

UPPER FEATHER RIVER
INTEGRATED REGIONAL WATER MANAGEMENT PROGRAM
Regional Water Management Group

Sharon Thrall, Plumas County Flood Control and Water Conservation District
Paul Roen, Sierra County
Terry Swofford, Plumas County
Russel Reid, Feather River Resource Conservation District
Bill Nunes, Sierra Valley Resource Conservation District
Jim Roberti, Sierra Groundwater Management District
Tom Yagerhofer, Plumas County Community Development Commission
Trina Cunningham, Maidu Summit Consortium
Jeffrey Greening, Public Member
Joe Hoffman, Plumas National Forest (Advisory)
Carol Thornton, Lassen National Forest (Advisory)
Quentin Youngblood, Tahoe National Forest (Advisory)

**AGENDA FOR REGULAR REGIONAL WATER MANAGEMENT GROUP MEETING OF
MARCH 27, 2015 TO BE HELD AT 1:00 P.M. IN THE
PLUMAS COUNTY PLANNING CONFERENCE ROOM, 555 MAIN STREET, QUINCY, CALIFORNIA**

www.featherriver.org

AGENDA

The Regional Water Management Group of the Upper Feather River Integrated Regional Water Management Program welcomes you to its meetings, which are regularly held on the fourth Wednesday of every other month, and your interest is encouraged and appreciated.

Any item without a specified time on the agenda may be taken up at any time and in any order.

Any person desiring to address the Board shall first secure permission of the Regional Water Management Group Chair. Any public comments made during a regular Regional Water Management Group meeting will be recorded. Members of the public may submit their comments in writing to be included in the public record.

CONSENT AGENDA: These matters include routine administrative actions. All items on the consent calendar will be voted on at some time during the meeting under "Consent Agenda." If you wish to have an item removed from the Consent Agenda, you may do so by addressing the Chairperson.



REASONABLE ACCOMMODATIONS: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting please contact Randy Wilson at 530-283-6214. Notification 72 hours prior to the meeting will enable the County to make reasonable arrangements to ensure accessibility. Auxiliary aids and services are available for people with disabilities.

STANDING ORDERS

1:00 P.M. **CALL TO ORDER/ROLL CALL**

ADDITIONS TO OR DELETIONS FROM THE AGENDA

PUBLIC COMMENT OPPORTUNITY

Matters under the jurisdiction of the RWMG, and not on the posted agenda, may be addressed by the general public at the beginning of the regular agenda and any off-agenda matters before the RWMG for consideration. However, California law prohibits the RWMG from taking action on any matter which is not on the posted agenda unless it is determined to be an urgency item by the RWMG. Any member of the public wishing to address the RWMG during the "Public Comment" period will be limited to a maximum of 3 minutes.

ANNOUNCEMENTS/REPORTS

General project update and brief announcements.

ACTION AGENDA

1. STAKEHOLDER OUTREACH UPDATES

- a. Draft informational pamphlet. Discussion and request for approval.
- b. Update on Tribal outreach efforts. Informational.
- c. Update on Workgroup efforts. Informational.

2. RESOURCE MANAGEMENT STRATEGIES

Review of Workgroup selections of priority resource management strategies (RMS) and assignment of other RMS. Discussion and direction to staff.

3. IRWM PLAN DRAFT GOALS AND OBJECTIVES

Staff will present Workgroup and Tribal feedback on draft goals and objectives for the RWMG's consideration. Discussion, possible action, and/or direction to staff.

4. ADMINISTRATIVE DRAFT BASELINE TECHNICAL STUDY

Introduction of Baseline Technical Study. Discussion and direction to staff.

5. DRAFT PROJECT SOLICITATION PACKAGE

Presentation of Workgroup feedback on draft project solicitation form. Discuss and consider the Draft Project Solicitation Form for approval. Approval and direction to staff to release Project Solicitation Package.

6. SCHEDULE OUTREACH MEETINGS

- a. Schedule Project Solicitation Meetings (2)
- b. Schedule Workgroup Integration Workshop (projects)
- c. Discuss schedule for Climate Change Workshop

7. DRAFT PROJECT SELECTION AND PRIORITIZATION CRITERIA

Review and discuss next steps and approach for developing project selection and ranking criteria. Discussion and possible direction to staff.

8. **NEXT MEETING**

Schedule and topics for next RWMG meeting. Discussion and possible direction to staff.

9. **CONSENT AGENDA**

These items are expected to be routine and non-controversial. The RWMG will act upon them at one time without discussion. Any RWMG members, staff member or interested party may request that an item be removed from the consent agenda for discussion.

A) **RWGM**

Approve RWMG Meeting Minutes for January 28, 2015.

ADJOURNMENT

**Upper Feather River
Integrated Regional Water Management**

**RWMG Meeting No. 4
March 27, 2015**

To: Upper Feather River Regional Water Management Group

From: Uma Hinman, Uma Hinman Consulting

Subject: UFR IRWM Prop 84 Grant Task and Budget Update

Date: March 22, 2015

SCHEDULE

Based on the contract date between DWR and the Plumas County Flood Control and Water Conservation District, we are currently in the ninth month of the two-year project. This is the fourth of six RWMG meetings in the first project year. The Workgroups have each held two of their four annual meetings. The next few months will be focused on project development and the next meetings will be scheduled for April/early May. To keep tasks on track staff will be emailing documents and tasks to Workgroups in between scheduled meetings.

MEMORANDUM OF UNDERSTANDING (MOU)

The draft MOU is posted on the website and has been presented at each of the Workgroup meetings. Additionally, copies have been provided to requesting agencies and organizations through the Workgroups. To date, five signed MOUs have been returned. In April, staff will be sending letters to the 2009 signatories to request their consideration in writing. Additionally, MOUs for the Forests have been drafted and will be sent out in April as well.

BUDGET AND TASK UPDATE

The overall expenditures on the grant project to date are consistent with the project accomplishments. It is reasonable to assume that some of the initial expenditures will be higher compared to project outcomes at the onset of the project, and that project productivity will increase once all Workgroups have had their first meetings and the development of projects and plan chapters has begun.

In October 2014 Plumas County and its partners provided documentation of \$237,489 in match funds, which fulfills the match requirement for the grant contract in its entirety. To date, Uma Hinman Consulting has submitted three invoices to DWR totaling \$117,520.21 in reimbursable services and

equipment purchases. The \$104,374.12 invoiced to date for professional and consultant services represents 17 percent of the budget for those services. The \$117,520.21 invoiced also includes County equipment costs, and represents 17 percent of the total project budget. See last page for budget summary.

Looking at the individual grant project tasks, most of the services and budget expenditures to date have been allocated to tasks one, two, three, five, and seven. See following for summaries of work completed or initiated by task.

Task 1: Stakeholder Outreach/RWMG/Workgroups/Tribal Engagement/IRWM Coordination

The Stakeholder Outreach efforts have included coordinating, publicizing, and preparing outreach materials and presentations for and conducting the first three RWMG meetings, updating the Workgroup contact lists, and maintaining the website. Significant efforts continue with coordinating and facilitating Tribal and individual Workgroup meetings and preparing background research and materials for the Tribes and Workgroup's efforts. Recent efforts have included preparing a draft informational pamphlet.

Staff continues to post articles of interest under the NEWS section of the website, which is also kept up to date with meeting schedules and materials. Please remember to check the website periodically for new posts and information. A new subcategory under DOCUMENTS has been developed for DRAFT IRWM PLAN, which is intended for posting draft Plan sections for public review.

Task 2: Baseline Technical Study

An administrative draft Baseline Technical Study has been prepared based on background materials collected and catalogued to date. The Study includes an appendix of the studies and reports collected so far. We anticipate this document being revised as we progress through the project and collect additional studies and information.

Work has also focused on refining the scope for the first deliverable for the Forest-Water Balance Study, a white paper on infiltration potential from forest fuels thinning projects.

Task 3: Data Management Strategy, System Development and Implementation

The new IRWM Plan Update website/web portal for the UFR IRWM Project has been developed and is being kept current. The RWMG meeting agendas, packets, and archived videos of the meetings are and will be available on the site (featherriver.org), as well as other project information and updates.

The consultant team has developed an online, map-based catalog of studies and projects in the region. The database is linked via GIS to a map that provides a visual catalog of studies and projects in the region (similar to the SWIM site). Time was spent compiling, categorizing, summarizing, and uploading baseline studies. The catalog is available on the website at:

<http://featherriver.org/catalog/index.php>.

Task 4: Climate Change

The first deliverable is a summary of current state and federal policy direction and legislative requirements related to Climate Change, which is anticipated in April. Staff has been conducting background research and collecting existing climate change documents, as well as developing legislative and policy frameworks for summarizing current state and federal policy direction and legislative requirements related to climate change.

The Climate Change consultants have identified regional information needs for completing the Climate Change Vulnerability Checklist. A conference call was held to identify potential contacts to assist with the gaps in regional information.

Task 5: Project Development Process

Staff has been working on drafting and refining the overall project development process, including timelines, project solicitation forms, project selection and prioritization criteria, and steps for moving forward. A conceptual project questionnaire has been developed, which is intended to get Workgroup members thinking about potential projects that may be suitable for inclusion in the IRWM Plan. The RWVG reviewed and discussed the Draft Project Solicitation Package (PSP) during the January 28 meeting. The draft PSP has been presented to the Workgroups and Tribes for input.

Task 6: IRWM Plan Update

The RWVG reviewed and approved the draft Chapter Development schedule during the January 28th meeting. Preliminary work on some of the chapters has begun. Based on information collected and what is generated through the Workgroup meetings, chapters will be drafted by staff and presented first to the RWVG, then the Workgroups for feedback. Eventually all comments will be collected through the Workgroup Chairs and Coordinators. Drafting of the Regional Description and Land Use Planning chapters of the Plan Update is underway.

Task 7: Grant Administration

Work under Task 7 has included the initial process of documenting the match funding and polishing the invoicing and reporting procedures. We have submitted the first six project progress reports and invoices.

Agreement No.: 4,600,010,066.00
Grantee: Plumas County Flood Control and Water Conservation District
Awarding Body: California Department of Water Resources
Program: Prop 84
Encumbrance FY: 2012

Award Budget	Match
\$679,657.00	\$237,489.00

Line Item Prop 84 Allotments		Personnel Services	Operating Expenses	Equipment	Professional/ Consultant Services	Total	10% Withholding	Overhead	Match Total
		\$ 64,220.00	\$ 4,731.00	\$ 4,998.00	\$ 605,708.00	\$ 679,657.00			
Invoice No.	Billing Period								
1	10/1/08-9/30/14	\$ -	\$ -	\$ 4,853.84	\$ 30,510.98	\$ 35,364.82	\$ 3,536.48	\$ 1,224.98	\$ 237,489.00
2	9/1/14-10/31/14	\$ -	\$ -	\$ -	\$ 22,925.60	\$ 22,925.60	\$ 2,292.56	\$ 1,675.85	\$ -
3	9/1/14-11/30/14	\$ -	\$ -	\$ -	\$ 13,009.60	\$ 13,009.60	\$ 1,300.96	\$ 513.61	\$ -
4	12/1/14-12/31/14	\$ -	\$ -	\$ -	\$ 4867.88	\$ 4,867.88	\$ 486.79	\$ 255.38	\$ -
5	10/1/14-1/31/15	\$ 3,891.97	\$ -	\$ -	\$ 25,774.11	\$ 29,667.08	\$ 2,966.71	\$ 1,383.10	\$ -
6	7/1/14-2/28/15	\$ 2,971.73	\$ 1,427.55	\$ -	\$ 7,285.95	\$ 11,685.23	\$ 1,168.52	\$ 665.13	\$ -

Total Amount Spent	\$ 6,861.70	\$ 1,427.55	\$ 4,853.84	\$ 104,374.12	\$ 117,520.21	\$ 11,752.02	\$ 5,718.05
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Allotment Remaining	\$ 57,355.30	\$ 3,303.45	\$ 144.16	\$ 501,333.88	\$ 562,136.79
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% Budget Invoiced	10.69%	30.17%	97.12%	17.23%	17.29%
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**Upper Feather River
Integrated Regional Water Management**

RWMG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group
From: Uma Hinman, Uma Hinman Consulting
Subject: Stakeholder Outreach Updates
Date: March 22, 2015

INTRODUCTION

Tribal Engagement

A Tribal Outreach meeting was held on March 20 in Greenville. The draft goals and objectives were discussed and comments submitted. Additionally, the UFR Tribal Engagement Chart was agreed upon (attached) and the Tribal Engagement Plan is in the process of being finalized.

Workgroup

The Workgroups have all held their second meetings. The second meetings were focused on identification of issues and potential projects, review/feedback on the draft goals and objectives, review/feedback on the project solicitation form, and selection of priority RMS. The Agricultural Lands Stewardship has not yet selected a Chair and Alternate; due to busy schedules there have been no volunteers as of yet. The following table summarizes the Chair/Alternate selections and meeting schedules.

Workgroup	Chair	Alternate	Meeting Schedule
Agricultural Land Stewardship	TBD	TBD	January 22, 2015 March 11, 2015 TBD
Floodplains, Meadows and Waterbodies	Carl Felts	Cindy Noble	December 5, 2014 February 13, 2015 TBD
Municipal Services	Frank Motzkus	Robert Meacher	November 20, 2014 February 19, 2015 April 17, 2015
Uplands and Forest	Mike DeLasaux	John Sheehan	January 29, 2015 March 13, 2015 April 24, 2015

The third round of Workgroup meetings will focus on the assigned priority RMS and developing recommendations.

Goals/Objectives

The draft goals and objectives were discussed by the Workgroups and the Tribes and a number of comments and suggestions were put forward, which are detailed for discussion under Agenda Item No. 3.

Project Solicitation Forms

The Project Solicitation Forms were presented to the Workgroups; no substantive comments were received.

Resource Management Strategies

The interconnectedness and overlap of RMS was evident to all Workgroups. The Workgroups expressed interest in providing input on many of the RMS, although priority RMSs were identified as well. Agenda Item No. 2 will be an in-depth look at the selections and possible assignment of other RMS not yet selected.

Assignment/Task Strategy

There are a total of eight Workgroup meetings identified in the Plan Update work program over the course of the two-year project. The next meetings are, or will be, scheduled for April/early May. In order to make efficient use of time and stay on track with the overall schedule, Coordinators will be emailing tasks and draft documents to Workgroup members and soliciting feedback in between meetings, focusing meeting time on collaboration and decision-making. It is recognized that the summer months may prove challenging for scheduling meetings, so the plan is to continue with meetings approximately every other month for the time being.

Outreach

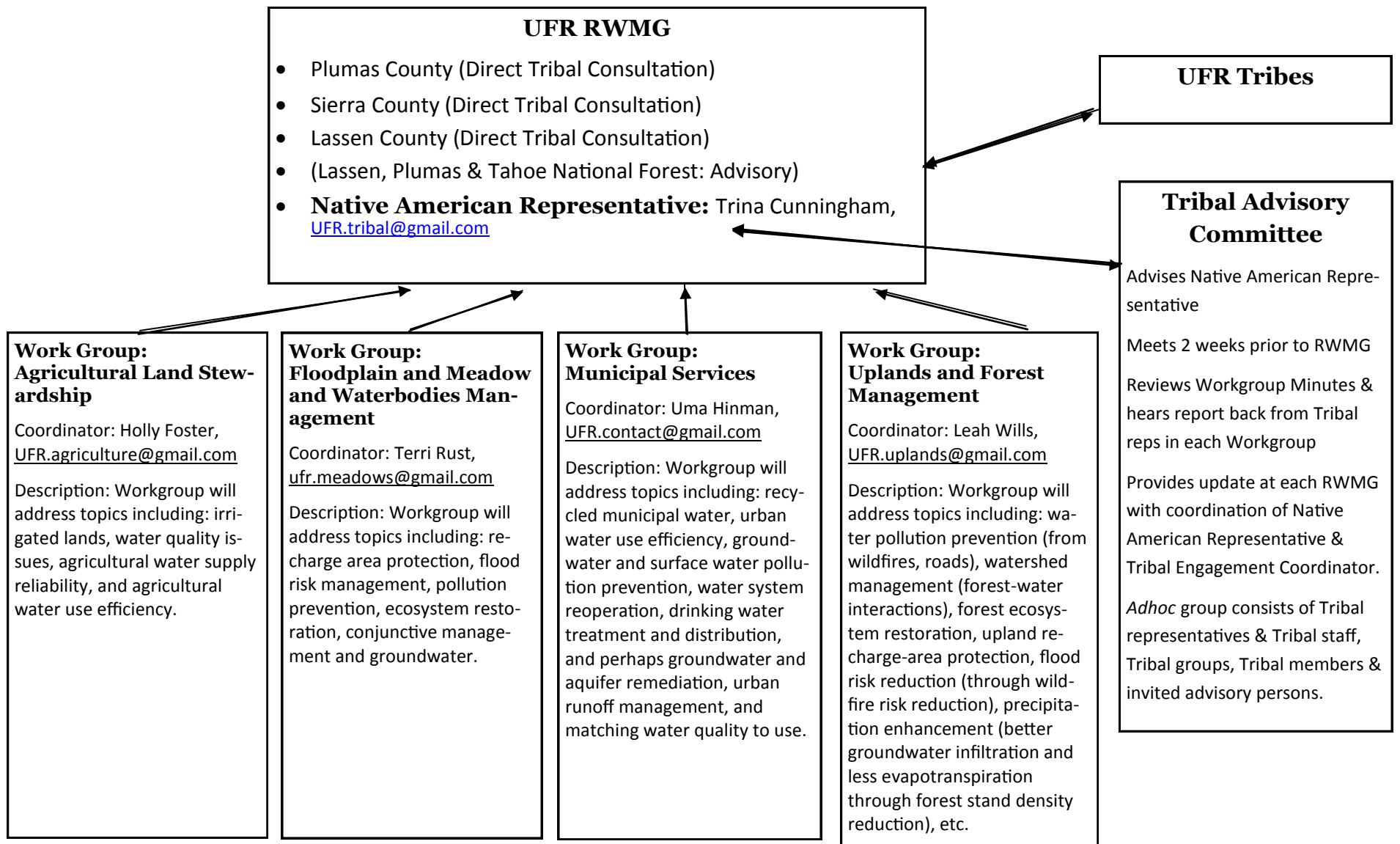
To aid outreach efforts, staff has developed an IRWM Plan Update pamphlet to provide a brief overview of the effort and process and contact information. Staff is requesting review, approval of the pamphlet or direction to staff at this meeting.

REQUEST

1. Staff is requesting approval of the draft pamphlet, or further direction to staff.

Attachments: Tribal Engagement Structure Chart
Draft UFR IRWM pamphlet

Upper Feather River IRWM Tribal Engagement Structure



Note: RWMG & Workgroup Meeting Dates are posted on the UFR IRWM Website at: <http://featherriver.org/>



For more information on how you can shape the future of the Upper Feather River Integrated Regional Water Management Plan, please visit the website:

<http://featherriver.org>

or contact:

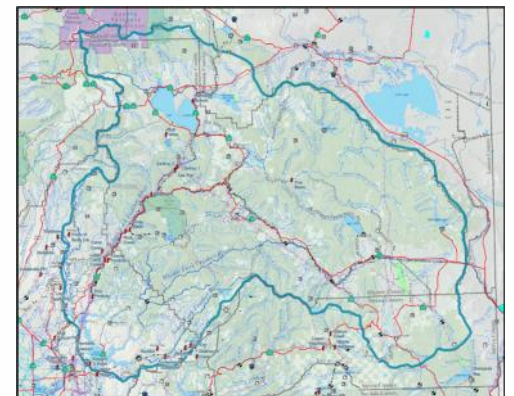
Uma Hinman Consulting
 Ms. Uma Hinman
 UFR.contact@gmail.com
 (916) 813-0818

Proposition 84 Grantee:
 Plumas County Flood Control and Water Conservation District



Upper Feather River IRWM Plan

Integrated Regional Water Management Plan Update



Overview 2015

What is an Integrated Regional Water Management Plan?

An IRWM Plan is a comprehensive, non-regulatory planning document prepared on a region-wide scale that identifies priority water resources projects and programs with multiple benefits.

An IRWM Plan relies upon specific and focused local and sub-regional planning efforts for its foundation, and investigates a broad spectrum of water resources issues including water supply, flood management, water quality, environmental restoration, environmental justice, stakeholder involvement and far-reaching community and statewide interests.

A key difference in IRWM Plan (as compared to other planning documents) is that IRWM Plans integrate multiple water management strategies to solve multiple priority challenges. IRWM Plans can help attract state and other funding to fund regional projects.



Integrated Regional Water Management

Benefits of IRWM Plans

Integrated Regional Water Management is a key initiative to ensuring reliable water supplies in the future. IRWM Plans help communities and regions incorporate sustainable actions into their water management efforts.

A main focus of IRWM is diversification of a region's water portfolio so that multiple resource management strategies are employed in meeting future water and water quality needs of all sectors. This diversification should help regions be better prepared to face an uncertain future of water availability and water use, while protecting and improving water quality and the environment

IRWM is a long term approach to water management in California. As IRWM evolves it seeks to encourage planning efforts that are collaborative and use broad stakeholder participation to gain the input that leads to diversity of water management strategies. Such planning efforts can live well into the future and beyond current state funding incentives.

Mission Statement

To effectively perpetuate local control and regional collaboration to provide stability and consistency in the planning, management and coordination of resources within the Upper Feather River watershed. To implement an integrated strategy that guides the Upper Feather River region toward protecting, managing and developing reliable and sustainable water resources.

Upper Feather River Regional Water Management Group

The RWMG is the decision-making body of the Upper Feather River IRWM Program. The RWMG consists of seven local agencies, a Tribal representative, a member of the public, and representatives of three national forests (Plumas, Lassen, Tahoe) who serve in an advisory role. The RWMG oversees the development of IRWM Plan, which includes stakeholder and disadvantaged community involvement and overall plan development and management.

Meeting times and locations are posted on the IRWM website
<http://featherriver.org/meetings>

How You Can Participate

IRWM operates on the principle that each stakeholder holds a piece of the water management solution for their region and that the best solutions require increased communication and understanding of regional issues. The more partners involved in an IRWM Plan, the higher the potential for better water management solutions.

IRWM Plan meetings and workshops are a forum for stakeholders to participate in constructing a Plan to fit changing regional water management needs within the Upper Feather River Watershed.

Stakeholders and the public are encouraged to become involved in the Workgroups. The Workgroups will provide input on project development, resource management strategies, and draft Plan chapters. More information is located on the Upper Feather River IRWM website: <http://featherriver.org/workgroups>.

Workgroups

Uplands and Forest Management:

[Leah Wills, UFR.uplands@gmail.com](mailto:Leah.Wills@ufr.org)

Meadows, Floodplains and Waterbodies Management:

[Terri Rust, UFR.meadows@gmail.com](mailto:Terri.Rust@ufr.org)

Agricultural Lands Stewardship:

[Holly Foster, UFR.agriculture@gmail.com](mailto:Holly.Foster@ufr.org)

Municipal Services:

[Uma Hinman, UFR.municipal@gmail.com](mailto:Uma.Hinman@ufr.org)

**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group

From: Uma Hinman, Uma Hinman Consulting

Subject: Resource Management Strategies

Date: March 22, 2015

INTRODUCTION

The intent of addressing resource management strategies (RMS) in the IRWM is to document the range of strategies considered by the RWVG to meet the Goals and Objectives of the UFR IRWM, and to ensure diversification of the water management strategies and projects as a way to mitigate for uncertain future circumstances, per requirements in the DWR IRWM Guidelines (DWR 2012).

Not all strategies identified in the table below will be useful or appropriate for the UFR region, however all projects identified through the UFR process will make use of at least one of the RMS. Additionally, other RMS may be identified by the RWVG for inclusion in the IRWM Update. The combination of RMS utilized will depend on multiple variables, including the project type, climate and population projections, existing infrastructure, environmental and social conditions, and the UFR's objectives.

Per RWVG direction, each of the Workgroups selected 6-7 priority RMS to focus on in developing recommendations for the Plan Update (see table below). Six of the RMS were selected by more than one Workgroup and 15 RMS were not selected as a priority by any of the Workgroups. Per the Proposition 84 Guidelines, IRWM Regions are required to address each applicable RMS in the IRWM Plan, or to provide explanation as to why an RMS was not addressed (i.e. why not applicable). (Note: other IRWM Regions have addressed as many as all, or as few as 7 or 8.) The following table indicates overlaps (highlighted in orange) and gaps (highlighted in green) in Workgroup selections. The color coding corresponds to the colors in the attached table of RMS definitions to facilitate discussion.

Resource Management Strategies – Workgroup Selections

RMS No.	RMS	Agricultural Lands Stewardship WG	Floodplains, Meadows, Waterbodies Management WG	Uplands and Forest WG	Municipal Services WG
1	Agricultural water use efficiency	X		^	
2	Urban water use efficiency				X
3	Flood management	^	X	^	^
4	Conveyance – Delta				^
5	Conveyance – regional/local	^	^	^	^
6	System reoperation				^
7	Water transfers				X
8	Conjunctive management	X	^	^	^
9	Desalination (brackish and sea water)				^
10	Precipitation Enhancement		^	^	
11	Municipal recycled water	^			X
12	Surface storage – CALFED/State				
13	Surface storage – regional/local	^	^		^
14	Drinking water treatment and distribution				X
15	Groundwater remediation/aquifer remediation				^
16	Matching water quality to water use	^			^
17	Pollution prevention	X	X	^	^
18	Salt and salinity management				^
19	Urban stormwater runoff management				^
20	Agricultural land stewardship	X	^		
21	Ecosystem restoration	^	X	X	
22	Forest management	^	X	X	
23	Land use planning and management	^	^	^	^
24	Recharge area protection	^	^	^	^
25	Sediment management	X	^	X	^
26	Watershed management	^	X	X	^
27	Economic incentives			X	X
28	Outreach and engagement	X	^	X	^
29	Water and culture		^	^	
30	Water-dependent recreation		X	^	^
31	Other Strategies				
	Wastewater/NPDES				X

Notes: Orange indicates RMS not selected by any of the Workgroups

Green indicates overlap in Workgroup selections

^ indicates Workgroup interest, but not priority selection

X indicates Workgroup priority selection

Next Steps

Discuss Workgroup priority selections and assign RMS. A number of the RMS were selected by more than one Workgroup. The RWMG had suggested that each RMS have a single assigned Workgroup to take the lead in developing recommendations for any one RMS. It is noted that all Workgroups will have the opportunity for input on any of the RMS.

Discuss remaining RMS and determine whether or not they are applicable to the UFR Region. If they are determined applicable, consider assignment to Workgroups. Those RMS that are determined not applicable will need to be discussed briefly in the Plan Update and reasons provided for exclusion. The RMS descriptions have been included as an attachment for information.

REQUEST

1. Discuss and assign Workgroup priority selections.
2. Determine whether remaining RMS are applicable to the UFR Region and assign them to Workgroups for developing recommendations.

Attachments: RMS Descriptions

Resource Management Strategies

The *California Water Plan Update 2013 (CWP)* presents 30 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. For example, to reach the goal of reduced agricultural water use, an applicable RMS might be reducing evapotranspiration in the water delivery infrastructure by lining or encasing canals.

The combination of RMS developed for the Upper Feather IRWM will depend on climate, projected growth, existing water systems, environmental and social conditions, and regional goals. The proposed strategies should also complement the operation of existing water systems. Some strategies identified below from the statewide *CWP* may have little value in certain regions of the Upper Feather area. For example, desalination is likely not relevant in the Sierra Nevada. Other strategies may have little value in particular conditions.

RMS outlined in the *CWP* are described below. The RMS are numbered for the sake of discussion, but are not prioritized. The following color coding applies and corresponds with the RMS table in the agenda item memo:

Orange indicates RMS not selected by any of the Workgroups

Green indicates overlap in Workgroup selections

No shading indicates RMS has been selected as a priority by one Workgroup

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013				
#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
Objective: Reduce Water Demand				
1	Agricultural Water Use Efficiency	The efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.	<ul style="list-style-type: none"> • Hardware – improving irrigation and water delivery systems • Water management – reducing evapotranspiration and improving management of irrigation and water delivery systems • Agricultural technology – Breeding, GMO crops, fertilizers, technology, etc. 	<p>Agricultural Lands Stewardship</p> <p>Uplands and Forest</p>
2	Urban Water Use Efficiency	The efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same	<ul style="list-style-type: none"> • Rate restructuring, incentive policies including for efficient appliances • Developing water budgets for homeowners • Identifying excessive water users and offer 	<p>Municipal Services</p>

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
		amount of water.	water audits <ul style="list-style-type: none"> • Installing water metering infrastructure • Improving water delivery infrastructure • Utilizing alternative water sources • Public outreach 	
Objective: Improve Flood Management				
3	Flood Management	Policies and practices related to educating the public, preparing for, mitigating damages related to, responding to, and recovering from flooding, as well as protecting the natural and beneficial functions of floodplains	<ul style="list-style-type: none"> • Nonstructural – Land use planning, floodplain mapping, risk assessment, land acquisitions and easements, building codes and floodproofing, permanent relocation, flood insurance, flood risk awareness • Structural – levees and flood walls, channels and bypasses, retention and detention basins, culverts and pipes, streambank stabilization, reservoir and floodplain storage, inspection and vegetation management, sediment removal, repair of structures • Restoration of natural floodplain functions – promoting natural hydrologic, geomorphic, and ecological processes, protecting and restoring floodplain habitats, invasive species reduction • Flood emergency management – flood preparedness, emergency response, post-flood recovery 	Meadows, Floodplains, Waterbodies Uplands and Forest Municipal Services
Objective: Improve Operational Efficiency and Transfers				
4	Conveyance - Delta	The conveyance of water through the Sacramento-San Joaquin River Delta, which is a confluence point of the Sacramento and San Joaquin Rivers that drains to the Pacific Ocean	<ul style="list-style-type: none"> • Dual water conveyance delivery system comprised of the existing (through-Delta) conveyance and a new conveyance system that will route water through an isolated facility conveyance system to be exported via the SWP and CVP 	Municipal Services

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
			<ul style="list-style-type: none"> Restoring natural communities to promote improved ecosystem function Providing increased climate change adaptation in the area Reducing north to south flows for export 	
5	Conveyance - Regional/Local	The conveyance or distribution of water from locally developed sources to the end users located within the same watershed or river system	<ul style="list-style-type: none"> Improving conveyance capacity by widening bottlenecks that constrict the movement of water Improving water quality by transporting more river water when water quality conditions are high (minimal turbidity and contaminants) and reducing water diversions when water quality is poor Providing the operational flexibility to divert and move water at times that are less harmful to fisheries 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>
6	System Reoperation	The improvement of existing operations and management procedures of water facilities to meet needs more efficiently and reliably, rather than relying solely on infrastructure improvements (though minor physical modifications to existing facilities may be necessary)	<ul style="list-style-type: none"> Conveying additional water supply from above-ground reservoirs to groundwater basins when supplies are high in order to bank water and prevent flooding in the reservoirs. 	Municipal Services
7	Water Transfers	Water delivered from one water user to another with the water returned at some specified future date, either in-kind or at a specified ratio	<ul style="list-style-type: none"> Transferring previously banked groundwater (from wet years) by pumping and transferring the groundwater, or by pumping the groundwater and using it locally and transferring surface water that would have been used locally Transferring water conserved by crop idling or crop shifting Transferring water that is conserved through measures that reduce seepage to saline sinks 	Municipal Services

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
			(such as canal lining)	
Objective: Increase Water Supply				
8	Conjunctive Management	The coordinated and planned use and management of both surface water and groundwater resources to maximize the availability and reliability of water supplies	<ul style="list-style-type: none"> Recharging groundwater storage when surface water supplies are available and affordable Recharging groundwater storage using recycled water 	Agricultural Lands Stewardship Meadows, Floodplains and Waterbodies Uplands and Forest Municipal Services
9	Desalination (Brackish and Sea Water)	The removal of salts from saline waters	<ul style="list-style-type: none"> Desalinating groundwater and sea water; various technologies available 	Municipal Services
10	Precipitation Enhancement	Also called cloud seeding, a form of weather modification that artificially stimulates clouds to produce more rainfall or snowfall than they would produce naturally by injecting substances into the clouds that enable snowflakes and raindrops to form more easily	<ul style="list-style-type: none"> Cloud seeding to offset reduced snowpack Cloud seeding in mountain meadows to delay start of fire season 	Meadows, Floodplains and Waterbodies Uplands and Forest
11	Municipal Recycled Water	The recycling and reuse of water originating from a municipal treatment plant	<ul style="list-style-type: none"> Using recycled municipal water treated to less-than-tertiary levels for agricultural and domestic irrigation purposes 	Municipal Services Agricultural Lands Stewardship
12	Surface Storage - CALFED/State	CALFED is a joint federal-state effort created to coordinate activities in the Sacramento-San Joaquin Delta. The state and federal governments have funded investigations into five sites for surface storage that would meet the goals of water supply reliability, water quality, and ecosystem restoration	<ul style="list-style-type: none"> Expanding or developing large new surface storage facilities to improve ecosystem functions and conditions for targeted species, or to improve water quality or supply reliability for water users 	

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
13	Surface Storage - Regional/Local	The use of human-made, above-ground reservoirs to collect water for later release when needed	<ul style="list-style-type: none"> • Expanding existing regional or local facilities • Developing new regional or local facilities 	Agricultural Lands Stewardship Meadows, Floodplains and Waterbodies Municipal Services
Objective: Improve Water Quality				
14	Drinking Water Treatment and Distribution	Drinking water in this context is via a public water system; a public water system is defined as having 15 or more service connections or regularly serving at least 25 individuals daily at least 60 days of the year	<ul style="list-style-type: none"> • Improving treatment facilities to include more sophisticated methods of treatment such as membrane filtration, ultraviolet light, and ozonation • Upgrading aging water storage and distribution systems, which may have an impact on water quality pose public health risks • Improving water system to prevent cross-connections and backflow in distribution systems 	Municipal Services
15	Groundwater Remediation/ Aquifer Remediation	The removal of constituents (or contaminants) that affect beneficial use of groundwater; groundwater remediation systems can employ passive or active methods to remove contaminants	<ul style="list-style-type: none"> • Treating contaminated groundwater while it is still in the aquifer (in situ); active in situ methods generally involve injecting chemicals into the contaminant plume to obtain a chemical or biological removal of the contaminant • Extracting contaminated groundwater from the aquifer and treating it outside of the aquifer (ex situ) 	Municipal Services
16	Matching Water Quality to Use	A management strategy that recognizes that not all water uses require the same water quality and that suitability for one use may not be suitability for another use; a water quality constituent often is only considered a contaminant when that	<ul style="list-style-type: none"> • Matching high quality water that does not require as much treatment to municipal and industrial uses • Matching water to agricultural uses that does not contain certain constituents that would reduce crop yields 	Agricultural Lands Stewardship Municipal Services

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
		constituent adversely affects the intended use of the water	<ul style="list-style-type: none"> • Matching water of certain temperatures to instream and ecosystem uses 	
17	Pollution Prevention	Reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less toxic substances, the implementation of practices or conservation techniques including activities that reduce the generation and/or discharge of the pollutants, and the application of innovative and alternative technologies which prevent pollutants from entering the environment prior to treatment	<ul style="list-style-type: none"> • Agricultural uses: Erosion and sediment controls, wastewater and runoff from confined animal feeding operations, nutrient management, pesticide application, grazing management • Urban uses: Runoff from developing areas, septic tank systems, transportation development runoff • Forestry uses: Preharvest planning, streamside management, road construction and management, forest regeneration and revegetation, fire management, chemical applications, postharvest evaluation • Marinas and recreational boating: Marina facility assessment, siting, and design (water quality assessment, marina flushing, shoreline stabilization, fueling station design, sewage facilities); and operation and maintenance (solid waste control, fish waste control, liquid material control, petroleum control, boat cleaning and maintenance, boat operations) 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>
18	Salt & Salinity Management	Management of salts (including dissolved minerals such as lime, gypsum, and other slowly dissolved soil minerals) and salinity (a condition where dissolved minerals are present and carry an electrical charge (ions); human causes of salinity include use of home water softeners, groundwater pumping causing seawater intrusion, and the use of fertilizers or soil amendments	<ul style="list-style-type: none"> • Source control – minimizing soil amendments in crop production, using alternate water sources to lower initial concentrations, reusing the same volume of water to decrease overall salt loads • Dilution and displacement – Dilution with lower salinity water, reusing salt in industries that require it, such as energy production • Treatment – membrane or distillation technologies • Export – moving salt to the ocean via brine 	<ul style="list-style-type: none"> •

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
			<p>lines</p> <ul style="list-style-type: none"> • Real-time salinity management – improving coordination of salt loading from upstream point and non-point sources to manage a maximum load of salts that does not exceed water quality objectives • Salt recycling – using the excess salts from agricultural drainage water for products such as soaps and detergents, glass, pulp and paper, textiles, and highway de-icing 	
19	Urban Stormwater Runoff Management	A range of activities to manage both stormwater and dry-weather runoff; dry-weather runoff occurs when, for example, excess landscape irrigation water flows to the storm drain	<ul style="list-style-type: none"> • Runoff from roofs and parking areas draining to vegetated areas and landscaped areas with permeable soils • Using dry wells and permeable surfaces • Collecting and routing stormwater runoff to basins 	Municipal Services
Objective: Practice Resource Stewardship				
20	Agricultural Land Stewardship	Farm and ranch landowners producing public environmental benefits (conservation of natural resources and protection of the environment) in conjunction with the food and fiber they have historically provided while keeping land in private ownership	<ul style="list-style-type: none"> • Managing cropland or rangeland to avoid streambank erosion or rapid stormwater runoff • Streambank stabilization, which may include a buffer strip of riparian vegetation to slows bank erosion and filters drainage water from the fields • Modifying grazing intensity and timing to prevent overgrazing • Cover crops to prevent soil erosion • Public outreach and education on these strategies • Land use planning to avoid agricultural land fragmentation • Land conservation through easements or conservancies 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p>

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
21	Ecosystem Restoration	Improvement of modified natural landscapes and biological communities to provide for their sustainability and for their use and enjoyment by current and future generations	<ul style="list-style-type: none"> • Reproducing natural flows in rivers and streams • Curtailing the discharge of waste and toxic contaminants into water bodies • Controlling non-native invasive plant and animal species • Removing barriers to fish migration in rivers and streams • Recovering wetlands so that they can store floodwater, recharge aquifers, filter pollutants, and provide habitat 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p>
22	Forest Management	The application of forestry principles, practices, and business techniques to the management of a forest to achieve the owner's objectives; different forest landowners have different goals and objectives and different strategies to accomplish them; the water produced by these forests has economic value that equals or exceeds that of any other forest resource	<ul style="list-style-type: none"> • Meadow restoration (form of groundwater banking) • Conserving riparian forests (high biological diversity) • Managing some riparian stands for fire protection purposes • Managing grazing in or near riparian forests • Selective thinning of young, small trees to improve streamflow regimen • Fuels and fire management • Road management for erosion control purposes • Managing illegal marijuana cultivation 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p>
23	Land Use Planning and Management	The orderly and planned use of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities	<ul style="list-style-type: none"> • Directing development away from agricultural lands, which permits multi-objective management of these agricultural lands for agricultural preservation, floodplain management, water quality, habitat conservation, and sustainable development. • Planning for more compact and sustainable communities, both urban and rural, which will assist in reducing reliance on the state's water 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
			<p>supply, and result in more efficient use of California’s water resources</p> <ul style="list-style-type: none"> • Planning for growth in a way that considers availability of water supplies, water resource features such as streams, wetlands, and groundwater recharge areas, and policies and regulations about water quality, drainage, and flooding • Increased and enhanced communication between land use planners and water managers 	
24	Recharge Area Protection	Natural recharge areas are those where good quality surface water is able to percolate through the sediments and rocks to the saturated zone which contains groundwater; if recharge areas cease functioning properly, there may not be sufficient groundwater for storage or use	<ul style="list-style-type: none"> • Protecting existing and developing new recharge areas, including instream recharge areas, which allow water to percolate through the stream bed itself, offstream recharge areas, which use suitable sites outside the streambed, and detention dams, urban detention basins and low-lying parks • Pre-treating storm water runoff • Water quality monitoring • Low Impact Development (LID) or best management practices (BMPs) for storm water filtration and reuse 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>
25	Sediment Management	The management of fine solid fragmented material such as silt, sand, and clay, which is suspended in or settled on the bottom of a water body; sediment is used for beach restoration, renewal of wetlands and coastal habitats, maintenance of spawning beds and riparian habitat, and is useful in agricultural applications – but excessive sediment can lead clouded water, degraded wildlife habitat,	<ul style="list-style-type: none"> • Source management – preventing soil loss and movement of sediment into waterways from recreational uses, roads, grazing, farming, forestry, and construction • Sediment transport management – sand bypass structures • Sediment deposition management – deconstruction of dams, dredging 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
		barriers to navigation, and decreased storage capacity on reservoirs, among other things		
26	Watershed Management	The process of creating and implementing plans, programs, projects, and activities to restore, sustain, and enhance watershed functions	<p>(The following watershed management strategies are examples from the <i>Feather River Watershed Management Strategy</i>. Watershed management strategies are as diverse as the RMS strategies listed in this table.)</p> <ul style="list-style-type: none"> • Improving upland vegetation management • Improving water retention for baseflow in streams • Improving water quality and streambank protection • Wetland restoration • Improving groundwater and retention and storage in major aquifers 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>
Objective: People and Water				
27	Economic Incentives	Financial assistance, water pricing, and water market policies intended to influence water management; economic incentives can influence the amount of use, time of use, wastewater volume, and source of supply	<ul style="list-style-type: none"> • Low interest loans, grants, and water rates and rate structures • Free services, rebates, and the use of tax revenues to partially fund water services • Government financial assistance • Fines (economic disincentive), used to discourage undesirable water user behavior 	<p>Uplands and Forest</p> <p>Municipal Services</p>
28	Outreach and Engagement	The use of public communication tools and practices by water agencies that provide the opportunity for public groups and individuals to contribute to positive water management outcomes	<ul style="list-style-type: none"> • The Ranch Water Quality Planning Short Course, which promotes the California Rangeland Water Quality Management Plan • Outreach and education on the Central Valley's General Order for Existing Milk Cow Dairies • The Education and the Environment Initiative (EEI) 	<p>Agricultural Lands Stewardship</p> <p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>

TABLE OF RMS FROM THE CALIFORNIA WATER PLAN 2013

#	RMS	DEFINITION OF RMS	EXAMPLES OF POSSIBLE APPROACHES	WORKGROUP SELECTIONS (BOLD = PRIORITY/NOT BOLD = INTEREST)
29	Water & Culture	Increasing the awareness of how cultural values, uses, and practices are affected by water management, and how these have an effect on water management as well; even regulations reflect cultural values such as when water is viewed as a commodity rather than as a cultural resource	<ul style="list-style-type: none"> Enhanced communication and consultation with local tribes on fishery, forest, and watershed issues Consideration and incorporation of Tribal Ecological Knowledge (TEC) and cultural connections to water and water-dependent resource activities in the development of watershed management plans, policies, and water-related structures/infrastructure Preservation and protection of historical/pre-historic features 	<p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p>
30	Water-Dependent Recreation	Recreation activities in or on water, including fishing, swimming, skiing, and snowboarding, waterfowl hunting, motor boating, surfing, kayaking, activities that can be enhanced by water, such as wildlife viewing (including birding), picnicking, biking, relaxing on the beach, camping, and hiking	<ul style="list-style-type: none"> Allowing public access to all navigable waterways, lakes, and beaches Integrating recreational components into flood management projects, climate adaptation projects, and other water-related projects 	<p>Meadows, Floodplains and Waterbodies</p> <p>Uplands and Forest</p> <p>Municipal Services</p>
31	Other Strategies	Management strategies that can potentially generate benefits that meet one or more water management objectives, but have limited capacity to strategically address long-term regional water planning needs	<ul style="list-style-type: none"> Crop idling Dew vaporization (process of humidification-dehumidification desalination) Fog collection Irrigated land retirement Rainfed agriculture Waterbag transport (diverting water in areas that have unallocated freshwater supplies, storing the water in large inflatable bladders, and towing them on the ocean by a tug boat to an alternate coastal region) 	
	Wastewater			Municipal Services

**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group
From: Uma Hinman, Uma Hinman Consulting
Subject: Draft Goals and Objectives
Date: March 22, 2015

INTRODUCTION

The UFR IRWM draft goals (1-4) and objectives (1-17) have been provided to all four Workgroups and the Tribes and feedback has been incorporated in the tables below. However, not all of the Workgroups have reviewed the changes recommended by other Workgroups (e.g. goal 5, objectives 18 and 19). The following draft goals and objectives are numbered solely for reference and do not indicate ranking or priority. Recommended changes to the draft goals and objectives are indicated with ~~strikeout~~ for removal and underline for additions. Workgroups making the recommended changes are noted in parentheses at the end of the goal/objective.

Draft Goals

During the January 28, 2015 RWVG meeting, staff was directed to develop four to five goals addressing the broad topics of water, land, people, and wildlife. In response, staff developed draft goals 1 through 4, below. Additionally, draft goal 5 has been proposed by the Agricultural Lands Stewardship Workgroup. The Meadows, Floodplains and Waterbodies Workgroup recommended the additional language for draft goal 2.

Draft Goals

1	Protect and improve water quality and water supply reliability.
2	Protect and improve the health of the environment including <u>fish</u> , wildlife and the land. (MFW WG)
3	Protect and improve the economy of the region and provide healthy and adequate water and wastewater treatment for all citizens, including disadvantaged communities and Native Americans.
4	Establish and maintain effective communication among water resource stakeholders in the region, enhancing the publics' understanding of water management issues.
5	Protect and enhance the health and economic viability of working landscapes. (Ag WG)

Draft Objectives

Per direction from the RWMG, staff provided the following draft objectives to the Workgroups for comment. During the second Workgroup meetings, participants reviewed each of the draft objectives and provided the following feedback:

- Whether the objective was appropriate and applicable
- Any recommended changes in wording
- Relationship of each objective to goals (1-4) (i.e. to which goals the objective applies)

There were a few changes to wording (6, 10, and 14) recommended by the Municipal Services Workgroup. Additionally, with the changed wording in 14, the Municipal Services Workgroup felt draft objective 12 was redundant and recommended eliminating it. The Agricultural Lands Stewardship Workgroup recommended the inclusion of additional goals 18 and 19. The Tribes suggested that draft objective 5 was possibly a goal and it may also be redundant with draft objective 12.

The draft goal numbers below correspond to the numbered goals in the previous table. The relationship of goals/objects identified by “X” in the table below illustrates the sum total of feedback from the Workgroups. What is evident is that each of the objectives may be considered applicable to all of the goals, with a few exceptions. Draft objectives 18 and 19 were not reviewed by the other Workgroups or Tribes as they were submitted after those meetings.

#	Draft Objectives	Draft Goals				
		1	2	3	4	5
1	Restore natural hydrologic functions.	X	X	X	X	X
2	Reduce potential for catastrophic wildland fires in the Region.	X	X	X		
3	Balance the needs of forest health, habitat preservation, fuels reduction, forest fire prevention, and economic activity in the UFR Region.	X	X	X	X	X
4	Build communication and collaboration among water resources stakeholders in the Region.	X	X	X	X	X
5	Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region. <i>(Tribes suggest maybe goal or redundant with #12)</i>	X	X	X		X
6	Encourage municipal service providers <u>to participate</u> in regional water management actions that affect <u>improve</u> water supply and water quality. (Muni WG)	X	X	X	X	X
7	Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region.	X	X	X	X	
8	Address economic challenges of municipal service providers to serve customers.	X	X	X	X	X
9	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
10	Address water resources and wastewater needs of DACs <u>and Native Americans</u> . (Muni WG)	X		X	X	
11	Coordinate management of recharge areas and protect groundwater	X	X	X	X	X

#	Draft Objectives	Draft Goals				
		1	2	3	4	5
	resources.					
12	Balance management of water resources for all users, including agriculture, municipal, and environmental resource needs. Redundant with #14, as edited (Muni WG). Tribes suggest redundant with #5.	X	X	X	X	X
13	Improve coordination of land use and water resources planning.	X			X	X
14	Maximize agricultural, <u>environmental</u> and municipal water use efficiency. (Muni WG)	X	X	X	X	X
15	Effectively address climate change adaptation and/or mitigation in water resources management.	X	X	X	X	X
16	Improve efficiency and reliability of water supply and other water-related infrastructure.	X	X	X	X	X
17	Enhance public awareness and understanding of water management issues and needs.	X	X	X	X	X
18	<u>Address economic challenges of agricultural producers.</u> (Ag WG)					X
19	<u>Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.</u> (Ag WG)					X

Prioritizing Plan Objectives

Prioritizing objectives is an optional step that could aid in identifying core issues that all interest groups in the region could agree upon. Additionally, prioritization of objectives could be useful in the project prioritization process to help the Region identify those projects that would provide the greatest benefit to the region as a whole. Prioritizing objectives can also help guide the course of adaptive management.

Some IRWM regions elected not to prioritize projects, deciding that to do so could create competition rather than collaboration and could result in potential loss of stakeholder support. Staff is requesting direction regarding whether or not the RWMG wishes to prioritize the goals and objectives for the UFR Region.

If the RWMG decides that prioritizing the objectives is important for the UFR IRWM Plan, polling could be a simple approach for accomplishing the task. A method used by a neighboring region consists of participants identifying and ranking three top objectives, leaving the remaining objectives as having equal importance. This approach consists of the following steps:

1. Participants identify the top three objectives
2. Participants rank the importance of those three objectives, 1 being the most important
3. Discuss, select and rank the top three as a group

DISCUSSION

Discussion, possible action, and/or possible direction to staff regarding draft goals and objectives.

1. Discuss and approve draft goals and objectives and/or possible provide direction to staff.
2. Decide whether or not to prioritize the objectives and provide direction to staff.

**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group
From: Uma Hinman, Uma Hinman Consulting
Subject: Administrative Draft Baseline Technical Study
Date: March 20, 2015

INTRODUCTION

The objective of the Baseline Technical Study is to provide a summary of existing water management related studies and data within the region, which will serve as the scientific and technical foundation for the Plan update. In November 2014, a “Call for Studies” was issued to the Workgroups and posted on the Plan Update website. Additionally, staff collected data and developed a database that is included as Appendix A of the attached Study, and which is also now available on the website (<http://featherriver.org/catalog/index.php>).

The Study will essentially become the Technical Analysis Chapter of the IRWM Plan Update, which is a discussion of the technical information, methods, and analyses used to understand the management needs over the planning horizon. The Study includes a database of studies, data, and information, which is organized into the following categories:

- Biotic Studies and Assessments
- Climate Change
- Conjunctive Management
- Demographic Information and DACs
- FERC Licensing and Dam Facilities
- Flooding
- Forests and Wildland Fires
- Groundwater
- Infrastructure
- Land Planning and Conservation
- Legislation, Legal, and Miscellaneous Policy Document
- Recreation
- Restoration
- Streamflow
- Water Quality
- Water Supply and Conservation
- Watershed Assessment
- Watershed Management and Planning

The administrative draft Study also identified several data gaps that should be addressed in the IRWM Plan Update as well as over the long-term in planning for the Upper Feather River watershed:

- Conjunctive water use and conjunctive water management resources
- Recreation planning resources
- Water supply and management plans

Staff anticipates that this document will grow over the course of the planning process as additional studies are submitted and catalogued.

REQUEST

Review, discussion and possible direction to staff to send to Workgroups and Tribes for comment.

Attachments: Administrative Draft Baseline Study

Administrative Draft

Baseline Technical Study

Upper Feather Integrated Regional Water Management Plan

March 2015

Prepared for

Plumas County Flood Control and Water Conservation District

California Department of Water Resources

By Uma Hinman Consulting



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Introduction

In November 2014, the Upper Feather Integrated Regional Water Management Plan (IRWMP) Project Team issued a call for studies at each of the Workgroup meetings and on the Upper Feather IRWMP website. At the same time, the Project Team began collecting data and developing a database that would be posted on the website indefinitely and updated as new information becomes available.

Data was collected on a wide range of watershed management-related topics, including but not limited to the following:

- Surface and groundwater sources and management
- Water quality
- Agricultural lands management and restoration
- Ecosystem conditions and restoration
- Flood and floodplain management
- Watershed conditions and management
- Fire and vegetation management
- Forest ecosystem conditions and management
- Stormwater management
- Wetlands
- Water supply assessments
- Hydrology and hydrogeology studies
- Land use management
- Recreation resources and plans
- Municipal service reviews
- Water and wastewater infrastructure studies
- Community vulnerability assessments
- Socioeconomic studies

Data on these topics include technical studies and assessments, monitoring reports, websites, document collections, maps, and legislation.

The following sections summarize the mandatory plans and other technical studies found during this data call and search, and evaluate the information for data gaps and applicability to the Upper Feather IRWMP Plan. The final section assesses how information, study methods, and analyses will be used by the Upper Feather Regional Water Management Group (RWMG) and public to understand watershed management conditions and needs over the 20-year planning horizon.

Appendix A to this memorandum includes a complete list of baseline data found to date, organized by topic area. This data list will continue to grow with the IRWMP Plan process. Many topic areas overlap, and thus many of the data studies may be used in different functions throughout the IRWMP planning process. As noted above, baseline information is also available within its own database on the IRWMP Plan website (<http://featherriver.org/catalog/index.php>). The database is fully searchable, and in many cases a web link to the referenced document is also made available.

1: Review of Mandatory Documents

This section provides an overview of federally, state, regionally, or locally mandated documents. A synopsis of each document is provided, along with an analysis of how the data will be used by the RWMG and public in the IRWM planning process.

Federal Resources

Forest Land and Resource Management Plans

U.S. Forest Service planning documents provide guidelines and management direction for the upper watershed regions of 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; invasive weeds; and foothill oak woodland ecosystems. In addition, the 2012 Planning Rule for land management planning for the National Forest System became effective on May 9, 2012. The Forest Service has subsequently released proposed planning directives, which are the key set of agency guidance documents that direct implementation of the 2012 Planning Rule, for public review and comment. The directives are expected to be formally adopted in the near future.

The Upper Feather IRWM planning area includes all or portions of the Plumas, Lassen, and Tahoe National Forests and their respective Land and Resource Management Plans, all prepared by the U.S. Forest Service, as follows:

- *Plumas National Forest Land and Resource Management Plan (1988)*
- *Lassen National Forest Land and Resource Management Plan (2005)*
- *Tahoe National Forest Land and Resource Management Plan (2005)*

These plans 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 discussed include recreation, fish, wildlife, and sensitive plants, diversity, riparian areas, water, ownership, land uses, and the urban/wildland interface. The plans also present both forest-wide and area-specific management direction for the National Forest lands.

FERC Relicensing Documents

At least six hydropower projects in the Upper Feather watershed are undergoing, or will soon undergo, relicensing through the Federal Energy Regulatory Commission (FERC), including the following:

- Bucks Creek Project (FERC Project 619)
- Lake Oroville Project (FERC Project 2100)
- Poe Hydroelectric Project (FERC Project 2107)
- Rock Creek - Cresta Project (FERC Project No. 1962)
- South Feather Power Project (FERC Project 2088)
- Upper North Fork Feather River Project - Lake Almanor, Butt Valley Reservoir, and Butt Valley, Caribou 1&2, Belden, and Oak Flat powerhouses (Project 2105)

FERC relicensing often requires substantial supporting documentation in the form of biotic studies, flood risk assessments, recreational use studies, settlement agreements mandating in-stream flow requirements and resource management strategies for fish and wildlife protection, and other documentation. These auxiliary documents are useful in the preparation of IRWM Plans. For hydropower projects currently undergoing relicensing, websites are typically in place that catalog the various supporting documents; in some case, such as the Poe Hydroelectric Project with the State Water Resources Control Board and National Oceanic and Atmospheric Administration, more than one agency may provide website support. FERC relicensing information is also readily available on FERC’s website under their Online Library (<http://www.ferc.gov/docs-filing/elibrary.asp>).

Climate Change Resources

Several federal agencies have been involved in climate change research and planning documents, including the U.S. Forest Service, the U.S. Environmental Protection Agency (EPA), and the U.S. Army Corps of Engineers. Federally prepared documents that will be useful in climate change vulnerability assessments and adaptation strategies include the following:

- “Chapter 3: Climate Change and the Relevance of Historical Forest Conditions” from *Managing Sierra Nevada Forests* (USDA Forest Service, March 2012) discusses the current and future patterns of climate change in Sierra Nevada forests, biotic responses to climate change, the value of various management practices in ecosystem restoration, and the value of historical ecology in developing management practices. These resources can be used to help define regional climate trends.
- *Climate Change Handbook for Regional Water Planning* (U.S. EPA and California Department of Water Resources, December 2011) was developed as a partnership of the U.S. Environmental Protection Agency (EPA) Region 9, the California Department of Water Resources, U.S. Army Corps of Engineers South Pacific Division, and the Resources Legacy Fund, specifically for the Integrated Regional Water Management (IRWM) planning process. Quantitative tools and techniques for addressing both climate change adaptation and mitigation (greenhouse gas reduction) are introduced and discussed in order to facilitate preparation of comprehensive IRWM Plans. A guide to assess the vulnerability of a watershed or region to climate change impacts is presented in this handbook, and guidelines to prioritize vulnerabilities are introduced. These resources can be used to help define vulnerabilities/strategies consistent with DWR guidelines.
- *The Emissions & Generation Resource Integrated Database (eGRID) for 2010* (U.S. EPA, December 2010) is a comprehensive inventory of environmental attributes of electric power. The preeminent source of emissions data for the electric power sector, eGRID is based on available facility-specific data for all U.S. electricity generating facilities that provide power to the electric grid and report data to the U.S. government. eGRID can be used to calculate construction-related electric energy emissions in the planning area.

State Resources

California Water Plan

The *California Water Plan Update 2013* (CWP) was prepared by the California Department of Water Resources (DWR) to define the statewide approach to water management, set state priorities, and provide guidance to water planners throughout the state. The CWP is a master plan that guides the orderly and coordinated control, protection, conservation, development, management, and efficient use of the water resources of the state. The CWP promotes regional water planning to integrate multiple water and resource

management activities to meet a wide range of local objectives and is intended to help water agencies, local governments, and the Legislature promote and support integrated regional water management (such as in the preparation of IRWM Plans). The CWP does not make project-specific or site-specific recommendations, but instead provides a framework to guide local agencies. The 2013 CWP Update has new features that include a strategic plan with vision, goals, recommendations and an implementation plan. It was developed with a different analytical approach than prior state water plans, and relies on extended information and tools, including use of water portfolios, regional reports, a protocol for future scenarios, and defined resource management strategies.

The CWP identifies resources management strategies (RMS) which should be used by the Upper Feather RWMG and other stakeholders to develop the IRWM Plan so that the Upper Feather RMS are consistent with the state’s priorities. Coordination of RMS with state priorities will also increase the competitiveness of IRWM Plan projects for future state funding.

A key objective of the CWP is to present a diverse set of RMS to meet the needs of each region as well as statewide needs. The strategies can be adapted and combined within an IRWM Plan region depending on climate, projected growth, existing water system, and environmental and social conditions. The proposed strategies should complement the operation of the existing water system within the IRWM Plan region. The basic intent of the CWP is to help IRWM planning areas to prepare watershed management plans that satisfy regional and state needs, meet multiple objectives, include public input, address environmental justice, mitigate impacts, protect public trust assets, and are affordable.

Table 1. CWP Resource Management Strategies

Agricultural lands stewardship	Recharge area protection
Agricultural water use efficiency	Recycled municipal water
Conjunctive management and groundwater storage	Salt and salinity management
Conveyance–Delta	Sediment Management
Conveyance–regional/local	Surface storage–CALFED
Desalination	Surface storage—regional/local
Drinking water treatment and distribution	System re-operation
Economic incentives (loans, grants, & water pricing)	Urban land use management
Ecosystem restoration	Urban runoff management
Forest management	System re-operation
Flood management	Urban land use management
Groundwater/Aquifer remediation	Urban stormwater runoff management
Land use planning and management	Urban water use efficiency
Matching water quality to use	Water and Culture
Outreach and engagement	Water-dependent recreation
Pollution prevention	Watershed management
Precipitation enhancement	Water transfers

Sacramento River Basin Plan

Section 13240 of the Porter-Cologne Water Quality Control Act requires each Regional Water Quality Control Board (RWQCB) of the State Water Resources Control Board (SWRCB) to formulate and adopt water quality control plans, or basin plans, for all areas within the region. The Porter-Cologne Act also requires each RWQCB to establish water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within basin plans. Beneficial uses and water quality objectives are also the State's water quality standards.

The jurisdictional boundaries of the Central Valley RWQCB include the Upper Feather IRWM planning area. As a tributary to the Sacramento River, the Upper Feather River is recognized in the Central Valley RWQCB's *Sacramento River Basin Plan* (2011) as a surface water body that requires monitoring and regulation. The *Basin Plan* identifies the beneficial uses of the Feather River, provides specific water quality objectives (including Total Dissolved Solids, pesticides, and electrical conductivity), and lists illegal discharges into the Feather River.

20x2020 Water Conservation Plan

The *20x2020 Water Conservation Plan* (2010) was developed by a number of public resource agencies, including DWR, SWRCB, California Bay-Delta Authority, California Energy Commission, California Department of Public Health, California Public Utilities Commission, and California Air Resources Control Board. In 2008 then-Governor Schwarzenegger directed state agencies to develop a plan to reduce statewide per capita water use by 20 percent by the year 2020. The *20x2020 Water Conservation Plan* sets forth a statewide road map that includes a range of activities to maximize the state's urban water efficiency and conservation opportunities between 2009 and 2020, and beyond. These activities include improving an understanding of the variation in water use across California, promoting legislative initiatives that incentivize water agencies to promote water conservation, and creating evaluation and enforcement mechanisms to assure regional and statewide goals are met.

Using ten hydrologic regions as defined by DWR for water resources planning purposes, regional baseline and target values were derived for daily per capita water use. The 2005 statewide baseline urban water use value, expressed in gallons per capita per day (gpcd), is 192 gpcd. The statewide target for 2020 is 154 gpcd. This represents a statewide savings of 1.59 million acre-feet (MAF) based on a population of 37 million people. The Upper Feather River is in DWR Hydrologic Region 5 (Sacramento River), with a baseline water use of 253 gpcd and a 2020 target of 176 gpcd. Residential users are the highest water users with 174 gpcd. This document can be used in the IRWMP to describe existing water use, water conservation targets, potential statewide savings, and water conservation strategies.

Disadvantaged Communities Mapping Tool

DWR has developed a mapping tool to help determine which communities in an IRWM region meet the Disadvantaged Community (DAC) median household income (MHI) definition. The maps and GIS files are derived from the US Census Bureau's American Community Survey (ACS) and are compiled for the 5-year period 2006-2010. DAC status is determined based on the DAC definition provided in DWR's Proposition 84 and 1E IRWM Guidelines, dated August 2010. An MHI of less than \$48,706 is the DAC threshold (80% of the Statewide MHI). Geographic Information System (GIS) files used to generate maps are provided for those with GIS capabilities.

Groundwater Resources

Groundwater Information Center

DWR's Groundwater Information Center is a website maintained by DWR (www.water.ca.gov/groundwater) that can be used to describe the relationship between groundwater and surface water.

Bulletin 118 and Related Resources

DWR's Bulletin 118 presents the results of groundwater basin evaluations in California. The Upper Feather River watershed is located within the Sacramento Valley basin, and there are a number of groundwater subbasins within the region. Resources include the 2003 Update of Bulletin 118, region-specific Bulletin reports, and groundwater basin maps and descriptions.

Climate Change Resources

Similar to the federal agency involvement in climate change planning, several state agencies have also been involved in climate change research and planning documents, including the California Department of Water Resources, California Energy Commission, and California Air Resources Board. State-prepared documents that will be useful in climate change vulnerability assessments and adaptation strategies include the following:

- *Managing an Uncertain Future: Climate change adaptation strategies for California's water* (California Department of Water Resources, 2008) provides a profile of the observed climate phenomena at the state level that have bearing on the region and provides adaptation strategies for addressing the phenomena. This document can be used for the existing setting of climate change and in developing climate change adaptation strategies.
- *Cal-Adapt – Exploring California's Climate Change Research* (California Energy Commission) provides modeled climate trend graphs, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters. This information can served as a source of comparison with other modeling of the watershed for high and low greenhouse gas emission (GHG) scenarios.
- *California Climate Adaptation Strategy* (California Natural Resources Agency, 2009) proposes a set of recommendations for policy development to protect the state from the effects of climate change and generally focuses on GHG reduction strategies. This document can be used in the IRWM Plan process to help develop climate adaptation goals.
- *The Climate Change Scoping Plan: A framework for change* (California Air Resources Board, December 2008) calls for a reduction in California's carbon footprint by reducing GHGs to 1990 levels, or cutting approximately 30 percent from business-as-usual emission levels projected for 2020. Significant progress can be made toward the 2020 goal relying on existing technologies and improving the efficiency of energy use. A number of solutions are "off the shelf," and many – especially investments in energy conservation and efficiency – have proven economic benefits. Other solutions involve improving infrastructure, transitioning to cleaner and more secure sources of energy, and adopting 21st century land use planning and development practices. This plan can assist in providing climate change adaptation strategies for the IRWM Plan.
- *Proposition 84 & Proposition 1E Integrated Regional Water Management Guidelines* (California Department of Water Resources, November 2012) provides IRWM Plan guidance on aspects of climate to be discussed, strategies to be considered, and assessment of GHG emissions to be included in IRWM Plans. It will be used for DWR compliance in the IRWM Plan process.

Local and Regional Plans

Urban Water Management Plans

Since 1983, the Urban Water Management Planning Act has required urban water suppliers that serve more than 3,000 customers, or that deliver more than 3,000 AF per year, to prepare and adopt an Urban Water Management Plan (UWMP). The Act provides that urban water suppliers must prepare, adopt, and submit UWMPs to DWR in order to be eligible to receive funding for certain programs, including Proposition 50. UWMPs provide water management strategies for their service area as well as baseline data on water deliveries, supply and demand, supply reliability, and climate and precipitation statistics.

There are no applicable UWMPs within the Upper Feather IRWM planning area. Just outside the Upper Feather River IRWM planning area to the west, the South Feather Water & Power Agency (SFWPA) has prepared an UWMP (2010) for their 31,000-acre service area, which serves approximately 6,650 households in the Oroville area of Butte County. SFWPA operates a hydropower project (South Feather Power Project, FERC License No. 2088) on the South Fork of Feather River and Slate Creek. This project includes numerous reservoirs with a combined storage of 164,577 AF. Given that SFWPA operates water storage and hydropower projects within the Upper Feather IRWM planning area, their UWMP will be a resource on the issue of exported water in the Upper Feather IRWMP.

Agricultural Water Management Plans

The Agricultural Efficient Water Management Act of 1990 (AB 3616) defines state requirements for Agricultural Water Management Plans (AWMPs), which are intended to document that agricultural water is being used efficiently. The Act also requires DWR to support and assist in implementation of practices that increase statewide water use efficiencies. DWR supports the Agricultural Water Management Council (Council) that consists of members of the agricultural and environmental communities and other interested parties.

AWMPs may be prepared as a requirement of the Central Valley Project Improvement Act (Central Valley Project contractors using water for agriculture are required to prepare AWMPs), or in accordance with the requirements of the Water Conservation Act of 2009 (SBx7-7) (water purveyors who deliver water to over 25,000 acres must prepare an AWMP).

Although Plumas County alone had 162,000 acres of planted crops in 2010 per the 2035 Plumas County General Plan Update, the region's water purveyors are not subject to either state mandate for the preparation of AWMPs, and there are no AWMPs in the Upper Feather IRWM planning area. It should be noted that Sierra Valley Resource Conservation District provides information on several agricultural water-related projects, including the Sierra Valley Agricultural Water Quality and Habitat Enhancement Project, and the Upper Long Valley Creek Agricultural Lands Improvement Project.

Groundwater Management Plans

Groundwater management is the planned and coordinated local effort of sustaining the groundwater basin to meet future water supply needs. With the passage of Assembly Bill (AB) 3030 in 1992, local water agencies were provided a systematic way of formulating Groundwater Management Plans (GWMPs). AB 3030 also encourages coordination between local entities through joint-power authorities or MOUs. SB 1938, passed in 2002, further emphasized the need for groundwater management in California. SB 1938 requires AB 3030 GWMPs to contain specific plan components to receive state funding for water projects.

In the Upper Feather IRWM planning area, the largest groundwater basin is in Sierra Valley. The Sierra Valley groundwater basin experiences a wide range of water quality conditions, primarily associated with naturally occurring mineral constituents. The most affected portion of the basin is found in the central west side of the valley where fault-associated thermal waters and hot springs yield water with high concentrations of boron, fluoride, iron, and sodium. Although there are no GWMPs in the planning area, Sierra Valley has been the subject of numerous groundwater studies and management documents related to safe extraction quantities, water supply, groundwater level, and water quality, including the following:

- Sierra Valley Hydrogeologic Studies (2005)
- Results of the Fall 2005 Aquifer Tests in Sierra Valley (2006)
- Technical Report on 2005-2011 Hydrogeologic Evaluation for Sierra Valley (2012)

Other documents, such as a number of studies on meadow restoration in the planning area and *the Feather River Watershed Management Strategy for Implementing the Monterey Settlement Agreement*, which discuss groundwater recharge, are also useful in groundwater issues research.

As noted under “Other State Resources” above, DWR’s region-specific Bulletin 118 reports are also pertinent to local groundwater conditions.

City and County General Plans

California state law requires each city and county to adopt a general plan for their physical development, including any land outside its boundaries which bears relation to its planning. The California Supreme Court has called the general plan the “constitution for future development.” The goals, policies and objectives contained in each of the city or county general plans are intended to underlie most land use- and resource-related decisions, including those that affect water supplies and quality.

Of the seven mandatory elements that cities and counties must cover in their general plans, some degree of water management information is required in five of them:

- Land use
- Circulation
- Conservation
- Open-space
- Safety

In addition, many general plans include optional elements, such as public services, recreation, hydrology and water quality, agricultural resources, and climate change or greenhouse gas emissions. These optional elements also include water management data.

The City of Portola is the only incorporated city within the IRWM Plan area and has adopted a *Parks and Recreation Master Plan* in addition to its General Plan. Plumas County, the primary county within the plan area, is actively engaged in the IRWM planning process and RWMG, and has assumed the role of lead agency for the IRWM Plan. Other jurisdictions with applicable General Plans within the IRWM planning area include Butte County, Lassen County, and Sierra County. These plans and their applicable planning horizons are shown in Table 2 below:

Table 2. General Plans in Upper Feather IRWM Planning Area

Plan	Year Adopted	Planning Horizon
City of Portola General Plan	2012	2020
Plumas County General Plan	2013	2035
Butte County General Plan	2012	2030
Lassen County General Plan	1999	2020
Sierra County General Plan	1996	2012

The *Plumas County General Plan* acknowledges that buildout of the General Plan may deplete groundwater resources or interfere with groundwater recharge, and provides mitigation including the support of the IRWM Plan and groundwater recharge protection measures. It also indicates that General Plan implementation may result in development within dam failure inundation zones, a significant and unavoidable impact even with the preservation of floodplain areas and management of new development in hazardous areas.

Both Butte and Plumas County’s general plans include a Water Resources Element that specifically addresses water sources, storm water management, water service providers, water storage facilities, the supply and demand of water, as well as each County’s management efforts. Plumas County’s Agriculture and Forestry Element and Butte County’s Agriculture Element will also be helpful in the preparation of the IRWM Plan. Both plans also contain discussions on GHGs in their Conservation and Open Space Elements.

It should also be noted that both the general plans and their corresponding EIRs are valuable resources in the IRWM planning process.

County Hazard Mitigation Plans/Emergency Operations Plans

The purpose of Hazard Mitigation Plans (HMPs) is to better protect people and property from the effects of hazard events or emergencies such as wildfire, flooding, and drought. Development of HMPs ensures participating jurisdictions’ continued eligibility for certain federal disaster assistance, specifically the FEMA Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance Program (FMA). Completion also earns credits under the National Flood Insurance Program’s Community Rating System (CRS) which provides for lower flood insurance premiums in CRS communities.

Hazard mitigation plans in the Upper Feather IRWM planning area include the following:

- *Butte County Hazard Mitigation Plan* (May 2013)
- *Lassen County, Susanville, Susanville Indian Reservation Hazard Mitigation Plan* (March 2010)
- *Plumas County Hazard Mitigation Plan* (2006, currently being updated)

In the Upper Feather IRWM planning area, wildfire, flooding, drought, and infrastructure failures are the primary water-related hazards listed in the local HMPs.

Municipal Service Reviews

Under the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code §56000, et seq.), public agencies whose boundaries and governance are subject to LAFCo must provide a review of the public services such as water, fire protection, and reclamation provided every five years. MSRs provide comprehensive knowledge of available services, future needs for each service, and the efficiency and expansion capacity of service providers.

In the Upper Feather IRWM planning area, the following MSR are available as reference sources:

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

The Lake Almanor MSR includes ten different service providers of various services, while the Eastern Plumas MSR includes seventeen different service providers. In utilizing these sources, the determinations made for each service provider should be reviewed for information on adequate infrastructure, supply, and growth projections. Determinations on water, wastewater, fire, and recreation services should specifically be reviewed for water-related issues.

Water Supply Master Plans

There are no local, mandated water supply master plans or water supply assessments under Senate Bills 610 and 221 in the Upper Feather IRWM planning area.

However, the Plumas County Flood Control and Water Conservation District (Plumas County FCWCD), has co-sponsored at least two watershed management plans as discussed below. The Plumas County FCWCD is a water district governed by the Plumas County Board of Supervisors that delivers municipal and irrigation water supplies from the State Water Project and promotes watershed restoration and management in the Upper Feather River region. It also serves as the Grantee for the current Upper Feather River IRWM Plan Update and for various Proposition 50 IRWM associated projects.

Watershed Management Plans

A number of local watershed management plans have been prepared within the Upper Feather IRWM planning area, including the following:

- Feather River Watershed Management Strategy for Implementing the Monterey Settlement Agreement (2004)
- Feather River Coordinated Resource Management Group Annual Reports (2005-2013)
- Coordinated Resource Management Plan for the East Branch of the North Fork Feather River (1989)
- Lake Almanor Watershed Management Plan (2009)
- 2014 Lower Owens River Project: Adaptive Management Recommendations (2014)
- Coordinated Resource Management Plan for the Feather River (1996)
- The Delta Plan (2013)

These documents establish priorities for watershed management and restoration actions. The watershed plan goals include improving temporal retention of water, increasing base flows, reducing sedimentation, protecting streambanks, improving upland vegetation, improving groundwater recharge, and providing adaptive management solutions. These plans will be integrated into the Upper Feather IRWM Plan in terms of watershed management strategies, adaptive management approaches, goals, and identified or perceived conflicts among water users.

2: Review of Other Data

A systematic search for information on watershed management and planning in the Upper Feather IRWM planning area uncovered approximately 200 data sources (a number that is growing as the IRWM Plan

process unfolds) for use in the IRWM Plan. Some of these sources are “mandatory” or legally required documents as specified in the scope of work for this baseline data summary, but many are not. Non-mandatory source material are equally as useful in the research and writing of watershed management topics covered in the IRWM Plan and as such are included in a brief discussion here. Most are primary sources of information such as scientific studies, non-profit organization (NPO) generated technical studies, document collections (such as the Climate Adaptation Knowledge Exchange, an NPO website which includes case studies, adaptation plans, climate adaptation tools), legal documents, U.S. Census documents, and monitoring reports. These documents cover a range of topics that can be generally categorized as follows:

- Biotic studies and assessments
- Climate change case studies, adaptation plans, vulnerability assessments, and planning tools
- Demographic information/DACs
- Flood studies
- Forest and wildfire studies
- Planning laws
- Recreation-related documents
- Restoration studies
- Stream flow studies
- Water quality studies and monitoring reports
- Watershed assessments

Given the large number of non-mandatory data found, please see a synopsis of these documents by category in Appendix A to this document.

3: Analysis of Data Gaps

This technical document review identified several data gaps that should be addressed in the IRWM Plan as well as over the long-term, in planning for the Upper Feather watershed area:

- Conjunctive water use and conjunctive water management resources
- Recreation planning resources
- Water supply and management plans

These data gaps are discussed in further detail below.

Conjunctive Water Use & Management Resources

More data and studies are needed on conjunctive water use and conjunctive water management strategies in the planning area.

Conjunctive water use is an approach that recognizes the hydrologic connection between surface water and groundwater so as to manage the overall water supply more efficiently. Methods for conjunctive water use can consist of groundwater use by individuals to supplement limited surface water supplies, or it can consist of regional water management programs that store large volumes of surface water below ground during normal and high rainfall years in order to pump groundwater from storage during drought years. Both types use surface water and groundwater together to improve the overall availability and reliability of water supply. The IRWM planning process would benefit from a review of existing conjunctive water use practices in the Upper Feather IRWM planning area, as well as recommendations for potential new conjunctive water use practices that could ease water supply and reliability issues.

Conjunctive water management engages the principles of conjunctive water use, where surface water and groundwater are used in combination to improve water availability and reliability. However, conjunctive water management also includes important components of groundwater management such as monitoring, evaluation of monitoring data to develop local management objectives, and use of monitoring data to establish and enforce local management policies. Scientific studies are needed to support conjunctive water management. They provide important data to understand the geology of aquifer systems, how and where surface water replenishes the groundwater, and flow directions and gradients of groundwater. These types of studies would benefit the IRWM planning process and should lead to conjunctive management strategy recommendations in the IRWM Plan. To support this effort, a Water Balance Study is being prepared by Plumas Geo-Hydrology as part of the work plan for the IRWM Plan Update.

Recreation Planning Resources

A survey of recreation documents in the planning area uncovered one recreation use survey on Little Last Chance Creek, a Parks and Recreation Master Plan for the City of Portola, and a database of recreation documents on an NPO site. The following additional agencies provide recreation services in the IRWM planning area:

- Eastern Plumas Recreation District
- Whitehawk Ranch CSD
- Almanor Recreation and Park District

No recreation plans for these districts were found. Recreation plans are significant in the context of IRWM planning when recreation relates to water consumption (e.g., irrigation for parks) and water use (e.g., rafting, boating, and fishing). Given the lack of recreation use documents for primary water bodies in the planning area, the IRWM outreach process will need to include informational interviews on recreational use of water bodies in the plan area.

Water Supply and Management Plans

State-mandated water supply documents and legislation such as the 20X2020 Water Conservation Plan, Senate Bills 610 and 221, and the State Water Resources Control Board's "Notice of Surface Water Shortage and Potential for Curtailment of Water Right Diversions for 2015" will all impact water supply discussions during the IRWM planning process. Other valuable resources related to water supply include groundwater management plans for some of the groundwater basins in the local valley areas, local general plans and general plan EIRs, and municipal service reviews. A data gap is identified, however, in terms of agricultural water management plans, drought action plans, and comprehensive water supply planning documents for the larger planning area that might match in scope the level of information provided in an UWMP.

APPENDIX A: BASELINE RESOURCES BY CATEGORY

Information Type	Title	Originator Name	Description	Date	Website	Topic areas/keywords
BIOTIC STUDIES AND ASSESSMENTS						
Document	Molecular analysis of the Spanish Creek Rana population (Plumas County, California) supports taxonomic placement within <i>Rana boylei</i>	Thomas J. Poorten, Erica Bree Rosenblum, Roland A. Knapp	Study on whether a frog population in Spanish Creek, Plumas County, California is affiliated with the Sierra Nevada yellow-legged frog <i>Rana sierrae</i> or the foothill yellow-legged frog <i>Rana boylei</i> .	2013	http://www.feather-river-crm.org/pdf/SpanishCk_YLF%20Report_CDFWfinal%202013.pdf	biota, biological resources, Spanish Creek
Document	Yellow Creek Whirling Disease Study: Investigating the Presence and Potential Severity of Whirling Disease in Yellow Creek	Dr. E. Scott Weber III, Kirsten Malm, M.S., Dr. Dolores V. Baxa, PhD, Susan C. Yun, B.S., Dr. Lori Campbell, DVM, PhD	This study evaluates the status of Whirling Disease (WD) within Yellow Creek and Humbug Valley.	31-Dec-12	http://www.feather-river-crm.org/pdf/YC_FINAL%20REPORT.pdf	meadow restoration, Humbug Valley, Yellow Creek
Document	Last Chance Creek Fish Data Summary	Plumas Corporation	This summary pulls together all known fisheries data collected in Last Chance Creek to date. The summary contains agency conducting the monitoring; dates, locations, and descriptions of each effort; and species, sizes, or weights of fish found during each effort.	Mar-13	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=66&Itemid=66	fishery, fishery data, Last Chance Creek
Document	Red Clover Creek Fish Data Summary	Plumas Corporation	This summary pulls together all known fisheries data collected on Red Clover Creek to date. The summary contains agency conducting the monitoring; dates, locations, and descriptions of each effort; and species, sizes, or weights of fish found during each effort.	Feb-13	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=66&Itemid=66	fishery, fishery data, Red Clover Creek
Document	Contribution of French Lake Spill to the Fishery of Little Last Chance Creek	California Department of Water Resources	Study of how water level relative to a spillway in French Lake contributed to the success of migrating fish.	Dec-98	http://www.water.ca.gov/pubs/environment/fish/contribution_of_frenchman_lake_spill_to_the_fishery_of_little_last_chance_creek/frnchmn.pdf	fishery, fish migration, fish passage, dam, spillway
Document	Mediterranean Climate effects. I. Conifer WATER USE ACROSS A SIERRA NEVADA ECOTONE	American Journal of Botany	Xylem water potential of the midelevation conifers <i>Pinus jeffreyi</i> , <i>Pinus lambertiana</i> , <i>Abies concolor</i> , and <i>Calocedrus decurrens</i> , the higher elevation <i>Pinus monticola</i> and <i>Abies magnifica</i> , and co-occurring evergreen angiosperm shrubs, together with soil moisture under these plants. were monitored at three sites on the Kern	2001	http://www.ncbi.nlm.nih.gov/pubmed/11353716	climate, forest health, biotic study
CLIMATE CHANGE						
Document	Tracking the Impact of Climate Change on Central and Northern California's Spring Snowmelt Subbasin Runoff	Gary J. Freeman	This study found that orographically influenced subbasins were least impacted by the effects of climate change, while those areas that were either in rain shadow or were behind topographic barriers revealed larger climate change impact in the form of reduced snowpack, spring runoff, and sometimes runoff for the water year.	2010	http://www.feather-river-crm.org/pdf/Freeman2010.pdf	climate change, snowmelt, runoff
Document	Quantification of Carbon Sequestration Benefits of Restoring Degraded Montane Meadows	Feather River Coordinated Resource Management	A Technical Advisory Committee developed and refined a multi-project sampling protocol for three restored meadows and three un-restored meadows. Data from the un-restored meadows will also provide base-line data for before and after restoration comparisons. Initial data analysis indicates that restored meadows contain twice	2010	http://www.feather-river-crm.org/images/stories/Publications/CarbonTechRpt.pdf	carbon sequestration, meadow restoration

Document	Looking for Recent Climatic Trends and Patterns in California's Central Sierra	Gary J. Freeman	In this paper, an array of monthly and seasonal groupings of historic precipitation, snowpack and runoff are analyzed to reveal possible subtle signs of climatic oscillation and trending. While no attempt is made here to forecast future cycles of wetness based on observations of historic data, or being able to define the wetness	2002	http://www.feather-river-crm.org/pdf/Freeman2002.pdf	climate change, hydroelectric, water flow, snowpack, runoff, snowmelt
Document	Climate Change and the Changing Water Balance for California's North Fork Feather River	Gary J. Freeman	Both the Lake Almanor and East Branch of the North Fork Feather (EBNFFR) subbasins are two rain-shadowed subbasins that exhibit a declining trend in water year runoff. Trend declines that approach 308 hm ³ (250,000 AF)/year collectively from the two subbasins since the early 1950s. The impact of climate change on monthly river flows in California's Sierra Nevada and southern Cascade Mountain Ranges and its potential to impact hydroelectric production was analyzed to determine changes that have taken place in two successive 35-year periods during the past 70 years. March flows were larger for the Conditions leading into the 2014 drought included 15-years of generally declining wetness over much of California causing the northern California's porous volcanic aquifer storage to decline significantly from the aquifer's relatively high mid-1990's storage state. Also water year runoff from rain-shadowed areas of the Modeled climate trend graphs were accessed for temperature degrees of change, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters.	2011	http://almanorpost.com/tap/wp-content/uploads/2014/02/2011Freeman.pdf	climate change, Feather River, orographic, water balance, rain shadow, northern climate change, subbasin, unimpaired flow, orographic, hydroelectric
Document	Analyzing the Impact of Climate Change on Monthly River Flows in California's Sierra Nevada and Southern Cascade Mountain Ranges	Gary J. Freeman	The impact of climate change on monthly river flows in California's Sierra Nevada and southern Cascade Mountain Ranges and its potential to impact hydroelectric production was analyzed to determine changes that have taken place in two successive 35-year periods during the past 70 years. March flows were larger for the Conditions leading into the 2014 drought included 15-years of generally declining wetness over much of California causing the northern California's porous volcanic aquifer storage to decline significantly from the aquifer's relatively high mid-1990's storage state. Also water year runoff from rain-shadowed areas of the Modeled climate trend graphs were accessed for temperature degrees of change, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters.	2012	http://almanorpost.com/tap/wp-content/uploads/2014/02/2012Freeman.pdf	drought, climate change, reservoirs, Sierra, hydroelectric
Document	The 2014 California Drought - Dealing with Extreme Dryness from a Hydroelectric Planning Perspective	Gary J. Freeman	Modeled climate trend graphs were accessed for temperature degrees of change, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters.	2014	http://almanorpost.com/tap/wp-content/uploads/2014/06/WS_C_2014-Drought-Poster-Paper_Durango_April-6-2014-	Sierra, hydroelectric
Document	Some Hydrometeorological Effects of Climate Change for the North Fork Feather River Headwater Drainage with Focus on the Lake Almanor and the East Branch Subbasins	Gary J. Freeman	Modeled climate trend graphs were accessed for temperature degrees of change, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters.	6-May-14	http://almanorpost.com/tap/wp-content/uploads/2014/06/Plumas-County-SThrall-May-6-2014A.pdf	climate change, north fork feather river, lake almanor, headwaters, snowmelt, runoff
Database	Climate and Precipitation Data	NOAA	Precipitation data.	2015	http://hdsc.nws.noaa.gov/hdsc/pfds/	precipitation, weather, flooding
Document	Satellite observations indicate rapid warming trend for lakes in California and Nevada	P. Schneider, et al.	Large lake temperatures are excellent indicators of climate change. Analysis of seventeen years of data from the Along-Track Scanning Radiometer series of sensors and data from the Moderate Resolution Imaging Spectroradiometer shows that six lakes situated in California and Nevada (including Lake Almanor) have exhibited	25-Nov-09	http://www.sierrainstitute.us/Reportsandpresentations.html	climate change, warming, lake temperatures, water temperature
Multi-media	State of the Almanor Basin Watershed Forum	Sierra Institute for Community and Environment	The State of the Almanor Basin Watershed Forum was held on Tuesday October 21, 2014 from 6:00pm to 8:00pm at the Almanor Recreation Center (Chester, CA). The Forum was hosted by the Lake Almanor Watershed Group, a project of Sierra Institute for Community and Environment. The Forum focused on California's current climate and precipitation trends, and how these factors relate to the health and productivity of the Almanor Basin Watershed. The presenters included Department of Water	12-Oct-14	http://sierrainstitute.us/index.php/forests-and-watersheds/upper-feather-river-watershed/upper-feather-watershed-overview	lake almanor, lake almanor watershed, climate change, water quality
Document	California's Fourth Climate Change Assessment: Proposed Non-Energy Research Portfolio	State of California	California's leadership in climate change policy is built on a strong foundation of research addressing the impacts of climate change on the state, as well as strategies to dramatically reduce greenhouse gas emissions. In turn, the state's research responds directly to policy needs related to safeguarding	2014	http://climatechange.ca.gov/climate_action_team/reports/climate_assessments.html	water supply, climate change
Document	Plumas County Greenhouse Gas Inventory (Appendix E to the Plumas County General Plan EIR)	Plumas County	This report provides estimates of greenhouse gas emissions resulting from activities in Plumas County as a whole in 2005.	Apr-14	http://www.countyofplumas.com/DocumentCenter/View/93	climate change, greenhouse gases

Document	Water management adaptation with climate change	Josué Medellín-Azuara, Christina R. Connell, Kaveh Madani, Jay R. Lund, and Richard E. Howitt.	Explores water management adaptation in California using two scenarios: a warm-dry and a warm-only. Modeled findings project consequences that allow separation of precipitation and temperature effects for hydrological adaptation. Specific reference to changes in water supply for the Sacramento basin are relevant to Profile of the observed climate phenomena at the state level that have bearing on the region	Aug-09	http://www.uceiee.org/downloads/CEC-500-2009-049-F.pdf	climate change, greenhouse gases
Document	Managing An Uncertain Future: Climate change adaptation strategies for California's water	California Department of Water Resources	Website providing climate change data and resources for the State's scientific and research community.	Oct-08	http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf	climate change, greenhouse gases
Document	Cal-Adapt – Exploring California's Climate Change Research	California Energy Commission	Website providing climate change data and resources for the State's scientific and research community.	2015	http://cal-adapt.org/tools/	climate change, greenhouse gases
Presentation	Adapt Flee or Perish. Water and climate change.	J.T. Andrew, CA DWR, Public Health Working Group.	Projected impacts to water resources from climate change. Climate change mitigation in the water sector. Adaptation to climate change in the water sector. Climate change and water quality	Jul-05	http://www.cakex.org/virtual-library/1959	climate change, greenhouse gases
Multi-media	Cal-Adapt – Exploring California's Climate Change Research.	California Energy Commission	Modeled climate trend graphs were accessed for temperature degrees of change, precipitation decadal averages, and wildfire risk, with GIS imaging of all parameters.	Dec-08	http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf	climate change, greenhouse gases
Document	2009 California Climate Adaptation Strategy	California Natural Resources Agency	Proposes a set of recommendations for policy development to protect the state from the effects of climate change and generally focuses on GHG reduction strategies.	2003	http://www.westernsnowconference.org/proceedings/pdf_Proceedings/2003%20WEB/FreeMan,%20G._Climate%20Change%20and%20CA's%20Diminish	climate change, greenhouse gases
Document	Climate Change Scoping Plan: A framework for change	California Air Resources Board	This plan calls for a reduction in California's carbon footprint by reducing greenhouse gas emissions to 1990 levels, or cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 15 percent from today's levels. Significant progress can be made toward the 2020 goal relying on Displays PG&E's early findings on possible impacts to hydropower generation from observed increases in runoff from winter rainfall and concomitant decrease in spring snowmelt.	2008	http://www.westernsnowconference.org/proceedings/pdf_Proceedings/2008/Freeman.RunoffImpactsOfClimateChangeOnNorthernCalifornia'sWatershed	climate change, greenhouse gases
Document	Climate change and California's diminishing low elevation snowpack - a hydroelectric scheduling perspective	Gary J. Freeman	Displays PG&E's early findings on possible impacts to hydropower generation from observed increases in runoff from winter rainfall and concomitant decrease in spring snowmelt.	2008	http://www.enerty.ca.gov/pier/project_reports/500-03-58cf.html	climate change, greenhouse gases
Document	Runoff impacts of climate change on northern California's watersheds as influenced by geology and elevation—a mountain hydroelectric system perspective	Gary J. Freeman	Characterizes the relationship of geology and elevation to groundwater flows in the region, the relationship of groundwater and runoff from reduced snowmelt and their combined effects on runoff trends.	Nov-12	http://www.water.ca.gov/irwm/guidelines.cfm	climate change, greenhouse gases
Document	The response of vegetation distribution, ecosystem productivity, and fire in California to future climate scenarios simulated by the MC1 dynamic vegetation model	J.M. Lenihan	Analysis of vegetation and effects on vegetation from climate change using modeled data.	Mar-12	http://www.fs.fed.us/psw/publications/documents/psw_gtr237/psw_gtr237_023.pdf	climate change, greenhouse gases

Document	Proposition 84 & Proposition 1E Integrated Regional Water Management Guidelines	California Department of Water Resources	Guidance for the Plan on aspects of climate to be discussed, strategies to be considered, and assessment of GHG emissions.	Dec-11	http://www.water.ca.gov/climatechange/docs/Climate_Change_Handbook_Regional_Water_Planning.pdf	climate change, greenhouse gases
Document	Climate Change and the Relevance of Historical Forest Conditions, Chapter 3 of Managing Sierra Nevada Forests	Safford, H.D., M. North, and M.D. Meyer	Chapter 3 of Managing Sierra Nevada Forests consists of a technical study on current conditions of climate change in Sierra Nevada Forests, likely future patterns, and the value of historical reference conditions to restoration.	Jun-06	http://pdf.wri.org/GHGProtocol-Tools.pdf	climate change, greenhouse gases
Document	Climate Change Handbook for Regional Water Planning	US Environmental Protection Agency, CA Department of Water Resources, US Army Corps of Engineers, and the Resource Legacy Fund	This handbook considers both climate change adaptation (reduction of impacts) and mitigation [greenhouse gas (GHG) reduction]. Quantitative tools and techniques for addressing both are introduced and discussed in order to prepare comprehensive IRWMPs. A guide to assess the vulnerability of a watershed or region	Dec-10	http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2010TechnicalSupportDocument.pdf	climate change, greenhouse gases
Document	The Greenhouse Gas Protocol: Designing a Customized Greenhouse Gas Calculation Tool	World Resources Institute	This guidebook explains how to customize a greenhouse gas (GHG) calculation tool (here referred to as the Tool Guidebook). It is designed to help the technical staff at GHG programs or initiatives such as GHG registries, and the technical staff at other institutions, such as local business or industry associations and/or consultants.	2015	http://www.ghgprotocol.org/	climate change, greenhouse gases
Document	The Emissions & Generation Resource Integrated Database for 2010	US Environmental Protection Agency	The Emissions & Generation Resource Integrated Database (eGRID) is a comprehensive inventory of environmental attributes of electric power. The preeminent source of emissions data for the electric power sector, eGRID is based on available plant-specific data for all U.S. electricity generating plants that provide power to the electric	2010	http://www.epa.gov/cleanenergy/energy-resources/egrid/	climate, greenhouse gas emissions
Database	CAKE: Climate Adaptation Knowledge Exchange	CAKE: Climate Adaptation Knowledge Exchange	This website provides large collection of climate adaptation case studies, plans, studies, tools, and other documents, and is frequently updated to provide the most recent information on the topic.	2015	http://www.cakex.org/	climate change, adaptation strategies, case studies

CONJUNCTIVE MGMT

Document	Conjunctive Water Management: What Is It? Why Consider It? What are the Challenges?	Toccoy Dudley (DWR) and Allan Fulton (UC Cooperative Extension)	This information document defines conjunctive water management and use and describes operational approaches to the conjunctive management of surface water and groundwater.	Not provided	http://cete.hama.ucanr.edu/files/20596.pdf	conjunctive use, conjunctive management, conjunctive water management.
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DEMOGRAPHIC INFORMATION & DACs

Database	2010 US Census data	US Census 2010	Demographic information for use in the Region Description of the IRWMP.	2010 and 2013	http://www.census.gov/2010census/ and http://quickfacts.census.gov/qfd/states/06/06115.html	census, demographics
Database	California Department of Finance Demographic Reports	California Department of Finance	Demographic information for use in the Region Description of the IRWMP.	2015	http://www.dof.ca.gov/research/demographic/reports/view.php	census, demographics, projections, population estimates

Website	Disadvantaged Communities Mapping Tool	California Department of Water Resources	DWR has developed a mapping tool to help determine which communities in an IRWM region meet the DAC median household income (MHI) definition. The maps and GIS files are derived from the US Census Bureau's American Community Survey (ACS) and are compiled for the 5-year period 2006-2010. DAC status is determined	2014	http://www.water.ca.gov/irwm/grants/resourceslinks.cfm	DACs, DAC, disadvantaged communities
FERC RELICENSING AND DAM FACILITIES						
Document	Rock Creek - Cresta Project, FERC Project No. 1962: Rock Creek - Cresta Relicensing Settlement Agreement	N/A	In 1991 PG&E and US Fish and Wildlife entered into an agreement for the Rock Creek-Cresta dam to establish minimum streamflows and other resource management measures for the protection, mitigation, and enhancement of fish and wildlife resources affected by the project. The newest settlement agreement supersedes the fish and wildlife agreement and was developed by a large group of entities known as the Rock Creek - Cresta Relicensing Collaborative who formed subcommittees and technical groups to resolve technical issues related to streamflow, fisheries, and whitewater recreation.	18-Sep-00	http://www.featherriverwater.com/images/FERC1962.pdf	FERC, PG&E, relicensing, licensing, Rock Creek, Cresta Reach, Bucks Creek, Chips Creek, Jackass Creek, Milk Ranch Creek, Grizzly Creek, Chambers Creek, North Fork Feather River
Document	Upper North Fork Feather River Project, FERC Project No. 2105: Project 2105 Relicensing Settlement Agreement	N/A	On October 23, 2002, PG&E filed an application with FERC for a new project license for the Upper North Fork Feather River Project, FERC Project No. 2105, on the North Fork Feather River in Plumas County. PG&E consulted with other individuals and organizations in the development of the studies and data supporting the application. These groups met with PG&E to collaboratively discuss the terms of the agreement. The agreement establishes lake level and stream flow issues for ecological purposes, river-based recreational uses, and other issues.	22-Apr-04	http://www.featherriverwater.com/images/FERC2105.pdf	FERC, relicensing, licensing, North Fork, Upper Feather, North Fork Feather River, PG&E
Document	FERC Project 619 - Bucks Creek: Fish Entrainment Risk Assessment	PG&E	To address the potential effect of entrainment at Project diversions and intakes on fish populations, existing documents and drawings describing the physical conditions and operations of the (1) Bucks Lake intake structure for Lower Bucks Lake and (2) Bucks Creek Powerhouse intake structure (in Grizzly Forebay) will be located and	11-Aug-14	http://www.bucksrelicensing.com/Public/Lists/Calendar/Attachments/14/FA-S2_Fish_Entrainment_Risk_Assessment_08-11-2014.pdf	fish passage, fish entrainment, FERC, FERC relicensing, Bucks Creek, Bucks Lake
Website	Bucks Creek Project Relicensing Website	PG&E and the City of Santa Clara	Website with relicensing and reference documents on the FERC relicensing of Bucks Creek (FERC Project 619).	2015	http://www.bucksrelicensing.com/Public/default.aspx	FERC, FERC relicensing, Bucks Creek, Bucks Lake
Website	Lake Oroville Project Relicensing Website	California Department of Water Resources	Website with relicensing and reference documents on the FERC relicensing of Lake Oroville facilities (FERC Project 2100).	2015	http://www.water.ca.gov/hlpc/o/p2100.cfm	FERC, FERC relicensing, Oroville
Website	South Feather Power Relicensing Website (FERC Project 2088)	FERC	Website with relicensing and reference documents on the FERC relicensing of South Feather Power facilities (FERC Project 2088).	2015	http://www.ferc.gov/industries/hydropower/enviro/eis/2009/06-04-09.asp	FERC, FERC relicensing, Little Grass Valley

Website	FERC Online Library	FERC	FERC licensing/relicensing documents.	2015	http://elibrary.ferc.gov/idmws/search/fercsearch.asp	FERC, FERC relicensing
Website	Poe Hydroelectric Project Relicensing Website (FERC Project 2107)	State Water Resources Control Board	Website with relicensing and reference documents on the FERC relicensing of Poe/North Fork Feather River project (FERC Project 2088).	2015	http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/poe_ferc2107.shtml	FERC, FERC relicensing, Poe, North Fork Feather River
Website	Poe Hydroelectric Project Relicensing Website (FERC Project 2107)	NOAA	Fisheries concerns with Poe relicensing project	2015	http://www.westcoast.fisheries.noaa.gov/fish_passage/ferc_relicensing/feather_river/poe.html	FERC, FERC relicensing, Poe, North Fork Feather River
Website	Project 2105 Committee	N/A	This website includes information on the FERC relicensing of Project 2105, which includes Lake Almanor, Butt Valley Reservoir, and Butt Valley, Caribou 1&2, Belden, and Oak Flat powerhouses. The center piece of the project is Lake Almanor which is located about 30 miles south of Mt. Lassen, the southern-most volcano in the Cascade	2015	http://www.project2105.org/	FERC, FERC relicensing, Project 2105, Upper North Fork Feather River, Lake Almanor

FLOODING

Document	Technical Report #1: Big Meadows Restoration Project, October 14, 2009 Flood Event	Jim Wilcox, Feather River Coordinated Resource Management, Plumas Corp.	The Big Meadows Restoration Project utilized a relatively new technology, called pond and plug, to re-connect the channel to its naturally evolved floodplain. This report document project performance.	22-Jan-10	http://www.feather-river-crm.org/pdf/BigMeadowsTechReport.pdf	pond and plug, floodplain, meadow restoration, flooding, flood management
Multi-media	Calculating Probable Maximum Precipitation in Complex Terrain	Edward Tomlinson, Chief Meteorologist, Applied Weather Associates, Inc.	Site-specific probably maximum precipitation study for a Southern California site with explanation of methodology involved.	24-Jun-14	http://www.appliedweatherassociates.com/uploads/1/3/8/1/13810758/kappel-ussd-2014-pirucreek-pmp.pdf	PMP, probable maximum precipitation, flooding
Multi-media	Comparing American River PMP Estimates to Historical Floods	Brett Whitin, Hydrologist, California-Nevada River Forecast Center, NOAA	The California-Nevada River Forecast Center hydrologic models were used to estimate the Probable Maximum Precipitation values using the historical precipitation and temperature patterns from the 1986 and 1997 floods.	2014	http://cepsym.org/procindex.php	PMP, probable maximum precipitation, flooding
Multi-media	Maximization of Historical Severe Precipitation Events over American, Yuba, and Feather River Basins	M. Levent Kavvas, Ph.D., Professor of Water Resources Engineering, UC Davis	This presentation discusses a new approach to determine the probable maximum precipitation (PMP) over the American, Yuba, and Feather rivers.	2014	http://cepsym.org/procindex.php	PMP, probable maximum precipitation, flooding,
Multi-media	The meteorology of extreme orographic precipitation in California—A synthesis as of 2014	Mike Dettinger, Research Hydrologist, USGS	A summary of Atmospheric Rivers (AR) research.	2014	http://cepsym.org/proceedings_2014.php#Dettinger	atmospheric rivers, atmospheric rivers, AR, flooding
Multi-media	PMP, Extreme Storm Probabilities, and Dam Safety: New Data, New Methods, Time to Update?	John F. England, Jr., Ph.D., Flood Hydrology Technical Specialist, US Bureau of Reclamation	This presentation highlights some ongoing work and issues regarding extreme weather events and PMP.	2014	http://cepsym.org/proceedings_2014.php#Dettinger	PMP, probable maximum precipitation, flooding, probable maximum flood.

Multi-media	Probable Maximum Flood Using HMR 59 for Piru Basin	Don Walker, P.E., Dam Safety Branch, Calif Dept of Water Resources	New design criteria (HMR 36 and HMR 58) were used to determine Probable Maximum Precipitation for Pyramid Dam. The new calculation procedures resulted in greater precipitation numbers and therefore higher needed freeboard levels at the dam.	2014	http://cepsym.org/proceedings_2014.php#Dettinger	PMP, probable maximum precipitation, flooding, probable maximum flood, PMP, probable maximum precipitation, flooding, probable maximum flood.
Multi-media	USACE Extreme Storm Team and Hypothetical Storm Analysis	Matthew J. Fleming, P.E., Chief, Hydrology and Hydraulics Technology Division, USACE	This study catalogs major historic precipitation events, performs site-specific PMP studies, and updates Corps guidance for hypothetical storm analysis.	2014	http://cepsym.org/proceedings_2014.php#Dettinger	PMP, probable maximum precipitation, flooding, probable maximum flood.
Document	Plumas County 2006 Hazard Mitigation Plan	Plumas County	Provides goals, objectives, and actions to prevent hazards such as wildfires and flooding in Plumas County.	2006	http://www.countyofplumas.com/index.aspx?NID=2214	hazards, flooding, wildfire, hazard plan
Document	Plumas County Emergency Operations Plan	Plumas County Office of Emergency Services	Part 1 of the plan describes the County's emergency management organization, the Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), roles, responsibilities, and administrative practices. Part 2 consists of an overview of the emergency management organization and how it Hazard mitigation plan to reduce or eliminate long-term risk to people and property from hazards.	1-Mar-11	http://www.countyofplumas.com/index.aspx?NID=1941	emergency plan, hazards, wildfire, flooding
Document	Butte County Local Hazard Mitigation Plan	Butte County	Hazard mitigation plan to reduce or eliminate long-term risk to people and property from hazards.	Jun-14	http://www.countyofplumas.com/index.aspx?NID=2218	hazards, flooding, wildfire, hazard plan
Document	Lassen County, City of Susanville, & Susanville Indian Rancheria Hazard Mitigation Plan	Lassen County, City of Susanville, & Susanville Indian Rancheria	The overall goal of the Hazard Mitigation Plan is to reduce the potential for damage to critical assets from natural hazards. In addition, the plan describes past and current hazard mitigation activities and philosophies, and outlines future mitigation goals and strategies	Oct-10	http://www.cityofsusanville.net/wp-content/uploads/documents/finance/LassenCountyMJHazardMitigationPlan.pdf	hazards, flooding, wildfire, hazard plan
Document	Producer Stories from Upper Feather River Watershed Farmers and Ranchers: Sierra Valley Ranch	UC Cooperative Extension and Upper Feather River Watershed Group	Report on improvements made to the 6,000-acre Sierra Valley Ranch to reverse flood damage, conserve water, and repair irrigation structures.	Not provided	http://ucce-plumas-sierra.ucanr.edu/files/19578.pdf	sierra valley, water rights, agricultural use, irrigation, infrastructure

FORESTS AND WILDLAND FIRES

Document	The State of the Sierra Nevada's Forests	Sierra Nevada Conservancy	There is a growing understanding that many Sierra Nevada forests are not healthy and that overgrown forests are susceptible to disease and intense wildfire. There is likewise broad consensus that science-based ecological restoration of our Sierra Nevada forests must be dramatically increased in order stem the tide of large, uncharacteristic wildfires. These wildfires threaten the very lifeblood of California - the forested watersheds of the Sierra Nevada.	2014	http://www.sierranevada.ca.gov/our-work/state-of-the-sierra	Wildfire, forest management
Document	Trends in Wildfire Severity: 1984 to 2010 in the Sierra Nevada, Modoc Plateau, and Southern Cascades, California, USA	Jay D. Miller and Hugh Safford	Wildfire severity in the Sierra Nevada Forest Plan Amendment area indicates that the percentage of total high severity fires in pine and mixed-conifer forests increased over the date range, and that the area burned has also increased.	2012	http://fireecologyjournal.org/journal/abstract/?abstract=173	wildfire, fire, fire severity, forest, sierra nevada forest plan amendment area

Document	Plumas County 2006 Hazard Mitigation Plan	Plumas County	Provides goals, objectives, and actions to prevent hazards such as wildfires and flooding in Plumas County.	2006	http://www.countyofplumas.com/index.aspx?NID=2214	hazards, flooding, wildfire, hazard plan
Document	Plumas County Hazardous Fuel Assessment and Strategy	Barry Callenberger and Zeke Lunder for Plumas County Firesafe Council	This document develops a framework for the prioritization of hazardous fuel reduction projects within the county. It establishes methods for assessing potential wildland fire behavior on a site-by-site basis, characterizes relative wildfire risk by community, and defines community-specific considerations in fuels management	22-Oct-04	http://www.countyofplumas.com/index.aspx?NID=2218	wildfire, fuels reduction
Document	Plumas County Emergency Operations Plan	Plumas County Office of Emergency Services	Part 1 of the plan describes the County's emergency management organization, the Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), roles, responsibilities, and administrative practices. Part 2 consists of an overview of the emergency management organization and how it	1-Mar-11	http://www.countyofplumas.com/index.aspx?NID=2218	emergency plan, hazards, wildlife, flooding
Document	Natural Infrastructure; Investing in Forested Landscapes for Source Water Protection	World Resources Institute, ed. Todd Gartner, et al.	Aging water infrastructure, increasing demand, continued land use change, and increasingly extreme weather events are driving the costs of water management higher in the United States. Investing in integrated water management strategies that combine engineered solutions with "natural infrastructure" can reduce costs, enhance	Not provided	http://www.wri.org/publication/natural-infrastructure	integrated water management strategies, natural infrastructure
Document	Forests and Water in the Sierra Nevada: Sierra Nevada Watershed Ecosystem Enhancement Project	Sierra Nevada Research Institute	In this white paper on the Sierra Nevada Watershed Ecosystem Enhancement Project (SWEET), we make the case that upstream management of Sierra Nevada forests can significantly increase the value of downstream water resources by shifting water towards	2011	http://ucanr.edu/sites/cff/files/146199.pdf	water supply, forests
Document	Soil moisture response to snowmelt and rainfall in a Sierra Nevada mixed-conifer forest	Sierra Nevada Research Institute and University of California, Merced	The aims of the research reported here at the scale of a headwater catchment in mixed-conifer forest were: i) to determine how the response of soil moisture to snowmelt and rainfall is controlled by variability across the landscape, as determined by terrain attributes and soil properties. and ii) to establish how these	2011	http://www.treesearch.fs.fed.us/pubs/39280	atmosphere, precipitation
Bibliography	The State of the Sierra Nevada's Forests	Sierra Nevada Conservancy	Bibliography for the State of the Sierra Nevada's Forests Report.	2014	http://www.sierranevada.ca.gov/our-work/state-of-the-sierra	forests, forestry
Document	Forest Health and Carbon Storage	Sierra Nevada Conservancy	This fourth report in the System Indicators series focuses on Sierra Nevada forests, and includes indicators related to Forest Health and Biomass/Carbon Storage on forest lands. In addition, this report describes the extent, character, and ownership of forest land in the Sierra Nevada Conservancy (SNC) Region.	2012	http://www.sierranevada.ca.gov/our-region/sys_ind_docs/4_3_forestcarbonstorage.pdf/view	forests, climate, atmosphere, carbon storage, climate change, greenhouse gases
Document	Soot superaggregates from flaming wildfires and their direct radiative forcing	SCIENTIFIC REPORTS	In a paper published this month in Nature Scientific Reports, a team of scientists led by Rajan Chakrabarty, Ph.D. graduate student Nicholas Beres from Nevada's Desert Research Institute report the observation of a previously unrecognized form of soot particle, identified by the authors as "superaggregates," from wildfire	2014	http://www.nature.com/srep/foxtrot/svc/authoremailform?doi=10.1038/srep05508&file=/srep/2014/140701/srep05508/full/srep05508.html&title=Soot+http://onlinelibrary.wiley.com/doi/10.1029/2009JD013530/abstract	Wildfire, forest management
Document	Global canopy interception from satellite observations	Journal of geophysical research; Atmospheres	This analysis presents daily values of canopy rainfall interception on a global 0.25° latitude-longitude resolution grid. It is based on the revised version of Gash's analytical model [Valente et al., 1997] driven by satellite remotely sensed data of precipitation, lightning frequency and canopy fraction	2010	http://onlinelibrary.wiley.com/doi/10.1029/2009JD013530/abstract	Wildfire, forest management, hydrology, climate change

Document	The State of the Sierra Nevada's Forests	Sierra Nevada Conservancy	There is a growing understanding that many Sierra Nevada forests are not healthy and that overgrown forests are susceptible to disease and intense wildfire. There is likewise broad consensus that science-based ecological restoration of our Sierra Nevada forests must be dramatically increased in order stem the tide of large. Fire will continue to be a major management challenge in mixed-conifer forests in the Sierra Nevada. Fire is a fundamental ecosystem process in these forests that was largely eliminated in the 20th century. Fire reintroduction is a critical goal but is subject to constraints such as smoke production, risk of fire moving outside	2014	http://www.sierranevada.ca.gov/our-work/state-of-the-sierra	wildfire, forest management
Document	Managing Sierra Nevada Forests	USDA Forest Service, Pacific Southwest Region	Using state-of-the-art models for fire, vegetation and post-fire erosion, we analyzed the potential impacts of a landscape-scale fuel treatments program in the upper Mokelumne watershed. In addition, we examined who would benefit the most from investing in fuel treatments and reducing the risk of high-intensity wildfires.	2012	http://www.fs.fed.us/psw/publications/documents/psw_gtr237/	Ecological Restoration, climate change, wildfire, forest management, biotic
Document	Mokelumne Watershed Avoided Cost Analysis: Why Sierra Fuel Treatments Make Economic Sense	Sierra Nevada Conservancy	A power point presentation by Malcolm North, April Brough, Jonathan Long, Brandon Collins and Marc Meyer USFS PSW, USFS Region 5, and UC Berkeley Outline: 1. Historical vs. Contemporary fire patterns 2. Contemporary treatment rates	2014	http://sierranevada.ca.gov/our-work/mokelumne-watershed-analysis/macafullreport	wildfire, forest management
Presentation	Increasing Pace and Scale of Fuels Reduction and Forest Restoration in the Sierra Nevada	USDA Forest Service, Pacific Southwest Region		2014	http://www.fs.fed.us/psw/publications/north/psw_2015_north001.pdf	fuel reduction, forestry, wildfire
Document	Carbon Sequestration and Storage by California Forests and Forest Products	CH2MHill		2007	http://www.calforests.org/wp-content/uploads/2012/11/Carbon-Sequestration-and-Storage-by-California-Forests-and-Forest-Products.pdf	fuel reduction, forestry, wildfire
Map	Plumas County Communities at risk WUI map	Plumas Fire Safe Council	Map showing Communities at risk and Wildland Urban Interface for Plumas County	2010	http://plumasfiresafe.org/	wildfire, wildfire hazard map
Document	Science Synthesis to Support Land and Resource Management Plan Revision in the Sierra Nevada and Southern Cascades	USDA Forest Service, Pacific Southwest Region	This synthesis emphasizes recent advances in scientific understanding that pertain to some of the most important issues facing managers across the synthesis area. These advances can help managers integrate ecological and social considerations across multiple spatial and temporal scales. The intent of this synthesis was in order to examine these options, the Team developed six management scenarios in which changes in carbon inventories were quantified over a 100-year timeframe. In addition, the study determined the monetary value of the carbon inventories, using hypothetical market assumptions, and evaluated the feasibility of	2013	http://www.fs.fed.us/psw/publications/documents/psw_gtr247/	forestry, land use
Document	National Forest Carbon Inventory Scenarios for the Pacific Southwest Region (California)	US Forest Service Region 5 Climate Change Interdisciplinary Team	As the Fairfax and Tarlock article pointed out, and as most everyone who lives in the Western United States knows, in the West, the availability of water determines the value of land.6 Given the importance of water to the value of land, it is timely today to take a look at the protections available to water on National Forest System	2009		climate change, forest
Document	Still No Water for the Woods	Lois G. Witte, ALI-ABA Federal Lands Law Conference October 19, 2001 Salt Lake City, Utah	Western US Forests are no longer resilient to disturbances such as wildfire and drought • Decades of fire suppression, intensive logging practices, and other factors have reduced heterogeneity and homogenized forests • Species composition has shifted from shade-intolerant, fire-resistant to shade-tolerant, fire-sensitive	2001	http://www.stream.fs.fed.us/pu	water supply, endangered species, threatened species, special-status species
Presentation	Landscape Management Demonstration Areas	Peter A. Stine USDA Forest Service		2014	https://nwllc.confex.com/nwllc	forest management, wildfire, fuels management

Document	An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests	USDA Forest Service, Pacific Southwest Region	Summarizes forest research completed at different scales and integrating those findings into suggestions for managing forests.			
Document	Mediterranean Climate effects. I. Conifer WATER USE ACROSS A SIERRA NEVADA ECOTONE	American Journal of Botany	Xylem water potential of the midelevation conifers <i>Pinus jeffreyi</i> , <i>Pinus lambertiana</i> , <i>Abies concolor</i> , and <i>Calocedrus decurrens</i> , the higher elevation <i>Pinus monticola</i> and <i>Abies magnifica</i> , and co-occurring evergreen angiosperm shrubs, together with soil moisture under these plants. were monitored at three sites on the Kern Chapter four of the PNF Land and Resource Management Plan	2001	http://www.ncbi.nlm.nih.gov/pubmed/11353716	climate change, forests, climate, water use
Collection	Plumas National Forest Land and Resource Management Plan	US Forest Service	describes specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM	1988	http://www.fs.usda.gov/land/plumas/landmanagement	USFS, Forest Service, Land and Resource Management Plan, Plumas National
Collection	Lassen National Forest Land and Resource Management Plan	US Forest Service	The water-related sections of this plan describe specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM Guidelines.	14-Jun-05	http://www.fs.usda.gov/main/lassen/landmanagement/planning	USFS, Forest Service, Land and Resource Management Plan, Lassen National
Document	Tahoe National Forest Land and Resource Management Plan	US Forest Service	This water-related sections of this this plan describe specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM Guidelines.	12-Jun-05	http://www.fs.usda.gov/main/tahoe/landmanagement/planning	USFS, Forest Service, Land and Resource Management Plan, Tahoe National
Document	California Spotted Owl, Songbird, and Small Mammal Responses to Landscape Fuel Treatments	Scott L. Stephens, et al.	Summarizes forest research completed at different scales and integrating those findings into suggestions for managing forests.	4-Sep-14	http://bioscience.oxfordjournals.org/content/early/2014/09/01/biosci.biu137	biota, biological resources, fuels treatment, wildfire, forest management

GROUNDWATER

Document	Big Valley Management Area Basin Management Objective Development Guidance Document	Brown and Caldwell	Groundwater resources have long played an important role in the development, growth, and sustainability of Lassen County and its residents. It is a source of drinking water, irrigation water for the agricultural community, and supports important environmental	5-Aug-11	http://www.lassenbmos.org/index_html_files/Big%20Valley%20BMO%20Guidance%20Document.pdf	Groundwater, Big Valley
Document	H51J-1350 Groundwater Discharge to Restored and Unrestored Meadow	USDA Forest Service, Pacific Southwest Region	A study of streamflow and groundwater level measurements in Red Clover Valley.	2011	http://www.feather-river-crm.org/pdf/SeepageRunPoster.pdf	Red Clover Valley, restored meadow, meadow restoration, groundwater
Document	Sierra Valley Hydrogeologic Studies	Kenneth D. Schmidt and Associates for Sierra Valley Groundwater Management District	This report describes the monitoring and testing of groundwater in Sierra Valley, offers hydrographs of water level, and provides an assessment of groundwater pumpage and safe yields in Sierra Valley.	May-05	http://featherriver.org/documents/	Sierra Valley, Groundwater, Sierra Valley Groundwater Management
Document	Results of the Fall 2005 Aquifer Tests in Sierra Valley	Kenneth D. Schmidt and Associates for Sierra Valley Groundwater Management District	Aquifer tests for new developments and older ranches in Sierra Valley.	Jan-06	http://featherriver.org/documents/	Sierra Valley, Groundwater, Sierra Valley Groundwater Management

Document	Letter to Governor Brown re May Revise and Watermaster Service Fees	Plumas County Board of Supervisors	Request to reinstate the State General Fund support for the watermaster program in 2011-2012 until a transition plan can be established and implemented.	7-Jun-11	http://featherriver.org/documents/	Watermaster, general fund, fee increas
Collection	Bulletin 118 and related resources, pertaining to the Sacramento Valley Basin	California Department of Water Resources	Bulletin 118 presents the results of groundwater basin evaluations in 2015 California. The Upper Feather River watershed is located within the Sacramento Valley basin, and there are a number of groundwater subbasins within the region. Resources include the 2003 Update of Bulletin 118, region-specific Bulletin reports, and groundwater basin maps and descriptions.		http://www.water.ca.gov/groundwater/bulletin118/index.cfm	groundwater, basin, subbasin, Bulletin 118
Document	Technical Report on 2005-2011 Hydrogeologic Evaluation for Sierra Valley	Sierra Valley Groundwater Management District	Report on groundwater levels, including contours, changes, monitoring wells, and long-term trends, in the Sierra Valley.	May-12	http://sierravalleygmd.org/TechnicalReport.pdf	sierra valley, groundwater management, conjunctive management.

INFRASTRUCTURE (COLLECTION, TREATMENT, STORAGE, DOMESTIC AND AG IRRIGATION FIXTURES)

Document	California Proposition 1, Water Bond (2014), Assembly Bill 1471		Proposition 1 authorizes \$7.12 billion in general obligation bonds for 2014 state water supply infrastructure projects, such as public water system improvements, surface and groundwater storage, drinking water protection, water recycling and advanced water treatment technology, water supply management and conveyance, wastewater Prepared for the Plumas Local Agency Formation Commission (LAFCo), this report is a regional municipal services review—a state-required comprehensive study of services within a designated geographic area. This MSR focuses on local agencies and other municipal service providers in the Lake Almanor region of Plumas		http://ballotpedia.org/California_Proposition_1,_Water_Bond_%282014%29	water quality, water supply, infrastructure, projects, surface water, groundwater municipal service
Document	Lake Almanor Area Municipal Service Review	Policy Consulting Associates, LLC for Plumas LAFCo	This report is a Municipal Service Review (MSR) report on fire services provided in Central Plumas County prepared for the Plumas Local Agency Formation Commission (LAFCo).	15-Oct-12	http://www.calafco.org/local/Plumas/Lake_Almanor_MSR_Public_Review_Draft_%28download%29.pdf	review, public services, public water, fire flow, municipal service review, public services, municipal services, fire, public safetv. LAFCO
Document	Central Plumas Fire Municipal Service Review	Policy Consulting Associates, LLC for Plumas LAFCo	Prepared for the Sierra LAFCo, this report is a regional municipal services review—a state-required comprehensive study of services within a designated geographic area. This MSR focuses on local agencies and other municipal service providers that provide municipal services, including water, wastewater, fire and EMS, park	9-Dec-13		municipal services, municipal service review, public services, municipal services, fire, public safetv. LAFCO
Document	City of Loyalton Municipal Service Review	Sierra LAFCo	This report is a Municipal Service Review (MSR) of services provided in the eastern region of Plumas County prepared for the Plumas Local Agency Formation Commission (LAFCo), including water, wastewater, fire & EMS, parks and recreation, cemetery, healthcare and streets.	9-Dec-10		municipal service review, public water, fire flow, municipal services, municipal service review, public services, public water, fire flow, municipal services,
Document	Eastern Plumas Municipal Service Review	Policy Consulting Associates, LLC for Plumas LAFCo	Report on improvements made to the 6,000-acre Sierra Valley Ranch to reverse flood damage, conserve water, and repair irrigation structures.	3-Oct-11	http://www.calafco.org/local/Plumas/Adopted-Eastern-Plumas-MSR.pdf	review, public services, public water, fire flow, municipal services, sierra valley, water rights, agricultural use, irrigation, infrastructure
Document	Producer Stories from Upper Feather River Watershed Farmers and Ranchers: Sierra Valley Ranch	UC Cooperative Extension and Upper Feather River Watershed Group		Not provided	http://ucce-plumas-sierra.ucanr.edu/files/19578.pdf	

Document	Whitehawk Ranch Mutual Water Company 2013 Annual Report	Whitehawk Ranch Mutual Water Company	Includes policies and treatment plant review and update.	Apr-14	http://www.whitehawkkranch.org/mwco2013annualreportfinal.pdf	public water, drinking water
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LAND PLANNING AND CONSERVATION

Collection	Plumas National Forest Land and Resource Management Plan	US Forest Service	Chapter four of the PNF Land and Resource Management Plan describes specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM	1988	http://www.fs.usda.gov/land/plumas/landmanagement	USFS, Forest Service, Land and Resource Management Plan, Plumas National
Collection	Lassen National Forest Land and Resource Management Plan	US Forest Service	The water-related sections of this plan describe specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM Guidelines.	5-Jun-14	http://www.fs.usda.gov/main/assen/landmanagement/planning	USFS, Forest Service, Land and Resource Management Plan, Lassen National
Document	Tahoe National Forest Land and Resource Management Plan	US Forest Service	This water-related sections of this plan describe specific management plans for the entire forest area and subsequent sections further detail specific sections of the forest. Many of the standards and guidelines presented in these chapters pertain to mandatory water elements as required by IRWM Guidelines.	5-Jun-12	http://www.fs.usda.gov/main/tahoe/landmanagement/planning	USFS, Forest Service, Land and Resource Management Plan, Tahoe National
Document	Feather River Resource Conservation District Long-range Workplan 2005-2009	Feather River Resource Conservation District	The plan provides a set of goals and objectives to conserve the soils, agriculture, water resources, and plant and animal resources.	9-Dec-04	http://www.conservation.ca.gov/dlrp/RCD/Documents/Plans/FRRCD%20long%20range%20plan.pdf	resource conservation district, agriculture, soil conservation, erosion, runoff
Document	Plumas County General Plan Update CEQA Findings and Statement of Overriding Considerations	ESA for Plumas County	This document includes the CEQA Findings, consistent with CEQA Guidelines Section 150901, and includes the Statement of Overriding Considerations, consistent with CEQA Guidelines Section 15093.	Nov-12	http://www.countyofplumas.com/index.aspx?NID=2248	plumas county, land use
Document	2035 Plumas County General Plan Update Draft EIR	ESA for Plumas County	This Draft Environmental Impact Report (DEIR) assesses the environmental impacts of the proposed 2035 Plumas County General Plan Update (proposed project or GPU).	Nov-12	http://www.countyofplumas.com/index.aspx?NID=2248	general plan, plumas county, land use
Document	2035 Plumas County General Plan Update Draft	ESA for Plumas County	The recently adopted General Plan for Plumas County. Currently in litigation by High Sierra Rural Alliance.	Dec-13	http://www.countyofplumas.com/index.aspx?NID=2116	general plan, plumas county, land use
Document	2012 Sierra County General Plan	Sierra County	The fundamental purpose of the General Plan is to protect Sierra County's existing qualities and address local concerns as the county grows. The General Plan is organized into seventeen chapters called elements (with each element addressing a different topic relating specifically to Sierra County), which staff relies on to help direct land	1996	http://www.sierracounty.ca.gov/index.aspx?NID=260	general plan, sierra county, land use
Collection	Butte County General Plan 2030	Butte County	The Butte County General Plan 2030 provides direction on how the County will fulfill its community vision and manage its future growth..	6-Nov-12	http://www.buttegeneralplan.net/products/2010-10-26_GP_Adopted/	general plan, butte county, land use

Document	Lassen County General Plan 2000	Lassen County	Lassen County's General Plan provides direction on how the County will fulfill its community vision and manage its future growth.	2000	http://www.lassencounty.org/govt/dept/planning_building/planning_division/general_area_plans.asp	general plan, lassen county, land use
Collection	Butte County General Plan 2030 Draft EIR	Butte County	Draft EIR for the Butte County General Plan 2030.	8-Apr-10	http://www.buttegeneralplan.net/products/2010-04-08_Draft_EIR/	butte county, general plan, general plan eir
Collection	Lassen Land & Resource Management Plan Monitoring Report for FY 2005 and FY 2006	USDA Forest Service, Pacific Southwest Region	A monitoring report for the Lassen National Forest Land & Resource Management Plan, to assess the success of Plan implementation.	2005 and 2006	http://www.fs.usda.gov/main/lassen/landmanagement/planning	lassen national forest
Collection	Plumas National Forest: Forest Plan Monitoring Report	USDA Forest Service	A monitoring report for the Plumas National Forest Land & Resource Management Plan, to assess the success of Plan implementation.	Oct-12	http://www.fs.usda.gov/main/plumas/landmanagement/planning	plumas national forest
Collection	Forest Plan Amendments	USDA Forest Service	Includes 1994 Northwest Forest Plan Amendment, 1999 Herger-Feinstein Quincy Library Group Forest Recovery Act, 2001 Northwest Forest Plan, 2003 Herger-Feinstein Quincy Library Group Forest Recovery Act - DFPZ Maintenance, 2004 Sierra Nevada Forest Plan Amendment	1994-2004	http://www.fs.usda.gov/main/lassen/landmanagement/planning	Forest Plan, Sierra Nevada, Forest Plan Amendment, USFS, Forest Service, USDA
Collection	Feather River Land Trust Annual Reports 2004 - 2013	Feather River Land Trust	General information on land trust activities, including meadow and wetland conservation, and conservation and restoration of forests.	2004-2013	http://www.frlt.org/about-us/publications	wetland conservation, meadow conservation, forest conservation.
Collection	Pacific Forest and Watershed Lands Stewardship Council Land Conservation Plan	Stewardship Council	The Pacific Forest and Watershed Lands Stewardship Council (Stewardship Council) has prepared this Land Conservation Plan (LCP) for the permanent conservation of over 140,000 acres of Watershed Lands in California currently owned and managed by the Pacific Gas and Electric Company (PG&E). The lands located	Nov-07	http://lcp.stewardshipcouncil.org/index.htm	conservation, PG&E, hydroelectric facilities, Lake Almanor, Mountain Meadows
Collection	Status of Land Planning Efforts	Stewardship Council	Various documents identifying the status of land planning efforts, including summary of conservation easement holder recommendations, summary of watershed lands to be retained by PG&E, and the Land Conservation Plan.	2015	http://www.stewardshipcouncil.org/land_conservation/status_of_planning_effort.htm	conservation, conservation easement, conservation planning, land conservation,
Collection	Stewardship Council Annual Reports 2005-2013	Stewardship Council	Conservation planning annual summaries from 2005 to 2013.	2005-2013	http://www.stewardshipcouncil.org/public_information/publications.htm	conservation, conservation easement, conservation planning, land conservation,
Document	Community Action Plan 2014-2015	Lassen-Plumas-Sierra Community Action Agency	Under a Joint Powers Agreement with Lassen, Plumas, and Sierra Counties, PCCDC governs a Tri-County Community Action Agency, an anti-poverty organization. LPSCAA provides federal funds to a broad array of community based organizations in the three counties that specialize in services such as: health. nutrition. child care and	2014	http://www.plumascdc.org/lpscaa.html	DACs, DAC, disadvantaged communities

Website	Northern Sierra Partnership: The Campaign to Conserve Sierra Valley	Northern Sierra Partnership	Website detailing the campaign by Feather River Land Trust, The Nature Conservancy, and the Sierra Business Council to conserve Sierra Valley.	2015	http://northernSierrapartnership.org/sierravalley/	sierra valley, conservation, land use
Document	City of Portola General Plan	City of Portola	The General Plan vision of the future of Portola includes the following characteristics and features: environmental protection, employment growth, enhanced retail opportunities and services for residents, clear sense of community and place, efficient public services and utilities. quality affordable housing. safety. and The Parks and Recreation Master Plan guides the future capital expenditures of the City for new recreation development and prioritizes projects.	11-Jan-12	http://www.ci.portola.ca.us/public-documents.htm	general plan, water, growth, region description
Document	City of Portola Parks and Recreation Master Plan	City of Portola	The Parks and Recreation Master Plan guides the future capital expenditures of the City for new recreation development and prioritizes projects.	1-Jun-10	http://cloud.snappages.com/90b198ba90b5e28a84879dd2e211239db3ff56a1/Parks%20and%20Rec%20Master%20Plan.pdf	recreation, recreation plan, parks

LEGISLATION, LEGAL, AND MISC POLICY DOCUMENTS

Document	MOU: Sierra Valley Resource Conservation District, Plumas Corp, and Feather River Coordinated Resource Management	N/A	This document sets forth the terms of a working relationship between the Sierra Valley Resource Conservation District and the Feather River Coordinated Resource Management group.	2004 and 2009	http://www.feather-river-crm.org/pdf/MOU/SVRCDMOU_04-09.pdf	MOU, Sierra Valley Resource Conservation District, Feather River Coordinated
Document	Sierra Valley Groundwater Management District Legislation/Senate Bill 1391: An act relating to the Sierra Valley and Long Valley Groundwater Basins	N/A	The bill specified the powers, duties and financing of the district, including the authority to levy groundwater extraction charges and management charges.	1980	http://sierravalleygmd.org/SenateBillNo.1391.pdf	Sierra Valley, Groundwater, Sierra Valley Groundwater Management
Document	Consultant's Report Plumas Watershed Forum Program Review	ICF Jones & Stokes for Plumas County Flood Control and Water Conservation District	The Plumas Watershed Forum (Forum) was formed in 2003 as part of the Monterey Settlement Agreement (Agreement) stemming from litigation involving California's State Water Project (Planning and Conservation League et al. 2003). The Forum's purpose is to plan and fund implementation of watershed management and restoration activities in the upper Feather River watershed for the mutual benefit of Plumas County and the State Water Project. The Forum directed that the review should evaluate all expenditures of settlement funds by the Forum in terms of meeting the goals of the Agreement, the Forum's bylaws and policies, and the Feather River Watershed Management Strategy.	May-08	http://featherriverwater.com/images/Plumas_Watershed_Forum_Program_Review.pdf	forum, plumas watershed, monterey settlement agreement, feather river watershed management strategy
Document	Settlement Agreement by and between Sierra Pacific Power Company, Washoe County Water Conservation District and Sierra Valley Water Company	N/A	Legal settlement to resolve conflict regarding diversions and water rights from Little Truckee River.	Oct-93	http://www.troa.net/documents/Sierra_Valley_Settlement_Agreement/index.pdf	sierra valley, water rights, diversions
Document	Sierra Nevada Water Workgroup Charter	Sierra Nevada Water Workgroup	The Sierra Water Workgroup mission is to assist regional efforts to protect and enhance water quality, water supply, and watershed health; to develop cooperative regional responses; and to facilitate reinvestment in our watersheds and water resources by all beneficiaries.	7-May-11	http://www.sierrawaterworkgroup.org/uploads/1/0/7/2/10721558/swwg_charter_final_5-17-11.pdf	watershed management, water workgroup, public outreach, water quality.

Document	Memorandum of Understanding (MOU) Regarding coordination among participants in the Sierra Nevada Water Workgroup	Sierra Nevada Water Workgroup	MOU on SWWG and IRWMP RWMG participation coordination.	18-Feb-14	http://www.sierrawaterworkgroup.org/uploads/1/0/7/2/10721558/swwg_mou_2-18-14_final.pdf	watershed management, water workgroup, public outreach, water quality.
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RECREATION

Database	American Whitewater: Feather River (CA)	N/A	Database of applicable documents on recreation in the Feather River watershed.	2015	https://www.americanwhitewater.org/content/Project/view/id/34/	Recreation, angling, fishing, hiking, swimming, stream flow
Document	Recreation Use Survey of Little Last Chance Creek, Plumas County	California Department of Water Resources	Survey of the recreational uses of Little Last Chance Creek.	1992	http://www.water.ca.gov/pubs/environment/fish/recreation_use_survey_of_little_last_chance_creek_plumas_county_1992/1992recreationusesurvevofli	recreation, little last chance creek

RESTORATION

Document	H51J-1350 Groundwater Discharge to Restored and Unrestored Meadow	USDA Forest Service, Pacific Southwest Region	A study of streamflow and groundwater level measurements in Red Clover Valley.	2011	http://www.feather-river-crm.org/pdf/SeepageRunPoster.pdf	Red Clover Valley, restored meadow, meadow restoration, groundwater
Document	Assessment of Restoration Activities at Indian Creek Watershed	N. Ohara, S. Jang, S. Kure and M. L. Kavvas	The Watershed Environmental Hydrology (WEHY) model (Kavvas et al. 2004), together with local monitoring, was utilized to assess the cumulative effects of localized restoration activities in Indian Creek watershed in the Upper Feather River Basin.	2005	http://www.feather-river-crm.org/images/stories/Publications/LastChanceModelresults2005.pdf	groundwater, water storage, Last Chance Creek, meadow restoration
Document	Statistical Analysis of Selected Feather River Coordinated Resource Management Stream Flow Data	Ken Cawley	Stream flow data collected by the Feather River CRM since 1998 was analyzed to see if change in summer base flow could be detected and to provide basic descriptive statistics of base flow hydrology at these sites. Data used in this analysis came from stream gauging sites on Cottonwood Creek (Big Flat), Doble Crossing (Last Chance).	26-Jun-11	http://www.feather-river-crm.org/pdf/StatReport2011.pdf	stream restoration, aquifer storage, groundwater, stream flow, hydrologic carbon
Document	Quantification of Carbon Sequestration Benefits of Restoring Degraded Montane Meadows	Feather River Coordinated Resource Management	A Technical Advisory Committee developed and refined a multi-project sampling protocol for three restored meadows and three unrestored meadows. Data from the un-restored meadows will also provide base-line data for before and after restoration comparisons. Initial data analysis indicates that restored meadows contain twice	2010	http://www.feather-river-crm.org/images/stories/Publications/CarbonTechRpt.pdf	sequestration, meadow restoration
Document	Technical Report #1: Big Meadows Restoration Project, October 14, 2009 Flood Event	Jim Wilcox, Feather River Coordinated Resource Management, Plumas Corp.	The Big Meadows Restoration Project utilized a relatively new technology, called pond and plug, to re-connect the channel to its naturally evolved floodplain. This report document project performance.	22-Jan-10	http://www.feather-river-crm.org/pdf/BigMeadowsTechReport.pdf	pond and plug, floodplain, meadow restoration, flooding, flood management
Document	Physical and Hydrological Characterization of Clark's Meadow	Dr. Kevin Cornwell and Ms. Kamala Brown	This report summarizes the methods, results and conclusions of the investigatiocapabilities of meadow sediments. The partially restored nature of Clark's Meadow was used to determine the subsurface conditions and potential water storage offered a unique opportunity to observe the consequences of uncheck stream erosion in the	1-Feb-08	http://www.feather-river-crm.org/images/stories/Publications/MountainMeadowReport2008.pdf	Clark's meadow, meadow restoration, restored meadow, water storage.

Document	Quantifying Stream-Aquifer Interactions through the Analysis of Remotely Sensed Thermographic Profiles and In Situ Temperature Histories	Steven Loeheide II, Stephen Gorelick	A quantification of the spatial patterns of groundwater discharge to a 1.7 km reach of Cottonwood Creek in Plumas National Forest. Quantification of base flow and hyporheic exchange on stream temperatures by simulating stream energy budget under different conceptual models of the stream-aquifer interaction.	2006	http://www.feather-river-crm.org/images/pdfs/loheide.pdf	Cottonwood Creek, Plumas National Forest, pond and plug, aquatic habitat, evapotranspiration, meadow restoration, restored meadow
Document	A local-scale, high-resolution evapotranspiration mapping algorithm (ETMA) with hydroecological applications at riparian meadow restoration sites	Steven P. Loeheide II, Steven M. Gorelick	A new algorithm for mapping evapotranspiration (ET) is presented that requires only local weather-station data including the ground heat flux and high resolution airborne thermal imagery.	2-Jul-05	http://www.feather-river-crm.org/images/pdfs/ETPaper.pdf	groundwater, water storage, Last Chance Creek, meadow restoration, restored meadow
Document	Assessment of the Restoration Activities on Water Balance and Water Quality at Last Chance Creek Watershed Using Watershed Environmental Hydrology	M.L. Kavvas, Z. Q. Chen, M. Anderson, L. Liang, N. Ohara, J. Wilcox, L. Mink, T. Benoit	An assessment of restoration activities on groundwater storage and water quality at Last Chance Creek.	2005	http://www.feather-river-crm.org/images/stories/Publications/LastChanceModelresults2005.pdf	groundwater, water storage, Last Chance Creek, meadow restoration
Document	Water Management Implications of Restoring Meso-scale Watershed Features	Jim Wilcox, Feather River Coordinated Resource Management	Stream channels with adjustable bed and banks have been proven to develop predictable features of pattern, form and profile centered around the dynamic equilibrium of available sediment and available discharge. Drainage basins of all sizes develop equivalent features that provide the same functions at the basin scale. The material in this booklet has been organized into three sections by general landscape setting. Section 2 discusses the challenges of implementing geomorphic restoration within entrenched channels in alluvial landscapes. The mechanism of entrenchment may vary, however the end result is a loss of floodplain area and concentration	Jan-05	http://www.feather-river-crm.org/images/pdfs/wm_implications.pdf	fluvially-evolved functions, meso-scale features, cumulative land use impacts, macro-restoration, fluvial systems
Website	Evaluation of Geomorphic Restoration Techniques Applied to Fluvial Systems	Jim Wilcox, Terry Benoit, Leslie Mink	Numerous articles discuss the merits and shortcomings of the Geomorphic Stream Classification System developed by Dave Rosgen (1985). This article discusses the Feather River Coordinated Resource Management (FR-CRM) group's experience using this system in the FR-CRM watershed restoration program.	Dec-01	http://www.feather-river-crm.org/project-files/georest/cover.html	fluvial geomorphic classification system, watershed restoration
Document	Applying a Fluvial Geomorphic Classification System to Watershed Restoration	Terry Benoit and Jim Wilcox	To develop a restoration strategy, several items were identified and developed in order to focus our attention on the important needs and desires. To do this the strategy identifies (1) a set of desired conditions for the Sulphur Creek watershed, (2) opportunities within the watershed that will help attain the desired conditions. and (3) In March 2011 the Pacific Southwest Region of the US Forest Service released a statement of its Leadership Intent for Ecological Restoration, which laid out the Region's guiding vision and goals for its stewardship of wildland and forests for the next 15–20 years. This document reflects the Regional leadership's current thinking on how The final monitoring report for the revegetation plan documents implementation of the Revegetation/Reforestation Plan and results through 2000.	Jul-97	http://www.feather-river-crm.org/images/pdfs/streamnotes.pdf	restoration, ranking, erosion, Sulphur Creek
Website	Sulphur Creek Watershed Restoration Strategy	Feather River Coordinated Resource Management and Mohawk Valley Watershed Restoration Committee		Mar-05	http://www.feather-river-crm.org/project-files/sulphur/SulphurCrRestorationStrategy.htm	restoration, planning, USFS
Document	Ecological Restoration Implementation Plan	USDA Forest Service, Pacific Southwest Region		Jan-13	http://www.fs.usda.gov/detail/r5/landmanagement/?cid=stemplrdb5409054	restoration, planning, USFS
Document	Butt Valley Reservoir and Lake Almanor Seismic Remediation Project: Revegetation/Reforestation Plan Final Monitoring Report	PG&E		Dec-00	http://www.feather-river-crm.org/monitoring/Butt00monrpt.htm	seismic remediation, revegetation, reforestation, monitoring report.
Document	Steelhead Restoration and Management Plan for California	California Department of Fish and Wildlife (Fish & Game at the time of publication)	Implementation plan to double the natural production of salmon and steelhead by the end of the century.	Feb-96	file:///C:/Users/Authorized%20User/Downloads/SH_RestMgtPlan_1996.pdf	steelhead, salmon, fisheries, recovery plan

Collection	Working Paper on Restoration Needs: Habitat Restoration Actions to Double Natural Production of Anadromous Fish in the Central Valley of California	US Fish & Wildlife Service	The paper presents a package of habitat restoration actions that, if implemented, would achieve the goal of at least doubling natural production.	9-May-95	http://www.fws.gov/stockton/afrp/	salmon, anadromous, steelhead, chinook, fisheries
Document	Final Restoration Plan for the Anadromous Fish Restoration Program	US Fish & Wildlife Service	The Restoration Plan presents the goal, objectives, and strategies of the Anadromous Fish Restoration Program (AFRP); describes how the AFRP identified and prioritized reasonable actions and evaluations; lists those actions and evaluations; and notes those actions and evaluations that are already underway or that may be underway. This plan provides a community-based framework for maintaining and improving the watershed health of the private and public lands that drain into the Mountain Meadows Reservoir. The plan provides a large selection of effective and voluntary action alternatives that are intended for use as a technical and educational resource for	9-Jan-01	http://www.fws.gov/stockton/afrp/documents/FinalRestPlan.pdf	salmon, anadromous, steelhead, chinook, fisheries
Document	Mountain Meadow Watershed Restoration Action Plan	Mountain Meadows Conservancy		Jan-13	http://mtmeadows.org/uploads/documents/WRAP%20Web%20page%20format.pdf	mountain meadows, restoration, watershed management.

STREAMFLOW

Document	Effects of Meadow Restoration on Stream Flow in the Feather River Watershed	J. Hoffman, K. Roby, B. Bohm	A description of the expected changes to flow due to restoration.	12-Jun-13	http://www.feather-river-crm.org/pdf/PPlug_FlowSummary_Final_June2013.pdf	meadow restoration, Feather River, Red Clover Creek, Last Chance Creek
Document	Statistical Analysis of Selected Feather River Coordinated Resource Management Stream Flow Data	Ken Cawley	Stream flow data collected by the Feather River CRM since 1998 was analyzed to see if change in summer base flow could be detected and to provide basic descriptive statistics of base flow hydrology at these sites. Data used in this analysis came from stream gauging sites on Cottonwood Creek (Big Flat), Doyle Crossing (Last Chance). A study of streamflow and groundwater level measurements in Red Clover Valley.	26-Jun-11	http://www.feather-river-crm.org/pdf/StatReport2011.pdf	stream restoration, aquifer storage, groundwater, stream flow, hydrologic
Document	H51J-1350 Groundwater Discharge to Restored and Unrestored Meadow	USDA Forest Service, Pacific Southwest Region		2011	http://www.feather-river-crm.org/pdf/SeepageRunPoster.pdf	Red Clover Valley, restored meadow, meadow restoration, groundwater
Collection	Red Clover and Last Chance Creeks Stream Flow Monitoring Reports, 2011 and 2012	Feather River Coordinated Resource Management, Plumas Corp.	Stream flow data collected by the Feather River Coordinated Resource Management group (FRCRM) on Red Clover and Last Chance creeks. No conclusions are drawn from data.	Mar-13	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=66&Itemid=66	stream flow, monitoring
Document	Instream Flows in the Sacramento River Hydrologic Region	N/A	This briefing paper demonstrates the existing instream flow requirements for the major rivers and streams in the Sacramento River hydrologic region. This includes requirements in State Water Resources Control Board (SWRCB) decisions, biological opinions, streamflow agreements, and other processes.	Sep-11	http://www.norcalwater.org/water-content/uploads/2012/01/flow-ssacvalley-sep2011.pdf	sacramento river, flow criteria, flows
Document	A precipitation shift from snow towards rain leads to a decrease in streamflow	Berghuijs, W.R., et al.	This research paper investigates the consequences on streamflow and water supply from the shift from snow to rain in a warming climate.	Jul-14	http://www.nature.com/nclimate/journal/v4/n7/full/nclimate2246.html	stream flow, climate change, water supply, groundwater, surface water.

WATER QUALITY (IRRIGATION, DRINKING WATER, SURFACE WATER, GROUNDWATER, ROAD EROSION, STREAMBANK EROSION, LEGACY EFFECTS)

Document	East Branch North Fork Feather River Erosion Control Strategy	East Branch North Fork Feather River Coordinated Resource Management Group	This document amends the 1989 Coordinated Resource Management Plan and outlines CRM purpose, structures, and project prioritization process.	Sep-94	http://www.feather-river-crm.org/images/pdfs/nffr.pdf	restoration, restoration planning, watershed management, erosion, Spanish Creek, sedimentation, sediment transport
Document	Two-Dimensional Simulation of Flow Hydraulics and Bed-Load Transport in a Mountain Gravel-Bed Stream: the Upper Spanish Creek	Jennifer G. Duan, Ph.D., Dong Chen, Ph.D.; Jennifer Weller, MS; Terry Benoit, BS	Sediment transport in a gravel-bed mountain stream, the Upper Spanish Creek, California, was simulated with a depth-averaged, two-dimensional hydrodynamic and sediment transport model.	2006	http://www.feather-river-crm.org/images/pdfs/dri_final.pdf	Creek, sedimentation, sediment transport
Document	Investigation of Water Quality Problems on Plumas County Roads Traversing USFS-administered Public Lands within the Spanish Creek Watershed	Clay C. Clifton for the Feather River Coordinated Resource Management Group and Plumas County Road Department	Data on sediment sources from County roads was retrieved from the data files compiled in 1990-91. Each sediment source from County roads was revisited in 1994-95 to update the information (see Appendix B, Water Quality Investigation Procedures). The updated information presented in this report can be used by the Plumas Erosion and sedimentation in the East Branch North Fork Feather River (EBNFFR) are impairing fisheries, water based recreation, aesthetics, water diversions for domestic and irrigation uses, downstream hydroelectric and State Water Project users. The Last Chance Creek subwatershed is estimated to contribute 9.5 percent	Jun-96	http://www.feather-river-crm.org/images/pdfs/pcroads.pdf	roads, road erosion, erosion, sedimentation, water quality
Document	East Branch North Fork Feather River Spanish Creek and Last Chance Creek Non-Point Source Water Pollution Study, Section 205(j)(2): Clean Water Act	Plumas County Community Development Department	Since 2009, the Almanor Basin Water Advisory Committee has overseen water quality monitoring efforts at Lake Almanor, and Sierra Institute was charged with providing this data to the public in a useable format. Prior to 2009, water quality data was collected by various groups and agencies (primarily DWR and PG&E) with varied A watershed assessment that includes a comprehensive, community-based rehabilitation strategy for Spanish Creek that extends from the watershed headwater region to the outlet of American Valley.	22-Jul-92	http://www.feather-river-crm.org/images/pdfs/spanlast.pdf	East Branch North Fork, erosion, sedimentation, water quality
Document	2011 Lake Almanor Review: Survey of Water Quality, Trend Analysis, and Recommendations	Kyle Rodgers and Emily Creeley, Sierra Institute for Community and Environment	Since 2009, the Almanor Basin Water Advisory Committee has overseen water quality monitoring efforts at Lake Almanor, and Sierra Institute was charged with providing this data to the public in a useable format. Prior to 2009, water quality data was collected by various groups and agencies (primarily DWR and PG&E) with varied A watershed assessment that includes a comprehensive, community-based rehabilitation strategy for Spanish Creek that extends from the watershed headwater region to the outlet of American Valley.	Mar-12	http://www.sierrainstitute.us/ALMANOR/LA_Report_4.12.pdf	Lake Almanor, water quality, monitoring, database
Document	Spanish Creek Assessment Rehabilitation and Gravel Management Strategy	Feather River Coordinated Resource Management Group	A watershed assessment that includes a comprehensive, community-based rehabilitation strategy for Spanish Creek that extends from the watershed headwater region to the outlet of American Valley.	Apr-06	http://www.feather-river-crm.org/images/pdfs/spanish_cr_wa.pdf	erosion, watershed restoration, restoration, channelization, hydraulic mining.
Website	Water Quality Certification Program for FERC Project No. 2105: Upper North Fork Feather River Hydroelectric Project	State Water Resources Control Board	Description of the Upper North Fork Feather River Hydroelectric Project (UNFFR Project). Site contains all project-related documents, including EIR, description of alternatives, FERC's Environmental Impact Statement, and Placer County Board of Supervisors' response to draft EIR.	Nov-14	http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/unffr_ferc2105.shtml	FERC, relicensing, water quality certification, SWRCB, water quality
Collection	Watershed Monitoring Reports - Upper Feather River Watershed, Water Years 1998-2013	Plumas Corporation	This report includes data from continuous recording flow stations operated by Plumas Corporation, as well flow stations operated by the US Geological Survey (USGS), California Department of Water Resources (DWR), and US Forest Service (USFS).	1998-2014	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=66&Itemid=66	monitoring, Upper Feather, FRCRM, Last Chance Creek, Red Clover, Feather River
Collection	Irrigated Lands Regulatory Program	State Water Resources Control Board	A range of pollutants can be found in runoff from irrigated lands, such as pesticides, fertilizers, salts, pathogens, and sediment. At high enough concentrations, these pollutants can harm aquatic life or make water unusable for drinking water or agricultural uses. The Irrigated Lands Regulatory Program (ILRP) was initiated in 2003 to prevent agricultural runoff from impairing surface waters. Waste discharge requirements, which protect both surface water and groundwater, address irrigated agricultural discharges throughout the Central Valley.	2015	http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/	irrigation, pesticides, ag runoff, agriculture, water board, swrcb

Document	Lake Almanor Water Quality Report, 2009	K.R. Gina Johnston and John McMurtry Butte Environmental Technologies for Plumas County Flood Control & Water Conservation District and Almanor EARTHWORKS Restoration, Inc. for Plumas County Flood Control and Conservation District	A water quality monitoring program for Lake Almanor was conducted during 2009. Four sampling windows were chosen for sampling to provide a look at lake health: during spring turnover (April 6-11), the period of heavy recreational use (July 6-11 and August 31- September 5) and fall turnover (November 16-21). Four The proposed monitoring responds to the need to track the lake and watershed conditions with respect to these and other possible water quality issues: Overall lake water quality associated with nutrient status and biological growth that reflects the cumulative effects of land condition and activities across the lake and	Dec-09	http://www.sierrainstitute.us/Reportsandpresentations.html	water quality, lake almanor
Document	Lake Almanor Watershed Monitoring Plan	East Quincy Services District	Water quality reports for the East Quincy Services District from 2010 - 2010-2013.	Apr-07	http://www.sierrainstitute.us/Reportsandpresentations.html	lake almanor, water quality, monitoring
Collection	Annual Water Quality Reports (Consumer Confidence Reports)	Gold Mountain Community Services District	Water quality report for the Gold Mtn Community Services District.	2013	http://www.goldmountaincso.org/docs2/GM_CSD_2013_Consumer_Confidence_Report.pdf	water quality, drinking water, public water, consumer confidence reports
Document	Gold Mountain Water Quality 2013 Consumer Confidence Report	Indian Valley CSD	This "Consumer Confidence Report" includes those constituents that were detected and otherwise fulfills the requirements of the Safe Drinking Water Act.	2013	http://www.indianvalleycso.com/	consumer confidence, water quality, public water
Document	2013 Water Quality Report for Indian Valley CSD Greenville Treatment Plant	Indian Valley CSD	This "Consumer Confidence Report" includes those constituents that were detected and otherwise fulfills the requirements of the Safe Drinking Water Act.	2013	http://www.indianvalleycso.com/	water quality, public water, consumer confidence report
Document	2013 Water Quality Report for Indian Valley CSD Crescent Mills	Lake Almanor Country Club Mutual Water Company	This "Consumer Confidence Report" includes those constituents that were detected and otherwise fulfills the requirements of the Safe Drinking Water Act.	2012	http://www.lacmutualwater.org/uploads/9/6/4/8/9648300/2012ccr.pdf	water quality, public water, consumer confidence report
Document	2012 Consumer Confidence Report	Feather River Resource Conservation District	The plan provides a set of goals and objectives to conserve the soils, agriculture, water resources, and plant and animal resources.	9-Dec-04	http://www.conservation.ca.gov/dlrp/RCD/Documents/Plans/FRRCD%20long%20range%20plan.pdf	resource conservation district, agriculture, soil conservation, erosion, runoff
Document	Feather River Resource Conservation District Long-range Workplan 2005-2009	Greenhorn Creek Community Services District	Water policy document.	Jun-07	http://www.greenhorncso.org/images/Water_Policy_June_2007.pdf	water policy, csd, greenhorn creek
Document	Greenhorn Creek Community Services District Water Policy	Holly George et al.	Provides an overview of irrigated land practices, including water, water conservation, and pesticide use in the Upper Feather River watershed.	Mar-07	http://ucanr.org/sites/UCCE-Plumas-Sierra/files/13633.pdf	water conservation, irrigation, agriculture, pesticides
Document	Upper Feather River Watershed (UFRW) Irrigation Discharge Management Program					

Document	Preliminary Engineering Report for the 2014 Water System Improvements	Plumas Eureka Community Services District	This water system improvement plan was developed to mitigate the high arsenic levels in the drinking water within the Plumas Eureka CSD.	May-14	http://www.pecsd.org/2014%20OPER%20Final.pdf	drinking water, public water, infrastructure, infrastructure improvements
Collection	Arsenic Studies, Public Notices, and Consumer Confidence Report for 2012	Plumas Eureka Community Services District	This website includes numerous documents related to the high arsenic levels within the Plumas Eureka CSD, including arsenic studies, improvement plans, and public notices.	2015	http://www.pecsd.org/2014%20OPER%20Final.pdf	drinking water, public water, infrastructure, infrastructure improvements.
Document	2012 Consumer Confidence Report	Quincy Community Services District	This "Consumer Confidence Report" includes those constituents that were detected and otherwise fulfills the requirements of the Safe Drinking Water Act.	2012	http://www.quincycsd.com/CCR%202012.pdf	consumer confidence, water quality, public water, drinking water
Website	Little Truckee River Bridge Replacement	Feather River Trout Unlimited	In 2010 Feather River Trout Unlimited, with Sierra County, applied for and received a Prop. 84 grant from the California Department of Water Resources. The project replaced a narrow (40 ft) bridge on the Independence Lake Road over the Little Truckee River. This constriction caused severe scouring of the river course below the river.	2015	http://www.frtu.org/little-truckee-river-bridge-replacement	little truckee river, flooding, restoration, infrastructure improvement
Website	Upper Feather River Watershed Group	Upper Feather River Watershed Group	Website for the Upper Feather River Watershed Group includes ILRP watershed monitoring reports from 2006 to 2012, information on ILRP monitoring, and Prop 50 UCCE Irrigation Discharge Management Program. The Upper Feather River Watershed Group is one of twelve subcoalitions of the Sacramento Valley Water Quality Results of monitoring from Jan 1 - December 31, 2013.	2015	http://www.ufrwg.org/group_info.html	irrigation, irrigated lands, ILRP, agriculture, agricultural use, pesticides, runoff.
Document	Whitehawk Ranch Mutual Water Company 2013 Consumer Confidence Report	Whitehawk Ranch Mutual Water Company		Apr-14	http://www.whitehawkranch.org/mwco2013ccrfinal.pdf	public water, drinking water
Document	City of Portola 2012 Consumer Confidence Report	City of Portola	Water quality report for public drinking water provided by the City of Portola.	16-Jul-13	http://www.ci.portola.ca.us/public-documents.htm	drinking water, public water, water quality, consumer confidence
Document	Whitehawk Ranch Mutual Water Company 2013 Annual Report	Whitehawk Ranch Mutual Water Company	Includes policies and treatment plant review and update.	Apr-14	http://www.whitehawkranch.org/mwco2013annualreportfinal.pdf	public water, drinking water

WATER SUPPLY AND CONSERVATION

Document	Canopy interception in a coniferous forest in eastern Plumas County, California	Plumas Geo-Hydrology Land and Water Resources	Field experiments were conducted in the winter of 2005/06 on private land near Blairsdan, in eastern Plumas County, California. In specific the objectives of this study were: 1. To examine effect of forest canopy on the amount of throughfall. 2. To examine to what extent reduced canopy density can increase the amount of moisture reaching the forest floor. 3. To examine the feasibility of using isotope tracers to assess impact of tree canopy interception on base flow.	28-Jul-08	http://featherriver.org/documents/	forest, canopy
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Document	20x2020 Water Conservation Plan	California Department of Water Resources, et al.	The 20x2020 Plan sets forth a statewide road map to maximize the state's urban water efficiency and conservation opportunities between 2009 and 2020, and beyond. It aims to set in motion a range of activities designed to achieve the 20 percent per capita reduction in urban water demand by 2020.	Feb-10	http://www.water.ca.gov/wateruseefficiency/sb7/docs/20x2020plan.pdf	water conservation, 20x2020, dwr
Document	Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001	California Department of Water Resources	The guidebook is designed to provide step-by-step suggestions for completing an SB 610 water assessment and an SB 221 verification of sufficient water supply. It includes commonly accepted definitions and examples of various supply and demand scenarios.	8-Oct-03	http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf	sb 221, sb 610, water supply assessment
Document	Notice of Surface Water Shortage and Potential for Curtailment of Water Right Diversions for 2015	State Water Resources Control Board	The purpose of this notice is to advise all water right holders that if hydrologic conditions do not significantly improve in the next several months, the State Water Board will once again begin notifying water right holders in critically dry watersheds of the requirement to limit or stop diversions of water under their water right, based on their priority.	23-Jan-15	http://mountaincountieswater.com/wp-content/uploads/2015/01/2015_notice.pdf	water shortage, drought, curtailment
Document	2010 Urban Water Management Plan	South Feather Water & Power Agency	UWMP for a 31,000-acre area just outside the Upper Feather IRWM planning area.	5-May-12	http://southfeather.com/assets/2012/05/UWMP_Adopted.052212.pdf	uwmp, urban water management plan, water supply
Document	Producer Stories from Upper Feather River Watershed Farmers and Ranchers: Sierra Valley Ranch	UC Cooperative Extension and Upper Feather River Watershed Group	Report on improvements made to the 6,000-acre Sierra Valley Ranch to reverse flood damage, conserve water, and repair irrigation structures.	N/A	http://ucce-plumas-sierra.ucanr.edu/files/19578.pdf	sierra valley, water rights, agricultural use, irrigation, infrastructure

WATERSHED ASSESSMENT

Document	Spanish Creek Assessment Rehabilitation and Gravel Management Strategy	Feather River Coordinated Resource Management Group	A watershed assessment that includes a comprehensive, community-based rehabilitation strategy for Spanish Creek that extends from the watershed headwater region to the outlet of American Valley.	Apr-06	http://www.feather-river-crm.org/images/pdfs/spanish_cr_wa.pdf	erosion, watershed restoration, channelization, hydraulic mining, watershed, Sulphur Creek
Document	Sulphur Creek Watershed Analysis	Feather River Coordinated Resource Management and Mohawk Valley Watershed Restoration Committee	This report documents the findings of an assessment of watershed condition.	Jun-04	http://www.feather-river-crm.org/images/pdfs/sulphur_analysis.pdf	
Document	Lake Almanor Watershed Assessment Report	EARTHWORKS Restoration, Inc. and CH2MHill for Plumas County Flood Control and Conservation District	Accordingly, this assessment assembles and summarizes collected information into one reference document and provides a reconnaissance-level synthesis of existing information. In accordance with the priorities of the stakeholders and the project objectives, the information search was conducted and the assessment is	Feb-07	http://www.sierrainstitute.us/Reportsandpresentations.html	watershed assessment, baseline conditions, Lake Almanor, FERC. PG&E
Collection	Sierra Institute - Lake Almanor Watershed Project	Sierra Institute for Community and Environment	Website collection of reports, plan, and presentations on the Lake Almanor watershed	2015	http://www.sierrainstitute.us/Reportsandpresentations.html	lake almanor

Collection	Assessment and Analysis of Cold Stream as potential reintroduction site for Lahontan cutthroat trout	Feather River Trout Unlimited	In 2010, Feather River Trout Unlimited received a grant to do an assessment of a portion of the area in the Little Truckee River (LTR) watershed to do a watershed assessment and initial fishery analysis of Cold Stream, one of the main tributaries to the LTR. This website includes a description of the work and a collection of documents	Oct-10	http://www.frtu.org/assessment-analysis-of-cold-stream-for-lahontan-cutthroat-trout	little truckee river, biotic assessment, biota, trout, fishery, reintroduction
Document	Little Truckee River Watershed Assessment: Sierraville Diversion to Stampede Reservoir	Feather River Trout Unlimited	This watershed assessment studies an area immediately downstream of the Upper Feather IRWM area; information contained herein is valuable in terms of downstream resources and immediately adjacent biotic, hydrologic, and cultural setting.	19-Mar-14	http://www.frtu.org/little-truckee-river-watershed-assessment	downstream, watershed assessment

WATERSHED MGMT AND PLANNING

Document	Feather River Watershed Management Strategy for Implementing the Monterey Settlement Agreement	Ecosystem Sciences for Plumas County Flood Control and Water Conservation District	This document established priorities for watershed management and restoration actions. The strategy allows the technical committee to advise the Watershed Forum on how to proceed with allotting funds for specific actions. The goals are to improve temporal retention of water, to increase base flows, reduce sedimentation, protect streambanks, improve upland vegetation, and improve groundwater recharge.	14-May-04	http://www.feather-river-crm.org/pdf/MOU/FeatherRiverStrategy.pdf	Feather River Watershed Management Strategy, Plumas County Flood Control and Water Conservation District, Monterey Settlement Agreement
Document	Coordinated Resource Management Plan for the East Branch of the North Fork Feather River and related MOUs	N/A		1989	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=100&Itemid=103	watershed management, north fork feather river, coordinated resource
Document	Lake Almanor Watershed Management Plan	Sierra Institute for Community and Environment	The Almanor Basin Watershed Advisory Committee (ABWAC) is an official advisory committee to the Plumas County Board of Supervisors. The committee is charged with making management recommendations to help ensure the long-term health of the watershed. This plan identifies priority action areas based on the	Apr-09	http://www.sierrainstitute.us/documents/LakeAlmanorWatershedPlan.pdf	watershed management, planning, lake almanor watershed. lake
Document	2014 Lower Owens River Project: Adaptive Management Recommendations	Ecosystem Sciences for LORP MOU Consultants	An ongoing, annual advisory document that provides adaptive management solutions for the Lower Owens River Project after careful review of annual reports, project objectives, conditions, and trends.	2014	http://www.inyowater.org/wp-content/uploads/2014/12/Draft_LORP_Adaptive-Management- http://www.feather-river-crm.org/pdf/MOU/CRMP-FR_1996.pdf	adaptive management, natural resource management
Document	Coordinated Resource Management Plan for the Feather River		This document outlines the goal and objectives, issues and concerns, CRM ground rules for coordination, CRM roles and memberships, as well as organizational structure of the CRM.	8-Feb-96	http://www.feather-river-crm.org/pdf/MOU/CRMP-FR_1996.pdf	Coordinated resource management plan, CRM, Feather River
Document	California Water Plan Update 2013	California Department of Water Resources	Long-term strategic plan for guiding the development and management of water resources in the state. Volume 2 consists of a regional report for the Mountain Counties area, which encompasses the Upper Feather River watershed.	25-Sep-13	http://www.waterplan.water.ca.gov/cwpu2013/final/index.cfm	California Water Plan, water management

Document	Integrated Regional Water Management Plan: Upper Feather River Watershed, California	Ecosystem Sciences	This Integrated Regional Water Management (IRWM) Plan is an implementation plan for the management of water resources throughout the Upper Feather River Watershed. The foundation for the IRWM Plan is the integration of seven existing plans by the statutory planning entities in the watershed.	2005	http://featherriver.org/feather-river-water-plan-2005-irwm/	IRWMP, IRWM, Feather River IRWM, previous IRWMP
Document	Plumas Watershed Forum: Review of Ongoing Projects Updated 10/1/08		A review of various watershed projects, including restoration projects, riparian protection projects, and testing and monitoring projects.	2008	http://featherriver.org/feather-river-water-plan-2005-irwm/	plumas watershed forum, projects
Website	Upper Feather River Watershed	Sacramento River Watershed Program	This website provides general condition information about the Upper Feather River watershed, its management issues, and its management organizations.	2015	http://www.sacrriver.org/about-watershed/roadmap/watersheds/feather/upper-feather-river-watershed	upper feather river watershed, watershed management, watershed management, contacts, organizations, outreach
Document	Who's Who in the Feather River Watershed	N/A	This document was developed to help address questions about organizations and relationships within the Upper Feather River region related to water and watershed management.	8-Aug-14	http://www.plumascounty.us/DocumentCenter/View/11636	contacts, organizations, outreach
Document	The Delta Plan	Delta Stewardship Council	The Delta Plan is a comprehensive, long-term management plan for the Delta. Required by the 2009 Delta Reform Act, it creates new rules and recommendations to further the state's coequal goals for the Delta: Improve statewide water supply reliability, and protect and restore a vibrant and healthy Delta ecosystem, all in a manner that preserves, protects and enhances the unique agricultural, cultural, and recreational characteristics of the Delta.	2013	http://deltacouncil.ca.gov/delta-plan-0	water supply, downstream water resources, water quality
Website	Sierra Valley Resource Conservation District website	Sierra Valley Resource Conservation District	This website provides contact information and some general information on some projects within the RCD that are pertinent to watershed management, such as the Sierra Valley Agricultural Water Quality and Habitat Enhancement Project, the Upper Long Valley Creek Agricultural Lands Improvement Project, and the Carman	2015	http://www.sierravalleyrcd.com/SVRCD_Weed_Management.html	sierra valley, rcd, agricultural lands, soil conservation, restoration, invasives
Document	Feather River Coordinated Resource Management Group Annual Reports, 2005 through 2012/2013	Feather River Coordinated Resource Management Group	These reports summarize the Feather River Coordinated Resource Management (FRCRM) group's annual accomplishments and program activities, projects, and plans for coming years.	2005-2014	http://www.feather-river-crm.org/index.php?option=com_content&view=article&id=60&Itemid=60	FRCRM, annual report, projects, funding
Document	The Sacramento River Basin: A Roadmap to Watershed Management	Sacramento River Watershed Program	In an effort to present a comprehensive look at current conditions and management efforts throughout the Sacramento River Basin, the Sacramento River Watershed Program developed The Sacramento River Basin – A Roadmap to Watershed Management (Roadmap). For the Basin as a whole and for 25 key tributaries to the Sacramento River, the Roadmap presents, through text and photos, a discussion of existing conditions (hydrology, water quality, vegetation, fish and wildlife, and social), identification of the principal management issues and objectives, and a brief discussion of the management organizations active in the watershed.	Oct-10	http://www.sacrriver.org/files/documents/roadmap/SRWP_ExecSummary.pdf	watershed management, basin plan, sacramento river basin, sacramento river

Document	Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin	State Water Resources Control Board	<p>Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. State law also requires that Basin Plans conform to the policies set forth in the Water Code beginning with Section 13000 and any state policy for water quality control. Since beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control (40 CFR 131.20). One significant difference between the state and federal programs is that California's basin plans establish standards for ground waters in addition to surface waters.</p>	Oct-11	http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr.pdf	<p>watershed management, basin plan, sacramento river basin, sacramento river</p>
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**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group

From: Uma Hinman, Uma Hinman Consulting

Subject: Project Development and Project Solicitation Package

Date: March 22, 2015

INTRODUCTION

BACKGROUND

The attached Draft Project Solicitation Package (PSP) contains the elements necessary to make informed project selections. The various sections of the PSP include questions intended to assist with determining whether or not the project addresses regional goals and objectives and meets minimum DWR requirements and emphases. The PSP was distributed through the Workgroups and Tribal Outreach Coordinator for review and input by email in February and early March, and was discussed during Workgroup meetings during that same timeframe. No comments or suggestions for change have been received to date. There were a number of requests for a “Conceptual Project Form” to assist potential project proponents with brainstorming projects and to submit ideas in the form of potential projects for future tracking in the Plan. The “Conceptual Project Form” is attached to this memo for information and consideration.

PROJECT SOLICITATION PACKAGE

To incorporate recently released information and to facilitate project selection and prioritization efforts, staff has made the following changes to the PSP since the last RWVG meeting and distribution for comment.

1. Instructions: added clarifications, including emphasizing links to examples of successful project submittals, updating the timeline, and adding a submittal deadline date.
2. Project Category: updated with summarized categories based on UFR draft goals, as directed. Note: the categories are intended to assist with prioritization efforts.
3. IRWM Program Priorities Table: table was eliminated and information was consolidated into the RMS table.
4. Applicable IRWM Plan Objectives Addressed: the draft objectives, as modified by the Workgroups, were added into the table. They will be finalized upon RWVG approval.

5. Project Impacts and Benefits Table: added item “Drought Preparedness” so as to incorporate this increasingly emphasized topic in California water planning. Drought preparedness is an Action identified in the California Water Action Plan. Additionally, drought preparedness has been included as a scoring criterion in the recently released 2015 Draft Proposition 84 Grant Solicitation Package. A table was also added, which includes the elements of PRC 75026(a), information required by DWR for determining grant eligibility. Whether or not a project addresses one or more elements will be helpful in the scoring and prioritization process.
6. Project Cost and Financing: added some clarifying questions to the Project Budget Table so as to better assess projects during project selection and prioritization.
7. Project Technical Feasibility: added request for identification of groundwater basin affected, if applicable. This addition is in response to recent emphasis and considerations in California water planning efforts, as well as Proposition 1 language.

The following steps must occur prior to releasing the PSP, and are all included as agenda items for March 27, 2015:

- RWMG approval of the draft goals and objectives
- Selection of RMS for inclusion in the Plan
- RWMG approval of the PSP

PROPOSED TIMELINE

The tentative timeline below assumes RWMG approvals on items noted above.

STEP	DATE (2015)
Review draft project/selection criteria, send to Workgroups/Tribes for feedback	March 27
Approve Project Solicitation Package	March 27
Release Project Solicitation Package	April 1
Project Solicitation Meetings (2)	Mid-late April
Approve Project Selection/Ranking Criteria	May RWMG meeting
Deadline for Project Submittals	June 1
Integration Workshop (projects)	Mid-late June
Select and prioritize projects	July RWMG meeting
Project Prioritization Workshop	August
Finalize prioritized project list for inclusion in Plan	September

REQUEST

Requesting approval of the Draft Project Solicitation Package and Draft Conceptual Project Form, and direction to staff to release both.

Attachment: Draft Project Solicitation Package
 Draft Conceptual Project Form



<http://featherriver.org>

UPPER FEATHER RIVER IRWM PROJECT SOLICITATION

PROJECT SOLICITATION INSTRUCTIONS

The Upper Feather River IRWM Regional Water Management Group (RWMG) is accepting projects to be considered for inclusion in the IRWM Plan Update, which is currently in progress. In order for your project(s) to be considered for inclusion, you must complete this Project Information Template.

Not sure your project is within the Upper Feather River IRWM Region? You can check the Region map at <http://featherriver.org/maps/>.

Purpose

This solicitation is for projects to be considered for inclusion in the IRWM Plan Update. Projects selected for inclusion in the Plan Update will be eligible for future DWR funding opportunities for IRWM projects. This project solicitation is **not** a grant application.

Background

The Upper Feather River (UFR) Regional Water Management Group (RWMG) is a group of local agencies and non-governmental organizations located in the Upper Feather River Watershed. In 2005, a collaborative effort of water-related agencies in Plumas County resulted in the development of the Upper Feather River Watershed IRWM Plan. In order to remain eligible for future IRWM grant funding, the region submitted a formal application for regional acceptance by the Department of Water Resources (DWR), and in 2009 the Upper Feather IRWM Region was formally recognized and included all or portions of four counties including Plumas, Sierra, Lassen and Butte. The next step is to update the 2005 Upper Feather River IRWM Plan to meet new standards per DWR's Proposition 84 Guidelines. Please see the Upper Feather River IRWM website at <http://featherriver.org> for further information about the IRWM Plan Update and history.

Projects developed through this process will be put through a selection and prioritization process for inclusion in the IRWM Plan Update as implementation projects. Collectively, these projects will seek to address adopted goals and objectives for the Upper Feather River IRWM Plan, address California Water Plan Resource Management Strategies (RMS), and Department of Water Resources' IRWM priorities (Attachment 1).

Proposition 84 Guidelines also specify a preference for projects that benefit Disadvantaged Communities (DACs) and projects providing for water conservation to meet a 20 percent reduction by 2020. Further, DWR encourages integrated regional strategies for management of water resources that support multi-benefit water resources planning and implementation projects. Projects must also address goals and objectives adopted for the Upper Feather River IRWM Region (Attachment 2).

SUBMITTAL PROCEDURE

All submissions must be received electronically by **5:00 p.m. PDT on June 1, 2015**. Please submit all project materials electronically to UFR.contact@gmail.com.

The following table identifies the estimated timeline for the UFR IRWM project development:

Order	Steps	Estimated Timeline
1	Project Solicitation Package/Application Released	April 1, 2015
2	Project Solicitation Meetings	Mid-late April 2015
3	Deadline for Project Submittal	June 1, 2015
4	Project Integration Workshop	Late June 2015
5	Project Prioritization/Ranking (RWMG)	July 2015
6	Project Prioritization Workshop	August/September 2015

Submittals

Please complete the following Project Information Template, including as much information as you are able, and submit in **MS Word Format**. An **IRWM Project Development Manual** can be found at <http://featherriver.org/documents/>, which provides additional guidance in completing the information requested. It is highly recommended that project proponents read through the Manual prior to preparing the Project Template; it includes many helpful tips and examples.

If you have multiple projects, you must complete a separate form for each project. It is essential for the Regional Water Management Group (RWMG) to have consistent and current information for all projects. This will prove of particular importance when the RWMG goes through the project review and selection processes.

Examples of Successful Project Submittals

It is often helpful to see examples of successful project submittals. To view applications that were submitted by various IRWM regions for DWR's 2014 Drought Grant Solicitation, see the following link: http://water.ca.gov/irwm/grants/docs/Archives/Prop84/Submitted_Applications/P84_2014Drought/

A list of awarded projects can be viewed here:

http://water.ca.gov/irwm/grants/docs/ImplementationGrants/IRWM_84_IG_DroughtRound_IRWM_FinalAwards_ProjectList.pdf.

If assistance is needed with any part of this form, please contact your Workgroup Coordinators:

Workgroup	Coordinator	Email
Agricultural Lands Stewardship	Holly Foster	UFR.agriculture@gmail.com
Floodplains, Meadows, and Waterbodies	Terri Rust	UFR.meadows@gmail.com
Municipal Services	Uma Hinman	UFR.municipal@gmail.com
Uplands and Forest	Leah Wills	UFR.uplands@gmail.com

UPPER FEATHER RIVER IRWM

PROJECT INFORMATION TEMPLATE

Please submit by **5:00 p.m. on June 1, 2015**, to UFR.contact@gmail.com

Please provide information in the tables below:

I. PROJECT PROPONENT INFORMATION

Agency / Organization	
Name of Primary Contact	
Name of Secondary Contact	
Mailing Address	
E-mail	
Phone	
Other Cooperating Agencies / Organizations / Stakeholders	
Is your agency/organization committed to the project through completion? If not, please explain	

II. GENERAL PROJECT INFORMATION

Project Title	
Project Category	<input type="checkbox"/> Water Supply/Water Quality <input type="checkbox"/> Environmental Protection/Restoration <input type="checkbox"/> Community Water/Wastewater <input type="checkbox"/> Stakeholder/Public Collaboration and Education <input type="checkbox"/> Working Landscape Viability
Project Description (Briefly describe the project, in 300 words or less)	
Project Location Description (e.g., along the south bank of stream/river between river miles or miles from Towns/intersection and/or address):	
Latitude:	
Longitude:	

III. APPLICABLE IRWM PLAN OBJECTIVES ADDRESSED

For each of the objectives addressed by the project, provide a one to two sentence description of how the project contributes to attaining the objective and how the project will be quantified. If the project does not address any of the IRWM plan objectives, provide a one to two sentence description of how the project relates to a challenge or opportunity of the Region.

Upper Feather River IRWM Objectives:	Will the project address the objective?	Brief explanation of project linkage to selected Objective	Quantification (e.g. acres of streams/wetlands restored or enhanced)
Restore natural hydrologic functions.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Reduce potential for catastrophic wildland fires in the Region.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Build communication and collaboration among water resources stakeholders in the Region.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Work with DWR to develop strategies and actions for the management, operation, and control of SWP facilities in the Upper Feather River Watershed in order to increase water supply, recreational, and environmental benefits to the Region.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Encourage municipal service providers to participate in regional water management actions that improve water supply and water quality.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Continue to actively engage in FERC relicensing of hydroelectric facilities in the Region.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Address economic challenges of municipal service providers to serve customers.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Protect, restore, and enhance the quality of surface and groundwater resources for all beneficial uses, consistent with the Basin Plan.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		

Upper Feather River IRWM Objectives:	Will the project address the objective?	Brief explanation of project linkage to selected Objective	Quantification (e.g. acres of streams/wetlands restored or enhanced)
Address water resources and wastewater needs of DACs and Native Americans.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Coordinate management of recharge areas and protect groundwater resources.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Improve coordination of land use and water resources planning.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Maximize agricultural, environmental and municipal water use efficiency.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Effectively address climate change adaptation and/or mitigation in water resources management.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Improve efficiency and reliability of water supply and other water-related infrastructure.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Enhance public awareness and understanding of water management issues and needs.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Address economic challenges of agricultural producers.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		
Work with counties/communities/groups to make sure staff capacity exists for actual administration and implementation of grant funding.	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		

If no objectives are addressed, describe how the project relates to a challenge or opportunity of the Region:

IV. PROJECT IMPACTS AND BENEFITS

Please provide a summary of the expected project benefits and impacts in the table below or check N/A if not applicable; **do not leave a blank cell**. Note that DWR encourages multi-benefit projects.

If applicable, describe benefits or impacts of the project with respect to:		
a. Native American Tribal Communities	<input type="checkbox"/> N/A	
b. Disadvantaged Communities ¹	<input type="checkbox"/> N/A	
c. Environmental Justice ²	<input type="checkbox"/> N/A	
d. Drought Preparedness	<input type="checkbox"/> N/A	
e. Assist the region in adapting to effects of climate change ³	<input type="checkbox"/> N/A	
f. Generation or reduction of greenhouse gas emissions (e.g. green technology)	<input type="checkbox"/> N/A	
g. Other expected impacts or benefits that are not already mentioned elsewhere	<input type="checkbox"/> N/A	
<p>¹ A Disadvantaged Community is defined as a community with an annual median household (MHI) income that is less than 80 percent of the Statewide annual MHI. A map is available on the UFR website (http://featherriver.org/maps/).</p> <p>² Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies. An example of environmental justice benefit would be to improve conditions (e.g. water supply, flooding, sanitation) in an area of racial minorities.</p> <p>³ Climate change effects are likely to include increased flooding, extended drought, and associated secondary effects such as increased wildfire risk, erosion, and sedimentation.</p>		

DWR encourages multiple benefit projects which address one or more of the following elements (PRC §75026(a)). Indicate which elements are addressed by your project.

a. Water supply reliability, water conservation, water use efficiency	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	g. Drinking water treatment and distribution	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
b. Stormwater capture, storage, clean-up, treatment, management	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	h. Watershed protection and management	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
c. Removal of invasive non-native species, creation/enhancement of wetlands, acquisition/protection/restoration of open space and watershed lands	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	i. Contaminant and salt removal through reclamation/desalting, other treatment technologies and conveyance of recycled water for distribution to users	<input type="checkbox"/> Yes <input type="checkbox"/> N/A

d. Non-point source pollution reduction, management and monitoring	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	j. Planning and implementation of multipurpose flood management programs	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
e. Groundwater recharge and management projects	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	k. Ecosystem and fisheries restoration and protection	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
f. Water banking, exchange, reclamation, and improvement of water quality	<input type="checkbox"/> Yes <input type="checkbox"/> N/A		

V. RESOURCE MANAGEMENT STRATEGIES

For each resource management strategy (RMS) employed by the project, provide a one to two sentence description in the table below of how the project incorporates the strategy. A description of the RMS can be found in Volume 2 of the 2013 California Water Plan (<http://featherriver.org/2013-california-water-plan-update/>).

Resource Management Strategy	Will the Project incorporate RMS?	Description of how RMS to be employed, if applicable
Reduce Water Demand		
Agricultural Water Use Efficiency	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Urban water use efficiency	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Improve Flood Management		
Flood management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Improve Operational Efficiency and Transfers		
Conveyance – Delta	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Conveyance – regional/local	<input type="checkbox"/> Yes <input type="checkbox"/> No	
System reoperation	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Water transfers	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Increase Water Supply		
Conjunctive management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Desalination (brackish and sea water)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Precipitation Enhancement	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Municipal recycled water	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Surface storage – CALFED/State	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Surface storage – regional/local	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Improve Water Quality		
Drinking water treatment and distribution	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Groundwater remediation/aquifer remediation	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Matching water quality to water use	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Pollution prevention	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Salt and salinity management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Urban storm water runoff management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Practice Resource Stewardship		
Agricultural land stewardship	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Resource Management Strategy	Will the Project incorporate RMS?	Description of how RMS to be employed, if applicable
Ecosystem restoration	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Forest management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Land use planning and management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Recharge area protection	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sediment management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Watershed management	<input type="checkbox"/> Yes <input type="checkbox"/> No	
People and Water		
Economic incentives	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Outreach and engagement	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Water and culture	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Water-dependent recreation	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Wastewater/NPDES	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Other RMS addressed and explanation:

VI. PROJECT COST AND FINANCING

Please provide any estimates of project cost, sources of funding, and operation and maintenance costs, as well as the source of the project cost in the table below.

PROJECT BUDGET					
Project serves a need of a DAC?: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Funding Match Waiver request?: <input type="checkbox"/> Yes <input type="checkbox"/> No					
	Category	Requested Grant Amount	Cost Share: Non-State Fund Source* (Funding Match)	Cost Share: Other State Fund Source*	Total Cost
a.	Direct Project Administration				
b.	Land Purchase/Easement				
c.	Planning/Design/Engineering / Environmental				
d.	Construction/Implementation				
e.	Environmental Compliance/Mitigation/Enhancement				

f.	Construction Administration				
g.	Other Costs				
h.	Construction/Implementation Contingency				
i.	Grand Total (Sum rows (a) through (h) for each column)				
j.	Can the Project be phased? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide cost breakdown by phases				
		Project Cost	O&M Cost	Description of Phase	
	Phase 1				
	Phase 2				
	Phase 3				
	Phase 4				
k.	Explain how operation and maintenance costs will be financed for the 20-year planning period for project implementation (not grant funded).				
l.	Has a Cost/Benefit analysis been completed?		<input type="checkbox"/> Yes <input type="checkbox"/> No		
m.	Describe what impact there may be if the project is not funded (300 words or less)				
*List all sources of funding. Note: See Project Development Manual, Exhibit B, for assistance in completing this table (http://featherriver.org/documents/).					

VIII. PROJECT STATUS AND SCHEDULE

Please provide a status of the project, level of completion as well as a description of the activities planned for each project stage. If unknown, enter **TBD**.

Project Stage	Check the Current Project Stage	Completed?	Description of Activities in Each Project Stage	Planned/ Actual Start Date (mm/yr)	Planned/ Actual Completion Date (mm/yr)
a. Assessment and Evaluation	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
b. Final Design	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
c. Environmental Documentation (CEQA / NEPA)	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
d. Permitting	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
e. Construction Contracting	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			

f. Construction Implementation	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Provide explanation if more than one project stage is checked as current status					

IX. PROJECT TECHNICAL FEASIBILITY

Please provide any related documents (date, title, author, and page numbers) that describe and confirm the technical feasibility of the project.

a. List the adopted planning documents the proposed project is consistent with or supported by (e.g. General Plans, UWMPs, GWMPs, Water Master Plan, Habitat Conservation Plans, TMDLs, Basin Plans, etc.).	
b. List technical reports and studies supporting the feasibility of this project.	
c. Concisely describe the scientific basis (e.g. how much research has been conducted) of the proposed project in 300 words or less.	
d. Does the project implement green technology (e.g. alternate forms of energy, recycled materials, LID techniques, etc.).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A If yes, please describe.
e. Are you an Urban Water Supplier¹?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
f. Are you are an Agricultural Water Supplier²?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
g. Is the project related to groundwater?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A If yes, please indicate which groundwater basin.

¹ Urban Water Supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually.

² Agricultural Water Supplier is defined as a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding the acreage that receives recycled water.

CONCEPTUAL PROJECT INFORMATION FORM

Purpose

The Upper Feather River (UFR) Regional Water Management Group (RWMG) is a group local agencies and non-governmental organizations located in the Upper Feather River Watershed. This organization has been working together since 2009 under a Memorandum of Understanding to foster collaboration regarding the region's most pressing water resources issues. To help guide planning activities, the RWMG is in the process of updating the Upper Feather River Integrated Regional Water Management (IRWM) Plan to meet current Proposition 84 standards.

The RWMG has concurrently released a Project Solicitation Package for the purpose of developing a list of plan implementation projects for inclusion in the IRWM Plan Update. Collectively, these projects will seek to address regionally adopted Goals and Objectives that are outlined in the IRWM Plan, address California Water Plan Resource Management Strategies (RMS), and Department of Water Resources priorities for projects. Completion of this Conceptual Project Form is an optional step for submitting a project that is not yet developed enough for formal submittal and prioritization in the IRWM Plan.

Order	Steps	Estimated Timeline
1	Release Project Solicitation Package and Conceptual Project Information Form	April 1, 2015
4	Project Solicitation Meetings	Mid-late April, 2015
5	Project Submittals Deadline	June 1, 2015
6	Project Integration Workshop	Late June
7	Project Selection and Prioritization (RWMG)	July 2015
8	Project Prioritization Workshop	August/September 2015

Completion of this Conceptual Project Form is an optional step to allow submittal of conceptual project information for inclusion in the Plan Appendices as a "project to be tracked"; it is **NOT** a grant application nor is it a full project solicitation submittal. Projects submitted under this form are **NOT** eligible for selection and prioritization for inclusion in the Plan.

Instructions

You may complete this form in bullet format, short sentences, or fragments; however, keep in mind that you will want to rewrite the information in a narrative format for the next phase of project development and application. An **IRWM Project Development Manual** can be found at <http://featherriver.org/documents/>, which provides additional guidance in completing the information requested. It is highly recommended that project proponents read through the Manual prior to preparing the Project Template; it includes many helpful tips and examples. It is often helpful to see examples of project submittals. To view applications that were submitted by various IRWM regions for DWR's Drought Grant Solicitation, see the following link:

http://water.ca.gov/irwm/grants/docs/Archives/Prop84/Submitted_Applications/P84_2014Drought/ .

DRAFT

Project Summary Form	
<p>Summary of the purpose and need for the project : The problem statement</p>	
<p>Description of the project: Including an overview of the status of the project [e.g., conceptual, needs design and engineering, is fully engineered and ready to proceed, etc.]; a description of project components (e.g., miles of pipe, size and number of tanks or pumps, restoration of a wetland with associated removal of invasive species, etc.); phasing of the project (if this is part of a larger project or if the project will be implemented in sequential phases)</p>	
<p>General tasks that will be completed: e.g., finalize design, complete engineering, finalize costs and schedule, develop bid documents, select contractors, begin construction</p>	
<p>Predicted outcomes (or project-specific objectives) of the project: Number of miles of pipeline replaced, number of new pumps or tanks installed, number of gallons of water saved, acres restored, etc. – See appendix XX for a list of possible performance measures to guide both this section and also project design)</p>	
<p>Data or studies that document both the need for the project and the technical feasibility of the project: List all documents that you have, whether they were created by/for your entity or not, which substantiate both the need for the project and confirm that the project you proposed is technically feasible</p>	
<p>Budget: Statement of total budget amount and available match funds (if any – may be waived for a DAC)</p>	
<p>Schedule: Overall duration of the work effort with a few key milestones identified.</p>	

DWR mandated considerations for inclusion of a project in an IRWMP. Keep these factors in mind when developing your project and address them specifically as you develop your project:

- a) How the project contributes to the IRWM Plan Objectives
- b) How the project is related to resource management strategies selected for use in the IRWM Plan
- c) Technical feasibility of the project
- d) Specific benefits to DAC water issues
- e) Specific benefits to critical water issues for Native American Tribal communities
- f) Environmental Justice (EJ) considerations
- g) Project costs and financing
- h) Economic feasibility, including water quality and water supply benefits and other expected benefits and costs
- i) Project status
- j) Strategic considerations for IRWM Plan implementation
- k) Contribution of the project in adapting to the effects of climate change in the region
- l) Contribution of the project in reducing GHG emissions as compared to project alternative

**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group
From: Uma Hinman, Uma Hinman Consulting
Subject: Schedule Outreach Meetings
Date: March 22, 2015

INTRODUCTION

A number of public outreach meetings are included in the work plan, including project solicitation meetings to encourage project submittals from all areas of the UFR Region, a joint Workgroup integration workshop focused on projects, and a climate change workshop to present and gather input on the climate change technical study.

Project Solicitation Meetings

There are two project solicitation meetings included in the work plan to reach out to the public throughout the Region. The project solicitation meetings will be an opportunity for interested parties to learn more about the IRWM project process and project development and review process. The intent is to reach out to people who are not necessarily interested in participating in the Workgroups, but who might want to have a project considered for inclusion in the plan. The meetings are intended to be held at varied locations within the Region so as to provide increased accessibility, outreach and inclusion in the process.

Staff recommends scheduling the two meetings in mid to late April so as to give potential project proponents time to consider submitting project applications for consideration.

Project Solicitation/Selection/Ranking Steps	Estimated Timeline
Project Solicitation Package/Application Released	April 1, 2015
Project Solicitation Meetings	Mid-late April 2015
Deadline for Project Submittal	June 1, 2015
Project Integration Workshop	Late June 2015
Project Prioritization/Ranking (RWVG)	July 2015
Project Prioritization Workshop	August/September 2015

Workgroup Integration Workshop (projects)

The first Workgroup Integration Workshop will be focused on projects. The primary purpose of the workshop will be to provide an opportunity for the Workgroups to work together in identifying and advance region-wide planning and projects.

Staff has suggested a June 1st deadline for project submittals. So as to allow staff enough time to organize the project information received, it is recommended that the workshop be scheduled for the end of June. See discussion below for further suggestions on schedule.

Climate Change Technical Study/Mitigation and Adaptation Workshop

At this workshop, an expert panel will present the findings of the draft Climate Change Technical Study and potential mitigation and adaptation strategies. The goal for the workshop is to have a “working session” with the Workgroups and public to (1) advance region-wide planning; (1) brainstorm integrated approaches to “cross-cutting” issues such as changing hydrology or inadequate resources, or science needs, etc.; and (3) focus on clarifying or resolving adaptation strategy ambiguities, inconsistencies, or redirected impacts.

The Climate Change consultants are available the weeks of June 15-19 and June 22-26. Staff suggests the RWMG consider holding the Workgroup Integration Workshop and Climate Change Workshop on the same day so as to make efficient use of everyone’s time. One workshop scheduled for the morning, host a BBQ lunch, and schedule the second workshop in the afternoon.

REQUEST FOR DISCUSSION AND/OR DIRECTION TO STAFF

Review, discuss and schedule the following workshops:

1. Schedule two Project Solicitation Meetings in different areas of the Region.
2. Schedule the Workgroup Integration Workshop
3. Schedule the Climate Change Workshop

Attachment: 2015 Calendar

- 2015 -

JANUARY						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL						
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26	27	28	29	30		

MAY						
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE						
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST						
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER						
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
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**Upper Feather River
Integrated Regional Water Management**

RWVG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group

From: Uma Hinman, Uma Hinman Consulting

Subject: Draft Project Selection and Prioritization Criteria

Date: March 22, 2015

INTRODUCTION

The projects included in the IRWM Plan are the projects that will implement the Plan and achieve the Plan objectives. In order to select projects through a clear and consistent process, review factors must be evaluated for each project and compared for all projects in a systematic manner. While some review factors are developed by and specific to an IRWM region, there are also DWR minimum standards for project inclusion in an IRWM Plan.

The Proposition 84 Grant Program Guidelines require that certain factors be used in the review process including the following, which have been included in the project selection and prioritization method (attached):

1. How the project contributes to the IRWM Plan objectives
2. How the project is related to resource management strategies selected for use in the IRWM Plan
3. Technical feasibility of the project
4. Specific benefits to DAC water issues
5. Environment Justice (EJ) considerations
6. Projects costs and financing
7. Economic feasibility, including water quality and water supply benefits and other expected benefits and costs
8. Project status
9. Strategic considerations for IRWM Plan implementation
10. Contribution of the project in adapting to the effects of climate change in the region
11. Contribution of the project in reducing GHG emissions as compared to project alternatives
12. Whether the project proponent has adopted or will adopt the IRWM Plan

PROJECT REVIEW PROCESS

The purpose of developing a project review process is to:

- Ensure the projects meet “minimum standards” for inclusion in the Plan
- Seek opportunities for integration (Workgroup Integration Workshop)
- Prioritize the projects according to how well they meet the IRWM Plan objectives, as well as how well they meet objectives of the IRWM Grant Program

To achieve these goals, projects typically undergo a number of levels of review, including an initial review for minimum standards per the Proposition 84 Guidelines. After projects are reviewed for minimum standards, a more thorough review for the following is typically conducted:

1. Consistency with laws, regulations, permit requirements, and local plans
2. Identification of potential problems or conflicts (either with IRWM Plan objectives or with other projects)
3. Identification of possibilities for integration with other projects
4. An assessment of each project according to the project ranking criteria
5. A screening for potential environmental justice impacts or impacts to disadvantaged communities (DACs)

The resulting list of vetted projects is then put through a ranking/prioritization process. See attached *Proposed Method for Selecting and Prioritizing Projects* for details.

REQUEST FOR DISCUSSION

Discuss and/or provide direction to staff regarding the draft project selection and ranking criteria.

Attachments: Proposed Method for Selecting and Prioritizing Projects

PROPOSED METHOD FOR SELECTING AND PRIORITIZING PROJECTS

This proposal describes the recommended method for selecting, prioritizing/ranking and including projects in the draft Upper Feather River (UFR) Integrated Regional Water Management (IRWM) Plan.

Overview

It is proposed that two categories of projects be included in the draft UFR IRWM Plan: 1) prioritized projects, and 2) projects to track for the future (i.e. projects which are not yet ready for ranking, but may have important impacts on the region in the future as they become more developed).

Project proponents may request to have their project ranked (prioritized) in the Plan, or included as a “project to track.” The purpose of the “Projects to Track” section is to acknowledge and describe projects that may be on the horizon for future consideration but which are not yet ready to be ranked in the Plan, especially large projects that have the potential to create substantial impacts or benefits to future regional water management. A *Conceptual Project Information Form* has been developed for consideration for submittal of projects to be tracked. The Workgroups may work with project proponents to determine whether a project should be ranked or tracked. The RWMG may also direct staff to describe and include additional projects to track in the Plan that have not been submitted by a project proponent.

It is proposed that project prioritization use a point-based system, which considers criteria 1-12 described below. Ranked projects may be prioritized on several different lists. For example: by top projects overall, by county, by UFR IRWM Plan goal (if prioritized), by top “shovel-ready” projects, by top disadvantaged community (DAC) or Tribal projects. Another example would be by category, if identified in the Project Information Template, such as: water supply/wastewater, restoration, and stormwater/flood control.

Any concerns raised regarding a project (ranked or tracked) will be described to the RWMG during the project selection and scoring process. The RWMG may direct staff to move projects between the ranked and tracked categories, or remove projects from the draft Plan.

We anticipate that the RWMG will conduct future project submittals after the initial UFR IRWM Plan is adopted. The RWMG may revise the project submittal process and criteria at its discretion. Project proponents may resubmit any project for the RWMG’s consideration (e.g. to improve rankings, to move a project between the tracked list and ranked lists, to integrate projects, or to request inclusion of a project that was removed from the draft Plan) at a later date.

Proposed Scoring Criteria

The following scoring criterion has been developed based on the review factors recommended in the 2012 Proposition 85 and Proposition 1E IRWM Grant Program Guidelines. Twelve scoring criteria are proposed, each with an identified scoring method. The point scores for the 12 scoring criteria will be summed for the total project score. Also included are two options for leveling criteria for consideration.

The purpose of the leveling criteria is to ensure geographic and proponent diversity that could be useful in the future for an individual grant solicitation. The scoring and leveling criteria are described below and as shown in the following table.

1. Relevance to UFR IRWM Plan Objectives

This scoring criterion evaluates how the project contributes to achieving the Upper Feather River IRWM Plan objectives. The scoring is based on the number of Plan objectives identified by the proponent in the Project Information Form. Projects can earn one point for each IRWM Plan objective met, for a total of **XX** available points.

2. Resource Management Strategies

Evaluation of whether the project contributes to achieving the RMS identified for inclusion in the IRWM Plan. The scoring is based on the number of RMS identified by the project proponent in the Project Information Form. The scoring is 1 point for addressing 2 RMS, 2 points for 3-5 RMS, or 3 points for more than 5 RMS. A maximum of 3 points is available for this scoring criterion.

3. Statewide Priorities

Considers how many of the State's priorities, which are identified in the Proposition 84 Guidelines, are met by the project. The scoring criteria are as follows: 1 point for addressing 1 priority, 2 points for addressing 2 priorities, and 3 points for addressing 3 or more priorities.

4. Shovel Ready/Readiness to Proceed

Considers the current status of the project, and whether the project could be implemented within 2 years (3 points), within 3-5 years (2 points), or in more than 5 years (1 point). For phased projects, the scoring should consider whether any of the phases could be completed within the time limit. Completion within the time limit should include completion of construction for construction-type projects or the start/continuation of monitoring-type projects. A maximum of 3 points are available from this scoring criterion.

5. Matching Funds

The amount of matching funds that has been secured for the projects as a percentage of the total project cost provided on the Project Information Form. Only match funds characterized as "secure" on the Project Information Form should be considered in this criteria, and past matching money be excluded. Scoring would be based on the amounts and characterizations of funding provided in the Project Information Form, and not consider changes to the funding status that may occur after submittal of the Project Information Form. Scoring consists of 1 point for less than 10% match funds, 2 points for 10-25%, and 3 points for 25% or greater match funds. A maximum of 3 points are available for this scoring criteria.

6. Partners

Evaluates whether a project involves multiple organizations for implementation of the project. Formal partners are considered to be organizations or agencies with which the project proponent has a formal relationship such as a memorandum of understanding, funding, or agreements such as property ownership, or organizations that are otherwise jointly implementing the project. Informal partners include partners such as technical advisory councils or stakeholder groups that are not actively participating or funding the project. The criterion scoring is as follows: beneficiaries identified outside of the applying entity score 1

point, informal partners identified who are in favor of the project score 2 points, and formal partners with letters of written support score 3 points. A maximum of 3 points are available for this scoring criterion.

7. Climate Change and Green Technology

The extent to which the project contributes to the reduction of greenhouse gases (GHGs), conserve energy and/or water, uses other green technologies such as improved best management practices, or contributes to adapting to the effects of climate change. Projects with a direct contribution to reduction of GHGs, energy and/or water conservation, or improved BMPs for water quality or infiltration received full points. Projects that contribute to climate change adaptation or support other green technologies would be scored as follows: minimal contribution with one specific contribution identified (1 points), two specific benefits to climate change or uses of green technology (2 points), three or more specific benefits to climate change or uses of green technology (3 points). A maximum of 3 points are available for this scoring criteria.

8. Drought Preparedness

Evaluation of the project's contributions to sustainable water supply and reliability during water shortages. Drought preparedness includes projects that contribute to the following categories: promote water conservation, conjunctive use, reuse and recycling; improve landscape and agricultural irrigation efficiencies; achieve long-term reduction of water use; efficient groundwater basin management; and establish system inerties. The criterion is scored as follows: 1 point for 1 category, 2 points for 2 categories, and 3 points for 3 or more categories.

9. Impact if Not Funded

Consideration of the importance of the project. Projects that benefit safety, public health, impaired water bodies, flooding, or threatened and endangered species would receive 3 points. Benefit to impaired water bodies would include only direct discharges into the impaired water body and not upstream benefits. Impaired water bodies include not only water bodies with a TMDL, but also aquatic invasive species concerns. A loss of matching fund if the project is not funded received 2 points, and a beneficial missed opportunity received 1 point. A maximum of 3 points are available for this criterion.

10. Preliminary Engineering/Scientific Backing

Assesses the technical feasibility of the project. Projects that have project-specific assessments, studies, or pilot tests, and that referenced equivalent projects consisting of similar procedures or technology. Equivalent projects do not have to include projects that have been completed by the project proponent, rather any similar projects with demonstrated effectiveness. The criteria scoring is as follows: 1 point for logical evidence of need, however no relevant studies or engineering; 2 points if there has been minimal assessment or an equivalent successful project identified; and 3 points for preliminary engineering or studies, and equivalent projects identified. A maximum of 3 points are available for this scoring criteria.

11. Community Benefits

Projects that would provide a tangible community benefit such as water conservation, water supply/reliability, fire protection, reduced wastewater contamination or consolidation would receive one point for each applicable benefit.

12. Disadvantaged Community or Tribal Communities

Whether the project is located in or directly benefits a DAC or Tribal community with respect to water supply and water quality needs. Projects that are located within or will have improvements to serve DAC or tribal communities receive 3 points. Projects that will indirectly, but significantly benefit a DAC or Tribal community received 2 points. Projects that may hire workers from a DAC or that have some minimal improvement to a DAC or Tribal community receive 1 point. A maximum of 3 points are available for this scoring criteria.

13. Number of Projects Submitted per Proponent – leveling criteria

The total number of projects submitted could be considered as a weighting for projects from proponents with fewer projects. The suggested scoring criteria is as follows: 1 point for proponents submitting 4 or more projects, 2 points for proponents submitting 2-3 projects, and 3 point for proponents submitting 1 project.

OR

14. Project Cost – leveling criteria

The total dollar amount requested by any submittal could be considered in an effort to “level the playing field.” The suggested scoring criteria are as follows: 3 points for less than \$500,000 requested; 2 points for less than \$1,000,000 requested; and 1 point for more than \$1,000,000 requested.

Please note that only one of the leveling criteria should be selected for clarity and simplicity.

UPPER FEATHER RIVER IRWM DRAFT PROJECT SCORING CRITERIA

Criteria	Points		
	1	2	3
Relevance to IRWM Plan (Goals/Objectives)	1 point for each plan objective that is met		
Resource Management Strategies	2 RMS addressed	3-5 RMS addressed	5 or more RMS addressed
Statewide Priorities	1 priority addressed	2 priorities addressed	3 or more priorities addressed
Shovel Ready/Readiness to Proceed	Implement/construct in more than 5 years	Implement/construct within 3-5 years	Implement/construct within 2 years
Matching Funds	Less than 10% Match	10-24% Match	25% or more Match
Partners	Beneficiaries identified	Informal partners	Formal partners
Climate Change & Green Technology	1 form of contribution identified, or has no reduction of GHG production	2 specific contributions or green technology uses, or reduces GHG production	3 or more contributions or green technologies used, or significantly reduces GHG production
Drought Preparedness (long-term)	1 category addressed	2 categories addressed	3 or more categories addressed
Impact if not funded	Missed opportunity	Lose matching funds	Safety, public health, impaired waterbodies, flood or threatened & endangered species risk
Preliminary Engineering/Scientific Backing	Logical evidence of need	Minimal assessment or equivalent project	Preliminary engineering & equivalent project
Community Benefits	1 point for each – water conservation, water supply/reliability, fire protection, consolidation/regionalization		
DAC or Tribal Communities	Some minimal benefit to DACs or Tribal communities	Indirect but significant benefit	Specifically a DAC or Tribal community project
Options for Leveling Criteria to ensure project prioritization is evenly dispersed			
Project Cost	\$1 million or more	Less than \$1 million	Less than \$500,000
Number of Projects Submitted per Proponent	4 or more projects	2-3 projects	1 project

Project Review Steps

IRWM Regions implement the project review process in various ways. Some RWMG/Boards select an ad-hoc committee, subcommittee, or technical advisory committee to vet projects for eligibility and ranking for inclusion in the Plan.

Several opportunities for public review and participation are proposed in the Project Review Process. Following the deadline for project submittal, a joint Workgroup project integration workshop will be an opportunity for Workgroups and the public to review the projects submitted, identify those that may benefit from integration, and provide recommendations to the RWMG. Once the RWMG has tentatively approved the ranked and tracked projects list, a project prioritization workshop will be held for Workgroup and public input on the ranked and tracked projects. An additional opportunity for public input will come through the Draft Plan public comment period.

1. Review projects for potential integration opportunities. Project proponents will be encouraged early in the process to integrate projects where possible for broader cross-jurisdictional and regional efficiency and/or benefits.
2. Determine if a project is a candidate for ranking or tracking.
3. Joint Workgroup project integration workshop.
4. For projects to be ranked, apply scoring criteria identified above.
5. Ranked projects will be listed in order from highest number of points to least, for inclusion in the draft IRWM Plan. The ranked list may also be used to group projects into categories.
6. The RWMG will review and tentatively approve the prioritized list of projects.
7. A project prioritization workshop will be held so as to obtain feedback on the list of tentatively approved prioritized list. The RWMG will review any recommended changes to the list before inclusion in the Plan.
8. Ranked and tracked projects will be ultimately be described in the draft Plan, which will go through another process of Workgroup and public review and recommendation and final RWMG consideration. Any concerns raised in project review will be described for the RWMG when the draft Plan is presented.
9. Projects that are not included by the RWMG on the ranked lists in the Plan may be re-submitted for ranking during future project submittal periods to be determined by the RWMG for updating the IRWM Plan. Ranked projects may also be updated to improve their rankings, or to integrate with other projects, during re-submittal periods. New projects to rank or track may also be included in future project submittals.
10. The RWMG may alter/update the submittal process and criteria for future submittals at its discretion. Future grant opportunities may require adding additional criteria and re-ranking the IRWM Plan lists for those specific opportunities as they arise.

Note: Inclusion in the ranked lists or “Projects to Track” section of the UFR IRWM Plan does not constitute project “endorsement” by the UFR RWMG. Project “endorsement” will occur when projects are packaged and recommended for specific grant funding opportunities.

Draft 2015 Statewide Priorities

Table 1 – Statewide Priorities		
Statewide Priority	Description	Source
Drought Preparedness	<p>Proposals that contain projects that effectively address long-term drought preparedness by contributing to sustainable water supply and reliability during water shortages. Drought preparedness projects do not include drought emergency response actions, such as trucking of water or lowering well intakes. Desirable proposals will achieve one or more of the following:</p> <ul style="list-style-type: none"> • Promote water conservation, conjunctive use, reuse and recycling • Improve landscape and agricultural irrigation efficiencies • Achieve long term reduction of water use • Efficient groundwater basin management • Establish system inerties 	<ul style="list-style-type: none"> • California Water Plan (CWP) Update 2013 • California Water Action Plan • Governor’s Drought Declaration, January 2014
Use and Reuse Water More Efficiently	<p>Proposals that include projects that implement water use efficiency, water conservation, recycling and reuse to help meet future water demands, increase water supply reliability, and adapt to climate change. Desirable proposals include those with projects that:</p> <ul style="list-style-type: none"> • Increase urban and agricultural water use efficiency measures such as conservation and recycling • Capture, store, treat, and use urban stormwater runoff (such as percolation to usable aquifers, underground storage beneath parks, small surface basins, domestic stormwater capture systems, or creation of catch basins or sumps downhill of development) or projects outlined in PRC §30916 (SB 790) • Incorporate and implement low impact development (LID) design features, techniques, and practices to reduce or eliminate stormwater runoff • Improve the water supply reliability of the Sacramento-San Joaquin Delta • Reduce reliance on the Sacramento-San Joaquin Delta in meeting water supply needs. • Implement an expanded water supply reliability element consistent with adopted urban or agriculture water management plans and the IRWM plan. 	<ul style="list-style-type: none"> • CWP Update 2013 • SWRCB Recycled Water Policy • DWR Sustainability Policy • CWC §10540, 10560 • California Water Action Plan • Delta Plan WR-R7
Climate Change Response Actions	<p>Water Management actions that will address the key Climate Change issues of:</p> <ul style="list-style-type: none"> • Assessment of Vulnerabilities as a Result of Climate Change • Adaptation to Climate Change • Reduction of Greenhouse Gas (GHG) Emissions • Reduce Energy Consumption <p>Proposals that contain projects that when implemented address adaptation to climate change effects in an IRWM region. Desirable proposals include those that:</p> <ul style="list-style-type: none"> • Advance and expand conjunctive management of multiple water supply sources • Use and reuse water more efficiently • Water management system modifications that address anticipated climate change impacts, such as rising sea-level, and which may include modifications or relocations of intakes or outfalls • Establish migration corridors, re-establish river-floodplain hydrologic continuity, re-introduce anadromous fish populations to upper watersheds, and enhance and protect upper watershed forests and meadow systems <p>Proposals that contain projects that reduce GHG emissions compared to alternate projects that achieve similar water management contributions toward IRWM objectives. Desirable proposals include those that:</p> <ul style="list-style-type: none"> • Reduce energy consumption of water systems and uses • Use cleaner energy sources to move and treat water <p>Proposals that contain projects that reduce not only water demand but wastewater loads as well, and can reduce energy demand and GHG emissions. Desirable proposals include:</p> <ul style="list-style-type: none"> • Water use efficiency • Water recycling • Water system energy efficiency • Reuse runoff 	<ul style="list-style-type: none"> • CWP Update 2013 • CHSC §38500 • Managing an Uncertain Future, DWR October 2008 • California Water Action Plan

Table 1 – Statewide Priorities

Statewide Priority	Description	Source
Expand Environmental Stewardship	Proposals that contain projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment by improving watersheds, floodplains, and instream functions, and to sustain water and flood management ecosystems. Also, proposals that contain projects that protect, restore, and enhance the Delta ecosystem	<ul style="list-style-type: none"> • CWP Update 2013 • DWR Environmental Stewardship Policy • Delta Reform Act 2009 • California Water Action Plan
Practice Integrated Flood Management	<p>Proposals that contain projects that promote and practice integrated flood management to provide multiple benefits including:</p> <ul style="list-style-type: none"> • Better emergency preparedness and response • Improved flood protection • More sustainable flood and water management systems • Enhanced floodplain ecosystems • LID techniques that store and infiltrate runoff while protecting groundwater 	<ul style="list-style-type: none"> • CWP Update 2013 • California Water Action Plan
Protect Surface Water and Groundwater Quality	<p>Proposals that include:</p> <ul style="list-style-type: none"> • Protecting and restoring surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses • Salt/nutrient management planning as a component of an IRWM Plan • Access of safe drinking water to small DACs, for areas that have been identified as nitrate high risk areas. 	<ul style="list-style-type: none"> • SWRCB Recycled Water Policy • SWRCB Nitrate Report
Improve Tribal Water and Natural Resources	Proposals that include the development of Tribal consultation, collaboration, and access to funding for water programs and projects to better sustain Tribal water and natural resources.	<ul style="list-style-type: none"> • CWP Update 2013
Ensure Equitable Distribution of Benefits	<p>Proposals that:</p> <ul style="list-style-type: none"> • Increase the participation of small and disadvantaged communities in the IRWM process, including DAC capacity to identify, develop, and design projects critical to their communities. . • Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations • Contain projects that address safe drinking water and wastewater treatment needs of DACs • Address and consider the Human Right to Water needs within the region • Address critical water supply or water quality needs of California Native American Tribes within the region • Provide access to safe, clean, and affordable water, adequate for human consumption, cooking and sanitary purposes. 	<ul style="list-style-type: none"> • CWP Update 2013 • CWC § 106.3 • California Water Action Plan

**Upper Feather River
Integrated Regional Water Management**

RWMG Meeting No. 4

March 27, 2015

To: Upper Feather River Regional Water Management Group
From: Uma Hinman, Uma Hinman Consulting
Subject: Next Meeting Date and Topics
Date: March 27, 2015

INTRODUCTION

Suggested schedule for the fourth RWMG meeting is Friday, May 29, 2015 at 1:00 p.m. in the Plumas County Planning Conference Room, 555 Main Street, Quincy.

Topics recommended for the May 2015 RWMG meeting:

1. Workgroup updates
2. Tribal Outreach update
3. Review/discuss administrative draft Regional Description
4. Review/discuss administrative draft Land Use Chapter
5. Review/consider Workgroup comments on project selection/ranking criteria

Future topics:

- Discuss, review, and adopt priority projects
- Update on project integration and coordination workshop
- Presentation on DAC and Tribal survey results
- Schedule RMS presentations by Workgroups
- Draft DAC Assessment

REQUEST FOR DISCUSSION AND/OR DIRECTION TO STAFF

Discuss and approve the next meeting date, time and tentative content.

Upper Feather River IRWM Regional Water Management Group

DRAFT SUMMARY MINUTES

For the Regular Meeting
On January 28, 2015

Meeting materials and video recording link are available on the website at:
http://featherriver.org/rwmg_meetings/

Call to Order and Roll Call

Sherrie Thrall, Chair, called the meeting to order on January 28, 2015 at 9:30 AM, at the Plumas County Planning Conference Room, 555 Main Street, Quincy, California.

Members Present:

Sharon Thrall, Plumas County Flood Control and Water Conservation District
Paul Roen, Sierra County
Terry Swofford, Plumas County
Russell Reid, Feather River Resource Conservation District
Bill Nunes, Sierra Valley Resource Conservation District
Jim Roberti, Sierra Groundwater Management District
Trina Cunningham, Maidu Summit Consortium
Jeffrey Greening, Public Member
Tom Yagerhofer, Plumas County Community Development Commission
Quentin Youngblood, Tahoe National Forest (Advisory)

Members Absent:

Joe Hoffman, Plumas National Forest (Advisory)
Carol Thornton, Lassen National Forest (Advisory)

Staff Present:

Randy Wilson, Plumas County Flood Control and Water Conservation District
Uma Hinman, Uma Hinman Consulting
Zeke Lunder, Deer Creek Resources
Leah Wills, Uplands and Forest Management Workgroup Coordinator
Terri Rust, Floodplains, Meadows, Waterbodies Management Workgroup Coordinator
Sherri Norris, California Indian Environmental Alliance

Additions or Deletions from the Agenda

None noted

Public Comment Opportunity

None noted

Announcements / Reports (Part 1, 00:0:01)

None noted

1. UFR IRWM Workgroup Updates (Part 1, 00:1:05)

1a. Update on progress of Workgroups. Uma Hinman provided an update on the status of the Workgroups. The first round of meetings focused on an overview of goals and processes, timelines, strategies and administrative organization such as selecting Chairs, Alternates and meeting schedules. Round two of the meetings will focus on the priority RMS and development of recommendations. They will also review the draft project solicitation forms.

Outreach is going well and has been aided by various organizations in the region. Several suggestions have been made for developing a flyer or postcard to provide a quick and clear overview of the Plan update and process. Staff provided a copy of one prepared by the Lahontan Basins IRWM as an example. Direction was given to staff to proceed with a draft. Randy reminded the group that an important message to include is that the UFR IRWM is not a regulatory plan; it is a tool for developing regional opportunities. Jeffery Greening noted that an informational/explanatory video on the website would also be beneficial.

1b. Review of Workgroup selected resource management strategies.

Each Chair and Alternate in attendance introduced themselves and gave a brief overview of the respective Workgroup meetings, noting their Workgroup selections of resource management strategies. RWMG direction to the Workgroups was to select up to six priority RMS on which to focus.

2. Tribal Outreach Update (Part 1, 00:5:00)

Uma Hinman introduced Sherri Norris from the California Indian Environmental Alliance (CIEA) and Trina Cunningham from Maidu Summit Consortium. Sherri and Trina have been working with Tribes to encourage participation in the UFR IRWM Plan Update. Sherri presented a PowerPoint presentation with information on outreach efforts to date and planned (presentation available at http://featherriver.org/rwmg_meetings/).

A Tribal outreach meeting was held in Susanville on January 13, 2015. Trina noted that this is the first time these Tribes have come together and there was great participation and support. During the meeting it was determined that the Tribal Engagement Committee will be an ad-hoc committee. The Tribal engagement process will consist of Tribal member participation in the Workgroups, formulation of recommendations and input through the Tribal Engagement Committee, and advising Tribal Representative and RWMG member Trina Cunningham. Additionally, regular updates on Tribal Outreach efforts will be provided at the RWMG meetings, which will be a standing agenda item.

They continue refining the draft Tribal Engagement Plan and a questionnaire, working towards supporting the relationship between Tribes and the County, as well as many other actions. Sherri emphasized the need to outreach to multiple branches of the Tribal Administration.

3. Chapter Development Schedule (Part 1, 00:17:10)

Uma Hinman presented the chapter development schedule. Although the timeline indicates a focus on chapter development primarily in year two, some preliminary chapters will be developed and presented in the next few months in order to support the project development process. Chapters will be brought to the RWMG and Workgroups for review and comment as they are prepared. The chapter development schedule was approved with no changes.

4. IRWM Plan Goals and Objectives (Part 1, 00:19:45)

Uma Hinman presented an overview of goals, objectives and the existing 2005 IRWM Plan goals and objectives. Goals and objectives provide focus for the Plan and will guide selection of resource management strategies, development of implementation/performance measures, and project development and selection. She reviewed the options of using issues rather than goals and discussed the possible benefits of prioritizing plan objectives. Staff recommended the RWMG focus on goals/issues and objectives at this time, and look for development of implementation/performance measures through the Workgroups efforts in development of resource management strategies and projects.

Uma reviewed the goals/objectives that are stated in the California Water Code and identified those that are not addressed in the 2005 Plan, and which could be addressed in the updated objectives. She noted that the Proposition 84 Guidelines required they be addressed somewhere in the Plan update, although not necessarily required to be included in the goals/objectives.

Using the Goals and Objectives Update Worksheet provided in the agenda packet, the RWMG members discussed and worked through the draft objectives. The Worksheet included the existing 2005 Plan goals and objectives, staff suggestions for consideration, and goals/issues identified within and by adjacent IRWM regions. The staff suggestions were developed based on issues identified in the UFR Regional Acceptance Process, the California Water Plan, and California Water Code.

A discussion of whether a goal/objective regarding salmonids is appropriate, given the lack of regional control over fish barriers (i.e., dams, hydroelectric facilities) on the Feather River. Trina Cunningham and Sherri Norris noted that fisheries were a priority to the Tribes. It was recommended by the RWMG that the fisheries goal be reworked and submitted by the Tribes.

Break

Upon motion by Paul Roen and second by Bill Nunes, the staff suggested objectives were approved for distribution to the Workgroups for review and feedback, and direction to staff to craft four to five overarching goals to encompass water, land, people and wildlife. **(Part 2, 00:0:40)**

5. Project Development and Project Solicitation Form (Part 2, 00:4:00)

Uma Hinman presented the Project Solicitation Form which contains elements necessary to make informed project selections. Paul Roen recommended modifying the Project Category section on page one of the Form to identify check boxes for the UFR goals. With that change, the RWMG directed staff to send Form to Workgroups for feedback and return to the RWMG for final consideration at the next meeting.

6. Introduction to Project Selection and Ranking Criteria (Part 2, 00:9:40)

Uma Hinman started presenting the project selection and ranking criteria purposes and objectives. Leah Wills asked about RMS that weren't selected by Workgroups and whether they would be dropped from the Plan. Staff clarified that "other" RMS were scheduled for discussion during the May RWMG meeting, but should probably be moved to the March RWMG meeting for discussion and assignment; the RWMG agreed that moving things up was better if possible.

Tom Yagerhofer noted that the Disadvantaged Communities identified on the DWR map are not accurate for the region. Sherri Norris mentioned a Northcoast Resource Partnership meeting that she attended where input from this group on this issue may be useful, as language for the bond is being developed regarding economically challenged communities. She also noted that it was stated at the same meeting that “innovative projects” would be ranked higher – what that means is still being defined. Sherri Norris will send information to Uma for sharing with the RWMG.

Due to time constraints of a number of the RWMG members, it was decided to table the rest of the discussion on this topic to the next meeting.

7. Next Meeting

7a. Schedule and Topics (Part 2, 00:16:00)

The next meeting was scheduled for Friday March 27th, 2015 at 1:00pm in the Plumas County Planning Conference Room.

Uma Hinman presented recommended topics for the meeting.

8. Consent Agenda

8a. Approve RWMG Meeting Minutes for November 14, 2015 (Part 2, 00:15:11)

Upon motion by Paul Roen and second by Bill Nunes, the RWMG Meeting Minutes for November 14, 2015 were approved.

Adjournment

The meeting was adjourned at approximately 12:30pm.