

JANUARY 2012

WESTLANDS STORMWATER COALITION

Water Quality Management Plan

prepared by

Westlands Water District



TABLE OF CONTENTS

INTRODUCTION.....	4
OVERALL APPROACH.....	4
1. SOURCE IDENTIFICATION STRATEGIES.....	5
2. MANGEMENT PRACTICE IMPLEMENTATION.....	5
3. MANAGEMENT PRACTICE IMPLEMENTATION SCHEDULE	6
4. PERFORMANCE GOALS AND CRITERIA FOR COMPLETION OF MANAGEMENT PLAN.....	7
5. EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	10
6. MONITORING	10
7. PARTICIPANTS AND RESPONSIBILITIES FOR IMPLEMENTATION.....	10
8. DOCUMENTATION AND REPORTING	13
9. APPROACHES FOR SPECIFIC MANAGEMENT PLAN CATEGORIES	14
REGISTERED PESTICIDES.....	16
REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES.....	16
SOURCE IDENTIFICATION	16
MANAGEMENT PRACTICE IMPLEMENTATION	17
IMPLEMENTATION SCHEDULE.....	18
COMPLETION CRITERIA AND PERFORMANCE GOALS.....	18
EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	20
MONITORING	20
PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION.....	20
REPORTING SCHEDULE.....	21
TOXICITY IN WATER AND SEDIMENT	22
SOURCE IDENTIFICATION	22
MANAGEMENT PRACTICE IMPLEMENTATION	23

IMPLEMENTATION SCHEDULE.....	24
COMPLETION CRITERIA AND PERFORMANCE GOALS.....	24
EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	25
MONITORING	25
PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION.....	26
REPORTING SCHEDULE.....	26
PATHOGEN INDICATORS.....	27
REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES.....	27
SOURCE IDENTIFICATION	27
MANAGEMENT PRACTICE IMPLEMENTATION	28
IMPLEMENTATION SCHEDULE.....	29
COMPLETION CRITERIA AND PERFORMANCE GOALS.....	29
EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	31
MONITORING	31
PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION.....	31
REPORTING SCHEDULE.....	31
TRACE METALS.....	32
REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES.....	32
SOURCE IDENTIFICATION	32
MANAGEMENT PRACTICE IMPLEMENTATION	33
IMPLEMENTATION SCHEDULE.....	33
COMPLETION CRITERIA AND PERFORMANCE GOALS.....	34
EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	35
MONITORING	35
PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION.....	35
REPORTING SCHEDULE.....	35
GENERAL CHEMISTRY: SALINITY.....	36

REVIEW DATA AND REGULATORY BASIS FOR EXCEEDANCES	36
SOURCE IDENTIFICATION	36
MANAGEMENT PRACTICE IMPLEMENTATION	37
IMPLEMENTATION SCHEDULE.....	38
COMPLETION CRITERIA AND PERFORMANCE GOALS.....	38
EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS.....	38
MONITORING	38
PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION.....	39
REPORTING SCHEDULE.....	39
APPENDIX A:	40
List of Parameters Requiring Management Plan Development and Implementation	40
APPENDIX B:	41
Site-Specific Management Plan Implementation.....	41
APPENDIX C:	42
Implementation Responsibilities and Schedule	42

LIST OF TABLES

Table 1 General Management Practice Implementation Schedule	6
Table 2 Management Plan Categories and Priorities	15
Table 3 Pesticide Management Plan Completion Criteria.....	20
Table 4 Toxicity Management Plan Completion Criteria.....	25
Table 5 Pathogen Management Plan Completion Criteria	30
Table 6 Trace Metals Management Plan Completion Criteria	35

Introduction

The primary purpose of this Management Plan is to document efforts that will be made by the Westlands Stormwater 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 (RWQCB) under the Irrigated Lands Regulatory Program (ILRP) addresses exceedances through December 2010.

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

- Overall Approach
- Registered Pesticides
- Toxicity in Water and Sediment
- Pathogen Indicators
- Trace Metals
- General Chemistry: Salinity (pH, EC, and TDS)
- List of Exceedances Requiring Management Plan Development and Implementation
- Site-Specific Management Plan Implementation

Overall Approach

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

1. Strategy for identification of potential sources of the observed exceedances.
2. Process to identify potential additional Management Practices to be implemented to address the exceedances.
3. Management Practices implementation schedule.
4. Management Plan completion criteria and performance goals.
5. Process and schedule for evaluating management plan effectiveness.
6. Monitoring strategy and schedule.
7. Identification of the participants that will implement the Management Plan.
8. Schedule and process for reporting the results of Management Plan actions to RWQCB staff.)

1. SOURCE IDENTIFICATION STRATEGIES

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

- Supplemental evaluation of pesticide use report data.
- Evaluation of the capability 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 nonagricultural sources is extant.
- Evaluation of agricultural vs. non-agricultural source contributions.
- A focused “Watershed Evaluation Report” documenting relevant site-specific information for irrigated parcels in the watershed, i.e., crops, pesticide use, irrigation practices, management practices in place, Coalition participants, et al.
- Ground-level visual reconnaissance of the water body.
- Monitoring for relevant constituents of interest.
- Source identification special studies.

2. MANGEMENT PRACTICE IMPLEMENTATION

The implementation of additional management practices will be predicated on the results of the source identification evaluations mentioned earlier, and on the knowledge of “baseline” management practices that are currently in place. 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 RWQCB 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 efforts of this outreach 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 2011 – 2013 in **Figure 1**.

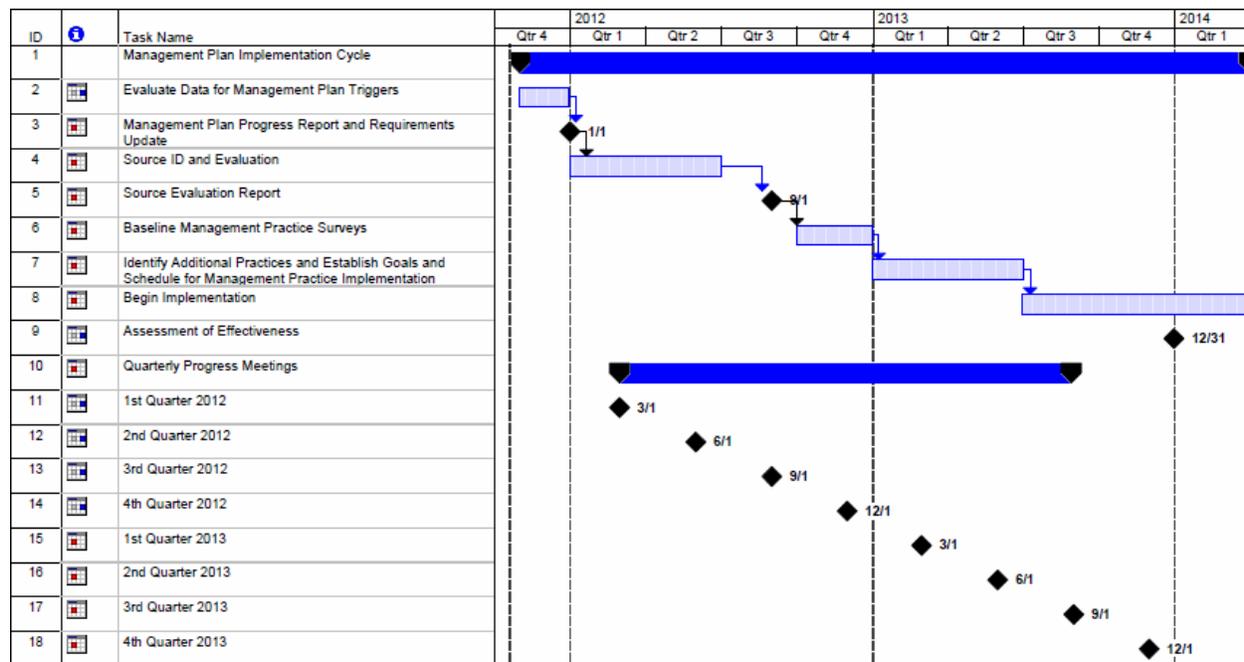
Table 1 General Management Practice Implementation Schedule

Implementation Element	Tentative Two-Year Schedule for High Priorities*
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
Initial Source Identification and Evaluation	July of the year following trigger
Source Evaluation Report	September of the year following trigger
Surveys of Baseline Management Practice Implementation	December of the year following trigger
If source evaluation is conclusive, identify additional practices and establish goals and schedule for implementation	June of 2 nd year following trigger
Implement or design for Spring-Fall installation of additional Management Practices	Begin July of 2 nd year following trigger
Assessment of Management Plan effectiveness	Annually in Management Plan Progress Reports, (December of each year)

*Schedule may be extended for low and medium priority management categories (legacy pesticides, trace metals, DO, pH, EC, TDS, and pathogen indicators) or watersheds.

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 commodity. The Coalition will provide assistance to these entities to allow consolidation and reporting of the tracking information to the RWQCB in a consistent format. Implementation progress will be evaluated and documented in annual reports for the Management Plan.

Figure 1 Example Management Plan Implementation Schedule 2011 - 2013



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 RWQCB. Generally, there are four possible pathways for successful completion of a specific management plan element:

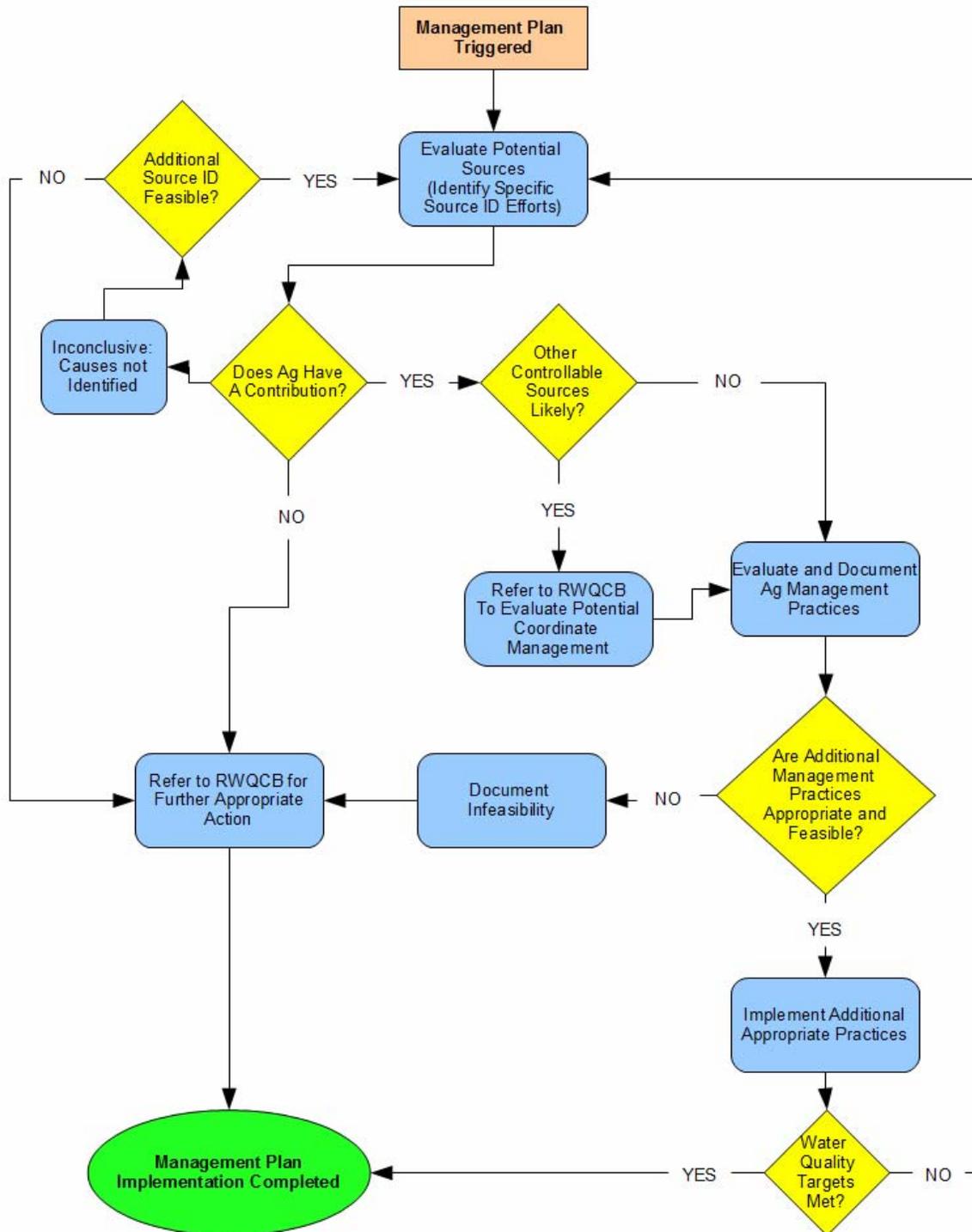
1. Agriculture is confirmed not to be a source of the exceedances, and the issue is referred to RWQCB staff for other appropriate actions;
2. Agriculture is confirmed as a potential source, the source is eliminated or controlled, and compliance with water quality objectives is demonstrated;
3. Agriculture is a potential source, but compliance with water quality objectives is not achievable by reasonable and economically feasible agricultural management practices;
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.

Short-term goals will be established to track the progress of Management Plan implementation. These will include the enumeration of outreach efforts (e.g., numbers of meetings with individual landowners and 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 Flowchart



5. EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

Ultimately, the effectiveness of management plans will be judged on improvements in water quality. Nevertheless, a number of short-term performance goals are necessary to evaluate progress toward these goals. Progress toward the implementation performance goals established for each management plan element will be assessed 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 strategic outreach to Coalition members.
- Return of surveys from 100% of Coalition members in the target watersheds.
- Documentation and reporting of baseline management practice inventory from surveys.
- Implementation of numbers or percentages of specific additional management practices in target watersheds.
- Specified decreases in number or frequency of exceedances, detections, or average concentrations.

6. MONITORING

The need for additional monitoring will be based primarily 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 necessary, the details of the monitoring required for each constituent will be documented, including the matrices and parameters to be analyzed, frequency of sampling, locations, and triggers for additional monitoring and follow-up. When appropriate, integration of monitoring with regular Irrigated Lands Regulatory Program (ILRP) evaluation monitoring, or coordination with other monitoring efforts will be considered and discussed. Management plan monitoring will be reviewed at least once per year, and revised as necessary. The site-specific Management Plan monitoring will supersede any prior general monitoring design identified in the Coalition's current MRP Plan or in the General Order currently under development by the RWQCB.

7. PARTICIPANTS AND RESPONSIBILITIES FOR IMPLEMENTATION

The Westlands Stormwater Coalition was formed in 2004 to enhance and improve water quality in its service area and to help land owners and growers meet the requirements in the ILRP. The Coalition is comprised of land owners and growers from the Westlands Water District, which is nearly 1000 square miles of prime farmland from Mendota California on the north to Kettleman City on the south. The Coalition's service area is comprised of the lands within the Westlands Water District.

Early in 2011, the Coalition's service area was extended to include the land owners and growers of the Pleasant Valley Water District (PVWD). PVWD is comprised of nearly 10,000 acres of

prime farmland in south-western Fresno County and shares a common border with the Westlands Water District.

On October 29, 2003, the Coalition submitted a Notice of Intent (NOI) and General Report on behalf of Coalition members to meet the requirements of the ILRP through a watershed-based stormwater program. On January 28, 2004, the Coalition received a Notice of Applicability (NOA) from the RWQCB Executive Officer approving the adequacy of the NOI and providing dischargers within the Coalition's service area initial coverage under the ILRP.

The Westlands Water District provides a budget, staff, and management services on behalf of Coalition members to implement the Coalition's Monitoring and Reporting Program Plan (MRP) submitted to the RWQCB on April 1, 2004. As the ILRP program and subsequent Management Plans evolves, the Westlands Water District will continue to provide program management and support to implement the plans.

The Coalition coordinates with contractors, including, but not limited to Pacific EcoRisk (PER), regarding MRP implementation. Under contract, PER conducts water quality sampling and analyses at the sites consistent with the Coalition's MRP, assists the Coalition with communication of water quality results to the RWQCB and growers. PER provides the Coalition with scientific reports, data, and information that is instrumental to its annual reporting scheme required under the current MRP.

The Coalition also communicates with the RWQCB 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 RWQCB. Westlands Water District provides, in their annual operations and maintenance budget, a line item to provide revenue sufficient to fully operate and maintain the Coalition's financial integrity. PVWD, through a Memorandum of Agreement (MOA) with the Westlands Water District, provides the Coalition with sufficient capital to fully fund their portion of Coalition activities. The Coalition continues to maintain a membership list of those land owners and agricultural irrigators and who choose to participate and seek coverage under the ILRP.

For Coalition members to remain in good standing they must comply with the requirements of the ILRP. Members must be responsive to the Coalition's requests including, but not limited to, completing and returning membership surveys, attending grower meetings, and implementing best management practices as needed.

Accountability

The Coalition services landowners and growers throughout the San Joaquin River Basin (SJR) and Tulare Lake Basin (TLB). The Coalition is committed to enhancing and improving water quality in the SJRB and TLB while sustaining the economic viability of irrigated agriculture and its associated industry and interests.

To ensure accountability, the Coalition is committed to providing written updates and status reports on implementation of its various programs to the RWQCB. Upon request, the Coalition

will also provide oral presentations. The updates and reports are designed to identify progress made within the SJRB and TLB, and to provide the Regional Water Board an opportunity to recommend additional efforts that might be beneficial.

The Coalition will assist local landowners and growers in responding to problems identified by the monitoring program. With this capability in place, once a problem is identified, the Coalition, along with its 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, there are three mechanisms to ensure members are accountable to the Coalition and to the RWQCB:

1. To protect the quality of Waters of the State and to address non-point source runoff, as they may negatively affect the quality of Waters of the State, the State Water Board and RWQCB utilize a framework with increasing levels of regulatory action based on watershed activities. This framework provides the State Water Board and RWQCB 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 RWQCB TMDL process. These steps provide the State Water Board and RWQCB adequate control to ensure accountability of the landowners and growers participating in the ILRP.
2. If the Coalition encounters a discharger failing to cooperate with the Coalition's Ag Waiver program, the Coalition will identify the situation and facilitate an informal conversation with the member about the situation. If the situation is not remediated and if the discharger is in violation of the "Terms and Agreement for Water Service" with the Westlands Water District, the Coalition will initiate the process to have the discharger's water service terminated until such time that the discharger comes back into compliance with the Coalition's Ag Waiver program. If this effort is unsuccessful and a violation of law or the Basin Plan is believed to be ongoing, the Coalition will work with the proper regulatory authorities to address the issue. If the Coalition identifies concerns related to pesticide use, they will report it to the County Agricultural Department and to RWQCB staff to determine which agency should take the lead in addressing the issue. For other constituents, the situation will be reported to the RWQCB staff. These steps provide accountability and ensure compliance with the law.
3. Although the Coalition has no legal control over the landowner's and grower's farming practices and operations; the Coalition can determine who is deemed a cooperating and participating member. Therefore, if the Coalition recognizes that a member is not adequately participating in, or cooperating with, the Coalition's Ag Waiver program; it will dismiss them from the program. The Coalition's annual¹ membership submittal to the RWQCB will not include non-participating growers on the membership list. Thus, to determine the growers who were dropped for non-participation, the RWQCB can easily compare the previous year's list against the current list to determine who was dropped. The RWQCB, at their discretion,

¹ July of any given year.

can institute a request for waste discharge under Section 13260 of the California Water Code. This provides direct accountability to participation in the Coalition and compels involvement.

Education and Outreach

The Coalition's education and outreach efforts will ensure that landowners and growers in the affected regions are receiving consistent plans and accurate messages regarding water quality issues. The Coalition will act as a nexus and facilitator for the transfer of information among the Coalition's landowners, growers, and other interested parties. 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 Coalition's outreach message has evolved over time; it started with general water quality issues and management practice reviews, and over time has developed into the communication of specific results of the Coalition's monitoring program and offering information on various management measures that could be adopted by farmers to improve water quality. The education and outreach 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 are available in a timely fashion to growers. The outreach message will continue to evolve; building upon, both historic and new information, with reliance on a long-term collaborative effort among the people who live and work within the Coalition's service area.

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 2012. 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 watersheds, 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, updates to the list of required 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

Within each of the three watersheds in the Coalition's service area, site-specific management plans for registered pesticides and toxicity will receive the highest priority for implementation; trace metals will receive a medium priority for implementation. Salinity (including EC and TDS), 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 the three watersheds, sites with multiple management plan requirements will also generally receive a higher priority for implementation of management plans. Priority 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.

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> ;
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 EC 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; Low 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;
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

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 had 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 watershed-specific basis for the watersheds 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 RWQCB ILRP. These trigger limits include adopted numeric Basin Plan water quality objectives, California Toxics Rule criteria, and un-adopted 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 un-adopted 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 RWQCB 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 watershed-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 the Fresno County Ag Commissioner (FCAC) and the 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 watersheds. Data will be compiled for applications of the specific pesticides in the affected watersheds. Application data will be evaluated for use patterns and timing, and will consider characteristics that affect the

constituent's end-state and transportability, e.g., solubility and half-life. For instance, a longer period of application data would be considered when evaluating insoluble, sediment-bound pesticides with longer half-lives. The results of these evaluations will be confirmed by consultation with FCAC. 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 nonagricultural 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 use by State and County agencies, as well 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 State. 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 watershed-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; an initial list of the types of relevant management practices thought to be currently in use; and percent of agricultural acreage represented by Coalition participants in the watershed. Potential sources will be prioritized by reported use of specific pesticides of concern, 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). 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 mentioned in the *Overall Approach* section, 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 watersheds 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. Depending on the available resources, identification of options for appropriate management practices may be coordinated with Coalition for Urban/Rural Environmental Stewardship (CURES),

University of California Cooperative Extension (UCCE), FCAC, Natural Resources Conservation Service (NRCS), Resource Conservation Districts (RCD), farm input suppliers, and pest control advisors,. The specific coordinating entities are expected to vary in the different Coalition watersheds. 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.
- Implementation actions will be coordinated with FCAC and CDPR when possible and appropriate. The need to coordinate with these entities will be determined on a case-by-case basis, centered on the requirements or effectiveness of their expertise and jurisdiction to address specific pesticide related issues. In most cases, it is expected that this coordination would consist of keeping CDPR informed of the issues, while working with the FCAC to resolve issues.

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 RWQCB ILRP staff. The schedule for site-specific and constituent-specific management plan elements is documented in **Appendix B**. The results of source identification efforts will be used to prioritize watersheds 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 RWQCB. 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 RWQCB 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.

Progress toward the implementation performance goals established for each watershed will be evaluated and documented in the 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 watershed (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 watersheds (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	Pesticide confirmed not to have significant irrigated agricultural sources;	Issue is referred to RWQCB staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	Irrigated agricultural sources likely; AND Appropriate additional agricultural management practices have been identified, implemented, and documented; AND Demonstrated achievement of water quality objectives	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances	Irrigated agricultural sources likely; AND WQOs not achieved or expected to be achieved; AND No additional appropriate management practices are possible or economically feasible;	Infeasibility is documented and issue is referred to RWQCB staff for appropriate actions.
4. Probable sources not identified	Sources of specific pesticides not identified; AND All reasonable efforts at source ID exhausted	Documented and referred to RWQCB staff for appropriate actions.

EVALUATION OF MANAGEMENT PLAN EFFECTIVENESS

The effectiveness of management plans will be judged on improvements in water quality and meeting water quality objectives. In the short-term, 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 watershed 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 might be monitored during high use periods for the specific pesticide(s) of concern in that watershed². 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 2012 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 RWQCB staff prior to implementation.

PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION

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

² The Coalition monitors stormwater exclusively; routine monitoring and/or additional monitoring may not be possible due to the lack of stormwater flow into the watershed.

REPORTING SCHEDULE

The results of initial source identification efforts will be reported in a memorandum by September of the year following trigger of management plan requirements, with the first report due in September 2012. 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

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 *Ceriodaphnia dubia*, *Pimephales promelas*, *Selenastrum capricornutum*, or *Hyalella azteca* as compared to the laboratory control) are listed in **Appendix A**. Implementation of this element of the management plan will be conducted on a watershed-specific basis for the watersheds determined to require management of toxicity exceedances.

SOURCE IDENTIFICATION

The following source identification efforts will be conducted on a watershed-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: Review Coalition data for toxicity, TIEs, chemistry, and follow-up analyses 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.
- 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 watersheds. 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 nonagricultural 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, etc.).

Source Evaluation Report: A focused Source Evaluation Report will be prepared to document the following watershed-specific information for irrigated parcels in the affected watersheds: 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, 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 2012. 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 watersheds 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, FCAC, NRCS, RCD, 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 watersheds. 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 the toxicity is sourced to a registered pesticide or other specific agricultural source, 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. The schedule will include quarterly progress meetings with the RWQCB 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 watersheds 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 RWQCB. 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 of 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 RWQCB 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 watershed 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 watersheds.
- Documentation and reporting of baseline management practice inventory from surveys.
- Implementation of numbers or percentages of specific additional management practices in target watersheds (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
1. Agriculture eliminated as probable source of exceedances.	Probable specific toxicant(s) are identified; AND Probable specific toxicant(s) confirmed not to have significant agricultural sources; <i>OR</i> Probable specific toxicant(s) not identified; AND The weight of evidence of TIEs, monitoring data, WER, and pesticide use evaluations all support a conclusion that agriculture is not a significant source;	Issue is referred to RWQCB staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances.	Probable specific toxicant(s) identified; AND Potentially significant agricultural sources likely; AND Appropriate additional agricultural management practices have been identified, implemented, and documented; AND Demonstrated achievement of water quality objectives	Periodically reevaluate compliance per MRP monitoring schedule.
3. WQOs not achievable by control of probable agricultural source(s) of exceedances.	Specific toxicant(s) identified; AND Potentially significant agricultural sources are likely; AND WQOs not achieved or expected to be achieved; AND No additional appropriate management practices are possible or economically feasible;	Infeasibility is documented and issue is referred to RWQCB staff for appropriate actions.
4. Probable sources not identified.	Probable specific toxicant(s) not identified; AND All reasonable efforts at source ID exhausted	Documented and referred to RWQCB 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 watershed 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 be monitored after 2012 will be reevaluated based on the results of previous monitoring in the

affected watersheds. The frequency for continued monitoring of these sites beginning in 2012 will be monthly monitoring for aquatic toxicity, and two (2) monitoring events per year for sediment toxicity as outlined in the Coalition's MRP. 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 RWQCB 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 2012. 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

This element of the Management Plan addresses exceedances of *E. coli* and *fecal coli form*³ which are used primarily as indicators of other human pathogenic organisms, including protozoans and viruses which can not be effectively monitored directly. Exceedances of *E-coli* 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 RWQCB 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 RWQCB ILRP. These trigger limits include adopted numeric Basin Plan water quality objectives, California Toxics Rule criteria, and un-adopted 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 need for establishing 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 un-adopted 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 watersheds, and allowable exceedance frequencies. Any substantial questions regarding validity or interpretation of the objectives used to determine exceedances will be summarized and provided to RWQCB staff and the ILRP Technical Issues Committee (TIC) 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 difficulty in developing a management plan for *E-coli* is determining the sources of the exceedances. Potential sources of the organisms in question 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. In July 2009, The Coalition had implemented and completed a manure and compost source identification survey that suggested that sources other than agriculture were

³ E-coli and fecal coli form will be generically called e-coli in this section.

responsible for the exceedances of objectives for *E-coli*. The results of these preliminary efforts were determined to be un-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 RWQCB 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 watersheds to inventory applications of animal wastes on agricultural fields.
- Acreage used for grazing operations will be catalogued in targeted watersheds.
- A field survey (i.e. “creek walk”) will be considered for affected watersheds. 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 watershed-specific information for irrigated parcels in the affected watersheds: 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, connectivity to water bodies, percent of agricultural acreage, and use of relevant management practices. This report will be completed by September of the 2nd year following the trigger of the specific management plan requirement (see **Table 1 and Figure 1**), with the first report in September 2013. 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 watersheds or regions.

- 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 2nd 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, FCAC, NRCS, and RCD, depending on the available resources. The specific coordinating entities are expected to vary in the different Coalition watersheds. 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 RWQCB ILRP staff. The schedule for site-specific and constituent-specific management plan elements is documented in **Appendix B**.

The results of source identification efforts will be used to prioritize watersheds and/or crop-type 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 RWQCB. 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 *E-coli* 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 RWQCB staff and approved by the Executive Officer of the RWQCB. Compliance with water

quality objectives for pathogens will 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 watershed 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.
- Return of waste application and management practice surveys from 100% of Coalition members in the target watersheds.
- Documentation and reporting of baseline management practice inventory from surveys.
- Implementation of numbers or percentages of specific additional management practices in target watersheds (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"> • E. coli bacteria confirmed not to have significant irrigated agricultural sources; 	Issue is referred to RWQCB staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> • Irrigated agricultural sources of E. coli bacteria confirmed; AND • Appropriate additional agricultural management practices have been identified, implemented, and documented; AND • Demonstrated achievement of water quality objectives 	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"> • Irrigated agricultural sources of E. coli bacteria confirmed; AND • WQOs not achieved or expected to be achieved; AND • No additional appropriate management practices are possible or economically feasible; 	Infeasibility is documented and issue is referred to RWQCB staff for appropriate actions.
4. Probable sources not identified	<ul style="list-style-type: none"> • Probable specific toxicant(s) not identified; AND • All reasonable efforts at source ID exhausted 	Documented and referred to RWQCB 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 watershed 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 may include two elements: (1) the Coalition's ongoing monitoring effort continues to routinely monitor for pathogen indicators; (2) Additional monitoring may be conducted as part of the bacterial source identification study currently under development. Continued monitoring for pathogen indicators in 2012 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 RWQCB staff prior to implementation.

PARTICIPANTS RESPONSIBLE FOR IMPLEMENTATION

All Coalition members will contribute to implementation of this Management Plan through their participation in the Coalition. Other ILRP coalitions and the RWQCB 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 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 2nd year following trigger of management plan requirements, with the first report due in September 2013. 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 2**).

TRACE METALS

This element of the Management Plan addresses exceedances of numeric water quality objectives for trace metals (arsenic, boron, cadmium, copper, lead, nickel, selenium, and zinc). 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 watershed-specific basis for the watersheds 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 watersheds, 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 RWQCB staff and the ILRP TIC 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 watershed-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 watersheds. If data is extant, it will be compiled for applications of the specific metals in the affected watersheds, 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 watersheds. If data is extant, it will be compiled for applications of the specific metals in the affected watersheds, 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 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 watersheds: 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 watershed.

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 watersheds.
- 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, FCAC, NRCS, RCD, 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 watersheds.
- 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 trace metals 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 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 RWQCB. 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**. 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 watershed 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.
- Return of management practice surveys from 100% of Coalition members in the target watersheds.
- Documentation and reporting of baseline management practice inventory from surveys.
- Implementation of numbers or percentages of specific additional management practices in target watersheds (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 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"> • Metal confirmed not to have significant irrigated agricultural sources; 	Issue is referred to RWQCB staff for appropriate actions.
2. WQOs achieved by control of probable agricultural source(s) of exceedances	<ul style="list-style-type: none"> • Irrigated agricultural sources likely; AND • Appropriate additional agricultural management practices have been identified, implemented, and documented; AND • Demonstrated achievement of water quality objectives 	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"> • Irrigated agricultural sources likely; AND • WQOs not achieved or expected to be achieved; AND • No additional appropriate management practices are possible or economically feasible; 	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"> • Sources of specific metals not identified; AND • All reasonable efforts at source ID exhausted 	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 watershed 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**. All sites will continue to be monitored routinely as part of the Coalition’s ongoing monitoring effort. Continued monitoring of affected sites in 2012 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 RWQCB 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 April 2014. 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.

GENERAL CHEMISTRY: SALINITY

This element of the Management Plan addresses exceedances of total dissolved solids (TDS), electrical conductivity (EC), and pH. Salinity is a regional issue that affects the entire Central Valley and particularly the south-west portion of the San Joaquin Valley. Consequently, this element of the management plan will be developed and implemented on a regional basis in coordination with the RWQCB and other ILRP Coalitions. The RWQCB and the State 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, EC, and pH, 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 watersheds, 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 RWQCB staff, the ILRP TIC 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, evapo-concentration 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.

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 County Agricultural Departments to identify areas with elevated salinity.
- The Coalition will work with County Agricultural Departments to compile information about potentially salt-sensitive crops grown in these areas.
- 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 2013, and reported in June 2014. 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 nonagricultural 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 watersheds. 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, FCAC, NRCS, and RCD, depending on their available resources in specific watersheds. The surveys of salinity management practices are tentatively schedule to be completed by June 2014, and documented in the subsequent Management Plan Progress Report in December 2014. 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.

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, and additional practices planned to be implemented.

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 watershed 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 CVSALTS process and can not yet be specified for the Coalition. In the interim, progress toward the implementation performance goals established for each watershed 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.
- Return of management practice surveys from 100% of Coalition members in the target watersheds.
- Documentation and reporting of baseline management practice inventory from surveys.
- Implementation of numbers or percentages of specific additional management practices in target watersheds (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 watershed 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 EC, TDS, and pH; (2) Additional monitoring may be conducted for watersheds that are determined not to have sufficient available data to characterize EC, TDS, and pH 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 watersheds 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 will be reported in a technical memorandum by April 2014. 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 and **Appendix B**.

Appendix A:

List of Parameters Requiring Management Plan Development and Implementation

Appendix B:

Site-Specific Management Plan Implementation

Site-specific monitoring and implementation schedules are provided as separate files for each watershed.

Appendix C:

Implementation Responsibilities and Schedule

Appendix A - Management Plan Elements

WATERSHED	MONITORING SITE	MANAGEMENT PLAN CATEGORY	CONSTITUENT	PRIORITY
Panoche Silver Creek	Panoche Silver Creek at I-5	Salinity	pH	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Salinity	EC	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Salinity	TDS	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Pathogen Indicators	E-coli	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Pathogen Indicators	Fecal Coli form	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Trace Metals	Boron	Low
Panoche Silver Creek	Panoche Silver Creek at I-5	Trace Metals	Selenium	Medium
Panoche Silver Creek	Panoche Silver Creek at I-5	Toxicity	Ceriodaphnia	High
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Salinity	pH	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Salinity	EC	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Salinity	TDS	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Pathogen Indicators	E-coli	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Pathogen Indicators	Fecal Coli form	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Trace Metals	Boron	Low
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Trace Metals	Selenium	Medium
Panoche Silver Creek	Panoche Silver Creek at Belmont Avenue	Toxicity	Ceriodaphnia	High
Cantua Creek	Cantua Creek at Highway 33	Salinity	pH	Low
Cantua Creek	Cantua Creek at Highway 33	Salinity	EC	Low
Cantua Creek	Cantua Creek at Highway 33	Salinity	TDS	Low
Cantua Creek	Cantua Creek at Highway 33	Pathogen Indicators	E-coli	Low
Cantua Creek	Cantua Creek at Highway 33	Pathogen Indicators	Fecal Coli form	Low
Cantua Creek	Cantua Creek at Highway 33	Trace Metals	Boron	Low
Cantua Creek	Cantua Creek at Highway 33	Trace Metals	Selenium	Medium
Cantua Creek	Cantua Creek at Highway 33	Toxicity	Ceriodaphnia	High
Cantua Creek	Cantua Creek at San Luis Canal	Salinity	pH	Low
Cantua Creek	Cantua Creek at San Luis Canal	Salinity	EC	Low
Cantua Creek	Cantua Creek at San Luis Canal	Salinity	TDS	Low
Cantua Creek	Cantua Creek at San Luis Canal	Pathogen Indicators	E-coli	Low
Cantua Creek	Cantua Creek at San Luis Canal	Pathogen Indicators	Fecal Coli form	Low
Cantua Creek	Cantua Creek at San Luis Canal	Trace Metals	Boron	Low
Cantua Creek	Cantua Creek at San Luis Canal	Trace Metals	Selenium	Medium
Cantua Creek	Cantua Creek at San Luis Canal	Toxicity	Ceriodaphnia	High
Cantua Creek	Cantua Creek at San Luis Canal	Toxicity	Hyalella azteca	High
Cantua Creek	Cantua Creek at San Luis Canal	Registered Pesticide	Chlorpyrifos	High
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Salinity	pH	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Salinity	EC	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Salinity	TDS	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Pathogen Indicators	E-coli	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Pathogen Indicators	Fecal Coli form	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Trace Metals	Boron	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Trace Metals	Selenium	Medium
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Salinity	pH	Low
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Salinity	EC	Low
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Salinity	TDS	Low
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Pathogen Indicators	E-coli	Low
Arroyo Pasajero	Arroyo Pasajero at El Dorado Avenue	Pathogen Indicators	Fecal Coli form	Low
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Trace Metals	Boron	Low
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Trace Metals	Selenium	Medium
Arroyo Pasajero	Arroyo Pasajero at Marmon Avenue	Toxicity	Ceriodaphnia	High

Panoche-Silver Creek Watershed Management Plans

Management plan elements will be implemented for the water bodies and analytes 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.

The Westlands Stormwater Coalition monitors stormwater exclusively. Therefore, any Management Plan monitoring and follow-up monitoring will be performed when stormwater is present in watershed.

Responsibilities and the schedule for management plan implementation are provided in **Appendix C**.

Table 1 - Required Management Plan Constituents as of 12/20/2010

MONITORING SITE (Priority)	MANAGEMENT PLAN CATEGORY	CONSTITUENT	PRIORITY
Panoche Silver Creek at I-5 (High)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
	Toxicity	Ceriodaphnia	High
Panoche Silver Creek at Belmont Avenue (High)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
	Toxicity	Ceriodaphnia	High

Interstate 5 Management Plan Details

Watershed: Panoche-Silver Creek

Monitoring Site: Interstate 5

Priority Rating: High

Priority Rational: Ceriodaphnia toxicity (High) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ¹
Panoche Silver Creek at I-5 1.25 miles upstream of the Interstate 5 bridge crossing.	Salinity	pH	Implementation in 1/2013
	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013
	Toxicity	Ceriodaphnia	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.

¹ The Management Plans for all constituents, except Ceriodaphnia, are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

Belmont Avenue Management Plan Details

Watershed: Panoche-Silver Creek
 Monitoring Site: Belmont Avenue
 Priority Rating: High

Priority Rational: Ceriodaphnia toxicity (High) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ²
<u>Panoche Silver Creek at Belmont Avenue</u> Terminus of creek at Belmont Ave. 7 miles west of Mendota CA.	Salinity	pH	Implementation in 1/2013
	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013
	Toxicity	Ceriodaphnia	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.

² The Management Plans for all constituents, except Ceriodaphnia, are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

Implementation Responsibilities and Schedule

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
1	I-5	pH, EC, TDS,	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	12/30/12	6/30/13	WSC; ILRP Staff
2	I-5	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/2/13	12/31/13	WSC
3	I-5	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	12/31/13	4/1/14	WSC
4	I-5	pH, EC, TDS,	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.	3/31/14	6/30/14	WSC; GAL
5	I-5	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS,.	7/1/14	9/30/14	WSC; GAL
6	I-5	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC
7	I-5	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	1/2/15	6/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
8	I-5	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
9	I-5	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
10	I-5	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
11	I-5	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
12	I-5	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
13	I-5	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
14	I-5	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
15	I-5	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL
16	I-5	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
17	I-5	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
18	I-5	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
19	I-5	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
20	I-5	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
21	I-5	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
22	I-5	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
23	I-5	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
24	I-5	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
25	I-5	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC
26	I-5	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
27	I-5	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
28	I-5	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	12/1/11	12/2/11	WSC
29	I-5	Toxicity	Source ID	Evaluation of Coalition Monitoring Data	1/1/12	7/1/12	WSC
30	I-5	Toxicity	Source ID	Additional review of pesticide applications	1/1/12	7/1/12	WSC
31	I-5	Toxicity	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	1/1/12	7/1/12	WSC
32	I-5	Toxicity	Source ID	Prioritize potential sources by reported use of pesticides of concern, distance to surface water, irrigated acreage by crop, pesticide application, current irrigation and management practices	7/1/12	9/30/12	WSC
33	I-5	Toxicity	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.	10/1/12	12/31/12	WSC; GAL
34	I-5	Toxicity	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	12/30/12	3/31/13	WSC; GAL
35	I-5	Toxicity	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	3/31/13	6/30/13	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
36	I-5	Toxicity	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
37	I-5	Toxicity	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	7/1/14	9/30/14	WSC
38	I-5	Toxicity	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
39	Belmont Avenue	pH, EC, TDS,	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	7/2/13	WSC; ILRP Staff
40	Belmont Avenue	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/1/13	12/29/13	WSC
41	Belmont Avenue	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	1/1/14	4/2/14	WSC
42	Belmont Avenue	pH, EC, TDS,	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.	4/1/14	7/1/14	WSC; GAL
43	Belmont Avenue	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS.	7/1/14	9/30/14	WSC; GAL
44	Belmont Avenue	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
45	Belmont Avenue	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	12/30/14	6/30/15	GAL
46	Belmont Avenue	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
47	Belmont Avenue	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
48	Belmont Avenue	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
49	Belmont Avenue	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
50	Belmont Avenue	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
51	Belmont Avenue	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
52	Belmont Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
53	Belmont Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
54	Belmont Avenue	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC
55	Belmont Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
56	Belmont Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
57	Belmont Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
58	Belmont Avenue	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
59	Belmont Avenue	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
60	Belmont Avenue	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
61	Belmont Avenue	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
62	Belmont Avenue	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
63	Belmont Avenue	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
64	Belmont Avenue	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL
65	Belmont Avenue	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
66	Belmont Avenue	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
67	Belmont Avenue	Toxicity	Source ID	Evaluation of Coalition Monitoring Data	1/1/12	7/1/12	WSC
68	Belmont Avenue	Toxicity	Source ID	Additional review of pesticide applications	1/1/12	7/1/12	WSC
69	Belmont Avenue	Toxicity	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	1/1/12	7/1/12	WSC
70	Belmont Avenue	Toxicity	Source ID	Prioritize potential sources by reported use of pesticides of concern, distance to surface water, irrigated acreage by crop, pesticide application, current irrigation and management practices	7/1/12	9/30/12	WSC
71	Belmont Avenue	Toxicity	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.	10/1/12	12/31/12	WSC; GAL
72	Belmont Avenue	Toxicity	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	1/1/13	4/2/13	WSC; GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
73	Belmont Avenue	Toxicity	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	4/1/13	7/1/13	WSC
74	Belmont Avenue	Toxicity	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
75	Belmont Avenue	Toxicity	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	7/1/14	9/30/14	WSC
76	Belmont Avenue	Toxicity	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC

Cantua Creek Watershed Management Plans

Management plan elements will be implemented for the water bodies and analytes 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.

The Westlands Stormwater Coalition monitors stormwater exclusively. Therefore, any Management Plan monitoring and follow-up monitoring will be performed when stormwater is present in watershed.

Responsibilities and the schedule for management plan implementation are provided in **Appendix C**.

Table 2 - Required Management Plan Constituents as of 12/20/2010

MONITORING SITE (Priority)	MANAGEMENT PLAN CATEGORY	CONSTITUENT	PRIORITY
Cantua Creek at Highway 33 (High)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
	Toxicity	Ceriodaphnia	High
Cantua Creek at San Luis Canal (High)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
	Toxicity	Ceriodaphnia	High
	Toxicity	Hyalella azteca	High
	Registered Pesticide	Chlorpyrifos	High

Highway 33 Management Plan Details

Watershed: Cantua Creek
 Monitoring Site: Highway 33
 Priority Rating: High

Priority Rational: Ceriodaphnia toxicity (High) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ³
<u>Cantua Creek at Highway 33</u>	Salinity	pH	Implementation in 1/2013
Derrick Ave. bridge creek crossing.	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013
	Toxicity	Ceriodaphnia	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.

³ The Management Plans for all constituents, except Ceriodaphnia, are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

San Luis Canal Management Plan Details

Watershed: Cantua Creek
 Monitoring Site: Highway 33
 Priority Rating: High

Priority Rational: Ceriodaphnia toxicity (High) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ⁴
Cantua Creek at San Luis Canal Terminus of the creek on the west side of the canal.	Salinity	pH	Implementation in 1/2013
	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013
	Toxicity	Ceriodaphnia and Hyalella azteca	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.
	Registered Pesticide	Chlorpyriphos	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.

⁴ The Management Plans for all constituents, except Ceriodaphnia and Chlorpyriphos, are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

Implementation Responsibilities and Schedule

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
77	Highway 33	pH, EC, TDS,	Source ID	Review regulatory basis establishing the need for the management plan	12/30/12	6/30/13	WSC; ILRP Staff
78	Highway 33	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/1/13	12/29/13	WSC
79	Highway 33	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	1/1/14	4/2/14	WSC
80	Highway 33	pH, EC, TDS,	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.	4/1/14	7/1/14	WSC; GAL
81	Highway 33	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS.	7/1/14	9/30/14	WSC; GAL
82	Highway 33	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC
83	Highway 33	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	12/30/14	6/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
84	Highway 33	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
85	Highway 33	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
86	Highway 33	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
87	Highway 33	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
88	Highway 33	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
89	Highway 33	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
90	Highway 33	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
91	Highway 33	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL
92	Highway 33	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
93	Highway 33	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
94	Highway 33	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
95	Highway 33	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
96	Highway 33	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
97	Highway 33	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
98	Highway 33	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
99	Highway 33	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
100	Highway 33	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
101	Highway 33	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC
102	Highway 33	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
103	Highway 33	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
104	Highway 33	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
105	Highway 33	Toxicity	Source ID	Evaluation of Coalition Monitoring Data	1/1/12	7/1/12	WSC
106	Highway 33	Toxicity	Source ID	Additional review of pesticide applications	1/1/12	7/1/12	WSC
107	Highway 33	Toxicity	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	1/1/12	7/1/12	WSC
108	Highway 33	Toxicity	Source ID	Prioritize potential sources by reported use of pesticides of concern, distance to surface water, irrigated acreage by crop, pesticide application, current irrigation and management practices	7/1/12	9/30/12	WSC
109	Highway 33	Toxicity	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.	10/1/12	12/31/12	WSC; GAL
110	Highway 33	Toxicity	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	1/1/13	4/2/13	WSC; GAL
111	Highway 33	Toxicity	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	4/1/13	7/1/13	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
112	Highway 33	Toxicity	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
113	Highway 33	Toxicity	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	7/1/14	9/30/14	WSC
114	Highway 33	Toxicity	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
115	San Luis Canal	pH, EC, TDS,	Source ID	Review regulatory basis establishing the need for the management plan	1/1/13	7/2/13	WSC
116	San Luis Canal	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/1/13	12/29/13	WSC
117	San Luis Canal	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	1/1/14	4/2/14	WSC
118	San Luis Canal	pH, EC, TDS,	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.	4/1/14	7/1/14	WSC; GAL
119	San Luis Canal	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS.	7/1/14	9/30/14	WSC; GAL
120	San Luis Canal	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
121	San Luis Canal	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	12/30/14	6/30/15	GAL
122	San Luis Canal	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
123	San Luis Canal	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
124	San Luis Canal	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
125	San Luis Canal	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
126	San Luis Canal	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
127	San Luis Canal	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
128	San Luis Canal	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
129	San Luis Canal	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
130	San Luis Canal	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC
131	San Luis Canal	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
132	San Luis Canal	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
133	San Luis Canal	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
134	San Luis Canal	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
135	San Luis Canal	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
136	San Luis Canal	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
137	San Luis Canal	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
138	San Luis Canal	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
139	San Luis Canal	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
140	San Luis Canal	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL
141	San Luis Canal	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
142	San Luis Canal	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
143	San Luis Canal	Toxicity	Source ID	Evaluation of Coalition Monitoring Data	1/1/12	7/1/12	WSC
144	San Luis Canal	Toxicity	Source ID	Additional review of pesticide applications	1/1/12	7/1/12	WSC
145	San Luis Canal	Toxicity	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	1/1/12	7/1/12	WSC
146	San Luis Canal	Toxicity	Source ID	Prioritize potential sources by reported use of pesticides of concern, distance to surface water, irrigated acreage by crop, pesticide application, current irrigation and management practices	7/1/12	9/30/12	WSC
147	San Luis Canal	Toxicity	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.	10/1/12	12/31/12	WSC; GAL
148	San Luis Canal	Toxicity	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	1/1/13	4/2/13	WSC; GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
149	San Luis Canal	Toxicity	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	4/1/13	7/1/13	WSC
150	San Luis Canal	Toxicity	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
151	San Luis Canal	Toxicity	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	7/1/14	9/30/14	WSC
152	San Luis Canal	Toxicity	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
153	San Luis Canal	Registered Pesticide	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/12	12/30/12	WSC; ILRP Staff
154	San Luis Canal	Registered Pesticide	Source ID	Review pesticide application data for 3 most recent years for drainage	1/1/12	4/1/12	WSC; CAC
155	San Luis Canal	Registered Pesticide	Source ID	Identify agricultural and any potential nonagricultural sources explaining the exceedances	4/1/12	7/1/12	WSC; CAC
156	San Luis Canal	Registered Pesticide	Source ID	Determination of likely agricultural sources of pesticide(s) of concern	7/1/12	9/30/12	WSC; ILRP Staff; CAC
157	San Luis Canal	Registered Pesticide	Source ID	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	10/1/12	12/31/12	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
158	San Luis Canal	Registered Pesticide	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	10/1/12	12/31/12	WSC; GAL
159	San Luis Canal	Registered Pesticide	Management Practice Implementation	Develop list of prioritized Management Practices specific to pesticides	1/1/13	4/2/13	WSC; GAL
160	San Luis Canal	Registered Pesticide	Management Practice Implementation	Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals.	4/1/13	7/1/13	WSC; CAC
161	San Luis Canal	Registered Pesticide	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	4/1/13	7/1/13	WSC
162	San Luis Canal	Registered Pesticide	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
163	San Luis Canal	Registered Pesticide	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
164	San Luis Canal	Registered Pesticide	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC

Arroyo Pasajero Watershed Management Plans

Management plan elements will be implemented for the water bodies and analytes 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.

The Westlands Stormwater Coalition monitors stormwater exclusively. Therefore, any Management Plan monitoring and follow-up monitoring will be performed when stormwater is present in watershed.

Responsibilities and the schedule for management plan implementation are provided in **Appendix C**.

Table 3 Required Management Plan Constituents as of 12/20/2010

MONITORING SITE (Priority)	MANAGEMENT PLAN CATEGORY	CONSTITUENT	PRIORITY
Arroyo Pasajero at El Dorado Avenue (Medium)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
Arroyo Pasajero at Marmon Avenue (High)	Salinity	pH	Low
	Salinity	EC	Low
	Salinity	TDS	Low
	Pathogen Indicators	E-coli	Low
	Pathogen Indicators	Fecal Coli form	Low
	Trace Metals	Boron	Low
	Trace Metals	Selenium	Medium
	Toxicity	Ceriodaphnia	High

El Dorado Avenue Management Plan Details

Watershed: Arroyo Pasajero
 Monitoring Site: El Dorado Avenue
 Priority Rating: Medium

Priority Rational: The Trace Metal Selenium (Medium) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ⁵
<u>Arroyo Pasajero at El Dorado Avenue</u> El Dorado Ave. bridge creek crossing.	Salinity	pH	Implementation in 1/2013
	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013

⁵ The Management Plans for all constituents are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

Marmon Avenue Management Plan Details

Watershed: Arroyo Pasajero
 Monitoring Site: Marmon Avenue
 Priority Rating: High

Priority Rational: Ceriodaphnia toxicity (High) was the highest priority constituent requiring management.

Monitoring

Monitoring in 2012 for Management Plan Implementation is summarized below and will be coordinated with the Assessment monitoring being conducted by the Coalition at this site.

SITE LOCATION	MANAGEMENT PLAN CATEGORY	CONSTITUENT	2012 Monitoring Schedule ⁶
<u>Arroyo Pasajero at Marmon Avenue</u> 1 mile upstream of Lassen Avenue (Highway 269) road crossing.	Salinity	pH	Implementation in 1/2013
	Salinity	EC	Implementation in 1/2013
	Salinity	TDS	Implementation in 1/2013
	Pathogen Indicators	E-coli	Implementation in 1/2013
	Pathogen Indicators	Fecal Coli form	Implementation in 1/2013
	Trace Metals	Boron	Implementation in 1/2013
	Trace Metals	Selenium	Implementation in 1/2013
	Toxicity	Ceriodaphnia	Monthly monitoring when stormwater is present per current MRP for source ID. Follow-up monitoring if needed and stormwater is present.

⁶ The Management Plans for all constituents, except Ceriodaphnia, are scheduled to be implemented in 2013. However, monthly monitoring per the current MRP will be performed in 2012 and the data used for Source ID in January 2013.

Implementation Responsibilities and Schedule

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
165	El Dorado Avenue	pH, EC, TDS,	Source ID	Review regulatory basis establishing the need for the management plan	1/1/13	7/2/13	WSC
166	El Dorado Avenue	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/1/13	12/29/13	WSC
167	El Dorado Avenue	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	1/1/14	4/2/14	WSC
168	El Dorado Avenue	pH, EC, TDS,	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.	4/1/14	7/1/14	WSC; GAL
169	El Dorado Avenue	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS.	7/1/14	9/30/14	WSC; GAL
170	El Dorado Avenue	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC
171	El Dorado Avenue	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	12/30/14	6/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
172	El Dorado Avenue	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
173	El Dorado Avenue	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
174	El Dorado Avenue	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
175	El Dorado Avenue	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
176	El Dorado Avenue	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
177	El Dorado Avenue	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
178	El Dorado Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
179	El Dorado Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL
180	El Dorado Avenue	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
181	El Dorado Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
182	El Dorado Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
183	El Dorado Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
184	El Dorado Avenue	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
185	El Dorado Avenue	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
186	El Dorado Avenue	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
187	El Dorado Avenue	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
188	El Dorado Avenue	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
189	El Dorado Avenue	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC
190	El Dorado Avenue	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
191	El Dorado Avenue	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
192	El Dorado Avenue	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
193	Marmon Avenue	pH, EC, TDS,	Source ID	Review regulatory basis establishing the need for the management plan	1/1/13	7/2/13	WSC
194	Marmon Avenue	pH, EC, TDS,	Source ID	Evaluation of Coalition monitoring data	7/1/13	12/29/13	WSC
195	Marmon Avenue	pH, EC, TDS,	Source ID	Prioritize potential sources by crop, current irrigation practices, and current management practices	1/1/14	4/2/14	WSC
196	Marmon Avenue	pH, EC, TDS,	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.	4/1/14	7/1/14	WSC; GAL
197	Marmon Avenue	pH, EC, TDS,	Management Practice Implementation	If specific cause identified and agriculture is identified as a source, develop list of prioritized Management Practices specific to cause of pH, EC, TDS.	7/1/14	9/30/14	WSC; GAL
198	Marmon Avenue	pH, EC, TDS,	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	10/1/14	12/31/14	WSC
199	Marmon Avenue	pH, EC, TDS,	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	12/30/14	6/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
200	Marmon Avenue	pH, EC, TDS,	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	TBD	TBD	WSC
201	Marmon Avenue	pH, EC, TDS,	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
202	Marmon Avenue	E. coli, Fecal Coli form	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan	1/1/13	12/31/13	WSC; ILRP Staff
203	Marmon Avenue	E. coli, Fecal Coli form	Source ID	Survey Coalition members in the targeted drainages to inventory applications of animal wastes	1/1/13	7/2/13	WSC
204	Marmon Avenue	E. coli, Fecal Coli form	Source ID	Conduct field survey ("creek walk"), if feasible and access is adequate	7/1/13	9/30/13	WSC
205	Marmon Avenue	E. coli, Fecal Coli form	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.	7/1/13	9/30/13	WSC
206	Marmon Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of relevant management practices	1/1/13	7/2/13	WSC; GAL
207	Marmon Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Develop list of prioritized Management Practices specific to pathogens	10/1/13	4/1/14	WSC; GAL
208	Marmon Avenue	E. coli, Fecal Coli form	Management Practice Implementation	If agriculture is identified as a probable source, set goals and schedule for additional Management Practice implementation	4/1/14	7/1/14	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
209	Marmon Avenue	E. coli, Fecal Coli form	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/14	6/30/15	GAL
210	Marmon Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
211	Marmon Avenue	E. coli, Fecal Coli form	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
212	Marmon Avenue	Boron, Selenium	Review Regulatory Basis	Review regulatory basis establishing the need for the management plan. Identify and review potential downstream impacts.	1/1/13	7/2/13	WSC; ILRP Staff
213	Marmon Avenue	Boron, Selenium	Source ID	Compile information about potential agricultural and non-agricultural sources of metals	7/1/13	12/30/13	WSC
214	Marmon Avenue	Boron, Selenium	Source ID	Document selenium sources and identify potential downstream impacts.	1/1/14	4/2/14	WSC
215	Marmon Avenue	Boron, Selenium	Management Practice Implementation	Conduct surveys of Coalition members for current level of implementation of irrigation and management practices relevant to metals	7/1/13	12/30/13	WSC; GAL
216	Marmon Avenue	Boron, Selenium	Management Practice Implementation	Develop list of crop-specific potential Management Practices specific to metals management	4/1/14	7/1/14	WSC; GAL
217	Marmon Avenue	Boron, Selenium	Management Practice Implementation	Set goals and schedule for implementation of specific additional Management Practices	7/1/14	9/30/14	WSC
218	Marmon Avenue	Boron, Selenium	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	10/1/14	9/30/15	GAL

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
219	Marmon Avenue	Boron, Selenium	Effectiveness Evaluation	Follow-up surveys for tracking implementation progress	TBD	TBD	WSC
220	Marmon Avenue	Boron, Selenium	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC
221	Marmon Avenue	Toxicity	Source ID	Evaluation of Coalition Monitoring Data	1/1/12	7/1/12	WSC
222	Marmon Avenue	Toxicity	Source ID	Additional review of pesticide applications	1/1/12	7/1/12	WSC
223	Marmon Avenue	Toxicity	Source ID	Identification of potential agricultural and any non-agricultural sources explaining the exceedances	1/1/12	7/1/12	WSC
224	Marmon Avenue	Toxicity	Source ID	Prioritize potential sources by reported use of pesticides of concern, distance to surface water, irrigated acreage by crop, pesticide application, current irrigation and management practices	7/1/12	9/30/12	WSC
225	Marmon Avenue	Toxicity	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.	10/1/12	12/31/12	WSC; GAL
226	Marmon Avenue	Toxicity	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	1/1/13	4/2/13	WSC; GAL
227	Marmon Avenue	Toxicity	Management Practice Implementation	If agriculture is identified as a source, set goals and schedule for additional outreach and Management Practice implementation.	4/1/13	7/1/13	WSC

TASK ID	MONITORING SITE	CONSTITUENT	IMPLEMENTATION ELEMENT	ELEMENT DETAIL	START TASK	END TASK	RESPONSIBLE ENTITIES
228	Marmon Avenue	Toxicity	Management Practice Implementation	Implement additional Management Practices per established Management Plan goals	7/1/13	6/30/14	GAL
229	Marmon Avenue	Toxicity	Effectiveness Evaluation	If agriculture is identified as a source and implementation of additional management practices is appropriate, conduct surveys to track implementation progress.	7/1/14	9/30/14	WSC
230	Marmon Avenue	Toxicity	Effectiveness Evaluation	Conduct effectiveness monitoring for tracking goals established for implementation	TBD	TBD	WSC

