

CHAPTER 7.0 LAND USE AND WATER PLANNING

7.1 Introduction

A goal of the Integrated Regional Water Management Plan (IRWMP) process is to facilitate communication between land use planners and water managers to better address coordination between land use planning and regional water planning. The IRWMP must incorporate and be consistent with local water and land use plans to encourage opportunities to implement local goals and policies; conversely, local planning documents should also incorporate IRWMP goals and objectives to provide collaborative opportunities with regard to IRWMP implementation.

One of the goals of the California Water Plan Update 2013 is to ensure water managers and land use planners make informed, collaborative water management decisions to better assure California's water needs are met into the future, especially in the face of climate change and drought. To address the integration of land use and water planning, the IRWMP must describe the relationship between the planning fostered by the IRWMP process—in this case, the Regional Water Management Group's (RWMG) planning efforts—and local agencies' water and land use planning. Early coordination of water and land use planning decisions is recognized as one of the best methods for meeting that future need; to that end, this chapter recognizes existing coordinated planning practices and highlights opportunities for future improved coordination.

7.1.1 Plan Area

Plumas County comprises 71.68 percent of the Upper Feather River watershed. Neighboring Butte (14.99 percent), Sierra (7.47 percent), and Lassen (5.2 percent) counties comprise the vast majority of the remainder of the Upper Feather River (UFR) IRWM plan Region. Only a small fraction of the Region (0.68 percent) is located within Shasta, Tehama, and Yuba counties (Table 7-1).

Table 7-1. County Acreages in the Upper Feather River IRWM Plan Area

County	Total County Size (acres)	Acres of County in Watershed	Percentage of County in Watershed (%)
Butte	1,072,692	345,850	14.99
Lassen	3,020,394	119,394	5.2
Plumas	1,673,682	1,653,456	71.68
Shasta	2,460,537	13,574	0.59
Sierra	615,880	172,367	7.47
Tehama	1,893,614	136	0.01
Yuba	411,973	1,880	0.08

County	Total County Size (acres)	Acres of County in Watershed	Percentage of County in Watershed (%)
Total Upper Feather River IRWM Region (acres)		2,306,657	100

Source: Deer Creek Resources, 2015.

Although the UFR IRWM plan area includes portions of Butte, Shasta, Tehama, and Yuba counties, it was mutually decided that they not be actively included in the UFR IRWM planning process for a variety of reasons: Butte County¹ because it is already entirely covered by the North Sacramento Valley IRWMP; Yuba County because it is entirely covered by the Yuba County IRWMP; and Shasta and Tehama counties because the land area covered by the UFR IRWMP in these counties is minimal and is managed primarily by Lassen National Park. This chapter, therefore, evaluates only those land managers within Lassen, Plumas, and Sierra counties. Further details on the Region are included in Section 7.2.1 of this chapter.

7.1.2 Watershed Characteristics

The UFR watershed is part of the northern Sierra Nevada, where that Range intersects with the volcanic Cascade Range to the north and the Diamond Mountains of the Basin and Range Province to the east. The tributaries of the Upper Feather River drain this terrain and flow southwest to eventually fill Lake Oroville, the second largest reservoir in the state. The Oroville Reservoir is the principal water storage facility of the State Water Project (SWP), which conserves and delivers water to over two-thirds of California's population.² Water flows from Lake Oroville through canals to irrigate farms of the Central Valley and provide domestic water to Southern Californians, and also to the Lower Feather River and beyond to enrich the aquatic ecosystem of the Sacramento-San Joaquin Delta.

7.1.3 Water Supply

Water supplies in the Upper Feather River Watershed come from both surface and groundwater, with the majority from surface water. In Plumas County, 66 percent of supply water is from surface sources, with the remaining supply relying upon groundwater.³ During drought years, additional groundwater is pumped to compensate for reduced surface water supplies. In Sierra County, a majority of supply water is from surface sources (94 percent).

The Region is the primary headwaters for the State Water Project (SWP), supplying 3.2 million acre-feet (AF) per year through Lake Oroville for downstream urban, industrial, and agricultural use. Lake Oroville is the largest of the SWP's storage facilities, with a storage capacity of 3.5 million AF of water; it accounts for 61 percent of the SWP's total system storage capacity and an important reservoir of the project.

¹ The UFR RWMP entered into an MOU with Butte County for the overlap area between the UFR IRWM and the Northern Sacramento Valley IRWM. The MOU stipulates coordination guidelines between the two entities for implementation projects located within the overlap surrounding Lake Oroville.

² Ecosystems Sciences Foundation. 2005. Integrated Regional Water Management Plan, Upper Feather River Watershed, California; Vol.1, p. 1-1.

³ Supply water refers to all water uses including domestic, agricultural, and irrigation.

developed municipal and industrial surface water supplies in California.⁴ The East Branch North Fork Feather River alone, which is contained completely in Plumas County, provides 25 percent of SWP water. Groundwater sources, both privately owned and publicly operated, occur mostly in the valleys on the east side of the Sierra Crest. Sierra Valley, the largest valley in the watershed, contains a large aquifer that is identified in DWR Bulletin 118 as a medium priority groundwater basin, thereby establishing it as subject to compliance with the recent sustainable groundwater management legislation.

7.1.4 Regional Land Use and Water Planning

7.1.4.1 Land and Water Managers in the Region

The Upper Feather IRWM Plan Area includes ten primary land managers (Table 7-2). Of these land managers, the counties and cities have the distinct and unique responsibility for planning land development policies and projects for privately held lands, which represent a small portion of the UFR Region. The US Forest Service/National Forests prepare land management plans and conduct land management activities such as restoration work and vegetation modification for fire protection, but do not plan for private development of land.

Table 7-2. Primary Land Management Agencies in the Plan Area

State of California	County of Sierra
City of Loyalton	County of Lassen
City of Portola	Lassen National Forest
County of Plumas	Plumas National Forest
Lassen National Park	Tahoe National Forest

7.1.4.2 Municipal Water Management

The Region includes 31 water managers (Table 7-3) responsible for managing water supply, quality, acquisition and delivery infrastructure, and administering the day-to-day operations of these activities. None of the water purveyors in the Region meet the DWR's definition of an urban water purveyor: one that provides over 3,000 AF of water annually or serves more than 3,000 urban connections. Urban water purveyors are subject to more stringent water conservation and reporting standards than are small water purveyors such as those in the Upper Feather River IRWM Plan Area.

Table 7-3. Water Purveyors and Managers in the Plan Area

Calpine California Water District	Chester Public Utility District
City of Loyalton	City of Portola
Clear Creek Community Service District	Clio Public Utility District

⁴ DWR. 2009. *State Water Project – Oroville Facilities*. June 17.

Dixie Valley Community Service District	East Quincy Community Service District
Feather River Canyon Community Service District	Gold Mountain Community Service District
Graeagle Community Service District	Graeagle Mutual Water Company
Greenhorn Creek Community Service District	Grizzly Lake Community Service District
Grizzly Ranch Community Service District	Hamilton Branch Community Service District
Indian Valley Community Service District	Johnsville Public Utility District
Lake Almanor Country Club Mutual Water Company	Last Chance Creek Water District
Long Valley Community Service District ⁵	Plumas County Flood Control & Water Conservation District
Plumas-Eureka Community Service District	Quincy Community Service District
Sierra Valley Groundwater Management District	Sierra Valley Mutual Water Company
Sierraville Public Utility District	Walker Ranch Community Service District
West Almanor Community Service District	Westwood Community Service District
Whitehawk Ranch Community Service District	Department of Water Resources ⁶
Pacific Gas and Electric (PG&E)	Mill Race

The UFR Region also includes a number of agencies, Tribes and organizations that manage or otherwise have an interest in water management but do not purvey water. Other water stakeholders in the Region, identified as those entities that participate in water management activities and have a role in water management, are identified in Table 7-4.

⁵ Although Long Valley Community Service District doesn't currently provide water services, they could in the future.

⁶ Department of Water Resources management activities include two water masters, one each for Indian Valley and Sierra Valley.

Table 7-4. Other Water Stakeholders in the Plan Area

Water Manager/Stakeholder	Interest in Water Management
Plumas County Environmental Health	Regulates community wells; possible future monitoring of private wells
Sierra County Environmental Health	Regulates community wells; possible future monitoring of private wells
Lassen County Environmental Health	Regulates community wells; possible future monitoring of private wells
Feather River Resource Conservation District	Advocates conservation of soil, water, and natural resources
Enterprise Rancheria	Watershed management, fisheries and restoration activities within ancestral homelands
Greenville Rancheria	Watershed management, fisheries and restoration activities within ancestral homelands
Susanville Rancheria	Watershed management, fisheries and restoration activities within ancestral homelands
Maidu Summit Consortium and Conservancy	Watershed management, fisheries and restoration activities within ancestral homelands
Lassen County	Interest in water planning as it relates to land use planning
PG&E	Holds water rights for hydropower generation on area reservoirs and lakes
Plumas County	Interest in water planning as it relates to land use planning
Plumas County Community Development Commission	Interest in water planning as it relates to land use planning
Feather River Stewardship Council	Advocates forestlands stewardship through education and restoration for resilient watersheds
Feather River Land Trust	Forestlands, meadows and wetlands stewardship, conservation, and restoration; outdoor education including schools programs.
Sierra County	Interest in water planning as it relates to land use planning
Sierra Institute for Community and Environment	Advocates for healthy watersheds and forests by developing assessments and programs in rural communities

Water Manager/Stakeholder	Interest in Water Management
Sierra Valley Resource Conservation District	Advocates conservation of soil, water, and natural resources
State Department of Water Resources	Headwaters of the State Water Project; leads IRWM planning process; Water Masters for Indian Valley and Sierra Valley
University of California Cooperative Extension, Plumas-Sierra and Lassen Counties	Research and education to address community challenges focused on sustaining agricultural vitality and enhancing natural resources
Plumas Watershed Forum	Funds implementation watershed management and restoration activities for the mutual benefit of Plumas County and the State Water Project
Plumas Corporation	Implement watershed restoration activities across the Sierra Nevada and including in the UFR Region.
Upper Feather River Watershed Group	Advocates irrigated lands stewardship through education and partnerships to ensure preservation of water quality
Resource Advisory Councils	As FACA Committees, provides advice and recommendations to the National Forests on the allocation of Safe Rural Schools funding for natural resource improvement and wildfire protection projects in the Region.

7.1.4.3 Groundwater Management

Due to the complexity of the subsurface geology in the Region (Chapter 3 *Region Description*), the UFR watershed's groundwater basins are primarily located east of the Sierra Nevada Crest. Of the 14 groundwater basins in the region,⁷ the Middle Fork contains the largest in the Region, the Sierra Valley Groundwater Basin.⁸ The Sierra Valley Groundwater Basin is the only basin in the Region that is currently listed in DWR's Bulletin 118 as a medium priority groundwater basin requiring the development of a Sustainable Groundwater Plan (SGP) by 2023. Smaller groundwater basins located throughout the Region are relied upon by much of the Region's population, which utilize groundwater wells for domestic, municipal, industrial, and agricultural irrigation needs.

The groundwater basins within the Region contain significant quantities of groundwater. In these areas, all of the municipal water purveyors except the City of Portola rely on groundwater for municipal/industrial water supply. Existing agricultural uses in these areas also rely on groundwater for some of their irrigation

⁷ See Chapter 3 *Region Description* for a comprehensive list and description of groundwater basins and sub-basins within the region.

⁸ Ecosystems Sciences Foundation, 2005, Integrated Regional Water Management Plan, Upper Feather River Watershed, California, Vol.1 2005, pp. 4-3.

needs, typically more so during dry years when groundwater is used to augment or substitute for surface water irrigation. Groundwater is an important source for many water needs in the Region including rural homes' individual domestic wells, public and private agricultural and municipal water supply systems, and for sustaining surface water supplies and quality for water-based recreational uses and for environmental needs.

It is anticipated that new demand on groundwater supplies within Plumas County will be relatively minor.⁹ Groundwater is assumed to continue being the primary potable water source in Plumas County. During prolonged droughts, increased demand on declining groundwater supplies could result in the decline of groundwater levels and/or quality within portions of the county. Particular areas which may experience declining groundwater quality or levels are those with expected growth (including Almanor, Mohawk, and the Sierra Valley) and areas having previously experienced groundwater declines during droughts, such as individual and community wells located in fractured rock zones. Groundwater recharge is an identified issue in the Region and is further discussed in Chapter 4 *Regional Water Issues*.

The Plumas County General Plan's EIR assessed the impacts of General Plan buildout on groundwater recharge and supply and found them to be a significant and unavoidable impact. Although increased demand on groundwater resources is expected to be relatively minor, the additional water demand of 2,066 acre-feet annually and resultant impacts on groundwater resources would be an irreversible consequence associated with the projected demand through 2035.¹⁰ The 2035 Plumas County General Plan includes open space designations and policies for groundwater management, groundwater recharge area protection, groundwater demand reductions, conservation easements, and sustainable water practices. Specifically, Policy 9.1.1 supports the development and implementation of Regional groundwater management plans and protection of groundwater recharge areas from development, and encourages groundwater demand reduction where feasible.

Sierra Valley Groundwater Management District

Since its inception in 1980,¹¹ the Sierra Valley Groundwater Management District (SVGMD) has monitored groundwater levels and installed flow meters to monitor groundwater pumping on all wells in the Sierra Valley that pump 100 gallons per minute or more. The District periodically prepares Sierra Valley Hydrologic Studies, the most recent update occurring in 2015. In response to declining groundwater levels, the SVGMD established water budgets in the areas of significant agricultural pumping. The Sierra Valley Groundwater Basin is identified as a medium priority groundwater basin by the DWR, and as such is required to have a Groundwater Sustainability Plan (GSP) prepared and adopted by January 31, 2022 in accordance with the Sustainable Groundwater Management Act of 2014. The Region's remaining groundwater basins (with the exception of the Mohawk Valley Groundwater Basin) have no adopted groundwater management plans, groundwater ordinances, or basin adjudications.¹²

⁹ 2035 Plumas County General Plan Update Draft EIR, 2012. pp. 4.6-22.

¹⁰ 2035 Plumas County General Plan Update Draft EIR, 2012. pp. 4.6-22.

¹¹ The Sierra Valley Groundwater Basin Law (Senate Bill 1391, dated January 28, 1980) authorized the creation by joint exercise of joint powers agreements, district described boundaries for the purposes of groundwater management. The districts include the Sierra Valley Groundwater Basin (Sierra and Plumas Counties), and the Long Valley Groundwater Basin (Plumas and Lassen Counties).

¹² A draft groundwater management plan was prepared for the Sierra Valley Groundwater Basin by the Sierra Valley Groundwater Management District; however, it has not been formally adopted as of yet.

7.1.4.4 Agricultural Water Management

Agriculture in the UFR Watershed is a significant user of water, particularly in the Sierra Valley and Indian Valley. Farms, pastures and other agricultural entities obtain irrigation water from many sources, including both surface and groundwater resources. Accounting for nearly all of the agricultural lands within the Upper Feather River Region, Plumas and Sierra counties report approximately 62,000 acres of irrigated agricultural lands consisting primarily of grazing and hay lands.¹³ Because there are no agricultural water management entities that trigger the state requirements for Agricultural Water Management Plans (AWMP),¹⁴ agricultural water management is typically dependent on private land owners. Department of Water Resources' Water Masters manage almost all agricultural water provided by surface supplies in Sierra and Indian Valleys. Agricultural producers in the Indian and American Valleys have installed extensive water-efficient piped irrigation systems over the past ten years.

7.1.4.5 Tribal Water Management

Each of the Upper Feather River Tribes and Tribal groups exerts its authority to manage water according to traditional policies, laws, mandates, and capacity. Tribes are separate and independent sovereign nations within the territorial boundaries of the United States. This sovereignty is inherent and flows from the pre-constitutional and extra-constitutional governance of the Tribe. Tribal governmental structures recognize the sovereign and political independence of Tribal nations and their members; a right also recognized by the State of California. Pursuant to Executive Order B-10-11, the State recognizes and reaffirms the inherent right of these Tribes to exercise sovereign authority over their members and territory.¹⁵ The Region is the ancestral territory of Maidu Tribes who have an inherent responsibility for managing their ancestral territories. Therefore, Upper Feather River Tribes' jurisdiction goes beyond the gathering, fishing, and hunting rights, which each individual Tribal member retains.

7.1.4.6 Water Supply Assessments

Coordination between land use planners and water managers may or may not occur during the initial review and evaluation of a project, depending on the scope of the project. However, projects with more than 500 units typically result in more land use planner/water purveyor collaboration due to the requirements of Senate Bills (SB) 221 and 610. Limitations of SB 221 and SB 610 are that the opportunity for land use and water supply planning collaboration is only applicable to large-scale residential developments, which occur rarely within the Region. SB 221 requires projects with more than 500 proposed dwelling units to obtain verification from the water purveyor that there is sufficient water to service the proposed project, as well as all other existing and anticipated future uses (such as agricultural and industrial) in its service area for a 20-year period in normal, single dry, and multiple dry years. SB 610 requires certain development projects, including those with more than 500 proposed dwelling units, and projects that will increase residential service connections by more than 10 percent, to prepare a Water

¹³ DWR, 2015. Annual Land and Water Use Estimates. Available at: <http://www.water.ca.gov/landwateruse/anaglwu.cfm>.

¹⁴ According to the Water Conservation Act of 2009, agricultural water suppliers with greater than 25,000 irrigated acres are required to adopt and submit an AWMP. (Senate Bill X7-7, available at: <http://www.water.ca.gov/wateruseefficiency/agricultural/agmgmt.cfm>)

¹⁵ Executive Order B-10-11. September 19, 2011. Available at: <https://www.gov.ca.gov/news.php?id=17223>.

Supply Assessment (WSA). The only WSA prepared to date in the UFR IRWM Plan Area has been for the Lake Front at Walker Ranch development.

The WSA is used by the lead planning agency in its state-mandated environmental review of the project under the California Environmental Quality Act (CEQA) and must evaluate the water purveyor's supplies to meet existing and anticipated demands for the proposed project. Both of these statutes repeatedly identify the urban water management plan (UWMP) as a planning document that, if properly prepared, can be used by a water supplier to fulfill the specific requirements of these statutes' standards.¹⁶

In rural areas such as the UFR IRWM Plan Area, planning usually occurs at a smaller scale.

7.1.4.7 Flood Protection and Other Hazard Mitigation

Flood reduction, prevention, and mitigation are a challenge to residents and floodplain managers within the Region. Areas of the Region at risk of flooding include property near rivers and alluvial fans, and within valley floors. The Region's topography creates concentrated flows from high elevations that spread out into the valleys before again becoming concentrated in steep river canyons. Populations located within the valleys and along the rivers and tributaries in the canyons are particularly prone to floodwaters. Flood-prone areas within the Region include the Sierra Valley, Chester, Indian Valley, American Valley, Mohawk Valley, and the North Fork Feather River Canyon. Localized flooding associated with creek or stream overflow occurs in the Region when rainfall/snowmelt runoff volumes exceed groundwater recharge rates, the capacity of creeks and streams, and the design capacity of drainage facilities. Areas without flood control structures can experience localized flooding which can be exacerbated by warmer rain on snow events during heavy seasonal rainfall, which typically occurs from November through March.

200-Year Flood Protection Standards

New California flood protection standards under the Central Valley Flood Protection Program (CVFPP) require 200-year flood protection for structures (while FEMA still requires 100-year flood protection). These new flood protection mandates require not only physical protection from 200-year flood events, typically in the form of levee improvements, but also trigger increased insurance requirements. The Department of Water Resources has not yet mapped the 200-year floodplain within the Region, nor has FEMA. Consistent with Federal Emergency Management Act and Federal Insurance Rate Mapping requirements, Plumas County requires that new construction and substantial improvements of any structure shall have the lowest floor, including the basement, elevated at least one foot above the base 100-year flood elevation. Similarly, the General Plan policies of the County of Sierra, City of Portola, and City of Loyalton support protection of inhabited uses from the deleterious impacts of floods, while permitting compatible uses such as open space and recreation within floodplains.

7.1.4.8 Watershed Management

The Monterey Settlement Agreement (2003) was a settlement among numerous entities that authorized the establishment of a Plumas Watershed Forum to implement watershed management and restoration activities in the Plumas County portion of the Feather River watershed. Parties to the Agreement included

¹⁶ CA Department of Water Resources. 2003. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities and counties in integrating water and land use planning. Available at: http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf.

the Planning and Conservation League, Plumas County Flood Control and Water Conservation District, Citizens Planning Association of Santa Barbara County, Inc., and the State of California Department of Water Resources, Central Coast Water Authority, Kern Water Bank Authority, and State Water Project Contractors. The Water Forum's specific goals include:

- ◆ Improve retention (storage) of water for augmented base flow in streams
- ◆ Improve water quality (reduced sedimentation), and streambank protection
- ◆ Improve upland vegetation management
- ◆ Improve groundwater retention/storage

Another watershed collaboration, the Feather River Watershed Authority, was comprised of several entities and organizations: Plumas County, Plumas National Forest, Sierra Valley Groundwater Management District, and Plumas County Flood Control and Water Conservation District. These four entities had statutory authority in the Upper Feather River Watershed to oversee development of the 2005 Feather River Watershed IRWM Plan under a Proposition 50 planning grant and the development of the DWR Regional Acceptance Process, which were prerequisites for applying for IRWM Planning funds under Proposition 84.

Over the past several years, the Region has seen the completion of more than 50 watershed projects, including studies and assessments, stream restoration, monitoring, resource management plans, strategic planning, community outreach and educational activities that resulted from these efforts.

7.1.4.9 Stormwater Management

Effective storm water planning and management on a regional scale involves collaboration of local, regional and Tribal governments, utilities, and other stakeholder groups to analyze the hydrology, storm drain/runoff conveyances systems, opportunity sites, and other habitat or community needs within sub-watersheds. Design of green infrastructure to capture dry weather or stormwater runoff should complement a regional planning for water quality conservation and protection of surface and groundwater. Coordinated stormwater management, monitoring, and evaluation over larger scales minimizes monitoring costs and maximizes the integration of stormwater monitoring with programs intended to protect beneficial uses.

The Storm Water Resource Plan (SWRP) Guidelines allow for an existing planning document or a collection of existing documents and local ordinances to be utilized as functionally equivalent plans, including but not limited to: watershed management plans, integrated resource plans, urban water management plans, green infrastructure plans, water quality improvement plans, salt and nutrient management plans, total maximum daily load (TMDL) implementation plans, or similar plans that include storm water and dry weather runoff capture and use as a component of the watershed goals and objectives.

The watershed approach is essential to integrate storm water management with other basic aspects of aquatic resource protection and overall water management such as flood control, water supply, and habitat conservation. The Water Code allows for a collection of local plans and ordinances and regional plans to constitute a functionally equivalent SWRP, if the plans and ordinances collectively meet all of the requirements of Water Code section 10560 et seq. There are currently no SWRPs within the UFR Region. However, should a SWRP be developed within the Region, the RWMG would incorporate it into the UFR IRWM Plan as an appendix and include the SWRP in the Data Management System.

Proposition 1 Guidelines require an IRWM Plan to include any stormwater resource plans developed for the Region. Per Water Code § 10562 (b)(7), the development of a stormwater resource plan and compliance with the provisions are required in order to be eligible for grants for stormwater and dry weather runoff capture projects with the following exceptions:¹⁷

- ◆ Funds provided for the purpose of developing a Storm Water Resource Plan; or
- ◆ A grant for a disadvantaged community as defined in Section 79505.5, with a population of 20,000 or less, and that is not a co-permittee for [an MS4] National Pollutant Discharge Elimination System (NPDES) permit issued to a municipality with a population greater than 20,000. (Wat. Code, § 10563(c) et seq.)

7.2 Current Coordination between Land Use and Water Planning Entities

Land use planning is conducted within the Region primarily by the counties of Plumas, Sierra, and Lassen; the cities of Portola and Loyalton; the US Forest Service for the Tahoe, Lassen, and Plumas National Forests; Plumas-Eureka State Park; and regional Tribes. In general, counties have land use jurisdiction of unincorporated lands and cities for incorporated lands, with much of the public land administered by the national forests. (See 7.1.4.1 for a discussion of other land use managers within the Region.)

The integration of land use and water planning is becoming increasingly emphasized at all levels of governance, the need for which is particularly evident during droughts and emergencies such as wildfires within the wild and urban interface (WUI). To describe existing coordination between land use and water planning entities in the Region, water managers in the UFR Region were contacted for baseline data and other input. Information from the entities that responded is presented below.

7.2.1 Westwood Community Services District

Westwood Community Services District (CSD) reported that it coordinates with land planning entities on projects in Lassen County, where those projects are applicable to the CSD, and occasionally provides input at Lassen County Planning Commission meetings on projects that involve water supply or water quality issues. Westwood CSD does not have any water planning documents, which limits their ability to coordinate with land planning entities regarding potential water and district-related impacts.

7.2.2 Sierraville Public Utility District

The Sierraville Public Utility District (PUD) reported that it has very limited interactions with the Sierra County Planning Department because of its small service area (110 homes and businesses). Sierraville PUD recently commissioned a "Preliminary Engineering Study" for submittal with an application for a loan and grant from the USDA Rural Water Agency for a new water tank; no coordination with Sierra County's planning agency occurred because the improvement would not result in land use or growth effects.

¹⁷ State Water Resources Control Board, 2015. *Storm Water Resource Guidelines*; pg 15. December 15. Available at:

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/docs/prop1/swrp_finalguidelines_dec2015.pdf.

7.2.3 Plumas-Eureka Community Services District

The Plumas-Eureka CSD receives the agenda for the Plumas County Planning Commission and Zoning Administrator meetings for special use permits via email but has not provided input on projects to date. The CSD coordinates with Plumas County Local Agency Formation Commission (LAFCo) for annexations to the CSD. Water planning documents for the CSD include a Municipal Service Review, Preliminary Engineering Report for Arsenic Remediation, a groundwater management plan, and numerous Hydrological Reports on groundwater quality.

7.2.4 City of Portola

The City of Portola, an incorporated community that is both a land planning agency and water purveyor in Plumas County, provides water to its customers from springs, municipal wells, and surface water from Lake Davis through the Plumas County Flood Control and Water Conservation District. Portola's Public Works Department coordinates with the Plumas County Planning Department on land use projects and provides input at city council meetings. The Public Works Department is not involved with Housing Element updates or any other general plan updates.

When project applications are received in the Region's city and county governments, the respective planning departments notify service agencies, including applicable water purveyors and other governmental regulatory agencies. Those entities may then submit comments, requests for additional information or studies, concerns, and potential conditions they would like to impose on the project.

All planning agencies must also comply with state requirements under SB 221 and SB 610 (see Water Supply Assessments section of this chapter). For large subdivisions of 500 or more units, the applicant must work with the water provider that services the project to prepare a Water Supply Assessment (WSA) in compliance with SB 610. For smaller projects, the water provider is notified of the application and given an opportunity to provide comments and conditions.¹⁸

7.2.5 Land and Water Use Patterns in the Region

There are no metropolitan areas within the watershed, and the population density is low (e.g., 7.2 people per square mile in Plumas County using US Census Bureau population statistics for 2013). The majority of people reside in small communities clustered around the population centers of Quincy, Chester, Westwood, Indian Valley, Greenville, Taylorsville, Crescent Mills, Almanor Basin, Portola, Sierraville, Loyalton, Chilcoot, Vinton, Beckwourth, and Graeagle. Plumas County accounts for the majority of population within the watershed, with a few small communities also occurring in the Lassen and Sierra county portions of the Region. A variety of land uses occur in the Upper Feather River Watershed. Of these land uses agriculture is predominant in alluvial valleys covering 3.5 percent of the total 2.2 million acres of the watershed.¹⁹ Forest lands and uses characterize over 70 percent of the UFR Region.

¹⁸ Boeck, Van, Yuba County Department of Public Works, and Wendy Hartman, Yuba County Planning Department, email communication to Jessica Hankins (April 9, 2014).

¹⁹ Ecosystems Sciences Foundation, 2005, Integrated Regional Water Management Plan, Upper Feather River Watershed, California, Vol.1 2005.

Plumas County

The vast majority of the Upper Feather Watershed Region is within Plumas County. In Plumas County, water covers two percent of the land base with over 1,000 miles of rivers and streams, hundreds of lakes, several reservoirs, and wetlands (Figure 3.5 *Map of vegetation communities in the Upper Feather River Region*). Riparian areas, which interface between aquatic and terrestrial habitats, comprise less than two percent of land cover and despite their ecological importance in the Region, are not identified for special management. However, public funding programs support their conservation and enhancement. In Plumas County, 62 percent of urban water use is for industrial and commercial uses; the remaining 38 percent is used for residential purposes. According to the 2035 Plumas County General Plan Land Use Element,²⁰ the primary land use within Plumas County is open space, with approximately 94 percent of the total county area dedicated to timberland or other managed natural resource uses, including but not limited to recreation, mining, timber production, agriculture production, fisheries, and cultural and historic resources. The remaining six percent of the land area is reserved for uses such as residential, commercial, industrial, and public service.²¹ Land use patterns in Plumas County and other areas of the Upper Feather Watershed are largely reflective of the pre-automobile era, with developed uses clustered around transportation and resource hubs.

Sierra County

A majority of urban water use (75 percent) in Sierra County is residential, with the remaining 25 percent used for industrial/commercial purposes. According to the 1996 Sierra County General Plan, approximately 99 percent of the land within Sierra County consists of resource uses: open space (0.2 percent), forest (91 percent), water (0.8 percent), and agricultural lands (7.1 percent). Urban and community uses comprise only 0.9 percent of lands which includes seasonal residential/lodging (0.4 percent), and residential uses (0.3 percent). More than 71 percent of land in Sierra County is in public ownership: the Tahoe National Forest, Humboldt Toiyabe National Forest, and Plumas National Forest. Under the General Plan's buildout conditions, resource uses would decrease and urban uses would increase to 1.0 percent.

Lassen County

More than 63 percent of the land in Lassen County is administered by federal, Tribal, state, or local agencies. Lassen County's geographic area within the Upper Feather IRWM Plan Area includes portions of Lassen National Park, Mountain Meadows Valley (a geographic region), and the unincorporated community of Westwood. Westwood is largely comprised of residential uses, while Mountain Meadows Valley predominantly consists of agricultural uses.

Cities of Portola and Loyalton

The only two incorporated communities in the Region are the cities of Portola and Loyalton, which have typical urbanized uses with a predominant mix of residential and commercial water users. Neither

²⁰ The 2035 Plumas County General Plan Update, adopted in 2013. Pending litigation on the allowed uses in Timber Production Zones. The General Plan is not being litigated on factual correctness, so for the purposes of this IRWMP Update, the 2035 General Plan is used as a data reference as well as a source for policy analysis. It is the Plan in effect as of the date of this writing.

²¹ Ibid, p. 19.

community has large industrial areas and agricultural uses are minimal. Because both cities are incorporated, all lands within the cities are under the planning jurisdiction of city government.

7.2.6 Population Growth and Water Demand Trends in the Region

Plumas County

Using California Department of Finance projections, the 2035 Plumas County General Plan Land Use Element estimates that the average population growth for Plumas County between 2010 and 2050 will be approximately 1.0 percent per decade. With this limited population growth in the Region, per capita water demand is forecasted to slightly increase if no conservation measures are implemented, and is expected to decrease if Best Management Practices (BMPs) and other conservation measures are adopted with guidance from the Urban Water Management Planning Act.

The 2035 Plumas County General Plan Update encourages growth within or near seven developed/developing Planning Areas in order to reduce impacts to agricultural production, natural resources, and public services, and provide a concise, orderly pattern consistent with the economic, social, and environmental needs of the specific communities that can accommodate future planned population growth. Orderly growth and development clustering are of the utmost importance in the efficient provision of public services and their attendant infrastructure. There are no planned large-scale infrastructure projects included in the General Plan.²²

Growth in the number of housing units in Plumas County has consistently exceeded the growth in the county's residential population during the past two decades. Between 1990 and 2000, the housing stock grew by 12.1 percent, or 1,444 units, while the number of resident households grew by only 10.8 percent during the same time period. These trends became even more marked during the nationwide housing boom between 2000 and 2010, when the Plumas County housing availability increased by 16.3 percent, or 2,180 units, even as the number of resident households dropped by 0.3 percent. Between 2000 and 2010 Plumas County experienced a 4.0 percent decline in population from 20,824 to 20,007 persons. Caltrans predicts that the number of housing units constructed within Plumas County will grow from 15,649 in 2010 to 20,606 in 2035. Caltrans predicts that the county's housing stock will grow almost three times as fast as its permanent resident population during the General Plan time horizon, implying that homes constructed for vacation use will represent a substantial portion of the overall residential construction. Based on the increment of new housing units projected by Caltrans for Plumas County, it is estimated that the county's overall housing stock will grow by approximately 5,000 new housing units between 2010 and 2035, an increase of about 200 units per year.²³

Sierra County

According to the 2006 Sierra County Housing Element, most of the development in Sierra County consists of single-family homes built by individuals. Large tract developments have rarely occurred in Sierra County, though several small subdivision developments have been built, most of which have created no more than four parcels at a time. The Sierra County General Plan further notes that some areas in the county lack sufficient surface or ground water for development. In addition, there are areas where there

²² Plumas County. General Plan EIR, Land Use and Aesthetics Chapter. 2013.

²³ Plumas County. General Plan EIR. Appendix B, Countywide growth assumptions.

may appear to be sufficient water but the potability is affected by heavy metals or minerals such as arsenic, mercury, sodium, chloride, and boron. Flood-prone areas also occur in Sierra County.

Four communities in Sierra County may have limited development potential due to either water quality issues or lack of capacity. For example, Calpine's public water system has limited capacity. Most of the county's population living in or near the various communities are served by one of the numerous public and/or privately owned water utilities.

The Sierra County Planning Department identified 17 individual water companies operating in the county, serving anywhere from 3 to 200 or more individual customers. In Sierra City alone there are nine different privately owned water companies. The remainder of the county's residents not connected to one of these public/private water utilities have either tapped into springs or surface water supplies, or have dug their own wells.

Lassen County

Westwood has a Westwood/Clear Creek Area Plan (2002) and a Westwood Revitalization Plan (2001) that envision residential, commercial, job, and recreational growth within the Westwood area. Land use maps were unavailable for Lassen County, though slow growth is projected for the area due to the distance from urban centers.

City of Portola

The total average water supply available to the City of Portola, located in Plumas County, is approximately 1.4 million gallons per day (mgd), with sources from Willow Creek Springs (312 gpm), the maintenance yard well (300 gpm), and the Commercial Street well (600 gpm). The city also has rights to four separate spring sources on Beckwourth Peak, south of the city – Turner, Malloy, Golden, and Darby – totaling 170 gpm or 270 AF per year.

Development of these springs for future use would require improvements to collect the water below ground (below root level) and a new delivery pipeline system. The cost of such improvements is unknown, but is likely to be substantial relative to the amount of water that can be delivered.²⁴ The city stopped using the springs as a water source in 1971, after Lake Davis water became available. At that time the Lake Davis water was considered more reliable and subject to fewer potential health hazards. Lake Davis water is part of the State Water Project (SWP); Portola is the only recipient of SWP water within the Region. The water is managed by the Plumas County Flood Control and Water Conservation District, which is a State Water Contractor to the SWP.



City of Portola, California

In 1997 the California Department of Fish and Wildlife introduced poison into the lake in an attempt to remove the invasive Northern Pike fish, and domestic use of the lake water was subsequently terminated. In the following years, after numerous public hearings and the settlement of a lawsuit that resulted in an agreement to bring the Lake Davis Water Treatment Plant up to new Safe Drinking Water Act standards,

²⁴ City of Portola. Portola General Plan 2020. January 11, 2012. pp. 78-79.

the city and county entered into an agreement to work together to bring the plant back online. The plant is currently operational.

The City of Portola is an urbanized area of approximately 1,957 people with slow growth projected for the next ten years and increasing growth over the next 20 years. Approximately 400 acres of land south of the existing developed areas is anticipated for primarily residential development. Water supply issues associated with the ongoing drought are the city's foremost growth concern.²⁵ The Portola General Plan indicates that the existing water supply and delivery system is adequate only for the existing community and that development anticipated in the Land Use Element would require an increase in the water supply and expansion and upgrading of the water storage and distribution systems. The City completed a Water System Master Plan in 2006 that addresses the water supply and distribution needs for the growth of the community.²⁶

According to the Eastern Plumas Municipal Service Review, regionalization of sewer services in the Delleker/Portola area is a potential opportunity for facility sharing and regional collaboration. Joint efforts between Portola and Grizzly Lake Community Services District (GLCSD) may maximize efficiencies, reduce costs, and assist them to better leverage available resources.²⁷ However, GLCSD (Delleker) is also exploring other options for water treatment facilities due to the costs associated with connecting to Portola's treatment plant.

City of Loyalton

The City of Loyalton, located in Sierra County, experienced a decline in population between 2000 and 2010 with negative annual growth rates for an overall loss of 12.4 percent of its population. The City had a 2014 population of 729. The City's historical growth rates and countywide growth rate projections by the Department of Finance and Plumas County Transportation Commission indicate minimal growth in the future. As of 2015, there were 21 residentially-zoned, undeveloped parcels totaling 9.96 acres within the city that could accommodate a maximum of 94 residential dwelling units.²⁸



City of Loyalton, Sierra County (Source: www.loneliesttowninamerica.com)

7.2.7 Coordination with State and Federal Planning Efforts

Currently, Westwood CSD and other small water purveyors in the Plan Area work with the local office of the State Department of Public Health. Sierraville PUD is working with the USDA Rural Water Agency on funding and installing a new 200,000 gallon water tank. Sierraville PUD is working with the state on conserving water, implementing a drought ordinance, and developing an alternative water source. The

²⁵ Personal communication, Robert Meacher, City Manager, City of Portola. *Land Use Planning Information Request*. 2015.

²⁶ City of Portola, Portola General Plan 2020. 2012.

²⁷ Plumas County LAFCo. Eastern Plumas Municipal Services Review. October 3, 2011.

²⁸ City of Loyalton 2015 Housing Element.

City of Portola has adopted emergency regulations for water conservation in response to the State Water Board's recently adopted emergency regulations in May 2015. Plumas-Eureka CSD has little contact with state and federal agencies since they use groundwater as their drinking water source.

Ongoing collaboration with relevant federal and state agencies, Tribes, and other stakeholders, will continue after the IRWMP is finalized. Efforts will include coordination with DWR, California State Water Resources Control Board, ongoing meetings with the Tahoe and Plumas National Forests and CALFIRE on fuel-load reduction and forest management, and participation in emerging regionally focused efforts aimed at aspects of water supply, water quality, and environmental stewardship.

7.2.7.1 California Water Plan

The Upper Feather River IRWM Region is located within the Mountain Counties Overlay Area, which was newly identified in the California Water Plan Update 2013. The designation was actively promoted by the Mountain Counties Water Resources Association and the Sierra Water Workgroup, of which the UFR RWMG is a member. The designation recognizes the significance of the Region and importance of the Sierra Nevada mountain range to the local communities, the environment, the Delta, and all of California. The purpose of the overlay area is to collect and provide information that will better enable planners and decision makers to address issues in areas of special interest where the following criteria apply:

1. The area is of statewide significance — meaning that water management strategies and actions taken in one area affect much of the remainder of the state.
2. Common water management conditions exist in the area — meaning that issues and integrated planning opportunities span more than one of the 10 hydrologic regions.

Water is an essential element of the social, economic and environmental well-being in the Mountain Counties Area. It requires continued Area of Origin and County of Origin protections, healthy forests, and headwaters to ensure reliable water supply and high water quality for the Region and the entire state. The multiple benefits and services provided by the Mountain Counties Area to local residents, California, and beyond are often not recognized or easily quantified. In addition to water, the area provides habitat for thousands of species, many identified as endangered or rare. The area's forests and rangelands provide food, energy, timber, and other renewable resources that can be sustainably produced. The Mountain Counties Area also offers a unique service in helping to achieve statewide policy goals, such as reductions in GHG emissions, by storing large amounts of carbon.

Understanding the issues facing the Mountain Counties Region and making thoughtful, effective, and broadly supported changes is demanding. Land use management and planning in this rural region is complicated by the size and ownership of the land with myriad local, state, and federal agencies, and Tribes, governing everything from energy and infrastructure to environmental quality, species, and human health and safety. State and local interests that depend on the health of the Sierra watersheds and ecosystems of the Mountain Counties Area are as vast and diverse as the state itself.

A key vehicle for developing and implementing successful long-term management strategies for the region is a multi-stakeholder collaborative group such as watershed councils, fire safe councils, forest management collaboratives, water purveyors, and integrated regional watershed management groups whose members work across interests to achieve results. Stakeholder groups can increase statewide understanding of the Region's importance and support efforts to find viable financial and political solutions that address issues such as the lack of funding for projects to tackle localized resource issues critical to the entire state.

7.2.7.2 RWQCB Basin Plan

The Clean Water Act requires that the EPA adopt water quality standards for surface waters within the United States, and that these standards be reviewed and revised, if necessary, at least every three years. The State Water Resources Control Board (SWRCB) carries out its water quality protection authority through the application of specific Regional Water Quality Control Plans, formulated and adopted by Regional Water Quality Control boards (RWQCB) that submit these plans to the SWRCB for review and approval.

The RWQCB basin plans provide standards through 1) a designation of existing and potential beneficial uses, 2) water quality objectives to protect those beneficial uses, and 3) programs of implementation needed to achieve those objectives. The RWQCBs are required to consider a number of items when establishing water quality standards, including: 1) past, present, and probable future beneficial uses; 2) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto; 3) water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area; and 4) economic considerations.

The SWRCB management goals are specified in the Central Valley RWQCB's Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin Rivers, the fourth edition of which was initially adopted in 1998 and most recently revised in 2009. The Basin Plan formally sets forth designated existing and potential beneficial uses and water quality objectives for areas, including the entire Upper Feather River IRWM region.

Water quality objectives included in the Plan establish criteria for meeting the Plan's goals for several water quality parameters. Parameters identified in the plan for inland surface waters include levels of bacteria, bio-stimulatory substances, chemical constituents, dissolved oxygen, oil and grease, pH, pesticides, salinity, sediment, temperature, toxicity, and turbidity. Groundwater parameters include bacteria, chemical constituents, radioactivity, tastes and odors, and toxicity.

7.2.8 Local Planning Relationship to the IRWMP

Water management and land use planning are inherently interconnected, with activities that occur on land directly impacting the movement and quality of water within a watershed, and events or disturbances in the watershed affecting landscapes and land uses. For example, land use decisions that impact population growth (such as the approval of new subdivisions or industrial facilities) or land use policies (such as water conservation or landscape ordinances) can impact water supply and demand. Further, other projects, such as resource extraction or land clearing for new development, can impact water quality with regard to sedimentation and storm water runoff. Conversely, a water management decision such as the amount of water supplied to agricultural or environmental uses in a dry year, or how close to the flood line a levee is constructed, can impact events and uses on land.

7.2.9 Plan Area Evaluated in the Upper Feather IRWMP

A substantial portion of eastern Butte County (345,850 acres) is covered by the Upper Feather IRWM Plan Area (Table 7-1). However, because the entirety of Butte County is within the Northern Sacramento Valley IRWM Plan Area in which Butte has already participated, Butte County representatives have decided not to participate in the Upper Feather IRWM Plan Area. At the same time, Butte County wants to coordinate on any proposed projects that could affect Butte County and not cede any jurisdictional authority it has with respect to IRWMP projects. Butte County also does not want its own funding on North Sacramento

Valley IRWMP projects affected by any Upper Feather IRWMP projects. For these reasons, a memorandum of understanding (MOU) is being developed to outline the coordination between Butte County, and the UFR IRWM process.

The same situation occurs with Yuba County: The entire county is within the Yuba County IRWM Plan Area. That area’s IRWMP was recently adopted in May 2015, so the 1,880 acres in Yuba County that overlap the Upper Feather River IRWM Plan Area were not included in the UFR IRWM planning effort.

Additionally, minimal portions of Shasta and Tehama counties are also within the Upper Feather IRWM Plan Area (13,574 and 136 acres, respectively). All of the IRWMP land within Shasta County is in Lassen National Park. Within Tehama County, a small portion (approximately 40 acres) is privately owned by Collins Pine Company and is thus under the jurisdiction of Tehama County; a similarly sized area is managed by the US Forest Service Lassen National Forest. Because the area of land in Shasta and Tehama counties is minimal and is under federal land management, the project team made a conscious decision not to conduct outreach activities to their county planning agencies. However, the Lassen National Forest is identified as an advisory member of the RWMG and receives all IRWMP update information and notifications.

7.2.10 IRWMP Participation

Many entities were contacted during the Upper Feather River IRWM planning process (Tables 7-3 and 7-4); 53 of them have participated regularly (Table 7-5), either via RWMG membership or workgroup membership.

Table 7-5. Participation in the Upper Feather IRWMP Process

REGIONAL WATER MANAGEMENT GROUP	
Plumas County	Sierra Valley Groundwater Management District
Sierra County	Plumas County Community Development Commission
Plumas County Flood Control and Water Conservation District	Maidu Summit Consortium
Feather River Resource Conservation District	USDA Forest Service – Plumas National Forest (Advisory)
Sierra Valley Resource Conservation District	USDA Forest Service – Lassen National Forest (Advisory)
Public member from the Almanor Basin	USDA Forest Service – Tahoe National Forest (Advisory)
WORKGROUPS	
Agricultural Lands Stewardship Workgroup	
Plumas County	Sierra Valley RCD

REGIONAL WATER MANAGEMENT GROUP	
UC Cooperative Extension	Feather River RCD
Plumas-Sierra Department of Agriculture	Feather River Land Trust
Mountain Meadows Conservancy	Plumas County Department of Agriculture
Plumas Sierra County Food Council	Upper Feather River Watershed Group
Floodplains, Meadows, Waterbodies Management Workgroup	
Mountain Meadows Conservancy	University California Cooperative Extension
Feather River Trout Unlimited	Plumas Corporation
Lindquist Environmental Consulting	Lake Almanor Water Group
Plumas County	Natural Resources Conservation District
Department of Water Resources	Plumas National Forest
Indian Valley Agricultural Producers	California Department of Fish and Wildlife
WM Beaty	Greenville Rancheria
Sierra Pacific Industries	Central Valley Regional Water Quality Control Board
Feather River Land Trust	Point Blue Conservation Science
Sierra County	Sierra Valley RCD
Trout Unlimited	
Municipal Services Workgroup	
Plumas-Eureka CSD	Clio PUD
City of Portola	Gold Mountain CSD
Plumas County Environmental Health	Sierraville PUD
Plumas County Public Works	Calpine
Plumas County Flood Control District	Greenhorn Creek CSD
Sierra County	Quincy CSD

REGIONAL WATER MANAGEMENT GROUP	
Plumas County Community Development Commission	East Quincy CSD
Indian Valley CSD	Old Mill Ranch CSD
University of California Cooperative Extension	Chester PUD
Uplands and Forest Workgroup	
Plumas County	Lake Almanor Water Group
Plumas National Forest	Soper-Wheeler Company
Office of Emergency Services	Collins Pine Company
Natural Resources Conservation District	Feather River Land Trust
Central Valley Regional Water Quality Control Board	Sierra Institute
Plumas County Fire Safe Council	Environmental Water Caucus
Maidu Summit Consortium	City of Portola
WM Beaty	UC Cooperative Extension
Tribal Advisory Committee	
Greenville Rancheria of Maidu Indians	Susanville Rancheria of Pomo Indians
Maidu Summit Consortium	Enterprise Rancheria
<small>Note: The agencies and organizations identified as workgroup participants in this table are not necessarily signatories to the Memorandum of Understanding for the Upper Feather River IRWM Plan. However, member organizations of the RWMG are signatories.</small>	

The Regional Water Management Group guides and oversees the development of the IRWMP, and forms the governance practices during and after IRWMP development. Based on their interest and focus, individual workgroups are responsible for developing Resource Management Strategies (RMS); however, all workgroups are responsible for development of land use planning and management RMSs. See Chapter 2 *Governance, Stakeholder Involvement, and Coordination*.

During the Upper Feather IRWMP Update process, many local entities have indicated that the IRWMP process has, for the first time, provided opportunities to coordinate between land use and water planning with other government agencies, Tribes and water districts. The IRWMP process has provided a unique forum, particularly in the Municipal Workgroup, to share information and problem solve. This IRWMP Update process has provided the first all-inclusive forum that includes small districts; these districts have reported that the workgroups and IRWMP process have been helpful for data sharing.

The project team for the IRWMP interviewed local land use agencies via phone and emailed a questionnaire to determine current interagency relationships and procedures. The US Forest Service and local jurisdictions of Plumas County, Sierra County, and the City of Portola are represented in the RWMG and the various workgroups, and have provided information for this chapter.

7.2.11 Programs, Policies, Standards, and Procedures

This updated Integrated Regional Water Management Plan includes a review of the water and land use planning policies, programs, and plans of other governmental and NGO entities in the region (Table 7-6).

Table 7-6. Water and Land Use Planning Documents and Programs in the Upper Feather IRWMP Region

Water Managers	Documents and Programs
Plumas County Flood Control and Water Conservation District	Feather River Watershed Management Strategy for Implementing the Monterey Settlement Agreement (2004)
Sierra Valley Groundwater Management District	Sierra Valley Hydrogeologic Studies (2015) Results of the Fall 2005 Aquifer Tests in Sierra Valley (2006) Technical Report on 2005-2011 Hydrogeologic Evaluation for Sierra Valley (2012) Technical Report on 2012-2014 Hydrologic Evaluation for Sierra Valley (2015)
Land Managers	Documents and Programs
City of Loyalton	Housing Element (2015)
City of Portola	General Plan (2012) Parks and Recreation Master Plan (2010)
Feather River Land Trust	Feather River Land Trust Annual Reports (2004-2013)
Feather River Resource Conservation District	Long-range Workplan 2005-2009 (2004)
Lassen County	Lassen County, City of Susanville, & Susanville Rancheria Hazard Mitigation Plan (2010) General Plan (2000) Groundwater Management Plan (2007)
Lassen Local Agency Formation Commission (LAFCo)	Clear Creek CSD and Westwood CSD Municipal Service Review and Sphere of Influence (2013)
Plumas County	Hazard Mitigation Plan (2015)

Water Managers	Documents and Programs
	<p>Emergency Operations Plan (2011)</p> <p>Hazardous Fuel Assessment and Strategy (2004)</p> <p>Communities at Risk Wildland Urban Interface Map (2010)</p> <p>General Plan Update CEQA Findings and Statement of Overriding Considerations (2012)</p> <p>2035 General Plan Update Draft EIR (2012)</p> <p>2035 General Plan Update (2013)</p>
Plumas County Environmental Health	Plumas County Public Health Agency Environmental Health Division Annual Report 2010
Plumas County Community Development Commission	Community Action Plan (2014-2015)
Plumas County Local Agency Formation Commission (LAFCo)	<p>Central Plumas Fire Municipal Service Review (2013)</p> <p>Eastern Plumas Municipal Service Review (2011)</p> <p>Indian Valley and Quincy Area Municipal Service Review (2015)</p> <p>Lake Almanor Area Municipal Service Review (2012)</p>
Sierra County	2012 General Plan (1996)
Sierra LAFCo	City of Loyalton Municipal Service Review (2010)
Stewardship Council	<p>Pacific Forest and Watershed Lands Stewardship Council Land Conservation Plan (2007)</p> <p>Status of Land Planning Efforts (2015)</p> <p>Stewardship Council Annual Reports (2005-2013)</p>
Other Resource Managers and NGOs	Documents and Programs
Central Valley Flood Protection Board	Central Valley Flood Protection Plan (2012)
Department of Water Resources, California	<p>Upper Feather River Flood Management Plan (Draft 2013)</p> <p>California Water Plan Update (2013)</p> <p>Bulletin 118 and related resources, pertaining to the Sacramento Valley Basin (2015)</p> <p>State Water Project documents (http://www.water.ca.gov/swp)</p>

Water Managers	Documents and Programs
PG&E	<p>Rock Creek - Cresta Project, FERC Project No. 1962: Rock Creek - Cresta Relicensing Settlement Agreement (2000)</p> <p>Upper North Fork Feather River Project, FERC Project No. 2105: Project 2105 Relicensing Settlement Agreement (2004); License stalled pending approval of 401 certification – Draft EIR has been released</p> <p>FERC Project 619 - Bucks Creek: Fish Entrainment Risk Assessment (2014)</p> <p>Bucks Creek Project Relicensing documents (2015) (www.bucksrelicensing.com)</p> <p>Lake Oroville Project Relicensing documents (2015)</p> <p>South Feather Power Relicensing documents (2015)</p> <p>Poe Hydroelectric Project Relicensing documents (FERC Project 2107) (2015)</p> <p>Project 2105 documents (2015)</p>
Feather River Coordinated Resource Management Group	<p>Coordinated Resource Management Plan for the East Branch of the North Fork Feather River (1989)</p> <p>Numerous technical studies (see Document Catalog)</p>
Regional Water Quality Control Board	<p>Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin Rivers (2009)</p>
Sacramento River Watershed Program	<p>The Sacramento River Basin: A Roadmap to Watershed Management (2010)</p>
State Water Resources Control Board	<p>Watershed Management Initiative for the Sacramento Hydrologic Region (2003)</p> <p>Development of Flow Criteria for the Sacramento-San Joaquin Delta (2010)</p> <p>Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin (2011)</p>
US Forest Service	<p>Tahoe National Forest Land and Resource Management Plan (1990)</p> <p>Plumas National Forest Land and Resource Management Plan (1988)</p> <p>Plumas National Forest: Forest Plan Monitoring Report (2012)</p>

Water Managers	Documents and Programs
	Lassen National Forest Land and Resource Management Plan (1992) Lassen Land and Resource Management Plan Monitoring Report for FY 2005 and 2006 (2005 and 2006)
Sierra Institute for Community and Environment	2011 Lake Almanor Review: Survey of Water Quality, Trend Analysis, and Recommendations (2012) Lake Almanor Watershed Project (2015) Lake Almanor Watershed Management Plan (2009) State of the Almanor Basin Watershed Forum documents (2014)
Feather River Land Trust	Conservation plans for FRLT-owned lands and for conservation easements on private lands
Maidu Summit Consortium and Conservancy	Conservation and stewardship plans on lands identified for ownership in Humbug Valley and around Lake Almanor

The information, strategies, and policies in all applicable water management plans have been incorporated in this chapter and elsewhere throughout the IRWMP Update. As these plans are updated, the revised versions will be reviewed and considered in subsequent IRWM planning efforts. As discussed in Chapter 5 *Goals & Objectives*, the goals and objectives of this IRWMP are consistent with local water plans. Most purveyors of agricultural water in the region are not included in Table 7-6 because they have not adopted planning documents.

The Upper Feather IRWMP Update incorporates local water resource management planning documents and information from groundwater management plans, adjacent IRWMPs, and local general plans. A brief description and background of several relevant water plans reviewed during the UFR IRWMP Update follow, along with their jurisdictions, how they apply to the IRWMP, and the compatibility of and dynamics among the IRWMP, the water plans, and the land use plans. The Plumas County General Plan EIR incorporated the IRWMP by reference and now includes a discussion of the IRWMP planning process in the Hydrology, Water Quality, and Drainage section of the EIR.

7.2.11.1 US Forest Service Land Use Plans

US Forest Service (USFS) planning documents provide guidelines and management direction for the Upper Feather IRWM Plan Area. The 2004 Sierra Nevada Forest Plan Amendment lays out broad management goals and strategies for addressing five issue areas in the dozens of complex ecosystems within the Sierra Nevada: old forest ecosystems and associated species; aquatic, riparian, and meadow ecosystems and associated species; fire and fuels management; noxious weeds; and foothill oak woodland ecosystems. In addition, the 2012 Planning Rule²⁹ for land management planning for the National Forest System became effective on May 9, 2012. The Forest Service has subsequently released final planning

²⁹ USFS. 2012 Planning Rule. April 9, 2012, Available at: <http://www.fs.usda.gov/detail/planningrule/home/?cid=stelprdb5359471>

directives³⁰ that are the key set of agency guidance documents that direct implementation of the 2012 Planning Rule.

The Forest Land and Resource Management Plans for Plumas (1988), Lassen (1992), and Tahoe (1990) National Forests direct the management of their respective National Forest lands. The purpose is to guide efficient use and protection of forest resources, fulfill legislative requirements, and balance local, regional, and national needs. The plans describe the current management direction, supply or production capability, existing and projected demands for forest goods and services, and the need or opportunity for changes in current management direction. Applicable resource areas that are discussed include recreation, fish, wildlife, and sensitive plants, diversity, riparian areas, water, ownership, land uses, and the urban/rural/wildland interface. The plans also present both forest-wide and area-specific management direction for the National Forest lands.

Monitoring reports for the Lassen and Plumas National Forests are also available from the Forest Service and document the successful implementation of their forest plans, such as the 1999 Herger Feinstein Quincy Library Group Record of Decision, the 2004 Sierra Nevada Forest Plan Amendment, and the 1994 Northwest Forest Plan Amendment as amended in 2001 and 2004.

The Sierra Nevada Conservancy's 2014 report "State of the Sierra Nevada's Forests" outlines key findings that include, "science-based ecological restoration of our Sierra Nevada forests must be dramatically increased in order to stem the tide of large, uncharacteristic wildfires." This key finding will likely be a guide to policy development within USFS land.

7.2.11.2 California Environmental Quality Act

Development projects are subject to CEQA, which requires consideration of potential environmental impacts of the project. Impacts to water quality, water supply (including groundwater availability), and flooding are all evaluated for any project that has the potential to have a physical impact on the environment. While the IRWM Plan itself is not subject to CEQA, project sponsors will be required to comply with CEQA and prepare an evaluation to assess the physical impacts of their projects upon implementation grant application.

7.2.11.3 Williamson Act

The California Land Conservation Act, better known as the Williamson Act, is a statewide agricultural land protection program that reduces property taxes on qualifying agricultural land in exchange for a commitment from the landowner not to develop the land with uses other than those compatible with and supportive of agriculture. This tax incentive preserves agricultural and open space lands by discouraging premature conversion to urban uses. Plumas County and Sierra County have both chosen to participate in the Williamson Act.³¹ Lassen County still participates in the Williamson Act, but to a more limited extent and with more stringent requirements for enrollment.³²

³⁰ USFS. 2012 Planning Rule Final Directives. Available at:

<http://www.fs.usda.gov/detail/planningrule/home/?cid=stelprd3828310>

³¹ Plumas County website: www.countyofplumas.com; Sierra County website: www.sierracounty.ca.gov.

³² SusanvilleStuff.com. A Report from the Lassen County Cooperative Extension. September 16, 2012.

Accessed at: <http://www.susanvillestuff.com/lassen-agweb-report-the-williamson-act/>.

7.2.11.4 LAFCo Municipal Service Reviews

In 2000, California adopted the Cortese-Knox-Hertzberg Act (AB 2838) requiring Local Agency Formation Commissions to review and update the spheres of influence of cities and districts in their jurisdiction once every five years. Before each sphere of influence review and update, a LAFCo must comprehensively review municipal services within the affected jurisdiction(s). A Municipal Service Review (MSR) covers an analysis and determinations on the adequacy of service for public services such as water, fire protection, and reclamation. An MSR provides comprehensive knowledge of available services, future needs for each service, and the efficiency and expansion capacity of service providers.

The following MSRs were completed in the Upper Feather IRWM Plan Area and are applicable to this IRWMP:

- ◆ Eastern Plumas MSR (October 3, 2011)
- ◆ Central Plumas Fire MSR (December 9, 2013)
- ◆ Lake Almanor Area MSR (October 15, 2012)
- ◆ City of Loyalton MSR (December 9, 2010)

Within each of these adopted MSRs is a list of determinations related to the existing and future provision of public services in their respective service areas. Determinations related to water issues in the region are highlighted below.

City of Loyalton MSR

- ◆ "There is sufficient source water available to serve the expected population growth."
- ◆ "The City of Loyalton should do everything possible to meet the requirements of the Central Valley Regional Water Quality Control Board and avoid costly fines."
- ◆ "The City is working to correct deficiencies in its WWTP and Collection system."
- ◆ "The City of Loyalton wastewater treatment plant is being improved to meet the requirements of California Regional Water Quality Control Board, Central Valley Region Order No. R5-2009-0108 Waste Discharge Requirements for City of Loyalton and Grandi Ranch Wastewater Treatment Facility Sierra County, dated October 8, 2009."
- ◆ "The improvements in the Loyalton wastewater treatment plant are being made to correct problems noted in the Cease and Desist Order No. R5-2005-0089."
- ◆ "The City of Loyalton has increased wastewater fees to pay for the required improvements to the wastewater treatment system."

Eastern Plumas MSR

- ◆ "There is a general lack of tracking of demand and other service indicators, which inform remaining capacity and level of services, in particular for water [. . .]"
- ◆ "With the exception of Gold Mountain and the City of Portola, the connections throughout the other water systems are unmetered. In order to accurately gauge the remaining capacity of the systems and determine the exact rate of water loss, it is recommended that water providers begin installing meters as financing allows. Meters will also enable agencies to charge water rates that promote water conservation."
- ◆ "All of the potable water providers presently rely on groundwater from wells and springs. The City of Portola will be transitioning to a surface water source once the new Lake Davis Water Treatment Plant is online and operational." *Update: the Treatment Plant is now operational.*

Central Plumas Fire MSR

- ◆ “Crescent Mills Fire Protection District reported a lack of available water in the District as a major challenge. Except for within the Crescent Mills community, the water for fire suppression has to be hauled.”
- ◆ “The Greenville water system continues to need substantial improvements to reduce significant unaccounted for water loss [50% in 2012 due to breaks and leaks].”
- ◆ “Quincy Fire Protection District cited absence of a sufficient water system as a capacity constraint for the District.”

Lake Almanor MSR

- ◆ “All of the potable water providers presently rely on groundwater from wells and springs, much of it from the Lake Almanor Valley groundwater basin.”
- ◆ “Chester PUD was unable to provide an estimate of what portion of water is lost between the water source and the connections served.”
- ◆ “Hamilton Branch Community Services District reported approximately 47 breaks and leaks per 100 miles of pipe lines in 2011, while other providers in the region had a median rate of 11 breaks per 100 pipe miles.”
- ◆ “Walker Ranch CSD estimates that the loss rate is approximately 16 percent during peak usage months (May through October), and no loss during winter months (November through April) between the water source and the connections served. Average water loss in the region is 12 percent.”

A general theme among these MSRs was that consolidation of water suppliers could result in conservation of water resources but, as in many rural areas, consolidation is largely infeasible due to the isolated geography of the service providers. Lake Almanor and Central Plumas special districts had specific infrastructure maintenance issues such as excessive leak and break rates, while Eastern Plumas districts reported a lack of tracking and metering that resulted in inadequate data on supply and demand. The limited availability of data has made compliance with state-mandated conservation targets difficult to assess.

These determinations support the RWMG objectives that emphasize the need for collaboration between land use and water planning due to uncertainties of water supply into the future. Because the Cortese-Knox-Hertzberg Act requires MSRs to be updated every five years, there is opportunity for coordination regarding MSR determinations and IRWM objectives, including participation in the MSR process by IRWMP adoptees.

7.2.11.5 Newly Acquired Conservation Lands

While conserved lands and land trust groups are not typically a part of the regulatory environment (though in certain large land development projects, they can play a role), their presence in the region warrants discussion for their positive impacts on the local watershed. The Feather River Land Trust (FRLT) is the major land conservancy group in the Upper Feather River watershed. To date, the FRLT has helped to conserve over 36,000 acres of private lands that promote valuable watershed goals, including recreational opportunities, educational opportunities, cultural sites, agricultural lands, and waterway and habitat preservation. The FRLT conserves land by means of conservation easements on private properties and fee title acquisition. The FRLT owns five properties:

- ◆ Folchi Ranch, Sierra Valley – 331-acre property purchased in 2014, which contains extensive seasonal and permanent wetlands, open water, and upland sage brush habitat
- ◆ Maddalena Property, Sierra Valley – 575-acres purchased in 2003, which contains freshwater wetland and marsh habitat
- ◆ Leonhardt Ranch Learning Landscape, American Valley – 42-acres purchased in 2012 and used as a living classroom for youth; habitats include meadows, riparian and wetlands
- ◆ Heart K Ranch, Genessee Valley – 900-acre ranch purchased in 2006, which contains woodlands, meadows, and riparian habitats and supports 26 species of concern
- ◆ Olsen Barn, Almanor Area – 107-acre property purchased in 2015, which is being preserved for wildlife habitat, recreation, and cultural heritage
- ◆ The Bulson Ranch – 1,630-acre ranch acquired in 2016, which contains freshwater wetlands and marsh habitat

Numerous conservation easements on agricultural lands are also held by the California Rangeland Trust and partnerships. The Sierra Nevada Conservancy is another conservation partner in the region.

Another conservation group in the region is the Maidu Summit Consortium and Conservancy, which is in the process of acquiring lands for ecological and cultural conservation and education including portions of Humbug Valley as well as portions of land around Lake Almanor and along State Route 89 near Lake Almanor in Plumas County.

The Natural Resource Conservation Service (NRCS) also conserves the productivity of private working agricultural and forest lands through its programs. For example, through its Wetland Reserve Program (WRP), the NRCS established conservation easements on hundreds of acres in Plumas and Sierra counties.

Land conservation is consistent with local land use planning documents, including the 2035 Plumas County General Plan Update and the Sierra County General Plan. Goal LU 1.11 of the Plumas General Plan is “to promote development patterns that recognize the need to conserve water resources, consistent with other stated goals,” while Goal 7.1 is “the conservation and utilization of natural resources, including water and its hydraulic force, forests, soils, rivers and other waters, fisheries, wildlife, minerals and other natural resources and protection of open space land for the continuation of the County’s rural character; scenic beauty; recreation; the protection of natural and cultural resources; and as consideration of open spaces as an important factor in the County’s quality of life.” The Water Resources Element goal in Sierra County’s General Plan is to “protect and maintain its water resources for the benefit of County residents and natural habitats and to assure protection of its watersheds as a primary land use constraint.” Sierra County’s General Plan has goals related to conserving timberlands, agricultural lands, fisheries, wildlife, and related natural resources.

7.2.11.6 Local General Plans and Other Municipal Planning Documents

California state law requires each county to adopt a general plan, “for the physical development of the County and any land outside its boundaries which ...bears relation to its planning” (Government Code Section 65300). The general plan serves as a county’s constitution for the physical use of its resources and is the foundation upon which all land use decisions are made. The general plan expresses the community’s development goals and embodies public policy relative to the distribution of future public and private land use. Planning and land use play a vital role in water use and distribution, and as such will influence infrastructure needs, water demand and supply, and impacts on natural systems addressed in the IRWMP.

These local jurisdictions within the Upper Feather IRWM Plan Area have prepared general plans:

- ◆ 2035 Plumas County General Plan (December 2013)
- ◆ 2012 Sierra County General Plan (1996)
- ◆ 2000 Lassen County General Plan (2000)
- ◆ City of Portola General Plan (January 11, 2012)
- ◆ City of Portola Parks and Recreation Master Plan (June 1, 2010)

Most general plan updates (other than the Housing Element) are updated once every 20 years, on average. As the general plans are updated, there will be opportunities for collaboration among land use planners, water managers, and the RWMG to consistently plan for water resource management issues. Further opportunities for synchronized efforts at land use and water planning occur with the adoption of new or revised zoning ordinances, which often implement the goals and objectives of the general plans.

During the issuance of building permits, applicants must comply with local, state, and federal statutes addressing erosion control and storm water management. Local development standards, codified by a local jurisdictions' zoning or municipal ordinances, are the on-the-ground implementation measures used to enact these protections.

7.2.12 Consistency between IRWMP and Local Plan Goals

Local planning goals and policies were reviewed to ensure that the goals and objectives of the Upper Feather River Integrated Regional Water Management Plan are compatible with and support local planning efforts (Appendix 7-1). These documents were reviewed to support development of the Upper Feather IRWMP's updated objectives and projects.

In general, the goals and objectives adopted by the Regional Water Management Group are closely aligned with local general plan goals and policies. For example, the RWMG found that the need to "reduce [the] potential for catastrophic wildland fires in the Region" while "balanc[ing] the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity" were important objectives. All of the local general plans also include goals and policies closely related to these RWMG objectives (e.g., City of Portola General Plan Goal WF-1, Lassen County General Plan Goal N-10, and Plumas County General Plan Goal 6.3). "Build[ing] communication and collaboration among water resources stakeholders in the Region" were also found to be important objectives for the Upper Feather region and, again, all of the local general plans support collaboration with other local, state and federal entities (e.g., Plumas General Plan Policies 7.1.3, 7.2.18, 9.2.4, 9.2.7, 9.7.6, 9.9; and Sierra County Parks and Recreation Element Policy 3, Water Resources Element Policies 14, 17, 21, and Energy Element Policy 3).

Many of the older general plans do not contain specific policies on climate change. However, Plumas County's General Plan does contain numerous policies on energy efficiency in its Economics Element, as well as carbon sequestration, biomass energy, and sustainable agriculture policies (Policies 7.10.2, .4, .6, 9.3.1 and 9.3.2). The RWMG goals and objectives are not specific with regard to range land and timber land objectives as are many of the local general plans and policies. However, the RWMG goals and objectives are broad enough to include these issues, as in the objectives calling to "Maximize agricultural, environmental and municipal water use efficiency" and "Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region."

Local planning policy documents support the overarching IRWM planning concepts of regional coordination among various land and water planning entities, as well as enhanced management of water that leads to greater conservation. All of the area general plans support the concept of focusing growth in areas that can readily provide public services and infrastructure, and support conservation of fisheries and water resources. The Plumas County General Plan specifically supports regional water management efforts and watershed program funding via Policies 9.4.4 and 9.4.5. Plumas County General Plan Policies 9.1.1-9.1.3 and 11.1.1 support regional groundwater planning consistent with the RWMG objective to “coordinate management of recharge areas and protect groundwater resources.” Water conservation is also a specific goal of the Plumas County General Plan (Goal 9.8), consistent with the RWMG objective to “maximize agricultural, environmental and municipal water use efficiency.”

All local plans and the IRWMP support goals of enhancing water quality, flood control infrastructure, and water supplies that support recreational uses while minimizing impacts on water quality and offer multiple benefits such as recreational, ecosystem, and agricultural benefits.

The ability to meet growing demands for water in the face of possible declining water supply due to climate change was a common theme in local general plans, particularly the City of Portola General Plan Policy PF-P-5 (supporting additional supply); Lassen County General Plan Policy NR-16 (supporting surface water rights), Goal N-5, Policy NR-21 and NR-22 (supporting the development of new reservoirs and other water supplies); Plumas County General Plan Policy 9.5.5 (supporting water rights); and Sierra County General Plan Water Resources Element Policies 1, 2 and 3 (supporting water rights) and 23 (opposing new diversions or impoundments that would limit Sierra County’s supply).

Protecting and improving water supply reliability is also a major goal of the RWMG. However, as seen in Sierra County’s Water Resources Element Policy 23, new diversions or impoundments intended to bolster one local jurisdiction’s supply can harm another jurisdiction’s supply downstream. Regional water planning needs to balance growing water demands in the context of existing water uses, contracts and rights. The RWMG may wish to consider further discussions not only of increased surface water supplies but also opportunities for the conservation, enhancement, and coordinated management of groundwater and surface water.

None of the local general plans contain specific policies relating to water that “address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans” which is an RWMG objective. Future general plan updates should consider highlighting needs and services relating to DACs and Tribal entities during the planning process and in the Plan.

7.3 Plan in Relation to Neighboring Regional Planning Efforts

Seven IRWM planning areas are directly adjacent to the Upper Feather River Integrated Regional Water Management Plan region: Lahontan Basin, Upper Pit River Watershed, Upper Sacramento-McCloud, North Sacramento Valley Group, Yuba County, Cosumnes American Bear Yuba, and Tahoe-Sierra. During the preparation of this Plan, collaboration with these regions occurred primarily through informal contact, conferences, workshops, and working groups (e.g., Sierra Water Workgroup). The various regional representatives will continue to coordinate with the Upper Feather IRWM via scheduled meetings at least annually, phone conversations as needed, attendance at RWMG meetings as requested, and through casual meetings at regional events and conferences such as the Sierra Water Workgroup, the Association of California Water Agencies, and attendance at DWR-sponsored workshops. Issues of common concern include forest management, flooding, water supply, fisheries, climate change, and capacity challenges. The adjacent regions have not yet begun to systematically focus on the options for inter-IRWMP project

development coordination. More information on next steps in regional collaboration is contained in Chapter 2 *Governance, Stakeholder Involvement and Coordination*.

7.4 Recommendations to Improve Coordination

As described in Chapter 2 *Governance, Stakeholder Involvement and Coordination*, at the outset of the IRWMP Update process, stakeholders with an interest in the region's water issues were identified through various outreach and engagement strategies. During subsequent interviews and meetings with interested stakeholders who became part of the Regional Water Management Group, the project team was able to identify regional issues and water-related conflicts. The contacted water agencies identified many similar water management issues such as water supply reliability, groundwater aquifer level sustainability, water quality improvement (with some purveyors experiencing heavy metal contamination), aging infrastructure, and flood management. Recent curtailment orders from State Water Board due to the ongoing drought also present significant and new water management challenge that necessitates not only ongoing education about conservation and water demand management, but also ongoing coordination and sharing of information and resources among water and land use planners, and as needed, with the Office of Emergency Services (OES) during extreme weather events such as floods. During the 2014-2016 drought, needs assessments were coordinated between land and water use agencies and emergency response entities through the Plumas and Sierra Counties Drought Task Force.

During the development of this Water and Land Use chapter, all of the water and land use planning entities in the Upper Feather Plan Area were contacted. Plumas County and the City of Portola responded to requests for information and input, but the remaining land planning agencies did not respond. Of the 31 water agencies in the region, three responded. However, many of those that did not respond are active participants in the RWMG or workgroup meetings. The RWMG meetings are formatted to elicit discussion and problem-solve emerging issues. They appear to be an important and effective tool in creating a convergence point for future collaboration, and will continue to be so during annual meetings throughout the IRWMP implementation process. Outreach will continue to Lassen County, Sierra County, and the City of Loyalton to engage these agencies in conversations about water and land use planning issues via the RWMG and the featherriver.org website. To provide effective outreach, the RWMG could consider one-on-one meetings with representatives of the non-participating entities. Routine email communication to all water and land use planning entities with grant and other funding opportunities for water-related projects should also continue. Sierraville PUD in particular has noted that as an all-volunteer board, the PUD misses opportunities for funding, modernization and development because of their lack of expertise. Funding for a paid consultant, grant writer, or advisor could dramatically improve coordination between the PUD, other local water purveyors, and land planning agencies.

Most of the responding water managers, including Westwood CSD, Sierraville PUD, and Plumas-Eureka CSD, reported little to no coordination with land planning entities on current planning projects (those individual projects currently proposed), and virtually no coordination on long-range planning or policy-level documents that can impact growth and water demand, such as Housing Element and General Plan updates. It is recommended that the land planning agencies in the Upper Feather IRWM region, particularly those agencies that encompass multiple water agencies, such as Plumas, Lassen, and Sierra counties, include their local water purveyors in all land planning efforts. Consistent with the Ahwahnee

Principles for Resource Efficient Land Use,³³ which advocate a more proactive relationship between land use and water management, coordination efforts should include,

1. distribution of land use project application materials to water purveyors, when applicable, as well as
2. enhanced outreach to these small water purveyors during long-range, strategic, and policy-planning efforts.

At the same time, small water suppliers should also coordinate with the local land planners when conducting water planning and management activities that could affect growth and land use patterns. For example, local land planning agencies and Tribes should be informed when the water purveyor is planning additional water storage or conducting floodplain management or floodway improvement activities.

A significant issue related to emergency drought curtailments of surface waters and from springs to disadvantaged (DAC) households and communities without access to other water sources remains unresolved. The City of Portola and Sierra and Plumas Counties provided extensive comments during the drought water curtailment process. Tribes in the region have identified the conservation and enhancement of springs as a nationwide tribal water and land use priority.

Coordination among the land and water managers of the Upper Feather region will be enhanced in the future by continued participation on the RWMG and by the Upper Feather IRWMP website (<http://featherriver.org>). Opportunity for ongoing coordination include shared equipment (such as specialized equipment used in wastewater and water treatment processes), shared knowledge (such as groundwater management plans and studies or GIS mapping efforts), and routine meetings to discuss potential grant funding opportunities and planning occurring in the area. A general theme among the region's MSRs was that consolidation of water suppliers would likely result in conservation of water resources, but that due to the rural nature of the water providers, physical consolidation was largely infeasible. The RWMG should take advantage of future planning document updates (General Plans, Area Plans, MSRs, Housing Elements, National Forest Land and Resource Management Plans, etc.) to coordinate IRWM and local and regional plan objectives related to water planning. RWMG members encourage participation in local and regional planning processes to ensure that future plan updates consider all potentially impacted areas and communities, including DACs and Tribal entities during their planning processes.

Prior to the IRWMP process, coordination among the larger land use and water planning agencies was functional, with reviews of new developments distributed to water agencies for review and input. However, the IRWM Update process has provided a unique opportunity for smaller, more isolated water purveyors often serving DAC communities to communicate and coordinate with other water and land use planners.

³³ Local Government Commission. Ahwahnee Principles for Resource-Efficient Communities. 1991. Sacramento, CA. Available at: <http://www.lgc.org/about/ahwahnee/principles>

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