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## CHAPTER 5.0 GOALS AND OBJECTIVES

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### 5.1 Introduction

This chapter addresses the Integrated Regional Water Management (IRWM) Objectives Plan standard that requires IRWM plans to:

- ◆ Present plan objectives, which must address major water-related issues and conflicts of the Region and must be measurable by some practical means so achievement of objectives can be monitored
- ◆ Describe the process used to develop the objectives
- ◆ Contain an explanation of the prioritization or reason why the objectives are not prioritized
- ◆ Consider climate change

### 5.2 Development of Goals and Objectives

Goals and objectives provide focus for an IRWM plan, and guide selection of resource management strategies, project development and selection, and development of implementation and performance measures. The goals and objectives presented in this section represent the foundational intent of this IRWM Plan to guide and improve water resources management throughout the Region over the planning horizon of the next 20 years, to 2035.

#### 5.2.1 Process for developing Goals and Objectives

##### 5.2.1.1 Development of goals and objectives for the IRWM Plan

To initiate the process, the Regional Water Management Group (RWMG) reviewed the 2005 Upper Feather River (UFR) IRWM Plan's goals and objectives for current regional relevancy. The RWMG's development of draft goals and objectives occurred during public meetings held on January 28 and March 27, 2015. In developing draft goals and objectives, the RWMG also reviewed and considered regionally relevant objectives contained within the California Water Code § 10540(c), the Sacramento River Basin Plan, and objectives developed by other IRWM regions. Ultimately five draft goals and 18 draft objectives were developed which were then discussed at length within the workgroups and Tribal Advisory Committee (TAC) by participants throughout the Region. The workgroups and TAC each held public meetings during which the draft objectives were reviewed and comments and recommendations drafted for the RWMG's consideration.

Workgroups formed at the beginning of the Plan Update process held focused discussions on the draft objectives for their respective areas of long-term interest within the Upper Feather River watershed: (1) agricultural land stewardship; (2) floodplains, meadow, and waterbodies management, (3) municipal services, and; (4) uplands and forest management. Workgroups are made up of stakeholders and interested persons from throughout the Region; public participation in all meetings is highly encouraged. Following acceptance of the final Plan objectives, the RWMG crafted five overarching Plan goals to encompass water, land, people, and wildlife. The RWMG approved the final Plan goals and objectives during its March 27, 2015 public meeting.

##### 5.2.1.2 2005 UFR IRWM Plan

The 2005 Upper Feather River IRWM Plan included seven goals and 12 objectives based on California Water Code requirements, Sacramento River Basin Plan objectives, California Water Plan guidance, and regional issues current at the time. Subsequent changes to California Water Code and the Basin Plan, as

well as Proposition 84 and the 2013 update to the California Water Plan, have added new requirements for regional IRWM plans.

The draft IRWM Plan represents an update and extension of the existing 2005 Plan, retaining the goals and objectives in the 2005 Plan and including additional goals and objectives based on new requirements.

Overall, the goals and objectives of this IRWM Plan are broader than those of the 2005 Plan, which emphasized water quality and upland watershed management. The goals and objectives of this Plan focus on water quality and watershed health while also emphasizing water and wastewater services, adaptation to climate change, economic and social health of communities, capacity building, and stakeholder outreach and engagement.

### **5.2.2 Prioritization of Goals and Objectives**

During its March 27, 2015 public meeting, the RWMG chose not to prioritize Plan objectives, determining that all of the objectives had equal weight, and that to prioritize them would limit the potential breadth of stakeholder interests and involvement, and ultimately support for the full potential for integrated water management.

## **5.3 Goals, Objectives and Performance Metrics**

### **5.3.1 Goals and Objectives**

The RWMG adopted five goals and 18 objectives for management of regional water resources in the Upper Feather River Watershed for the IRWM Plan. The five goals of the Plan are to

- ◆ Protect and improve water quality and water supply reliability.
- ◆ Protect and improve the health of the environment.
- ◆ Protect and improve the economy of the Region and provide water and wastewater treatment services to all citizens.
- ◆ Establish and maintain effective communication among water and resource stakeholders in the Region.
- ◆ Protect and enhance the economic viability of the working landscapes of the Region.

The 18 Plan objectives are more detailed, process-oriented actions focused on the specific concerns of stakeholders, and the environmental, economic, social, and cultural conditions in the Plan area. The 18 Plan objectives are:

- ◆ Restore natural hydrologic functions.
- ◆ Reduce potential for catastrophic wildland fires in the Region.
- ◆ Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region.
- ◆ Build communication and collaboration among water resources stakeholders in the Region.
- ◆ Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region.
- ◆ Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.
- ◆ Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region.

- ◆ Address economic challenges of municipal service providers to serve customers.
- ◆ Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.
- ◆ Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans.
- ◆ Coordinate management of recharge areas and protect groundwater resources.
- ◆ Improve coordination of land use and water resources planning.
- ◆ Maximize agricultural, environmental and municipal water use efficiency.
- ◆ Effectively address climate change adaptation and/or mitigation in water resources management.
- ◆ Improve efficiency and reliability of water supply and other water-related infrastructure.
- ◆ Enhance public awareness and understanding of water management issues and needs.
- ◆ Address economic challenges of agricultural producers.
- ◆ Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.

### 5.3.2 Performance Metrics

Plan performance will be assessed in terms of progress toward achieving the Plan objectives. As described in Chapter 10 – *Impacts and Benefits*, the objectives of the Plan generally represent the intended benefits of Plan implementation, and include both plan-level and project-level benefits. Evaluation of Plan performance will include an assessment of the extent to which plan-level benefits have been realized through Plan implementation. Assessment of project-level benefits will be incorporated into individual project monitoring plans. Monitoring Plan performance will be closely tied to the implementation of individual projects, and the IRWM Plan focuses on establishing a framework for evaluation that will link project completion to IRWM Plan implementation. See Chapter 11 – *Plan Implementation, Performance, Monitoring and Data Management* for a detailed discussion of Plan performance metrics.

## 5.4 Plan Integration of Goals and Objectives

### 5.4.1 Regional Issues

Goals and objectives of the Plan were formulated in response to the regional issues identified by the workgroups and TAC, as well as the requirements of the California Water Code, California Water Plan, Propositions 84 and 1, and the Sacramento River Basin Water Quality Control Plan. Each regional issue identified by the workgroups was linked to at least one Plan objective (Tables 5-1, 5-2, 5-3, and 5-4).

Table 5-1. Agricultural Lands Stewardship Workgroup Issues and Plan Objectives

UFR IWRM Objectives	Issues identified by the Agricultural Lands Stewardship Workgroup															
	Lack of consistent supply of surface & ground H2O	Water-Demand vs Supply-Competing/Historical Uses	Climate Change: Snow pack-precipitation, temperature	Regulatory costs (time, money, leadership)	Conveyance System Infrastructure	Clarification of Water Rights & Decrees	Groundwater Basin Recharge	Surface Water Storage	Management of Upland Forests-Evapotranspiration/Storage	Irrigation Management	Water Quality Management (nutrient, sediment, pathogen, etc.)	Holistic Management (soil health/forage mixes, etc.)	Availability of Public/Private Grazing Lands	Collaboration between Interests, (e.g., treated muni water for irrigation)	Capacity of individuals and groups in Ag Community	Wildlife/Habitat Enhancement
Restore natural hydrologic functions.	X		X				X		X							
Reduce potential for catastrophic wildland fires in the Region.			X					X					X			
Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region.	X	X	X	X	X		X	X	X	X	X	X			X	X
Build communication and collaboration among water resources stakeholders in the Region.		X		X		X				X			X	X	X	
Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River	X	X		X	X	X		X		X						

Issues identified by the Agricultural Lands Stewardship Workgroup																
UFR IWRM Objectives	Lack of consistent supply of surface & ground H2O	Water-Demand vs Supply-Competing/Historical Uses	Climate Change: Snow pack-precipitation, temperature	Regulatory costs (time, money, leadership)	Conveyance System Infrastructure	Clarification of Water Rights & Decrees	Groundwater Basin Recharge	Surface Water Storage	Management of Upland Forests-Evapotranspiration/Storage	Irrigation Management	Water Quality Management (nutrient, sediment, pathogen, etc.)	Holistic Management (soil health/forage mixes, etc.)	Availability of Public/Private Grazing Lands	Collaboration between Interests, (e.g., treated muni water for irrigation)	Capacity of individuals and groups in Ag Community	Wildlife/Habitat Enhancement
Watershed in order to increase water supply, recreational and environmental benefits to the Region.																
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.	X	X					X							X		
Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region.																
Address economic challenges of municipal service providers to serve customers.														X		
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.							X	X	X							X

Issues identified by the Agricultural Lands Stewardship Workgroup																
UFR IWRM Objectives	Lack of consistent supply of surface & ground H2O	Water-Demand vs Supply-Competing/Historical Uses	Climate Change: Snow pack-precipitation, temperature	Regulatory costs (time, money, leadership)	Conveyance System Infrastructure	Clarification of Water Rights & Decrees	Groundwater Basin Recharge	Surface Water Storage	Management of Upland Forests-Evapotranspiration/Storage	Irrigation Management	Water Quality Management (nutrient, sediment, pathogen, etc.)	Holistic Management (soil health/forage mixes, etc.)	Availability of Public/Private Grazing Lands	Collaboration between Interests, (e.g., treated muni water for irrigation)	Capacity of individuals and groups in Ag Community	Wildlife/Habitat Enhancement
Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans.														X		
Coordinate management of recharge areas and protect groundwater resources.	X	X		X			X							X	X	
Balance management of recharge areas for all users including agriculture, municipal and environmental resource needs.	X	X		X	X		X							X	X	X
Improve coordination of land use and water resources planning. (CWP)	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
Maximize agricultural, environmental and municipal water use efficiency.	X	X	X	X	X		X	X	X	X				X	X	
Effectively address climate change adaptation and/or mitigation in water resources management.	X	X	X									X				

Issues identified by the Agricultural Lands Stewardship Workgroup																
UFR IWRM Objectives	Lack of consistent supply of surface & ground H2O	Water-Demand vs Supply-Competing/Historical Uses	Climate Change: Snow pack-precipitation, temperature	Regulatory costs (time, money, leadership)	Conveyance System Infrastructure	Clarification of Water Rights & Decrees	Groundwater Basin Recharge	Surface Water Storage	Management of Upland Forests-Evapotranspiration/Storage	Irrigation Management	Water Quality Management (nutrient, sediment, pathogen, etc.)	Holistic Management (soil health/forage mixes, etc.)	Availability of Public/Private Grazing Lands	Collaboration between Interests, (e.g., treated muni water for irrigation)	Capacity of individuals and groups in Ag Community	Wildlife/Habitat Enhancement
Improve efficiency and reliability of water supply and other water-related infrastructure.	X	X	X	X	X	X	X	X	X					X	X	X
Enhance public awareness and understanding of water management issues and needs.	X	X	X			X									X	X
Address economic challenges of agricultural producers.	X	X		X	X					X					X	X
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.														X	X	

Table 5-2. Floodplains, Meadows, and Waterbodies Workgroup Issues and Plan Objectives

UFR IRWM Objectives	Issues identified by the Floodplains, Meadows, and Waterbodies Workgroup																			
	Water Quality	Water Quantity	Fisheries Habitat	Grazing on public lands	Degraded Meadows	Wildfire Impacts	Waterbodies-sediments	Conifer Encroachment	Water Storage/Release - Impoundments	Flood Management - Timing	Preserving Floodplains	Extending Stream Flow – Water release	Improve Wildlife Habitat	Improve Recreation Facilities	Sediment Management	Abandoned mines impacts	Salmon – Middle Fork	Integration of Programs	Better Collaboration btn agencies & people	Threatened & Endangered Species
Restore natural hydrologic functions.	X	X	X		X		X			X	X	X			X			X	X	
Reduce potential for catastrophic wildland fires in the Region.																				
Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region.																				
Build communication and collaboration among water resources stakeholders in the Region.																		X	X	
Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational and environmental benefits to the Region.		X						X						X					X	
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.																				



UFR IRWM Objectives	Issues identified by the Floodplains, Meadows, and Waterbodies Workgroup																			
	Water Quality	Water Quantity	Fisheries Habitat	Grazing on public lands	Degraded Meadows	Wildfire Impacts	Waterbodies-sediments	Conifer Encroachment	Water Storage/Release - Impoundments	Flood Management - Timing	Preserving Floodplains	Extending Stream Flow – Water release	Improve Wildlife Habitat	Improve Recreation Facilities	Sediment Management	Abandoned mines impacts	Salmon – Middle Fork	Integration of Programs	Better Collaboration btn agencies & people	Threatened & Endangered Species
Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region.	X	X	X				X	X	X		X						X		X	
Address economic challenges of municipal service providers to serve customers.																				
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.	X	X	X		X	X				X				X	X			X	X	
Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans.																				
Coordinate management of recharge areas and protect groundwater resources.																		X	X	
Improve coordination of land use and water resources planning.																		X	X	
Maximize agricultural, environmental and municipal water use efficiency.		X			X		X											X	X	

UFR IRWM Objectives	Issues identified by the Floodplains, Meadows, and Waterbodies Workgroup																			
	Water Quality	Water Quantity	Fisheries Habitat	Grazing on public lands	Degraded Meadows	Wildfire Impacts	Waterbodies-sediments	Conifer Encroachment	Water Storage/Release - Impoundments	Flood Management - Timing	Preserving Floodplains	Extending Stream Flow – Water release	Improve Wildlife Habitat	Improve Recreation Facilities	Sediment Management	Abandoned mines impacts	Salmon – Middle Fork	Integration of Programs	Better Collaboration btn agencies & people	Threatened & Endangered Species
Effectively address climate change adaptation and/or mitigation in water resources management.																		X	X	
Improve efficiency and reliability of water supply and other water-related infrastructure.								X			X								X	
Enhance public awareness and understanding of water management issues and needs.																			X	
Address economic challenges of agricultural producers.																				
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.																			X	

Table 5-3. Municipal Services Workgroup Issues and Plan Objectives

UFR IRWM Objectives	Issues identified by the Municipal Services Workgroup															
	Water Quality	Wastewater Reuse	Infiltration/ Inflow	Inadequate Storage	Aging infrastructure	Regulatory Requirements	Wastewater pond/levee integrity	Regional Facilities	Dam/reservoir integrity	Reservoir capacity loss	Insufficient O&M Revenue	Limited staff and budget	Insufficient flow capacity	Location of private wells	Staff training	Flood Management
Restore natural hydrologic functions.			X						X	X			X			
Reduce potential for catastrophic wildland fires in the Region.				X	X							X		X		
Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region.																
Build communication and collaboration among water resources stakeholders in the Region.	X	X				X									X	
Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational and environmental benefits to the Region.	X					X		X	X						X	X
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.	X	X	X			X		X				X			X	
Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region.																
Address economic challenges of municipal service providers to serve customers.	X	X	X	X	X	X						X			X	
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.	X	X			X	X	X	X	X	X	X	X		X	X	

UFR IRWM Objectives	Issues identified by the Municipal Services Workgroup															
	Water Quality	Wastewater Reuse	Infiltration/ Inflow	Inadequate Storage	Aging infrastructure	Regulatory Requirements	Wastewater pond/levee integrity	Regional Facilities	Dam/reservoir integrity	Reservoir capacity loss	Insufficient O&M Revenue	Limited staff and budget	Insufficient flow capacity	Location of private wells	Staff training	Flood Management
Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coordinate management of recharge areas and protect groundwater resources.	X	X	X			X								X	X	
Improve coordination of land use and water resources planning.	X	X						X	X			X		X	X	X
Maximize agricultural, environmental and municipal water use efficiency.		X			X	X			X					X		
Effectively address climate change adaptation and/or mitigation in water resources management.	X	X		X	X				X					X		X
Improve efficiency and reliability of water supply and other water-related infrastructure.	X	X	X	X	X				X	X	X		X	X	X	
Enhance public awareness and understanding of water management issues and needs.	X	X		X		X	X		X	X		X			X	X
Address economic challenges of agricultural producers.		X								X				X		
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.												X			X	

Table 5-4. Uplands and Forests Workgroup Issues and Plan Objectives

UFR IRWM Objectives	Issues identified by the Uplands and Forest Workgroup													
	Soil impacts	Loss of riparian forests	Infiltration/ Inflow changes	Conversion of forests to brush	Los of critical habitats	Post burn rehabilitation	Active biomass infrastructure is Inadequate	Regional wood processing facilities	Conifer encroachment into meadows	Groundwater infiltration & soil	Fire liability	Increasing stand densities & ET	Role of applied science & data:	Water for fire & forest management
Restore natural hydrologic functions.	X	X	X	X	X	X			X	X		X	X	
Reduce potential for catastrophic wildland fires in the Region in order to improve watershed conditions for downstream benefits and beneficiaries.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Balance and integrate the needs of forest health, water supply and quality, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Build communication and collaboration among water resources stakeholders in the Region.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational and environmental benefits to the region & for California	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.											X			X
Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region.			X										X	X
Address economic challenges of municipal service providers to serve customers.										X				X

UFR IRWM Objectives	Issues identified by the Uplands and Forest Workgroup													
	Soil impacts	Loss of riparian forests	Infiltration/ Inflow changes	Conversion of forests to brush	Los of critical habitats	Post burn rehabilitation	Active biomass infrastructure is Inadequate	Regional wood processing facilities	Conifer encroachment into meadows	Groundwater infiltration & soil	Fire liability	Increasing stand densities & ET	Role of applied science & data:	Water for fire & forest management
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.	X	X	X	X	X	X			X	X	X	X	X	
Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans.			X										X	X
Coordinate management of upland recharge areas and protect and enhance groundwater storage.	X	X	X	X	X	X			X	X		X	X	
Improve coordination of land use and water resources planning.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Maximize agricultural, environmental and municipal water use efficiency.													X	X
Effectively address climate change adaptation and/or mitigation in water resources management.	X	X		X	X	X	X	X	X	X	X	X	X	X
Improve efficiency and reliability of water supply and other water-related infrastructure.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhance public awareness and understanding of water management issues and needs.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Address economic challenges of agricultural & forest product producers.							X	X			X			X
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.	X	X	X	X	X	X	X	X	X	X	X	X	X	X

## 5.4.2 Resource Management Strategies

The draft *California Water Plan Update 2013* presents 30 standard resource management strategies (RMS) designed to help meet the water-related goals and objectives of IRWM plans across the state. An RMS is a technique, program, or policy that helps local entities manage their water and water-related resources. The intent of the RMS standard is to encourage diversification of water management approaches as a way to mitigate for uncertain future circumstances, rather than relying on a single strategy or approach for addressing a regional issue.

An IRWM Plan must consider, at a minimum, each RMS in the *California Water Plan Update 2013*; additional RMSs can be formulated as well in response to regional conditions. All 30 standard RMSs were considered in formulating the current Plan; however, three were inapplicable to the Plan area and the workgroups did not make specific strategy recommendations for these three RMSs. Workgroups and the TAC identified strategy recommendations tailored to the specific goals and objectives of the Plan for each of the 27 standard RMSs considered. The relationship between the IRWM Plan objectives and the 27 standard RMSs considered is summarized in Table 5-5.

The RMSs discussed in this chapter will be incorporated into the process for development and review of individual projects under the IRWM Plan. Please see Chapter 9 – *Project Development and Review Process* for a detailed description of the timing and review process for individual projects.

**Table 5-5. Plan Objectives and Resource Management Strategies**

UFR IRWM Objectives	Resource Management Strategies
Restore natural hydrologic functions	Flood control Surface storage – Regional Ecosystem restoration Recharge area protection Watershed management
Reduce potential for catastrophic wildland fires in the Region	Ecosystem restoration Forest management
Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region	Forest management
Build communication and collaboration among water resources stakeholders in the Region	Conjunctive management Outreach and engagement
Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational and environmental benefits to the Region	Conjunctive management
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality	Outreach and engagement
Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region	Conjunctive management

UFR IRWM Objectives	Resource Management Strategies
Address economic challenges of municipal service providers to serve customers	Drinking water treatment and distribution Wastewater/NPDES
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan	Flood management Conveyance – Regional Pollution prevention Ecosystem restoration Recharge area protection Sediment management Watershed management
Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans	Drinking water treatment and distribution Wastewater/NPDES
Coordinate management of recharge areas and protect groundwater resources	Conjunctive management Recharge area protection Watershed management
Improve coordination of land use and water resources planning	Land use planning and management Agricultural land stewardship
Maximize agricultural, environmental and municipal water use efficiency	Conjunctive management Surface storage – Regional Ecosystem restoration Recharge area protection
Effectively address climate change adaptation and/or mitigation in water resources management	Conjunctive management Ecosystem restoration Watershed management
Improve efficiency and reliability of water supply and other water-related infrastructure	Conveyance –Regional/Local Surface storage – Regional/Local
Enhance public awareness and understanding of water management issues and needs	Ecosystem restoration Watershed management Outreach and engagement
Address economic challenges of agricultural producers	Agricultural land stewardship Economic incentives
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding	Outreach and engagement

### 5.4.3 Implementation Projects

Table 5-6 presents the Plan objectives and implementing projects.



Table 5-6 Plan Objectives and Implementing Projects

Project Number/Title	Objectives <sup>a</sup>																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ALS-1: Taylorsville Mill Race Dam resurfacing		X		X					X		X	X	X	X	X	X	X	X
ALS-2: Water quality and infrastructure upgrades on working lands	X		X	X	X				X		X	X	X	X	X	X	X	X
ALS-3: Enhanced management of livestock grazing	X		X	X		X			X		X	X	X	X	X		X	X
ALS-4: Invasive weed management	X	X	X	X					X		X	X	X			X	X	X
ALS-6: Sierra Valley agricultural water diversion efficiency and improvements	X		X	X					X			X	X	X	X	X	X	X
ALS-7: Sierra Valley Resource Conservation District Resource Management Plan	X	X	X	X	X				X		X	X	X	X	X	X	X	X
ALS-8: Upper Feather River weather monitoring infrastructure		X		X		X			X		X	X	X	X	X	X	X	
ALS-9: Soil health assessment	X		X	X					X	X	X	X	X	X		X	X	X
ALS-10: Sierra Valley Groundwater Sustainability Plan	X		X	X		X			X		X	X	X	X	X	X	X	X
ALS-11: Cold Stream agricultural and fire storage Impoundment		X		X	X				X		X	X	X	X	X	X	X	X
ALS-12: Alfalfa alternative			X	X					X		X	X	X	X	X		X	X
ALS-13: Little Last Chance Lake	X			X	X				X		X	X	X	X	X	X	X	X
FMW-2: Water quality monitoring program for Lake Almanor and its tributaries			X	X	X		X					X		X		X		
FMW-4: Wildlife enhancement project	X		X	X	X				X								X	
FMW-5: Upper Feather River interpretive and education sites			X											X		X		
FMW-6: Watershed monitoring program			X	X		X						X				X		
FMW-8: Spanish Creek restoration	X											X						
FMW-9: Watershed education			X													X		
FMW-10: Lake Almanor Basin stewardship and outreach program			X	X	X		X		X					X		X		X
FMW-11: Lake Almanor Basin water quality improvement plan			X	X	X	X	X					X		X	X	X		X
FMW-14: Folchi Meadow project	X	X	X	X					X					X				X

Project Number/Title	Objectives <sup>a</sup>																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FMW-15: Fish habitat assessment/restoration, public awareness/education			X	X	X				X					X		X		
FMW-16: Fish distribution modeling in relation to climate change	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	
FMW-18: Mountain Meadows livestock fencing	X		X						X									
FMW-19: Debris dam survey, inventory and characterization			X		X				X		X			X		X		
MS-1: Wastewater system infrastructure improvements				X	X	X		X	X	X	X				X	X		X
MS-2: Turner Springs improvement		X			X			X		X		X		X	X			X
MS-4: Water tank project		X				X		X	X	X	X		X	X	X			X
MS-6: Old Mill Ranch				X		X		X	X	X	X		X	X	X			X
MS-7: High elevation water tank and well	X	X		X		X		X	X	X	X	X	X	X	X			X
MS-8: Water reclamation facility	X	X		X		X		X	X	X	X	X	X	X	X			X
MS-9: Crocker water service meters						X		X	X	X	X		X	X	X			X
MS-10: Crocker Welch ground tank repair						X		X	X	X	X		X	X	X			X
MS-11: Delleker water meters						X		X	X	X	X		X	X	X			X
MS-12: Delleker water tank rehabilitation						X		X		X	X		X		X			X
MS-13: Groundwater monitoring				X		X				X	X	X			X	X		X
MS-15: Chandler Road bridge erosion	X								X									X
MS-16: Humbug Valley Road bridge erosion									X									X
MS-17: Road 311 culvert improvement									X									X
MS-18: Road 318 culvert improvement									X									X
MS-19: North Valley Road bridge erosion	X								X									X
MS-20: Mill Creek erosion	X								X									X
MS-21: Smith Creek erosion	X								X									X
MS-22: Wapaunsie Creek erosion	X								X									X
MS-23: Stampfli Land bridge erosion	X								X									X
MS-24: Walker Ranch Community Services District infrastructure improvements													X	X				X
MS-25: Humbug Valley Road 307 culvert improvement									X									X

Project Number/Title	Objectives <sup>a</sup>																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MS-26: Municipal well No. 3		X				X		X	X						X			X
MS-27: Treated wastewater reuse	X	X		X		X				X	X	X	X	X	X	X	X	X
MS-28: Water meter installation						X		X							X	X		X
MS-29: Water storage tank replacement		X				X					X			X	X			X
MS-30: Wastewater treatment plant No. 6 upgrade						X			X						X			X
MS-31: Wastewater treatment plant No. 7 lift station replacement						X		X	X									X
MS-32: Water system improvements		X				X		X	X	X			X	X	X	X		X
MS-33: Sierra County road improvements	X			X					X		X	X						X
MS-35: Alternative water storage analysis and development	X			X					X		X	X						X
MS-36: Water storage project		X				X		X		X			X		X	X		
MS-37: Almanor Basin solid and wastewater treatment plant				X	X	X	X	X	X	X	X	X		X		X		X
MS-38: Leak detection and repair		X		X	X	X		X	X	X			X		X	X		X
MS-39: Meter replacement						X		X		X		X	X		X	X		X
MS-40: Pumphouse improvement		X		X	X	X		X		X			X		X	X		X
MS-41: Tank replacement project		X		X	X	X		X	X	X		X	X	X	X	X		X
MS-42: Automatic meter reading project		X		X	X	X		X	X	X	X		X		X	X		
MS-43: Replace copper service lines project		X				X		X	X	X	X		X		X			X
TAC-2: Big Springs vegetation management	X	X	X	X	X	X	X		X	X		X		X		X		X
TAC-3: Mud Creek habitat recovery	X	X	X	X					X	X		X				X		X
TAC-5: Indian Jim River Resource Center	X		X	X			X		X			X			X	X		X
TAC-6: Tradition Ecological Knowledge	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
UF-1: Marian Meadow	X	X	X	X					X		X			X		X		
UF-2: Rock Creek meadow restoration	X	X	X	X					X		X	X		X	X	X		
UF-6: Round Valley/Keddie hand thin	X	X	X	X					X	X		X		X	X			X
UF-7: US Forest Service road improvements	X	X	X	X	X				X	X		X		X		X		X
UF-8: Goodrich Creek biomass	X	X	X			X			X									
UF-10: Greenville Creek biomass	X	X	X			X			X									
UF-11: Mountain Meadows Creek biomass	X	X	X			X			X									

Project Number/Title	Objectives <sup>a</sup>																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
UF-12: Upper Feather River cooperative regional thinning	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X
UF-13: Upper Feather River cooperative LiDAR and GIS support program	X	X	X	X	X		X		X	X	X	X	X	X		X	X	X

<sup>a</sup> Plan Objectives (numbering is only for identification purposes and does not reflect priority objectives or projects)

1: Restore natural hydrologic functions

2: Reduce potential for catastrophic wildland fires in the Region

3: Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the Upper Feather River Region

4: Build communication and collaboration among water resources stakeholders in the region

5: Work with the Department of Water Resources to develop strategies and actions for the management, operation, and control of State Water Project facilities in the Upper Feather River Watershed in order to increase water supply, recreational and environmental benefits to the Region

6: Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality

7: Continue to actively engage in Federal Energy Regulatory Commission (FERC) relicensing of hydroelectric facilities in the Region

8: Address economic challenges of municipal service providers to serve customers

9: Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan

10: Address water resources and wastewater needs of Disadvantaged Communities (DACs) and Native Americans

11: Coordinate management of recharge areas and protect groundwater resources

12: Improve coordination of land use and water resources planning

13: Maximize agricultural, environmental and municipal water use efficiency

14: Effectively address climate change adaptation and/or mitigation in water resources management

15: Improve efficiency and reliability of water supply and other water-related infrastructure

16: Enhance public awareness and understanding of water management issues and needs

17: Address economic challenges of agricultural producers

18: Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding

## 5.5 Relationship of Plan Objectives to Climate Change

The Proposition 1 IRWM objectives standard requires IRWM plans to consider the potential effects of climate change in the formulation of plan objectives. The following Plan objective specifically addresses climate change in the Upper Feather River Region:

*Effectively address climate change adaptation and/or mitigation in water resources management.*

Per Proposition 1 Guidelines, IRWM plans are required to include the following five climate change adaptation and mitigation requirements. In addition to the Plan's climate change objective identified above, elements of other Plan objectives also address the required topics as discussed below:

**1. Address adapting to changes in the amount, intensity, timing, quality and variability of runoff and recharge.**

Changes in the amount and timing of precipitation, as well as shifts from snowfall to rain, are major issues in the Plan area (Chapter 4 – *Regional Water Issues*). These changes are expected to become more common and severe as the result of climate change. Decreasing total precipitation, and shifts toward more precipitation falling as rain, will reduce water storage as snowpack and infiltration for groundwater recharge within the UFR watershed, as well as reduce the availability of water in the Plan area and downstream during the summer dry season. This pattern is exacerbated by losses of natural water-holding functions in high-elevation wet meadows due to degraded environmental conditions.

Plan objectives intended to improve the ability of the UFR watershed to store and release water include restoring natural hydrologic functions in the watershed; reducing potential for catastrophic wildland fires; protecting and enhancing groundwater recharge areas; and maximizing agricultural, environmental, and municipal water use efficiency.

**2. Consider the effects of sea level rise (SLR) on water supply conditions and identify suitable adaptation measures.**

The Plan area is not coastal and would not be affected by sea level rise; therefore, this factor is not pertinent to the UFR Region.

**3. Reduce energy consumption, especially the energy embedded in water use, and ultimately reducing greenhouse gas (GHG) emissions.**

Water use infrastructure in the Plan area is predominantly small-scale, serving communities and municipalities of fewer than 1,000 customers. Consequently, the energy embedded in water use in the Plan area is small. The Plan objectives include an objective to improve efficiency and reliability of water supply and other water-related infrastructure, which will improve the efficiency of water services in the Plan area and reduce energy consumption associated with water use.

The Plan area is a major producer of hydroelectric power, which contributes to California's statewide goal of reducing GHG emissions. Plan objectives include an objective to continue to actively engage in Federal Energy Regulatory Commission's (FERC) relicensing of hydroelectric facilities in the Region.

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**4. Consider, where practical, the strategies adopted by California Air Resources Board (CARB) in its AB 32 Scoping Plan, when evaluating different ways to meet IRWM plan objectives.**

The Global Warming Solutions Act of 2006 (Assembly Bill 32) authorized the CARB to develop a scoping plan that includes 18 strategies for reducing carbon emissions statewide. Two of these--Sustainable Forests and Water--relate directly to the objectives of the IRWM Plan. The IRWM Plan objectives relating to sustainable forests include objectives to reduce the potential for catastrophic wildland fires, promote forest health, and develop forest biomass energy generation. The IRWM Plan objectives relating to energy use for water management include objectives to maximize water use efficiency and to encourage municipal service providers to participate in regional water management actions that improve water supply and water quality. Other scoping plan strategies may be incorporated into implementation projects, such as converting agency fleets to zero emission vehicles or installing rooftop solar on new and existing facilities.

**5. Consider options for carbon sequestration and using renewable energy where such options are integrally tied to supporting IRWM Plan objectives.**

Plan objectives include objectives to reduce the potential for catastrophic wildland fires, enhance groundwater recharge, and promote forest health and economic activity in the Plan area through stand-thinning and development of biomass energy production infrastructure. Improving forest health will enhance carbon sequestration by encouraging active stand regeneration, and biomass energy generation will contribute to statewide goals of reducing fossil fuel consumption. Additionally, there is a net benefit in avoiding the resultant release of stored carbon and especially "black carbon" during a catastrophic wildfire. Agriculture is also a major source of carbon sequestration, particularly when considering the native meadowlands and wetlands that are preserved and nurtured within the boundaries of many ranches within the Region. The Plan objective of engaging in FERC relicensing of hydroelectric facilities in the region will also contribute to statewide goals of reducing GHG emissions through the offset of carbon-based energy production.