

December 2008

SACRAMENTO VALLEY  
WATER QUALITY COALITION

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**Water Quality Management Plan**

*prepared by*

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L A R R Y  
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# SVWQC Management Plan

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## **Introduction**

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The primary purpose of this Management Plan is to document efforts that will be made by the Sacramento Valley Water Quality Coalition (Coalition) to address multiple exceedances of the same constituent at a given site within a three-year period. This Management Plan, as required by the Central Valley Regional Water Quality Control Board (Regional Water Board) under the Irrigated Lands Regulatory Program (ILRP), addresses exceedances through September 2007.

This Management Plan includes the following elements, as specified in the ILRP:

- Overall Approach
- Registered Pesticides
- Toxicity in Water and Sediment
- Pathogen Indicators
- Legacy Organochlorines Pesticides
- Trace Metals
- Salinity
- DO and pH
- List of Exceedances Requiring Management Plan Development and Implementation
- Site-Specific Management Plan Implementation

## **Overall Approach**

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The Coalition's Management Plan approach includes the following elements, consistent with guidance proposed in the Monitoring and Reporting Program (MRP) adopted by the Regional Water Board in January 2008 (*Order No. R5-2008-0005*).

1. Strategy for identification of potential sources of the observed exceedances (1. Source Identification Strategies)
2. Process to identify potential additional Management Practices to be implemented to address the exceedances (2. Management Practice Implementation)
3. Management Practices implementation schedule (3. Management Practice Implementation Schedule)
4. Management Plan completion criteria and performance goals (4. Performance Goals and Criteria for Completion of Management Plan)
5. Process and schedule for evaluating management plan effectiveness (5. Evaluation of Management Plan Effectiveness)
6. Monitoring strategy and schedule (6. Monitoring)

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7. Identification of the participants that will implement the Management Plan (7. Participants and Responsibilities for Implementation )
8. Schedule and process for reporting the results of Management Plan actions to Regional Water Board staff. (8. Documentation and Reporting)

### **1. SOURCE IDENTIFICATION STRATEGIES**

Source identification strategies for the Management Plan will vary and will be specified for each pollutant category and drainage, and may include any of the following:

- Additional review of pesticide applications
- Evaluation of adequacy of analytical and sampling methods to identify sources
- Evaluation of Coalition and other monitoring data
- Identification of agricultural and non-agricultural sources (if information for non-agricultural sources is available)
- Evaluation of agricultural vs. non-agricultural source contributions
- A focused “Watershed Evaluation Report” documenting relevant site-specific information for irrigated parcels in the drainage (crops, pesticide use, irrigation practices, management practices in place, Coalition participants, etc.)
- Ground-level visual reconnaissance of the water body.
- Monitoring for relevant constituents of interest
- Source identification special studies

### **2. MANAGEMENT PRACTICE IMPLEMENTATION**

Implementation of additional management practices is dependent on the outcome of the source identification evaluations described previously, and on the knowledge of “baseline” management practices that are already implemented. In addition to the specific source identification efforts identified for each Management Plan element, the process to identify additional management practices will consider the following elements:

1. Meetings with individual landowners and/or growers to discuss exceedances, possible sources, and management plan requirements and goals.
2. Information for management practices already in place will be developed through surveys of owners and/or growers. Survey forms will be developed based on the site and the exceedance. The Regional Water Board staff will be provided a copy upon request.
3. Additional outreach will be conducted dependent on the results of source identification efforts and will provide options for additional appropriate management practices.

The results of these outreach efforts will be documented and included in the required reports of the results of Management Plan Actions. Documentation of outreach efforts will include the participants, additional practices planned to be implemented, and the schedule for implementation.

### 3. MANAGEMENT PRACTICE IMPLEMENTATION SCHEDULE

The schedule for implementation of management practices will be repeated as overlapping two-year cycles, beginning when new management plan requirements are triggered. A tentative two-year schedule for development and implementation of additional practices is provided in **Table 1** and one cycle is illustrated for 2008-2010 in **Figure 1**.

**Table 1. General Management Practice Implementation Schedule**

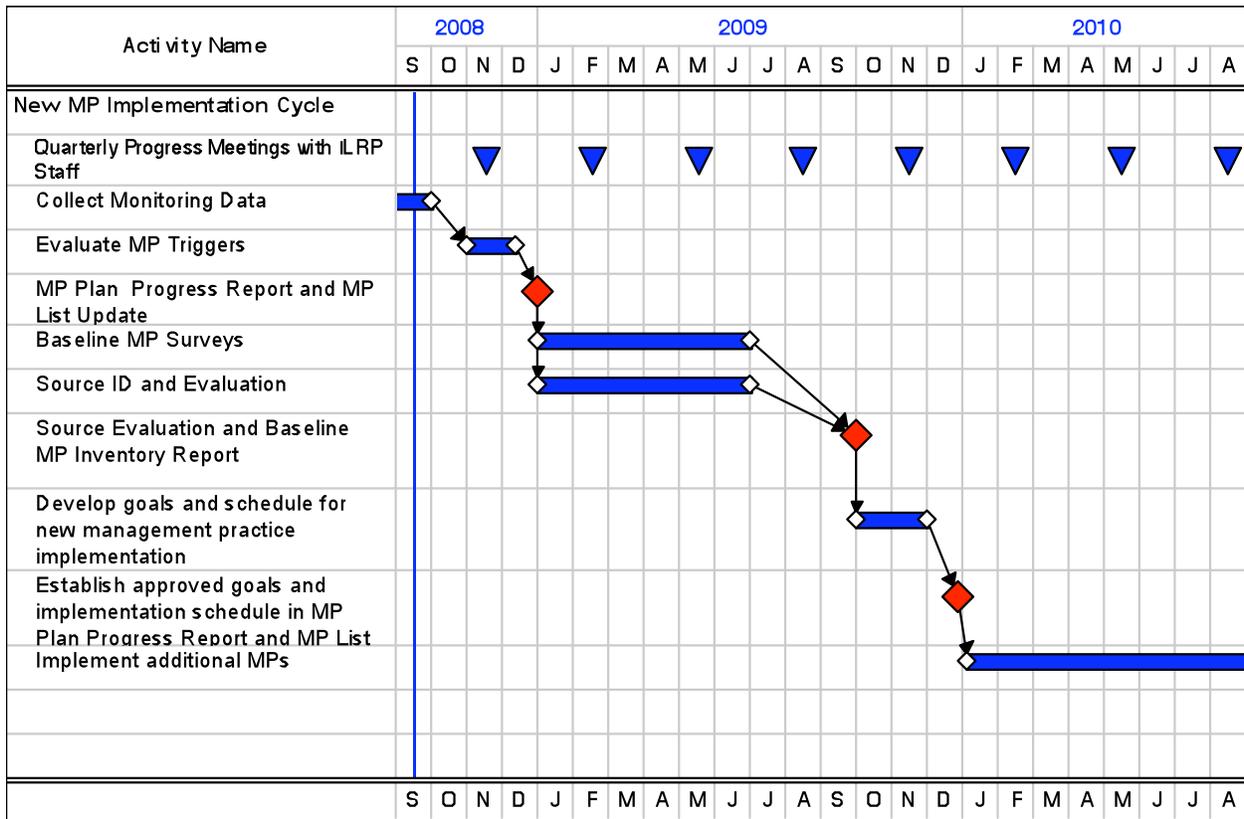
<b>Implementation Element</b>	<b>Tentative Two-Year Schedule for High and Medium Priorities*</b>
Evaluate data for Management Plan requirements (Data evaluated through September of each year)	November – December
Management Plan Progress Reports and Requirements List Update	December each year
Surveys of Baseline Management Practice Implementation	Jan – June of the year following trigger
Initial Source Identification and Evaluation	Jan – June of the year following trigger
Source Evaluation and Management Practice Inventory Report	September of the year following trigger
If source evaluation is conclusive, identify additional practices and establish goals and schedule for implementation	Oct - Nov of the year following trigger
Management Plan Progress Reports and Requirements List Update	December each year
Implement or design for Spring-Fall installation of additional Management Practices	Begin January of 2 <sup>nd</sup> year following trigger
Assessment of Management Plan effectiveness	Annually in Management Plan Progress Reports, (December of each year)

\*Schedule may be extended for LOW priority management categories (DO, pH, and salinity) or water bodies.

The schedule for implementation of additional management practices will be included in the documentation of outreach efforts described above. The specific entities responsible for tracking implementation of management practices will also be identified. These entities are expected to vary by specific management plan element and subwatershed. Implementation progress will be evaluated and documented in annual reports for the Management Plan.

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**Figure 1. Example Management Plan Implementation Schedule, 2008 – 2010**



## 4. PERFORMANCE GOALS AND CRITERIA FOR COMPLETION OF MANAGEMENT PLAN

The successful completion of specific Management Plan elements will be determined by the Executive Officer of the Regional Water Board. Generally, there are four possible pathways for successful completion of a specific management plan element:

1. Agriculture is confirmed not to be a source of the exceedances, and the issue is referred to Regional Water Board staff for other appropriate actions;
2. Agriculture is confirmed as a potential source, the source is eliminated or controlled, and compliance with water quality objectives is demonstrated;
3. Agriculture is a potential source, but compliance with water quality objectives is not achievable by reasonable and economically feasible agricultural management practices; or...
4. No conclusion can be reached regarding the probable source(s) of exceedances, and reasonable efforts to identify the source(s) have been exhausted.

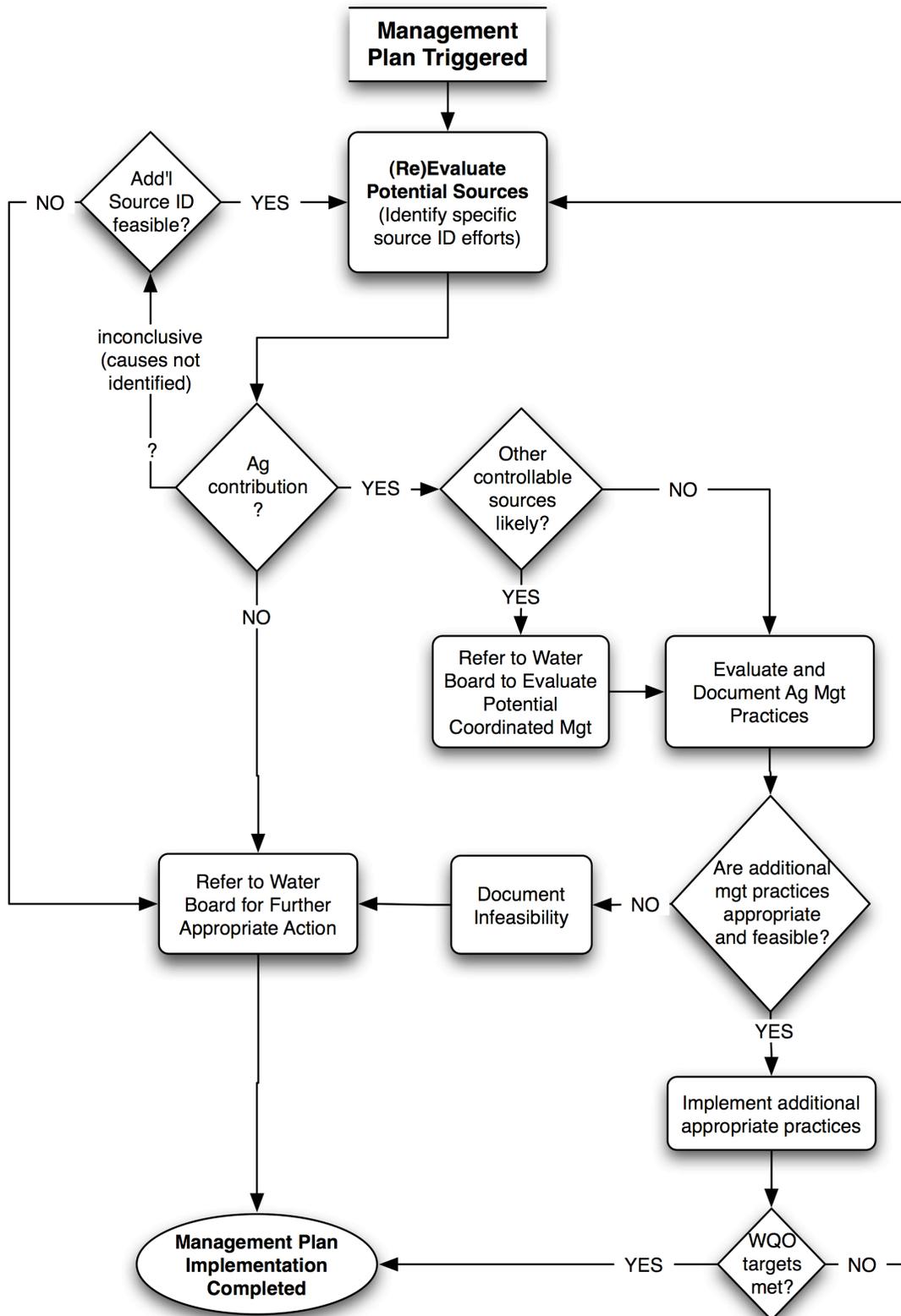
The criteria for completion of each of these pathways are illustrated in Figure 2. The specific criteria for each of these pathways will be clearly identified and documented for each Management Plan element.

Interim goals will also be set to track the progress of Management Plan implementation. These will include measures of outreach efforts (e.g., numbers of meetings with individual owners and

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growers, numbers of targeted workshops, numbers of mailings, advisory assistance to identify appropriate management practices), measures of management practice implementation, and measures of changes in water quality. The specific goals will be developed as appropriate for each element, and progress toward these goals will be tracked and reported in the annual Management Plan Progress Reports.

Figure 2. Management Plan Completion Pathways



## **5. EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS**

Ultimately, the effectiveness of management plans will be judged on improvements in water quality. However, a number of interim performance goals are necessary to evaluate progress toward these goals. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports. Evaluation of effectiveness will be based on meeting the following kinds of performance goals:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of surveys from 100% of Coalition members in the target drainages
- Documentation and reporting of baseline management practice inventory from surveys
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule established in Management Plan Progress Report)
- Specified decreases in number or frequency of exceedances, detections, or average concentrations (goals and schedule established in Management Plan Progress Report).

## **6. MONITORING**

The need for additional monitoring will be determined primarily based on the potential to provide useful information for source identification, in establishing causes of toxicity, and to evaluate management practice effectiveness. If additional monitoring is determined to be appropriate, the details of the monitoring required for each element will be documented, including the matrices and parameters to be analyzed, frequency of sampling, locations, and triggers for additional monitoring and follow-up. Integration of monitoring with regular Irrigated Lands Regulatory Program (ILRP) evaluation monitoring or coordination with other monitoring efforts will be considered and discussed, if appropriate. Management plan monitoring will be reviewed at least once per year, and revised as needed. The site-specific Management Plan monitoring will supersede any prior general monitoring design identified in the 2009 MRP Plan or in the Coalition-specific monitoring plan to be developed by the Regional Water Board for 2010.

## **7. PARTICIPANTS AND RESPONSIBILITIES FOR IMPLEMENTATION**

The Sacramento Valley Water Quality Coalition (Coalition) was formed in 2002 to enhance and improve water quality in the Sacramento River Basin and to help growers and wetlands managers meet the requirements in the Irrigated Lands Regulatory Program (ILRP). The Coalition is comprised of farmers, wetlands managers, and affiliated state and local agricultural organizations, as well as local governments throughout the Sacramento River watershed, which is a twenty-one county region that spans from the Sacramento/San Joaquin Bay-Delta almost to the California-Oregon border.

On October 6, 2003, the Coalition, under Northern California Water Association (NCWA), submitted a Notice of Intent (NOI) and General Report on behalf of Coalition members to meet

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the requirements of the ILRP through a watershed-based water quality management program. On February 10, 2004, the Coalition received a Notice of Applicability (NOA) from the Regional Water Board Executive Officer approving the adequacy of the NOI and providing dischargers within the Coalition area' initial coverage under the ILRP.

Nested within the Sacramento Valley Water Quality Coalition (Coalition) are a series of "subwatershed" groups coordinated by the Coalition. Each subwatershed has a lead ("Subwatershed Coordinator") that can assist the Coalition and its members to successfully implement the ILRP in the Sacramento Valley: Northeastern California Water Association, Shasta-Tehama Water Education Coalition, Colusa Glenn Subwatershed Program, Butte-Yuba-Sutter Water Quality Coalition, Dixon/Solano RCD Water Quality Coalition, Sacramento-Amador Water Quality Alliance, Upper Feather Subwatershed Group, Placer/Nevada/South Sutter/North Sacramento Subwatershed Group, Napa County Putah Creek Watershed Group, Lake County Agricultural Watershed Group, the El Dorado County Agricultural Water Quality Management Corporation and the Yolo County Farm Bureau Education Corporation Subwatershed Program (collectively, the "Subwatershed Groups").

NCWA provides program management services on behalf of Coalition members to implement the Coalition's Regional Plan for Action submitted to the Regional Water Board on June 30, 2003, the Monitoring and Reporting Program Plan (MRPP) submitted by the Coalition on August 25, 2008, and the draft Management Plan submitted on September 30, 2008. As the program evolves NCWA will continue to provide program management and support to implement new plans and any plan amendments.

NCWA coordinates with contractors, including but not limited to Larry Walker Associates (LWA), regarding MRPP implementation. Under contract, LWA conducts water quality sampling and analyses at the sites consistent with the Coalition's MRPP, develops management plans, manages and implements the monitoring program, manages data, assists the Coalition with communication of water quality results to the Regional Water Board and growers, and draft monitoring reports.

NCWA also communicates with the Regional Water Board and the State Water Resources Control Board on behalf of Coalition members regarding program implementation, and manages data and Geographic Information System development for communications with growers and the Regional Water Board. NCWA coordinates any necessary legal action on behalf of the Coalition regarding the ILRP, and contracts with appropriate legal representation as necessary.

Each Subwatershed Group is responsible for developing the appropriate financing mechanism to generate revenue sufficient to cover the expenses described above as well as collecting fees, based on irrigated acre in the subwatershed, to pay the State to administer the ILRP. Each Subwatershed Group bears its own costs for local management and coordination with the Coalition. Each Subwatershed Groups maintains a working group comprised of representatives capable of reviewing communication reports drafted by LWA, and as appropriate, developing outreach strategies with growers to address water quality results. Each Subwatershed Group reviews drafts of the Semi Annual and/or Annual Reports prepared by LWA and provides timely feedback. Each Subwatershed Group continues to maintain a membership list of those agricultural irrigators and wetlands managers choosing to participate and seek "coverage" under the ILRP and provide the list annually to NCWA.

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For Coalition members to remain in good standing they must comply with the requirements of the ILRP. Coalition members must submit dues on time to their Subwatershed Group with an update on irrigated acres. Each member must be responsive to Coalition and Subwatershed Group requests including, but not limited to, completing and returning membership surveys, attending grower meetings (some are required while others are optional), and implementing best management practices as needed.

### **Accountability**

The Coalition supports a broad cross-section of interests throughout the Sacramento River Basin. Its members have a proven record of implementing programs for social, economic and environmental benefits. The Coalition is committed to a program focused on enhancing and improving water quality in the Sacramento River Basin while sustaining the economic viability of agriculture and the associated values of managed wetlands.

To ensure accountability, the Coalition is committed to providing written updates and status reports on implementation of its various programs to the Regional Water Board. Upon request, the Coalition will also provide oral presentations. The updates and reports are designed to identify progress made within the Sacramento River Basin and to provide the Regional Water Board an opportunity to recommend additional efforts that might be beneficial.

The Coalition will assist local subwatershed groups in responding to problems identified by the monitoring program. With this capability in place, once a problem is identified, the Coalition, along with its subwatershed groups, partners and members, will make every effort to isolate and address the problem through improved management practices and/or other appropriate actions.

If management practices are ineffective or not adopted within a subwatershed, there are three mechanisms to ensure members are accountable to the Coalition and to the Regional Water Board:

- 1) To protect water quality and to address non-point source runoff, the State Water Board and Regional Water Boards utilize a framework with increasing levels of regulatory action based on watershed activities. This framework provides the State Water Board and Regional Water Boards with a tool for continual oversight within the watershed and the ability to increase the regulatory requirements if actions taken within the watershed do not effectively address a problem. Additionally, priority actions will focus on impaired water bodies governed by the Regional Water Board's TMDL process. These steps provide the State Water Board and Regional Water Boards complete control and ensure accountability.
- 2) If a subwatershed group encounters a discharger failing to cooperate with the subwatershed program, the subwatershed group will identify the situation and facilitate an informal conversation with the member about the situation. If this effort is unsuccessful and a violation of law or the Basin Plan is believed to be ongoing, the subwatershed group will work with the proper regulatory authorities to address the issue. If Coalition representatives have concerns related to pesticide use they will report it to the County Agricultural Commissioner. For other constituents, the situation will be reported to the Regional Water Board staff. These steps provide accountability and ensure compliance with the law.
- 3) Although subwatershed groups have no legal control over the management actions taken by landowners, the subwatershed groups can determine who is deemed a cooperating and participating member. Consequently, if the Coalition or subwatershed group recognizes that a

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member is not sufficiently participating in or cooperating with the subwatershed program, it will dismiss them from the subwatershed group. The Coalition's annual membership submittal to the Regional Water Board will not include non-participating members. This provides direct accountability to participation in the subwatershed group and compels involvement.

### **Education and Outreach**

The Coalition's education and outreach efforts will ensure that consistent plans and accurate messages regarding water quality issues will effectively reach dischargers in the region. The target audiences include, but are not limited to landowners, wetlands managers and farmers. The Coalition will act as a facilitator and central hub for the transfer of information among the Sacramento Valley subwatersheds and ultimately to the landowners, farmers and wetlands managers. Furthermore, the Coalition will facilitate the identification and distribution of relevant information from activities and projects developed in other areas of the Central Valley.

The outreach message has evolved over time, initiating with general water quality issues and management practice reviews, advancing to the communication of specific results by watershed monitoring programs and offering information on various management measures that could be adopted by farmers to improve water quality. The collaboration offered through the Coalition will ensure that useful and scientifically accurate information about management options that are appropriate for the crops and geographic conditions in the region is available in a timely fashion to farmers. The outreach message will continue to evolve, building upon both historic and new information, relying on a long-term collaborative effort among the people who live and work within the watershed.

### **8. DOCUMENTATION AND REPORTING**

Reporting for the Management Plan will provide sufficient and timely information regarding achievement of the performance goals. Reports will document source identification evaluations, evaluations needed to determine the effectiveness of the management practice implementation, and whether additional or different management practices need to be implemented. At a minimum, these evaluations will be conducted and reported annually, in coordination with the Coalition's Annual Monitoring Report. Data reports will be submitted on the same quarterly schedule and in the same formats as required by the MRP for regular Coalition monitoring.

The first Management Plan Progress Report will be submitted in December 2009. This initial Progress Report will include the results of monitoring for the previous year, the results of initial source identification evaluations, documentation of outreach efforts, a summary of completed baseline management practice inventories in priority drainages, and proposed goals for additional management practice implementation. The Progress Reports will also include an evaluation of progress toward completion of specific Management Plan elements, and recommendations for continuation or modification of the Management Plan. In subsequent years, Progress Reports will also assess progress toward management practice implementation goals set in previous years.

Interim reporting schedules for source identification efforts will be based on the specific evaluations required. Management Plan Progress Reports will include the results of pesticide application reviews, evaluations of analytical methods, source evaluation, documentation of initial outreach meetings, documentation of any ground level reconnaissance conducted, and recommendations for the Management Plan monitoring.

## **9. APPROACHES FOR SPECIFIC MANAGEMENT PLAN CATEGORIES**

Although collaborating on ideas and approach, each subwatershed will be working independently on specific elements of the Management Plan. Within each subwatershed, site-specific management plans for registered pesticides and toxicity will receive the highest priority for implementation, and legacy pesticides, and trace metals will receive a medium priority for implementation. Salinity (including conductivity and TDS), DO, pathogens, and pH will receive a LOW priority because these parameters have greater number of non-agricultural potential sources and causes, and consequently an expected longer time frame to identify appropriate coordinated solutions. Within subwatersheds, sites with multiple management plan requirements will also generally receive a higher priority for implementation of management plans. Priorities for sites and parameters will also be influenced by the magnitude and frequency of exceedances, and the ability of agricultural management practices to affect changes in water quality. Generally, the priority for sites or parameters will be reflected as an accelerated schedule and level of effort for higher priorities, and an extended schedule and lesser immediate commitment of resources for lower priorities. Levels of effort and schedules are detailed in the individual plans. The priorities for management plan categories were based on a subjective assessment of the potential for affecting beneficial uses, the probability of significant agricultural sources or contributions, the probability of other non-agricultural sources, and the requirements and potential for successful management (Table 2). Additional details are provided in the following sections for specific approaches to management plan categories.

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**Table 2. Management Plan Categories and Priorities**

Management Plan Category	Priority	Rationale for Priority
Registered pesticides	HIGH	High potential for affecting aquatic life beneficial uses; High probability of direct agricultural sources in many cases; High probability of successful management of agricultural sources with modified practices and other controls;
Toxicity in water and sediment	HIGH	High potential for affecting aquatic life beneficial uses; Moderate probability of direct agricultural sources with potential contributions from other anthropogenic and natural background sources; High probability of successful management of agricultural sources with modified practices <i>if specific sources of toxicity are identified</i> ;
Legacy Organochlorine Pesticides	MEDIUM	Low potential for affecting aquatic life beneficial uses, medium probability of affecting other uses; High probability of historical agricultural sources, no current sources; Long-term management of multiple sources likely required even with successful management of agricultural sources;
Trace Metals	MEDIUM	Moderate potential for affecting aquatic life and other beneficial uses (depends on trace metal); Moderate probability of historical or current agricultural sources; High probability of natural background contributions; Long-term management of multiple sources likely required even with successful management of agricultural sources
Salinity (including Conductivity and TDS)	LOW	Low potential for affecting aquatic life, medium probability of affecting other uses, including agriculture; No direct agricultural sources, but high probability of agricultural contributions through consumptive uses, and high probability of contributions from other anthropogenic and uncontrollable background sources; Long-term integrated management of multiple sources required for solution;
Pathogen indicators	LOW	Low potential for affecting aquatic life, moderate probability of affecting other uses; Moderate probability of significant agricultural sources, with high probability of contributions from other anthropogenic and uncontrollable natural sources; Long-term management of multiple sources likely required even with successful management of agricultural sources;
DO and pH	LOW	Moderate potential for affecting aquatic life, low probability of affecting other uses; Low probability of significant direct agricultural sources, with high probability of natural causes; Long-term management of multiple sources likely required even with successful management of agricultural sources;

## **REGISTERED PESTICIDES**

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This element of the Management Plan addresses exceedances of numeric water quality objectives or numeric interpretations of narrative objectives for pesticides legally registered for use for agricultural purposes. Sites observed to have more than one exceedance in three years of applicable numeric or narrative water quality objectives for registered pesticides are listed in **Appendix A**. Implementation of this element of the management plan will be conducted on a drainage-specific basis for the drainages determined to require management of pesticide exceedances.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

The need for developing management plans is determined by exceedances of “Water Quality trigger limits” established by the Regional Water Board ILRP. These trigger limits include adopted numeric Basin Plan water quality objectives, California Toxics Rule criteria, and unadopted numeric interpretations of Basin Plan narrative objectives. The first step in the implementation of this element of the management plan is a review of the Coalition’s monitoring data and the basis establishing the need for the management plan. The basis for these trigger limits will be reviewed and evaluated for regulatory and scientific validity. Generally, adopted numeric objectives and criteria will be determined valid without any substantial additional review. Trigger limits based on unadopted numeric interpretations will receive additional evaluation. Any substantial questions regarding validity or basis for the triggers used to determine exceedances will be summarized and provided to the Regional Water Board staff and the ILRP Technical Issues Committee for additional consideration, evaluation, and confirmation. Based on the results of these considerations, the exceedances and need for a pesticide-specific management plan may be reevaluated. However, development and implementation of management plans required by exceedances of these trigger limits will proceed according to the normal schedule while any additional considerations are completed.

Sites observed to have more than one exceedance within a three year period of numeric Basin Plan water quality objectives or numeric interpretations of Basin Plan narrative objectives for pesticides registered for agricultural uses are listed in **Appendix A**. Exceedances based on trigger limits requiring additional evaluation are identified in the site-specific management plans in **Appendix B**.

### **SOURCE IDENTIFICATION**

The following source identification efforts will be conducted on a drainage-specific basis to identify sources of pesticides and to evaluate potential agricultural and non-agricultural contributions to pesticide exceedances:

- Review of pesticide application data: Pesticide application data from California Department of Pesticide Regulations (CDPR) will be compiled and reviewed to determine whether the registered pesticides are used or likely to be used by irrigated agriculture in the affected drainages. Data will be compiled for applications of the specific pesticides in the affected drainages. Application data will be evaluated for use patterns and timing, and will consider characteristics that affect fate and transport (e.g., solubility and half-life). For instance, a longer period of application data would be

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considered when evaluating insoluble, sediment-bound pesticides with longer half-lives. The results of these evaluations will be confirmed by consultation with County Agricultural Commissioners. If necessary, use of specific pesticides of concern may also be confirmed through the surveys designed to collect Management Practice implementation data from growers (described below in Management Practice Implementation).

- ❑ Identification of potential agricultural and non-agricultural sources: Agricultural and non-agricultural sources of the pesticides will be identified and relative contributions will be evaluated based on pesticide use and application data, as well as relevant information for non-reported uses such as consumer retail sales and use. The relative importance of contributions will consider the percentage of land use comprised by each potential source, and their proximity and connection to surface waters of the drainage. The primary purpose of this evaluation is to determine whether irrigated agriculture is a likely source of the pesticides of concern. The secondary purpose is to identify other potential substantial non-agricultural sources.
- ❑ Source Evaluation Report: A focused Source Evaluation Report will be prepared documenting the following drainage-specific information: reported use of the specific pesticides of concern by crop or commodity, crops by percent of the total irrigated acreage and total acreage, application and irrigation practices, relevant management practices currently in use, and Coalition participants in the drainage. Potential sources will be prioritized by reported use of specific pesticides of concern, drainage distance and connectivity to water bodies, percent of irrigated acreage and total acreage, pesticide application and irrigation practices, and relevant management practices. The purpose of this evaluation is to prioritize potential agricultural sources for outreach and management practice implementation. This report will be completed by September of the year following the trigger of the specific management plan requirement (see **Table 1** and **Figure 1**). Schedules and goals for additional management plan elements (e.g., management practice implementation) will be developed and modified based on the results of the source evaluation.

### MANAGEMENT PRACTICE IMPLEMENTATION

As discussed in the “Overall Approach,” implementation of specific additional appropriate management practices will depend on the outcome of the source identification evaluations described above and on “baseline” practices already in place. If irrigated agriculture is a potential source of the pesticide(s) of interest, the process to identify appropriate additional management practices will include the following elements:

- ❑ If potential irrigated agricultural sources of pesticides are confirmed, detailed information for management practices already in place in the targeted drainages will be developed through surveys of Coalition members. This information will be used to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices may be coordinated with Coalition for Urban/Rural Environmental Stewardship (CURES), University of California Cooperative Extension (UCCE), County Agriculture Departments, Natural Resources Conservation Service (NRCS), Resource Conservation Districts (RCDs), farm input suppliers, and pest

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control advisors, depending on the available resources. The specific coordinating entities are expected to vary in the different Coalition subwatersheds. Follow-up surveys will be conducted annually to measure and track progress toward the goals established for BMP implementation. The survey to inventory baseline management practices will be completed by December of the year following trigger of the specific management plan.

- ❑ Develop a list of prioritized BMPs specific to pesticides of concern, and establish goals and schedule for additional implementation (reported in December, in Management Plan Progress Reports)
- ❑ Meetings with individual landowners and/or growers to discuss exceedances, sources of pesticides, and management plan requirements and goals.
- ❑ Additional targeted outreach will be conducted dependent on the results of source identification efforts and will provide options for additional appropriate management practices. Outreach will be prioritized and directed to users and potential users of the pesticides of concern.

The results of outreach efforts will be documented and included in the Management Plan Progress Reports. These reports will also document any additional practices planned to be implemented, the goals and schedule for implementation, and measures of progress toward these goals. If it is determined that no additional appropriate management practices to control pesticide exceedances are feasible, this will also be documented.

### **IMPLEMENTATION SCHEDULE**

The schedule for development and implementation of additional management practices will be conducted as described in the overall Management Plan approach (**Figure 1**). The schedule will include quarterly progress meetings with the Regional Water Board ILRP staff. The schedule for site-specific and parameter-specific management plan elements is documented in **Appendix B**. The results of source identification efforts will be used to prioritize drainages or commodities by greatest use potential for the specific pesticides of concern and lowest rates of BMP implementation. These priorities will be reflected in the schedule and scope of management plan implementation.

### **COMPLETION CRITERIA AND PERFORMANCE GOALS**

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section.

The criteria for completion of each these pathways are summarized in Table 3 and the pathways are also illustrated in **Figure 2**. Because the relative contributions to specific pesticide exceedances will generally not be able to be quantified, these criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for pesticides will be determined to occur when no more than one exceedance of the appropriate trigger limit has been observed in three years of the specified management plan monitoring.

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Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of management practice surveys from 100% of Coalition members in the target drainage (completed by December of year following trigger of management plan requirement).
- Documentation and reporting of baseline management practice inventory from surveys  
Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule established in Management Plan Progress Report).
- Specified decreases in number or frequency of exceedances, detections, or average concentrations (goals and schedule established in Management Plan Progress Report).

**Table 3. Pesticide Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
1. Agriculture eliminated as source of exceedances	<ul style="list-style-type: none"> <li>• Pesticide confirmed not to have significant irrigated agricultural sources;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources likely; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources likely; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> <li>• No additional appropriate management practices are possible or economically feasible;</li> </ul>	Infeasibility is documented and issue is referred to Regional Water Board staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"> <li>• Sources of specific pesticides not identified; <u>AND</u></li> <li>• All reasonable efforts at source ID exhausted</li> </ul>	Documented and referred to Regional Water Board staff for appropriate actions.

### EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress

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toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

### **MONITORING**

Monitoring proposed to be performed as part of this element of the management plan is summarized in **Appendix B**. Some sites will continue to be monitored routinely as part of the Coalition's ongoing monitoring effort. Other sites will be monitored during high use periods for the specific pesticide(s) of concern in that drainage. Sites will continue to be monitored for specific pesticides as needed to evaluate success of implemented management practices. Continued monitoring of these sites beginning in 2009 will be integrated with the monitoring strategy being developed by the Coalition in response to renewed ILRP MRP. Specific seasons and timing of the continued monitoring will be based on pesticide use patterns determined in the source identification evaluations and monitoring results. Any changes to the approved monitoring schedule must be approved by Regional Water Board staff prior to implementation.

### **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

The participants responsible for implementing specific elements of the Management Plan are provided in **Appendix B**.

### **REPORTING SCHEDULE**

The results of initial source identification efforts and the inventory of baseline management practices will be reported in a technical memorandum by September of the year following trigger of management plan requirements, with the first report due in September 2009. The reports will include the results of data reviews, any trigger limit evaluations, pesticide application reviews, source identification and evaluation, documentation of initial outreach meetings, and recommendations for the Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the Overall Management Plan Approach.

## **TOXICITY IN WATER AND SEDIMENT**

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This element of the Management Plan addresses exceedances of narrative objectives for toxicity in the Basin Plan. Sites observed to have more than one exceedance in three years of the narrative prohibition against toxicity (significant reductions of invertebrate or fish survival or algae growth compared to the laboratory control) are listed in **Appendix A**. Implementation of this element of the management plan will be conducted on a drainage-specific basis for the drainages determined to require management of toxicity exceedances.

### **SOURCE IDENTIFICATION**

The following source identification efforts will be conducted on a drainage-specific basis to identify causes and sources of toxicity, and to evaluate potential agricultural and non-agricultural contributions to toxicity. The primary distinction between source identification efforts for aquatic and sediment toxicity is a focus on soluble or more hydrophobic sediment-associated pesticides or other contaminants.

- ❑ Evaluation of Coalition Monitoring Data: Coalition data for toxicity, TIEs, chemistry, and follow-up analyses will be reviewed to identify potential causes and sources of the observed cases of toxicity. Data for all potentially toxic ILRP analytes will be evaluated to identify or eliminate potential causes of toxicity, including pesticides, trace metals, and ammonia. This evaluation will also consider potentially additive or synergistic effects of detected analytes, based on interactions documented in literature and on similar modes of action. Coalition analytical methods will also be evaluated to confirm that they are adequate to detect potentially toxic constituents at concentrations of concern and to identify sources. If they are determined not to be adequate for this purpose, alternative analytical methods will be evaluated.
- ❑ Additional review of pesticide applications: If toxicity cannot be reasonably attributed to constituents monitored for the ILRP, additional review of pesticide application data will be conducted to evaluate whether other unmonitored pesticides have potential to contribute to toxicity. Data will be compiled for pesticide applications in the specific parcels in the affected drainages. The period of application data reviewed will depend on the type of toxicity (aquatic or sediment) and likely causes of toxicity, but will include at least the month prior to and including the sample dates of each sample determined to be significantly toxic. Applied pesticides will be evaluated to identify or eliminate potential causes of toxicity based on the use pattern and timing, toxicity characteristics, and physical and chemical characteristics. TIE procedures used previously will be reviewed to determine whether these procedures were appropriate for the characteristics of specific unmonitored pesticides of concern, and recommendations will be made for modifications, if appropriate. Pesticides determined likely to cause or contribute to the observed toxicity may be added to the list of monitored constituents, if appropriate methods are available.
- ❑ Identification of agricultural and non-agricultural sources: Agricultural and non-agricultural potential sources or causes of toxicity determined above will be identified and their relative contributions will be evaluated. Non-agricultural sources may include pesticide applications for mosquito abatement or weed control on rights-of-way, urban or rural residential runoff, treated wastewater, etcetera).

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- ❑ **Source Evaluation Report:** A focused Source Evaluation Report will be prepared to document the following drainage-specific information for irrigated parcels in the affected drainages: crops by percent of the total irrigated acreage and total acres, pesticide use by crop or commodity, irrigation practices, management practices currently in place, and Coalition participants. Potential sources will be prioritized by reported use of identified causes of toxicity, drainage distance and connectivity to water bodies, percent of total irrigated acreage and total acres, and use of relevant management practices. This report will be completed by September of the year following the trigger of the specific management plan requirement (see **Table 1** and **Figure 1**), with the first report due in 2009. Schedules and goals for additional management plan elements (e.g., management practice implementation) will be developed and modified based on the results of the source evaluation.

### MANAGEMENT PRACTICE IMPLEMENTATION

As discussed in the “Overall Approach”, implementation of specific additional appropriate management practices will depend on the outcome of the source identification evaluations described above and on “baseline” practices already in place. In addition to the source identification efforts described above, the process to identify appropriate additional management practices will include the following elements:

- ❑ If irrigated agricultural sources of pesticides are not initially ruled out, detailed information for relevant management practices already in place in the targeted drainages will be developed through surveys of Coalition members. Surveys related to sediment toxicity will include erosion and sediment management practices. This information will be used to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices may be coordinated with CURES, UCCE, County Agriculture Departments, NRCS, RCDs, farm input suppliers, and pest control advisors, depending on the available resources. The specific coordinating entities are expected to be different for the different Coalition subwatersheds. Follow-up surveys will be conducted annually to measure and track progress toward the goals established for BMP implementation. The survey to inventory baseline management practices will be completed by June and reported in September of the year following trigger of the specific management plan.
- ❑ If the cause of toxicity is determined to be registered pesticides or other specific agricultural sources, meetings will be held with individual landowners and/or growers to discuss exceedances, possible sources, and management plan requirements and goals.
- ❑ Additional outreach will be conducted dependent on the results of source identification efforts and will provide options identified above for additional appropriate management practices.

The results of outreach efforts will be documented and included in the Management Plan Progress Reports. These reports will also document any additional practices to be implemented, the goals and schedule for implementation, and measures of progress toward these goals. If it is determined that no additional appropriate management practices to control toxicity are feasible, this will also be documented.

**IMPLEMENTATION SCHEDULE**

The schedule for development and implementation of additional management practices will be conducted as described in the overall Management Plan approach (Figure 1). The schedule will include quarterly progress meetings with the Regional Water Board ILRP staff. The schedule for site-specific and parameter-specific management plan elements is documented in **Appendix B**. The results of source identification efforts will be used to prioritize drainages or commodities by greatest use potential for the specific identified causes of toxicity and the lowest rates of BMP implementation. These priorities will be reflected in the schedule and scope of management plan implementation.

**COMPLETION CRITERIA AND PERFORMANCE GOALS**

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section.

The criteria for completion of each of these pathways are summarized in Table 4 and the pathways are illustrated in **Figure 2**. Because the specific causes of toxicity exceedances may not be known and may not be determined in spite our best efforts, these criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for toxicity will be determined to occur when no more than one exceedance has been observed in three years of the specified management plan monitoring.

Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- If surveys are conducted, return of management practice surveys from 100% of Coalition members in the target drainages.
- Documentation and reporting of baseline management practice inventory from surveys
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule established in Management Plan Progress Report).
- Specified decreases in frequency of exceedances, detections, or average concentrations (goals and schedule established in Management Plan Progress Report).

**Table 4. Toxicity Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
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1. Agriculture eliminated as probable source of exceedances	<ul style="list-style-type: none"> <li>• Probable specific toxicant(s) are identified; <u>AND</u></li> <li>• Probable specific toxicant(s) confirmed not to have significant agricultural sources; <u>OR...</u></li> <li>• Probable specific toxicant(s) not identified; <u>AND</u></li> <li>• The weight of evidence of TIEs, monitoring data, WER, and pesticide use evaluations all support a conclusion that agriculture is not a significant source;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Probable specific toxicant(s) identified; <u>AND</u></li> <li>• Potentially significant agricultural sources likely; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Specific toxicant(s) identified; <u>AND</u></li> <li>• Potentially significant agricultural sources are likely; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> <li>• No additional appropriate management practices are possible or economically feasible;</li> </ul>	Infeasibility is documented and issue is referred to Regional Water Board staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"> <li>• Probable specific toxicant(s) not identified; <u>AND</u></li> <li>• All reasonable efforts at source ID exhausted</li> </ul>	Documented and referred to Regional Water Board staff for appropriate actions.

### EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

### MONITORING

Monitoring to be performed as part of this element of the management plan is summarized in **Appendix B**. Most sites will continue to be monitored routinely as part of the Coalition's ongoing monitoring effort. TIEs and serial dilution testing required by the MRP will continue to be conducted at these sites. Additional sampling and analysis of water or sediment may be added if recommended by the initial source identification efforts. Subsequent to completion of Coalition monitoring, sites will continue to be monitored for a limited subset of parameters as needed to evaluate success of implemented management practices. These continued analyses will include appropriate toxicity testing, and pesticides or other parameters as recommended by the results of the source identification element of the Management Plan. The specific parameters to

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be monitored after 2009 will be reevaluated based on the results of previous monitoring in the affected drainages. The frequency for continued monitoring of these sites beginning in 2009 will be four (4) events per year for aquatic toxicity, and two (2) events per year for sediment toxicity. The frequency of aquatic toxicity monitoring is lower than the frequency during the Assessment phase for most sites, but allows for continued evaluation of the causes and sources of toxicity during source identification efforts. Toxicity monitoring will be integrated with the monitoring strategy being developed by the Coalition in response to renewed ILRP MRP. Specific seasons and timing of the monitoring will be determined based on the results of the source identification evaluations and monitoring results. Any changes to the approved monitoring schedule must be approved by Regional Water Board staff prior to implementation.

### **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

The participants responsible for implementing specific elements of the Management Plan are provided in **Appendix B**.

### **REPORTING SCHEDULE**

The results of initial source identification efforts and the inventory of baseline management practices will be reported in a technical memorandum by September of the year following trigger of management plan requirements, with the first report due in September 2009. The reports will include the results of data reviews, pesticide application reviews, source identification and evaluation, documentation of initial outreach meetings, and recommendations for Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the Overall Management Plan Approach (**Table 1** and **Figure 1**).

## **PATHOGEN INDICATORS**

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This element of the Management Plan addresses exceedances of *E. coli* bacteria which are used primarily as indicators of other human pathogenic organisms, including protozoans and viruses which can not be effectively monitored directly. Exceedances of pathogen indicators reflect a regional issue that affects the entire Central Valley. Consequently, this element of the management plan will be developed and implemented on a regional basis in coordination with the Central Valley Regional Water Board and other ILRP Coalitions.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

The need for developing management plans is determined by exceedances of “Water Quality trigger limits” established by the Regional Water Board ILRP. These trigger limits include adopted numeric Basin Plan water quality objectives, California Toxics Rule criteria, and unadopted numeric interpretations of Basin Plan narrative objectives. The first step in the implementation of this element of the management plan is a review of the data and the basis establishing the need for the management plan. The basis for these trigger limits will be reviewed and evaluated for regulatory and scientific validity. Generally, adopted numeric objectives and criteria will be determined valid without any substantial additional review. Trigger limits based on unadopted numeric interpretations will receive additional evaluation. For pathogen indicators, this will include a review of numeric Basin Plan water quality objectives or numeric interpretations of Basin Plan narrative objectives used to determine exceedances. The review will evaluate the regulatory and scientific basis for the objectives, the beneficial uses that these objectives are intended to protect and their applicability to the affected drainages, and allowable exceedance frequencies. Any substantial questions regarding validity or interpretation of the objectives used to determine exceedances will be summarized and provided to the Regional Water Board staff and the ILRP Technical Issues Committee for additional consideration and evaluation. Based on the results of these evaluations, the exceedances and need for a pathogen management plan may be reevaluated. However, development and implementation of management plans required by exceedances of the trigger limits will proceed according to the normal schedule while any additional considerations are completed.

Sites observed to have more than one exceedance of numeric Basin Plan water quality objectives or numeric interpretations of Basin Plan narrative objectives for pathogens are listed in **Appendix A**. Exceedances based on trigger limits requiring additional evaluation are identified in the site-specific management plans in **Appendix B**.

### **SOURCE IDENTIFICATION**

The primary challenge in developing a management plan for pathogen indicators is determining the sources of the exceedances. Sources of the organisms used as pathogen indicators – *E. coli* in this case – include all warm blooded animals (humans, domestic pets and livestock, waterfowl and other birds, and other assorted wildlife of all kinds). Consequently, *E. coli* is everywhere in the environment and there are typically multiple potential sources for virtually every water body, which presents significant challenges in source identification. The Coalition has implemented and completed a preliminary source identification study that suggested that sources other than agriculture were primarily responsible for most exceedances of objectives for pathogen indicators. However, the results of these preliminary efforts were determined not to be

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adequately definitive for source identification, and the ILRP coalitions have initiated development of a new bacterial source identification study. Development of this study will be coordinated with the Central Valley Regional Water Board and will include peer review to ensure the scientific validity of the study strategy and methods. The specific objectives and time frame for conducting the study have not yet been established.

Additional independent Coalition efforts to support source identification for pathogens will include the following:

- The Coalition will survey Coalition members in the targeted drainages to inventory applications of animal wastes on agricultural fields.
- Acreage used for grazing operations will be catalogued in targeted drainages.
- A field survey (i.e. “creek walk”) will be considered for affected drainages. The primary purpose of these field surveys will be to identify and document potential non-agricultural and agricultural sources of pathogens and indicators, such as septic system discharges, wildlife activity, access by cattle, etc. The decision to conduct field surveys will be determined primarily based on completeness of access, cost of survey, and available resources to conduct the surveys.
- Source Evaluation Report: These independent Coalition source identification efforts are expected to be completed by June of the year following establishment of the management plan requirement. A focused Source Evaluation Report will be prepared documenting the following drainage-specific information for irrigated parcels in the affected drainages: manure applications, percent grazed acreage, irrigation practices, relevant management practices currently in place, and Coalition participants. Potential sources will be prioritized by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices. This report will be completed by September of the 2<sup>nd</sup> year following the trigger of the specific management plan requirement (see **Table 1** and **Figure 1**), with the first report in September 2010. Schedules and goals for additional management plan elements (e.g., management practice implementation) will be developed and modified based on the results of the source evaluation.

### MANAGEMENT PRACTICE IMPLEMENTATION

Implementation of specific additional appropriate management practices will initially depend on the results of the Coalition’s independent source evaluations (described above) and on the baseline management practices already in place. The longer term goals and scope of implementation will ultimately be dependent on the outcome of the bacterial source identification studies. To support these longer-term coordinated source identification efforts, the Coalition’s independent efforts to identify appropriate additional management practices will initially include:

- ❑ Discussions with landowners and/or growers of the exceedances, possible sources of pathogens, and management plan requirements and goals, and options for management practices. These discussions will be incorporated into scheduled public outreach meetings for the Subwatersheds or regions.

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- ❑ Detailed information for relevant cultural practices and management practices already in place will be developed through surveys of coalition members. Surveys are expected to be completed by June of the 2<sup>nd</sup> year following establishment of the management plan requirement, and will be conducted with the survey for animal waste applications for Source Identification. This information will be used with source evaluation results to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices may be coordinated with CURES, UCCE, County Agriculture Departments, NRCS, and RCDs, depending on the available resources. The specific coordinating entities are expected to vary in the different Coalition subwatersheds. The survey to inventory baseline management practices will be completed by June and reported in September of the year following trigger of the specific management plan.
- ❑ Additional targeted outreach may be conducted dependent on the results of source identification efforts and will provide options for additional appropriate management practices. Outreach will be prioritized and directed to likely agricultural sources of pathogen indicator organisms.

The results of outreach efforts will be documented and included in the Management Plan Progress Reports. These reports will also document any additional practices to be implemented, the goals and schedule for implementation, and measures of progress toward these goals. If it is determined that no additional appropriate management practices to control pathogen indicators are feasible, this will also be documented.

### **IMPLEMENTATION SCHEDULE**

The schedule for development and implementation of additional management practices will be conducted as described in the overall Management Plan approach (**Figure 1**). The schedule will include quarterly progress meetings with the Regional Water Board ILRP staff. The schedule for site-specific and parameter-specific management plan elements is documented in **Appendix B**. The results of source identification efforts will be used to prioritize drainages or commodities by greatest potential for contributing to elevated pathogens and the lowest rates of management practice implementation. These priorities will be reflected in the schedule and scope of management plan implementation.

### **COMPLETION CRITERIA AND PERFORMANCE GOALS**

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section.

The criteria for completion of each these pathways are summarized in Table 5 and the pathways are also illustrated in Figure 2. Because the relative contributions to pathogen indicator exceedances will generally not be able to be quantified, these criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for pathogens will

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be determined to occur when no more than one exceedance of the water quality objective or trigger limit has been observed in three years of the specified management plan monitoring.

Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of waste application and management practice surveys from 100% of Coalition members in the target drainages (in June of 2<sup>nd</sup> year following trigger of management plan requirement).
- Documentation and reporting of baseline management practice inventory from surveys (in September of 2<sup>nd</sup> year following trigger of management plan requirement)
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule established in Management Plan Progress Report).
- Specified decreases in frequency of exceedances (goals and schedule established in Management Plan Progress Report).

**Table 5. Pathogen Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
1. Agriculture eliminated as source of exceedances	<ul style="list-style-type: none"> <li>• E. coli bacteria confirmed not to have significant irrigated agricultural sources;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources of E. coli bacteria confirmed; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources of E. coli bacteria confirmed; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> <li>• No additional appropriate management practices are possible or economically feasible;</li> </ul>	Infeasibility is documented and issue is referred to Regional Water Board staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"> <li>• Probable specific toxicant(s) not identified; <u>AND</u></li> <li>• All reasonable efforts at source ID exhausted</li> </ul>	Documented and referred to Regional Water Board staff for appropriate actions.

## **EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS**

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

## **MONITORING**

Monitoring to be performed as part of this element of the management plan will include two elements: (1) the Coalition's ongoing monitoring effort continues to routinely monitor for pathogen indicators; (2) Additional monitoring will be conducted as part of the bacterial source identification study currently under development. Continued monitoring for pathogen indicators in 2009 will be integrated with the monitoring strategy being developed by the Coalition in response to the renewed ILRP MRP. Future modifications to monitoring will also incorporate recommendations resulting from the coordinated source identification study. Any changes to approved monitoring schedules must be approved by Regional Water Board staff prior to implementation.

## **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

All Coalition subwatersheds will contribute to implementation of this Management Plan through their participation in the Coalition. Other ILRP coalitions and the Central Valley Regional Water Board are also expected to participate in the source identification study under development.

The participants responsible for implementing specific elements of the Management Plan are also provided in **Appendix B**.

## **REPORTING SCHEDULE**

The coordinated bacterial source identification study currently under development is expected to be implemented in 2009. However, the results of this source identification study are not expected to be available until 2010. The results of initial Coalition source identification efforts and the inventory of baseline management practices will be reported in a technical memorandum by September of the 2<sup>nd</sup> year following trigger of management plan requirements, with the first report due in September 2010. The reports will include the results of data reviews, source identification and evaluations, documentation of initial outreach meetings, and recommendations for Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the Overall Management Plan Approach (**Table 1** and **Figure 1**).

## **LEGACY ORGANOCHLORINE PESTICIDES**

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This element of the Management Plan addresses exceedances of numeric water quality objectives for legacy organochlorine pesticides. Sites observed to have more than one exceedance of numeric Basin Plan water quality objectives for legacy organochlorine pesticides in three years are listed in **Appendix A**. Implementation of this element of the management plan will be conducted on a drainage-specific basis for the drainages determined to require management of legacy organochlorine pesticides.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

Coalition monitoring data and the regulatory basis for determination of exceedances will be evaluated and summarized. Review of the monitoring data will focus on any seasonal patterns in exceedances that can be used to focus future monitoring efforts. Evaluation of the regulatory basis will focus on the beneficial uses that these objectives are intended to protect and their applicability to the affected drainages, and appropriate averaging periods and allowable exceedance frequencies. Any substantial questions regarding implementation of the objectives used to determine exceedances will be summarized and provided to the Regional Water Board staff and the ILRP Technical Issues Committee for additional consideration and evaluation. Based on the results of these evaluations, the exceedances and need for a management plan may be reevaluated. However, development and implementation of management plans required by exceedances of the objectives will proceed according to the normal schedule while any additional regulatory considerations are completed.

### **SOURCE IDENTIFICATION**

Historical uses are considered the only significant sources of these legacy pesticides. Because no legitimate uses remain for agriculture or other sources, no formal source identification efforts will be undertaken to determine whether there are current sources of these pesticides. For the purpose of this management plan, it will be assumed that potential irrigated agricultural sources are limited to discharges of sediment and associated particulate-bound legacy pesticides from irrigated agricultural acreage. However, sources other than agricultural sediment discharges may contribute significantly to these exceedances. Efforts to identify potential sources will include:

- ❑ Survey of sediment concentrations of pesticides of concern: The affected water bodies will be sampled for sediments at locations selected to determine the spatial distribution of potential sources of legacy organochlorine pesticides to the water body. This sampling will be conducted during the irrigation season, in conjunction with the approved monitoring schedule. Recommendations for follow-up sampling to further characterize distributions will be based on the results of the initial survey of sediment concentrations. The results of this survey will be used to focus outreach efforts for implementation of management practices.
- ❑ Source Evaluation Report: A focused Source Evaluation Report will be prepared documenting the following drainage-specific information in the affected drainages: crops by percent of the total irrigated acreage, irrigation practices, soil erosion potential, erosion and sediment management practices currently in place, and the results of the sediment survey. Potential sources will be evaluated for their potential contributions to

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erosion and transport of legacy pesticides. The purposes of this evaluation are to document spatial distribution of pesticides in sediment, and to prioritize potential sources for outreach and management practice implementation.

### **MANAGEMENT PRACTICE IMPLEMENTATION**

The process to identify appropriate additional management practices will include the following elements:

- ❑ Meetings with landowners and/or growers to discuss exceedances, possible sources and causes of sediment discharges, possible non-agricultural sources of legacy pesticides, options for relevant management practices, and management plan requirements and goals.
- ❑ If agriculture is determined to be a probable source, detailed information will be developed through surveys of Coalition members to document sediment and erosion management practices already in place to control erosion and sediment discharges in the affected drainages. With the results of the source evaluations, this information will be used to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. (Although *control* of erosion is a goal of these management practices, it is not expected that soil movement from agricultural fields can be eliminated.) Identification of options for appropriate management practices may be coordinated with CURES, UCCE, County Agriculture Departments, NRCS, or RCDs, depending on the available resources. The specific coordinating entities are expected to vary in the different Coalition subwatersheds.

The results of outreach efforts will be documented and included in the Management Plan Progress Reports. These reports will also document any additional practices to be implemented, the goals and schedule for implementation, and measures of progress toward these goals. If it is determined that no additional appropriate management practices to control legacy pesticides are feasible, this will also be documented with the basis for the determination.

### **IMPLEMENTATION SCHEDULE**

The schedule and responsibilities for implementation of additional management practices will be documented as described in the overall Management Plan approach.

### **COMPLETION CRITERIA AND PERFORMANCE GOALS**

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section.

The criteria for completion of each these pathways are summarized in Table 6 and the pathways are also illustrated in **Figure 2**. Because the relative contributions to exceedances of legacy pesticides will generally not be able to be quantified, these criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for legacy pesticides will be

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determined to occur when no more than one exceedance of the appropriate trigger limit has been observed in three years of management plan monitoring.

Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of erosion management practice surveys from 100% of Coalition members in the target drainages (in September of 2<sup>nd</sup> year following trigger of management plan requirement).
- Documentation and reporting of baseline management practice inventory from surveys
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule to be established in Management Plan Progress Report).
- Specified decreases in frequency of exceedances (goals and schedule established in Management Plan Progress Report).

**Table 6. Legacy Organochlorine Pesticide Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
1. Agriculture eliminated as source of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural confirmed not to be a significant source of sediment discharges or erosion in the drainage;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural confirmed to be a source of sediment discharges or erosion; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources of sediment discharges or erosion are likely; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> <li>• No additional appropriate management practices are possible or economically feasible;</li> </ul>	Infeasibility is documented and issue is referred to Regional Water Board staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"> <li>• Sources of legacy pesticides not identified; <u>AND</u></li> <li>• All reasonable efforts at source ID exhausted</li> </ul>	Documented and referred to Regional Water Board staff for appropriate actions.

## **EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS**

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

## **MONITORING**

Monitoring to be performed as part of this element of the management plan is described for specific water bodies in **Appendix B**. Monitoring at identified management plan sites will include the sediment survey described previously. Subsequent to completion of approved MRPP monitoring, sites will continue to be monitored as needed to evaluate success of implemented management practices. Changes to the approved monitoring schedule must be approved by Regional Water Board staff prior to implementation.

## **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

The participants responsible for implementing specific elements of the Management Plan are identified in **Appendix B**.

## **REPORTING SCHEDULE**

The results of initial source identification efforts will be reported in a technical memorandum by June of the 2<sup>nd</sup> year following trigger of management plan requirements, with the first report due in June 2010. The reports will include the results of data reviews, results of the focused source evaluations, documentation of initial outreach meetings, and recommendations for continued Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the **Overall Management Plan Approach** and **Appendix B**.

## **TRACE METALS**

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This element of the Management Plan addresses exceedances of numeric water quality objectives for trace metals (arsenic, cadmium, copper, lead, nickel, selenium, and zinc). The trace metal boron is addressed in the salinity Management Plan section. Sites observed to have more than one exceedance of numeric Basin Plan water quality objectives for trace metals in three years are listed in **Appendix A**. Implementation of this element of the management plan will be conducted on a drainage-specific basis for the drainages determined to require management of trace metals exceedances.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

Coalition monitoring data and the regulatory basis for determination of exceedances will be evaluated and summarized. Review of the monitoring data will focus on any seasonal patterns in exceedances that can be used to focus future monitoring efforts. Evaluation of the regulatory basis will focus on the beneficial uses that these objectives or trigger limits are intended to protect and their applicability to the affected drainages, and appropriate averaging periods and allowable exceedance frequencies. Any substantial questions regarding implementation of the objectives used to determine exceedances will be summarized and provided to the Regional Water Board staff and the ILRP Technical Issues Committee for additional consideration and evaluation. Based on the results of these evaluations, the exceedances and need for a management plan may be reevaluated. However, development and implementation of management plans required by exceedances of the objectives will proceed according to the normal schedule while any additional regulatory considerations are completed.

### **SOURCE IDENTIFICATION**

The major sources of trace metals in the Central Valley have already been categorically identified, and include urban runoff, surface water and groundwater sources, and natural geological sources, as well as some direct agricultural uses of specific metals (e.g., copper). Sources of metals in agricultural runoff may also include direct importation from surface or groundwater supplies, dissolution of naturally occurring metals in soils, and intentional addition of some trace metals as micronutrients or pesticides. The following source identification efforts will be conducted on a drainage-specific basis to identify potential sources of trace metals and to evaluate potential agricultural and non-agricultural contributions to exceedances:

- ❑ Review of agricultural uses: Agricultural uses of the specific metals of concern will be reviewed to determine whether they are used or likely to be used by irrigated agriculture in the affected drainages. If available, data will be compiled for applications of the specific metals in the affected drainages, and the data will be evaluated for use patterns and timing.
- ❑ Identification of agricultural and non-agricultural sources: Agricultural uses of the specific metals of concern will be reviewed to determine whether they are used or likely to be used by irrigated agriculture in the affected drainages. If available, data will be compiled for applications of the specific metals in the affected drainages, and the data will be evaluated for use patterns and timing. Non-agricultural sources of metals will also be identified and relative contributions will be evaluated based on available information

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on agricultural uses and non-agricultural sources (e.g., agricultural supply water or natural geological sources). The primary purpose of this evaluation is to determine whether irrigated agriculture is a direct source or contributor to exceedances of the metals of concern.

- ❑ Source Evaluation Report: A focused Source Evaluation Report will be prepared documenting the following information for the affected drainages: relevant information for non-agricultural sources, agricultural application information for the specific metals of concern, application and irrigation practices, relevant management practices currently in place, and Coalition participants in the drainage.

### **MANAGEMENT PRACTICE IMPLEMENTATION**

Implementation of specific additional appropriate management practices will depend on the outcome of the metals source identification studies. To support these source identification efforts, the process to identify appropriate additional management practices will initially include:

- ❑ Meetings with landowners and/or growers to discuss the exceedances, possible sources of metals, management plan requirements and goals, and options for management practices. These discussions will be incorporated into scheduled public outreach meetings for the Subwatersheds.
- ❑ If source identification studies determine that irrigated agriculture sources contribute to exceedances of trace metals objectives, detailed information for relevant cultural practices and management practices already in place will be developed through surveys and other mechanisms. This information will be used to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices may be coordinated with CURES, UCCE, County Agriculture Departments, NRCS, RCDs, farm input suppliers, and pest control advisors, depending on the available resources and the specific trace metals of concern. The specific coordinating entities are expected to vary in the different Coalition subwatersheds.
- ❑ Additional targeted outreach may be conducted dependent on the results of source identification efforts and will provide options for additional appropriate management practices. Outreach will be prioritized and directed to likely agricultural sources of pathogen indicator organisms.

The results of outreach efforts will be documented and included in the Management Plan Progress Reports. These reports will also document any additional practices to be implemented, the goals and schedule for implementation, and measures of progress toward these goals. If it is determined that no additional appropriate management practices to control specific trace metals of concern are feasible, this will also be documented.

### **IMPLEMENTATION SCHEDULE**

The schedule and responsibilities for implementation of additional management practices will be documented as described in the overall Management Plan approach.

## COMPLETION CRITERIA AND PERFORMANCE GOALS

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section.

The criteria for completion of each these pathways are summarized in Table 7 and the pathways are also illustrated in **Figure 2**. These criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for metals will be determined to occur when no more than one exceedance of the appropriate trigger limit has been observed in three years of the specified management plan monitoring.

Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of management practice surveys from 100% of Coalition members in the target drainages
- Documentation and reporting of baseline management practice inventory from surveys
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule to be established in Management Plan Progress Report)
- Specified decreases in frequency of exceedances (goals and schedule established in Management Plan Progress Report).

**Table 7. Trace Metals Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
1. Agriculture eliminated as source of exceedances	<ul style="list-style-type: none"> <li>• Metal confirmed not to have significant irrigated agricultural sources;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources likely; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control	<ul style="list-style-type: none"> <li>• Irrigated agricultural sources likely; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> </ul>	Infeasibility is documented and

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of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"><li>No additional appropriate management practices are possible or economically feasible;</li></ul>	issue is referred to Regional Water Board staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"><li>Sources of specific metals not identified; <u>AND</u></li><li>All reasonable efforts at source ID exhausted</li></ul>	Documented and referred to Regional Water Board staff for appropriate actions.

### EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

### MONITORING

Monitoring proposed to be performed as part of this element of the management plan is summarized in **Appendix B**. Some sites will continue to be monitored routinely as part of the Coalition's ongoing 2009 monitoring effort. Subsequent to completion of 2009 Coalition monitoring, sites will continue to be monitored for specific trace metals as needed to evaluate success of implemented management practices, or to conduct additional source identification. Continued monitoring of affected sites in 2009 will be integrated with the monitoring strategy being developed by the Coalition in response to renewed ILRP MRP. The specific scope and timing of any continued monitoring will be based on results of the source identification evaluations and monitoring results. Any changes to the approved monitoring schedule must be approved by Regional Water Board staff prior to implementation.

### PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION

The participants responsible for implementing specific elements of the Management Plan are provided in **Appendix B**.

### REPORTING SCHEDULE

The results of initial source identification efforts will be reported in a technical memorandum by September 2011. The reports will include the results of data reviews, water quality objective evaluations, documentation of initial outreach meetings, and recommendations for additional Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the Overall Management Plan Approach.

## **SALINITY**

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This element of the Management Plan addresses exceedances of total dissolved solids (TDS), electrical conductivity (EC), and boron. Salinity is a regional issue that affects the entire Central Valley and Sacramento-San Joaquin Delta. Consequently, this element of the management plan will be developed and implemented on a regional basis in coordination with the Central Valley Regional Water Board and other ILRP Coalitions. The Central Valley Regional Water Board and State Regional Water Board have initiated a comprehensive effort to address salinity problems in California's Central Valley and to adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is an effort to develop and implement a comprehensive salinity management program. The CV-SALTS program is a multi-year effort anticipated to continue through 2012. In the context of the ILRP, the primary mechanism for developing and implementing a salinity management plan will be the Coalition's continued participation in this effort. Specific management plan actions to be implemented by the Coalition in support of these efforts are documented in the following sections.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

The first step in the implementation of this element of the management plan is a review of the monitoring data and the regulatory basis establishing the need for the management plan. For TDS and EC, this will include a review of numeric Basin Plan water quality objectives or numeric interpretations of Basin Plan narrative objectives used to determine exceedances. The review will evaluate the regulatory and scientific basis for the objectives, the beneficial uses that these objectives are intended to protect and their applicability in the affected drainages, averaging periods for assessing exceedances, and allowable exceedance frequencies. Any substantial questions regarding validity or interpretation of the objectives used to determine exceedances will be summarized and provided to the Regional Water Board staff, the ILRP Technical Issues Committee, and appropriate CV-SALTS committee for additional consideration and evaluation. Based on the results of these evaluations, the exceedances and need for a salinity management plan may be reevaluated. However, development and implementation of management plans required by exceedances of the objectives will proceed according to the normal schedule while any additional regulatory considerations are completed.

### **SOURCE IDENTIFICATION**

The major sources of salinity in the Central Valley have already been categorically identified, and include urban and rural water users, industrial users, surface water and groundwater sources, and natural geological sources, as well as agricultural users. Agricultural categories of salinity sources include direct importation from surface or groundwater supplies, evapoconcentration of supply water, addition of salts by dissolution of naturally occurring salts in soils, and intentional addition of salts as fertilizers or soil conditioners. The Coalition will support additional source characterization for the CV-SALTS program through the ongoing ILRP monitoring effort. Additionally, data will be compiled to characterize salinity characteristics of irrigation supply waters, if these data have not already been compiled by the CV-SALTS program.

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In addition to participation in the CV-SALTS process, the Coalition will conduct additional independent efforts to support source identification for salinity management.

- The Coalition will work with Agricultural Commissioners to identify areas and drainages with elevated salinity.
- The Coalition will work with Agricultural Commissioners to compile information about potentially salt-sensitive crops grown in these drainages.
- Source Evaluation Report: Because the CV-SALTS process is expected to be a protracted effort, the Coalition independent source identification efforts will be completed over an extended period compared to higher priority management plans. These independent Coalition source identification efforts are tentatively schedule to be completed by December of the 2nd year following establishment of this management plan requirement (December 2010), and reported in June 2011. The scope of this report will be determined in coordination with ILRP staff and will depend in part on types of information determined to be useful for the CV-SALTS process.

### MANAGEMENT PRACTICE IMPLEMENTATION

Integrated management and control of salinity in Central Valley waters is the objective of the CV-SALTS effort, and can only be achieved by coordinated efforts by all of the stakeholders. The scope of agriculture management practice implementation for salinity will be determined through the CV-SALTS process. To support the efforts of the CV-SALTS process to identify appropriate additional management practices, the Coalition will implement the following:

- ❑ Meetings with landowners and/or growers to discuss exceedances, agricultural and non-agricultural salinity sources, options for relevant salinity management practices, and management plan requirements and goals.
- ❑ Information will be developed through surveys to document salinity management practices already in place in the coalition subwatersheds. This information is intended to supports CV-SALTS efforts to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices will be coordinated primarily with CV-SALTS Technical Advisory Committee. Evaluation of appropriate management practices may also be coordinated with CURES, UCCE, County Agriculture Departments, NRCS, and RCDs, depending on their available resources in specific subwatersheds. The surveys of salinity management practices are tentatively schedule to be completed by September of the 3rd year following establishment of this management plan requirement (September 2011), and documented in the subsequent Source Evaluation Report in December 2011. As discussed above, the scope of this report will be determined in coordination with ILRP staff and will depend in part on types of information determined to be useful for the CV-SALTS process. Schedules and goals for additional management plan elements (e.g., management practice implementation) will be developed and modified based on the results of the source evaluations and evaluation of baseline management practices already in place.

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The results of the initial outreach efforts will be documented and included in the Management Plan Progress Reports. Documentation of outreach efforts will include the participants, identified options for salinity management practices, additional practices planned to be implemented, and a summary of the CV-SALTS process and progress toward developing goals and schedule for additional management practice implementation.

### **IMPLEMENTATION SCHEDULE**

The schedule for implementation of additional salinity management efforts is dependent on and will initially be developed through coordination with CV-SALTS, which is a many-year effort. Specific schedules and goals for each subwatershed or for the Coalition as a whole will be based on outcomes of the CV-SALTS process. The parties responsible for tracking implementation of management practices cannot yet be identified, but will be documented later in the process. Implementation will be evaluated and documented in annual reports as required for the Management Plan.

### **COMPLETION CRITERIA AND PERFORMANCE GOALS**

Completion criteria for this element of the management plan will be developed through the CV-SALTS process and can not yet be specified for the Coalition. In the interim, progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of management practice surveys from 100% of Coalition members in the target drainages (estimated completion in September 2011).
- Documentation and reporting of baseline management practice inventory from surveys (estimated completion in December 2011)
- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule to be established in future Management Plan Progress Reports).
- Specified decreases in frequency or magnitude of exceedances or average concentrations (goals and schedule established in Management Plan Progress Report).

### **EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS**

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

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### **MONITORING**

Monitoring to be performed as part of this element of the management plan will include two elements: (1) the Coalition's ongoing monitoring effort will continue to routinely monitor EC, TDS, and boron; (2) Additional monitoring may be conducted for drainages that are determined not to have sufficient available data to characterize EC, TDS, and boron in irrigation supply waters to support source identification. The performance of this additional monitoring will depend on the outcome of the source identification and data compilation efforts coordinated with the CV-SALTS program.

### **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

The participants responsible for implementing specific elements of the Management Plan are provided in **Appendix B**. The Coalition's initial responsibility for implementing this element of the Management Plan is through participation and coordination with the CV-SALTS program. Coalition Subwatersheds will be responsible for conducting the initial outreach for the Management Plan. Parties responsible for specific additional elements of implementation will be determined as these elements are developed.

### **REPORTING SCHEDULE**

The results of initial source identification efforts and management practice inventory are tentatively estimated to be reported in a technical memorandum by June 2011. The reports will include the results of data reviews, water quality objective evaluations, documentation of outreach meetings, and any recommendations for additional Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the **Overall Management Plan Approach** and **Appendix B**.

## **DO and pH**

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This element of the management plan addresses exceedances of dissolved oxygen (DO) and pH.

### **REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES**

The first step in the implementation of this element of the management plan is a review of the monitoring data and the regulatory basis establishing the need for the management plan. For DO and pH, this will include an evaluation of the current designated beneficial uses of the waterbodies to determine whether the COLD or WARM designations should apply. The information used will include an evaluation of whether natural seasonal conditions (e.g., low flows, elevated temperatures, and low DO) support these designated uses in water bodies which would be completely dry in the absence of irrigation returns. An initial determination will be made in consultation with appropriate Regional Board staff of the ambient conditions (including flow, DO, temperature, resident species) required to define and support the designated WARM and COLD beneficial uses. This task will include an evaluation of the existing monitoring data for seasonal patterns of flow, temperature and DO in the monitored waterbodies.

Recommendations for additional monitoring will be developed if available information is determined to be insufficient to establish appropriate beneficial uses for Coalition monitoring sites.

The review will evaluate the regulatory and scientific basis for the objectives, beneficial uses that these objectives are intended to protect and their applicability to the affected drainages, and allowable exceedance frequencies. Any substantial questions regarding validity or interpretation of the objectives used to determine exceedances will be summarized and provided to the Regional Water Board staff and the ILRP Technical Issues Committee for additional consideration and evaluation. Based on the results of these evaluations, the exceedances and need for a management plan may be reevaluated.

### **SOURCE IDENTIFICATION**

Dissolved oxygen (DO) concentrations are often low regionally during low flow and high water temperature conditions (i.e., there are significant natural seasonal causes). These same conditions can cause or contribute to high or low pH in ambient water. These parameters also exhibit significant natural diurnal variation with daily fluctuations controlled principally by algal photosynthesis and respiration, and the buffering capacity of the water. These processes are controlled by light and nutrient availability, concentrations of organic matter, and temperature. These factors combine to cause increasing DO and pH during daylight hours and decreasing DO and pH at night. Diurnal variations are typically greater in summer because there is more light and higher temperatures. Irrigation return flows may influence this variation primarily by increasing or decreasing in-stream temperatures, or by increasing available nutrients or organic matter. Therefore, low DO concentrations may be caused or exacerbated by algal growth and natural diurnal respiration and variation. Algal growth may be influenced by potentially elevated nutrient runoff from irrigated agriculture (fertilizer application, irrigated pasture, dairy facilities), or from irrigation supply water that contains high nutrient concentrations or phytoplankton from upstream sources. To evaluate potential contributions of elevated nutrients from agriculture to DO and pH exceedances, the Coalition will undertake the following:

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- Nutrient applications and agricultural uses will be evaluated to better identify potential nutrient sources and to characterize use patterns in monitored drainages. The purpose of this element is to describe the types of nutrients applied, estimate how much is applied per acre of a specific crop type, when nutrients are typically applied, and how applications are linked with irrigation patterns. Because data for actual fertilizer applications are not available, this characterization will be made based on current land use data and available information on cultural practices (e.g., grazed pasture, manure applications, and crop types and the typical nitrogen and phosphorus applications required to support these crops).
- Available relevant monitoring data will be evaluated for nutrients and organic carbon in monitored drainages to determine whether excess nutrients may indirectly contribute to low dissolved oxygen or pH extremes through promotion of excessive algal growth. The evaluation will be made based on average ambient nutrient concentrations, observations of excessive algae, and their relationship with the frequency, and patterns and timing of low DO or extreme pH conditions from Coalition monitoring data. Evaluations of this relationship will utilize formal statistical methods if the available data support this, or will consist of a qualitative assessment if the data do not support more rigorous statistical methods.
- A focused Source Evaluation Report will be prepared documenting the following drainage-specific information for irrigated parcels in the affected drainages: crops by percent of total irrigated acreage, relative use of the additional nutrients by crop or commodity, nutrient application and irrigation practices, relevant management practices currently in place, and Coalition participants in the drainage. Based on a lower priority for this management plan element, source evaluations are estimated to be completed by June of 2011 and reported by September 2011.

### **MANAGEMENT PRACTICE IMPLEMENTATION**

Implementation of specific additional appropriate management practices will depend on the outcome of the source identification efforts. To support these source identification efforts, the process to identify appropriate additional management practices will include:

- Discussions with landowners and/or growers of the exceedances, sources of nutrients and organic carbon, management plan requirements and goals, and options for management practices. These discussions will be incorporated into scheduled public outreach meetings
- If source identification studies determine that elevated nutrients from irrigated agriculture contribute to exceedances of DO and pH objectives, detailed information for relevant cultural practices and management practices already in place will be developed through surveys of Coalition members. This information will be used with the results of source evaluations to determine whether implementation of additional management practices is appropriate and feasible, and to establish goals for additional management practice implementation. Identification of options for appropriate management practices will be coordinated with CURES, UCCE, County Agriculture Departments, and RCDs.
- Depending on the results of source evaluations and baseline management practice implementation, targeted outreach may be conducted to provide options for additional

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appropriate management practices. Outreach will be prioritized and directed to growers of crops with high nutrient use.

The results of the initial outreach efforts will be documented and included in the Management Plan Progress Reports. Documentation of outreach efforts will include the participants, relevant options for management practices, any additional practices planned to be implemented, and the goals and schedule for additional management practice implementation. If it is determined that no additional appropriate management practices to control DO and pH are feasible, this will also be documented.

### **IMPLEMENTATION SCHEDULE**

The schedule for development and implementation of additional management practices will be conducted as described in the overall Management Plan approach (**Table 1** and **Figure 1**). However, due to the lower priority and longer period expected for resolution for this management plan element, the schedule will be extended by one year. The schedule will include quarterly progress meetings with the Regional Water Board ILRP staff. The schedule for site-specific and parameter-specific management plan elements is documented in **Appendix B**. The results of source identification efforts and management practice inventories will be used to prioritize drainages or commodities by greatest potential for contributing to DO and oxygen exceedances and the lowest rates of management practice implementation. These priorities will be reflected in the schedule and scope of management plan implementation.

### **COMPLETION CRITERIA AND PERFORMANCE GOALS**

The successful completion of the Management Plan will be determined by the Executive Officer of the Regional Water Board. The possible pathways for successful completion of this element of the management plan are described in the Overall Approach section. The criteria for completion of each these pathways are summarized in Table 8 and the pathways are also illustrated in **Figure 2**. These criteria are generally qualitative, with the exception of compliance with water quality objectives. Consequently, determination that a specific criterion has been met will be based on a “weight of evidence” approach in consultation with Regional Water Board staff and approved by the Executive Officer of the Regional Board. Determination of compliance with water quality objectives for DO and pH will be determined to occur when no more than one exceedance of the appropriate trigger limit has been observed in three years of the specified management plan monitoring.

Progress toward the implementation performance goals established for each subwatershed will be evaluated and documented in annual Management Plan Progress Reports. Specific performance goals will include the following:

- Completion of source identification and evaluation
- Completion and documentation of targeted outreach to Coalition members (and potential members, if appropriate)
- Return of management practice surveys from 100% of Coalition members in the target drainages
- Documentation and reporting of baseline management practice inventory from surveys

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- Implementation of numbers or percentages of specific additional management practices in target drainages (goals and schedule to be established in Management Plan Progress Report).
- Specified decreases in frequency of exceedances (goals and schedule established in Management Plan Progress Report).

**Table 8. DO and pH Management Plan Completion Criteria**

Management Plan Pathway	Criteria for Successful Completion	Endpoint
1. Agriculture eliminated as source of exceedances	<ul style="list-style-type: none"> <li>• Exceedances determined not to have significant irrigated agricultural causes;</li> </ul>	Issue is referred to Regional Water Board staff for appropriate actions.
2. WQOs achieved by control of probable agricultural contributions to exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural contribution likely; <u>AND</u></li> <li>• Appropriate additional agricultural management practices have been identified, implemented, and documented; <u>AND</u></li> <li>• Demonstrated achievement of water quality objectives</li> </ul>	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural contributions to exceedances	<ul style="list-style-type: none"> <li>• Irrigated agricultural contribution likely; <u>AND</u></li> <li>• WQOs not achieved or expected to be achieved; <u>AND</u></li> <li>• No additional appropriate management practices are possible or economically feasible;</li> </ul>	Infeasibility is documented and issue is referred to Regional Water Board staff for appropriate actions.
4. Probable causes not identified	<ul style="list-style-type: none"> <li>• Causes of exceedances not identified; <u>AND</u></li> <li>• All reasonable efforts at identification of causes exhausted</li> </ul>	Documented and referred to Regional Water Board staff for appropriate actions.

### EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

Ultimately, the effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the interim, the effectiveness of the management plan will be evaluated based on meeting the interim performance goals described above. Progress toward the implementation performance goals established for each subwatershed and management plan element will be evaluated and documented in annual Management Plan Progress Reports.

### MONITORING

Monitoring to be performed as part of this element of the management plan will include two elements: (1) the Coalition's ongoing monitoring effort will continue to routinely monitor for field parameters; (2) If indicated by the source identification efforts, additional monitoring of nutrients will be conducted in subsequent years. This monitoring will be integrated with the monitoring strategy developed by the Coalition in response to renewed ILRP MRP, and will also incorporate any other recommendations resulting from the source identification efforts. Any changes to approved monitoring schedules must be approved by Regional Water Board staff prior to implementation.

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### **PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION**

The participants responsible for implementing specific elements of the Management Plan are provided in **Appendix B**.

### **REPORTING SCHEDULE**

The results of initial source identification efforts and management practice inventories will be reported in a technical memorandum by September 2011. The reports will include the results of reviews of data and regulatory basis for exceedances, evaluations of nutrient contributions, focused WER, documentation of initial outreach meetings, and recommendations for the Management Plan monitoring. All other reporting for this element will be scheduled as proposed in the **Overall Management Plan Approach** and **Appendix B**.

**Appendix A:**  
**List of Parameters Requiring Management Plan**  
**Development and Implementation**

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## **Appendix B:** **Site-Specific Management Plan Implementation**

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Site-Specific monitoring and implementation schedules are provided as separate files for each subwatershed.

## **Appendix C: Subwatershed and Drainage Maps**

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Drainage representation maps are provided for each subwatershed.

Appendix A: Table of Management Plan Elements

Subwatershed	Water Body	Monitoring Site	MgtPlanCategory	Analyte	Default Analyte Priority	Final Priority
Butte Yuba Sutter	Butte Slough	Butte Slough at Pass Road	DO and pH	DO	LOW	LOW
Butte Yuba Sutter	Butte Slough	Butte Slough at Pass Road	Toxicity	Toxicity - Selenastrum	HIGH	HIGH
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	DO and pH	pH	LOW	LOW
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	DO and pH	DO	LOW	LOW
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	Legacy Pesticides	DDE	MEDIUM	MEDIUM
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	Pathogen Indicators	E. Coli	LOW	LOW
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	Registered Pesticides	Diazinon	HIGH	HIGH
Butte Yuba Sutter	Gilsizer Slough	Gilsizer Slough at George Washington Road	Salinity	EC	LOW	LOW
Butte Yuba Sutter	Lower Snake River	Lower Snake R. at Nuestro Rd	Pathogen Indicators	E. Coli	LOW	LOW
Butte Yuba Sutter	Pine Creek	Pine Creek at Nord Gianella Road	Pathogen Indicators	E. Coli	LOW	LOW
Butte Yuba Sutter	Pine Creek	Pine Creek at Nord Gianella Road	Registered Pesticides	Chlorpyrifos	HIGH	HIGH
Butte Yuba Sutter	Wadsworth Canal	Wadsworth Canal at South Butte Rd	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Colusa Basin Drain	Colusa Basin Drain a KL	DO and pH	DO	LOW	LOW
Colusa Glenn	Colusa Basin Drain	Colusa Basin Drain at Maxwell road	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Colusa Basin Drain	Colusa Basin Drain a KL	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Colusa Basin Drain	Colusa Basin Drain a KL	Salinity	EC	LOW	LOW
Colusa Glenn	Freshwater Creek	Freshwater Creek at Gibson Rd	DO and pH	DO	LOW	LOW
Colusa Glenn	Freshwater Creek	Freshwater Creek at Gibson Rd	Legacy Pesticides	DDE	MEDIUM	MEDIUM
Colusa Glenn	Freshwater Creek	Freshwater Creek at Gibson Rd	Salinity	EC	LOW	LOW
Colusa Glenn	Logan Creek	Logan Creek at 4 Mile-Excelsior Rd	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Lurline Creek	Lurline Creek at 99W	Legacy Pesticides	DDE	MEDIUM	MEDIUM
Colusa Glenn	Lurline Creek	Lurline Creek at 99W	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Lurline Creek	Lurline Creek at 99W	Salinity	EC	LOW	LOW
Colusa Glenn	Lurline Creek	Lurline Creek at 99W	Salinity	TDS	LOW	LOW
Colusa Glenn	Sycamore Slough	Rough and Ready Pumping Plant (RD 108)	DO and pH	DO	LOW	LOW
Colusa Glenn	Sycamore Slough	Rough and Ready Pumping Plant (RD 108)	Legacy Pesticides	DDE/DDT	MEDIUM	MEDIUM
Colusa Glenn	Sycamore Slough	Rough and Ready Pumping Plant (RD 108)	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Sycamore Slough	Rough and Ready Pumping Plant (RD 108)	Salinity	EC	LOW	LOW
Colusa Glenn	Sycamore Slough	Rough and Ready Pumping Plant (RD 108)	Salinity	TDS	LOW	LOW
Colusa Glenn	Stone Corral Creek	Stone Corral Creek near Maxwell Road	DO and pH	DO	LOW	LOW
Colusa Glenn	Stone Corral Creek	Stone Corral Creek near Maxwell Road	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Stone Corral Creek	Stone Corral Creek near Maxwell Road	Salinity	EC	LOW	LOW
Colusa Glenn	Stony Creek	Stony Creek on Hwy 45 near Rd 24	DO and pH	pH	LOW	LOW
Colusa Glenn	Stony Creek	Stony Creek on Hwy 45 near Rd 24	Toxicity	Toxicity - Hyalella	HIGH	MEDIUM
Colusa Glenn	Walker Creek	Walker Creek at Co Rd 48	DO and pH	DO	LOW	LOW
Colusa Glenn	Walker Creek	Walker Creek at Co Rd 48	Pathogen Indicators	E. Coli	LOW	LOW
Colusa Glenn	Walker Creek	Walker Creek at Co Rd 48	Registered Pesticides	Chlorpyrifos	HIGH	HIGH
Colusa Glenn	Walker Creek	Walker Creek at Co Rd 48	Toxicity	Toxicity - Ceriodaphnia	HIGH	HIGH
El Dorado	Coon Hollow Creek	Coon Hollow Creek	Legacy Pesticides	DDE/DDT	MEDIUM	MEDIUM
El Dorado	Coon Hollow Creek	Coon Hollow Creek	Toxicity	Toxicity - Ceriodaphnia	HIGH	HIGH
El Dorado	North Canyon Creek	North Canyon Creek	Legacy Pesticides	DDE	MEDIUM	MEDIUM
El Dorado	North Canyon Creek	North Canyon Creek	Pathogen Indicators	E. Coli	LOW	LOW
Lake Napa	Capell Creek	Capell Creek upstream from Lake Berryessa	Pathogen Indicators	E. Coli	LOW	LOW
Lake Napa	McGaugh Slough	McGaugh Slough	Pathogen Indicators	E. Coli	LOW	LOW

Appendix A: Table of Management Plan Elements

Subwatershed	Water Body	Monitoring Site	MgtPlanCategory	Analyte	Default Analyte Priority	Final Priority
Pit River	Fall River	Fall River at Fall River Ranch Bridge	DO and pH	pH	LOW	LOW
Pit River	Pit River	Pit River at Pittville Bridge	DO and pH	DO	LOW	LOW
Pit River	Pit River	Pit River at Pittville Bridge	DO and pH	pH	LOW	LOW
Pit River	Pit River	Pit River at Canby Bridge	DO and pH	DO	LOW	LOW
Pit River	Pit River	Pit River at Canby Bridge	Pathogen Indicators	E. Coli	LOW	LOW
PNSSNS	Coon Creek	Coon Creek at Striplin Road	DO and pH	DO	LOW	LOW
PNSSNS	Coon Creek	Coon Creek at Brewer Road	Pathogen Indicators	E. Coli	LOW	LOW
PNSSNS	Coon Creek	Coon Creek at Striplin Road	Pathogen Indicators	E. Coli	LOW	LOW
PNSSNS	Coon Creek	Coon Creek at Striplin Road	Registered Pesticides	Chlorpyrifos	HIGH	LOW
Sacramento/Amador	Cosumnes River	Cosumnes River at Twin Cities Road	DO and pH	pH	LOW	LOW
Sacramento/Amador	Cosumnes River	Cosumnes River at Twin Cities Road	Toxicity	Toxicity - Hyalella	HIGH	LOW
Sacramento/Amador	Dry Creek	Dry Creek at Alta Mesa Rd	DO and pH	pH	LOW	LOW
Sacramento/Amador	Dry Creek	Dry Creek at Alta Mesa Rd	Pathogen Indicators	E. Coli	LOW	LOW
Sacramento/Amador	Dry Creek	Dry Creek at Alta Mesa Rd	Salinity	TDS	LOW	LOW
Sacramento/Amador	Grand Island	Grand Isle at Leary Road	Legacy Pesticides	DDE/DDT	MEDIUM	MEDIUM
Sacramento/Amador	Grand Island	Grand Isle at Leary Road	Salinity	EC	LOW	LOW
Sacramento/Amador	Grand Island	Grand Isle at Leary Road	Salinity	TDS	LOW	LOW
Sacramento/Amador	Laguna Creek	Laguna Crk at Alta Mesa Rd	DO and pH	pH	LOW	LOW
Sacramento/Amador	Laguna Creek	Laguna Crk at Alta Mesa Rd	DO and pH	DO	LOW	LOW
Sacramento/Amador	Laguna Creek	Laguna Crk at Alta Mesa Rd	Pathogen Indicators	E. coli	LOW	LOW
Sacramento/Amador	Laguna Creek	Laguna Crk at Alta Mesa Rd	Toxicity	Toxicity - Ceriodaphnia	HIGH	HIGH
Shasta Tehama	Andersen Creek	Andersen Creek at Ash Creek Rd	DO and pH	DO	LOW	LOW
Shasta Tehama	Andersen Creek	Andersen Creek at Ash Creek Rd	Pathogen Indicators	E. Coli	LOW	LOW
Shasta Tehama	Burch Creek	Burch Creek above Woodson Ave Bridge	Pathogen Indicators	E. Coli	LOW	LOW
Shasta Tehama	Coyote Creek	Coyote Creek at Tyler Road	DO and pH	DO	LOW	LOW
Solano Yolo	Cache Creek	Cache Creek at Capay Diversion Dam	Salinity	EC	LOW	LOW
Solano Yolo	Cache Creek	Cache Creek at Capay Diversion Dam	Salinity	Boron	LOW	LOW
Solano Yolo	Cache Creek	Cache Creek at Capay Diversion Dam	Toxicity	Toxicity - Ceriodaphnia	HIGH	HIGH
Solano Yolo	Tule Canal	Tule Canal at I-80	Salinity	Boron	LOW	LOW
Solano Yolo	Tule Canal	Tule Canal at I-80	Salinity	EC	LOW	LOW
Solano Yolo	Tule Canal	Tule Canal at I-80	Salinity	TDS	LOW	LOW
Solano Yolo	Tule Canal	Tule Canal at I-80	Pathogen Indicators	E. Coli	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	DO and pH	pH	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	DO and pH	DO	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Pathogen Indicators	E. Coli	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Registered Pesticides	Malathion	HIGH	HIGH
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Registered Pesticides	Diuron	HIGH	HIGH
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Salinity	EC	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Salinity	TDS	LOW	LOW
Solano Yolo	Ulatis Creek	Ulatis Creek at Brown Road	Toxicity	Toxicity - Selenastrum	HIGH	HIGH
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Legacy Pesticides	DDE	MEDIUM	MEDIUM
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Pathogen Indicators	E. Coli	LOW	LOW
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Registered Pesticides	Chlorpyrifos	HIGH	HIGH
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Salinity	EC	LOW	LOW

Appendix A: Table of Management Plan Elements

Subwatershed	Water Body	Monitoring Site	MgtPlanCategory	Analyte	Default Analyte Priority	Final Priority
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Salinity	TDS	LOW	LOW
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Salinity	Boron	LOW	LOW
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Toxicity	Toxicity - Selenastrum	HIGH	HIGH
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Toxicity	Toxicity - Ceriodaphnia	HIGH	HIGH
Solano Yolo	Willow Slough	Willow Slough Bypass at Pole Line	Trace Metals	Selenium	MEDIUM	MEDIUM
Solano Yolo	Z Drain	Z Drain – Dixon RCD	DO and pH	pH	LOW	LOW
Solano Yolo	Z Drain	Z Drain – Dixon RCD	DO and pH	DO	LOW	LOW
Solano Yolo	Z Drain	Z Drain – Dixon RCD	Pathogen Indicators	E. Coli	LOW	LOW
Solano Yolo	Z Drain	Z Drain – Dixon RCD	Salinity	TDS	LOW	LOW
Solano Yolo	Z Drain	Z Drain – Dixon RCD	Salinity	EC	LOW	LOW
Solano Yolo	Z Drain	Z Drain – Dixon RCD	Toxicity	Toxicity - Hyalella	HIGH	HIGH
Upper Feather River	Indian Creek	Indian Creek at Arlington Bridge	DO and pH	DO	LOW	LOW
Upper Feather River	Indian Creek	Indian Creek at Arlington Bridge	Pathogen Indicators	E. Coli	LOW	LOW
Upper Feather River	Middle Fork Feather River	Middle Fork Feather River at Co Rd A-23	DO and pH	DO	LOW	LOW
Upper Feather River	Middle Fork Feather River	Middle Fork Feather River at Co Rd A-23	DO and pH	pH	LOW	LOW
Upper Feather River	Spanish Creek	Spanish Creek below Greenhorn Creek	Pathogen Indicators	E. Coli	LOW	LOW

## Northeastern California Water Association Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

NECWA does not agree with the continuing to spend funds on monitoring activities, or that agriculture should be held responsible for determining the cause. However, NECWA is moving forward with helping their landowners understand their potential impacts to the environment. NECWA has developed a landowner survey as a first step to understand more about what management practices are currently being implemented in their Subwatershed. The surveys will help NECWA determine their specific education and outreach strategy. The implementation of this type of program is expected to eventually impact what is going on at the ground level. A copy of the landowner survey will be provided to the Regional Water Board upon request.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Fall River (LOW)	DO & pH	pH	LOW
Pit River (LOW)	DO & pH	DO	LOW
		pH	LOW
	Pathogens	E. Coli	LOW

## Pit River Management Plan Details

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**Drainage:** Bieber, Canby

**Water Body:** Pit River

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) is the highest priority analyte for this water body.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Pit River at Pittville	DO & pH	pH	APR-NOV
		DO	APR-NOV
Pit River at Canby Bridge	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.
	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.

## Fall River Management Plan Details

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**Drainage:** Big Lake

**Water Body:** Fall River

**Water Body Priority:** LOW

**Priority Rationale:** pH (LOW) is the only analyte with exceedances for this water body. Elevated pH appears to be a normal condition in this drainage.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Fall River at River Ranch Bridge	DO & pH	pH	None initially. Future schedule TBD based on source evaluation.

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## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Fall River	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Fall River	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Fall River	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Fall River	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Fall River	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Fall River	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Fall River	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Fall River	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Fall River	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Fall River	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pit River	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Pit River	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Pit River	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Pit River	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Pit River	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Pit River	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Pit River	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Pit River	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Pit River	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pit River	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pit River	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Pit River	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Pit River	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Pit River	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Pit River	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC; Subwatershed coordinator	7/1/10	9/30/10
Pit River	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Pit River	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Pit River	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Pit River	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Pit River	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pit River	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Lake Napa Subwatershed Management Plans

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Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

<b>Water Body (PRIORITY)</b>	<b>MP Category</b>	<b>Analyte of Concern</b>	<b>Analyte Priority</b>
Capell Creek (LOW)	Pathogens	E. Coli	LOW
McGaugh Slough (LOW)	Pathogens	E. Coli	LOW

## Capell Creek Management Plan Details

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**Drainage:** Capell Creek

**Water Body:** Capell Creek

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) is the highest priority analyte for this water body, and the only management plan requirement.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Capell Creek upstream from Lake Berryessa	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.

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## McGaugh Slough Management Plan Details

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**Drainage:** McGaugh Slough

**Water Body:** McGaugh Slough

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) is the highest priority analyte for this water body, and the only management plan requirement.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
McGaugh Slough	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.

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## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Capell Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Capell Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Capell Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Capell Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Capell Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Capell Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Capell Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Capell Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Capell Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Capell Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Capell Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
McGaugh Slough	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
McGaugh Slough	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
McGaugh Slough	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
McGaugh Slough	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
McGaugh Slough	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
McGaugh Slough	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
McGaugh Slough	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
McGaugh Slough	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
McGaugh Slough	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
McGaugh Slough	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
McGaugh Slough	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD

## **PNSSNS Subwatershed Management Plans**

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

<b>Water Body (PRIORITY)</b>	<b>MP Category</b>	<b>Analyte of Concern</b>	<b>Analyte Priority</b>
Coon Creek (HIGH)	DO & pH	DO	LOW
	Pathogens	E. Coli	LOW
	Registered Pesticides	Chlorpyrifos	LOW <sup>1</sup>

<sup>1</sup> The priority for chlorpyrifos was reduced from HIGH to LOW because no exceedances or related toxicity has been observed in Coon Creek since 2005.

## Coon Creek Management Plan Details

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**Drainage:** Lower Coon Creek and Middle Coon Creek

**Water Body:** Coon Creek

**Water Body Priority:** LOW

**Priority Rationale:** The only exceedance for HIGH priority analytes in this water body has been for chlorpyrifos. The most recent observed exceedance for chlorpyrifos was in 2005. With no exceedances in the last three monitoring years and no associated toxicity, the priority for chlorpyrifos management was reduced to LOW. Consequently, the highest parameter management priority is LOW.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Coon Creek at Striplin Road	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.
	Registered Pesticides	Chlorpyrifos	MAY-SEP
Coon Creek at Striplin Road	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
Coon Creek at Brewer Road	Pathogens	E. coli, fecal coliforms	Monthly
Coon Creek at DLX Ranches (upstream from Brewer Road and potential non-agricultural source of E. coli)			JAN-JUN

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Coon Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Coon Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Coon Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Coon Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Coon Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Coon Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Coon Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Coon Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Coon Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Coon Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Coon Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Coon Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Coon Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Coon Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Coon Creek	Pathogen Indicators	2.4	Source ID	Monitor upstream location to isolate potential non-agricultural	SVWQC	1/1/09	12/31/09
Coon Creek	Pathogen Indicators	2.5	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Coon Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Coon Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Coon Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Coon Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Coon Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Coon Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Coon Creek	Registered Pesticides	1	Review Regulatory Basis	Review monitoring data and regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Coon Creek	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09
Coon Creek	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/09	5/30/09
Coon Creek	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Coon Creek	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Coon Creek	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Coon Creek	Registered pesticides	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Coon Creek	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	Subwatershed coordinator; SVWQC; Ag Commissioners	4/1/10	6/30/10
Coon Creek	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	Subwatershed coordinator; SVWQC	4/1/10	6/30/10
Coon Creek	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Coon Creek	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Coon Creek	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Sacramento Amador Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Cosumnes River (LOW)	DO & pH	pH	LOW
	Toxicity	Sediment Toxicity - <i>Hyalella</i>	LOW <sup>1</sup>
Dry Creek (LOW)	DO & pH	pH	LOW
	Pathogens	E. Coli	LOW
	Salinity	TDS	LOW
Laguna Creek (HIGH)	DO & pH	DO	LOW
		pH	LOW
	Pathogens	E. Coli	LOW
	Toxicity	Toxicity - Ceriodaphnia	HIGH
Grand Island (MEDIUM)	Legacy Pesticides	DDE/DDT	MEDIUM
	Salinity	EC	LOW
		TDS	LOW

<sup>1</sup> Priority for management of sediment toxicity at the Butte Slough site was reduced from HIGH to LOW because reductions in survival were less than 20% for cases of significant toxicity.

## Cosumnes River Management Plan Details

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**Drainage:** Lower Cosumnes

**Water Body:** Cosumnes River

**Water Body Priority:** LOW

**Priority Rationale:** Sediment toxicity (adjusted to LOW) and pH (LOW) are the only analytes requiring management. Priority for management of sediment toxicity at Cosumnes River site was reduced from HIGH to LOW because reductions in survival were less than 20% for cases of significant toxicity.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Cosumnes River at Twin Cities Rd	DO & pH	pH	Monthly
	Toxicity	Sediment Toxicity - <i>Hyalella</i>	APR, AUG
		TOC, Grain size	APR, AUG
		Pyrethroids and Chlorpyrifos in sediment	As needed for toxic sediments

## Dry Creek Management Plan Details

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**Drainage:** Jackson Creek

**Water Body:** Dry Creek

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) is the highest priority analyte requiring management for this water body.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Dry Creek at Alta Mesa Road	DO & pH	pH	None initially. Future schedule TBD based on source evaluation.
	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
	Salinity	TDS	None initially. Future schedule TBD based on source evaluation.

## Laguna Creek Management Plan Details

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**Drainage:** Middle Cosumnes

**Water Body:** Laguna Creek

**Water Body Priority:** HIGH

**Priority Rationale:** Multiple analytes potentially require management. *Ceriodaphnia* toxicity (HIGH) is the highest priority analyte requiring management for this water body.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Laguna Creek at Alta Mesa Rd	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.
		pH	None initially. Future schedule TBD based on source evaluation.
	Pathogens	E. coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
	Toxicity	Toxicity - <i>Ceriodaphnia</i>	FEB, APR, JUN, AUG  TIEs, Dilution Series, and chemical analyses as required for significant toxicity;

## Grand Island Drain Management Plan Details

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**Drainage:** Sacramento Delta

**Water Body:** Grand Island Drain

**Water Body Priority:** MEDIUM

**Priority Rationale:** DDE/DDT (MEDIUM) is the highest priority analyte requiring management for this water body.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Grand Island Drain near Leary Road	Legacy Pesticides	OC Pesticides (sediment survey)	APR
		OC Pesticides (water)	None initially. Future sampling schedule TBD based on source evaluation.
	Salinity	EC	Monthly
		TDS	Monthly

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Cosumnes River	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Cosumnes River	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Cosumnes River	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Cosumnes River	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Cosumnes River	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Cosumnes River	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Cosumnes River	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Cosumnes River	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Cosumnes River	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Cosumnes River	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Cosumnes River	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/10	6/30/10
Cosumnes River	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/10	6/30/10
Cosumnes River	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/10	6/30/10
Cosumnes River	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water,	SVWQC; Subwatershed coordinator	7/1/10	9/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices			
Cosumnes River	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/10	12/31/10
Cosumnes River	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/11	3/31/11
Cosumnes River	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Cosumnes River	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/11	6/29/12
Cosumnes River	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	6/30/12	9/29/12
Cosumnes River	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Dry Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Dry Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Dry Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Dry Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Dry Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Dry Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and	1/1/12	3/31/12

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
					growers;		
Dry Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Dry Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Dry Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Dry Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Dry Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Dry Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Dry Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Dry Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	SVWQC	7/1/10	9/30/10
Dry Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Dry Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Dry Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Dry Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Dry Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Dry Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Dry Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Dry Creek	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Dry Creek	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Dry Creek	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Dry Creek	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Dry Creek	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Dry Creek	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Dry Creek	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Dry Creek	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Dry Creek	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Dry Creek	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Dry Creek	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Dry Creek	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Grand Island Drain	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Grand Island Drain	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
Grand Island Drain	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
Grand Island Drain	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Grand Island Drain	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
Grand Island Drain	Legacy Pesticides	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	10/1/10	12/31/10
Grand Island Drain	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
Grand Island Drain	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12
Grand Island Drain	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
Grand Island Drain	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Grand Island Drain	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Grand Island Drain	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Grand Island Drain	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Grand Island Drain	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Grand Island Drain	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Grand Island Drain	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Grand Island Drain	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Grand Island Drain	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Grand Island Drain	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Grand Island Drain	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Grand Island Drain	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Laguna Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Laguna Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Laguna Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Laguna Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Laguna Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Laguna Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Laguna Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Laguna Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Laguna Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Laguna Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Laguna Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Laguna Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Laguna Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Laguna Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	SVWQC	7/1/10	9/30/10
Laguna Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Laguna Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Laguna Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Laguna Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Laguna Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Laguna Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Laguna Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Laguna Creek	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Laguna Creek	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Laguna Creek	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Laguna Creek	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Laguna Creek	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Laguna Creek	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Laguna Creek	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Laguna Creek	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Laguna Creek	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Laguna Creek	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD



## Butte Yuba Sutter Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

The Regional Water Board has a contract with the Agricultural Commissioners of Butte and Glenn Counties to support the Irrigated Lands Regulatory Program. A Memorandum of Understanding (MOU) between the State Water Board, the Regional Water Board, the Department of Pesticide Regulation, and the Agricultural Commissioners of Butte and Glenn Counties supports this MOU Pilot Program. To date, the Agricultural Commissioners have evaluated Walker Creek (Glenn County) and Pine Creek (Butte County) and plan to evaluate Freshwater Creek (Colusa County) in 2009. The Agricultural Commissioners MOU tasks include observation and communication activities such as: inspections of watershed monitoring locations, inspections of monitoring locations where data indicate that water quality objectives have been exceeded, and assisting in identification of sources of water quality violations. Agricultural Commissioners were also able to conduct public education, public outreach, and reporting to the Commissioners and Central Valley Water Board on the results of their activities along with recommendations for alternative approaches and strategies. Other activities were performed as agreed to by all parties. The reports can be found at [http://www.swrcb.ca.gov/centralvalley/water\\_issues/irrigated\\_lands/ag\\_commissioners\\_pilot/index.shtml](http://www.swrcb.ca.gov/centralvalley/water_issues/irrigated_lands/ag_commissioners_pilot/index.shtml).

**Table 1. Required Management Plan Analytes as of September 30, 2007**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Butte Slough (HIGH)	DO & pH	DO	LOW
	Toxicity	Toxicity - Selenastrum	HIGH
Gilsizer Slough (HIGH)	DO & pH	pH	LOW
		DO	LOW
	Legacy Pesticides	DDE	MEDIUM
	Pathogens	E. Coli	LOW
	Registered Pesticides	Diazinon	HIGH
	Salinity	EC	LOW
Lower Snake River (LOW)	Pathogens	E. Coli	LOW
Pine Creek (HIGH)	Pathogens	E. Coli	LOW
	Registered Pesticides	Chlorpyrifos	HIGH
Wadsworth Canal (LOW)	Pathogens	E. Coli	LOW



## Butte Slough Management Plan Details

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**Drainage:** Butte Creek

**Water Body:** Butte Slough

**Water Body Priority:** HIGH

**Priority Rationale:** Algae toxicity (HIGH) was the highest priority analyte requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring being conducted by the California Rice Commission at this site.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Butte Slough at Pass Road	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.
	Toxicity	Toxicity - <i>Selenastrum</i>	NOV, JAN, MAR, MAY, to supplement CRC MRPP Core and Assessment monitoring

## Gilsizer Slough Management Plan Details

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**Drainage:** Gilsizer

**Water Body:** Gilsizer Slough

**Water Body Priority:** HIGH

**Priority Rationale:** Diazinon (HIGH) was the highest priority analyte requiring management. This water body also has the highest number of analytes potentially requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Gilsizer Slough at George Washington Road	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.
		pH	None initially. Future schedule TBD based on source evaluation.
	Legacy Pesticides	OC Pesticides (sediment survey)	APR
		OC Pesticides (water)	None initially. Future sampling schedule TBD based on source evaluation.
	Pathogens	E. Coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
	Registered Pesticides	Diazinon	JAN-FEB (Both exceedances occurred in February)
	Salinity	EC	None initially. Future schedule TBD based on source evaluation.

## **Lower Snake River Management Plan Details**

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**Drainage:** Lower Snake

**Water Body:** Lower Snake River

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) was the only analyte requiring management.

### **MONITORING**

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Lower Snake R. at Nuestro Rd	Pathogens	E. Coli, fecal coliforms	Monthly

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## Pine Creek Management Plan Details

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**Drainage:** Pine Creek

**Water Body:** Pine Creek

**Water Body Priority:** HIGH

**Priority Rationale:** Chlorpyrifos (HIGH) was the highest priority analyte requiring management.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Pine Creek at Nord Gianella Road	Pathogens	E. Coli, fecal coliforms	Monthly
	Registered Pesticides	Chlorpyrifos	MAY-SEP

## **Wadsworth Canal Management Plan Details**

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**Drainage:** Wadsworth

**Water Body:** Wadsworth Canal

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) was the only analyte requiring management.

### **MONITORING**

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Wadsworth Canal at South Butte Rd	Pathogens	E. Coli, fecal coliforms	None initially. Future sampling schedule TBD based on source evaluation.

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## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Butte Slough	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Butte Slough	DO and pH	2.1	Source ID	Evaluate Nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Butte Slough	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Butte Slough	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Butte Slough	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Butte Slough	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Butte Slough	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Butte Slough	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Butte Slough	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Butte Slough	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Butte Slough	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Butte Slough	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Butte Slough	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Butte Slough	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Butte Slough	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Butte Slough	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Butte Slough	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Butte Slough	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Butte Slough	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Butte Slough	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Gilsizer Slough	DO and pH	2.1	Source ID	Evaluate Nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Gilsizer Slough	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Gilsizer Slough	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Gilsizer Slough	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management	Subwatershed coordinator; SVWQC	10/1/11	12/31/11

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				practices			
Gilsizer Slough	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Gilsizer Slough	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Gilsizer Slough	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Gilsizer Slough	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09
Gilsizer Slough	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
Gilsizer Slough	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
Gilsizer Slough	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Gilsizer Slough	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
Gilsizer Slough	Legacy Pesticides	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC	10/1/10	12/31/10
Gilsizer Slough	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
Gilsizer Slough	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Gilsizer Slough	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
Gilsizer Slough	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Gilsizer Slough	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Gilsizer Slough	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Gilsizer Slough	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Gilsizer Slough	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Gilsizer Slough	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Gilsizer Slough	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Gilsizer Slough	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Gilsizer Slough	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Gilsizer Slough	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Registered Pesticides	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Gilsizer Slough	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09
Gilsizer Slough	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed	4/1/09	5/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
					coordinator; Ag Commissioners		
Gilsizer Slough	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09
Gilsizer Slough	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Gilsizer Slough	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Gilsizer Slough	Registered pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Gilsizer Slough	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/10	6/30/10
Gilsizer Slough	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Gilsizer Slough	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Gilsizer Slough	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Gilsizer Slough	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
					Commissioners		
Gilsizer Slough	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Gilsizer Slough	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Gilsizer Slough	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Gilsizer Slough	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Gilsizer Slough	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Gilsizer Slough	Salinity	3.3	Management Practice Implementation	Develop list of prioritized Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Gilsizer Slough	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Gilsizer Slough	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Gilsizer Slough	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Lower Snake River	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Lower Snake River	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Lower Snake River	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Lower Snake River	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Lower Snake River	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Lower Snake River	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Lower Snake River	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Lower Snake River	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Lower Snake River	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Lower Snake River	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Lower Snake River	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pine Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Pine Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Pine Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Pine Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Pine Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Pine Creek	Pathogen Indicators	3.1	Management Practice	Conduct surveys of Coalition members for current level of implementation of relevant	Subwatershed coordinator; SVWQC	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
			Implementation	management practices (in coordination with Source ID Survey of waste application)			
Pine Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Pine Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Pine Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Pine Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pine Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pine Creek	Registered Pesticides	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Pine Creek	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09
Pine Creek	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/09	5/30/09
Pine Creek	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09
Pine Creek	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Pine Creek	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Pine Creek	Registered pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Pine Creek	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/10	6/30/10
Pine Creek	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Pine Creek	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Pine Creek	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pine Creek	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Wadsworth Canal	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Wadsworth Canal	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Wadsworth Canal	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Wadsworth Canal	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Wadsworth Canal	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Wadsworth Canal	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Wadsworth Canal	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and	10/1/10	3/31/11

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
					growers;		
Wadsworth Canal	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Wadsworth Canal	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Wadsworth Canal	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Wadsworth Canal	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Colusa Glenn Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

The Regional Water Board has a contract with the Agricultural Commissioners of Butte and Glenn Counties to support the Irrigated Lands Regulatory Program. A Memorandum of Understanding (MOU) between the State Water Board, the Regional Water Board, the Department of Pesticide Regulation, and the Agricultural Commissioners of Butte and Glenn Counties supports this MOU Pilot Program. To date, the Agricultural Commissioners have evaluated Walker Creek (Glenn County) and Pine Creek (Butte County) and plan to evaluate Freshwater Creek (Colusa County) in 2009. The Agricultural Commissioners MOU tasks include observation and communication activities such as: inspections of watershed monitoring locations, inspections of monitoring locations where data indicate that water quality objectives have been exceeded, and assisting in identification of sources of water quality violations. Agricultural Commissioners were also able to conduct public education, public outreach, and reporting to the Commissioners and Central Valley Water Board on the results of their activities along with recommendations for alternative approaches and strategies. Other activities were performed as agreed to by all parties. The reports can be found at [http://www.swrcb.ca.gov/centralvalley/water\\_issues/irrigated\\_lands/ag\\_commissioners\\_pilot/index.shtml](http://www.swrcb.ca.gov/centralvalley/water_issues/irrigated_lands/ag_commissioners_pilot/index.shtml).

**Table 1. Required Management Plan Analytes As of September 30, 2007**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Colusa Basin Drain (LOW)	DO and pH	DO	LOW
	Pathogen Indicators	E. Coli	LOW
	Salinity	EC	LOW
Freshwater Creek (MEDIUM)	DO and pH	DO	LOW
	Legacy Pesticides	DDE	MEDIUM
	Salinity	EC	LOW
Logan Creek (LOW)	Pathogen Indicators	E. Coli	LOW
Lurline Creek (MEDIUM)	Legacy Pesticides	DDE	MEDIUM
	Pathogen Indicators	E. Coli	LOW
	Salinity	EC	LOW
	Salinity	TDS	LOW
Sycamore Slough (MEDIUM)	DO and pH	DO	LOW
	Legacy Pesticides	DDE/DDT	MEDIUM
	Pathogen Indicators	E. Coli	LOW
	Salinity	EC	LOW
	Salinity	TDS	LOW

<b>Water Body (PRIORITY)</b>	<b>MP Category</b>	<b>Analyte of Concern</b>	<b>Analyte Priority</b>
Stone Corral Creek (LOW)	DO and pH	DO	LOW
	Pathogen Indicators	E. Coli	LOW
	Salinity	EC	LOW
Stony Creek (MEDIUM)	DO and pH	pH	LOW
	Toxicity	Toxicity - Hyalella	MEDIUM <sup>(1)</sup>
Walker Creek (HIGH)	DO and pH	DO	LOW
	Pathogen Indicators	E. Coli	LOW
	Registered Pesticides	Chlorpyrifos	HIGH
	Toxicity	Toxicity - Ceriodaphnia	HIGH

1 Reduced from default HIGH priority due to marginal toxicity effects

## **Colusa Basin Drain Management Plan Details**

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**Drainage:** Lower Colusa Drain

**Water Body:** Colusa Basin Drain

**Water Body Priority:** LOW

**Priority Rationale:** Only LOW priority analytes required management.

### **MONITORING**

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Colusa Basin Drain above KL	DO & pH	DO	Monthly
	Pathogens	E. Coli, Fecal Coliforms	Monthly
	Salinity	EC	Monthly

## Freshwater Creek Management Plan Details

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**Drainage:** Freshwater Creek

**Water Body:** Freshwater Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** Legacy pesticides (MEDIUM) were the highest priority analytes requiring management.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Freshwater Creek at Gibson Rd	DO & pH	DO	Monthly
	Legacy Pesticides	OC Pesticides (sediment survey)	April 2009
		OC Pesticides (water)	None initially. Future schedule TBD based on source evaluation.
	Salinity	EC	Monthly

## **Logan Creek Management Plan Details**

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**Drainage:** Logan Creek

**Water Body:** Logan Creek

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) was the only analyte requiring management.

### **MONITORING**

Monitoring in 2009 includes only Special Project monitoring, as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Logan Creek at 99W	Pathogens	E. Coli, Fecal Coliforms	None initially. Future Schedule TBD based on source evaluation.

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## Lurline Creek Management Plan Details

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**Drainage:** Lurline Creek

**Water Body:** Lurline Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** Legacy pesticides (MEDIUM) were the highest priority analytes requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring, as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Lurline Creek at 99W	Legacy Pesticides	OC Pesticides (sediment survey)	APR 2009
		OC Pesticides (water)	None initially. Future Schedule TBD based on source evaluation.
	Pathogens	E. Coli, Fecal Coliforms	None initially. Future Schedule TBD based on source evaluation.
	Salinity	EC	None initially. Future Schedule TBD based on source evaluation.
		TDS	None initially. Future Schedule TBD based on source evaluation.

## Sycamore Slough (Rough and Ready Pumping Plant) Management Plan Details

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**Drainage:** Sycamore Area

**Water Body:** Sycamore Slough

**Water Body Priority:** MEDIUM

**Priority Rationale:** E. coli (MEDIUM) was the highest priority analyte requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring, as described in the Coalition MRPP. Monitoring for Management Plan Implementation will be coordinated with Assessment and Core monitoring for the subwatershed, summarized below.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Rough and Ready Pumping Plant (RD 108)	DO & pH	DO	None initially. Future Schedule TBD based on source evaluation.
	Pathogens	E. Coli, Fecal Coliforms	None initially. Future Schedule TBD based on source evaluation.
	Salinity	EC	None initially. Future Schedule TBD based on source evaluation.
		TDS	None initially. Future Schedule TBD based on source evaluation.

## Stone Corral Creek Management Plan Details

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**Drainage:** Stone Corral Creek

**Water Body:** Stone Corral Creek

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (MEDIUM) and DO (LOW) were the only analytes requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring, as described in the Coalition MRPP. Monitoring for Management Plan Implementation will be coordinated with Assessment and Core monitoring for the subwatershed, summarized below.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Stone Corral Creek near Maxwell Road	DO & pH	DO	None initially. Future Schedule TBD based on source evaluation.
	Pathogens	E. Coli, Fecal Coliforms	None initially. Future Schedule TBD based on source evaluation.

## Stony Creek Management Plan Details

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**Drainage:** Lower Stony Creek

**Water Body:** Stony Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** Sediment toxicity to *Hyalella* (reduced from HIGH to MEDIUM) was the highest priority analyte requiring management. The priority for sediment toxicity was reduced to MEDIUM from the default HIGH priority due to marginal toxicity effects.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring, as described in the Coalition MRPP. Monitoring for Management Plan Implementation will be coordinated with Assessment and Core monitoring for the subwatershed, summarized below.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Stony Creek on Hwy 45 near Rd 24	DO & pH	pH	None initially. Future Schedule TBD based on source evaluation.
	Toxicity	Sediment Toxicity - <i>Hyalella</i>	APR, AUG
		TOC, Grain size	APR, AUG
		Pyrethroids and Chlorpyrifos in sediment	As needed for toxic sediments

## Walker Creek Management Plan Details

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**Drainage:** Willow Creek

**Water Body:** Walker Creek

**Water Body Priority:** HIGH

**Priority Rationale:** was the highest priority Analytes potentially requiring management include Aquatic toxicity to *Ceriodaphnia* (HIGH) and chlorpyrifos (HIGH).

### MONITORING

Monitoring in 2009 in Walker Creek includes Assessment and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation will be coordinated with the Assessment and Core monitoring, and is summarized below.

Site Description (PRIORITY)	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Walker Creek near 99W and CR33  (HIGH)	Registered pesticides	Chlorpyrifos	Monthly, JAN-AUG
	Toxicity	<i>Ceriodaphnia</i> toxicity	Monthly, DEC-SEP; TIEs and Dilution Series as required for significant toxicity;
	Pathogens	E. Coli, Fecal Coliforms	Monthly
	DO and pH	DO	Monthly

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Butte Slough	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Butte Slough	DO and pH	2.1	Source ID	Evaluate Nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Butte Slough	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Butte Slough	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Butte Slough	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Butte Slough	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Butte Slough	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Butte Slough	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Butte Slough	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Butte Slough	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Butte Slough	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Butte Slough	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Butte Slough	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Butte Slough	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Butte Slough	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Butte Slough	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Butte Slough	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Butte Slough	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Butte Slough	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Butte Slough	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Gilsizer Slough	DO and pH	2.1	Source ID	Evaluate Nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Gilsizer Slough	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Gilsizer Slough	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Gilsizer Slough	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Gilsizer Slough	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Gilsizer Slough	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Gilsizer Slough	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Gilsizer Slough	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09
Gilsizer Slough	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
Gilsizer Slough	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
Gilsizer Slough	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Gilsizer Slough	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
Gilsizer Slough	Legacy Pesticides	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC	10/1/10	12/31/10
Gilsizer Slough	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
Gilsizer Slough	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12
Gilsizer Slough	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
Gilsizer Slough	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Gilsizer Slough	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Gilsizer Slough	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Gilsizer Slough	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Gilsizer Slough	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Gilsizer Slough	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Gilsizer Slough	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Gilsizer Slough	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Gilsizer Slough	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Gilsizer Slough	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Registered Pesticides	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Gilsizer Slough	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09
Gilsizer Slough	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/09	5/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Gilsizer Slough	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09
Gilsizer Slough	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Gilsizer Slough	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Gilsizer Slough	Registered pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Gilsizer Slough	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/10	6/30/10
Gilsizer Slough	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Gilsizer Slough	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Gilsizer Slough	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Gilsizer Slough	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Gilsizer Slough	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Gilsizer Slough	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated	SVWQC; Ag Commissioners	7/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				salinity			
Gilsizer Slough	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Gilsizer Slough	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Gilsizer Slough	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Gilsizer Slough	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Gilsizer Slough	Salinity	3.3	Management Practice Implementation	Develop list of prioritized Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Gilsizer Slough	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Gilsizer Slough	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Gilsizer Slough	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Gilsizer Slough	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Lower Snake River	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Lower Snake River	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Lower Snake River	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Lower Snake River	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Lower Snake River	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Lower Snake River	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Lower Snake River	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Lower Snake River	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Lower Snake River	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Lower Snake River	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Lower Snake River	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pine Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Pine Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Pine Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Pine Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Pine Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Pine Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Pine Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Pine Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Pine Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Pine Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pine Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Pine Creek	Registered Pesticides	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Pine Creek	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09
Pine Creek	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/09	5/30/09
Pine Creek	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09
Pine Creek	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Pine Creek	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Pine Creek	Registered pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Pine Creek	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/10	6/30/10
Pine Creek	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Pine Creek	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Pine Creek	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Pine Creek	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Wadsworth Canal	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Wadsworth Canal	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Wadsworth Canal	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Wadsworth Canal	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Wadsworth Canal	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Wadsworth Canal	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Wadsworth Canal	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Wadsworth Canal	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Wadsworth Canal	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Wadsworth Canal	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Wadsworth Canal	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## El Dorado Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes As of September 30, 2007**

<b>Water Body (PRIORITY)</b>	<b>MP Category</b>	<b>Analyte of Concern</b>	<b>Analyte Priority</b>
Coon Hollow Creek (HIGH)	Legacy Pesticides	DDE/DDT	MEDIUM
	Toxicity	Toxicity - Ceriodaphnia	HIGH
North Canyon Creek (MEDIUM)	Legacy Pesticides	DDE	MEDIUM
	Pathogen Indicators	E. Coli	LOW

## Coon Hollow Creek Management Plan Details

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**Drainage:** Coon Hollow

**Water Body:** Coon Hollow Creek

**Water Body Priority:** HIGH

**Priority Rationale:** *Ceriodaphnia* toxicity (HIGH) was the highest priority analyte requiring management, with multiple observed exceedances and no identified cause of toxicity.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Coon Hollow Creek	Legacy Pesticides	OC Pesticides (sediment survey)	April
		OC Pesticides (water)	None initially. Future sampling schedule TBD based on source evaluation.
	Pathogens	E. Coli, fecal coliforms	None initially. Future sampling schedule TBD based on source evaluation.
	Toxicity	Toxicity - <i>Ceriodaphnia</i>	None initially. Future sampling schedule TBD based on source evaluation.

## North Canyon Creek Management Plan Details

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**Drainage:** Coloma

**Water Body:** North Canyon Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** Legacy pesticides (MEDIUM) were the highest priority analytes requiring management.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
North Canyon Creek	Legacy Pesticides	OC Pesticides (sediment survey)	April
		OC Pesticides (water)	None initially. Future Schedule TBD based on source evaluation.
	Pathogens	E. Coli, fecal coliforms	JAN-AUG

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Coon Hollow Creek	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09
Coon Hollow Creek	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
Coon Hollow Creek	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
Coon Hollow Creek	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Coon Hollow Creek	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
Coon Hollow Creek	Legacy Pesticides	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	10/1/10	12/31/10
Coon Hollow Creek	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
Coon Hollow Creek	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12
Coon Hollow Creek	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
Coon Hollow Creek	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Coon Hollow Creek	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Coon Hollow Creek	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Coon Hollow Creek	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water,	SVWQC; Subwatershed coordinator	7/1/09	9/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices			
Coon Hollow Creek	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Coon Hollow Creek	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Coon Hollow Creek	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Coon Hollow Creek	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Coon Hollow Creek	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Coon Hollow Creek	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
North Canyon Creek	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09
North Canyon Creek	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
North Canyon Creek	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
North Canyon Creek	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
North Canyon Creek	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
North Canyon Creek	Legacy Pesticides	3.3	Management Practice	If agriculture is identified as a probable source, set goals and schedule for additional	Subwatershed coordinator; SVWQC	10/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
			Implementation	Management Practice implementation			
North Canyon Creek	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
North Canyon Creek	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12
North Canyon Creek	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
North Canyon Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
North Canyon Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Source ID Study	SVWQC	ongoing	TBD
North Canyon Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	SVWQC	1/1/10	6/30/10
North Canyon Creek	Pathogen Indicators	2.3	Source ID	This element is not required for this drainage.	SVWQC	NA	NA
North Canyon Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: If agricultural sources confirmed, prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
North Canyon Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	SVWQC; Subwatershed coordinator	1/1/10	6/30/10
North Canyon Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
North Canyon Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
North Canyon Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD

<b>Waterbody</b>	<b>Management Plan Category</b>	<b>Task ID</b>	<b>Implementation Element</b>	<b>Element Detail</b>	<b>Responsible Entities</b>	<b>Task Start</b>	<b>Task End</b>
North Canyon Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	SVWQC	TBD	TBD
North Canyon Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Shasta Tehama Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

<b>Water Body (PRIORITY)</b>	<b>MP Category</b>	<b>Analyte of Concern</b>	<b>Analyte Priority</b>
Andersen Creek	DO & pH	DO	LOW
(LOW)	Pathogens	E. Coli	LOW
Coyote Creek (LOW)	DO & pH	DO	LOW
Burch Creek (LOW)	Pathogens	E. Coli	LOW

## Andersen Creek Management Plan Details

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**Drainage:** Andersen Creek

**Water Body:** Andersen Creek

**Water Body Priority:** LOW

**Priority Rationale:** E. coli (LOW) is the highest priority analyte with exceedances for this water body.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Anderson Creek at Ash Creek Road	DO & pH	DO	Monthly
	Pathogens	E. coli, fecal coliforms	Monthly

## Coyote Creek Management Plan Details

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**Drainage:** Coyote Creek

**Water Body:** Coyote Creek

**Water Body Priority:** LOW

**Priority Rationale:** Dissolved oxygen (LOW) is the highest priority analyte with exceedances for this water body. Evaluations to date indicate that the primary cause is lack of flow.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Coyote Creek at Tyler Road	DO & pH	DO	None initially. Future schedule TBD based on source evaluation.

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## Burch Creek Management Plan Details

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**Drainage:** Rice and Burch Creek

**Water Body:** Burch Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** E. coli (MEDIUM) is the highest priority and only analyte with unresolved exceedances for this water body.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring
Burch Creek west of Rawson Rd	Pathogens	E. coli, fecal coliforms	None initially. Future monitoring on source evaluation.

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Anderson Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Anderson Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Anderson Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Anderson Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Anderson Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Anderson Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Anderson Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Anderson Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Anderson Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Anderson Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Anderson Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Anderson Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Anderson Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Anderson Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Anderson Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Anderson Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Anderson Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Anderson Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Anderson Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Anderson Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Anderson Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Burch Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Burch Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Burch Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Burch Creek	Pathogen Indicators	2.3	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Burch Creek	Pathogen Indicators	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Burch Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with	Subwatershed coordinator; SVWQC	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				Source ID Survey of waste application)			
Burch Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Burch Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Burch Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Burch Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Burch Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Coyote Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Coyote Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Coyote Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Coyote Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Coyote Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Coyote Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Coyote Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Coyote Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Coyote Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Coyote Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Upper Feather River Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September, 2008**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Indian Creek (LOW)	DO & pH Pathogens	DO E. Coli	LOW LOW
Middle Fork Feather River (LOW)	DO & pH	DO pH	LOW LOW
Spanish Creek (LOW)	Pathogens	E. Coli	LOW

### ONGOING EFFORTS TO ADDRESS E. COLI, PH AND DO EXCEEDANCES

The Upper Feather River Subwatershed already has several ongoing efforts to address observed exceedances. There are likely several sources contributing to repeated *E. coli* exceedances observed. These sources include rural residential septic systems, township septic systems, municipal dischargers, and wildlife species common throughout the sub-watershed. For example, results of monitoring conducted under the Proposition 50 project during the irrigation season of 2007 documented that *E. coli* concentrations increase significantly in stream water passing through the town of Sierraville, in Sierra Valley. However, it is also likely that cattle on agricultural lands are also contributing to the exceedances observed in the Upper Feather River Watershed (UFRW).

To reduce possible commensal *E. coli* contributions from cattle, the Upper Feather River Watershed Group (UFRWG) is implementing an outreach program specifically tailored to livestock producers in the subwatershed. The goal of this outreach is to stimulate implementation of effective management practices to lower *E. coli* levels transported from pastures and meadows. There is good reason to expect that implementation of a combination of irrigation, grazing management, and vegetative filter management practices can reduce *E. coli*, and other pollutant, contributions from grazed, irrigated pastures such as those found in the UFRW. Therefore, efforts will focus on outreach and implementation, rather than on documentation of management practice effectiveness at the site or pasture scale.

The outreach efforts include a combination of venues including short courses, town hall meetings, newsletters, field days, demonstration projects, and one-on-one education. We will provide ranchers with information about: 1) grazing and irrigation practices that increase the risk

of E. coli transport from pastures and meadows; 2) grazing and irrigation practices that decrease the risk of E. coli transport from pastures and meadows; and 3) the effectiveness of filter strips and wetlands to filter E. coli in pasture and meadow runoff; and 4) technical and financial support available to evaluate possible problems, as well as identify, fund, and implement solutions.

Outreach will continue to be developed and conducted collaboratively between UFRWG, the Coalition, UC Cooperative Extension, USDA Natural Resources Conservation Service, local Resource Conservation Districts and NGO's, and Regional Water Board staff. The UFRWG will also investigate the potential to coordinate outreach with other sub-watershed groups (e.g., Pit River) and coalitions (e.g., Gooselake) with similar systems and exceedences. The UFRWG will maintain a record of management practice implementation for annual reporting and progress assessment.

The UFRWG developed a special monitoring project to identify the factors determining DO and pH levels, and thus exceedences, at the Sierra Valley (above Grizzly Creek) and Indian Valley monitoring locations. This project is being conducted in collaboration with the University of California Cooperative Extension and UC Davis (samples were collected during the 2008 irrigation season (May-October)). The sampling results and analysis will be documented in a report scheduled for release in the first quarter of 2009.

## Indian Creek Management Plan Details

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**Drainage:** East Branch of North Fork Feather (Indian Valley)

**Water Body:** Indian Creek

**Water Body Priority:** LOW

**Priority Rationale:** Only LOW priority analytes require management for this water body.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

The Upper Feather River subwatershed is conducting special studies for DO and pH exceedances in 2008. If the results of these studies resolve the questions for these parameters, additional Special Project monitoring and evaluation will not be required for these analytes.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Indian Creek below Arlington Bridge	DO & pH	DO	MAY-SEP
	Pathogens	E. Coli	MAY-SEP

## **Middle Fork Feather River Management Plan Details**

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**Drainage:** Middle Fork Feather

**Water Body:** Middle Fork Feather River

**Water Body Priority:** LOW

**Priority Rationale:** Only LOW priority analytes require management for this water body.

### **MONITORING**

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

The Upper Feather River subwatershed is conducting special studies for DO and pH exceedances in 2008. If the results of these studies resolve the questions for these parameters, additional Special Project monitoring and evaluation will not be required for these analytes.

<b>Site Description</b>	<b>MP Category</b>	<b>Monitoring Parameter</b>	<b>2009 Monitoring Schedule</b>
Middle Fork Feather River above confluence with Grizzly Creek	DO & pH	DO	MAY-SEP
		pH	MAY-SEP

## Spanish Creek Management Plan Details

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**Drainage:** East Branch of North Fork Feather (American Valley)

**Water Body:** Spanish Creek

**Water Body Priority:** LOW

**Priority Rationale:** Only LOW priority analytes require management for this water body.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

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Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Spanish Creek below Greenhorn Creek	Pathogens	E. coli	MAY-SEP

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## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Indian Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	6/30/09
Indian Creek	DO and pH	2.1	Source ID	Evaluate and Report results of 2008 Special Studies by UFRW	UFRWG; SVWQC	NA	6/30/09
Indian Creek	DO and pH	2.1	Source ID	If not resolved by initial Special Studies, evaluate nutrient applications and agricultural uses	SVWQC	7/1/09	12/30/09
Indian Creek	DO and pH	2.2	Source ID	If not resolved by initial Special Studies, evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/10	6/30/10
Indian Creek	DO and pH	2.3	Source ID	Source Evaluation Report: If not resolved by initial Special Studies, identify and prioritize agricultural and non-agricultural causes	SVWQC; UFRW	7/1/10	9/30/10
Indian Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD
Indian Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Indian Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Indian Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	NA
Indian Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD
Indian Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Indian Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/31/10
Indian Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	1/1/09	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Indian Creek	Pathogen Indicators	2.2	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC; UFRW	7/1/09	9/30/09
Indian Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	UFRW; Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Indian Creek	Pathogen Indicators	3.2	Management Practice Implementation	Implement outreach program specifically tailored for livestock producers in the sub-watershed. The goal of this outreach is to stimulate implementation of irrigation and grazing management, and vegetative filter management practices.	UFRW; SVWQC; UCCE	Ongoing	TBD
Indian Creek	Pathogen Indicators	3.3	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	Ongoing	TBD
Indian Creek	Pathogen Indicators	3.4	Management Practice Implementation	Establish goals for Management Practice implementation	SVWQC; UFRW	1/1/10	3/31/10
Indian Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD
Indian Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Middle Fork Feather River	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	6/30/09
Middle Fork Feather River	DO and pH	2.1	Source ID	Evaluate and Report results of 2008 Special Studies by UFRW	UFRWG; SVWQC	NA	6/30/09
Middle Fork Feather River	DO and pH	2.1	Source ID	If not resolved by initial Special Studies, evaluate nutrient applications and agricultural uses	SVWQC	7/1/09	12/30/09
Middle Fork Feather River	DO and pH	2.2	Source ID	If not resolved by initial Special Studies, evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/10	6/30/10
Middle Fork Feather River	DO and pH	2.3	Source ID	Source Evaluation Report: If not resolved by initial Special Studies, identify and prioritize agricultural and non-agricultural causes	SVWQC; UFRW	7/1/10	9/30/10
Middle Fork Feather River	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				practices			
Middle Fork Feather River	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Middle Fork Feather River	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Middle Fork Feather River	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	NA
Middle Fork Feather River	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD
Middle Fork Feather River	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Spanish Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/31/10
Spanish Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	1/1/09	12/31/10
Spanish Creek	Pathogen Indicators	2.2	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC; UFRW	7/1/09	9/30/09
Spanish Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	UFRW; Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Spanish Creek	Pathogen Indicators	3.2	Management Practice Implementation	Implement outreach program specifically tailored for livestock producers in the sub-watershed. The goal of this outreach is to stimulate implementation of irrigation and grazing management, and vegetative filter management practices.	UFRW; SVWQC; UCCE	Ongoing	TBD
Spanish Creek	Pathogen Indicators	3.3	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	Ongoing	TBD
Spanish Creek	Pathogen Indicators	3.4	Management Practice	Establish goals for Management Practice implementation	SVWQC; UFRW	1/1/10	3/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
			Implementation				
Spanish Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	UFRW; Subwatershed coordinator; SVWQC	TBD	TBD
Spanish Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD

## Solano Yolo Subwatershed Management Plans

Management plan elements will be implemented for the water bodies and parameters indicated in **Table 1**. Site priorities are based on a combination of the number and type of management plan requirements, and the severity and frequency of exceedances. Modifications of priorities for specific analytes (if any) are indicated in **Table 1** footnotes.

Maps of subwatersheds and drainages are provided in **Appendix C**.

**Table 1. Required Management Plan Analytes as of September 30, 2007**

Water Body (PRIORITY)	MP Category	Analyte of Concern	Analyte Priority
Cache Creek (MEDIUM)	Salinity	Boron	LOW
		EC	LOW
	Toxicity	Toxicity - <i>Ceriodaphnia</i>	HIGH
Tule Canal (LOW)	Salinity	EC	LOW
		TDS	LOW
	Pathogen Indicators	E. Coli	LOW
Ulatis Creek (HIGH)	DO & pH	DO	LOW
		pH	LOW
	Pathogens	E. Coli	LOW
	Registered Pesticides	Diuron	HIGH
		Malathion	HIGH
	Salinity	EC	LOW
		TDS	LOW
Toxicity	Toxicity - <i>Selenastrum</i>	HIGH	
Willow Slough (HIGH)	Legacy Pesticides	DDE	MEDIUM
	Pathogens	E. Coli	LOW
	Registered Pesticides	Chlorpyrifos <sup>1</sup>	HIGH
	Salinity	Boron	LOW
		EC	LOW
		TDS	LOW
	Toxicity	Toxicity - <i>Ceriodaphnia</i>	HIGH
Toxicity - <i>Selenastrum</i>		HIGH	
Trace Metals	Selenium	MEDIUM	
Z-Drain (MEDIUM)	DO & pH	DO	LOW
		pH	LOW
	Pathogens	E. Coli	LOW
	Salinity	EC	LOW
		TDS	LOW
	Toxicity	Toxicity - <i>Hyalella</i>	HIGH

- 1 Actions have already been taken to reduce observed chlorpyrifos exceedances. In Yolo County, chlorpyrifos was made a restricted material and now requires a permit and a notice of intent prior to use. This allows the County Agriculture Department to prescribe conditions on its use. The conditions used were the label requirements plus a 72-hour period of no irrigation or rain after use. The 72 hours limitation is the same requirement as for dormant sprays. The notice of intent allows the department to do a pre-application inspection and insure that conditions are being met. That there were no chlorpyrifos exceedances this year is attributed to the 72-hour restriction and heightened awareness of the label conditions. The goal is to maintain chlorpyrifos as a tool for growers, but these new restrictions have reduced use by about 50%. Based on the preliminary success of these measures, management of chlorpyrifos in Willow Slough will be omit some preliminary steps and focus on assessment of effectiveness of the measures already implemented.

## Cache Creek Management Plan Details

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**Drainage:** Cache Creek

**Water Body:** Cache Creek

**Water Body Priority:** MEDIUM

**Priority Rationale:** This water body has one HIGH priority analyte (*Ceriodaphnia* toxicity) and the fewest number of analytes potentially requiring management overall. *Ceriodaphnia* toxicity has the minimum number of exceedances to trigger a management plan.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Cache Cr. at Capay Diversion Dam	Salinity <sup>(1)</sup>	Boron	None initially. Future schedule TBD based on source evaluation.
		EC	None initially. Future schedule TBD based on source evaluation.
	Toxicity	Toxicity - <i>Ceriodaphnia</i>	MAY- AUG

1 Addressed previously in Yolo Management Plan

## Tule Canal Management Plan Details

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**Drainage:** South Yolo Bypass

**Water Body:** Tule Canal

**Water Body Priority:** LOW

**Priority Rationale:** This water body has only LOW priority analytes requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Tule Canal at I-80	Pathogens	E. Coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
	Salinity	EC	None initially. Future schedule TBD based on source evaluation.
		TDS	None initially. Future schedule TBD based on source evaluation.

## Ulatis Creek Management Plan Details

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**Drainage:** Cache Slough

**Water Body:** Ulatis Creek

**Water Body Priority:** HIGH

**Priority Rationale:** This water body has several HIGH priority analytes and a high number of analytes potentially requiring management in the subwatershed.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Ulatis Creek at Brown Road	DO & pH	DO	Monthly
		pH	Monthly
	Pathogens	E. Coli, fecal coliforms	Monthly
Registered Pesticides		Diuron	JAN-APR (to coordinate with Selenastrum toxicity testing)
		Malathion	MAR-SEP
Salinity		EC	Monthly
		TDS	Monthly
Toxicity		Toxicity - <i>Selenastrum</i>	JAN - APR

## Willow Slough Management Plan Details

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**Drainage:** Willow Slough

**Water Body:** Willow Slough

**Water Body Priority:** HIGH

**Priority Rationale:** This water body has several HIGH priority analytes and the highest number of analytes potentially requiring management in the subwatershed.

### MONITORING

Monitoring in 2009 includes Core and Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule	
Willow Slough Bypass at Pole Line	Legacy Pesticides	OC Pesticides (sediment survey)	APR	
		OC Pesticides (water)	None initially. Future sampling schedule TBD based on source evaluation.	
	Pathogens <sup>(1)</sup>	E. Coli, fecal coliforms	Monthly	
	Registered Pesticides	Chlorpyrifos	JAN, MAR, MAY, AUG	
	Salinity <sup>(1)</sup>	Boron		None initially. Future sampling schedule TBD based on source evaluation.
			EC	Monthly
			TDS	Monthly
	Toxicity		Toxicity - <i>Ceriodaphnia</i>	JAN - APR
			Toxicity - <i>Selenastrum</i> <sup>(1)</sup>	JAN - APR
	Trace Metals		Selenium <sup>(1)</sup>	None initially. Future sampling schedule TBD based on source evaluation.

1 Addressed previously in Yolo Management Plan

## Z-Drain Management Plan Details

**Drainage:** Southwest Yolo Bypass

**Water Body:** Z-Drain

**Water Body Priority:** MEDIUM

**Priority Rationale:** This water body has one HIGH priority analyte (sediment toxicity to *Hyaella*), and several lower priority analytes potentially requiring management.

### MONITORING

Monitoring in 2009 includes only Special Project monitoring as described in the Coalition MRPP. Monitoring for Management Plan Implementation summarized below will be coordinated with the Assessment and Core monitoring.

Site Description	MP Category	Monitoring Parameter	2009 Monitoring Schedule
Z Drain – Dixon RCD	DO & pH	DO <sup>(1)</sup>	None initially. Future schedule TBD based on source evaluation.
		pH <sup>(1)</sup>	None initially. Future schedule TBD based on source evaluation.
	Pathogens <sup>(1)</sup>	E. Coli, fecal coliforms	None initially. Future schedule TBD based on source evaluation.
	Salinity <sup>(1)</sup>	EC	None initially. Future schedule TBD based on source evaluation.
		TDS	None initially. Future schedule TBD based on source evaluation.
	Toxicity	Sediment Toxicity - <i>Hyaella</i>	APR, AUG
		TOC, Grain size	APR, AUG
		Pyrethroids and Chlorpyrifos in sediment	As needed for toxic sediments

1 Addressed previously in Yolo Management Plan

## Implementation Responsibilities and Schedule

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Cache Creek	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Cache Creek	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Cache Creek	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Cache Creek	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Cache Creek	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Cache Creek	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Cache Creek	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Cache Creek	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Cache Creek	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Cache Creek	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Cache Creek	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Cache Creek	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Cache Creek	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Cache Creek	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Cache Creek	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Cache Creek	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Cache Creek	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Cache Creek	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Cache Creek	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Cache Creek	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Cache Creek	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Cache Creek	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Tule Canal	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Tule Canal	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Tule Canal	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Tule Canal	Pathogen Indicators	2.3	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Tule Canal	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Tule Canal	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Tule Canal	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Tule Canal	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Tule Canal	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Tule Canal	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Tule Canal	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Tule Canal	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Tule Canal	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Tule Canal	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Tule Canal	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Tule Canal	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Tule Canal	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Tule Canal	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Tule Canal	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Tule Canal	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Tule Canal	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Tule Canal	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Ulatis Creek	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Ulatis Creek	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Ulatis Creek	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Ulatis Creek	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Ulatis Creek	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Ulatis Creek	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Ulatis Creek	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/12	6/30/12
Ulatis Creek	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Ulatis Creek	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Ulatis Creek	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Ulatis Creek	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Ulatis Creek	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Ulatis Creek	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Ulatis Creek	Pathogen Indicators	2.3	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Ulatis Creek	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Ulatis Creek	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Ulatis Creek	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Ulatis Creek	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Ulatis Creek	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Ulatis Creek	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Ulatis Creek	Registered Pesticides	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/09	12/1/09
Ulatis Creek	Registered pesticides	2.1	Source ID	Review pesticide application data for 3 most recent years for drainage	SVWQC; Ag Commissioners	1/1/09	3/31/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Ulatis Creek	Registered pesticides	2.2	Source ID	Identify agricultural and any potential non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/09	5/30/09
Ulatis Creek	Registered pesticides	2.3	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	SVWQC; Subwatershed coordinator; Ag Commissioners; ILRP Staff	6/1/09	7/30/09
Ulatis Creek	Registered Pesticides	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Ulatis Creek	Registered Pesticides	3.1	Management Practice Implementation	If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Ulatis Creek	Registered pesticides	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Ulatis Creek	Registered Pesticides	3.3	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	SVWQC; Subwatershed coordinator; Ag Commissioners	4/1/10	6/30/10
Ulatis Creek	Registered pesticides	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	Subwatershed coordinator; SVWQC	4/1/10	6/30/10
Ulatis Creek	Registered Pesticides	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Ulatis Creek	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Ulatis Creek	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Ulatis Creek	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Ulatis Creek	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed	1/1/10	6/30/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
					coordinator; Ag Commissioners		
Ulatis Creek	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Ulatis Creek	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10
Ulatis Creek	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Ulatis Creek	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Ulatis Creek	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Ulatis Creek	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Ulatis Creek	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Ulatis Creek	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Ulatis Creek	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Ulatis Creek	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Ulatis Creek	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Ulatis Creek	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Ulatis Creek	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Ulatis Creek	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity,	SVWQC; Subwatershed coordinator	7/1/09	9/30/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
				pesticide application, irrigation practices, and current management practices			
Ulatis Creek	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09
Ulatis Creek	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Ulatis Creek	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Ulatis Creek	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Ulatis Creek	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Ulatis Creek	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Willow Slough	Legacy Pesticides	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	4/1/09	6/30/09
Willow Slough	Legacy Pesticides	2.1	Source ID	Sampling of water body sediment concentrations	SVWQC	7/1/09	12/31/09
Willow Slough	Legacy Pesticides	2.2	Source ID	Source Evaluation Report: Document spatial distribution of pesticides in sediment. Prioritize potential sources for outreach and management practice implementation.	SVWQC	1/1/10	6/30/10
Willow Slough	Legacy Pesticides	3.1	Management Practice Implementation	If agriculture is determined to be a probable source, survey Coalition members to document sediment and erosion management practices	Subwatershed coordinator; SVWQC	7/1/10	9/30/10
Willow Slough	Legacy Pesticides	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to Legacy Organochlorine Pesticides	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	12/31/10
Willow Slough	Legacy Pesticides	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC	10/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Willow Slough	Legacy Pesticides	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	1/1/11	12/31/11
Willow Slough	Legacy Pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/12	3/31/12
Willow Slough	Legacy Pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	4/1/12	6/30/12
Willow Slough	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Willow Slough	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Willow Slough	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Willow Slough	Pathogen Indicators	2.3	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/10	9/30/10
Willow Slough	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Willow Slough	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Willow Slough	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	SVWQC; Subwatershed coordinator	4/1/11	6/30/11
Willow Slough	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Willow Slough	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Willow Slough	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Willow Slough	Registered Pesticides	1	Review Regulatory Basis	NA	NA	NA	NA

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Willow Slough	Registered pesticides	2.1	Source ID	NA	NA	NA	NA
Willow Slough	Registered pesticides	2.2	Source ID	NA	NA	NA	NA
Willow Slough	Registered pesticides	2.3	Source ID	NA	NA	NA	NA
Willow Slough	Registered Pesticides	2.4	Source ID	NA	NA	NA	NA
Willow Slough	Registered Pesticides	3.1	Management Practice Implementation	NA	NA	NA	NA
Willow Slough	Registered pesticides	3.2	Management Practice Implementation	NA	NA	NA	NA
Willow Slough	Registered Pesticides	3.3	Management Practice Implementation	NA	NA	NA	NA
Willow Slough	Registered pesticides	3.4	Management Practice Implementation	NA	NA	NA	NA
Willow Slough	Registered Pesticides	3.5	Management Practice Implementation	Implement Management Practices per established Management Plan goals	Landowners and growers	1/1/09	12/31/09
Willow Slough	Registered pesticides	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	1/1/10	3/31/10
Willow Slough	Registered pesticides	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	1/1/09	12/31/09
Willow Slough	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Willow Slough	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Willow Slough	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Willow Slough	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Willow Slough	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Willow Slough	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Willow Slough	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Willow Slough	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Willow Slough	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Willow Slough	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Willow Slough	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Willow Slough	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Willow Slough	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Willow Slough	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Willow Slough	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Willow Slough	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Willow Slough	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Willow Slough	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Willow Slough	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Willow Slough	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Willow Slough	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Willow Slough	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Willow Slough	Trace Metals - Se	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts. Evaluate whether selenium should be included in the Salinity Management Plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Willow Slough	Trace Metals - Se	2.1	Source ID	Review data and identify areas and drainages with elevated selenium	SVWQC; Subwatershed coordinator; Ag Commissioners	7/1/10	12/31/10
Willow Slough	Trace Metals - Se	2.2	Source ID	Compile information about potential agricultural and non-agricultural sources of selenium	SVWQC; Ag Commissioners; UCCE	1/1/11	6/30/11
Willow Slough	Trace Metals - Se	2.3	Source ID	Source Evaluation Report: Document selenium sources and identify potential downstream impacts.	SVWQC; ILRP Staff	7/1/11	9/30/11
Willow Slough	Trace Metals - Se	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices relevant to selenium	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Willow Slough	Trace Metals - Se	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to selenium management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Willow Slough	Trace Metals - Se	3.3	Management Practice	Set goals and schedule for implementation of specific additional Management Practices	Subwatershed coordinator; SVWQC	TBD	TBD

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
			Implementation				
Willow Slough	Trace Metals - Se	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Willow Slough	Trace Metals - Se	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Willow Slough	Trace Metals - Se	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Z-Drain	DO and pH	1	Review Regulatory Basis	Review monitoring data and the regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	6/30/10
Z-Drain	DO and pH	2.1	Source ID	Evaluate nutrient applications and agricultural uses	SVWQC	7/1/10	12/30/10
Z-Drain	DO and pH	2.2	Source ID	Evaluate relevant monitoring data for nutrients and organic carbon and relationship to DO and pH exceedances	SVWQC	1/1/11	6/30/11
Z-Drain	DO and pH	2.3	Source ID	Source Evaluation Report: Identify and prioritize agricultural and non-agricultural causes	SVWQC; Subwatershed coordinator	7/1/11	9/30/11
Z-Drain	DO and pH	3.1	Management Practice Implementation	If agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of relevant management practices	Subwatershed coordinator; SVWQC	10/1/11	12/31/11
Z-Drain	DO and pH	3.2	Management Practice Implementation	Develop list of prioritized Management Practices specific to DO and pH	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/12	3/31/12
Z-Drain	DO and pH	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/12	6/30/12
Z-Drain	DO and pH	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/12	1/31/13
Z-Drain	DO and pH	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Z-Drain	DO and pH	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Z-Drain	Pathogen Indicators	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Z-Drain	Pathogen Indicators	2.1	Source ID	Coordinate with ILRP Coalitions and Water Board to develop and implement Region-wide Source ID Study	SVWQC	ongoing	TBD
Z-Drain	Pathogen Indicators	2.2	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Z-Drain	Pathogen Indicators	2.3	Source ID	Source Evaluation Report: Prioritize potential sources by reported applications of waste, drainage distance to water bodies, percent of agricultural acreage, and use of relevant management practices.	SVWQC	7/1/09	9/30/09
Z-Drain	Pathogen Indicators	3.1	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices (in coordination with Source ID Survey of waste application)	Subwatershed coordinator; SVWQC	1/1/10	6/30/10
Z-Drain	Pathogen Indicators	3.2	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to pathogens	Subwatershed coordinator; SVWQC; Landowners and growers;	10/1/10	3/31/11
Z-Drain	Pathogen Indicators	3.3	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	Subwatershed coordinator; SVWQC	4/1/11	6/30/11
Z-Drain	Pathogen Indicators	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Z-Drain	Pathogen Indicators	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Z-Drain	Pathogen Indicators	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Z-Drain	Salinity	1	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	SVWQC; ILRP Staff	1/1/10	12/31/10
Z-Drain	Salinity	2.1	Source ID	Review data and identify areas and drainages with elevated salinity	SVWQC; Subwatershed coordinator; Ag Commissioners	1/1/10	6/30/10
Z-Drain	Salinity	2.2	Source ID	Compile information about potentially salt-sensitive crops in drainages with elevated salinity	SVWQC; Ag Commissioners	7/1/10	12/31/10
Z-Drain	Salinity	2.3	Source ID	Source Evaluation Report: Determine scope of report in coordination with CV-SALTS process	SVWQC; ILRP Staff	7/1/10	12/31/10

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Z-Drain	Salinity	2.4	Source ID	Source Evaluation Report: Document salinity source and salt-sensitive crop info (per scope determined above)	SVWQC; ILRP Staff	1/1/11	6/30/11
Z-Drain	Salinity	3.1	Management Practice Implementation	Participate as stakeholder in CV-SALTS Process	SVWQC	1/1/09	12/31/12
Z-Drain	Salinity	3.2	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and salinity control management practices	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Z-Drain	Salinity	3.3	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to salinity management	Subwatershed coordinator; SVWQC; Landowners and growers;	TBD	TBD
Z-Drain	Salinity	3.4	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	SVWQC; ILRP Staff; CV-SALTS	TBD	TBD
Z-Drain	Salinity	3.5	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	TBD	TBD
Z-Drain	Salinity	4.1	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	Subwatershed coordinator; SVWQC	TBD	TBD
Z-Drain	Salinity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
Z-Drain	Toxicity	2.1	Source ID	Evaluation of Coalition Monitoring Data	SVWQC	1/1/09	6/30/09
Z-Drain	Toxicity	2.2	Source ID	Additional review of pesticide applications	SVWQC	1/1/09	6/30/09
Z-Drain	Toxicity	2.3	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	SVWQC; Subwatershed coordinator	1/1/09	6/30/09
Z-Drain	Toxicity	2.4	Source ID	Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, drainage distance to surface water, irrigated acreage by crop or commodity, pesticide application, irrigation practices, and current management practices	SVWQC; Subwatershed coordinator	7/1/09	9/30/09
Z-Drain	Toxicity	3.1	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, conduct surveys of Coalition members for current level of implementation of management practices relevant to specific cause.	Subwatershed coordinator; SVWQC	10/1/09	12/31/09

Waterbody	Management Plan Category	Task ID	Implementation Element	Element Detail	Responsible Entities	Task Start	Task End
Z-Drain	Toxicity	3.2	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of toxicity	Subwatershed coordinator; SVWQC; Landowners and growers;	1/1/10	3/31/10
Z-Drain	Toxicity	3.3	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	SVWQC; Subwatershed coordinator	4/1/10	6/30/10
Z-Drain	Toxicity	3.4	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	Landowners and growers	7/1/10	6/30/11
Z-Drain	Toxicity	4.1	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	Subwatershed coordinator; SVWQC	7/1/11	9/30/11
Z-Drain	Toxicity	4.2	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	SVWQC	TBD	TBD
All	All	5.1	Documentation and Reporting	Monitoring Data Reports	SVWQC	6/1/09	TBD
All	All	5.2	Documentation and Reporting	Annual Management Plan Progress Reports	SVWQC	12/1/09	TBD
All	All	5.3	Documentation and Reporting	Reports of implementation progress	SVWQC	12/1/10	TBD
All	All	5.4	Documentation and Reporting	Quarterly Meetings with Water Board ILRP Staff	SVWQC; ILRP Staff	3/1/09	TBD





















































