

11.1 CABY Institutional Structure

CABY has initiated creation of a Regional Entity to implement the IRWMP over the next thirty years. The current stakeholder Planning Committee (see Chapter 2, Planning Process), comprised of public agencies with water management responsibilities and diverse interests across all four watersheds, are in the process of signing a Memorandum of Understanding (MOU) to serve as the interim Regional Entity. The MOU will provide a management structure that delegates management decision-making authority to the Planning Committee.

CABY is currently evaluating two possible, long-term governance structures: a Joint Powers Authority/Agreement and a non-profit corporation. The governance structure discussion is being held at the highest levels within the CABY partners and stakeholders. The final decision will be during the fall of 2007, however, the formal filings needed to finalize the governance structure will take an additional several months – most likely by the end of March, 2008.

This final Regional Entity will be responsible for ensuring the implementation, monitoring and success of the IRWMP. During the interim period the Nevada Irrigation District will act as a fiscal agent for CABY.

The elected officials who govern entities that have adopted the IRWMP and signed the MOU, along with other Planning Committee members will have an opportunity to provide input regarding CABY project and policy recommendations through out this timeframe.

The Coordinating Committee, which includes the four water agencies in the region and four non-governmental organizations, will play a vital role in providing guidance to the recently hired CABY Executive Director. The Coordinating Committee will work closely with the Executive Director on IRWMP implementation and forming decision proposals for the Planning Committee.

CABY has already completed the first of its annual work plans. CABY envisions an annual evaluation process in which its Coordinating Committee recommends to Planning Committee members and their boards the appropriate staffing, funding and implementation schedule for the regional entity.

CABY has also developed a contingency funding model in which agencies on the Coordinating Committee are committing to underwrite CABY for the next three years in the absence of adequate grant funding to sustain this effort. The four water agencies in the region, El Dorado Irrigation District, El Dorado County Water Agency, Placer County Water Agency and Nevada Irrigation District will budget contingency funds to ensure IRWMP implementation for 2007 through 2009. Additional funding beyond 2009 will be determined by the CABY Regional Entity and will consist of public and private grant funds, fee for service contracts with CABY members and interested parties, and other means (see section 11.10 for more detail on financing).

A Fiscal Committee comprised of the elected officers from the various agencies allocating contingency funds will provide fiscal oversight for agency funds.

The CABY members and stakeholders represent a highly professional and talented team of individuals. Both the water agency staff and the staff of the various non-profit organizations are talented, experienced and highly educated individuals. These staffs represent a very real resource to the various project proponents. In recognition of this resource, all projects funded through CABY will include a regional coordination task of two to five percent of the total project budget. The “fee for service” monies allocated through this task will augment the funding to the CABY regional entity. This coordination task is described in Section 11.1.2, Roles and Responsibilities of the Regional Entity.

During 2007, CABY will refine and formalize its institutional structure, and continue coordinating and outreach in the region through Planning Committee meetings and regional briefings. The Regional Entity will identify funding critical to implementing projects that have met CABY's rigorous project criteria to bring multiple benefits to the region.

By early 2008, CABY will finalize its governance structure by becoming either a non-profit organization or forming a Joint Powers Authority. CABY will continue all implementation aspects and begin to update the IRWMP. CABY will also continue its data management, funding program, and further its monitoring program. CABY will be the principal organization in the region for outreach and coordination among diverse interests and CABY envisions that potential projects will be vetted at CABY meetings to ensure they are integrated to their full potential and to maximize coordination among agencies and organizations. The full scope of work for the CABY Regional Entity is described in the next section.

11.2 Roles and Responsibilities of the CABY Regional Entity

The Regional Entity has hired an Executive Director to coordinate and implement activities. Below is a brief summary of the tasks identified for this work effort.

- 1.) Finalize the institutional structure for the region and develop a schedule for implementation.
- 2.) Provide coordination and outreach. Conduct briefings for elected officials and engage them in interpreting policy. Make presentations on CABY throughout the region and State to raise awareness about CABY and encourage support for CABY projects and planning. Meet with the Planning Committee quarterly (at a

minimum). Facilitate stakeholder coordination and support for regional efforts.

- 3.) Select and prioritize projects in the region. Solicit requests for proposals. Review and prioritize projects for inclusion in the IRWMP and for funding applications. Identify opportunities for integrating projects, avoiding duplication, and achieving multiple benefits. Track progress on all funded projects.
- 4.) Act as the region's fiscal agent. Prepare and submit grant applications for State and Federal funds. Secure funding through grant applications and local agency and organizational participation. Develop and prepare quarterly progress and financial reports.
- 5.) Ensure proper data management. Provide consistent quality control and quality assurance procedures for the region. Provide guidance in the preparation of Project Assessment and Evaluation Plans for each CABY project. Link CABY to State databases and meet State data requirements. Develop and implement GIS interactive software to store data and display information.
- 6.) Monitor the performance of the plan. Develop performance measures to ensure plan implementation and success in meeting objectives and goals. Ensure plan is implemented effectively and adaptive management occurs.
- 7.) Coordinate and provide training in integrated regional water management and other relevant skills.
- 8.) Advocate for the region. Participate in legislative activities that involve the CABY region. Participate in Statewide programs such as the California Water Plan updates and California Environmental Protection Agency (Cal/EPA) Watershed Program.
- 9.) Provide regional IRWMP coordination. Meet with adjacent IRWMP organizations twice a year or as needed to ensure adequate coordination with projects and policy decisions. Participate and coordinate with other regional efforts such as the Sierra Nevada Conservancy and Mountain Counties Water Resources Association.

11.3 Regional Priorities

11.3.1 Overview

Regional priorities were developed to address issues of importance which extend beyond the individual priorities established within management plans and studies of CABY member agencies, counties, cities, and stakeholders.

Regional priorities take into the account the collective needs of the watershed and reflect the IRWMP goals and objectives.

11.3.2 Identified Regional Priorities

CABY regional priorities were identified by the group following an extensive internal process, involving all CABY Planning Committee members. This process, outlined in 11.3.3 – Regional Prioritization Process, resulted in the identification of three regional priorities:

- 1.) Water Quality;
- 2.) Water Supply; and
- 3.) Environmental Restoration and Habitat Improvement.

These priorities were developed the guide the Workgroups in the creation of CABY Goals and Objectives and, in the aggregate, address the spectrum of management issues identified as part of the overall IRWMP preparation process (See Table 11.1, Regional Priorities and CABY Goals)

Water Quality

Chapter 4, Water Quality, characterizes the key water quality issues in the region as: sediment, mercury, contamination (e.g., hydrocarbons, bacteria, lawn chemicals, etc.) and temperature. CABY proposes to address the water quality issues through two types of projects: (1) research, data collection and outreach efforts that can guide future policy and project design, and (2) remediation or

improvement projects that seek to directly improve water quality.

Data collection efforts would establish baseline conditions in selected waterways, calculate or project impacts of global warming throughout the watershed, create outreach and training to increase awareness and technical support skills, expand citizen monitoring efforts, completion of flood control and creek master plans and develop and maintain extensive data bases.

Remediation or improvement projects would increase water quality through cleanup of known contamination using pilot level projects, implementation of demonstration projects, direct removal of mercury from selected sites, improvements to ditch delivery system components, alteration of agricultural irrigation patterns and frequency, cleanup of contaminated lands, reduction in erosion through targeted roadway and trail improvements, improvements to selected waste water treatment facilities, and creek restoration to reduce erosion and sedimentation.

Even though most of the CABY projects will support individual communities, it is in the interest of the CABY region to support quantification of regional needs for infrastructure and to work with the communities and the local, state and federal agencies to find and develop funding; ensure compliance with existing or proposed standards and regulations; and protect public and environmental health. It is through this universal approach that CABY plans on addressing disadvantaged community needs; through intra-community, inter-regional project development, disadvantaged community assets and resources will be compounded.

Water Supply

Chapter 5, Water Demand and Supply, quantifies the key surface and ground water supply issues as: urban water supplies, agricultural water supplies, and environmental demand.

CABY projects will address these issues via improving water supply infrastructure;

identifying and securing new water supplies through conservation, recycling and storage; and instituting improvements in water quality to increase the quality of area water, thereby increasing the availability of clean, healthy water to the watershed and its environment.

Another regional issue, mirroring a situation felt nationally, is the question of aging public works-related capital infrastructure. These needs have not yet been fully defined or quantified. Over the next two years CABY will work with agency stakeholders in the community to identify areas of greatest need. Work will include evaluating current wastewater treatment needs, water supply distribution and storage requirements, including identifying which systems are at or near the standards or are risking regulatory action.

Environmental Restoration and Habitat Improvement

The primary issues affecting environmental and habitat resources in the watershed are: water quality (sediment, mercury contamination, and temperature), diversions (of stream flow), fire and fuels, habitat alteration, and fish passage barriers.

As with water quality and water supply, CABY projects will address these issues through a two-pronged approach of data collection and evaluation and implementation projects.

Quantifying the probable effects of global warming, assessing and identifying abandoned mining sites, clean up of contaminated areas, implementation of demonstration projects, habitat improvement and restoration projects, improvement of fish passage, and improvements to water quality will all contribute to meeting the regional priorities and plan goals and objectives with respect to habitat restoration and preservation.

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Regional Priority	Applicable CABY Goal	Comments
Water Quality	<ol style="list-style-type: none"> 1. Achieve sustainable surface and groundwater supply. 2. Provide multiple benefits from management of water resources, diversions, and infrastructure. 4. Protect infrastructure, equipment, and property from flooding. 6. Manage sediment for water resources, infrastructure, and habitat value. 7. Reduce mercury contamination in waterways. 8. Reduce contamination of surface and groundwater resources. 	<p>This regional priority seeks to ensure that water quality in the CABY region is sufficient to support natural resources and sustain beneficial uses.</p> <p>Ongoing monitoring will be essential to ensure that baseline conditions are documented, trends of pollutants of concern are updated and monitored, and to assess the success of projects and programs aimed at water quality improvement.</p> <p>Data collection efforts would: establish baseline conditions in selected waterways; model impacts of global warming throughout the watershed; create outreach and training to increase awareness and technical support skills; expand citizen monitoring efforts: complete flood control and creek master plans and develop; and maintain extensive data bases.</p> <p>Remediation or improvement projects would: increase water quality through cleanup of known contamination using pilot level projects; implement demonstration projects; remove mercury from selected sites; improve ditch delivery system components, alter of agricultural irrigation patterns and frequency to increase conservation, cleanup contaminated lands; reduce erosion through targeted roadway and trail improvements; improve selected waste water treatment facilities; and creek restoration to reduce erosion and sedimentation.</p>
Environmental Restoration and Habitat Improvement	<ol style="list-style-type: none"> 1. Achieve sustainable surface and groundwater supply. 2. Provide multiple benefits from management of water resources, diversions, and infrastructure. 3. Reduce impacts from catastrophic fire. 5. Protect and improve watershed resources through land use practices 6. Manage sediment for water resources, infrastructure, and habitat value. 7. Reduce mercury contamination in waterways. 8. Reduce contamination of surface and groundwater resources. 	<p>This regional priority seeks to restore and the preserve the integrity and value of natural habitats and communities. This includes wetlands, streams, rivers, and riparian areas, as well as upland areas, forests and meadows.</p> <p>Quantifying the probable effects of global warming, assessing and identifying abandoned mining sites, clean up of contaminated areas, implementation of demonstration projects, habitat improvement and restoration projects, improvement of fish passage, minimizing the potential for catastrophic fire, and improvements to water quality (as cited above) will all contribute to meeting the regional priorities and plan goals and objectives with respect to habitat restoration and preservation</p>

	9. Protect and improve fisheries and aquatic biota through water resources management.	
Water Supply	<ol style="list-style-type: none"> 1. Achieve sustainable surface and groundwater supply. 2. Provide multiple benefits from management of water resources, diversions, and infrastructure. 4. Protect infrastructure, equipment, and property from flooding. 6. Manage sediment for water resources, infrastructure, and habitat value. 7. Reduce mercury contamination in waterways. 8. Reduce contamination of surface and groundwater resources. 	<p>This regional priority seeks to ensure the provision of adequate and improved water supplies to meet community and regional needs, consistent with sound ecosystem management.</p> <p>CABY projects will address these issues via instituting improvements identified above in Water Quality to increase the quality of area water, thereby increasing the availability of clean, healthy water to the watershed and its environment. The Plan also proposes to reduce demand of agriculture through the employment of “smart” technologies.</p>

Table 11.1. Regional Priorities and CABY Goals

11.3.3 Relationship of Regional Priorities to Plan Goals and Objectives

The CABY regional priorities were identified concurrently with the Plan Goals and Objectives. This process resulted in the development of a set of goals that intentionally address multiple management strategies and key management issues. Table 11.1, Regional Priorities and CABY Goals, presents the regional priorities and how they correspond to CABY Goals.

As identified in Chapter 8, Integrated Goals and Objectives, CABY has developed nine primary IRWMP Goals, displayed below.

- 1) Achieve sustainable surface and groundwater supply.
- 2) Provide multiple benefits from management of water resources, diversions, and infrastructure.
- 3) Reduce impacts from catastrophic fire.
- 4) Protect infrastructure, equipment, and property from flooding.
- 5) Protect and improve watershed resources through land use practices.
- 6) Manage sediment for water resources, infrastructure, and habitat value.
- 7) Reduce mercury contamination in waterways.
- 8) Reduce contamination of surface and groundwater resources.
- 9) Protect and improve fisheries and aquatic biota through water resources management.

Chapter 8 also identifies 26 Objectives that, when integrated with the nine goals, form the foundation for future water resources management in the CABY watershed.

The process by which the regional priorities, goals and objectives were developed is outlined below (Section 11.3.4) and is explained in greater detail in Chapter 2, Planning Process and Chapter 8, Integrated Goals and Objectives.

Regional Prioritization Process

The identification of regional priorities was the result of an extensive internal review and debate that included all CABY stakeholders. Chapter 10 refers to the specifics of this process. The CABY stakeholders have determined that on-going prioritization of regional issues will be necessary in response to outcomes of project performance evaluations, evolving conditions within the region, and other factors. As a result CABY will review the regional priorities annually to determine that the Goals and Objectives are based on currently available information. This process will be a coordinated effort that will include consideration of new projects as well as refinements to ongoing projects.

11.3.4 Development of Project Priorities

After an initial set of projects was developed, a review panel made up of planning committee members ranked an assessed each project. Using the project ranking as a starting point, the full Planning Committee was then able to prioritize the projects into two tiers (see Table 11.2 – Recommended Projects, Prioritized by Tier). More detail on this process is available in Chapter 10, Project Descriptions.

Tier 1 projects are those projects which are ready to proceed, consistent with the adopted water management strategies, responsive to established state priorities, consistent with the CABY goals and objectives. Tier 2 projects include projects which may be consistent with some, but not all criteria used to establish Tier 1, or projects which are insufficiently developed to move into Tier 1. Five other projects were submitted to the CABY review team; these were judged to be sufficiently incomplete, but of high enough quality, to warrant a more thorough project development process. These projects can be found in Chapter 10, section 10.6.3, page 10-48.

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Tier 1 – Projects	Requested Funds - Total Cost
Placer and Nevada County Fish Passage Improvement and Habitat Restoration	\$4,300,000 – (\$5,200,000)
The Bear River Project: A Comprehensive Approach to Reducing the Legacy Mercury Contamination in Sierra Nevada Watersheds	\$4,133,513 – (\$5,108,213)
Addressing Sediment Issues in the CABY Region	\$3,321,934 – (\$4,282,853)
Measuring Impact Project	\$1,740,113 – (\$2,740,113)
Protecting the Headwaters: Groundwater Sources and Mountain Meadows	\$1,116,732 – (\$1,306,732)
Abandoned Mines Lands Assessment	\$1,066,000 – (\$1,319,000)
Flow Augmentation: Assessing Needs and Implementing Strategies in the CABY Region	\$286,933 – (\$361,933)
The Heat is On: Climate Change, Water Supply, and Aquatic Habitat in the CABY Region	\$169,575 – (\$690,000)
Evapotranspiration Rates Measures in the Cosumnes, American, Bear, and Yuba River Watersheds	\$33,257 – (\$67,697)
Ag Stewardship Project	\$388,500 – (\$634,859)
Hangtown Creek Restoration	\$21,960,050 – (\$24,046,050)
Riparian Conservation Area Evaluation and Dump Cleanup	\$480,231 – (\$498,231)
Tribute Trail Bridge	\$438,000 – (\$473,000)
Tier 2 – Projects	Requested Funds - Total Cost
Regional Water System Reliability and Conservation Project	\$9,000,000 – (\$18,000,000)
Caples Spillway Channel Stabilization	\$1,162,500 – (\$1,443,750)
Esmerelda Creek Restoration	\$1,068,750 – (\$1,795,500)
Groundwater Response to Climate Variation	\$52,500 – (\$105,000)
Conservation and Increased Ag Water Use Efficiency	\$48,544 – (\$105,485)
Wolf Creek Parkway Demonstration Projects	\$41,025 – (\$62,825)
North Fork Yuba River Fire Ecology/Assessment Project	\$12,600 – (\$16,000)
Finnon Lake Dam Reconstruction Project	\$925,000 – (\$1,343,750)
Colfax WWTP	\$5,420,900 – (\$12,122,200)
Upper Lakes Project	\$107,800 – (\$215,758)
Bridging Schools and Communities	\$310,654 – (\$388,826)
Sly Park Restoration Projects	\$305,000 – (\$610,000)

Table 11.2- Recommended Projects, Prioritized by Tier

11.3.5 Short-term Priorities

The near term priority for implementing the IRWMP is to continue the development and refinement of high priority projects that are ready to proceed and which have received high scoring in the project ranking. The Tier 1 implementation projects (identified as meeting the highest priority needs of the region) are considered, by CABY, to be the short-term high priority projects.

As part of the ongoing process of document refinement, data collection, performance measure assessment, changing physical conditions in the watershed, and other considerations, project tiers will be reassessed periodically, when needed, to ensure continual response to changing regional priorities. With limited funding resources, the focus of the regional agencies must be on those projects that can provide the greatest degree of benefit.

11.3.6 Long-term Priorities

The long-term priority for plan implementation is to meet the articulated plan goals and objectives. It is clear that, as conditions change within the watershed and more data becomes available, the objectives identified in the plan may be revised or refined to reflect evolving understanding of watershed conditions.

Additional long-term priorities include: development of CABY programs for stakeholder assistance in project design and development, deepening the collaborative relationships and number of involved stakeholders, developing more projects answering the unmet needs of the CABY community, and disseminating the results of CABY projects and programs throughout the State to inform the work plans and project design efforts of other IRWMPs with similar issues.

The ongoing process for review of Plan Goals, Objectives, and priorities will be designed to accommodate the ongoing evaluation of both types of projects, under the assumption that

regional priorities can be met by both single- and multi-proponent projects.

CABY will utilize the implementation actions (see Chapter 10, Project Implementation) as a basis for both new project design development and implementation, and ongoing refinement of short, mid term, and long term priorities.



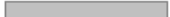






The process for modifying priorities in response to regional changes will be as follows:

- semi-annually, as part of their IRWMP review and evaluation process, the CABY Coordinating Committee will review project performance data, reports and publications on global and state-wide issues as well as the results of stakeholder participants' studies and technical evaluations;
- Goals, Objectives, and performance measures will be evaluated to determine the need for revision, refinement, or necessary additions; and
- the CC will make formal recommendations to the full PC for changes to the document.

CABY fully intends for this IRWMP to be a "living document" and, as such, expects that various portions of the document will be subject to regular review and revision.










Table 11.3. Project Implementation Schedule

ID	Task Name	2007				2008				2009				2010				2011				2012			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1	1. The Heat is On: Climate Change, Water Supply, and Aquatic Habitat in the CABY Region																								
2	Contracts & project management																								
3	Compile and enter data into GIS																								
4	Complete modeling and interpret results																								
5	Model potential impacts to water supply																								
6	Conduct workshop to disseminate results																								
7	Write projects report and distribute																								
8																									
9	2. Abandoned Mines Lands Assessment																								
10	CABY Management																								
11	Collection of known information																								
12	Screen/sample about 100 abandoned/inactive mine land sites located on public lands in the CABY region.																								
13	Synthesize data and prioritize sites.																								
14	Cleanup and Remediation of Known Hotspots in Deer Creek watershed																								
15	Out reach to community and school																								
16																									
17	3. Protecting the Headwaters: Groundwater Sources and Mountain Meadows																								
18	Project oversight and coordination																								
19	Define the geophysical parameters of groundwater aquifers																								
20	Quantify the groundwater surface water interaction																								
21	Delineate mountain meadows in the headwaters of the CABY region																								
22	Assess meadow health using integrated protocol																								
23	Identify groundwater sources that support mountain meadows hydrologic function																								
24	Meadow restoration and protection of groundwater resources																								
25																									
26	4. Addressing Sediment Issues in the CABY Region																								
27	Manage and report on project progress																								
28	Develop and implement project performance and evaluation plan																								
29	Prioritize sediment projects																								
30	Implement and monitor sediment reduction projects																								

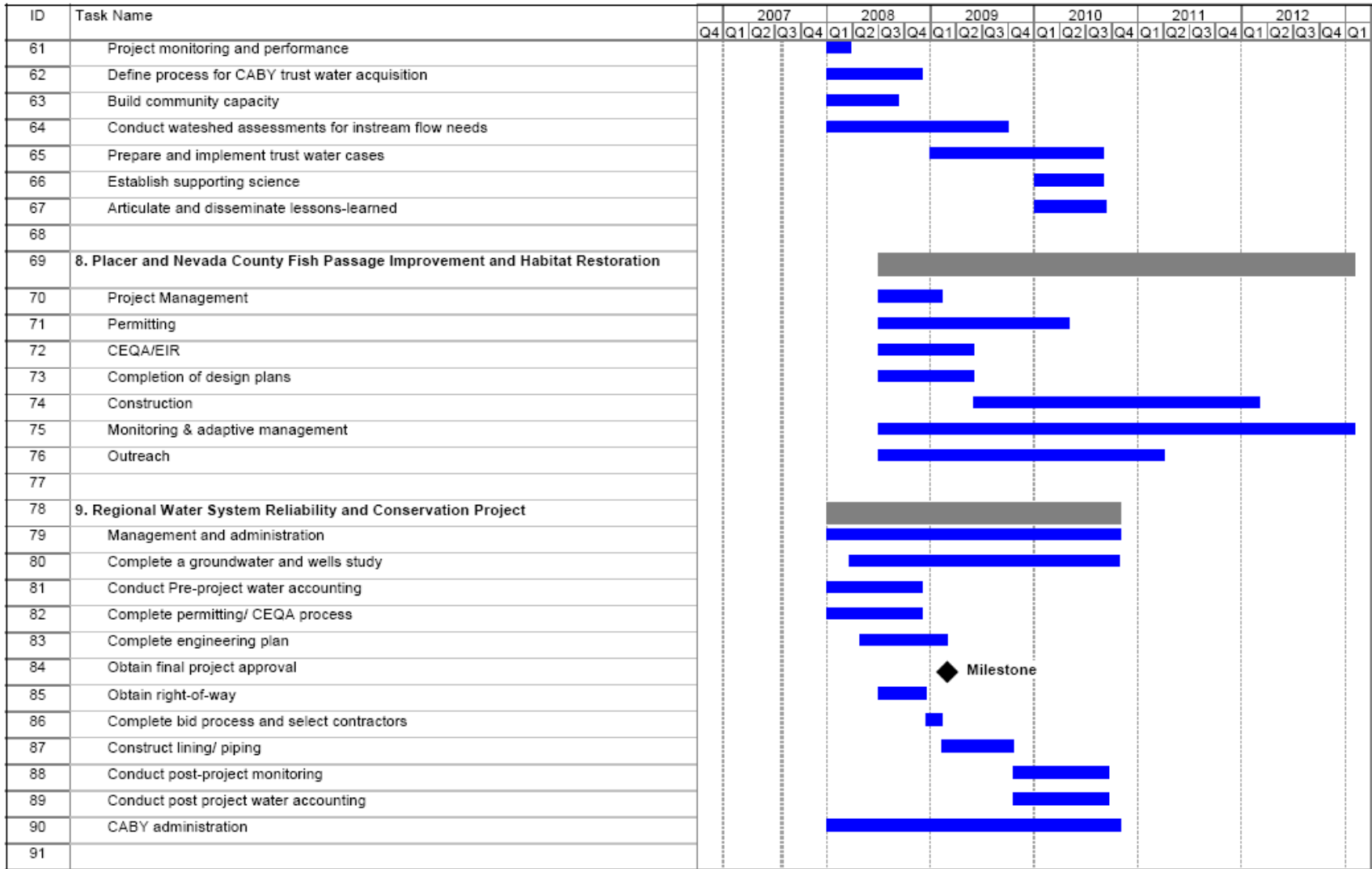
Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	



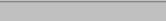






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ID	Task Name	2007				2008				2009				2010				2011				2012					
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
31	Develop and disseminate education and outreach materials																										
32	Trainings and community forums																										
33	Sediment budget: Acquire and review existing data																										
34	Establish region wide streamflow monitoring network including stream temperature, suspended sediment, and other water quality constituents																										
35	Sediment budget: Spatial analysis and fieldwork																										
36	Construct and apply sediment budget																										
37																											
38	5. The Bear River Project: A Comprehensive Approach to Reducing the Legacy Mercury Contamination in Sierra Nevada Watersheds																										
39	Technical review panel, project reporting																										
40	Multiple benefits assessment																										
41	Preparation for project achieved																										
42	Report summarizing mercury removal and monitoring																										
43	Restoration of priority sites																										
44	School and community education and outreach																										
45	Project performance plan and evaluation																										
46																											
47	6. Measuring Impact Project																										
48	Manage and report on project progress																										
49	Develop and implement project Performance and evaluation plan																										
50	Support baseline and restoration monitoring																										
51	Standardize watershed group data collection and reporting																										
52	Expand capacity to analyze, apply and report water quality																										
53	Integrating hydrology, geomorphology, and groundwater																										
54	Identifying and filling data gaps																										
55	Coordinating across CABY region																										
56	Ensuring sustainability																										
57																											
58	7. Flow Augmentation: Assessing Needs and Implementing Strategies in the CABY Region																										
59	Project administration and management																										
60	CEQA compliance																										

Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	

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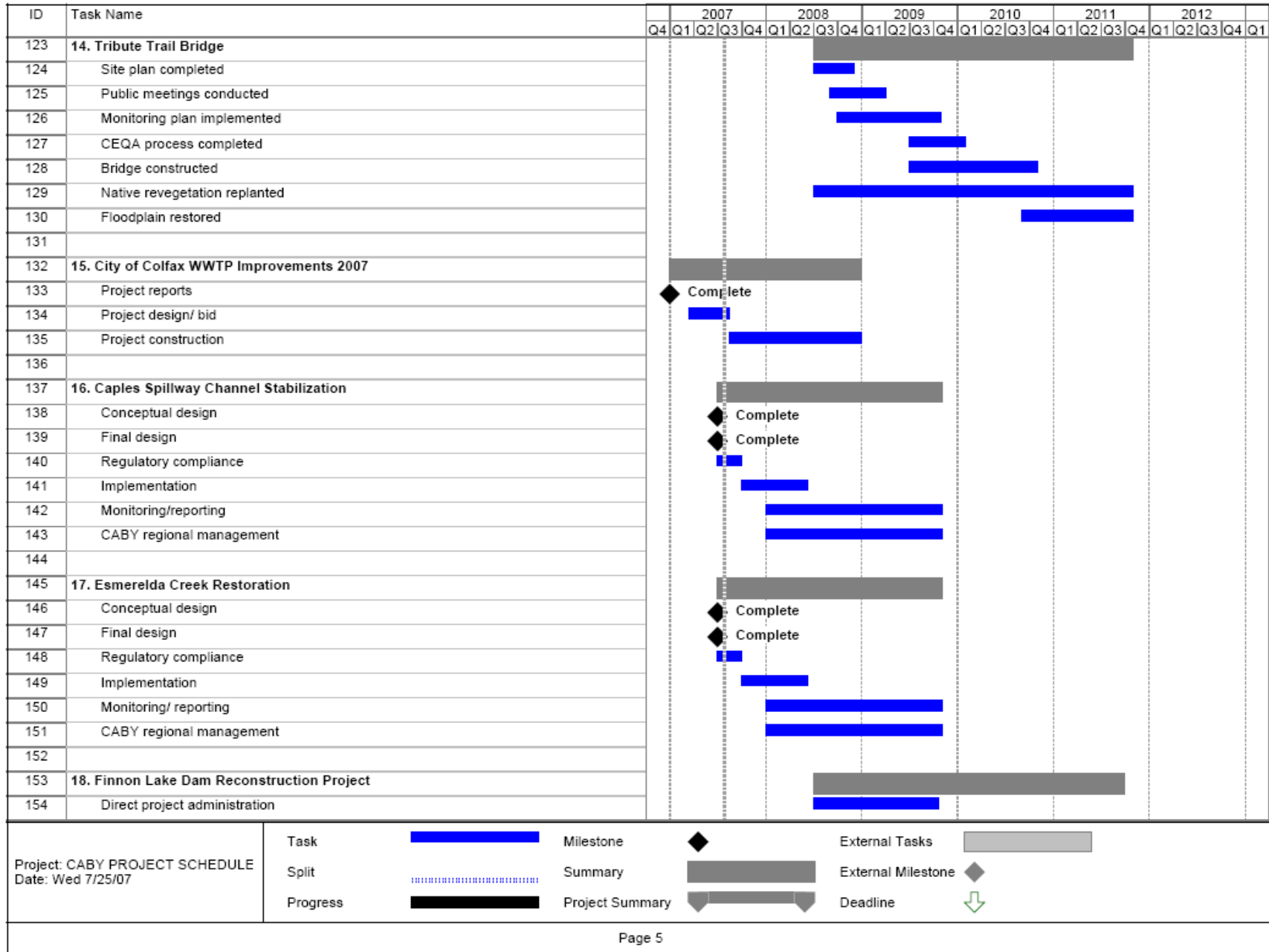
Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	

IRWMP IMPLEMENTATION AND MANAGEMENT

ID	Task Name	2007		2008				2009				2010				2011				2012					
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
92	10. Ag Stewardship Project	[Grey bar]																							
93	Project management/adminitstration	[Blue bar]																							
94	Water quality monitoring	[Blue bar]																							
95	Conservation planning technical assistance	[Blue bar]																							
96	Education & outreach	[Blue bar]																							
97	CEQA documentation	◆ Complete																							
98																									
99	11. Evapotranspiration Rates Measures in the Cosumnes, American, Bear, and Yuba River Watersheds	[Grey bar]																							
100	Signed landowner agreements	[Blue bar]																							
101	Equipment at EID	[Blue bar]																							
102	Equipment collecting usable data	[Blue bar]																							
103	12 months of continuous data collection	[Blue bar]																							
104																									
105	12. Hangtown Creek Restoration	[Grey bar]																							
106	Hydrology and hydraulics	[Blue bar]																							
107	Hangtown creek master plan	[Blue bar]																							
108	Remove existing trunk sewer from Hangtown Creek	[Blue bar]																							
109	Upgrade existing sewer lift stations	[Blue bar]																							
110	Ongoing restoration of Hangtown Creek	[Blue bar]																							
111																									
112	13. Riparian Conservation Area Evaluation and Dump Cleanup	[Grey bar]																							
113	CABY management funds for CABY	[Blue bar]																							
114	Compile known information	[Blue bar]																							
115	Select evaluation criteria using an interdisciplinary process	[Blue bar]																							
116	Select/develop/populate a database	[Blue bar]																							
117	Survey, collect samples, send samples in for analysis, and input data on public lands within riparian corridors in th eCABY region	[Blue bar]																							
118	Summarize geologic information & groundwater data	[Blue bar]																							
119	Prioritize dump sites for treatment	[Blue bar]																							
120	Cleanup/remediation of pilot project	[Blue bar]																							
121	Project coordination between collaborators	[Blue bar]																							
122																									

Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task	[Blue bar]	Milestone	◆	External Tasks	[Grey bar]
	Split	[Dotted bar]	Summary	[Grey bar]	External Milestone	◆
	Progress	[Black bar]	Project Summary	[Grey bar]	Deadline	↓

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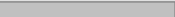






ID	Task Name	2007				2008				2009				2010				2011				2012							
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
155	CEQA or permitting					◆																							
156	Planning/ design/ engineering					◆																							
157	Construction/ implementation																												
158	Wetlands rehabilitation																												
159	Monitoring																												
160																													
161	19. Wolf Creek Parkway Demonstration Projects																												
162	Education																												
163	Forested riparian buffer																												
164	Revegetation																												
165	NPS control demonstration																												
166	SWM BMPs																												
167	Parking lot filter																												
168	Boardwalk																												
169	NCLT trail																												
170																													
171	20. North Fork Yuba River Fire Ecology/Assessment Project																												
172	Recruit science teachers in the partner schools																												
173	Develop GPS protocol curriculum																												
174	Develop biometry protocol curriculum																												
175	Develop fire fuel analysis protocol curriculum																												
176	Develop soils characteristics																												
177	Develop a plant regeneration protocol curriculum																												
178	Develop procedure to input gathered data in appropriate scientific forums																												
179																													
180	21. Groundwater Response to Climate Variation																												
181	Retain consultant																												
182	Perform study																												
183	Prepare report																												
184	CABY administration																												
185																													
186	22. Conservation and Increased Ag Water Use Efficiency																												

Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task		Milestone	◆	External Tasks	
	Split		Summary		External Milestone	◆
	Progress		Project Summary		Deadline	↓

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ID	Task Name	2007				2008				2009				2010				2011				2012							
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
187	Growers Identified																												
188	Grower site set-up																												
189	project requirements																												
190	project monitoring																												
191	Regional management																												
192																													
193	23. Upper Lakes Project																												
194	Water quality sampling																												
195	Water quality analysis/ speciation																												
196	Community outreach																												
197	Data sharing/ conference presentation																												
198	Regional management task																												
199																													
200	24. Bridging Schools and Communities																												
201	Community engagement																												
202	Teacher training																												
203	Student activities																												
204	Curriculum implementation																												
205																													
206	25. Sly Park Restoration Projects																												
207	Project design completed and plan for implementation																												
208	Implement project design																												
209	Fire-safe landscape demonstration project																												
210	Reporting																												
211	Public outreach/ education																												

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Project: CABY PROJECT SCHEDULE Date: Wed 7/25/07	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	

11.4 Economic and Technical Feasibility

11.4.1 Economic Feasibility

The program-level assessment of economic feasibility focused on projections, formulas, and calculations contained in agency master planning documents, availability of selected technologies in the marketplace, cost estimates and budgets contained in individual project proposals, and other similar factors.

An additional aspect of economic feasibility is the impact of collaboration and project “bundling.” The ability of stakeholders to combine planning and implementation activities can lead to an economy of scale, as can the grouping or “bundling” of projects to achieve cost reduction or efficiency.

11.4.2 Technical Feasibility

The program-level technical feasibility assessment took into account a variety of issues identified during plan preparation. There will be two primary categories of long term implementation projects/programs: projects/programs that would be independently implemented by stakeholders and projects/programs that would be coordinated as inter-group/multi-stakeholder efforts.

Projects that met all criteria and were ready to proceed were given a higher priority than those projects that were conceptual in nature or which had not yet been sufficiently described. In this context, technical feasibility – as a minimum – included: presence of a budget detailing projected costs, a timeline which identified project tasks and key milestones, initiated CEQA/NEPA review or completed environmental review and permitting, documented commitment of responsible agency/organizational board to proceed with project, and availability of match funds. See Chapter 10 for more project details.

The program-level criteria for technical feasibility included availability of identified technology in the market-place, documentation of demonstration-level testing of innovative or emerging technologies, review of resource management and land use management plans and policies developed by CABY partners or stakeholders, regulatory parameters or technologies mandated by state and federal agencies, evaluation of best management practices (BMPs), and available agency guidelines. Table 11.4, Program-Level Technical Feasibility, provides a program-level presentation of technical feasibility, using plan objectives as the screening level.

1) Achieve sustainable surface and groundwater supply.	The technical feasibility was defined based on technologies identified in agency master planning documents, regulatory agency compliance regulations, guidelines and policies, and evaluation of known technologies as well as documentation of available demonstration technologies.
2) Provide multiple benefits from management of water resources, diversions, and infrastructure.	The technical feasibility was determined using evaluation of issues such as temperature, water diversion, infrastructure, instream flow, habitat alteration, and fisheries and aquatic biota contained in master planning documents and technical reports and memorandum developed by project proponents.
3) Reduce impacts from catastrophic fire.	Technical feasibility was defined through forest management actions and land use management identified in federal and local management plans.
4) Protect infrastructure, equipment, and property from flooding.	Because flooding is not a concern in all areas of the CABY region and some flooding is desired to maintain stream and riparian function, flooding is usually a localized problem. However, technical feasibility relates to management plans which focus on discrete flood hazard areas as well as regional plans that affect downstream areas potentially subject to cumulative flooding.
5) Protect and improve watershed resources through land use practices.	Technical feasibility is addressed in local state and federal management plans, programs, and policies which relate to land-use practices.
6) Manage sediment for water resources, infrastructure, and habitat value.	Technical feasibility was defined using conventional technologies or demonstration tests of new technologies from agencies within CABY, as well as nation wide.
7) Reduce mercury contamination in waterways.	Technical feasibility is defined via best management practices to reduce mercury input as well s documented technologies for extracting mercury contamination.
8) Reduce contamination of surface and groundwater resources.	Technical feasibility was defined using conventional or pilot tested technologies.
9) Protect and improve fisheries and aquatic biota through water resources management.	Technical feasibility determined through evaluation of the best management strategies based in plans on local and state federal management plans guidelines and policies.

Table 11.4. Program-Level Technical Feasibility

11.5 Current Status of Plan Elements

CABY has already begun to implement the Plan within the CABY region. Stakeholders engaged in a project identification and ranking process in late 2006 and mid-2007, resulting in a set of projects that are “ready to proceed. CABY has also begun the design and implementation of a data base system that will enable the storage, interpretation, and dissemination of data to stakeholders and interested parties. CABY stakeholders have participated in the development of performance measures for currently identified projects and for the CABY regional entity. The entity has also identified an on-going process for IRWMP refinement and revision.

As with all entities taking on large-scale regional management, the shortfall is not in creation of good ideas, but in finding funding to support implementation. CABY is already a line item in the annual budgets of the four major water agencies. In addition, CABY is implementing a strategic planning process to develop a diversified fundraising plan, project prioritization by watershed, finalization of the regional entity/governance structure, development of Prop 84 water management strategies, and expanded outreach to regional stakeholders (especially agencies with land use management authority, energy providers, and business interests).

CABY IRWMP Implementation IRWMP Development Schedule

Work Elements	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CABY IRWMP Implementation																		
Task 1 Implementation of the Regional Entity																		
Subtask 1.1 Establish Governance Structure																		
Subtask 1.2 Implement Governance Structure																		
Task 2 Long-Term Data Management Plan																		
Subtask 2.1 Develop Data Management System																		
Subtask 2.2 Collect and Input Historic Data																		
Subtask 2.3 Establish Collection Protocol																		
Task 3 Implement Projects																		
Tier 1 Project Implementation																		
Tier 2 Project Implementation																		
Tier 3 and New Project Development																		
Tier 3 Project Implementation																		
Task 4 CABY Project Monitoring																		
Task 5 Reporting																		
Task 6 Plan Evaluation																		
Task 7 Financing																		

Table 11.5. IRWMP Implementation Schedule

11.6 Programmatic-level Impacts and Benefits

11.6.1 Project Impacts and Benefits

A wide variety of potential benefits and impacts will result from implementation of projects described in the IRWMP.

11.6.2 Potential Benefits

Qualitative benefits of project implementation will include, among other benefits, increased reliability of long-term water supply, increased efficiency in water storage and delivery, sustainable management of groundwater, integrated management of water supply and storage infrastructure, reduced impact from catastrophic fire, decreased damage from flooding, increased protection and improvement of watershed resources (stream flow, water quality, habitat, and fish and wildlife), decrease in regional erosion and sediment, reduction in mercury contamination in waterways (source reduction and contamination remediation), and improvement of fishery and aquatic habitats through water resources management. The collective benefits of implementing the integrated projects identified in the plan will directly benefit the key water management issues identified during Plan preparation, including increased water quality, increased habitat values, more reliable water supply, and development of policy and related management practices that directly address the articulated goals and objectives of the region.

11.6.3 Potential Impacts

Potential impacts to the region of not implementing the Plan will be far greater than the negative impacts that could occur as a result of project implementation. The continued decline in water quality,

reduction in habitat values, and growing shortage in water supply will affect the region both directly and indirectly in significant ways.

Without regional and sustainable management of regional water resources, the increase in population and growth will stretch existing water supplies in the region and in some areas eliminate surplus supplies during the first 2-3 years of a drought. Increase in recreational use and urban runoff will continue to degrade our groundwater and surface water supplies, impacting both consumptive use and the environment. In addition to the regional impacts, state water supplies could also be impacted by the consumption of water supply and degradation of quality in the CABY region.

Many of the CABY projects will be categorically or statutorily exempt from environmental review because they do not result in direct physical effects (e.g., WEAP modeling, mountain meadow data collection, citizen-based water quality monitoring, education programs in area schools, irrigation rescheduling, etc.). However, some individual projects which would require disruption to the physical environment (e.g., abandoned mine clean-up, removal of mercury from the Bear River, sediment control demonstration projects, and dump cleanups) will need to comply with CEQA, NEPA, or other state and local permitting requirements. Necessary documentation will be prepared by participating agencies, which will identify potential adverse impacts in more detail for each project.

Additionally, it is possible that implementation of proposed projects could result in impacts to downstream or adjacent planning areas outside of the CABY boundaries. Short-term disruptions to water quality that cause increases in sedimentation, disruption in traffic patterns due to road closures or increases in construction-related trucks or vehicular traffic, increase in particulates, and other similar impacts could occur as a result of CABY project activities. These impacts

could result in changed conditions in areas immediately adjacent to or downstream of CABY projects. Similarly, increases in construction or vehicle related emissions as a result of project activities could also add to the cumulative regional air quality impact. Where necessary, these projects will be evaluated and comply with CEQA where deemed necessary by the lead agency.

However, as already mentioned, the environmental review of implementation projects that require physical change to the environment will be used to evaluate and mitigate potential short-term impacts of project implementation. Table 11.6, Programmatic Level Impacts and Benefits, Correlated with Water Management Strategies & Regional Priorities, provides a qualitative discussion of implementation impacts and benefits of each project.

Table 11.6 – Programmatic Level Impacts and Benefits, Correlated with Water Management Strategies & Regional Priorities

PROJECT	Responsible Agency/Partnership	Water Management Strategy	Regional Priorities Addressed	Qualitative Benefits	Possible Negative Impacts
The Heat is On: Climate Change, Water Supply and Aquatic Habitat in the CABY Region	AR	Climate Change	Water Quality, Water Supply, Environmental Restoration and Preservation	Establish baseline conditions, inform on-going design of projects/programs, interface with Flow Augmentation Study (# 8), support design of projects which benefit water quality, water supply and environmental restoration and habitat improvement regional priorities	None
Abandoned Mines Lands Assessment	USFS	Mercury and other contamination	Water Quality, Environmental Restoration and Preservation	Establish baseline conditions, enable targeted design of remediation projects, complete cleanup of two known sites using pilot project design, provide data for federal and state databases,	Short-term construction-related impacts, mitigation will be designed during project environmental review
Protecting the Headwaters: Groundwater Sources and Mountain Meadows	NHI	Groundwater Management	Water Quality, Environmental Restoration and Preservation	Establish baseline conditions, inform development of targeted enhancement projects	None
Addressing Sediment Issues in the CABY Region	NHI	Land Use	Water Quality, Environmental Restoration and Preservation	Implementation of demonstrations projects, regional sediment monitoring, outreach and training, create initiative to design and implement non-point source projects	Short-term construction-related impacts, mitigation will be designed during project environmental review

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The Bear River Project: A Comprehensive Approach to Reducing the Legacy Mercury Contamination in Sierra Nevada Watersheds	NID, EID, ECWA, PCWA	Mercury and Other contamination	Water Quality, Water Supply, Environmental Restoration and Preservation	Remove mercury contamination from targeted river reaches, renew storage capacity in Combie Reservoir, habitat enhancement, reuse of extracted material, renewed recreation and integrated educational outreach as part of project implementation	Short-term construction-related impacts, mitigation will be designed during project environmental review
Measuring Impact Project	SYRCL	Land Use	Water Quality	Expansion of exiting citizen-based water quality monitoring programs, increase collection of base line data, inform development of site-specific remediation projects, inform development of NPS policy locally	None
Flow Augmentation: Assessing Needs and Implementing Strategies in the CABY Region	NHI	Stream Flow	Water Quality	Evaluate management of flows through water systems to improve water quality	None
Placer and Nevada County Fish Passage Improvement and Habitat Restoration Project	Placer County	Environmental Restoration and Preservation	Water Quality, Environmental Restoration and Preservation	A suite of five projects, direct habitat improvement for steelhead, includes dam removal, stream restoration and dam fish passage modification, increase in water quality as well as habitat improvement	Short-term construction-related impacts, mitigation will be designed during project environmental review
Region Water System Reliability and Conservation Project	EDCWA, NID, EID, PCWA	Water Conveyance	Water Quality, Water Supply, Environmental Restoration and Preservation	Improve and optimize ditch conveyance of water, improve water conservation, reduce sediment loads, increase supply and storage volumes, possible dedication of portion of "saved" flows to in stream uses	Changes in flows may impact isolated or discrete wetlands or seepage areas

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Agricultural Stewardship Project	GDRCD	Water Quality	Water Quality	Direct outreach and education to targeted area growers to ensure agricultural discharges meet water quality objectives	None
Evapotranspiration Rates Measures in the Cosumnes, American, Bear, and Yuba River Watersheds	EID	Water Conservation and Recycling	Water Quality, Environmental Restoration and Preservation	Establish weather station to calculate Evapotranspiration rates in watershed, calibrate "smart" irrigation controllers, support modification of irrigation based on environmental inputs rather than calendar scheduling, reduce over watering and consequent waste and contamination	None
Hangtown Creek Restoration	EDCWA	Environment and Habitat	Water Quality, Environmental Restoration and Habitat Preservation	Complete flood control and area creek master plans, relocate sewer trunk line, upgrade sewage lift stations, ongoing creek restoration	Short-term construction related - impacts, mitigation will be designed during project environmental review
Riparian Conservation Area Evaluation and Dump Cleanup	USFS	Water Quality	Water Quality, Environmental Restoration and Preservation	Cleanup and remediation of dumps on public lands	Short-term construction related - impacts, mitigation will be designed during project environmental review
Tribute Trail Bridge	FoDC	Land Use	Environmental Restoration and Habitat Preservation	Completion of trail loop, reconnect floodplain to creek, reestablish native vegetation, create educational elements for trail	Short-term construction related - impacts, mitigation will be designed during project environmental review

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Colfax WWTP	City of Colfax	Water Quality	Water quality	Plant upgrades to improve effluent quality	Short-term construction-related impacts, mitigation will be designed during project environmental review
Caples Spillway Channel Stabilization	EID	Environmental restoration and Preservation	Water Quality, Environmental Restoration and Habitat Preservation	Stabilize spillway, reduce erosion and sedimentation , improve habitat through higher water quality, restore habitat through natural succession	Short-term construction-related impacts, mitigation will be designed during project environmental review
Esmeralda Creek Restoration	EID	Environmental restoration and Preservation	Environmental Restoration and Habitat Preservation	Restore reach of creek, allowing for natural succession to riparian communities	Short-term construction-related impacts, mitigation will be designed during project environmental review
Finnon Lake Dam reconstruction	GDRCD	Water Supply Reliability	Environmental Restoration and Habitat Preservation	Restore lake to original size via reconstruction of impoundment, enhance habitat values, increase recreational opportunities, improve upland habitat	Short-term construction-related impacts, mitigation will be designed during project environmental review
Wolf Creek Parkway Demonstration Projects	Wolf Creek Community Alliance	Environmental Restoration and Preservation	Water Quality, Environmental Restoration and Habitat Preservation	Protect areas of higher value, restore selected six degraded areas using demonstration projects (can then be applied elsewhere in watershed in similar situations)	Short-term construction-related impacts, mitigation will be designed during project environmental

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					review
North Fork Yuba River Fire Ecology / Assessment Project	SYRCL	Resource Mapping	Environmental Restoration and Habitat Enhancement	Collect data using citizen participants, develop BMP's based on study results, collect water quality data and leach field location data	None
Groundwater Response to Climate Variation	ECWA	Groundwater Management	Water Supply	Overall focus on effects of climate change on wells/groundwater, phase 1 - data collection, education program aimed at well owners, identification of high risk areas, development of conservation program, Phase 2 - long-term monitoring program associated with possible policy nad mitigation assessments	None
Conservation and Increased Agricultural Water Use Efficiency	EID	Agriculture	Water Quality	Establish irrigation scheduling program for commercial agriculture, already being used by EID with documented water savings, expand to full region	None
Upper Lakes Project	EID	Water Quality	Water Quality	Base line monitoring to establish control of recreational use and leachate from on-site waste disposal systems	None
Bridging Schools and Communities	Nevada County Schools	Environment and Habitat	Environmental Restoration and Habitat Preservation	Create collaboration between CABY members and area schools, teaching students about watershed science	None

11.6.4 *Advantages of Regional over Individual Efforts*

The advantages of a regional effort over individual efforts have already been made clear by the demonstrable increase in collaboration amongst CABY stakeholders. The creation of a forum for identification of jointly held values, mutually agreed upon goals and objectives, and project development and evaluation has already resulted in the identification of a number of collaborative efforts between agencies, non profit organizations, and area stakeholders.

The advantages of the regional approach include opportunity to share knowledge and expertise; access data, studies, plans and management strategies; avoid duplicative efforts or overlapping projects; allow for consolidation of costs, effort and labor; identify issues which can only be addressed regionally (e.g., climate change, mountain meadow assessments, assessment of abandoned mines, monitoring or multiple parameters on multiple rivers, and cross-watershed collaborations on fish passage); ability to work on point and non-point source pollution strategies (pollutants do not respect political boundaries); and evaluation of projects from a fresh perspective – addressing multiple issues through multiple strategies simultaneously in one project or enabling cross-jurisdictional collaborations (more information on this in Chapter 10, section 10.3).

The requirements of plan preparation have mandated a level of increased regional understanding that did not exist prior to the formation of CABY. The on-going dialogues, regular meetings, creation of work groups, and implementation of joint planning has resulted in the ability of organizations to realize an economy of scale, ability of agency and non-profit boards to engage in policy level collaboration, the fostering of support amongst small grass-roots organizations who feel empowered through the identification of regional priorities, and the realization that implemented projects can

and do provide benefits that extend beyond the needs of the region.

Importantly, the design of projects by diverse stakeholders will increase public acceptance as they see projects proposed by agencies and organizations that have not traditionally cooperated. This also fosters an increasing sense of plan-level altruism – as demonstrated by some CABY partners advocating to prioritize projects developed by other agencies above their own. Once regional needs are known and understood it becomes easier to determine the relative importance of individual agency issues.

Finally, CABY projects have the potential to serve as demonstration projects to illustrate the economic viability and technical merit of innovative approaches which can then be applied throughout the region and the State.

11.6.5 *Plan Objectives and the Regional Solution*

As described in Chapter 8, Integrated Goals and Objectives, the Goals and Objectives identified in the plan were developed through a collaborative process that identified the long term regional vision, key regional management issues, watershed management strategies, and regional priorities. As a result, the Goals and Objectives identified in the plan are, by their very nature, regional in scope. In fact, the expectation of the stakeholders and Planning Committee was that the outcome of their efforts would be an integrated set of Goals and Objectives responding directly to regional needs and priorities. Also, as shown in Table 11.1, Regional Priorities and CABY Goals, the identified priorities are innately regional in nature and could not be addressed without a comprehensive and collaborative regional effort.

11.6.6 *Interregional Benefits and Impacts*

As part of its plan preparation process, CABY has purposefully and systematically interacted with adjacent IRWMPs and non-

IRWMP planning regions. As a result, the “receiving waters” of the CABY region are not directly included in the CABY IRWMP. It became obvious early on that, while the CABY region supplies water to much of the state, its infrastructure for water delivery is primarily local in nature. The valley floor entities which gather and distribute water that originates in the CABY region tend to be more infrastructure intensive.

Frequently, projects improving local habitat and water quality result in increased benefits to downstream users outside of the CABY region. The benefits of CABY project implementation extend far beyond Plan-specific boundaries.

11.6.7 Impacts and Benefits to Disadvantaged Communities and Environmental Justice

As discussed in Chapter 3, Section 3.7, the CABY region includes nine communities that are designated disadvantaged. Additionally, recognizing the special status of Native American populations, CABY has is developing productive and inclusive relationships with regional tribal organizations.

Implementation of the Plan will have significant benefits to the Disadvantaged Communities and on Environmental Justice issues. As discussed in Chapter 2, the CABY stakeholder outreach efforts and governance structure will allow representatives to actively participate in the development and implementation of the IRWMP. Through this open process potential for grant funding, partnership and matching funds will be available to communities that previously were overlooked by many previous regional planning efforts.

In addition, the current IRWMP includes projects from disadvantaged communities, such as the Colfax Water Wastewater Treatment Plant Project, that will provide direct water quality improvements in that community and regionally. Other projects and program elements will provide high quality drinking water, increased recreational

opportunities, and continued sustainability of regional recreational tourism that provides local employment opportunities.

Potential impacts to disadvantaged communities of plan implementation could result from short-term physical changes during plan construction such as increased sediment, increased traffic congestion, and disrupted recreational access. However, the measures to ameliorate both short and long term negative project-related impacts will be identified through the required CEQA and NEPA processes. None of the projects proposed in the plan would result in a long-term negative impact to disadvantaged minority, low income, or low income communities. If the plan is not implemented, there is the potential for the deepening of conflicts with disadvantaged communities if water shortages remain unaddressed, public health hazards continue, and water and recreational standards decline within the region. CABY stakeholders seek to remedy these potential ills before they become acute, through the implementation of this IRWMP.

11.7 Plan Evaluation

11.7.1 Importance of Monitoring and Performance Measures

CABY has developed a performance measure framework for use in implementing the IRWMP. The goal of the performance measure program is to ensure that the results achieved by implementation projects are available to CABY managers, stakeholders, and founders. The framework is also designed to keep CABY partners focused on the goals of the program, progressively refine ongoing new project design, and support development and justification of project budgets by quantifying how the system has and will benefit from investments. Adherence to the identified performance measures will promote improved decision making, ongoing project modification, project transparency, inter and intra watershed learning, accountability, regular and systematic reporting, and monitoring of focus project outcomes.

11.7.2 Framework for CABY Performance Measures

CABY has adopted a three-prong framework for addressing performance measure needs. The first level of measurement will involve system level monitoring in the CABY region. For this level, CABY will identify and measure system indicators that will quantify the existing conditions within the system.

The second level of monitoring will focus on measuring program performance and will ensure that CABY is on track with implementing program goals and objectives.

Lastly, CABY will collect performance data to determine if projects are achieving the desired results. Project level performance measurements will be “rolled up” into the broader programmatic performance measures.

For a more specific example, a CABY system indicator might be “linear feet of riparian vegetation restored”, while a project specific

measurement might be “linear feet of riparian vegetation restored on the Cosumnes River”, which would fit under the CABY programmatic Goal 5: Protect and improve watershed resources through land use practices.

CABY System Monitoring

The primary organizing concept for CABY System Monitoring is based on a modified USEPA Scientific Advisory Board (SAB) Report. This is a simple framework for organizing and reporting on watershed health at various scales. The CABY modified-SAB framework includes a set of Essential Attributes categorizes the breadth of information that describes the state of the CABY system. This logical framework is grounded in current scientific understanding. The modified SAB Framework adds socio-economic and human attributes for a broader and integrated description of the CABY region.

The indicators for each of these attributes, taken together, provide a picture of the status and trends for the region. Some of the data collected will be part of ongoing monitoring in the region, and other data will need to be acquired as part of CABY IRWMP implementation. The attributes and indices that CABY will monitor to provide this baseline and system information are presented below:

Socio-Economic Condition

- Number of unemployed residents (annual average)
- Population living at or below the federal poverty level
- Vacancy rate of hotel rooms

Human Use

- Population served by water that meets all health-based standards
- Percent of river/lake miles under fish consumption advisory
- Percent impervious surface
- Road density

Landscape Conditions

- Area of wetlands, lakes and ponds
- Land cover change

Biotic/Chemical/Physical Conditions

Number of native species that are at risk of extinction
 Mercury- level in fish tissues
 Trends in macro-invertebrate assemblages
 Monitoring of TMDL parameters including mercury, temperature, sediment
 River miles with water temperatures that exceed thresholds for key species

Hydrology/geomorphology/natural disturbance

River miles with floodplains that are inundated at natural rates
 Suspended sediment monitoring
 Annual area disturbed by catastrophic wildfire

Performance of the CABY Plan

The plan-level performance measurements are associated with each of the CABY goals. In addition, CABY has also developed performance measures that focus on the administrative and coordination role that CABY intends to play. These are presented in Table 11.7, CABY Initial Programmatic Performance Measures. These performance measurements represent an initial set of indicators; as implementation of the plan proceeds, CABY will refine this set, develop a full-suite of performance measures, and settle on firm and quantitative targets.

These performance measures have been developed using the following criteria:

- Data quality - based on scientifically valid data collection
- Representativeness – reflect the goals and objectives of the CABY IRWMP
- Sensitivity – able to detect meaningful differences in conditions
- Decision-support – supply information that can support decision-making

Performance Monitoring of CABY Projects

Project level performance measurements will be stated as inputs, outputs and outcomes, and will incorporate targets and timeframes under which the targets are expected to be achieved.

Each project will develop a Project Assessment and Evaluation Plan (PAEP) that will include these different types of performance measures, targets and timeframes. PAEPs will be compatible with CERES, SWAMP, and GAMA reporting requirements and formats.

Types of Performance Measures:

- Input performance measures - measure process and include such indicators such as number of meetings held, number of people trained, etc
- Output performance measures - measure progress and include such indicators as number of miles of canals lined, number of riparian seedlings planted, number of water audits completed, etc
- Outcome performance measures - measure project impact and include such indicators as number of migrating fish, acre-feet of water conserved, and degree change in water temperature, etc

In the early stages of CABY implementation (1-3 years), input and output performance measures will be used to demonstrate CABY IRWMP implementation. As the implications of the actions accumulate, system response to these actions should be increasingly detectable, and outcome indicators will be added to show results.

Table 11.7. CABY Initial Programmatic Performance Measures

CABY GOALS	PROGRAMMATIC PERFORMANCE MEASURES
Plan Implementation	<p>\$ awarded to implement CABY by source/year</p> <p># of CABY Planning Committee and Coordinating Committee Meetings Held</p> <p>% of supported projects that help achieve three or more CABY goals</p> <p>Level of local government involvement in ongoing watershed initiatives by tributary</p> <p># of individuals educated regarding integrated, regional water management planning</p> <p>Extent and quality of new and updated GIS layers developed</p>
Achieve sustainable surface and ground water supply	<p># water meters/1,000 people</p> <p>reduction in water demand due to increased conservation</p> <p>amount of recycled water produced</p> <p>linear feet of recycled water pipeline</p> <p># of new customers connected to water supply</p> <p># of aquifers evaluated for potential potable supply</p> <p># of active monitoring wells</p> <p>capacity of water treatment plants</p>
Provide multiple benefits from management of water resources, diversions and infrastructure	<p>linear feet of ditches lined</p> <p>linear feet of dam stabilized</p> <p># of hydrograph changes that provide multiple benefits due to management changes</p> <p># of management decisions that consider climate change impacts</p> <p># of reservoirs re-operated to provide temperature appropriate flows</p> <p># of infrastructure improvements</p>
Reduce impacts from catastrophic fire	<p># of acres under fuel reduction practices</p>
Protect infrastructure, equipment, and property from flooding	<p>Acres of floodplain wetlands restored</p> <p># of properties protected from flooding</p> <p>acres of stormwater infiltration area</p>
Protect and improve watershed resources through land use practices	<p># of acres under sustainable agricultural practices</p> <p># of property owners that implement BMPs</p> <p># of stormwater BMPs implemented</p>

	<p>Stormwater runoff quality</p> <p>linear feet of riparian corridor restored</p> <p># of community and regional storm water management plans developed and implemented</p>
Manage sediment for water resources, infrastructure and habitat value	<p>Linear feet of bank erosion repaired</p> <p>Linear feet of roads/trails stabilized or decommissioned</p> <p>Linear feet of new trail constructed</p>
Reduce mercury contamination in waterways	<p>% of fish tissue with elevated levels of mercury</p>
Reduce contamination of surface and ground water resources	<p># of TMDLs implemented</p> <p># of wastewater discharge facilities that regain NPEDS permit compliance</p> <p>length of 303(d) listed stream enhanced</p>
Protect and improve fisheries and aquatic biota through water resources management.	<p>% of watersheds and subwatersheds with completed assessments and plans</p> <p>miles of stream with restoration projects</p> <p># of fish passage barriers removed</p> <p># of fish successfully migrating to ancestral headwaters</p> <p># of BMI (benthic macroinvertebrate) population survey events</p>

11.7.3 CABY Assessment Process and Adaptive Management

CABY proposes to use an adaptive management approach to implementing the IRWMP. Adaptive management involves designing and executing actions, monitoring and assessing the responses of the system to these actions, and thereby learning how actions affect the system. In the event that monitoring data demonstrates that CABY actions are not meeting CABY goals and objectives, these actions will be adapted or changed over time.

The process of adaptive management and the development of indicators begins with confirming the major issues driving the system. Using existing knowledge, CABY will identify and describe key regional watershed attributes as they relate to CABY goals and objectives, their interrelatedness,

and the important factors and stressors that influence them. In many cases there will not be unanimity of opinion regarding the attributes and linkages in the conceptual models. However, the point of preparing and presenting these conceptual models is to begin the discussion of the attributes, functions, and linkages described by the models; to enhance communication, collaboration, and understanding amongst a range of stakeholders; to eliminate options that are unlikely to do much good; convey why certain management actions are expected to produce desirable effects; to formulate specific questions and hypotheses to inform management actions and monitoring; and to identify knowledge gaps.

11.7.4. Responsibilities and Mechanisms for Adapting Plan Implementation

CABY has developed specific mechanisms to ensure that data collected as part of the performance measure process will be integrated into plan, program, and project-level decision making. Table 11.8, CABY IRWMP Assessment Responsibilities, describes these assessment responsibilities. Additionally, every five years, CABY will contract for an independent performance audit from an outside entity to be selected through a competitive bid process.

Data Sources, Use and Dissemination

Sharing environmental and water-related information is a major component of the CABY IRWMP. Integrating historic and current watershed information will enable more efficient actions, help track IRWMP implementation, increase decision-making transparency, reduce the cost of data collection, and avoid duplication of effort. The CABY DMS and web portal are discussed in Chapter 9; these will be instrumental in assisting CABY in aggregating, managing, distributing and presenting data for the CABY Region.

Measurements and data collected for performance measures and indices outlined above will come from four major sources:

- direct measurements undertaken by CABY;
- measurements taken by projects supported by CABY;
- data collected by local, state and federal agencies and water districts; and
- data collected by watershed groups, cities, counties, and universities.

CABY staff and implementing parties will undertake the gathering and analysis of the various data sets and will manage the data in the proposed CABY DMS and web portal.

One of the first steps implementation actions will be to conduct a data gaps analysis. Based on this analysis, CABY will establish permanent monitoring stations in the four watersheds to augment the existing data collection efforts. These sites will record data that can be used for long-term water quality and flow trend detection. The goal of this monitoring program is to provide a broad and accurate view of the water quality and flows in the CABY region.

The main mechanism for data dissemination will include an on-line CABY Assessment Database that will be updated annually with system and performance measures data and information. It is envisioned that this will be an internet- and map-based application web portal, allowing CABY members and stakeholders access to this data. It is also anticipated that the CABY system would be compatible with the developing DWR system, IRIS.

CABY will also coordinate with state and federal monitoring efforts, including the Surface Water Ambient Monitoring Program (SWAMP), the Groundwater Ambient Monitoring Assessment (GAMA), and the California Environmental Resource Evaluation System (CERES). CABY data will be supplied in a format that is compatible with these databases, and will include proper quality control and assurances and will provide data back to these systems in formats compatible with state requirements.

Responsible Party	Reporting/Assessment Task	Frequency
Project Proponent	If funded, project proponents will be required to develop a PAEP, and monitor and report on project status and progress towards achieving stated goals and objectives using approved output and outcome performance measures	Quarterly
CABY Staff	Collect and compile project performance information from project proponents, conduct site visits, and report on status of projects	Quarterly
CABY Staff	Collect, analyze and report on baseline data and trends	Annually
CABY Staff	Monitor and report on CABY Program Status and Progress	Quarterly
CABY Coordinating Committee	Assess CABY Performance in contributing to CABY goals, objectives, and vision and report to CABY Planning Committee	Annually
CABY Planning Committee	If necessary, adjust CABY IRWMP	Annually

Table 11.8. CABY IRWMP Assessment Responsibilities

11.7.5 Quality Assurance

CABY will implement quality assurance approaches on a range of scales. On a project level CABY will ensure that projects that involve data collection, analysis, and reporting will be done under a Quality Assurance Program Plan (QAPP) with an associated Technical Advisory Committee (TAC). In addition, all data that is collected will be in accordance with California’s Surface Water Ambient Monitoring Program (SWAMP), Groundwater Ambient Monitoring and Assessment (GAMA), and California Environmental Resources Evaluation System (CERES) guidelines.

As described above, all CABY projects will develop PAEPs and report performance measurement data on a quarterly basis. CABY staff will engage in project implementation oversight through annual site visits to all CABY projects, review of progress reports.

In addition, every five years, CABY will commit to an outside review of progress towards implementing the IRWMP. This objective assessment will be invaluable in keeping the region on track to successfully reach stated goals and objectives. As part of this assessment, there will be a review of the efficacy of the performance measurements process.

11.8 Reporting

As described above, the performance measures will be used to communicate and report to the public and to policy and decision makers. A CABY Annual Report will include a description of the performance monitoring undertaken during the reporting period, an analysis of the monitoring results, and progress towards meeting goals and objectives based on output and outcome indicators. The CABY DMS will be used to help staff generate annual reports, project reports and other information products for the community affairs efforts.

Also, CABY will produce a State of the CABY Report every five years that will include status and trends from the baseline and ongoing monitoring, and an aggregation of indicators into an evaluation and reporting index similar to the scorecard method of reporting used in the Chesapeake Bay and elsewhere.

11.9 Financing

11.9.1 Implementation Funding Overview and Context

Developing reliable funding sources for the CABY projects will be a fundamental challenge to the group, as it will be for all of the regional IRWM Plans.

In the case of water agencies, there are a variety of factors that can influence their ability to finance projects, ranging from the steady increase of construction costs to the ongoing need to maintain and replace aging infrastructure. For non-profit organizations the ability to raise general support funds to keep their operations going is notoriously difficult, and project-specific funds are often tightly restricted, making the use of such funds for any uses not explicitly included in a grant application impossible.

Nonetheless, the CABY members have already demonstrated a firm commitment to see the organization succeed and its projects funded. The four water agencies that are on the Planning Committee and Coordinating Committee have made a three-year commitment to fund the CABY organization.

This long-term commitment means that the CABY staff can focus on developing funding sources for projects without having to “raise their salaries;” at the same time. Additionally, CABY members have agreed that the expertise encompassed in the CABY membership will be provided to each CABY project via a CABY task allocation. This allocation is not a fee for overhead but is,

rather, a fee for service. CABY has developed a list of project support functions that will generate direct benefit to the project proponents, ensure consistency of project implementation across the watershed and also enable non-profits which cannot generally contribute funds to instead contribute in kind services and support.

11.9.2 *Beneficiaries of CABY Projects*

The benefits that will derive from CABY projects are derived from and linked to the Goals and Objectives established in Chapter 8. The region has already benefited from the high degree of collaboration that preparation of the plan has engendered. Agencies and organizations are, through the Coordinating Committee, meeting monthly to discuss issues and to develop projects of mutual design and benefit. Additionally, the Planning Committee meets quarterly to work on region wide issues of concern and to continue to the ongoing development of multi-stakeholder, multi-objective projects and programs. These on-going planning efforts will directly benefit the region through the development of projects that are responsive to regional priorities and sensitive to the evolving knowledge of the watershed as project performance monitoring results become available.

The beneficiaries of CABY projects are many and varied – residents of the project areas, residents of the region, the over millions of tourists who visit the region yearly, the agricultural community, the business community, federal and state agencies and the water agencies which will experience increased reliability of water supply and quality, beneficial uses, other public agencies empowered to implement state plans and the future residents of the region are all direct or indirect beneficiaries of the plan.

11.9.3 *Government Funding Sources*

Current funding sources that are being pursued by CABY to fund projects include:

State of California Funds - Proposition 50 (Chapters 6& 8), Proposition 84 (this legislation has 9 separate possible sources of revenues many of which are applicable to the CABY region or CABY issues and priorities), Proposition 1E, Sierra Nevada Conservancy grants, State Water Resources Control Board watershed grants, Department of Health Services grants.

Federal Funds (via both legislatively mandated and agency grant programs): Water Resources Development Act, Bureau of Reclamation, Field Conservation Grants, Natural Resource Conservation Service, National Ocean and Atmospheric Administration, Army Corps of Engineers, and the Environmental Protection Administration,

Local funds: FERC power revenue, fees, water rates, municipal bonds, augmentation charges, loans, fee cost sharing, NGO in-kind, etc. Additional possible sources might include: development fees, user fees, user rate, and bond debt financing.

If CABY forms a Joint Powers Agreement/Authority (JPA) it will be empowered to use any of the aforementioned local funding options.

11.9.4 *Foundation Grants*

If CABY goes the route of a 501(c)(3), non-profit organization, then in addition to many of the sources outlined above, it will also be able to pursue grants funds through philanthropic organizations. While competition for such funds is very keen, CABY may be able to serve as a funding partner with several of its member groups to solicit joint funding opportunities. The diversity and high value of the CABY region resources also makes it a candidate for major donor funding. It will take careful planning and coordination to avoid unnecessary competition for these scarce but powerful funding sources within the region. CABY members have already begun a dialogue about such funding, discussing the benefits and detractants of forming a regional non-profit organization.

11.9.5 Funding for Operation and Maintenance

At this point, many of the CABY projects do not involve the installation of infrastructure that will require significant operation and maintenance funding. In fact, of the twenty-five CABY prioritized projects, only three involve the installation of infrastructure that would require on-going O&M. In all cases, the entities which have proposed the projects have already factored long-term O&M into their instructional budgets.

The nine projects involving in-stream or near-stream improvements or habitat restoration activities will experience some short-term monitoring expense (for ongoing monitoring of performance measures and project stability/function). In these cases, the expense of monitoring or post construction inspections is already included in the project cost

- finalization of the Regional Entity governance structure (Fall, 2007);
- preparation for the Prop 84 grant cycle;
- prioritization of issues on a watershed-by-watershed basis;
- development of a program-based project organization structure;
- developing a diversified fundraising plan to include local funding sources;
- additional stakeholder outreach to land use agencies, the business community, power generators;
- continued outreach to tribal communities; and
- continued advances in addressing issues of Environmental Justice.

11.9.6 Project-specific Budgets

Project-specific budgets are presented in Table 11.2, Recommended list of Prioritized Project, by Tier, and are also listed in individual project descriptions, in section 10.6.2.

Table 10.1, Summary Budget, provides an overview of total project budgets with total project matches. This table illustrates the overall projects costs, the portion of the project costs that is being considered for Prop 50 funding and the match made available by local/regional entities. CABY projects currently total \$80,639,337.00 with a match of \$24,615,556.00. CABY is seeking a total of \$56,003,781.00 in grant funding for all of its projects. The CABY match thus totals 31%.

11.10 Next Steps

CABY has identified a number of “next steps” that will need to be undertaken to speed or facilitate plan implementation. These include:

