

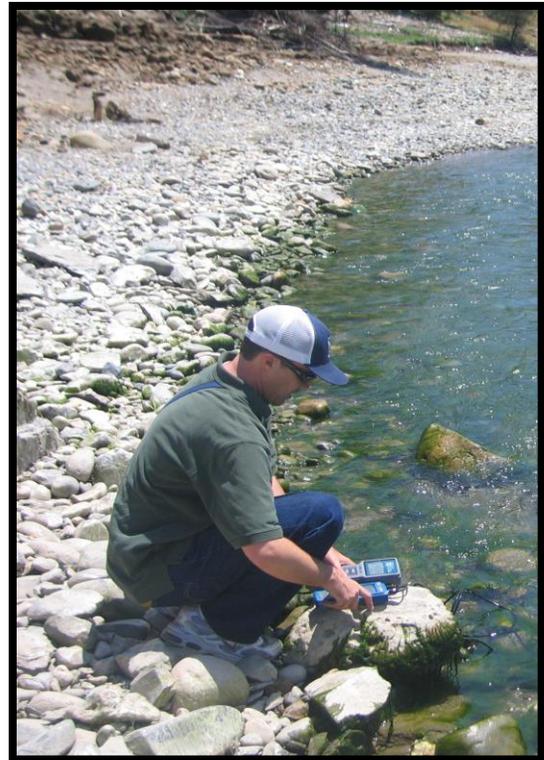
Chapter 13

Plan Performance and Monitoring

13.1 Introduction

Performance measures and monitoring will gauge the success of Plan implementation. Plan performance and monitoring generally falls into two categories: 1) evaluation and measurement of the Plan’s performance (progress toward accomplishing goals and objectives), and 2) monitoring and evaluation of individual projects against their respective measures and outcomes.

This Chapter presents the Plan and project performance measures the CABY Regional Water Management Group, known as the Planning Committee (PC), will use to monitor its performance in implementing the Plan objectives and to assure that projects meet measurable outcomes appropriately. It sets forth the respective roles of project sponsors and the CABY PC for monitoring and measuring, and any adaptive management that might take place to assure desired progress.



13.2 Performance Measures Development

In recognition of the importance of both organizational self-assessment and project-level monitoring, the PC began evaluation early in the Plan development process of both the appropriate and quantifiable performance measures, and design of a process to ensure those measures are accurately reported. The PC discussed the importance of performance measures, stating that they “...are central to gauging regional progress toward collaboratively defined accomplishments and objectives.” To support the process of development of measures the PC established a Performance Measure Work Group (WG). This committee was tasked with defining CABY’s revised performance measures in coordination with the revised CABY objectives. While the PC instructed the WG that performance measures could be qualitative or quantitative, they also stipulated that quantifiable measures were preferable to allow for more specific performance reviews and annual reporting.

DWR mandates a process of identifying and addressing the issue of Plan performance: “[The Plan] shall include performance measures and monitoring to document progress toward meeting plan objectives.” Notwithstanding the guidelines requirement, the longstanding commitment of CABY members to the organization, and their desire to have the collective investment in the IRWM process be value-added, has driven the development of both Plan and project-related performance evaluation. The WG recognized performance measures and monitoring not only as a straightforward exercise of collecting

and evaluating data, but also as a relationship-building exercise that could help CABY members celebrate each other's successes as well as those of the CABY organization.

13.2.1 Members of the Performance Measures Work Group

As described above, the revised process of identifying performance measures included a volunteer Work Group with members from the CABY Coordinating Committee (CC), the U.S. Forest Service, and the Sierra Nevada Conservancy (SNC). The Work Group met to discuss and identify performance measures, assign responsibility for tracking, and to develop a tracking mechanism.

13.2.2 Performance Measures Identification: Plan-level

The WG determined that the factors which could be used to evaluate the performance of the Plan fell into two general categories: qualitative measures associated with the governance, and group and qualitative measures that related directly to whether the Plan was being fully implemented (as judged by meeting objective targets and in numbers of funded implementation projects). The qualitative performance measures associated with Plan governance of the group has not yet been developed, but could include:

- how robust the IRWMP process has been post-Plan development (e.g., the number of meetings the PC has versus identified benchmarks for evaluating the Plan);
- the number of attendees and range of attendees targeted by the PC (would need to set benchmarks, identify stakeholder groups);
- the amount of additional funding for and employment associated with projects identified in the Plan; and
- reduction of conflicts identified in the Plan, as measured by implementing systems for greater collaboration, and by qualitative perceptions of stakeholder participants.

Performance measures tied to objectives will indicate progress toward the accomplishment of objectives targets. The assessment of funding success will be judged by both DWR/Bond-funded awards and other funding. Projects included in this Plan and implemented, regardless of funding source, will be counted as contributing to objectives/outcomes.

13.2.3 Performance Measures Identification: Project-level

After considerable discussion, the Work Group prioritized, minimizing duplication of effort by the various entities throughout the region that have mandated collection of performance and monitoring data. The WG also determined that this could be done best by utilizing measures already in place, wherever possible. After research, targeted interviews, and discussion, the group identified the Sierra Nevada Conservancy suite of comprehensive performance measures as a starting point for developing the CABY measures.

13.2.3.1 Rationale for Basing Performance Measures on Sierra Nevada Conservancy (SNC) Measures

The SNC was created with the understanding that the environmental, economic, and social well-being of the Sierra Nevada and its communities are closely linked and that the Sierra-wide region and the State of California would benefit from an agency providing a strategic direction. The organization is an effective advocate for the Sierra Nevada on issues such as bioenergy, healthy forests, water supply, and climate change, all of which benefit from a regional focus. The SNC awards grants on a semi-annual basis to projects improving economic, recreational, agricultural, and environmental aspects of the region (as

of 2012, awarding over \$40 million to 175 projects throughout the region). Accordingly, the SNC has developed performance measures to track project goals, as well as track individual project contributions to larger SNC programmatic goals.

The CABY Performance Measures Work Group decided to make use of these goals for several reasons:

1. to increase the efficiency of reporting for CABY members;
2. to enhance the ties between CABY and the SNC and to support the SNC's efforts; and
3. to better understand how the CABY region's efforts fit into the larger Sierra Nevada.

Clearly the SNC measures, given the focus and scale which they address, are not always directly relevant to specific CABY projects. In these cases, more refined and specific measures were identified. A review of the draft performance measures submitted by project proponents, as part of the project development process, affirmed that this approach would standardize tracking on a regional basis, and would also simplify the process for individual project proponents.

13.3 Monitoring CABY's Success on a Plan Level

13.3.1 Evaluation Process and Responsibility

The PC and the Performance Measures WG identified the CABY Coordinating Committee (CC) as having final responsibility for ensuring that tracking Plan-level performance is completed. The CC will convene a meeting to evaluate Plan performance at least once annually, and more often if needed to enhance chances for project funding, for incorporation of updates to regulations, for opportunities to improve the Plan, and/or recognize and document circumstances in the region that substantively affect the Plan. The schedule for evaluation will be set forth when the PC adopts the Plan. The CC will write up its Plan evaluations (annually at minimum) and will post evaluations on the CABY website.

At minimum, the evaluation will consist of measuring Plan progress against the adopted Plan-level performance measures adopted by the governing body. As part of its adaptive management strategy to stay current and revise the Plan, the governing body will compare implemented projects and their outcomes against objective metrics to determine progress toward achieving the Plan's goals and objectives. New scientific data, regional conditions, or natural resource events could substantively alter the understanding of issues or solutions within the watershed. Potential alterations to the Plan goals and/or objectives will necessarily need to consider/address changes in water demand, water supply, water quality, and effects on communities and natural resources. For guidance on amendments to the IRWMP, please see Chapter 4, Governance.

The RWMG will determine if updates that materially affect the Plan need to be appended, and whether objectives and their metrics continue to be relevant and appropriate. For instance, some objectives may be met, either by a change in circumstance, regulation, or implementation of projects. Objective metrics might need to be changed at that point, or a timeframe added to the metric to give it additional timeliness or urgency. New strategies and adaptations or mitigation may also emerge that warrant a change in an objective or its metric. The feedback loop provided by a consistently applied performance and monitoring program will ensure that CABY can: revise objectives (either in language and/or measures of quantification) to be responsive to ongoing data collection and evaluation; evaluate the success of different projects and project types in achieving the Plan objectives; revise quantification measures stated in the objectives in response to meeting the stated criteria; assess the reasons for

project-related and Plan-related successes and failures and revise portions of the document in response; and perform critical system analyses in response to documented outcomes.

Significant changes that affect aspects of the Plan may promulgate more frequent than annual Plan evaluations, and/or Plan re-adoption. Re-adoption will occur at the discretion of the PC, but could be triggered by significant changes in governance structure, catastrophic changes to natural resources, or significant changes in regulations. Re-adoption will occur at least every five years to assure widespread buy-in by area stakeholders.

It is anticipated that additional information and data and, potentially, additional localized effects of climate variability will manifest in coming decades. While new studies and technologies may emerge for this relatively new science, the CC may wish to search and review new climate studies annually, but revisit climate projections at longer intervals. IRWM Guidelines encourage Regional Water Management Groups to stay involved with the California Natural Resource Agency's California Adaptation Strategy process and to consider joining the California Climate Action Registry at: <http://www.climateregistry.org>.

The ability of the PC and regional stakeholders to exhibit adaptive management to outcomes of the performance monitoring will be a key factor in ensuring that the IRWMP is being implemented successfully and remains relevant to water management across the CABY region. Please see Table 13-1, CABY Goals, Objectives, Target Outcomes, and Performance Measures, for a description of the target outcomes and performance measures that will be used to assess the success of both project and Plan implementation.

13.4 Project-specific Monitoring

13.4.1 Responsible Parties and Timing

Individual project sponsors are responsible for reporting compliance with performance measures as well as the associated monitoring their own projects. However, individual implementation projects may be funded by a variety of sources with different reporting and outcome monitoring requirements and timelines. Reporting to funders, especially if project match is provided via additional grants from non-DWR sources, can become an onerous process, greatly increasing the administrative costs of project implementation. In recognition of this, the reporting process will be developed on a project-by-project basis (where necessary) to avoid requiring project sponsors having to create multiple reports for a single project. This process, designed on a case-by-case basis, will ensure that measures identified in the CABY project are specifically tracked to support annual Plan and project performance review criteria and process.

A project sponsor agreement is being evaluated that includes a commitment to track progress, monitor performance, and report resulting information to CABY as projects are implemented. As the process currently stands, project proponents would receive a reminder on an either quarterly or annual basis to report project information into the CABY Data Management System. It is expected that, if there are multiple project participants, the project lead would be responsible for reporting.

13.4.2 Typical Project Monitoring Requirements

Individual project monitoring requirements have been and would continue to be established as the projects are developed into a Tier 1 status (see Chapter 12, Project Review Process, for more

information regarding CABY's project tiers). As with tracking and reporting, monitoring of individual projects would be the responsibility of individual project sponsors and, in the case of a group of project participants, the responsibility of the lead sponsor.

Many Tier 1 projects included in this CABY IRWMP have fully developed monitoring protocols and are ready for implementation, but they have not yet been submitted for funding. As a result, specific monitoring protocols for individual projects may change or be augmented, based on the requirements of diverse funding agencies. Project data that is relevant to State databases will always be collected compliant with these databases' needs and structure. Mandatory and permitting-level monitoring will be administered in compliance with the laws and regulations outlining those requirements.

A typical monitoring plan for projects in the CABY IRWMP would include the following:

1. a brief description of the project and GPS-based location of either a) the project center if it is a large project, or b) the actual project location if it's location-specific;
2. a description of the proposed monitoring (both of performance measures and post-project results) for the project and the specific, GPS-based location of that monitoring. Please see Table 13-2, Potential Monitoring Activities Based on Project Type, below, for a list of possible monitoring activities based on project type;
3. the protocols and frequency of the monitoring; if it is to be done in compliance with an established regulatory framework, that framework is referenced;
4. the individual and/or entity responsible for monitoring is identified and a contingency plan described in the case that the individual or entity is unable to complete the responsibility;
5. a plan for tracking the data and how it will be used; how the data will be made public and how the public will benefit from the information made available and whether any interpretation will be necessary in order to communicate findings to the public;
6. this would include reference to both CABY's DMS for performance measures monitoring as well as to applicable State databases and tracking tools; if a State database is referenced, the CABY Protocols for State Database Reporting should be referenced and any additional contact/coordination completed; and
7. a description of the funding and/or volunteer coordination efforts needed to complete the monitoring task and how, if applicable, the work will be funded if scheduled to be complete after grant funds expire or are used in full on project implementation.

The basic monitoring plan structure for CABY projects is expected to be developed as the project is accepted into CABY's Tier 1 project list. These preliminary plans will be made available via the CABY website, along with all other project materials. Making these plans publicly available increases CABY organizational capacity by creating a pool of monitoring resources available to all CABY members and the general public. In this way, regional project monitoring expertise and consistency is elevated.

Alphabetical List of CABY Performance Measures¹

1. *Acre feet per annum of water supply conserved or enhanced*
2. *Acre feet per annum of streamflow improved*
3. *Acres of land conserved*
4. *Acres of land improved or restored*
5. Acres of riparian habitat and/or floodplain restored
6. CABY documents are annually updated in the SWIM data management system
7. DAC projects make up at least 30 percent of the total infrastructure funding request of the CABY IRWMP on an annual basis, including all grant and loan requests to all potential funders
8. Decrease in the number of acres covered by the FEMA inundation zone
9. *Feet of trail/path constructed or improved*
10. Increase in CABY membership/CABY IRWM Plan adoptees
11. *Kilowatts of renewable energy production capacity created*
12. Land use planners are active in the CABY RWMG
13. Legislation introduced for two regulatory issues by 2015
14. *Linear feet of stream bank protected or restored*
15. *Measurable changes in knowledge or behavior*
16. Measurable improvement in water quality
17. *Mass of pollutant reduced per year*
18. Miles of additional spawning habitat created
19. Miles of canal/ditch lined
20. Miles of stream where natural sediment transport regime is restored
21. Number and diversity of CABY region agricultural stakeholders active in the development of and lobbying for revised ILRP regulations for the Sierra
22. *Number and diversity of people reached*
23. *Number and types of jobs created*
24. *Number and value of new, improved, or preserved economic activities*
25. Number of abandoned mine land sites improved or restored
26. Number of acres surveyed for terrestrial invasive species
27. Number of acres treated for terrestrial invasive species
28. Number of adaptive strategies implemented in the CABY region
29. Number of AIS-infested water bodies identified (annually)
30. Number of AIS-infested water bodies closed (annually)
31. Number of anadromous fish migration barriers removed
32. Number of at-risk subdivisions identified and improved approval processes outlined
33. Number of communities implementing new (since 2012) urban water conservation plans and/or leak detection plans
34. Number of county-level approval processes for groundwater-dependent community plans assessed and summarized
35. *Number of collaboratively developed plans and assessments*
36. Number of critical surface drinking water watersheds identified and major threats described
37. Number of interties installed
38. Number of launch sites where AIS information was distributed (annually)

¹ Note: SNC-derived performance measures are indicated by the use of *italics* in this table.

39. Number of locations identified as integral to maintaining habitat connectivity throughout the CABY region
40. Number of meadow restoration or enhancement projects developed, funded, and/or implemented
41. *Number of new recreation access points*
42. Number of outreach opportunities taken with State government officials to advocate for source water IRWM regions
43. Number of presentations to CABY member organizations per annum
44. Number of projects addressing threats to source water areas and increased resiliency of those watersheds
45. Number of projects implemented to upgrade or improve aging infrastructure
46. *Number of significant sites protected*
47. Number of sites surveyed for AIS (annually)
48. Number of stakeholders participating in Sierra Lobby Day
49. Number of trainings conducted per year
50. Number of water agencies collaborating in the development of an interregional drought response
51. *Percent of pre-project and planning efforts resulting in project implementation*
52. Regulatory issues committee developed by 2013
53. Site identified for recycled water infrastructure development/expansion
54. Sustainability Revolving Fund developed
55. *Tons of carbon sequestered or emissions avoided*
56. Water quality credit trading opportunities identified
57. White paper developed identifying major regional issues and strategies

Table 13-1
CABY Goals, Objectives, Target Outcomes, and Performance Measures²

Issue(s)	Objective	Target Outcomes ³	Performance Measures
Programmatic Area: Water Supply			
<i>GOAL: Ensure adequate and reliable supply that can be adapted to climate change and can meet the needs of the region</i>			
Primary Issue: Conservation	WS-1: Implement urban water conservation plans	<ul style="list-style-type: none"> Implement Urban Water Conservation Plans in at least five additional communities by 2020 Include conveyance and delivery system leak detection and control in each plan 	<ul style="list-style-type: none"> Acre feet per annum of water supply conserved or enhanced (SNC-PM) Tons of carbon sequestered or emissions avoided (SNC-PM) by treating less water Number of communities implementing new (since 2012) urban water conservation plans and/or leak detection plans
Primary Issue: Infrastructure			
Aging Infrastructure	WS-2: Upgrade aging infrastructure	<ul style="list-style-type: none"> Implementation of at least five site-specific projects and lining or piping of at least ten miles by 2020 Projects can be associated with urban, rural, and agricultural water supply treatment and delivery of canal/ditches 	<ul style="list-style-type: none"> Acre feet per annum of water supply conserved or enhanced (SNC-PM) Miles of canal/ditch lined Number of projects implemented to upgrade or improve aging infrastructure
Interties	WS-3: Complete major strategic interties between regional water agencies	<ul style="list-style-type: none"> Complete three major strategic interties by 2017 Choose and design interties that allow for connectivity within and between delivery systems in the case of a catastrophic infrastructure failure, to allow for a backup supply and/or conduit to provide water for water treatment plants, urban and municipal drinking water supplies, and/or irrigation and agricultural water 	<ul style="list-style-type: none"> Acre feet per annum of water supply conserved or enhanced (SNC-PM) Number of interties installed
Primary Issue: Water Storage	WS-4: Assess the need and economic and environmental feasibility of new storage facilities	<ul style="list-style-type: none"> By 2020, facilitate discussion with at least one agency to assess the need and determine the economic and environmental feasibility of a new storage facility and alternatives accomplishing multiple benefits 	<ul style="list-style-type: none"> Number of collaboratively developed plans and assessments (SNC-PM)

² NOTE TO REVIEWERS: This is the exact same table as 9-4. It is included here to spark your consideration as to whether it should be replicated here as well or appear only in Chapter 9.

³ NOTE: To ensure consistency with DWR guidelines, ease of comprehension for performance reviews, and to more closely match other IRWMP chapters – the Consulting Team has: shortened each objective, included the exact measurable outcome language developed by the Work Group in the column headed “Target Outcomes” and inserted performance measures from Chapter 13, Plan Performance and Monitoring.

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Water Management Operations			
Drought	WS-5: Adopt local drought and regional drought and emergency management preparedness plans	<ul style="list-style-type: none"> • Specific plans for every local water delivery service area by 2018 • Interregional, coordinated drought and emergency management plans by 2020 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Number of water agencies collaborating in the development of an interregional drought response
Recycled Water	WS-6: Development of additional recycled water infrastructure	<ul style="list-style-type: none"> • Identify at least one site for recycled water infrastructure development and/or expansion by 2020 • Include consideration of gray water systems • Consider entire CABY region through collaborative planning 	<ul style="list-style-type: none"> • Acre feet per annum of water supply conserved or enhanced (SNC-PM) • Site identified for recycled water infrastructure development/expansion
Primary Issue: Water Transfers	WS-7: Convene CABY meetings discussing water transfers in and out of the region	<ul style="list-style-type: none"> • Develop a CABY ethic and approach to water transfers by January 2015 • Convene periodic (at least quarterly) meetings of interested parties • Report outcomes to PC annually 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM)
Primary Issue: Groundwater	WS-8: Prepare summary of requirements for approving development relying exclusively on groundwater	<ul style="list-style-type: none"> • By 2014 summarize the requirements for three major planning jurisdictions in the CABY region for approving developments that rely exclusively on groundwater wells as a source of water 	<ul style="list-style-type: none"> • Number of county-level approval processes for groundwater-dependent community plans assessed and summarized • Number of at-risk subdivisions identified • Improved approval processes outlined
	WS-9: Catalogue major subdivision permit denials due to possibility of unavoidable impacts due to reliance on groundwater	<ul style="list-style-type: none"> • By 2015, determine if there have been any denials of major subdivisions since 2010 • Using this information, identify at-risk subdivisions and summarize the planning oversight process and where process could be improved 	

Issue(s)	Objective	Target Outcomes	Performance Measures
Programmatic Area: Water Quality			
<i>GOAL: Ensure sufficient water quality to support healthy ecosystems and dependent organisms</i>			
Primary Issue: Contamination			
Legacy Mining Toxins	<i>WQ-1: Remediate abandoned mining sites</i>	<ul style="list-style-type: none"> • <i>Annually select one abandoned mine land site for remediation and work to develop necessary plans, obtain permits and funding to ensure implementation</i> 	<ul style="list-style-type: none"> • <i>Number of abandoned mine land sites improved or restored</i>
	<i>WQ-2: Remove legacy mining contaminants from region</i>	<ul style="list-style-type: none"> • <i>Remove 500 pounds of legacy mining contaminants by 2020</i> • <i>Work with stakeholders to collaborate with the land owner/land manager to develop/implement/fund remediation of the site</i> 	<ul style="list-style-type: none"> • <i>Mass of pollutant reduced per year (SNC-PM)</i>
Urban Run-off and Abandoned Mine Land Run-off	<i>WQ-3: Increase the number of water bodies that can achieve water quality objectives</i>	<ul style="list-style-type: none"> • <i>Implement at least five projects by 2020</i> • <i>Work with affected parties to restore a natural balance to identified river systems</i> 	<ul style="list-style-type: none"> • <i>Linear feet of stream bank protected or restored (SNC-PM)</i> • <i>Mass of pollutant reduced per year (SNC-PM)</i> • <i>Acres of riparian habitat and/or floodplain protected or restored</i> • <i>Measurable improvement in water quality</i>
Primary Issue: Sedimentation Management	<i>WQ-4: Restore the natural sediment transport regime</i>	<ul style="list-style-type: none"> • <i>In at least three river reaches by 2020</i> • <i>Monitor and publicize the work being done and encourage the implementation of projects designed to restore natural sediment transport</i> 	<ul style="list-style-type: none"> • <i>Acres of riparian habitat and/or floodplain protected or restored</i> • <i>Linear feet of stream bank protected or restored (SNC-PM)</i> • <i>Miles of stream where natural sediment transport regime is restored</i>
Primary Issue: Wastewater Management	<i>WQ-5: Assess the level of preparedness and prevention measures in place for wastewater spills</i>	<ul style="list-style-type: none"> • <i>Convene at least two regional discussions on the topic and by 2015</i> • <i>CABY will work with regional agencies providing wastewater services (including small systems)</i> • <i>Use the discussions and agency overflow reduction plans and sewer system master plans to create a short white paper identifying the major regional issues and strategies for managing these issues</i> 	<ul style="list-style-type: none"> • <i>Number of collaboratively developed plans and assessments (SNC-PM)</i> • <i>White paper developed identifying major regional issues and strategies</i>

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Headwaters Protection	WQ-6: Identify watersheds critical to major in-region urban areas' water supply	<ul style="list-style-type: none"> • <i>By 2014, implement at least two identification projects annually</i> • <i>Come to a conclusion regarding how to proceed on this issue by 2015</i> • <i>Work with stakeholders to identify the major threats to those important watersheds (including wildland fire, development, insects and disease, climate change, or other threats)</i> • <i>Focus on watersheds that are the most critical for production of surface drinking water for the major urban areas in the CABY region</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Number of critical surface drinking water watersheds identified and major threats described
	WQ-7: Maintain watershed resilience	<ul style="list-style-type: none"> • <i>Work with stakeholders in the affected areas to identify threats to watershed resilience</i> • <i>Develop strategies and plans that make the forests in these important watersheds more resilient to the identified threats (including removing structures, eradication of non-native invasive plants, decommission unneeded roads, revegetate stream banks, and/or improve the water-holding capacity of wetlands/riparian areas/meadows)</i> 	<ul style="list-style-type: none"> • Number of projects addressing threats to source water areas and increased resiliency of those watersheds • Acres of land improved or restored (SNC-PM)
	WQ-8: Evaluate feasibility of a watershed and water quality 'credit trading program'	<ul style="list-style-type: none"> • <i>Discuss with CABY stakeholders a watershed and water quality 'credit trading program'</i> • <i>Program should enable land managers and owners who discharge effluents into the same watershed and who must comply with regulatory requirements to purchase credits and trade them</i> • <i>Program should take advantage of the most economically efficient activities to facilitate compliance with water quality standards</i> 	<ul style="list-style-type: none"> • Water quality credit trading opportunities identified
Primary Issue: Temperature	WQ-9: Improve habitat for aquatic biota	<ul style="list-style-type: none"> • <i>Improve habitat on at least 10 miles of streams 2020, by providing water of appropriate temperatures</i> 	<ul style="list-style-type: none"> • Linear feet of stream bank protected or restored (SNC-PM) • Acre feet per annum of streamflow improved (SNC-PM) • Acres of riparian habitat and/or floodplain protected or restored

Issue(s)	Objective	Target Outcomes	Performance Measures
Programmatic Area: Environment and Habitat			
<i>GOAL: Preserve and restore watershed health</i>			
Primary Issue: Fisheries			
Fish Passage	<i>EH-1: Increase access to suitable spawning habitat for anadromous fish</i>	<ul style="list-style-type: none"> • <i>Make 15 additional miles of spawning habitat available by 2020</i> • <i>Work with interested and affected stakeholders to identify spawning habitat potentially accessible to anadromous fish</i> 	<ul style="list-style-type: none"> • Acre feet per annum streamflow improved (SNC-PM) • Linear feet of stream bank protected or restored (SNC-PM) • Number of anadromous fish migration barriers removed • Miles of additional spawning habitat created
Primary Issue: Aquatic Biota	<i>EH-2: Improve aquatic and riparian habitat</i>	<ul style="list-style-type: none"> • <i>By 2015, identify and quantify at least three measures necessary to improve aquatic habitat not in this document or in other processes (such as water rights proceedings or FERC)</i> • <i>For Sierra Nevada and foothill yellow-legged frogs, remove trout in 18 acres of high mountain lakes at locations where these frogs can recolonize</i> • <i>For California red-legged frogs, create one acre of pond habitat by 2015 where existing CA red-legged frogs reside downstream and have the potential to colonize the new pond habitat</i> • <i>Improve four miles of stream by adding large woody debris by 2015</i> 	<ul style="list-style-type: none"> • Linear feet of stream bank protected or restored (SNC-PM) • Acres of riparian habitat and/or floodplain protected or restored • Acre feet per annum of streamflow improved (SNC-PM)
Primary Issue: Instream Flow	<i>EH-3: Quantify and/or secure habitat on rivers or tributaries with barrier-free ocean access</i>	<ul style="list-style-type: none"> • <i>CABY stakeholders work to quantify and secure the amount of water necessary to allow for anadromy on the two major rivers (and/or major tributaries) within the CABY region that have barrier-free access to the Pacific Ocean</i> 	<ul style="list-style-type: none"> • Acre feet per annum streamflow improved (SNC-PM)
Primary Issue: Meadows	<i>EH-4: Enhance wet meadow-complex function</i>	<ul style="list-style-type: none"> • <i>Support stakeholders in the annual development, implementation, and/or funding of five projects to maintain or enhance wet meadow complex function</i> 	<ul style="list-style-type: none"> • Number of meadow restoration or enhancement projects developed, funded, and/or implemented • Acres of land improved or restored (SNC-PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Fire and Fuels	<i>EH-5: Increase fuel load management</i>	<ul style="list-style-type: none"> • <i>By 2017, conduct fuels management on at least 10,000 acres</i> • <i>Reduce risk of environmental and property damage by working with regional agencies to address loss/impacts from catastrophic fire through management actions</i> 	<ul style="list-style-type: none"> • Acres of land improved or restored (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM)
Aquatic Invasive Species	<i>EH-6: Implement an Aquatic Invasive Species (AIS) Program</i>	<ul style="list-style-type: none"> • <i>Collaboratively work with the State of California and others to implement an Aquatic Invasive Species (AIS) prevention program, detection program, and closure of infested water bodies program</i> • <i>Annually complete the following activities: develop and distribute prevention information to users at a minimum of 20 launch sites; survey at least 10 water bodies; and collaborate with regulatory groups to rapidly close infested water bodies until the AIS are eliminated</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Number of launch sites where AIS information was distributed (annually) • Number of sites surveyed for AIS (annually) • Number of AIS-infested water bodies identified (annually) • Number of AIS-infested water bodies closed (annually)
Terrestrial Invasive Species	<i>EH-7: Implement coordinated non-native invasive plant education, prevention, and control actions</i>	<ul style="list-style-type: none"> • <i>Work with affected regional organizations</i> • <i>Implement coordinated non-native invasive plant education, prevention, and control actions to specifically treat 50 acres</i> • <i>Provide at least one annual training</i> • <i>Survey a minimum of 50 acres annually, supporting prevention through rapid detection and treatment</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Acres of land improved or restored (SNC-PM) • Number of trainings conducted per year • Number of acres surveyed for terrestrial invasive species • Number of acres treated for terrestrial invasive species
Programmatic Area: Climate Change			
<i>GOAL: Anticipate climate change needs and be prepared to respond adaptively to human and ecosystem needs</i>			
<i>Objective: CC-1: Implement climate change adaptive management strategies</i>		<ul style="list-style-type: none"> • <i>By 2020, implement (or encourage the implementation of, as appropriate) three adaptive strategies identified in 2012 IRWMP update to make the CABY region more climate resilient</i> 	<ul style="list-style-type: none"> • Number of adaptive strategies implemented in the CABY region • Kilowatts of renewable energy production capacity created (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM) • Number of collaboratively developed plans and assessments (SNC-PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
<i>Objective: CC-2: Increase alternative energy and energy efficiency</i>		<ul style="list-style-type: none"> • <i>CC-2: Work with interested parties/agencies</i> • <i>Implement at least alternative energy or energy efficiency projects by 2025</i> • <i>Focus on increasing alternative energy and energy efficiency by including: small-scale hydropower, biomass, solar power, wind energy, and other clean energy options</i> 	
Programmatic Area: Human-Landscape Interaction			
<i>GOAL: Maintain and enhance functioning landscapes that provide sustainable services for humans</i>			
Primary Issue: Habitat Alteration	<i>HL-1: Provide conservation stewardship for core and connected habitat</i>	<ul style="list-style-type: none"> • <i>Collaborate with local land use authorities and property owners to identify priority lands/parcels</i> • <i>By 2025, protect 25,000 acres of core and connective habitat by bringing identified lands under permanent conservation stewardship</i> 	<ul style="list-style-type: none"> • <i>Number of locations identified as integral to maintaining habitat connectivity throughout the CABY region</i> • <i>Acres of land conserved (SNC-PM)</i> • <i>Acres of land improved or restored (SNC-PM)</i>
Primary Issue: Native American Uses	<i>HL-2: Increase involvement of Tribal entities in CABY activities</i>	<ul style="list-style-type: none"> • <i>Develop sustained outreach and involvement through the Tribal Work Group participants</i> 	<ul style="list-style-type: none"> • <i>Number and diversity of people reached (SNC-PM)</i>
Primary Issue: Flooding	<i>HL-3: Implement flood risk reduction projects</i>	<ul style="list-style-type: none"> • <i>Remove flood risk from at least 50% of the current FEMA inundation zone in Placerville, Nevada City, and Grass Valley</i> • <i>Work with affected areas to implement flood management and/or reduction projects</i> 	<ul style="list-style-type: none"> • <i>Linear feet of stream bank protected or restored (SNC-PM)</i> • <i>Number of significant sites protected (SNC-PM)</i> • <i>Decrease in the number of acres covered by the FEMA inundation zone</i>
Primary Issue: Open Space	<i>HL-4: Provide for permanent protection of open space</i>	<ul style="list-style-type: none"> • <i>By 2017, bring at least 30,000 acres of open space under permanent protection</i> • <i>Collaborate with local land use authorities and property owners to preserve rural open space and the character of the CABY Region</i> 	<ul style="list-style-type: none"> • <i>Acres of land conserved (SNC-PM)</i>
Primary Issue: Disadvantaged Communities	<i>HL-5: Support DAC project development activities</i>	<ul style="list-style-type: none"> • <i>CABY member groups and other stakeholders support and work with DACs to develop high-scoring projects</i> 	<ul style="list-style-type: none"> • <i>DAC projects make up at least 30% of the total infrastructure funding request of the CABY IRWMP on an annual basis, including all grant and loan requests to all potential funders</i>

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Recreation	<i>HL-6: Increase recreational opportunities</i>	<ul style="list-style-type: none"> • <i>Implement at least six multi-purpose projects by 2016 that include recreation as a consideration</i> • <i>Develop projects to maintain and enhance the recreational experience in the CABY region by working with interested agencies</i> 	<ul style="list-style-type: none"> • Number of new recreation access points (SNC-PM) • Feet of trail/path constructed or improved (SNC-PM) • Acres of land improved or restored (SNC-PM)
Primary Issue: Hydropower	<i>HL-7: Increase alternative energy generation</i>	<ul style="list-style-type: none"> • <i>Implement at least two alternative energy generation projects by 2015, with an additional two by 2020</i> • <i>Work with interested agencies to increase alternative energy generation, including small-scale hydropower projects and existing hydropower plant efficiency improvements</i> 	<ul style="list-style-type: none"> • Kilowatts of renewable energy production capacity maintained or created (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM)
Primary Issue: Agriculture	<i>HL-8: Advocate for regulations that support continued agricultural operations viability</i>	<ul style="list-style-type: none"> • <i>Advocate for reasonable, area-specific regulations that will preserve the viability of continued agricultural operations in the region</i> 	<ul style="list-style-type: none"> • Number and diversity of CABY region agricultural stakeholders active in the development of and lobbying for revised ILRP regulations for the Sierra • Acres of land conserved (SNC-PM) • Number and value of new, improved, or preserved economic activities (SNC-PM) • Number of collaboratively developed plans and assessments (SNC-PM)
	<i>HL-9: Permanently protect agricultural lands</i>	<ul style="list-style-type: none"> • <i>By 2017, bring at least 30,000 acres of agricultural land under permanent protection (the purchase of development rights or another similar approach)</i> • <i>Identify acreage that will sustain the local economic base, rural open space, and agricultural production</i> • <i>Collaborate with local land use authorities and property owners</i> 	

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Sustainable Economy/Self-sufficient Communities	HL-10: Create a Sustainability Revolving Fund	<ul style="list-style-type: none"> • Create a Sustainability Revolving Fund of a minimum \$350,000-\$500,000 • The Fund should be configured to support projects, industries, and economic pursuits that are sustained by the ambient natural resource base, including timber management, agriculture, recreation, and energy production 	<ul style="list-style-type: none"> • Number and types of jobs created (SNC-PM) • Number and value of new, improved, or preserved economic activities (SNC-PM) • Sustainability Revolving Fund developed
Primary Issues: Governance			
Political	HL-11: Continue to expand CABY's presence in the region	<ul style="list-style-type: none"> • Ensure that all CABY member organizations understand the current status of the CABY IRWMP and the potential benefits received to support their own organizations' mandate(s) • Annually: Have the CABY executive director (or designated alternate) present CABY to the elected boards of all CABY member agencies 	<ul style="list-style-type: none"> • Continued increase in CABY membership/CABY IRWM Plan adoptees • Number of presentations to CABY member organizations per annum • Number and diversity of people reached (SNC-PM)
Legislative	HL-12: Enhance legislators' understanding of the Sierra Region	<ul style="list-style-type: none"> • CABY stakeholders will participate in at least one Sierra Lobby Day at the Capitol each year • Efforts will focus on furthering support for the IRWMP objectives and enhance legislators' understanding of the Sierra Region 	<ul style="list-style-type: none"> • Number of stakeholders participating in Sierra Lobby Day • Number of outreach opportunities taken with State government officials to advocate for source water IRWM regions
	HL-13: Monitor regulatory processes with the potential to affect water resources in the region	<ul style="list-style-type: none"> • The CABY organization, with the help of member groups, will monitor regulatory processes that have the potential to affect water resources in the region • Activities may include regular presentations by member groups and/or outside entities seeking to inform and/or recruit CABY's support 	
Regulatory	HL-14: Identify persistent conflicting regulations that hinder implementation of the CABY IRWMP	<ul style="list-style-type: none"> • By 2013, appoint a committee to identify persistent conflicting regulations that hinder implementation of the CABY IRWMP • By 2015, work to introduce legislation on at least two issues (including the sale of recycled water and/or treated effluent to downstream users) 	<ul style="list-style-type: none"> • Regulatory issues committee developed by 2013 • Legislation introduced for two regulatory issues by 2015

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issues: Other			
Education and Outreach	<i>OV-1: Integrate education into all CABY projects and programs</i>	<ul style="list-style-type: none"> • <i>Where possible, outreach and education will be integrated into all CABY projects and programs</i> • <i>This will include both school education and public and community outreach</i> 	<ul style="list-style-type: none"> • Measurable changes in knowledge or behavior (SNC-PM) • Number and diversity of people reached (SNC-PM) • Number and types of jobs created (SNC-PM)
Financial Feasibility	<i>No objective developed – will be included in the finance chapter</i>		
Data Analysis and Monitoring	<i>OV-2: Maintain the Data Management System</i>	<ul style="list-style-type: none"> • <i>It is the intent of this Plan to share useable data and information across the region (on the SWIM site or another appropriate public database) both during plan preparation and implementation</i> • <i>Help assure best management and coordination throughout the region over time</i> 	<ul style="list-style-type: none"> • CABY documents are annually updated in the SWIM data management system
Regional Planning and Land use	<i>OV-3: Coordination of planning activities across the region</i>	<ul style="list-style-type: none"> • <i>Encourage that all planning in the region be completed in a coordinated fashion</i> • <i>Ensure communication and shared solutions for the benefit of the region</i> • <i>Emphasize school and community education regarding stormwater run-off and the positive effects of low-impact design</i> 	<ul style="list-style-type: none"> • Land use planners are active in the CABY RWMG • Number of collaboratively developed plans and assessments (SNC-PM) • Percent of pre-project and planning efforts resulting in project implementation (SNC-PM)

Table 13-2	
Potential Monitoring Activities Based on Project Type	
Project Type	Potential Project-level Monitoring Activities
Environmental Work/Restoration	<ul style="list-style-type: none"> a. Number of fish successfully migrating b. Extent of flooding c. Linear feet of channel bottom and bank erosion repair d. Linear feet of vegetated swale created e. Miles of riparian corridor restored f. Stabilization of severe bank erosion g. Number and distribution of native species h. Number and diversity of waterfowl populations i. Development of a low-flow threshold for XX population j. Development of method to distinguish and characterize at-risk populations for the purpose of targeting risk-reduction and impact-mitigation efforts k. Number of fish passage barriers removed l. Distribution of non-native species m. Re-grading of channel complete
Water Quality	<ul style="list-style-type: none"> a. Number of certified water testers b. Number of homes sampled/tested c. Number of reservoirs re-operated to provide temperature-appropriate flows d. Quality of on-site stormwater runoff e. State or federal protocols or standards for water quality testing or measurements f. Salinity, organic carbon, turbidity, nutrients, and pathogens in local or regional discharges and runoff g. Reduced inflow of contaminants to treatment plant h. Removal of water body from 303(d) list i. TMDL created
Recreation	<ul style="list-style-type: none"> a. Square miles of watershed access b. Number of access points to XX river c. Linear feet of new trails
Land Conservation and Stewardship	<ul style="list-style-type: none"> a. Number of environmentally important acres of forest protected b. Cost per acre of environmentally important forest protected c. Amount of voluntary land conservation d. Acres of land assisted with protection e. Linear feet of fire road stabilized f. Sediment delivery to adjacent creek channels g. Quality of water in adjacent creeks
Infrastructure Projects	<ul style="list-style-type: none"> a. Quality of on-site stormwater runoff b. Flow rate/capacity c. Percent of CIP implemented d. Frequency of infrastructure issues/problems e. Stabilization of the XX dam/canal/intertie/etc. f. Capacity of existing plant g. Stormwater infiltration area established h. Number of active monitoring wells

Table 13-2	
Potential Monitoring Activities Based on Project Type	
Project Type	Potential Project-level Monitoring Activities
Water Supply	<ul style="list-style-type: none"> a. New wells drilled b. XX years of supply projected c. Quantity of recycled water produced d. Cost per household of supply augmentation (can be used for both supply- and demand-side management)
Education and Outreach	<ul style="list-style-type: none"> a. Number of individuals educated b. Decrease in the amount of pesticides/herbicides applied on residential properties c. Number of viewing platforms erected d. Decrease in per-capita water demand e. Number of participants in region-wide technical committees for discussing data collection, management, disbursement, coding, presentation techniques f. Removal of properties from FEMA flood insurance rates g. Development of a manual/guidebook h. Placement of XX number of signs
Planning	<ul style="list-style-type: none"> a. Development of a comprehensive Agricultural Areas Management Plan b. Model completed c. Vulnerabilities assessed d. Development of feasibility assessment e. Development of methods for identifying contaminants f. Percent of stakeholder/public input considered and/ or included in the project implementation design