       |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00  | \$21,000.00                     | \$210,510.00            | \$231,510.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |   |                                 |                         |              |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Landowner funded designs and implementation of several revegetation projects</i> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 23 – Graton Wastewater Treatment Upgrade and Reclamation Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   |  | \$88,881.00                     | \$32,500.00             | \$121,381.00   |                 |
| (b)  | Land Purchase/Easement  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  | \$392,722.00                    | \$143,500.00            | \$536,222.00   |                 |
| (d.1)  | Construction/Implementation : Labor   |  | \$292,900.00                    | \$107,100.00            | \$400,000.00   |                 |
| (d.2)  | Construction/Implementation : Materials   |  | \$585,800.00                    | \$214,200.00            | \$800,000.00   |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  | \$86,540.00                     | \$31,700.00             | \$118,240.00   |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  | \$110,187.00                    | \$40,221.00             | \$150,408.00   |                 |
| (f)  | Construction Administration   |  | \$73,200.00                     | \$26,800.00             | \$100,000.00   |                 |
| (g.1)  | Other Costs: Labor  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (g.2)  | Other Costs: Materials  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (h)  | Construction/Implementation Contingency   |  | \$161,249.00                    | \$58,900.00             | \$220,149.00   |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$1,791,479.00                  | \$654,921.00            | \$2,446,400.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Federal Emergency Management Act (FEMA)<br/>                     20-year Capital Improvements Loan to the GCSD<br/>                     Annual sewer use and connection fees<br/>                     PGE Energy-by-Design Grant<br/>                     Other incidental grants compatible to the project</i> |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 78 – Monte Rio Community Wastewater Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total           | % Funding Match |
|--|---|--|---------------------------------|-------------------------|-----------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   | \$186,346.00   | \$243,654.00                    | \$170,000.00            | \$600,000.00    |                 |
| <b>(b)</b>   | Land Purchase/Easement  | \$335,000.00   | \$1,165,000.00                  | \$0.00                  | \$1,500,000.00  |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  | \$0.00   | \$250,000.00                    | \$0.00                  | \$250,000.00    |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   | \$3,845,670.00   | \$4,219,124.00                  | \$2,997,177.00          | \$11,061,971.00 |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   |  |                                 |                         | \$0.00          |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  |  | \$120,000.00                    | \$204,870.00            | \$324,870.00    |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  |  |                                 |                         | \$0.00          |                 |
| <b>(f)</b>   | Construction Administration   |  | \$1,220,000.00                  | \$0.00                  | \$1,220,000.00  |                 |
| <b>(g.1)</b>   | Other Costs: Labor  | \$0.00   | \$217,994.00                    | \$0.00                  | \$217,994.00    |                 |
| <b>(g.2)</b>   | Other Costs: Materials  | \$12,006.00  |                                 | \$0.00                  | \$12,006.00     |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   |  | \$1,618,346.00                  | \$89,680.00             | \$1,708,026.00  |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$4,379,022.00   | \$9,054,118.00                  | \$3,461,727.00          | \$16,894,867.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                 |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | 1) Monte Rio Community Wastewater District Sewer Assessment (\$3.0M)<br>2) USDA-RUS (\$1M) grant<br>3) USDA-RUS Loan (\$3,188,167)<br>4) EPA Grant (\$192,400)<br>5) SWRCB Coastal Nonpoint Grant (\$1M)<br>6) SWRCB Grant Agreement (\$1,780,000)<br>7) Small Community Grant (\$1,595,750) |                                 |                         |                 |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 128 – Sonoma County Water Recycling and Habitat Preservation Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|---|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   | \$0.00  | \$153,000.00                    | \$0.00                  | \$153,000.00   |                 |
| (b)  | Land Purchase/Easement  | \$0.00  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  | \$0.00  | \$213,000.00                    | \$0.00                  | \$213,000.00   |                 |
| (d.1)  | Construction/Implementation : Labor   |   | \$354,997.00                    | \$954,603.00            | \$1,309,600.00 |                 |
| (d.2)  | Construction/Implementation : Materials   | \$0.00  |                                 | \$50,000.00             | \$50,000.00    |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |   | \$400,000.00                    | \$0.00                  | \$400,000.00   |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  | \$0.00  | \$50,000.00                     | \$0.00                  | \$50,000.00    |                 |
| (f)  | Construction Administration   | \$0.00  | \$213,000.00                    | \$0.00                  | \$213,000.00   |                 |
| (g.1)  | Other Costs: Labor  |   | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (g.2)  | Other Costs: Materials  | \$0.00  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (h)  | Construction/Implementation Contingency   | \$0.00  | \$339,750.00                    | \$0.00                  | \$339,750.00   |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00  | \$1,723,747.00                  | \$1,004,603.00          | \$2,728,350.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |   |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Use this space to list all sources of the Non-State Share and Other State Funds (expand this cell or add cells as necessary)</i> |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 236 – S2 – Araujo Dam Restoration**

| Budget Category  |   | Other State Funds <sup>1)</sup> see note below   | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   | \$45,232.00  | \$41,949.00                     | \$41,779.00             | \$128,960.00   |                 |
| <b>(b)</b>   | Land Purchase/Easement  | \$0.00   |                                 |                         | \$0.00         |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  | \$7,273.00   | \$74,941.00                     | \$107,016.00            | \$189,230.00   |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   | \$525,531.00   | \$86,136.00                     | \$192,975.00            | \$804,642.00   |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   | \$457,124.00   | \$258,409.00                    | \$288,792.00            | \$1,004,325.00 |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  | \$7,286.00   |                                 | \$32,214.00             | \$39,500.00    |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  | \$5,058.00   |                                 | \$26,537.00             | \$31,595.00    |                 |
| <b>(f)</b>   | Construction Administration   | \$48,810.00  |                                 | \$40,182.00             | \$88,992.00    |                 |
| <b>(g.1)</b>   | Other Costs: Labor  | \$0.00   |                                 | \$6,600.00              | \$6,600.00     |                 |
| <b>(g.2)</b>   | Other Costs: Materials  | \$0.00   |                                 | \$20,121.00             | \$20,121.00    |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   | \$239,734.00   |                                 | \$122,059.00            | \$361,793.00   |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$1,336,048.00   | \$461,435.00                    | \$878,275.00            | \$2,675,758.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | (Non-state) Natural Resources Conservation Service (NRCS)= \$379,000<br>(Non-state) Natural Resources Conservation Service (NRCS) in-kind= \$40,435<br>(Non-state) U.S. Fish and Wildlife = \$34,000<br>Other (Non-state) funds are pending<br>Other State Funds: \$8,000 is 'in-hand', the remainder is pending |                                 |                         |                |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 236 – S5 – City of Etna Water Supply**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|--|---|--|---------------------------------|-------------------------|--------------|-----------------|
| (a)  | Direct Project Administration Costs   |  | \$2,000.00                      | \$1,000.00              | \$3,000.00   |                 |
| (b)  | Land Purchase/Easement  |  | \$15,000.00                     |                         | \$15,000.00  |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  | \$35,000.00                     | \$30,000.00             | \$65,000.00  |                 |
| (d.1)  | Construction/Implementation : Labor   |  | \$4,000.00                      | \$104,000.00            | \$108,000.00 |                 |
| (d.2)  | Construction/Implementation : Materials   |  | \$6,000.00                      | \$135,000.00            | \$141,000.00 |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  |                                 | \$4,000.00              | \$4,000.00   |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  |                                 | \$4,000.00              | \$4,000.00   |                 |
| (f)  | Construction Administration   |  | \$2,000.00                      | \$8,000.00              | \$10,000.00  |                 |
| (g.1)  | Other Costs: Labor  |  |                                 |                         | \$0.00       |                 |
| (g.2)  | Other Costs: Materials  |  |                                 | \$8,105.00              | \$8,105.00   |                 |
| (h)  | Construction/Implementation Contingency   |  |                                 | \$24,000.00             | \$24,000.00  |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$64,000.00                     | \$318,105.00            | \$382,105.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | \$35,000 toward Feasibility Study from CDBG funds<br>\$29,000 City of Etna funds and in-kind staff labor |                                 |                         |              |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 217 – Newell Water System Renovation**

| Budget Category  |   | Other State Funds <sup>1)</sup>            | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   |  | \$22,154.00                     | \$51,032.00             | \$73,186.00    |                 |
| (b)  | Land Purchase/Easement  |  |                                 |                         | \$0.00         |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  |                                 | \$315,109.00            | \$315,109.00   |                 |
| (d.1)  | Construction/Implementation : Labor   |  |                                 | \$499,054.00            | \$499,054.00   |                 |
| (d.2)  | Construction/Implementation : Materials   |  |                                 | \$423,216.00            | \$423,216.00   |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  | \$7,500.00                      |                         | \$7,500.00     |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  |                                 |                         | \$0.00         |                 |
| (f)  | Construction Administration   |  |                                 | \$116,325.00            | \$116,325.00   |                 |
| (g.1)  | Other Costs: Labor  |  |                                 |                         | \$0.00         |                 |
| (g.2)  | Other Costs: Materials  |  |                                 |                         | \$0.00         |                 |
| (h)  | Construction/Implementation Contingency   |  |                                 | \$92,227.00             | \$92,227.00    |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00                                     | \$29,654.00                     | \$1,496,963.00          | \$1,526,617.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>In Kind local contribution in labor</i> |                                 |                         |                |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 236 – S3 – Scott River Water Trust Phase III**

| Budget Category  |  | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|--|--|--|---------------------------------|-------------------------|--------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs                                      | \$0.00   | \$0.00                          | \$20,061.00             | \$20,061.00  |                 |
| <b>(b)</b>   | Land Purchase/Easement   | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation                 | \$3,200.00   | \$7,040.00                      | \$29,600.00             | \$39,840.00  |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor                                      | \$4,250.00   | \$0.00                          | \$5,000.00              | \$9,250.00   |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials                                  | \$0.00   | \$0.00                          | \$28,339.00             | \$28,339.00  |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor                 | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials             | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(f)</b>   | Construction Administration  | \$0.00   | \$0.00                          | \$11,500.00             | \$11,500.00  |                 |
| <b>(g.1)</b>   | Other Costs: Labor   | \$29,260.00  | \$93,600.00                     | \$34,000.00             | \$156,860.00 |                 |
| <b>(g.2)</b>   | Other Costs: Materials   | \$0.00   | \$6,000.00                      | \$31,500.00             | \$37,500.00  |                 |
| <b>(h)</b>   | Construction/Implementation Contingency                                  | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)                | \$36,710.00  | \$106,640.00                    | \$160,000.00            | \$303,350.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion) |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |  | <i>Bureau of Reclamation (USDI funds) – grant to Siskiyou RCD and to DWR for gage operations<br/>                     Local Advisory Board to Scott River Water Trust – donated labor<br/>                     Natural Resources Conservation Service (USDA funds) – labor contribution<br/>                     US Forest Service (USDA funds) – equipment contribution &amp; fish population surveys<br/>                     California Dept. of Water Resources – Watermaster Service<br/>                     California Dept. of Fish and Game – fish population surveys</i> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 236 – S1 – Shasta Water Association Dam Restoration**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   | \$57,022.00  | \$74,196.00                     | \$86,017.00             | \$217,235.00   |                 |
| <b>(b)</b>   | Land Purchase/Easement  | \$0.00   |                                 |                         | \$0.00         |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  | \$117,265.00   | \$232,364.00                    | \$104,453.00            | \$454,082.00   |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   | \$431,381.00   | \$243,675.00                    | \$280,072.00            | \$955,128.00   |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   | \$945,723.00   | \$191,723.00                    | \$990,381.00            | \$2,127,827.00 |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  | \$0.00   | \$0.00                          | \$67,120.00             | \$67,120.00    |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  | \$0.00   | \$0.00                          | \$16,500.00             | \$16,500.00    |                 |
| <b>(f)</b>   | Construction Administration   | \$0.00   | \$0.00                          | \$119,856.00            | \$119,856.00   |                 |
| <b>(g.1)</b>   | Other Costs: Labor  | \$0.00   | \$0.00                          | \$16,200.00             | \$16,200.00    |                 |
| <b>(g.2)</b>   | Other Costs: Materials  | \$0.00   | \$0.00                          | \$21,071.00             | \$21,071.00    |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   | \$241,963.00   | \$0.00                          | \$224,680.00            | \$466,643.00   |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$1,793,354.00   | \$741,958.00                    | \$1,926,350.00          | \$4,461,662.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | (Non-state) Natural Resources Conservation Service (NRCS)= \$362,832<br>(Non-state) Shasta Water Association in-kind = \$120,944<br>(Non-state) U.S. Fish and Wildlife = \$168,182<br>(Non-state funds not yet in hand) = \$635,000<br>Other funds pending |                                 |                         |                |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 55 – Crescent City Wastewater Treatment Plant Renovation**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total           | % Funding Match |
|--|---|----------------------------------|---------------------------------|-------------------------|-----------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   | \$0.00                           | \$254,500.00                    | \$0.00                  | \$254,500.00    |                 |
| <b>(b)</b>   | Land Purchase/Easement  | \$0.00                           | \$0.00                          | \$0.00                  | \$0.00          |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  | \$0.00                           | \$3,256,700.00                  | \$0.00                  | \$3,256,700.00  |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   | \$0.00                           | \$5,002,500.00                  | \$500,000.00            | \$5,502,500.00  |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   | \$0.00                           | \$8,104,198.00                  | \$435,602.00            | \$8,539,800.00  |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  | \$0.00                           | \$100,200.00                    | \$0.00                  | \$100,200.00    |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  | \$0.00                           | \$50,000.00                     | \$0.00                  | \$50,000.00     |                 |
| <b>(f)</b>   | Construction Administration   | \$0.00                           | \$1,200,000.00                  | \$0.00                  | \$1,200,000.00  |                 |
| <b>(g.1)</b>   | Other Costs: Labor  | \$0.00                           | \$0.00                          | \$0.00                  | \$0.00          |                 |
| <b>(g.2)</b>   | Other Costs: Materials  | \$0.00                           | \$0.00                          | \$0.00                  | \$0.00          |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   | \$0.00                           | \$2,835,555.00                  | \$0.00                  | \$2,835,555.00  |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00                           | \$20,803,653.00                 | \$935,602.00            | \$21,739,255.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |                                  |                                 |                         |                 |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Local funding/Rate payers</i> |                                 |                         |                 |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 38 – Head Hunter/Smoke House Non-point Sediment Reduction Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   |  | \$9,539.25                      | \$9,539.25              | \$19,078.50    |                 |
| <b>(b)</b>   | Land Purchase/Easement  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  |  | \$631.65                        | \$7,838.85              | \$8,470.50     |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   |  | \$60,084.16                     | \$23,411.37             | \$83,495.53    |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   |  | \$623,111.38                    | \$181,424.38            | \$804,535.76   |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  |  | \$50,217.52                     | \$33,639.10             | \$83,856.62    |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  |  | \$1,174.50                      | \$1,174.50              | \$2,349.00     |                 |
| <b>(f)</b>   | Construction Administration   |  | \$11,646.55                     | \$11,646.55             | \$23,293.10    |                 |
| <b>(g.1)</b>   | Other Costs: Labor  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| <b>(g.2)</b>   | Other Costs: Materials  |  | \$12,450.00                     | \$7,050.00              | \$19,500.00    |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   |  | \$14,869.97                     | \$4,956.00              | \$19,825.97    |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$783,724.98                    | \$280,680.00            | \$1,064,404.98 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Source of funding match comes through a grant to the Smith River Alliance from the California Wildlife Conservation Board for treatment of LSEP roads for the fiscal years 2005/06 through 2007/08.</i> |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 7 – Mattole Integrated Water Management Program**

| Budget Category |   | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|-----------------|---|---------------------------------|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>      | Direct Project Administration Costs   |                                 |                                 |                         | \$0.00         |                 |
| <b>(b)</b>      | Land Purchase/Easement  |                                 |                                 |                         | \$0.00         |                 |
| <b>(c)</b>      | Planning/Design/Engineering/ Environmental Documentation  |                                 | \$42,112.00                     | \$47,343.00             | \$89,455.00    |                 |
| <b>(d.1)</b>    | Construction/Implementation : Labor   |                                 | \$353,514.00                    | \$392,897.00            | \$746,411.00   |                 |
| <b>(d.2)</b>    | Construction/Implementation : Materials   |                                 | \$1,490,233.00                  | \$993,887.00            | \$2,484,120.00 |                 |
| <b>(e.1)</b>    | Environmental Compliance/ Mitigation/Enhancement : Labor  |                                 | \$32,451.00                     | \$40,804.00             | \$73,255.00    |                 |
| <b>(e.2)</b>    | Environmental Compliance/ Mitigation/Enhancement : Materials  |                                 |                                 |                         | \$0.00         |                 |
| <b>(f)</b>      | Construction Administration   |                                 | \$59,722.00                     | \$68,812.00             | \$128,534.00   |                 |
| <b>(g.1)</b>    | Other Costs: Labor  |                                 |                                 |                         | \$0.00         |                 |
| <b>(g.2)</b>    | Other Costs: Materials  |                                 |                                 |                         | \$0.00         |                 |
| <b>(h)</b>      | Construction/Implementation Contingency   |                                 |                                 |                         | \$0.00         |                 |
| <b>(i)</b>      | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00                          | \$1,978,032.00                  | \$1,543,743.00          | \$3,521,775.00 |                 |
| <b>(j)</b>      | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |                                 |                                 |                         |                |                 |

Sources of Funds for Non-State Share (Funding Match)  
and Other State Funds

*Bureau of Land Management  
NOAA Fisheries—National Marine Fisheries Service  
US Fish and Wildlife Service  
National Fish and Wildlife Foundation  
US Environmental Protection Agency  
Pacific States Marine Fisheries Commission  
Private Foundations  
Landowner Cost-Share  
County of Humboldt  
County of Mendocino*

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 125 – Navarro Watershed Road Sediment Reduction Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   |  | \$18,000.00                     | \$34,997.00             | \$52,997.00    |                 |
| (b)  | Land Purchase/Easement  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  | \$22,500.00                     | \$43,550.00             | \$66,050.00    |                 |
| (d.1)  | Construction/Implementation : Labor   |  | \$24,750.00                     | \$24,750.00             | \$49,500.00    |                 |
| (d.2)  | Construction/Implementation : Materials   |  | \$287,800.00                    | \$444,450.00            | \$732,250.00   |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  | \$0.00                          | \$0.00                  | \$0.00         |                 |
| (f)  | Construction Administration   |  | \$3,750.00                      | \$28,275.00             | \$32,025.00    |                 |
| (g.1)  | Other Costs: Labor  |  | \$1,100.00                      | \$29,250.00             | \$30,350.00    |                 |
| (g.2)  | Other Costs: Materials  |  | \$0.00                          | \$15,701.00             | \$15,701.00    |                 |
| (h)  | Construction/Implementation Contingency   |  | \$33,275.00                     | \$52,660.00             | \$85,935.00    |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$391,175.00                    | \$673,633.00            | \$1,064,808.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | MCRCD is applying for \$996,000 in funding from SWRCB 319(h) funds for sediment reduction projects in the Navarro watershed. Of that, \$320,000 is related to road sediment reduction implementation and will be used as funding for additional miles of road restoration. |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 207/26 – Sediment Solutions for the Gualala**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|--|---|--|---------------------------------|-------------------------|--------------|-----------------|
| (a)  | Direct Project Administration Costs   |  |                                 | \$9,890.00              | \$9,890.00   |                 |
| (b)  | Land Purchase/Easement  |  |                                 |                         | \$0.00       |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  |                                 | \$5,000.00              | \$5,000.00   |                 |
| (d.1)  | Construction/Implementation : Labor   |  | \$30,000.00                     | \$41,260.00             | \$71,260.00  |                 |
| (d.2)  | Construction/Implementation : Materials   |  | \$10,145.50                     | \$15,230.50             | \$25,376.00  |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  |                                 |                         | \$0.00       |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  |                                 |                         | \$0.00       |                 |
| (f)  | Construction Administration   |  | \$5,000.00                      | \$5,447.50              | \$10,447.50  |                 |
| (g.1)  | Other Costs: Labor  |  | \$53,760.00                     | \$53,760.00             | \$107,520.00 |                 |
| (g.2)  | Other Costs: Materials  |  | \$44,970.00                     | \$28,464.00             | \$73,434.00  |                 |
| (h)  | Construction/Implementation Contingency   |  |                                 |                         | \$0.00       |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$143,875.50                    | \$159,052.00            | \$302,927.50 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Local funding from Landowners: Gualala Redwoods, Mendocino Redwood Company and Gualala River Watershed Council and 50% matching gage funding from USGS.</i> |                                 |                         |              |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 153 – Westport County Water District Water Supply Reliability Project**

| Budget Category  |   | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|--|---|---------------------------------|---------------------------------|-------------------------|--------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs   | \$0.00                          | \$0.00                          | \$16,340.00             | \$16,340.00  |                 |
| <b>(b)</b>   | Land Purchase/Easement  | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(c)</b>   | Planning/Design/Engineering/ Environmental Documentation  | \$0.00                          | \$0.00                          | \$61,670.00             | \$61,670.00  |                 |
| <b>(d.1)</b>   | Construction/Implementation : Labor   | \$0.00                          | \$0.00                          | \$58,820.00             | \$58,820.00  |                 |
| <b>(d.2)</b>   | Construction/Implementation : Materials   | \$0.00                          | \$0.00                          | \$203,500.00            | \$203,500.00 |                 |
| <b>(e.1)</b>   | Environmental Compliance/ Mitigation/Enhancement : Labor  | \$0.00                          | \$0.00                          | \$6,020.00              | \$6,020.00   |                 |
| <b>(e.2)</b>   | Environmental Compliance/ Mitigation/Enhancement : Materials  | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(f)</b>   | Construction Administration   | \$0.00                          | \$0.00                          | \$3,160.00              | \$3,160.00   |                 |
| <b>(g.1)</b>   | Other Costs: Labor  | \$0.00                          | \$0.00                          | \$3,790.00              | \$3,790.00   |                 |
| <b>(g.2)</b>   | Other Costs: Materials  | \$0.00                          | \$0.00                          | \$600.00                | \$600.00     |                 |
| <b>(h)</b>   | Construction/Implementation Contingency   | \$0.00                          | \$0.00                          | \$20,341.00             | \$20,341.00  |                 |
| <b>(i)</b>   | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00                          | \$0.00                          | \$374,241.00            | \$374,241.00 |                 |
| <b>(j)</b>   | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |                                 |                                 |                         |              |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>none</i>                     |                                 |                         |              |                 |

<sup>1)</sup> "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 108 – Martin Slough Interceptor Project - Phase 1 Construction**

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|--|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   |  | \$108,533.00                    | \$140,128.00            | \$248,661.00   |                 |
| (b)  | Land Purchase/Easement  |  |                                 | \$700,450.00            | \$700,450.00   |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  |  | \$3,523,830.00                  |                         | \$3,523,830.00 |                 |
| (d.1)  | Construction/Implementation : Labor   |  |                                 | \$625,800.00            | \$625,800.00   |                 |
| (d.2)  | Construction/Implementation : Materials   |  |                                 | \$600,800.00            | \$600,800.00   |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |  |                                 | \$168,150.00            | \$168,150.00   |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |  |                                 | \$8,850.00              | \$8,850.00     |                 |
| (f)  | Construction Administration   |  |                                 | \$130,500.00            | \$130,500.00   |                 |
| (g.1)  | Other Costs: Labor  |  |                                 | \$12,267.00             | \$12,267.00    |                 |
| (g.2)  | Other Costs: Materials  |  |                                 | \$1,840.00              | \$1,840.00     |                 |
| (h)  | Construction/Implementation Contingency   |  |                                 | \$184,120.00            | \$184,120.00   |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$0.00   | \$3,632,363.00                  | \$2,572,905.00          | \$6,205,268.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |  |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <p><i>Note: Planning, Design, Engineering, and Environmental Documentation work was completed prior to project Implementation, and is therefore not included in the above budget. EPA Grant funds for this work total \$2,001,300, and City of Eureka matching funds total \$1,634,663, making the total budget expenditure for this work \$3,635,963. EPA Special Appropriations Grants of \$1,997,700, and City of Eureka matching funds of \$1,634,663, make the total budget expenditure for Planning/Design/Engineering/ Environmental Documentation \$3,632,363.</i></p> |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 86 – Orick Community Services District Wastewater Treatment**

| Budget Category |  | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|-----------------|--|---------------------------------|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>      | Direct Project Administration Costs  |                                 |                                 | \$115,525.00            | \$115,525.00   |                 |
| <b>(b)</b>      | Land Purchase/Easement   |                                 |                                 |                         | \$0.00         |                 |
| <b>(c)</b>      | Planning/Design/Engineering/<br>Environmental Documentation  |                                 | \$390,500.00                    | \$281,426.00            | \$671,926.00   |                 |
| <b>(d.1)</b>    | Construction/Implementation : Labor  |                                 |                                 | \$696,190.00            | \$696,190.00   |                 |
| <b>(d.2)</b>    | Construction/Implementation : Materials  | \$250,000.00                    | \$1,527,784.00                  | \$515,569.00            | \$2,293,353.00 |                 |
| <b>(e.1)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Labor  |                                 |                                 | \$190,800.00            | \$190,800.00   |                 |
| <b>(e.2)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Materials  |                                 |                                 | \$128,500.00            | \$128,500.00   |                 |
| <b>(f)</b>      | Construction Administration  |                                 |                                 | \$252,000.00            | \$252,000.00   |                 |
| <b>(g.1)</b>    | Other Costs: Labor   |                                 |                                 | \$0.00                  | \$0.00         |                 |
| <b>(g.2)</b>    | Other Costs: Materials   |                                 |                                 | \$0.00                  | \$0.00         |                 |
| <b>(h)</b>      | Construction/Implementation<br>Contingency   |                                 |                                 | \$448,431.00            | \$448,431.00   |                 |
| <b>(i)</b>      | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$250,000.00                    | \$1,918,284.00                  | \$2,628,441.00          | \$4,796,725.00 |                 |
| <b>(j)</b>      | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |                                 |                                 |                         |                |                 |

|   |  |
|---|--|
| <p>Sources of Funds for Non-State Share (Funding Match) and Other State Funds</p> | <p><i>Donated funds to date (NOT INCLUDED IN TABLE B1):</i><br/> <i>\$7,500. Redwood National and State Parks (Feasibility)</i><br/> <i>\$1,000. Resident donation (Feasibility)</i><br/> <i>\$86,000 Housing &amp; Comm. Devl Block Grant (to SHN) Feasibility</i><br/> <i>\$35,000 Comm. Devl Block Grant (to Oscar Larson) Pollution Study</i><br/> <i>\$2,500 Pre-application assistance</i><br/> <i>In-kind: HSU graduate students, under supervision of Professor Bob Gearheart, are involved in wastewater system planning</i><br/> <u><i>Other funds that MAY become available :</i></u><br/> <i>We are seeking the balance of funds needed from the Headwaters Fund (a local fund for Humboldt County). We have been assured that these funds will be made available and will inform both the NCRP and the Prop 50 funding agency as soon as the funds are secured. \$1,100,000. Humboldt County Redevelopment- Redevelopment for Humboldt County is being reviewed by the county Board of Supervisors. Orick is one of the communities that will receive Redevelopment funding and has been allocated \$1,100,000 that will likely all go toward the WWTF. We will inform both the NCRP and the Prop 50 funding agency as soon as the funds are secured.</i></p> |
|---|--|

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 22 – Redwood Creek Erosion Control**

| Budget Category   |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|---|---|--|---------------------------------|-------------------------|--------------|-----------------|
| (a)   | Direct Project Administration Costs   |  | \$20,000.00                     | \$26,630.00             | \$46,630.00  |                 |
| (b)   | Land Purchase/Easement  |  |                                 |                         | \$0.00       |                 |
| (c)   | Planning/Design/Engineering/<br>Environmental Documentation   |  | \$18,000.00                     | \$28,100.00             | \$46,100.00  |                 |
| (d.1)   | Construction/Implementation : Labor   |  |                                 | \$32,500.00             | \$32,500.00  |                 |
| (d.2)   | Construction/Implementation : Materials   |  | \$236,000.00                    | \$354,016.00            | \$590,016.00 |                 |
| (e.1)   | Environmental Compliance/<br>Mitigation/Enhancement : Labor   |  |                                 | \$2,000.00              | \$2,000.00   |                 |
| (e.2)   | Environmental Compliance/<br>Mitigation/Enhancement : Materials   |  |                                 |                         | \$0.00       |                 |
| (f)   | Construction Administration   |  | \$8,500.00                      | \$51,250.00             | \$59,750.00  |                 |
| (g.1)   | Other Costs: Labor  |  | \$17,500.00                     | \$34,900.00             | \$52,400.00  |                 |
| (g.2)   | Other Costs: Materials  |  |                                 | \$8,575.00              | \$8,575.00   |                 |
| (h)   | Construction/Implementation<br>Contingency  |  |                                 | \$0.00                  | \$0.00       |                 |
| (i)   | Grand Total<br>(Sum rows (a) through (h) for each<br>column)  | \$0.00   | \$300,000.00                    | \$537,971.00            | \$837,971.00 |                 |
| (j)   | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects.</i> |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share<br>(Funding Match) and Other State Funds |   | <p><i>\$250,000 in matching funding from the EPA is provided through a 319(h) project, SWRCB Agreement No. 04-062-551-0</i></p> <p><i>\$50,000 in matching funds is being provided by Green Diamond Resources Company, a major landowner in the Redwood Creek watershed for contracted heavy equipment, project labor and materials.</i></p> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 74 – City of Willits Wastewater Treatment/Water Reclamation Project**

| Budget Category   |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total           | % Funding Match |
|---|---|--|---------------------------------|-------------------------|-----------------|-----------------|
| (a)   | Direct Project Administration Costs   |  | \$236,400.00                    |                         | \$236,400.00    |                 |
| (b)   | Land Purchase/Easement  |  | \$750,000.00                    |                         | \$750,000.00    |                 |
| (c)   | Planning/Design/Engineering/<br>Environmental Documentation   |  | \$1,641,700.00                  |                         | \$1,641,700.00  |                 |
| (d.1)   | Construction/Implementation : Labor   |  | \$3,940,500.00                  |                         | \$3,940,500.00  |                 |
| (d.2)   | Construction/Implementation : Materials   |  | \$3,940,500.00                  |                         | \$3,940,500.00  |                 |
| (e.1)   | Environmental Compliance/<br>Mitigation/Enhancement : Labor   | \$130,000.00   | \$59,100.00                     |                         | \$189,100.00    |                 |
| (e.2)   | Environmental Compliance/<br>Mitigation/Enhancement : Materials   | \$130,000.00   | \$59,100.00                     |                         | \$189,100.00    |                 |
| (f)   | Construction Administration   |  | \$788,100.00                    |                         | \$788,100.00    |                 |
| (g.1)   | Other Costs: Labor  |  | \$0.00                          |                         | \$0.00          |                 |
| (g.2)   | Other Costs: Materials  |  | \$0.00                          |                         | \$0.00          |                 |
| (h)   | Construction/Implementation<br>Contingency  |  | \$1,576,200.00                  | \$0.00                  | \$1,576,200.00  |                 |
| (i)   | Grand Total<br>(Sum rows (a) through (h) for each<br>column)  | \$260,000.00   | \$12,991,600.00                 | \$0.00                  | \$13,251,600.00 |                 |
| (j)   | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects.</i> |  |                                 |                         |                 |                 |
| Sources of Funds for Non-State Share<br>(Funding Match) and Other State Funds |   | 1 USDA Funding \$11,285,000 (\$10,285,000 Loan; \$1,000,000 Grant)<br>2 U.S. Environmental Protection Agency (EPA) Grant \$303,600; City Share \$196,400<br>3 City of Willits Redevelopment Agency (RDA) contribution \$550,000.<br>4 Small Wastewater Community Grant (SWCG) \$260,000. |                                 |                         |                 |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 89 – Covelo Wastewater Facilities Improvement Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--|---|---|---------------------------------|-------------------------|----------------|-----------------|
| (a)  | Direct Project Administration Costs   |   | \$40,000.00                     |                         | \$40,000.00    |                 |
| (b)  | Land Purchase/Easement  |   |                                 |                         | \$0.00         |                 |
| (c)  | Planning/Design/Engineering/ Environmental Documentation  | \$60,000.00   | \$272,302.00                    | \$38,898.00             | \$371,200.00   |                 |
| (d.1)  | Construction/Implementation : Labor   |   | \$806,688.00                    | \$646,012.00            | \$1,452,700.00 |                 |
| (d.2)  | Construction/Implementation : Materials   |   | \$775,850.00                    | \$380,681.00            | \$1,156,531.00 |                 |
| (e.1)  | Environmental Compliance/ Mitigation/Enhancement : Labor  |   | \$9,000.00                      |                         | \$9,000.00     |                 |
| (e.2)  | Environmental Compliance/ Mitigation/Enhancement : Materials  |   | \$900.00                        |                         | \$900.00       |                 |
| (f)  | Construction Administration   |   | \$210,000.00                    |                         | \$210,000.00   |                 |
| (g.1)  | Other Costs: Labor  |   | \$29,900.00                     |                         | \$29,900.00    |                 |
| (g.2)  | Other Costs: Materials  |   | \$30,000.00                     |                         | \$30,000.00    |                 |
| (h)  | Construction/Implementation Contingency   |   | \$465,700.00                    |                         | \$465,700.00   |                 |
| (i)  | Grand Total<br>(Sum rows (a) through (h) for each column)   | \$60,000.00   | \$2,640,340.00                  | \$1,065,591.00          | \$3,765,931.00 |                 |
| (j)  | Calculation of Funding Match % (Used in Funding Match Scoring Criterion)<br><i>Optional for individual component projects .</i> |   |                                 |                         |                |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>USDA Rural Utilities Program, \$750,000 Grant, \$750,000 Loan.<br/>                     HUD Community Development Block Grant \$755,000<br/>                     Mendocino County, State Tobacco Grants \$60,000</i> |                                 |                         |                |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 51 – Mid Van Duzen River Ranch Road Sediment Reduction Program**

| Budget Category   |  | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|---|--|--|---------------------------------|-------------------------|--------------|-----------------|
| <b>(a)</b>  | Direct Project Administration Costs  | \$0.00   | \$3,000.00                      | \$40,000.00             | \$43,000.00  |                 |
| <b>(b)</b>  | Land Purchase/Easement   | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(c)</b>  | Planning/Design/Engineering/<br>Environmental Documentation  | \$0.00   | \$4,000.00                      | \$39,480.00             | \$43,480.00  |                 |
| <b>(d.1)</b>  | Construction/Implementation : Labor  | \$0.00   | \$2,000.00                      | \$150,600.00            | \$152,600.00 |                 |
| <b>(d.2)</b>  | Construction/Implementation : Materials  | \$0.00   | \$28,000.00                     | \$79,400.00             | \$107,400.00 |                 |
| <b>(e.1)</b>  | Environmental Compliance/<br>Mitigation/Enhancement : Labor  | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(e.2)</b>  | Environmental Compliance/<br>Mitigation/Enhancement : Materials  | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(f)</b>  | Construction Administration  | \$0.00   | \$2,000.00                      | \$18,000.00             | \$20,000.00  |                 |
| <b>(g.1)</b>  | Other Costs: Labor   | \$0.00   | \$0.00                          | \$9,000.00              | \$9,000.00   |                 |
| <b>(g.2)</b>  | Other Costs: Materials   | \$0.00   | \$0.00                          | \$337.00                | \$337.00     |                 |
| <b>(h)</b>  | Construction/Implementation<br>Contingency   | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(i)</b>  | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$0.00   | \$39,000.00                     | \$336,817.00            | \$375,817.00 |                 |
| <b>(j)</b>  | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |  |                                 |                         |              |                 |
| <b>Sources of Funds for Non-State Share (Funding Match) and Other State Funds</b> |  | <i>Local funding from landowner contributions will constitute the match.</i> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 121 – Salt River Restoration Project**

| Budget Category |  | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|-----------------|--|---------------------------------|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>      | Direct Project Administration Costs  | \$0.00                          | \$0.00                          | \$53,100.00             | \$53,100.00    |                 |
| <b>(b)</b>      | Land Purchase/Easement   | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00         |                 |
| <b>(c)</b>      | Planning/Design/Engineering/<br>Environmental Documentation  | \$11,000.00                     | \$0.00                          | \$47,110.00             | \$58,110.00    |                 |
| <b>(d.1)</b>    | Construction/Implementation : Labor  | \$415,192.00                    | \$1,501,916.00                  | \$497,492.00            | \$2,414,600.00 |                 |
| <b>(d.2)</b>    | Construction/Implementation : Materials  | \$204,498.00                    | \$1,835,675.00                  | \$407,500.00            | \$2,447,673.00 |                 |
| <b>(e.1)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Labor  | \$55,000.00                     | \$60,000.00                     | \$59,520.00             | \$174,520.00   |                 |
| <b>(e.2)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Materials  | \$0.00                          | \$0.00                          | \$30,480.00             | \$30,480.00    |                 |
| <b>(f)</b>      | Construction Administration  | \$0.00                          | \$0.00                          | \$54,300.00             | \$54,300.00    |                 |
| <b>(g.1)</b>    | Other Costs: Labor   | \$22,400.00                     | \$0.00                          | \$12,333.00             | \$34,733.00    |                 |
| <b>(g.2)</b>    | Other Costs: Materials   | \$17,600.00                     | \$0.00                          | \$7,667.00              | \$25,267.00    |                 |
| <b>(h)</b>      | Construction/Implementation<br>Contingency   | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00         |                 |
| <b>(i)</b>      | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$725,690.00                    | \$3,397,591.00                  | \$1,169,502.00          | \$5,292,783.00 |                 |
| <b>(j)</b>      | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |                                 |                                 |                         |                |                 |

|   |  |
|---|--|
| <p>Sources of Funds for Non-State Share (Funding Match) and Other State Funds</p> | <p><i>Local landowner contributions (significant).</i><br/> <i>Local non-profit organizations.</i><br/> <i>Local foundations (e.g., Humboldt Area Foundation, McClean Foundation, Bertha Russ Lytel Foundation, etc.)</i><br/> <i>Local business community contributions.</i><br/> <i>Headwaters Fund.</i><br/> <i>State Coastal Conservancy.</i><br/> <i>Wildlife Conservation Board.</i><br/> <i>Department of Fish and Game, Fisheries Restoration Grants Program.</i><br/> <i>U.S. Fish and Wildlife Service, Coastal Wetlands Grants Program.</i><br/> <i>Federal Emergency Management Agency (FEMA).</i><br/> <i>U.S. Army Corps of Engineers.</i><br/> <i>National Oceanic and Atmospheric Administration (NOAA).</i><br/> <i>U.S. Environmental Protection Agency (EPA).</i><br/> <i>Consolidated Grant Program.</i></p> |
|---|--|

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project Title: Project 39 – Raw and Recovered Water for Irrigating Public**

| Budget Category   |  | Other State Funds <sup>1)</sup>                | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|---|--|--|---------------------------------|-------------------------|--------------|-----------------|
| (a)   | Direct Project Administration Costs  |  |                                 | \$27,000.00             | \$27,000.00  |                 |
| (b)   | Land Purchase/Easement   |  |                                 | \$50,000.00             | \$50,000.00  |                 |
| (c)   | Planning/Design/Engineering/<br>Environmental Documentation  |  |                                 | \$75,000.00             | \$75,000.00  |                 |
| (d.1)   | Construction/Implementation : Labor  |  | \$78,128.00                     | \$335,219.00            | \$413,347.00 |                 |
| (d.2)   | Construction/Implementation : Materials  |  |                                 | \$300,000.00            | \$300,000.00 |                 |
| (e.1)   | Environmental Compliance/<br>Mitigation/Enhancement : Labor  |  |                                 | \$10,000.00             | \$10,000.00  |                 |
| (e.2)   | Environmental Compliance/<br>Mitigation/Enhancement : Materials  |  |                                 | \$5,000.00              | \$5,000.00   |                 |
| (f)   | Construction Administration  |  |                                 | \$20,000.00             | \$20,000.00  |                 |
| (g.1)   | Other Costs: Labor   |  |                                 | \$5,000.00              | \$5,000.00   |                 |
| (g.2)   | Other Costs: Materials   |  |                                 | \$10,000.00             | \$10,000.00  |                 |
| (h)   | Construction/Implementation<br>Contingency   |  |                                 | \$75,000.00             | \$75,000.00  |                 |
| (i)   | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$0.00   | \$78,128.00                     | \$912,219.00            | \$990,347.00 |                 |
| (j)   | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share<br>(Funding Match) and Other State Funds |  | <i>Local funds from Trinity Co. Waterworks</i> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 151 – Trinity Drinking Water Source Sediment Reduction Project**

| Budget Category |  | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|-----------------|--|---------------------------------|---------------------------------|-------------------------|--------------|-----------------|
| <b>(a)</b>      | Direct Project Administration Costs  | \$0.00                          | \$2,270.00                      | \$3,400.00              | \$5,670.00   |                 |
| <b>(b)</b>      | Land Purchase/Easement   | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(c)</b>      | Planning/Design/Engineering/<br>Environmental Documentation  | \$520.00                        | \$360.28                        | \$1,180.00              | \$2,060.28   |                 |
| <b>(d.1)</b>    | Construction/Implementation : Labor  | \$25,000.00                     | \$150,264.00                    | \$0.00                  | \$175,264.00 |                 |
| <b>(d.2)</b>    | Construction/Implementation : Materials  | \$0.00                          | \$10,666.02                     | \$268,165.00            | \$278,831.02 |                 |
| <b>(e.1)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Labor  | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(e.2)</b>    | Environmental Compliance/<br>Mitigation/Enhancement : Materials  | \$0.00                          | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(f)</b>      | Construction Administration  | \$884.00                        | \$1,620.00                      | \$0.00                  | \$2,504.00   |                 |
| <b>(g.1)</b>    | Other Costs: Labor   | \$3,136.00                      | \$8,148.78                      | \$4,619.22              | \$15,904.00  |                 |
| <b>(g.2)</b>    | Other Costs: Materials   | \$0.00                          | \$0.00                          | \$1,830.78              | \$1,830.78   |                 |
| <b>(h)</b>      | Construction/Implementation<br>Contingency   | \$0.00                          | \$0.00                          | \$1,500.00              | \$1,500.00   |                 |
| <b>(i)</b>      | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$29,540.00                     | \$173,329.08                    | \$280,695.00            | \$483,564.08 |                 |
| <b>(j)</b>      | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |                                 |                                 |                         |              |                 |

Sources of Funds for Non-State Share (Funding Match) and Other State Funds

*Direct Project Admin Costs- Trinity River Restoration Program (TRRP)  
 Planning/Design/Engineering/Environmental Documentation: TRRP, Trinity County (TCPD),  
 CDFG Fisheries Restoration Grant Program (CDFG)  
 Construction/Implementation: TRRP, Trinity County Dept of Transportation (TCDOT);  
 FEMA/OES Disaster (FEMA)  
 Construction Administration: TCDOT, CDFG, FEMA, TRRP  
 Other Costs: TRRP, CDFG*

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project 81 – Weaverville Sanitary District Water Reclamation Project**

| Budget Category   |  | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total        | % Funding Match |
|---|--|--|---------------------------------|-------------------------|--------------|-----------------|
| <b>(a)</b>  | Direct Project Administration Costs  | \$5,000.00   | \$1,000.00                      | \$4,000.00              | \$10,000.00  |                 |
| <b>(b)</b>  | Land Purchase/Easement   | \$0.00   | \$6,000.00                      | \$0.00                  | \$6,000.00   |                 |
| <b>(c)</b>  | Planning/Design/Engineering/<br>Environmental Documentation  | \$0.00   | \$14,000.00                     | \$31,000.00             | \$45,000.00  |                 |
| <b>(d.1)</b>  | Construction/Implementation : Labor  | \$14,000.00  | \$0.00                          | \$153,598.00            | \$167,598.00 |                 |
| <b>(d.2)</b>  | Construction/Implementation : Materials  | \$44,660.00  | \$2,000.00                      | \$81,090.00             | \$127,750.00 |                 |
| <b>(e.1)</b>  | Environmental Compliance/<br>Mitigation/Enhancement : Labor  | \$0.00   | \$1,000.00                      | \$0.00                  | \$1,000.00   |                 |
| <b>(e.2)</b>  | Environmental Compliance/<br>Mitigation/Enhancement : Materials  | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(f)</b>  | Construction Administration  | \$8,000.00   | \$2,000.00                      | \$6,000.00              | \$16,000.00  |                 |
| <b>(g.1)</b>  | Other Costs: Labor   | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(g.2)</b>  | Other Costs: Materials   | \$0.00   | \$0.00                          | \$0.00                  | \$0.00       |                 |
| <b>(h)</b>  | Construction/Implementation<br>Contingency   | \$12,500.00  | \$0.00                          | \$5,000.00              | \$17,500.00  |                 |
| <b>(i)</b>  | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$84,160.00  | \$26,000.00                     | \$280,688.00            | \$390,848.00 |                 |
| <b>(j)</b>  | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |  |                                 |                         |              |                 |
| Sources of Funds for Non-State Share<br>(Funding Match) and Other State Funds |  | <i>Sources of funding match are provided in monetary and in-kind services from the Weaverville Sanitary District, Concrete Aggregate, and the Trinity County Planning Department – Natural Resources Division.</i> |                                 |                         |              |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project ICWMP D - Mattole Integrated Coastal Watershed Management**

| Budget Category  |   | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total       | % Funding Match |
|--|---|---|---------------------------------|-------------------------|-------------|-----------------|
| (a)  | Direct Project Administration Costs   |   | \$45,580                        | \$55,390                | \$100,970   |                 |
| (b)  | Land Purchase/Easement  |   | \$0                             | \$0                     | \$0         |                 |
| (c)  | Planning/Design/Engineering/Environmental Documentation                             |   | \$40,600                        | \$26,400                | \$67,000    |                 |
| (d)  | Construction/Implementation   |   | \$709,000                       | \$900,200               | \$1,609,200 |                 |
| (e)  | Environmental Compliance/Mitigation/Enhancement                                     |   | \$34,000                        | \$39,600                | \$73,600    |                 |
| (f)  | Project Summary [Sum (a) through (e) for each column]                               |   | \$56,720                        | \$72,016                | \$128,736   |                 |
| (g)  | Construction Administration   |   | \$128,000                       | \$141,600               | \$269,600   |                 |
| (h)  | Other (Explain):  |   | \$0                             | \$0                     | \$0         |                 |
| (i)  | Construction/Implementation Contingency   |   | \$0                             | \$0                     | \$0         |                 |
| (j)  | Grand Total [Sum (f) through (i) for each column]                                   | \$0.00  | \$1,013,900                     | \$1,235,206             | \$2,249,106 |                 |
| (j)  | Calculation of Funding Match %<br><i>Optional for individual component projects</i> |   |                                 |                         |             |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>US Environmental Protection Agency<br/>NOAA Fisheries<br/>US Fish and Wildlife Service<br/>Bureau of Land Management</i> |                                 |                         |             |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project ICWMP B - Forsythe Creek Sediment Control Project**

| Budget Category  |   | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total       | % Funding Match |
|--|---|---|---------------------------------|-------------------------|-------------|-----------------|
| <b>(a)</b>   | Direct Project Administration Costs                     |   | \$44,564                        | \$133,100               | 177,664     |                 |
| <b>(b)</b>   | Land Purchase/Easement                                  |   | \$0                             | \$0                     | \$0         |                 |
| <b>(c)</b>   | Planning/Design/Engineering/Environmental Documentation |   | \$16,596                        | \$59,500                | 76,096      |                 |
| <b>(d)</b>   | Construction/Implementation                             |   | \$867,130                       | \$2,080,984             | \$2,948,114 |                 |
| <b>(e)</b>   | Environmental Compliance/Mitigation/Enhancement         |   | \$0                             | \$0                     | \$0         |                 |
| <b>(f)</b>   | Project Summary [Sum (a) through (e) for each column]   |   | \$928,290                       | \$2,273,584             | \$3,201,874 |                 |
| <b>(g)</b>   | Construction Administration                             |   | \$46,909                        | \$114,000               | 160,909     |                 |
| <b>(h)</b>   | Other (Explain):  |   | \$16,914                        | 15,893                  | \$32,807    |                 |
| <b>(i)</b>   | Construction/Implementation Contingency                 |   |                                 | \$120,174               | 120,174     |                 |
| <b>(j)</b>   | Grand Total [Sum (f) through (i) for each column]       | \$0.00  | \$992,113                       | \$2,523,651             | \$3,515,764 |                 |
| <b>(j)</b>   | Calculation of Funding Match %                          |   |                                 |                         |             |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>NRCS - EQIP/Landowner Match \$307,157<br/>                     CADFG Programmatic Permitting: \$15,000<br/>                     CA DFG 2007 proposal: \$269,966<br/>                     CADFG Walker Creek Restoration Grant \$80000<br/>                     BIA 2007 Proposal \$180,000<br/>                     CalTrans: estimated \$80,000<br/>                     Landowner Contribution: \$10000<br/>                     MCDOT: \$50,000</i> |                                 |                         |             |                 |

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project ICWMP A - Salmon Creek Sediment Reduction and Water**

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

| Budget Category  |   | Other State Funds <sup>1)</sup>  | Non-State Share (Funding Match) | Requested Grant Funding | Total   | % Funding Match |
|--|---|--|---------------------------------|-------------------------|---------|-----------------|
| (a)  | Direct Project Administration Costs                     |  | \$15,000                        | \$25,000                | 40,000  |                 |
| (b)  | Land Purchase/Easement                                  |  | \$0                             | \$0                     | 0       |                 |
| (c)  | Planning/Design/Engineering/Environmental Documentation |  | \$141,204                       | \$19,393                | 160,597 |                 |
| (d)  | Construction/Implementation                             |  | \$214,398                       | \$285,602               | 500,000 |                 |
| (e)  | Environmental Compliance/Mitigation/Enhancement         |  | \$0                             | \$0                     | 0       |                 |
| (f)  | Project Summary [Sum (a) through (e) for each column]   |  | \$370,602                       | \$329,995               | 700,597 |                 |
| (g)  | Construction Administration                             |  | \$15,000                        | \$30,000                | 45,000  |                 |
| (h)  | Other (Explain):  |  | \$0                             | \$0                     | \$0     |                 |
| (i)  | Construction/Implementation Contingency                 |  | \$0                             | \$0                     | \$0     |                 |
| (j)  | Grand Total [Sum (f) through (i) for each column]       |  | \$385,602                       | \$359,995               | 745,597 |                 |
| (j)  | Calculation of Funding Match %                          |  |                                 |                         |         |                 |
| Sources of Funds for Non-State Share (Funding Match) and Other State Funds |   | <i>Department of Fish and Game: \$185,602</i><br><i>State Coastal Conservancy: \$200,000</i> |                                 |                         |         |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Project ICWMP C - Big River Main Haul Road Phase I Restoration**

| Budget Category                             |   | Other State Funds <sup>1)</sup> | Non-State Share (Funding Match) | Requested Grant Funding | Total     | % Funding Match |
|---|---|---------------------------------|---------------------------------|-------------------------|-----------|-----------------|
| <b>(a)</b>                                  | Direct Project Administration Costs                     |                                 | \$0                             | \$249,852               | 249,852   |                 |
| <b>(b)</b>                                  | Land Purchase/Easement                                  |                                 | \$0                             | \$0                     | 0         |                 |
| <b>(c)</b>                                  | Planning/Design/Engineering/Environmental Documentation |                                 | \$0                             | \$158,312               | 158,312   |                 |
| <b>(d)</b>                                  | Construction/Implementation                             |                                 | \$187,602                       | \$1,220,640             | 1,408,242 |                 |
| <b>(e)</b>                                  | Environmental Compliance/Mitigation/Enhancement         |                                 | \$0                             | \$86,352                | 86,352    |                 |
| <b>(f)</b>                                  | Project Summary [Sum (a) through (e) for each column]   |                                 | \$187,602                       | \$1,715,156             | 1,902,758 |                 |
| <b>(g)</b>                                  | Construction Administration                             |                                 | \$0                             | \$62,250                | 62,250    |                 |
| <b>(h)</b>                                  | Other (Explain):  |                                 | \$0                             | \$0                     | \$0       |                 |
| <b>(i)</b>                                  | Construction/Implementation Contingency                 |                                 | \$0                             | \$98,622                | \$0       |                 |
| <b>(j)</b>                                  | Grand Total [Sum (f) through (i) for each column]       |                                 | \$187,602                       | \$1,876,028             | 2,063,630 |                 |
| <b>(j)</b>                                  | Calculation of Funding Match %                          |                                 |                                 |                         |           |                 |
| <b>Sources of Funds for Non-State Share</b> |   | <i>Mendocino Land Trust</i>     |                                 |                         |           |                 |

1) "Other State Funds" may be presented in Table B-1 to demonstrate the full funding picture for the Proposal and, if presented, must be included in the total costs of the Proposal, which will be used to determine the percentage for the Funding Match Scoring Criterion.

**Table B-1 – Budget**

**Project Title: North Coast Integrated Regional Water Management Plan, Phase I**

**Project Title: Regional Administration**

| Budget Category                      |  | Other State Funds <sup>1)</sup>   | Non-State Share (Funding Match) | Requested Grant Funding | Total          | % Funding Match |
|--------------------------------------|--|---|---------------------------------|-------------------------|----------------|-----------------|
| <b>(a)</b>                           | Direct Project Administration Costs  |   |                                 | \$1,250,000.00          | \$1,250,000.00 |                 |
| <b>(b)</b>                           | Land Purchase/Easement   |   |                                 |                         | \$0.00         |                 |
| <b>(c)</b>                           | Planning/Design/Engineering/<br>Environmental Documentation  |   |                                 |                         | \$0.00         |                 |
| <b>(d.1)</b>                         | Construction/Implementation : Labor  |   |                                 |                         | \$0.00         |                 |
| <b>(d.2)</b>                         | Construction/Implementation : Materials  |   |                                 |                         | \$0.00         |                 |
| <b>(e.1)</b>                         | Environmental Compliance/<br>Mitigation/Enhancement : Labor  |   |                                 |                         | \$0.00         |                 |
| <b>(e.2)</b>                         | Environmental Compliance/<br>Mitigation/Enhancement : Materials  |   |                                 |                         | \$0.00         |                 |
| <b>(f)</b>                           | Construction Administration  |   |                                 |                         | \$0.00         |                 |
| <b>(g.1)</b>                         | Other Costs: Labor   |   |                                 |                         | \$0.00         |                 |
| <b>(g.2)</b>                         | Other Costs: Materials   |   |                                 |                         | \$0.00         |                 |
| <b>(h)</b>                           | Construction/Implementation<br>Contingency   |   |                                 |                         | \$0.00         |                 |
| <b>(i)</b>                           | Grand Total<br>(Sum rows (a) through (h) for each<br>column)   | \$0.00  | \$0.00                          | \$1,250,000.00          | \$1,250,000.00 |                 |
| <b>(j)</b>                           | Calculation of Funding Match % (Used<br>in Funding Match Scoring Criterion)<br><i>Optional for individual component<br/>projects .</i> |   |                                 |                         |                |                 |
| Sources of Funds for Non-State Share |  | <i>Use this space to list all sources of the Non-State Share and Other State Funds (expand this</i> |                                 |                         |                |                 |



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX N: NCIRWMP PROJECT SCHEDULES**



| Schedule/Project Timeline              |  |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|--|--|------------------|------------|------------------|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|
| ID                                     | Project Name   | Project Timeline |            | Project Timeline |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  |  | Start            | End        | Pre 2006         | Year 2006 |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |
|  |  |                  |            |                  | 1st       | 2nd | 3rd | 4th |
| 7                                      | <b>Mattole Intergrated Water Management Program</b>            |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Larger Project   | 1/1/2003         | 12/31/2008 |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Feasibility  | 1/1/2004         | 3/1/2005   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Design and Bid Solicitation                                    | 1/1/2004         | 1/1/2005   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | <b>Permitting</b>  |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | CEQA   |                  | 6/15/2006  |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | NEPA   |                  | 6/15/2006  |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Other Permits:*  | 1/1/2005         | 6/15/2006  |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Implementation   | 7/1/2006         | 10/15/2008 |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Mitigation & Environmental Enhancement                         | 7/1/2006         | 10/15/2008 |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance                            | 1/1/2006   | 1/1/2009         |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                             | 9/1/2005   | 12/31/2008       |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| 236<br>S - 1                           | <b>Siskiyou Co. Integrated Water Mgt/Coho Recovery Project</b> |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Larger Project   | 3/30/2005        | 12/31/2010 |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | <b>Shasta Water Association Dam Restoration</b>                |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Feasibility  | 5/1/2002         | 4/1/2004   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Design and Bid Solicitation                                    | 5/1/2002         | 6/1/2006   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | <b>Permitting</b>  |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | CEQA   |                  | 1/1/2008   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | NEPA   |                  | N/A        |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Other Permits:*  | 5/1/2006         | 1/1/2008   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|  | Implementation   | 11/1/2006        | 3/1/2011   |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Mitigation & Environmental Enhancement | 11/1/2006  | 3/1/2011         |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance                            | N/A  |                  |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                             | 11/1/2006  | 3/1/2011         |            |                  |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |

| Schedule/Project Timeline |  |                  |           |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|---------------------------|--|------------------|-----------|-------------|------------------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----|-----|-----|
| ID                        | Project Name                           | Project Timeline |           | Pre 2006    | Project Timeline |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           |  | Start            | End       |             | Year 2006        |     |     | Year 2007 |     |     | Year 2008 |     |     | Year 2009 |     |     | Year 2010 |     |     | Year 2011 |     |     | Year 2012 |     |     |     |     |     |
|                           |  |                  |           |             | 1st              | 2nd | 3rd | 4th       | 1st | 2nd | 3rd       | 4th | 1st | 2nd       | 3rd | 4th | 1st       | 2nd | 3rd | 4th       | 1st | 2nd | 3rd       | 4th | 1st | 2nd | 3rd | 4th |
| <b>S - 2</b>              | <b>Aruja Dam Restoration</b>           |                  |           |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Feasibility                            | 5/1/2002         | 4/1/2002  | Yellow      |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Design and Bid Solicitation            | 5/1/2002         | 6/1/2006  | Light Green |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Permitting                             |                  |           |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | CEQA                                   |                  | 12/1/2007 |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | NEPA                                   |                  | N/A       |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Other Permits:*                        | 6/1/2006         | 12/1/2007 |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Implementation                         | 11/1/2006        | 3/1/2011  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Mitigation & Environmental Enhancement | 11/1/2006        | 3/1/2011  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Maintenance                            |                  | N/A       |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Monitoring                             | 11/1/2006        | 3/1/2011  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
| <b>S - 3</b>              | <b>Scott River Water Trust</b>         |                  |           |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Feasibility                            | 7/1/2002         | 12/1/2004 | Yellow      |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Design and Bid Solicitation            | 7/1/2002         | 12/1/2004 | Light Green |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | <b>Permitting</b>                      |                  |           |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | CEQA                                   |                  | 6/15/2007 |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | NEPA                                   |                  | N/A       |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Other Permits:*                        | 4/1/2005         | 12/1/2005 |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Implementation                         | 7/1/2006         | 7/1/2009  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Mitigation & Environmental Enhancement | 7/1/2006         | 7/1/2009  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Maintenance                            |                  | N/A       |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |
|                           | Monitoring                             | 7/1/2006         | 7/1/2009  |             |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |

| Schedule/Project Timeline |   |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|---------------------------|---|------------------|-----------|----------|------------------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|
| ID                        | Project Name                                  | Project Timeline |           | Pre 2006 | Project Timeline |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           |   | Start            | End       |          | Year 2006        |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |
|                           |   |                  |           |          | 1st              | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |
| S - 5                     | <b>City of Etna Water Supply</b>              |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility                                   | 6/1/2006         | 12/1/2006 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                   | 6/1/2006         | 12/1/2006 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>                             |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  |                  | 12/1/2007 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  |                  | N/A       |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*                               | 1/1/2007         | 12/1/2007 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation                                | 8/1/2007         | 10/1/2007 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement        | 8/1/2007         | 10/1/2007 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Maintenance                                   | 8/1/2006         | 8/1/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Monitoring                                    | 8/1/2007         | 10/1/2007 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| 78                        | <b>Monte Rio Community Wastewater Project</b> |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project                                |                  | N/A       |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility                                   | 1/1/2001         | 6/7/2002  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                   | 5/10/2002        | 4/22/2004 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>                             |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  |                  | 6/7/2001  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  |                  | 4/15/2005 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*                               | 4/23/2004        | 10/3/2005 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation                                | 7/1/2006         | 3/7/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement        |                  |           |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Maintenance                                   | 1/7/2007         | 6/6/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Monitoring                                    | 1/7/2005         | 9/6/2008  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |

|             |  | Schedule/Project Timeline |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|-------------|--|---------------------------|------------|----------|-----------|------------------|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|--|--|--|
|             |  | Project Timeline          |            |          |           | Project Timeline |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             |  | Project Timeline          |            | Pre 2006 | Year 2006 |                  |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |  |  |  |
| ID          | Project Name   | Start                     | End        | Pre 2006 | 1st       | 2nd              | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |           |  |  |  |
| ICWMP<br>D  | <b>Mattole Integrated Coastal Watershed Management Program</b> |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Larger Project   | 1/1/2005                  | 12/29/2011 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Feasibility  | 1/1/2007                  | 12/10/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Design and Bid Solicitation                                    | 1/1/2007                  | 12/10/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | <b>Permitting</b>  |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | CEQA   |                           | 5/5/2008   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | NEPA   |                           | N/A        |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Other Permits:*  | 1/1/2007                  | 11/1/2009  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Implementation   | 1/1/2009                  | 11/1/2011  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Mitigation & Environmental Maintenance                         | 6/1/2010                  | 12/31/2011 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
| Monitoring  | 1/1/2008   | 12/31/2011                |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
| 86          | <b>Orick Community Services District</b>                       |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Larger Project   | 1/1/2001                  | 12/29/2010 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Feasibility  | 1/5/2004                  | 9/23/2004  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Design and Bid Solicitation                                    | 1/1/2006                  | 12/10/2006 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | <b>Permitting</b>  |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | CEQA   |                           | 12/31/2006 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | NEPA   |                           | 12/31/2006 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Other Permits:*  | 6/1/2005                  | 1/1/2007   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Implementation   | 7/1/2006                  | 12/10/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|             | Mitigation & Environmental Enhancement                         | 7/1/2006                  | 12/10/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
| Maintenance | 6/1/2008   | 12/31/2010                |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
| Monitoring  | 6/1/2008   | 12/31/2010                |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |

|             |  | Schedule/Project Timeline |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|-------------|--|---------------------------|------------|----------|-----------|------------------|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|--|--|
|             |  | Project Timeline          |            |          |           | Project Timeline |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             |  | Project Timeline          |            | Pre 2006 | Year 2006 |                  |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |  |  |
| ID          | Project Name   | Start                     | End        | Pre 2006 | 1st       | 2nd              | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |  |  |
| 22          | <b>Redwood Creek Erosion Control</b>                             |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Larger Project   | 1/1/2001                  | 12/29/2010 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Feasibility  | 1/1/2002                  | 3/10/2004  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Design and Bid Solicitation                                      | 1/1/2001                  | 3/15/2006  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Permitting   |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | CEQA   |                           | 5/15/2006  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | NEPA   |                           | N/A        |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Other Permits:*  | 1/1/2006                  | 5/15/2006  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Implementation   | 7/1/2006                  | 11/30/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Mitigation & Environmental Enhancement                           | 7/1/2006                  | 11/30/2008 |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
| Maintenance | 5/16/2006  | 11/30/2008                |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
| Monitoring  | 5/16/2006  | 11/30/2010                |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
| 164         | <b>Fish Friendly Farming Environmental Certification Program</b> |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Larger Project   | 1/2/2001                  | 7/1/2010   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Feasibility  |                           | N/A        |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Design and Bid Solicitation                                      | 1/1/2005                  | 1/1/2007   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Permitting   |                           |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | CEQA   |                           | 1/15/2001  |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | NEPA   |                           | N/A        |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Other Permits:*  | 7/1/2006                  | 7/1/2007   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Implementation   | 7/1/2006                  | 7/1/2010   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
|             | Mitigation & Environmental Enhancement                           | 7/1/2006                  | 7/1/2010   |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
| Maintenance | 7/1/2006   | 7/1/2010                  |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |
| Monitoring  | 7/1/2006   | 7/1/2010                  |            |          |           |                  |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |

| Schedule/Project Timeline              |                                       |                  |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|--|---------------------------------------|------------------|------------|------------------|--------------|-----|-----|-----|--------------|-----|-----|-----|--------------|-----|-----|-----|--------------|-----|-----|-----|--------------|-----|-----|-----|--------------|-----|-----|-----|--------------|-----|-----|-----|
| ID                                     | Project Name                          | Project Timeline |            | Project Timeline |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  |                                       | Start            | End        | Pre<br>2006      | Year<br>2006 |     |     |     | Year<br>2007 |     |     |     | Year<br>2008 |     |     |     | Year<br>2009 |     |     |     | Year<br>2010 |     |     |     | Year<br>2011 |     |     |     | Year<br>2012 |     |     |     |
|  |                                       |                  |            |                  | 1st          | 2nd | 3rd | 4th |
| 51                                     | <b>Mid Van Duzen River</b>            |                  |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Larger Project                        | 10/1/2004        | 12/31/2010 |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Feasibility                           |                  | N/A        |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Design and Bid Solicitation           | 1/1/2007         | 6/1/2008   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | <b>Permitting</b>                     |                  |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | CEQA                                  |                  | 6/1/2006   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | NEPA                                  |                  | N/A        |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Other Permits:*                       | 1/1/2006         | 6/1/2008   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Implementation                         | 7/1/2006                              | 10/15/2008       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Mitigation & Environmental Enhancement | 7/1/2006                              | 10/15/2008       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Maintenance                            | 10/15/2008                            | 12/31/2010       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Monitoring                             | 7/1/2006                              | 10/15/2008       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| 121                                    | <b>Salt River Restoration Project</b> |                  |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Larger Project                        | 1/1/2001         | 4/1/2010   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Feasibility                           | 2/28/2005        | 3/2/2005   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Design and Bid Solicitation           | 6/1/2006         | 6/1/2007   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | <b>Permitting</b>                     |                  |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | CEQA                                  |                  | 6/1/2007   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | NEPA                                  |                  | 6/1/2007   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
|  | Other Permits:*                       | 7/1/2006         | 6/1/2007   |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Implementation                         | 7/1/2006                              | 9/29/2010        |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Mitigation & Environmental Enhancement | 7/1/2006                              | 9/29/2010        |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Maintenance                            | 11/1/2007                             | 12/31/2010       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |
| Monitoring                             | 6/1/2006                              | 12/31/2010       |            |                  |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |              |     |     |     |

| Schedule/Project Timeline |  |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|---------------------------|--|------------------|------------|----------|------------------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|
| ID                        | Project Name   | Project Timeline |            | Pre 2006 | Project Timeline |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           |  | Start            | End        |          | Year 2006        |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |
|                           |  |                  |            |          | 1st              | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |
| 23                        | <b>Graton Wastewater Treatment Upgrade and Reclamation Project</b> |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project   |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility  | 12/1/2004        | 4/15/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation  | 5/1/2005         | 11/1/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>  |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA   |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA   |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*  | 3/15/2005        | 10/7/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation   | 7/1/2006         | 10/1/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                             | 7/1/2006         | 10/1/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               |  | N/A              |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | 1/1/2006   | 10/7/2007        |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| 128                       | <b>Sonoma County Water Recycling and Habitat Preservation Proj</b> |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project   |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility  | 1/1/2001         | 3/4/2004   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation  | 4/21/2005        | 3/1/2006   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>  |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA   |                  | 6/1/2006   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA   |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*  | 7/1/2005         | 6/1/2006   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation   | 7/1/2006         | 10/31/2008 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                             | 7/1/2006         | 10/31/2008 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               | 10/31/2008   | 12/31/2010       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | 10/31/2008   | 12/31/2010       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |



| Schedule/Project Timeline |  |                             |   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |  |  |
|---------------------------|--|-----------------------------|---|----------|------------------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|--|--|--|--|
| ID                        | Project Name   | Project Timeline            |   | Pre 2006 | Project Timeline |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |  |  |
|                           |  | Start                       | End   |          | Year 2006        |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |  |  |  |  |
|                           |  |                             |   |          | 1st              | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |  |  |  |  |
| 151                       | <b>Trinity Drinking Water Source Sediment Reduction Project</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br><b>Permitting</b><br>CEQA<br>NEPA<br>Other Permits:*<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring | N/A<br>N/A<br>3/15/2006     | 5/30/2006<br>6/15/2006<br>N/A<br>6/15/2006<br>7/1/2006<br>10/31/2007<br>7/1/2006<br>10/31/2007<br>N/A<br>3/1/2006<br>6/15/2006  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |  |  |
| 108                       | <b>Martin Slough Interceptor Project</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br>Permitting<br>CEQA<br>NEPA<br>Other Permits:*<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring                               | N/A<br>3/6/2006<br>2/1/2002 | 7/15/2006<br>6/1/2006<br>10/5/2004<br>3/15/2005<br>9/1/2005<br>9/1/2006<br>7/1/2006<br>11/1/2008<br>7/1/2006<br>11/1/2008<br>11/1/2008<br>11/1/2009<br>11/1/2008<br>11/1/2010 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |  |  |  |  |

| Schedule/Project Timeline |  |                  |            |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|---------------------------|--|------------------|------------|----------|------------------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----------|-----|-----|-----|-----|-----|--|--|--|--|
| ID                        | Project Name   | Project Timeline |            | Pre 2006 | Project Timeline |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | Start            | End        |          | Year 2006        |     |     | Year 2007 |     |     | Year 2008 |     |     | Year 2009 |     |     | Year 2010 |     |     | Year 2011 |     |     | Year 2012 |     |     |     |     |     |  |  |  |  |
|                           |  |                  |            |          | 1st              | 2nd | 3rd | 4th       | 1st | 2nd | 3rd       | 4th | 1st | 2nd       | 3rd | 4th | 1st       | 2nd | 3rd | 4th       | 1st | 2nd | 3rd       | 4th | 1st | 2nd | 3rd | 4th |  |  |  |  |
| 125                       | <b>Navarro Watershed Road Sediment Reduction Project</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br>Permitting<br>CEQA<br>NEPA<br>Other Permits:*<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring | 6/15/2005        | 12/31/2007 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | 7/15/2005  |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 6/1/2005         | 12/31/2007 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 7/1/2006         | 12/31/2007 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 7/1/2006         | 12/31/2007 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 6/15/2005        | 12/15/2010 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | N/A              | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
| 26                        | <b>Sediment Solutions for the Gualala: Phase III</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br>Permitting<br>CEQA<br>NEPA<br>Other Permits:*<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring     |                  | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 9/1/2004         | 5/1/2005   |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 9/1/2004         | 5/1/2005   |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  |            |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | 1/1/2006   |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  |                  | N/A        |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 1/1/2005         | 1/1/2006   |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 7/1/2006         | 12/31/2008 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 7/1/2006         | 12/31/2008 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 1/4/2006         | 12/31/2010 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |
|                           |  | 5/1/2006         | 12/31/2010 |          |                  |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |           |     |     |     |     |     |  |  |  |  |

| Schedule/Project Timeline |   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|---------------------------|---|------------------|------------|----------|------------------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|
| ID                        | Project Name  | Project Timeline |            |          | Project Timeline |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           |   | Start            | End        | Pre 2006 | Year 2006        |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |
|                           |   |                  |            |          | 1st              | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |
| ICWMP<br>B                | <b>Forsythe Creek Sediment Control Project</b>                  |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project  | ongoing          |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility   | 1/1/2006         | 5/1/2012   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                                     | 1/1/2008         | 5/1/2008   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  |                  | 5/1/2008   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*   | 1/1/2009         | 6/1/2009   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation  | 1/1/2009         | 10/1/2010  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                          | 7/1/2006         | 10/1/2006  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               | 1/1/2010  | 12/31/2011       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | 6/1/2009  | 12/31/2011       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| 39                        | <b>Raw &amp; Recovered Water for Irrigating Public Agencies</b> |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project  | N/A              |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility   | 1/1/2001         | 7/31/2004  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                                     | 5/1/2005         | 10/1/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  |                  | 8/1/2005   |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  |                  | N/A        |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*   | 9/1/2005         | 11/30/2005 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation  | 7/1/2006         | 4/30/2008  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                          | 7/1/2006         | 4/30/2008  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               | 4/30/2008   | 12/31/2010       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | 4/30/2008   | 12/31/2010       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |



| Schedule/Project Timeline |   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|---------------------------|---|------------------|------------|----------|------------------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|
| ID                        | Project Name  | Project Timeline |            | Pre 2006 | Project Timeline |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           |   | Start            | End        |          | Year 2006        |     |     |     | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |     |     |     |
|                           |   |                  |            |          | 1st              | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |
| 89                        | <b>Covelo Wastewater Facilities Improvement Project</b> |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project  | N/A              |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility   | 12/15/2002       | 2/28/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                             | 2/1/2005         | 1/31/2006  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>                                       |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  |                  | 6/30/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  |                  | 6/30/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*   | 7/1/2005         | 8/31/2005  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation  | 7/1/2006         | 2/28/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                  | 7/1/2006         | 2/28/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               | N/A   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | N/A   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| ICWMP C                   | <b>Big River Main Haul Road, Phase I Restoration</b>    |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Larger Project  | N/A              |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Feasibility   | 1/1/2005         | 12/31/2011 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Design and Bid Solicitation                             | 3/1/2006         | 12/1/2007  |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | <b>Permitting</b>                                       | 3/1/2009         | 12/31/2009 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | CEQA  | complete         |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | NEPA  | N/A              |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Other Permits:*   | 3/1/2009         | 12/30/2009 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Implementation  | 4/1/2010         | 12/30/2010 |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
|                           | Mitigation & Environmental Enhancement                  |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Maintenance               | 4/1/2009  | 12/31/2011       |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |
| Monitoring                | N/A   |                  |            |          |                  |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |

|     |  | Schedule/Project Timeline |           |          |             |                  |     |             |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|-----|--|---------------------------|-----------|----------|-------------|------------------|-----|-------------|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|-----|-----|-----|-----------|--|--|--|
|     |  | Project Timeline          |           |          |             | Project Timeline |     |             |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|     |  | Project Timeline          |           | Pre 2006 | Year 2006   |                  |     |             | Year 2007 |     |     |     | Year 2008 |     |     |     | Year 2009 |     |     |     | Year 2010 |     |     |     | Year 2011 |     |     |     | Year 2012 |  |  |  |
| ID  | Project Name   | Start                     | End       | Pre 2006 | 1st         | 2nd              | 3rd | 4th         | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th | 1st       | 2nd | 3rd | 4th |           |  |  |  |
| 55  | <b>Crescent City Wastewater Treatment Plant Renovation</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br><b>Permitting</b><br>CEQA<br>NEPA<br>Other Permits:<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring | N/A<br>N/A<br>11/1/2003   | 8/1/2005  |          | [Green bar] |                  |     |             |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
| 153 | <b>Westport Water Supply Reliability Project</b><br>Larger Project<br>Feasibility<br>Design and Bid Solicitation<br><b>Permitting</b><br>CEQA<br>NEPA<br>Other Permits:<br>Implementation<br>Mitigation & Environmental Enhancement<br>Maintenance<br>Monitoring           | N/A<br>N/A<br>1/1/2006    | 5/31/2006 |          |             |                  |     | [Green bar] |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |
|     | * See Table 9, Environmental Compliance Summary for permit list  |                           |           |          |             |                  |     |             |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |     |     |     |           |  |  |  |

**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX O: PROJECTS INTEGRATION WITH NCIRWMP OBJECTIVES**



## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix O: NCIRWMP Projects Integration with NCIRWMP Objectives

| Project ID | Project Name   | Conserve and enhance salmonid populations | Protect and enhance drinking water quality | Ensure adequate water supply | Implementation of Total Maximum Daily Loads | Implementation of Regional Water Quality Control Board WMI Chapters, Plans, & Policies | Implementation of the SWRCB's Non-point Source Program Plan | Implementation of floodplain management task force or recycling task force recommendations | Support implementation of State Programs | Address environmental justice concerns |
|------------|--|---|--|------------------------------|---|--|---|--|--|--|
| 7          | Mattole Integrated Water Management Program                          | X   |  | X                            | X   | X  | X   |  | X  | X                                      |
| 236        | Siskiyou County Integrated Water Management/Coho Recovery Project    | X   | X  | X                            | X   | X  | X   |  | X  | X                                      |
| 78         | Monte Rio Community Wastewater Project                               | X   | X  | X                            | X   | X  | X   | X  | X  | X                                      |
| 86         | Orick Community Services District                                    | X   | X  |                              |   | X  | X   | X  | X  | X                                      |
| ICWMP-D    | Mattole Integrated Coastal Watershed Management Program              | X   |  | X                            | X   | X  | X   |  | X  | X                                      |
| 22         | Redwood Creek Erosion Control  | X   |  |                              | X   | X  | X   | X  | X  |  |
| 164        | California Fish Friendly Farming Environmental Certification Program | X   | X  | X                            | X   | X  | X   |  | X  |  |
| 51         | Mid Van Duzen River Ranch Road Sediment Reduction Program            | X   | X  |                              | X   | X  | X   | X  | X  | X                                      |
| 121        | Salt River Restoration Project                                       | X   | X  |                              | X   | X  | X   | X  | X  | X                                      |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix O: NCIWMP Projects Integration with NCIWMP Objectives

| <b>Project ID</b> | <b>Project Name</b>  | <b>Conserve and enhance salmonid populations</b> | <b>Protect and enhance drinking water quality</b> | <b>Ensure adequate water supply</b> | <b>Implementation of Total Maximum Daily Loads</b> | <b>Implementation of Regional Water Quality Control Board WMI Chapters, Plans, &amp; Policies</b> | <b>Implementation of the SWRCB's Non-point Source Program Plan</b> | <b>Implementation of floodplain management task force or recycling task force recommendations</b> | <b>Support implementation of State Programs</b> | <b>Address environmental justice concerns</b> |
|-------------------|--|--|---|-------------------------------------|--|---|--|---|---|---|
| 23                | Graton Wastewater Treatment Upgrade and Reclamation Project    | X  | X   |                                     | X  | X   | X  | X   | X   | X   |
| 128               | Sonoma county Water Recycling and Habitat Preservation Project | X  | X   | X                                   | X  | X   | X  | X   | X   |   |
| 217               | Newell Water System Renovation                                 | X  | X   | X                                   |  | X   |  |   | X   | X   |
| 38                | Head Hunter/Smoke House Nonpoint Sediment Reduction Project    | X  | X   | X                                   |  | X   | X  |   | X   |   |
| 151               | Trinity Drinking Water Source Sediment Reduction Project       | X  | X   |                                     | X  | X   | X  |   | X   |   |
| 108               | Martin Slough Interceptor Project                              |  |   |                                     |  | X   |  |   | X   | X   |
| 125               | Navarro Watershed Road Sediment Reduction Project              | X  |   |                                     | X  | X   | X  |   | X   |   |
| 26                | Sediment Solutions for the Gualala: Phase III                  | X  | X   |                                     | X  | X   | X  |   | X   |   |
| 207               | Lower Fuller Creek Sediment Source Implementation Plan         | X  | X   |                                     | X  | X   | X  |   | X   |   |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix O: NCIWMP Projects Integration with NCIWMP Objectives

| Project ID | Project Name   | Conserve and enhance salmonid populations | Protect and enhance drinking water quality | Ensure adequate water supply | Implementation of Total Maximum Daily Loads | Implementation of Regional Water Quality Control Board WMI Chapters, Plans, & Policies | Implementation of the SWRCB's Non-point Source Program Plan | Implementation of floodplain management task force or recycling task force recommendations | Support implementation of State Programs | Address environmental justice concerns |
|------------|--|---|--|------------------------------|---|--|---|--|--|--|
| ICWMP-B    | Forsythe Creek Sediment Control Project                        | X   | X  | X                            | X   | X  | X   |  | X  |  |
| 39         | Raw and Recovered Water for Irrigating Public Agencies         | X   |  | X                            | X   | X  |   |  | X  | X                                      |
| 74         | Willits Wastewater Treatment/Water Reclamation Project         |   | X  |                              |   | X  |   |  | X  | X                                      |
| 81         | Weaverville Sanitary District Water Reclamation Project        | X   |  | X                            |   | X  |   |  | X  | X                                      |
| ICWMP-A    | Salmon Creek Sediment Reduction and Water Conservation Program | X   | X  | X                            | X   | X  | X   |  | X  |  |
| 89         | Covelo Wastewater Facilities Improvement Project               |   | X  |                              |   | X  |   |  | X  | X                                      |
| ICWMP-C    | Big River Main Haul Road Phase I Restoration                   | X   |  |                              | X   | X  | X   |  | X  |  |
| 55         | Crescent City Wastewater Treatment Plant Renovation            | X   |  | X                            |   | X  |   |  | X  | X                                      |
| 153        | Water Supply Reliability Project                               | X   | X  | X                            |   | X  |   |  | X  | X                                      |



**NORTH COAST INTEGRATED REGIONAL  
WATER MANAGEMENT PLAN  
PHASE 1**

**July 2007**

**APPENDIX P: NCIRWMP PROJECTS WATERSHED ATTRIBUTES**



## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix P: NCIRWMP Projects Watershed Attributes

| Project ID | Project Name   | Groundwater Basins   | 303(d) Listed Waterbodies  | Critical Coastal Areas/Areas of Biological Significance  | DFG Coho Recovery Unit(s)   |
|------------|--|--|--|--|---|
| 7          | Mattole Integrated Water Management Program                          | Mattole River Valley   | Mattole River, Cape Mendocino HU, Mattole River HA   | Gilham Butte Area of Critical Environmental Concern, Mill Creek Forest Area of Critical Environmental Concern, King Range ASBS, Mattole River ASBS | Cape Mendocino HU   |
| 236        | Siskiyou County Integrated Water Management/Coho Recovery Project    | Shasta Valley, Scott River Valley, Butte Valley, Happy Camp Town Area            | Scott River, Klamath River HU, Scott River HA, Shasta River HA, Klamath River, Middle HA, Iron Gate Dam to Scott River, Salmon River HA  | Redwood National and State Parks ASBS  | Klamath River HU  |
| 78         | Monte Rio Community Wastewater Project                               | Lower Russian River Valley   | Russian River, Russian River HU, Lower Russian River HA, Guerneville HSA   |  | Russian River HU; Guerneville HSA   |
| 86         | Orick Community Services District                                    | Redwood Creek Area   | Redwood Creek, Redwood Creek HU  |  | Redwood Creek HU  |
| ICWMP-D    | Mattole Integrated Coastal Watershed Management Program              | Mattole River Valley   | Mattole River, Cape Mendocino HU, Mattole River HA   | Gilham Butte Area of Critical Environmental Concern, Mill Creek Forest Area of Critical Environmental Concern, King Range ASBS, Mattole River ASBS | Cape Mendocino HU   |
| 22         | Redwood Creek Erosion Control  | N/A  | Redwood Creek, Redwood Creek HU  | Redwood National and State Parks ASBS  | Redwood Creek HU  |
| 164        | California Fish Friendly Farming Environmental Certification Program | Alexander Valley, Ukiah Valley, Navarro River Valley, Lower Russian River Valley | Navarro River Delta, Mendocino Coast HU, Navarro River HA, Gualala River, Gualala River HA, Laguna de Santa Rosa, Russian River HU, Middle Russian River HA, Navarro River, Santa Rosa Creek, Russian River, Lower Russian River HA, Austin Creek HSA, Guerneville HSA, Big Sulphur Creek HSA, Dry Creek HSA, Mark West Creek HSA, Upper Russian River HA, Forsythe Creek HSA, Ukiah HSA |  | Mendocino Coast HU; Russian River HU; Guerneville HSA; Austin Creek HSA; Guerneville HSA, Mark West Creek HSA, Forsythe Creek HSA |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix P: NCIRWMP Projects Watershed Attributes

| Project ID | Project Name   | Groundwater Basins  | 303(d) Listed Waterbodies   | Critical Coastal Areas/Areas of Biological Significance    | DFG Coho Recovery Unit(s)                           |
|------------|--|---|---|--|---|
| 51         | Mid Van Duzen River Ranch Road Sediment Reduction Program      | N/A   | Eel River Delta, Eel River HU, Lower Eel river HA, Van duzen River, Eel river HU, Van Duzen River HA  |  |   |
| 121        | Salt River Restoration Project                                 | Eel River Valley  | Eel River Delta, Eel River HU, Lower Eel River HA   |  | Eel River HU  |
| 23         | Graton Wastewater Treatment Upgrade and Reclamation Project    | Wilson Grove Formation Hi                                       | Russian River, Russian River HU, Lower Russian River HA, Guerneville HSA, Austin Creek HSA  |  | Russian River HU; Guerneville HSA, Austin Creek HSA |
| 128        | Sonoma county Water Recycling and Habitat Preservation Project | Santa Rosa Valley, Lower Russian River Valley, Alexander Valley | Laguna de Santa Rosa, Russian River HU, Middle Russian River HA, Santa Rosa Creek, Russian River, Mark West Creek HA, Lower Russian River HA, Guerneville HSA, Dry Creek HSA, Geyserville HSA |  | Russian River HU; Guerneville HSA, Geyserville HSA  |
| 217        | Newell Water System Renovation                                 | N/A   | Klamath River, Klamath River HU, Lost River HA, Tule Lake and Mt. Dome HSAs   |  |   |
| 38         | Head Hunter/Smoke House Nonpoint Sediment Reduction Project    | Smith River Plain   |   |  |   |
| 151        | Trinity Drinking Water Source Sediment Reduction Project       | N/A   | Trinity River, Trinity River HU, Middle HA  |  |   |
| 108        | Martin Slough Interceptor Project                              | Eureka Plain  | Humboldt Bay, Eureka Plain HU   |  | Eureka Plain HU                                     |
| 125        | Navarro Watershed Road Sediment Reduction Project              | Anderson Valley, Navarro River Valley                           |   |  | Navarro River HSA                                   |
| 26         | Sediment Solutions for the Gualala: Phase III                  | Anapolis Ohlsen Ranch   | Gualala River, Mendocino Coast HU, Gualala River HA   | Del Mar Landing Ecological Reserve ASBS, Gerstle Cove ASBS | Mendocino Coast HU; Gualala River HSA               |

## North Coast Integrated Regional Water Management Plan, Phase 1

### Appendix P: NCIWMP Projects Watershed Attributes

| Project ID | Project Name   | Groundwater Basins  | 303(d) Listed Waterbodies   | Critical Coastal Areas/Areas of Biological Significance       | DFG Coho Recovery Unit(s)                            |
|------------|--|---|---|---|--|
| 207        | Lower Fuller Creek Sediment Source Implementation Plan         | Anapolis Ohlsen Ranch   | Gualala River, Mendocino Coast HU, Gualala River HA   | Del Mar Landing Ecological Reserve ASBS, Gerstle Cove ASBS    | Mendocino Coast HU; Gualala River HSA                |
| ICWMP-B    | Forsythe Creek Sediment Control Project                        | N/A   | Russian River HU, Upper Russian River HA, Forsythe Creek HSA  |   | Russian River HU; Forsythe Creek HSA                 |
| 39         | Raw and Recovered Water for Irrigating Public Agencies         | Hayfork Valley  | Trinity River, Trinity River HU, Lower Trinity HA, South Fork, South Fork HA, Klamath River, Klamath River HU, Lower HA, Klamath Glen HSA |   | Trinity River HU; Klamath River HU; Klamath Glen HSA |
| 74         | Willits Wastewater Treatment/Water Reclamation Project         | Little Lake Valley  | Eel River, South Fork, Eel River HU, South Fork HA  |   | Eel River HU   |
| 81         | Weaverville Sanitary District Water Reclamation Project        |   | Trinity River, Trinity River HU, Lower Trinity HA, Middle HA, Upper HA, Klamath River, Klamath River HU, Lower HA, Klamath Glen HSA       |   | Trinity River HU; Klamath River HU; Klamath Glen HSA |
| ICWMP-A    | Salmon Creek Sediment Reduction and Water Conservation Program | Bodega Bay Area   |   | Bodega Marine Life Refuge CCA, Bodega Marine Life Refuge ASBS | Bodega HU; Salmon Creek HSA                          |
| 89         | Covelo Wastewater Facilities Improvement Project               | Round Valley  | Eel River, Middle Fork, Eel River HU, Middle Fork HA  |   |  |
| ICWMP-C    | Big River Main Haul Road Phase I Restoration                   | Fort Bragg Terrace Area   | Mendocino Coast HU, Big River HA, Big River   | Big River CCA   | Mendocino Coast HU, Big River HA, Big River          |
| 55         | Crescent City Wastewater Treatment Plant Renovation            | Lower Klamath River Valley, Prairie Creek Area, Smith River Plain |   | Redwood National and State Parks ASBS                         |  |
| 153        | Water Supply Reliability Project                               | Fort Bragg Terrace Area   |   |   |  |