

APRIL 2012

SACRAMENTO VALLEY
WATER QUALITY COALITION

Water Quality Management Plan Progress Report

prepared by

LARRY WALKER ASSOCIATES

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Management Plan Progress Report

The purpose of this document is to provide an update on the status of the Sacramento Valley Water Quality Coalition's (Coalition) Water Quality Management Plan (the Management Plan¹) and the Coalition's progress in implementing this plan.

Reporting for the Management Plan is intended to provide information regarding progress toward and achievement of the Management Plan performance goals. These Progress Reports document the results of source identification evaluations, any evaluations conducted to determine the effectiveness of the management practice implementation, and whether additional or different management practices need to be implemented. These evaluations are conducted and reported according to the Management Plan deliverable schedule. Data reports for monitoring conducted for the Management Plan are submitted on the same quarterly schedule and in the same formats as required by the Monitoring and Reporting Program (MRP) for regular Coalition monitoring.

This Progress Report provides summaries 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. This Progress Report also summarizes the results of initial source identification evaluations and results of selected Management Plan monitoring for the previous year, provides documentation of outreach efforts, and a summary of completed baseline management practice inventories in priority drainages. Future Progress Reports will also document goals established for additional management practice implementation and assess progress toward these implementation goals.

The activities conducted in 2011 to implement the Coalition's Management Plan continued to focus primarily on addressing the higher priority Management Plan elements triggered by exceedances of water quality objectives and trigger limits for registered pesticides and toxicity. Deliverables completed for registered pesticides included review and evaluation of pesticide application data, identification of potential sources, and determination of likely agricultural sources. Implementation completed to address toxicity exceedances included review and evaluation of pesticide application data, evaluation of monitoring results to identify potential causes of toxicity, and determination of likely agricultural sources of identified causes of toxicity. These evaluations have been documented in the Source Evaluation Reports submitted for each management plan element² in 2011. For registered pesticides and identified causes of toxicity, surveys of Coalition members operating on high priority parcels were also conducted to determine the degree of implementation of relevant management practices. Similar surveys (or in some cases the same surveys) were also completed and reported to support source evaluation efforts for pathogen indicators. These survey results form the basis for

¹ SVWQC 2009. Water Quality Management Plan. Prepared by Larry Walker Associates for the Sacramento Water Quality Coalition (SVWQC). Sacramento, California. January 2009.

² A Management Plan element is the specific individual combination of the water body and analyte or monitoring category requiring management, e.g., diazinon in Gilsizer Slough, or invertebrate toxicity in Coon Hollow Creek.

establishing goals for additional management practice implementation needed to address exceedances of Basin Plan water quality objectives and *ILRP* trigger limits.

Management Plan elements with tasks to be completed in 2011 are listed in Table 1. This table provides the water body and analyte or monitoring category of concern, and a summary of the major Management Plan task activity. The remainder of this report documents the status, progress, and results for the following Management Plan Components:

- Results of Monitoring
- Source Evaluations
- Outreach Documentation
- Management Practices Inventories and Member Surveys
- Recommendations for Management Plan Monitoring
- Status of Management Plan tasks
- Proposed Goals for Implementation of Management Practices
- Update to Required Management Plans
- TMDL Compliance Reporting
- Evaluation of Progress

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Table 1. Summary of Management Plan Task Activity

| Management Plan Category | Subwatershed | Waterbody | Analytes | Summary of Major Mgt Plan Task Activity and Status; |
|--------------------------|---|--------------------|------------------------------|--|
| DO and pH | ButteYubaSutter | Butte Slough | DO | <p>Sampled at 14 Assessment sites in 2011; Monitoring scheduled for all MP sites for 2012MY; Other Tasks suspended on direction from EO; Source Evaluations deferred; Management Plan requirements will be revised/addressed in LT-ILRP WDR being developed for LT -ILRP in 2012.</p> <p>Management Plan approved as completed by Water Board.</p> |
| | | Gilsizer Slough | DO, pH | |
| | ColusaGlenn | Colusa Basin Drain | DO | |
| | | Freshwater Creek | DO | |
| | | Stone Corral Creek | DO | |
| | | Stony Creek | DO | |
| | | Sycamore Slough | DO | |
| | | Walker Creek | DO | |
| | Pit River | Fall River | DO | |
| | | Pit River | DO, pH | |
| | PNSSNS | Coon Creek | DO | |
| | SacramentoAmador | Cosumnes River | DO, pH | |
| | | Dry Creek | DO | |
| | | Laguna Creek | DO, pH | |
| ShastaTehama | Anderson Creek | DO | | |
| | Coyote Creek | DO | | |
| Solano | Ulatis Creek | DO, pH | | |
| | Z-Drain | DO, pH | | |
| Upper Feather River | Indian Creek | DO | | |
| | Middle Fork Feather River | DO, pH | | |
| Legacy Pesticides | ButteYubaSutter | Gilsizer Slough | DDT and degradation products | <p>Sampled at 3 Assessment sites in 2011; Monitoring scheduled for all MP sites for 2012MY; Other Tasks suspended on direction from EO; Management Plan requirements will be addressed in LT-ILRP WDR; Completion requests for El Dorado water bodies denied;</p> |
| | ColusaGlenn | Lurline Creek | | |
| | | Sycamore Slough | | |
| | SacramentoAmador | Grand Island Drain | | |
| | Yolo | Willow Slough | | |
| El Dorado | Coon Hollow Creek North Canyon Creek | | | |

| Management Plan Category | Subwatershed | Waterbody | Analytes | Summary of Major Mgt Plan Task Activity and Status; |
|--------------------------|---------------------|-------------------------------|----------|--|
| Pathogen Indicators | ButteYubaSutter | Gilsizer Slough | E. coli | Sampled at 14 Assessment sites in 2011; Surveys of Coalition members reported in Source Evaluation Report (March 2011); Other Tasks suspended pending direction from EO re: development of a region-wide approach [December 5, 2011 comm from EO]; |
| | | Lower Snake River | | |
| | | Pine Creek | | |
| | | Wadsworth Canal | | |
| | ColusaGlenn | Colusa Basin Drain | | |
| | | Logan Creek | | |
| | | Lurline Creek | | |
| | | Stone Corral Creek | | |
| | | Sycamore Slough | | |
| | El Dorado | North Canyon Creek | | |
| | | Lake | | |
| Napa | Capell Creek | | | |
| Pit River | Pit River | | | |
| PNSSNS | Coon Creek | | | |
| SacramentoAmador | Dry Creek | | | |
| | Laguna Creek | | | |
| ShastaTehama | Anderson Creek | | | |
| | Burch Creek | | | |
| Solano | Ulatis Creek | | | |
| | Z-Drain | | | |
| Yolo | Tule Canal | | | |
| | Willow Slough | | | |
| Pathogen Indicators | Upper Feather River | Indian Creek Spanish Creek | | |

| Management Plan Category | Subwatershed | Waterbody | Analytes | Summary of Major Mgt Plan Task Activity and Status; |
|--------------------------|------------------|-------------------------------|--------------------------|--|
| Registered Pesticides | PNSSNS | Coon Creek | Chlorpyrifos | Management Plan requirement approved as Completed in 2010; Management Plan requirement was re-established in 2011 due to additional exceedances observed in Assessment Monitoring; |
| | ButteYubaSutter | Gilsizer Slough Pine Creek | Diazinon Chlorpyrifos | MPIPGs were developed and submitted, and implementation is in progress |
| | ColusaGlenn | Walker Creek | Chlorpyrifos | |
| | Solano | Ulatis Creek | Diuron, Malathion | |
| | Yolo | Willow Slough | Chlorpyrifos | |
| Salinity | ButteYubaSutter | Gilsizer Slough | EC | Salinity Source Evaluation Report elements rescheduled for Early 2012 to be completed in support of CV-SALTS Technical Framework ("Conceptual Model") finalized in early 2012; |
| | ColusaGlenn | Colusa Basin Drain | EC | |
| | | Freshwater Creek | EC | |
| | | Lurline Creek | EC, TDS | |
| | | Stone Corral Creek | EC | |
| | SacramentoAmador | Dry Creek | TDS | |
| | | Grand Island Drain | EC, TDS | |
| Solano | Ulatis Creek | EC, TDS | | |
| | Z-Drain | EC, TDS | | |
| Yolo | Cache Creek | Boron, EC | | |
| | Tule Canal | Boron, EC, TDS | | |
| | Willow Slough | Boron, EC, TDS | | |

| Management Plan Category | Subwatershed | Waterbody | Analytes | Summary of Major Mgt Plan Task Activity and Status; |
|--------------------------|------------------|---|--|---|
| Toxicity | ButteYubaSutter | Butte Slough | <i>Selenastrum</i> (unidentified cause) | Monitoring of potential causes continued in 2011; No toxicity, no detection of targeted pesticide (Oxyfluorfen) (0/6 events); |
| | ColusaGlenn | Stony Creek | <i>Ceriodaphnia</i> (unidentified cause) | Monitoring of toxicity and potential causes continued in 2011; 1 toxicity exceedance in 2 samples, no cause identified; |
| | | Walker Creek | <i>Ceriodaphnia</i> (chlorpyrifos) | MPIPGs were developed, submitted, and are under review by Water Board; Implementation is in progress; |
| | SacramentoAmador | Cosumnes River | <i>Hyalella</i> | Source evaluations reported in SER; Recommendation to deem management plan complete based on lack of toxicity and lack of probable ag sources; |
| | Solano | Ulatis Creek | <i>Selenastrum</i> (diuron) | MPIPGs were developed, submitted, and are under review by Water Board; Implementation is in progress; |
| | | Z-Drain | <i>Hyalella</i> , Pyrethroids | MPIPGs were developed, submitted, and are under review by Water bioard; Implementation is in progress; |
| | Yolo | Cache Creek | <i>Ceriodaphnia</i> (unidentified cause) | Monitoring of potential causes continued in 2011; |
| Willow Slough | | <i>Ceriodaphnia</i> (chlorpyrifos), <i>Selenastrum</i> (diuron) | MPIPGs were developed, submitted, and are under review by Water bioard; Implementation is in progress; | |
| Trace Metals - Se | Yolo | Willow Slough | Selenium | No determination by ILRP staff on recommendation to include selenium in the "Salinity" Management Plan category; Source evaluation rescheduled to 2012; SER reviewing regulatory basis, data, and identification and evaluation of sources completed and in review by Coalition (March 2012); |

RESULTS OF MONITORING

Management Plan monitoring was conducted as scheduled in the Coalition's 2011 Monitoring Plan, as approved by the Water Board. The results of monitoring conducted in the 2011 Monitoring Year (October 2010-September 2011) for all management plan analytes through September 2011 have been reported in the Coalition's 2011 AMR and submitted to the Water Board. Additionally, exceedances for all management plan sampling conducted from October 2010-January 2012 have been reported in Exceedance Reports as required by the ILRP MRP.

The 2011 monitoring year (October 2010-September 2011) was an "Assessment" monitoring year for all representative Coalition sites, and most management plan monitoring was coordinated with scheduled Assessment monitoring or conducted independently as needed for the specific locations and parameters. The results of Management Plan monitoring conducted in calendar year 2011 are summarized below.

Registered Pesticides

Organophosphate pesticides were sampled at nine compliance sites for chlorpyrifos and diazinon TMDLs. Seven of 96 samples collected during this period were observed to exceed the Basin Plan Amendment objective (0.015 µg/L) for chlorpyrifos for the TMDL. Four chlorpyrifos exceedances were observed at the same site (Pine Creek) in four sequential events under conditions (ponded water, no observable connections or flows) that suggested that the exceedances were attributable to a single cause or discharge. Only one sample (Gilsizer Slough) was found to exceed the water quality objective for diazinon.

Three samples were analyzed for diazinon and malathion in Gilsizer Slough. As noted above, one of these samples exceeded the ILRP trigger limit and Basin Plan objective for diazinon. Follow-up for this exceedance determined that diazinon was applied to approximately 191 acres of peaches and 63 acres of prunes in the month prior to the February 16, 2011 exceedance at Gilsizer Slough. Malathion was not detected in any of the Gilsizer Slough samples.

Nine samples were analyzed for chlorpyrifos in Lower Snake River. There were no exceedances in any of these samples.

Nine samples were analyzed for chlorpyrifos in Pine Creek. There were four exceedances observed for sequential events under conditions that suggested that the exceedances were attributable to a single cause or discharge (ponded water, no observable connections or flows, no evidence of additional discharges of irrigation tailwater runoff after the initial exceedance). Chlorpyrifos concentrations measured in the second, third, and fourth samples decreased in a way that was consistent with degradation of the initial exceedance. Chlorpyrifos was applied to approximately 2075 acres of walnuts and 40 acres of almonds in the Pine Creek drainage in the month prior to the initial July 20 exceedance. Chlorpyrifos was also applied to additional walnut and prune acreage before the subsequent two exceedances observed at this site in August and September 2011.

Eight samples were analyzed for chlorpyrifos in Walker Creek. There were no exceedances in any of these samples.

Two samples were analyzed for chlorpyrifos in Coon Creek at Striplin Road. One of these samples was an exceedance of the ILRP trigger limit and Basin Plan Amendment objective (0.015 µg/L) for chlorpyrifos. The management plan requirement for chlorpyrifos was previously deemed complete based on achieving water quality objectives – however, based on this additional exceedance, the requirement was reinstated. No chlorpyrifos applications were reported in the month prior to the May 2011 exceedance at Striplin Road.

Seven samples were analyzed for chlorpyrifos in Willow Slough. There were no exceedances in any of these samples.

Eight samples were analyzed for chlorpyrifos in Ulatis Creek. Two of these samples exceeded the ILRP trigger limit and Basin Plan Amendment objective (0.015 µg/L) for chlorpyrifos. Chlorpyrifos was applied to approximately 28 acres of walnuts in the Ulatis Creek drainage in the month prior to the May 17, 2011 exceedance. Chlorpyrifos was applied to 2050 acres of alfalfa, 131 acres of walnuts, and 17 acres of almonds in the Ulatis Creek drainage in the month prior to the September 20, 2011 exceedance.

Three samples were analyzed for diuron in Ulatis Creek, which has a Management Plan requirement for diuron and algae toxicity exceedances. None of these samples were exceedances of the ILRP trigger limit and none of the samples were toxic to *Selenastrum*.

Three samples were analyzed for diuron in Willow Creek, which has a Management Plan requirement for diuron and algae toxicity exceedances. None of these samples were exceedances of the ILRP trigger limit and none of the samples were toxic to *Selenastrum*.

Eight samples were analyzed for malathion in Ulatis Creek. Malathion was not detected in any of these samples and did not exceed the ILRP trigger limit (0 µg/L) and Basin Plan prohibition of discharge.

Seven samples were analyzed for malathion in Willow Creek. Malathion was not detected in any of these samples and did not exceed the ILRP trigger limit (0 µg/L) and Basin Plan prohibition of discharge.

Four samples were analyzed for pyrethroids and chlorpyrifos for Z-drain, which has a Management Plan requirement for *Hyaella* toxicity in sediment. The samples were not tested for toxicity. The results for these samples indicated that one pyrethroid pesticide (L-cyhalothrin) was present at concentrations that would likely cause or contribute to toxicity to sensitive invertebrate species in three of the four samples. There was no temporal pattern apparent in the concentrations of the detected pesticides. Chlorpyrifos, bifenthrin, esfenvalerate, and permethrin were also detected in several of the Z-drain sediment samples, but concentrations did not appear to have been elevated sufficiently to cause or contribute significantly to sediment toxicity, based on detected concentrations and known toxicity thresholds for *Hyaella*.

Toxicity

Butte Slough has a Management Plan requirement for algae toxicity exceedances, and six samples were analyzed for *Selenastrum* toxicity in 2011. None of these samples were toxic, and no targeted pesticides (oxyfluorfen) were detected in these samples.

Lower Snake River has a Management Plan requirement for *Ceriodaphnia* toxicity exceedances, and eight samples were analyzed for *Ceriodaphnia* toxicity in 2011. One of these samples was toxic to *Ceriodaphnia* (August 2011). This was the result of a re-test, due to unacceptable control survival in the initial test. The toxicity observed in the sample (>50% reduction compared to control) triggered initiation of TIE procedures using *Ceriodaphnia*. Toxicity was not persistent in the original sample (95% survival compared to control), and the TIE was therefore inconclusive. This pattern is consistent with a rapidly degrading source of toxicity, indicating that the toxicity would probably not be persistent under ambient conditions. Analysis for organophosphate pesticides was conducted for this sample and none were detected. The sample was also tested for copper and was determined not to have toxic concentrations of dissolved copper (1.0 µg/L, compared to the hardness-based 4-day average objective of 9.7 µg/L for a hardness of 110 mg/L as CaCO₃). Data provided by the Butte and Sutter County Agriculture Departments indicate that 2258 acres were treated with insecticides in the month prior to the August 16 sample. These applications were dominated by pyrethroid pesticides (bifenthrin, esfenvalerate, lambda- cyhalothrin, permethrin; 1731 total acres), but also included chlorpyrifos (87 acres) and chlorantraniliprole (148 acres). Crops treated with insecticides included peaches, rice, walnut, and almond. Based only on treated acreage and relative toxicity, pyrethroid pesticides were the most likely to have contributed to the toxicity observed in the sample. However, no toxicity was observed in the TIE sample treated with piperonyl butoxide (PBO), which would be expected to increase the toxicity of any pyrethroids present in the sample.

Stony Creek has a Management Plan requirement for sediment toxicity exceedances, and two samples were analyzed for *Hyalella* toxicity in 2011. Neither of these two sediment samples were toxic.

Stony Creek also has a Management Plan requirement for *Ceriodaphnia* toxicity exceedances, and two samples were analyzed for *Ceriodaphnia* toxicity in 2011. One of these samples was toxic. The toxicity observed in the February 2011 sample triggered initiation of TIE procedures and a serial dilution test using *Ceriodaphnia*. Toxicity was not persistent in the original sample, and the TIE was therefore inconclusive. This pattern is consistent with a rapidly degrading source of toxicity, indicating that the toxicity would probably not be persistent under ambient conditions. No pesticide analyses were conducted for this sample, but the rapid degradation of the toxicity signal appears to rule out commonly applied organophosphate pesticides (which are not expected to degrade that quickly under controlled storage conditions). An aliquot of the toxic sample was tested for copper (commonly applied in the drainage during this season) and was determined not to have toxic concentrations of copper (1.1 µg/L, compared to the hardness-based 4-day average objective of 10 µg/L for a hardness of 115 mg/L as CaCO₃). Data provided by the Glenn County Agriculture Department indicate that bifenthrin was applied aerially to 389 acres and by ground to 366 acres of almonds in the drainage, 19 days prior to the February 16 sample date. Esfenvalerate was applied to 69 acres of prunes (all ground applications), with the last application occurring 11 days before the sample date. Methidathion (an organophosphate pesticide) was applied to 36 acres of prunes 20 days prior to the February 16 sample date. Other pesticide applications included copper (811 acres), six different fungicides (615 acres), a variety of herbicides (645 acres) and petroleum oil dormant spray (865 acres). Based on toxicity to

invertebrates and application amounts and timing, most of these applications represent a relatively low risk to be transported in toxic amounts to the sampling location. The applications of bifenthrin and esfenvalerate have the greatest potential for causing the observed toxicity to *Ceriodaphnia*. However, no toxicity was observed in the TIE sample treated with piperonyl butoxide (PBO), which would be expected to increase the toxicity of any pyrethroids present in the sample.

Walker Creek has a Management Plan requirement for *Ceriodaphnia* toxicity exceedances and for chlorpyrifos exceedances, and eight samples were analyzed for *Ceriodaphnia* toxicity in 2011. None of these samples were toxic and there were no chlorpyrifos exceedances in any sample. There have been no observations of toxicity in the last 24 samples tested with *Ceriodaphnia*.

Cosumnes River has a Management Plan requirement for sediment toxicity exceedances, and two samples were analyzed for *Hyalella* toxicity in 2011. Neither of these two sediment samples was toxic.

Cache Creek has a Management Plan requirement for *Ceriodaphnia* toxicity exceedances, and four samples were analyzed for *Ceriodaphnia* toxicity in 2011. The toxicity observed in the August 2011 sample triggered initiation of TIE procedures using *Ceriodaphnia*. Toxicity was not persistent in the original sample (100% survival compared to control), and the TIE was therefore inconclusive. This pattern is consistent with a rapidly degrading source of toxicity, indicating that the toxicity would probably not be persistent under ambient conditions. Analysis for organophosphate pesticides was conducted for this sample and none were detected. No toxicity was observed in the TIE sample treated with piperonyl butoxide (PBO), which contraverts a hypothesis of toxicity due to pyrethroids. Data provided by the Yolo County Agriculture Department indicate that there were no insecticide applications upstream from the sampling site in July 2011. Pesticide application data for August 2011 were not yet available for review at the time this report was prepared due to changes in the pesticide application reporting management system and will be evaluated when they become available. A previous Source Evaluation concluded that agriculture was not a likely source of the sporadically observed toxicity at this site, based on the relatively low use of pesticides in the upstream drainage. One alternative hypothesis raised is that toxins from cyanobacteria blooms in Clear Lake may be responsible for the toxicity. This hypothesis is circumstantially supported by the mid-summer timing of the toxicity (August 2007, July 2008, August 2011), which coincides with typical peak season of cyanobacterial bloom in Clear Lake.

Ulatis Creek has a Management Plan requirement for algae toxicity exceedances and for diuron, and nine samples were analyzed for *Selenastrum* toxicity in 2011. None of these samples were toxic and there were no diuron exceedances in any sample tested. There have been no observations of toxicity in the last 13 samples tested with *Selenastrum*.

Willow Slough has a Management Plan requirement for algae toxicity exceedances and for diuron, and nine samples were analyzed for *Selenastrum* toxicity in 2011. None of these samples were toxic and there were no diuron exceedances in any sample tested. There have been no observations of toxicity in the last 11 samples tested with *Selenastrum*.

Willow Slough has a Management Plan requirement for *Ceriodaphnia* toxicity exceedances and for chlorpyrifos exceedances, and seven samples were analyzed for *Ceriodaphnia* toxicity in 2011. One sample was toxic (July 2011). The toxicity observed in the sample (>50% reduction compared to control) triggered initiation of TIE procedures and a serial dilution test using *Ceriodaphnia*. Toxicity was not persistent in the original sample (100% oxyfluorfen were conducted for this sample. Chlorpyrifos (0.0007 µg/L) and oxyfluorfen (0.026 µg/L) were detected well below concentrations expected to cause toxicity. No pyrethroid pesticides were detected. Data provided by the Yolo County Agriculture Department indicate that 8092 acres were treated with insecticides and miticides in the month prior to the July 19 sample date. These applications included applications of organophosphates and other acetylcholinesterase inhibitors (chlorpyrifos, dimethoate, methomyl), and pyrethroid pesticides (bifenthrin, esfenvalerate, lambda-cyhalothrin, tau-fluvalinate). Many of these insecticides were applied by aerial methods (3242 acres), although only ~120 acres were treated aerially within 7 days of the sample date. Other pesticides applications in the drainage included copper (188 acres), 14 different fungicides (5318 acres), a variety of herbicides (9724 acres) and petroleum oil dormant spray (9724 acres). Based on toxicity to invertebrates and application amounts and timing, most of these applications represent a relatively low risk to be transported in toxic amount to the sampling location. Although the applications of organophosphate and pyrethroid pesticides have a high potential for causing the observed toxicity to *Ceriodaphnia*, these were undetected or below toxic concentrations in the sample and TIE results counter-indicated pyrethroids as a likely cause.

Z-Drain has a Management Plan requirement for sediment toxicity exceedances, and four sediment samples were analyzed for pesticides in 2011. As discussed above, lambda-cyhalothrin was present in three of these samples at concentrations that could cause or contribute to toxicity to sensitive sediment organisms. Alfalfa applies the majority of lambda-cyhalothrin in this drainage (>71% of the total applied from 2008-2010), with much smaller amounts applied by tomatoes, sunflowers, corn, sorghum, wheat, peppers, cabbage, and beans (8 to <1% for each crop).

Legacy Pesticides

Management Plan monitoring for legacy organochlorine pesticides during this period was conducted at three Assessment sites (Freshwater Creek, Grand Island Drain, and Willow Slough). No legacy organochlorine pesticides were detected in these samples.

Pathogen indicators

There are 33 sites with active Management Plan requirements for pathogen indicator bacteria. Management Plan monitoring for *E. coli* consisted of sampling at Assessment sites in 2011. There were 146 samples collected from 14 sites with active Management Plan requirements for pathogen indicators. There were 42 exceedances of the ILRP trigger limit for *E. coli* observed at these sites (29%) during 2011.

Trace Metals

The only active Management Plan monitoring requirement for trace metals is for selenium in Willow Slough. Monitoring for selenium during this period consisted of 4

sample events, including one exceedance. Source evaluations for selenium (March 2012) in Willow Slough have implicated shallow groundwater with naturally elevated selenium as the cause of the exceedances at this site.

Salinity

There are 16 sites with active Management Plan requirements for parameters related to salinity (conductivity, TDS, and boron). Management Plan monitoring for these parameters consisted of sampling at seven Assessment sites and four additional Management Plan sites in 2011. There were 81 samples collected at these 11 sites, with 40 exceedances of the ILRP trigger limit for conductivity observed at these sites (50%) during 2011. Two sites have a requirement for boron (Willow Slough and Tule Canal), and all 4 samples collected from Willow Slough in 2011 exceeded the ILRP trigger limit.

DO and pH

There are 25 sites with active Management Plan requirements for dissolved oxygen and 12 sites with active Management Plan requirements for pH.

- There were 145 samples collected from 19 sites with active Management Plan requirements for dissolved oxygen. There were 9 exceedances (6.2%) of the ILRP trigger limit for dissolved oxygen observed at 5 sites during 2011 at these sites.
- There were 50 samples collected from 7 sites with active Management Plan requirements for pH. There were no exceedances observed (0.0%) of the ILRP trigger limit for pH during 2011 at these sites.

Nutrients

The only active Management Plan monitoring requirement specifically for nutrient exceedances in 2011 was for nitrate in Ulatis Creek. There were 11 samples collected from this site, with two exceedances of the ILRP trigger limit for nitrate observed during 2011. The source evaluations for nitrate in Ulatis Creek determined that agriculture was not the source of these exceedances, and the Management Plan has been approved as completed.

The other nutrient-related Management Plan requirement is for the Clear Lake Nutrient TMDL. Monitoring for this Management Plan requirement consisted of 8 sample event at one site in the Lake County subwatershed in 2011. There were no exceedances of the ILRP trigger limit for nitrate in these samples. Compliance with the agriculture TMDL load allocations for phosphorus require evaluation of a larger data set of coordinated monitoring data and have not yet been determined.

SOURCE EVALUATIONS

Source evaluations conducted for the Management Plan and submitted in 2011 included evaluations for pathogen indicators, nutrients, registered pesticides, and toxicity. Some additional source evaluations originally scheduled for 2011 were rescheduled by order of the Central Valley Water Board Executive Officer for early 2012 and included evaluations for salinity (14 sites), and selenium (one site). In addition, this section provides updates on the progress of additional source evaluation monitoring for three

previously completed source evaluations (sediment toxicity in Cosumnes River; sediment toxicity in Stony Creek; algae toxicity in Butte Slough). Summaries of the source evaluations listed in Table 2 provided below, with the exception of the pathogen indicators source evaluation, which was provided previously in the 2010 MPPR.

Table 2. 2011 Source Evaluation Submittals

| Management Plan | Water Bodies | Submitted |
|-------------------------------|-------------------|----------------|
| Pathogen Indicators (E. coli) | 23 water bodies | February 2011 |
| <i>Ceriodaphnia</i> Toxicity | Cache Creek | September 2011 |
| <i>Ceriodaphnia</i> Toxicity | Lower Snake River | September 2011 |
| <i>Ceriodaphnia</i> Toxicity | Stony Creek | September 2011 |
| <i>Hyalella</i> Toxicity | Cosumnes River | September 2011 |
| Chlorpyrifos | Lower Snake River | September 2011 |
| Malathion | Willow Slough | September 2011 |
| Malathion | Gilsizer Slough | September 2011 |
| Nitrate | Ulatis Creek | September 2011 |

***Ceriodaphnia* Toxicity Source Evaluation, Cache Creek**

Specific causes and sources of the toxicity observed in Cache Creek could not be definitively identified for the two toxicity exceedances that initially triggered the Management Plan (prior to the August 2011 exceedance discussed below). The cause of the toxicity was not a monitored pesticide, and based on the available evidence (evaluations of land uses, reported pesticide applications, the timing of irrigation and precipitation, chemistry and toxicity results, and chemical characteristics), agricultural pesticides were not likely to have caused or contributed to the observed toxicity. Pesticide application data were evaluated for unmonitored agricultural pesticides that might have a significant potential to cause or contribute to the *Ceriodaphnia* toxicity observed in the Cache Creek samples, but no reported applications appeared to have a significant potential. Consequently, no additional pesticides were recommended for analysis based on the evaluation of pesticide use in the drainage.

As described previously in this report, the toxicity observed in the August 2011 Cache Creek sample triggered initiation of TIE procedures using *Ceriodaphnia*. The TIE was inconclusive, but suggested that organophosphate and pyrethroid pesticides were not the cause. The 2011 Source Evaluation concluded that agriculture was not a likely source of the sporadically observed toxicity at this site, based on the relatively low use of pesticides in the upstream drainage and the lack of any pesticide exceedances in Cache Creek samples. An alternative hypothesis is that toxins from cyanobacteria (blue-green algae) blooms in Clear Lake may be responsible for the toxicity. This hypothesis is circumstantially supported by the mid-summer timing of the toxicity (August 2007, July 2008, August 2011), which coincides with typical peak season of cyanobacterial bloom in Clear Lake.

Potential non-agricultural sources of toxicity are limited in the Cache Creek drainage above the sampling site, but include the small towns of Guinda and Rumsey, and the

Cache Creek Casino Resort, as well as Clear Lake. As part of the response to the observed exceedances, growers were informed of the exceedances. Because the cause of these exceedances was not identified, there was no targeted outreach to promote specific management practices. No toxicity was observed in ten of the eleven samples tested with *Ceriodaphnia* since the second exceedance in August 2008 that triggered the Management Plan.

There have been no pesticide exceedances in any of the 17 pesticide monitoring events conducted in Cache Creek from 2007-2011, and the single toxic sample since 2008 occurred more than 3 years after the last exceedance. If agriculture did contribute to the exceedances, subsequent monitoring results have demonstrated that the grower response was appropriate and successfully mitigated any problems from agricultural operations, and that water quality objectives for toxicity and pesticides are now being met. Based on these results and evaluations, the Coalition continues to recommend that implementation of the management plan should be considered completed.

***Ceriodaphnia* Toxicity Source Evaluation, Stony Creek**

Specific causes and sources could not be definitively identified for any of the *Ceriodaphnia* toxicity exceedances in Stony Creek. Based on the available evidence (evaluations of land uses, reported pesticide applications, the timing of irrigation and precipitation, chemistry and toxicity results, and chemical and toxicity characteristics), agricultural pesticides were unlikely to have contributed to the exceedances.

- No organophosphate or triazine pesticides were detected in any toxic samples, and the cause of the toxicity was not a monitored pesticide.
- Copper has been demonstrated not to be elevated to toxic concentrations in Stony Creek.
- Although some applied pesticides were identified as having a higher relative risk of contributing to observed toxicity (esfenvalerate and bifenthrin), these were determined to be unlikely causes based on the methods and timing of applications and the potential for agricultural runoff and transport during these events.

Other than esfenvalerate and bifenthrin, no other agricultural pesticides or specific crops were identified as having a significant potential to cause or contribute to the *Ceriodaphnia* toxicity observed in the Stony Creek samples. Pyrethroid pesticides are currently monitored in sediments determined to be toxic to sensitive invertebrates, and consequently no additional pesticides were recommended for analysis based on the evaluation of pesticide use in the drainage.

Several non-agricultural sources were identified that have potential to cause or contribute to the observed toxicity in Stony Creek: the Orland Sand and Gravel Corporation gravel mining operation, inappropriate use of old cars and asphalt for erosion control, illegal dumping, and residential runoff from the City of Orland.

As part of the response to the observed exceedances, growers were informed of the exceedances. Because the specific cause was not identified, there was no targeted outreach to promote pesticide-specific management practices.

The next step identified for this management plan was to continue and complete the management plan monitoring scheduled in 2011 for this location, and determine whether any continued monitoring is necessary. Because Stony Creek is not a representative drainage and sampling location for the Coalition, completion of the management plan requirements would also complete the monitoring requirements for this water body.

***Ceriodaphnia* Toxicity Source Evaluation, Lower Snake River**

Based on evaluations of monitoring results and reported pesticide applications, agriculture was determined to be a likely source of one of the two toxicity exceedances that triggered the Management Plan requirement (August 2008, September 2008). Chlorpyrifos was identified as the most probable cause of *Ceriodaphnia* toxicity in the August 2008 LSNKR sample and exceeded the Basin Plan objective of 0.015 ug/L. No other pesticides or analytes approached concentrations expected to have adverse effects on *Ceriodaphnia* in this sample. No other potential causes of toxicity were indicated by the monitoring results or follow-up sampling. The pesticide analyses and application data also supported chlorpyrifos as the likely cause of the *Ceriodaphnia* toxicity in the August 2008 sample, and walnuts were identified as the crop accounting for nearly all of the chlorpyrifos use in the drainage.

There are some non-agricultural sources identified that have the potential to cause or contribute to toxicity in Lower Snake River. These include urban and rural residential runoff, and treated wastewater discharge from the Live Oak wastewater treatment plant.

A third *Ceriodaphnia* toxicity exceedance was observed in August 2011. In a toxicity test conducted with *Ceriodaphnia*, the Coalition observed a reduction in survival of 100% compared to the control. The toxicity triggered initiation of TIE procedures and a serial dilution test using *Ceriodaphnia*. Toxicity was not persistent in the original sample, and the TIE was therefore inconclusive. This pattern is consistent with a rapidly degrading source of toxicity, indicating that the toxicity would probably not be persistent under ambient conditions. No organophosphate pesticides were detected in this sample, and the rapid degradation of the toxicity signal appears to rule out commonly applied organophosphate pesticides (which are not expected to degrade that quickly under controlled storage conditions). There was no increase in toxicity in the TIE PBO treated sample, indicating that pyrethroids were unlikely to be the cause. An aliquot of the toxic sample was also tested for copper (commonly applied in the drainage during this season) and was determined not to have toxic concentrations of copper (1.1 µg/L, compared to the hardness-based 4-day average objective of 10 µg/L for a hardness of 115 mg/L as CaCO₃). Data provided by the Glenn County Agriculture Department indicate that bifenthrin was applied aerially to 389 acres and by ground to 366 acres of almonds in the drainage, 19 days prior to the February 16 sample date. Esfenvalerate was applied to 69 acres of prunes (all ground applications), with the last application occurring 11 days before the sample date. Methidathion (an organophosphate pesticide) was applied to 36 acres of prunes 20 days prior to the February 16 sample date. Other pesticide applications included copper (811 acres), six different fungicides (615 acres), a variety of herbicides (645 acres) and petroleum oil dormant spray (865 acres). Based on toxicity to invertebrates and application amounts and timing, most of these applications represent a relatively low risk to be transported in toxic amount to the sampling location. The

applications of bifenthrin and esfenvalerate have the greatest potential for causing the observed toxicity to *Ceriodaphnia*, although this potential is discounted due to a lack of toxicity in the August 2011 sediment sample from this location, and lack of increased toxicity in the PBO treated sample of the TIE.

Based on the evaluations for source evaluations, the next Management Plan step is to survey Coalition members farming on identified high-priority parcels in the drainage, with a focus on practices relevant to the method and timing of chlorpyrifos applications during irrigation season will be the focus. The results of the survey will be used to determine the current degree of management practice implementation and to establish appropriate goals for additional implementation.

***Hyalella* Toxicity Source Evaluation, Cosumnes River**

Conclusions based on the evaluations in this report are as follows:

- The magnitude of sediment toxicity observed in the 2005 samples was very low and possibly due solely to statistical anomaly (i.e., false positive) as a result of low variability in both the sample and control treatment. Specific causes and sources of the initial toxicity exceedances could not be definitively identified based on the monitoring data. Rural residential runoff was identified as a potentially significant contributing source of the exceedances.
- Agriculture cannot be definitively identified or ruled out as a potential source of the exceedances, at least in part due to the low level of toxicity observed. Based on evaluations of land uses and reported pesticide applications, chlorpyrifos and three pyrethroid pesticides and five specific crops were identified as having the highest potential to cause or contribute to the observed exceedances. No additional pesticides were recommended for monitoring, based on the relative risks for pesticides applied in the drainage.

Based on the conclusions of this report, toxicity to *Hyalella* does not appear to be a significant problem in this drainage. However, the results of some toxicity tests were statistically significant and these represent exceedances of the Basin Plan narrative toxicity objective. Although there is agricultural use of pesticides with known potential to contribute to sediment toxicity, there is also significant potential from rural residential runoff. The low magnitude and uncertainty of the significance of the initially observed toxicity and the lack of toxicity in more recent sediment testing, as well as the uncertainty of the contributing role of agriculture, indicate that implementation of additional management practices is not warranted. Based on the conclusions of this report, the recommended next Management Plan step was to complete the sediment toxicity testing scheduled in 2011 for the Coalition's ILRP Assessment monitoring in the Lower Cosumnes River. If the results of sediment toxicity testing indicate that significant toxicity is still occurring, then the subsequent Management Plan step should be to set Management Practice implementation goals as required by the Management Plan. If 2011 results indicate no sediment toxicity, then the management plan should be considered completed based on the achievement of water quality objectives and the Coalition will submit a formal request to the Executive Officer of the Water Board to this effect.

Chlorpyrifos Source Evaluation, Lower Snake River

Based on evaluations of reported pesticide applications and predominant crops in the drainage, agriculture was a likely source of the chlorpyrifos exceedances observed in this water body. The next Management Plan step is to survey Coalition members farming on identified high-priority parcels in the drainage. Based on the conclusions of this report, practices relevant to the method and timing of chlorpyrifos applications during irrigation season should be the focus. The results of this survey will be used to determine the current degree of management practice implementation and to establish appropriate goals for additional implementation.

Walnuts account for the majority of agricultural applications relevant to the observed exceedances, with much smaller amounts used by almonds, prunes, peaches, and pecans. These crops should be the priority for surveys and outreach.

The Lower Snake River drainage also contains some urban and rural residential acreage that represents a potential non-agricultural source of chlorpyrifos in the drainage. However, changes in the retail availability of chlorpyrifos are expected to have substantially reduced the potential for contributions from this source. Other non-agricultural sources (rights-of-way, public health, landscape maintenance) were considered unlikely to have contributed to the exceedances.

Malathion Source Evaluation, Willow Slough

Based on evaluations of reported pesticide applications and predominant crops in the drainage, agriculture is a potential contributing source of some of the observed malathion exceedances. Alfalfa accounts for the nearly all of the agricultural applications relevant to two of the four observed exceedances, and it was the only crop identified in the drainage with a significant potential to contribute to the exceedances. This crop should be the priority for outreach and implementation of any required additional management practices.

Non-agricultural uses of malathion for structural pest control were also determined to have some limited potential to have caused or contributed to observed exceedances. In addition to the uses reported in the CDPR PUR database, unreported urban and rural residential use also represents a potentially significant non-agricultural source of malathion exceedances in this drainage. These unregulated and unreported uses probably caused or contributed to at least two of the four observed exceedances. If additional management of malathion exceedances is considered necessary, these non-agricultural sources will be addressed through the Regional Water Board's urban runoff regulatory programs.

Coalition participants farming on high-priority parcels in the drainage have already been surveyed for crop type, pesticide use, and management practice implementation, and the Coalition has already implemented additional outreach to alfalfa growers in the subwatershed. The next Management Plan step will be to establish the specific goals and schedule for implementation of additional management practices and outreach.

Malathion Source Evaluation, Gilsizer Slough

Evaluations of observed exceedances and reported pesticide applications indicate agriculture is not a contributing source of the observed malathion exceedances. There were no reported agricultural or non-agricultural uses of malathion in the PUR data for the Gilsizer Slough drainage or in the surrounding Sutter county in the months prior to the exceedances. In fact, there were no reported uses for November through March for 2008-2010. Based on these findings, the probable source of the detected malathion is urban and rural residential uses and runoff (which are not reported in the PUR database). These uses represent the only significant unreported potential source of malathion in the drainage and there were no applications reported preceding the exceedances.

These results and evaluations support a finding that implementation of the management plan should be considered complete based on a determination that agriculture did not cause or contribute to the exceedances. Based on the conclusions of this report, the next Management Plan step will be for the Coalition to submit a formal request to this effect to the Executive Officer of the Water Board.

Nitrate Source Evaluation, Ulatis Creek

Evaluations of observed exceedances and available monitoring data indicated that agriculture is not a contributing source of the observed nitrate exceedances. Exceedances occurred when the potential for agricultural runoff of excess nitrate was low and when the Ulatis Creek flows were affected primarily by Vacaville's Easterly WWTP. Additionally, the high degree of nutrient management practices implemented in the drainage further decreases the potential for agriculture to cause or contribute to the observed nitrate exceedances. Based on the monitoring data from the ILRP and from the Easterly WWTP, agriculture, urban runoff, and septic systems do not appear to be significant sources of elevated nitrate in Ulatis Creek. Based on these evaluations, elevated nitrate in treated wastewater from the WWTP appears to be the sole cause of the nitrate exceedances in Ulatis Creek.

These results and evaluations support a finding that implementation of the management plan should be considered complete based on a determination that agriculture does not cause or contribute to the exceedances. Based on the conclusions of this report, the next Management Plan step was for the Coalition to submit a formal request to this effect to the Executive Officer of the Water Board. This request was approved and the Management Plan has been completed.

Source Evaluation Updates

Hyaella toxicity in Cosumnes River

Based on the conclusions of 2011 Source Evaluation Report, toxicity to *Hyaella* does not appear to be a significant problem in this drainage and the next Management Plan step should be to complete the sediment toxicity testing scheduled in 2011 for the Coalition's ILRP Assessment monitoring in the Lower Cosumnes River. Two samples were tested for sediment toxicity to *Hyaella* in the Cosumnes River in 2011, as scheduled in the approved monitoring plan. Neither of these two sediment samples was toxic to *Hyaella*. Based on the recommendations of the 2011 Source Evaluation Report, the Management

Plan should be considered completed based on the achievement of water quality objectives. The next step is for the Coalition to submit a formal request to this effect to the Executive Officer of the Central Valley Regional Water Quality Control Board.

Hyalella Toxicity in Stony Creek

Based on the conclusions of the 2010 Source Evaluation Report, no specific likely cause of *Hyalella* toxicity could be identified. Because the magnitude of observed toxicity exceedances was relatively low and subsequent samples did not exhibit toxicity, it was proposed that the next step should be to monitor again for sediment toxicity at the original location during assessment monitoring planned for 2011. If significant reductions $\geq 20\%$ of control are observed, the samples would have been analyzed for pyrethroid pesticides (consistent with the current MRP requirements) to determine whether they contributed to the toxicity. If no toxicity is observed, the Management Plan for sediment toxicity in Stony Creek would be considered to be complete. Two samples were analyzed for *Hyalella* toxicity in 2011, as scheduled in the approved monitoring plan. Neither of these two sediment samples was toxic to *Hyalella*. Based on the recommendations of the 2011 Source Evaluation Report, the Management Plan should be considered completed based on the achievement of water quality objectives. The next step is for the Coalition to submit a formal request to this effect to the Executive Officer of the Central Valley Regional Water Quality Control Board.

Selenastrum Toxicity in Butte Slough

Specific causes and sources of the toxicity exceedances were not identified in the 2010 Source Evaluation Report, but agriculture was identified as a potential contributor. Based on evaluations of land uses and reported pesticide applications, three herbicides (propanil, oxyfluorfen, and thiobencarb) were identified to have a significant potential to cause or contribute to the observed exceedances. The primary crops using these herbicides in the drainage were rice, almonds, and walnuts.

Monitoring of propanil and thiobencarb conducted by the California Rice Commission (CRC) indicates that these pesticides have not been found in concentrations toxic to *Selenastrum*. Monitoring of oxyfluorfen by SVWQC indicated that oxyfluorfen has rarely been detected at concentrations potentially toxic to *Selenastrum* at other locations. It was recommended that oxyfluorfen should be monitored during high-use months in Butte Slough in 2011 to determine whether it was causing *Selenastrum* toxicity.

In 2011, the Coalition implemented monitoring coordinated in Butte Slough with the CRC to analyze for the pesticides with the highest potential to contribute to the observed toxicity (propanil, oxyfluorfen, and thiobencarb). Six samples were analyzed for *Selenastrum* toxicity and oxyfluorfen in 2011. None of these samples were toxic, and no oxyfluorfen was detected in these samples. Based on these monitoring results and the findings of the previous source evaluations, the Management Plan should be considered completed based on the achievement of water quality objectives. The next step is for the Coalition to submit a formal request to this effect to the Executive Officer of the Central Valley Regional Water Quality Control Board.

OUTREACH DOCUMENTATION

The Coalition and its subwatersheds, working with the Coalition for Urban/Rural Environmental Stewardship (CURES) continue to work with the Central Valley Regional Water Board and its staff to implement the Coalition's *Landowner Outreach and Management Practices Communications Process* and the Coalition's approved Management Plan to address exceedances of water quality objectives identified in the Sacramento Valley. The primary strategic approach taken by the Coalition has been to notify and educate the subwatershed landowners, farm operators, and/or wetland managers about the cause(s) of toxicity and/or exceedance(s) of water quality objectives or ILRP trigger limits. Notifications have initially focused on (but have not been not limited to) growers who operate directly adjacent to or within close proximity to the waterway. The broader outreach program, which includes both grower meetings and the notifications distributed through direct mailings, encourages the adoption of BMPs and modification of the uses of specific farm and wetland inputs to prevent movement of constituents of concern into Sacramento Valley surface waters.

To identify those landowners operating in high priority lands, the Coalition identifies the assessor parcels and subsequently the owners of agricultural operations nearest the water bodies of interest. From the list of assessor parcel numbers, the Coalition identifies its members and mails to them an advisory notice along with information on how to address the specific exceedances using BMPs. This same approach has been used to conduct management practice surveys in areas targeted by the Management Plan.

Descriptions of the outreach and education activities conducted by the Coalition's subwatersheds in 2011 are provided in **Appendix A** (*Summary of 2011 Management Plan Outreach Efforts*). These have been previously reported in additional detail in the Coalition's 2011 Annual Monitoring Report. The Coalition is currently in the process of developing a process to more closely track outreach related to the specific Management Plan requirements.

MANAGEMENT PRACTICES INVENTORIES AND MEMBER SURVEYS

Inventories of management practices have been conducted by the Coalition in several contexts for the ILRP. For 2011, surveys were conducted to establish an implementation baseline for 7 water bodies with management plan requirements for registered pesticides or toxicity with an identified cause. The results of these surveys were reported in 2011 as part of the specific Management Practice Implementation Performance Goals documents for each Management Plan element. The water body- and constituent-specific baselines from these surveys form the basis for setting goals for management practices implementation for the Management Plan. Additionally, reports summarizing the results of the grower surveys conducted for the ILRP were developed by the Coalition and submitted in December 2011.

RECOMMENDATIONS FOR MANAGEMENT PLAN MONITORING

Special project monitoring for the Management Plan includes specific targeted monitoring or studies to address implementation of a TMDL or implementation of a Management Plan that results from exceedances. Management plan monitoring is generally conducted to support source identification or effectiveness assessment, and may

include surveys of agricultural practices as well as water column or sediment sampling. The monitoring sites, special study parameters, management plan strategy, implementation steps, and schedule for management plans have been presented previously in the Sacramento Valley Coalition Group's approved 2009 Management Plan, the April 2010 and April 2011 Water Quality Management Plan Progress Reports, and the Addendum to Sacramento Valley Water Quality Coalition Management Plan: Chlorpyrifos and Diazinon TMDLs.

The need for management plan monitoring is determined primarily based on the potential to provide useful information for source identification, in establishing causes of toxicity, and to evaluate management practice effectiveness. This monitoring may consist of water column or sediment sampling, field evaluations, or surveys of agricultural practices. With the exception of pathogen indicator Management Plans for 19 sites, all Management Plans have monitoring scheduled for source evaluation and/or compliance in 2012. Monitoring proposed for 2012 was submitted to and approved by the Central Valley Regional Water Quality Control Board's Executive Officer in 2011. The Coalition's approved 2012 monitoring plan includes the recommended monitoring schedule for the Management Plan (**Appendix B**), as well as monitoring required in 303(d)-listed water bodies and TMDLs for chlorpyrifos and diazinon, legacy OC pesticides, and Group A OC pesticides (Attachment D (Site Specific Monitoring Tables) of the 2012 ILRP Monitoring Plan).

Based on the evaluations of 2011 Management Plan monitoring results and source evaluations presented earlier in this document, the Coalition is recommending continuation or modifications to the Management Plan requirements and monitoring. In eight cases, continuation of the current approved Management Plan monitoring is recommended. In nineteen cases, the recommendations are for ending management plan requirements or modifying the monitoring based on 2011 results and source evaluations. These recommendations are summarized in Table 3.

Table 3. Recommendations for Management Plan Monitoring Modifications in 2012

| Monitoring Recommendations | Management Plan Category | Analyte | Water Body |
|--|--------------------------|--------------------------------|--|
| Continue scheduled monitoring based on exceedances in 2011; | Registered Pesticides | Chlorpyrifos | Coon Creek Pine Creek |
| | | Diazinon | Gilsizer Slough |
| | Toxicity | Toxicity - <i>Ceriodaphnia</i> | Lower Snake River Willow Slough |
| | | Toxicity - <i>Hyalella</i> | Z Drain |
| Continue based on recent exceedance (Jan 2012); | Registered Pesticides | Diuron | Ulatis Creek |
| Recommend upstream tributary sampling to establish natural background condition; | DO and pH | pH | Pope Creek |
| Request to end MP based on elevated natural background groundwater sources; Continue monitoring in Assessment years; | Salinity | Boron | Willow Slough |
| Request to end MP based on no exceedances in 2011; | Registered Pesticides | Chlorpyrifos | Lower Snake River Walker Creek Willow Slough |
| | | Diuron | Willow Slough Gilsizer Slough |
| | | Malathion | Ulatis Creek Willow Slough |
| | Toxicity | Toxicity - <i>Ceriodaphnia</i> | Walker Creek |
| | | Toxicity - <i>Hyalella</i> | Cosumnes River Stony Creek |
| | | Toxicity - <i>Selenastrum</i> | Butte Slough Ulatis Creek Willow Slough |
| | | Toxicity - <i>Ceriodaphnia</i> | Cache Creek |
| Request to end MP based on non-ag sources of toxicity; | Toxicity | Toxicity - <i>Ceriodaphnia</i> | Cache Creek |
| Request to limit sampling to Assessment years based on no exceedances in 2011; | Legacy Pesticides | DDE | Freshwater Creek Willow Slough |
| | | DDE/DDT | Grand Island |

PROPOSED GOALS FOR IMPLEMENTATION OF MANAGEMENT PRACTICES

The Coalition is required to develop performance goals and a schedule for implementation of management practices when it is determined that agriculture is a contributor to exceedances of water quality objectives or ILRP trigger limits. These goals are developed as independent documents for specific Management Plan elements. Management Practice Implementation Performance Goals (MPIPG) documents planned for 2010 were rescheduled and submitted in 2011, and most are in review by the Central Valley Regional Water Quality Control Board. These included implementation for legacy pesticides (7 water bodies), registered pesticides (5 water bodies), and toxicity (4 water bodies). The submitted MPIPGs are listed in Table 4.

Table 4. Management Practices Implementation and Performance Goals Submitted in 2011

| Management Plan Category | Analyte | Water Body |
|---------------------------------|---------------------|----------------------------|
| Registered Pesticides | Diazinon | Gilsizer Slough |
| | Diuron | Ulati Creek |
| | Malathion | Ulati Creek |
| | Chlorpyrifos | Walker Creek |
| | Chlorpyrifos | Willow Slough |
| | Diuron | Willow Slough ¹ |
| Toxicity | <i>Selenastrum</i> | Ulati Creek |
| | <i>Ceriodaphnia</i> | Walker Creek |
| | <i>Ceriodaphnia</i> | Willow Slough |
| | <i>Hyalella</i> | Z-Drain |
| | <i>Selenastrum</i> | Willow Slough ¹ |
| | <i>Hyalella</i> | Z-Drain |

1 Submitted April 2012

UPDATE TO REQUIRED MANAGEMENT PLANS

This section provides an update to the Coalition's currently approved Management Plan. The existing Management Plan approved in 2009 included elements based on monitoring conducted from 2005 through September 2007, and was last updated in 2011 with data collected by the Coalition through September 2010. Data collected by the Coalition through September 2011 were evaluated to update the management plan requirements for this Progress Report. Requirements for new management plan elements were based on observations of more than one exceedance in a three-year period, as required by the ILRP. Proposed tasks and schedules to implement the new elements were developed. If modifications to the existing scope or schedule for implementation in the approved Management Plan were proposed, these are described.

New Management Plan Elements

There are four new Management Plan requirements in four different subwatersheds triggered by exceedances observed in Coalition monitoring conducted from October 2010 through September 2011. Two of the new required Management Plans were for registered pesticides, and two were for trace metals with no significant agricultural uses. There were no new management plans for low priority Management Plan categories (salinity, DO, pH, and pathogen indicators). The new Management Plan requirements based on monitoring data through September 2011 are listed in Table 5.

Table 5. Additions to the Management Plan for Data through September 2011

| Subwatershed | Water Body | Category | Analyte | Priority |
|---------------------|--------------------|-----------------------|----------------|------------------|
| Colusa Glenn | Colusa Basin Drain | Registered Pesticides | Malathion | HIGH |
| Solano | Ulati Creek | Registered Pesticides | Chlorpyrifos | HIGH |
| Sacramento Amador | Grand Island Drain | Trace Metals | Arsenic | MED ¹ |
| Pit River | Pit River | Trace Metals | Lead | MED ² |

1 No current agriculture use of arsenic

2 No current agriculture use of lead

Implementation Tasks and Schedule for New Elements

Tasks and schedules to implement the new management plan requirements were developed to be consistent with the Coalition's existing Management Plan, unless otherwise specified. In cases where it was possible, the existing schedules for a category were adopted without modification. In others, the schedules were adjusted to conform to agricultural cycles, Coalition reporting schedules, or other ILRP programmatic constraints. The only modifications to the approaches or scope for specific Management Plan categories are the elimination of the "Review Regulatory Basis" task for analytes if this has already been completed or is not necessary for the specific parameter.

The tasks and schedules proposed for the new Management Plan elements are provided in Table 6.

Proposed Changes to the Management Plan

No significant changes to the scope of the Management Plan are proposed in this Progress Report. However, there have been a number of significant and minor changes requested by the Central Valley Regional Water Quality Control Board Executive Officer and staff, and/or proposed by the Coalition since the 2009 Management Plan was originally approved. These include:

- Addition of an approach to address the nutrient category of analytes
- Modification of the approach for the pathogen indicator category
- Schedule modifications for ongoing Management Plan element tasks and deliverables

The Central Valley Regional Water Quality Control Board staff has proposed to incorporate details and additional changes in the Management Plan approach into the Coalition's Waste Discharge Requirements (WDR) being developed for the Long-Term Irrigated Lands Regulatory Program. Development of the WDR by the Central Valley Regional Water Quality Control Board staff will begin in 2012. Proposed changes include the Management Plan approaches for pathogen indicators, dissolved oxygen and pH, and legacy organochlorine pesticides.

Deliverables and Schedule for Ongoing Management Plan Elements

Deliverables to be completed in 2012 for existing Management Plan elements are listed in the December 5, 2011 Memorandum from the Central Valley Regional Water Quality Control Board's Executive Officer (**Appendix C**). The tasks for these existing Management Plan elements have been provided previously.

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Table 6. Tasks for New Management Plan Elements

| Waterbody (Subwatershed) | Analyte (Category) | Management Plan Task | Element Detail | Responsible Entities | Task End |
|-------------------------------------|--|--|--|---------------------------------|-----------------|
| Ulatis Creek (Solano) | Chlorpyrifos (Registered Pesticides) | Review pesticide application data | Review pesticide application data for 3 most recent years for drainage | SVWQC; AC | |
| | | Identify potential sources | Identify agricultural and any potential non-agricultural sources explaining the exceedances | SVWQC; SWC; AC | |
| | | Determination of likely agricultural sources | Determination of likely agricultural sources of pesticide(s) of concern | SVWQC; SWC; AC; ILRP | |
| | | Source Evaluation Report | <u>Source Evaluation Report</u> : Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices | SVWQC; SWC | 06/29/2012 |
| | | Survey Coalition members | If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices | SWC; SVWQC | |
| | | Develop list of Management Practices | Develop list of crop-specific potential Management Practices specific to pesticides | SWC; SVWQC; LOG | |
| | | Meet with landowners and growers | Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals. | SVWQC; SWC; AC | |
| | | Set goals and schedule for implementation | <u>MPIPG</u> : Set goals and schedule for implementation of specific additional Management Practices | SWC; SVWQC | TBD |
| | | Implement additional Management Practices | Implement additional Management Practices per established Management Plan goals | LOG | |
| | | Conduct follow-up implementation surveys | Follow-up surveys for tracking implementation progress | SWC; SVWQC | |
| Conduct effectiveness monitoring | Conduct effectiveness monitoring for tracking goals established for implementation | SVWQC | | | |

| Waterbody (Subwatershed) | Analyte (Category) | Management Plan Task | Element Detail | Responsible Entities | Task End |
|-----------------------------|---|--|--|-------------------------|------------|
| Colusa Drain | Malathion (Registered Pesticides) | Review pesticide application data | Review pesticide application data for 3 most recent years for drainage | SVWQC; AC | |
| | | Identify potential sources | Identify agricultural and any potential non-agricultural sources explaining the exceedances | SVWQC; SWC; AC | |
| | | Determination of likely agricultural sources | Determination of likely agricultural sources of pesticide(s) of concern | SVWQC; SWC; AC; ILRP | |
| | | Source Evaluation Report | <u>Source Evaluation Report</u> : Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices | SVWQC; SWC | 06/29/2012 |
| | | Survey Coalition members | If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices | SWC; SVWQC | |
| | | Develop list of Management Practices | Develop list of crop-specific potential Management Practices specific to pesticides | SWC; SVWQC; LOG | |
| | | Meet with landowners and growers | Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals. | SVWQC; SWC; AC | |
| | | Set goals and schedule for implementation | <u>MPIPG</u> : Set goals and schedule for implementation of specific additional Management Practices | SWC; SVWQC | TBD |
| | | Implement additional Management Practices | Implement additional Management Practices per established Management Plan goals | LOG | |
| | | Conduct follow-up implementation surveys | Follow-up surveys for tracking implementation progress | SWC; SVWQC | |
| | | Conduct effectiveness monitoring | Conduct effectiveness monitoring for tracking goals established for implementation | SVWQC | |

| Waterbody (Subwatershed) | Analyte (Category) | Management Plan Task | Element Detail | Responsible Entities | Task End |
|-----------------------------|--------------------------|--|--|-------------------------|------------|
| Grand Island Drain | Trace Metals, Arsenic | Review pesticide application data | Review pesticide application data for 3 most recent years for drainage | SVWQC; AC | |
| | | Identify potential sources | Identify agricultural and any potential non-agricultural sources explaining the exceedances | SVWQC; SWC; AC | |
| | | Determination of likely agricultural sources | Determination of likely agricultural sources of pesticide(s) of concern | SVWQC; SWC; AC; ILRP | |
| | | Source Evaluation Report | Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices | SVWQC; SWC | 07/31/2012 |
| | | Survey Coalition members | If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices | SWC; SVWQC | |
| | | Develop list of Management Practices | Develop list of crop-specific potential Management Practices specific to pesticides | SWC; SVWQC; LOG | |
| | | Meet with landowners and growers | Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals. | SVWQC; SWC; AC | |
| | | Set goals and schedule for implementation | MPIPG: Set goals and schedule for implementation of specific additional Management Practices | SWC; SVWQC | TBD |
| | | Implement additional Management Practices | Implement additional Management Practices per established Management Plan goals | LOG | |
| | | Conduct follow-up implementation surveys | Follow-up surveys for tracking implementation progress | SWC; SVWQC | |
| | | Conduct effectiveness monitoring | Conduct effectiveness monitoring for tracking goals established for implementation | SVWQC | |

| Waterbody (Subwatershed) | Analyte (Category) | Management Plan Task | Element Detail | Responsible Entities | Task End |
|-----------------------------|-----------------------|--|--|-------------------------|------------|
| Pit River | Trace Metals | Review pesticide application data | Review pesticide application data for 3 most recent years for drainage | SVWQC; AC | |
| | | Identify potential sources | Identify agricultural and any potential non-agricultural sources explaining the exceedances | SVWQC; SWC; AC | |
| | | Determination of likely agricultural sources | Determination of likely agricultural sources of pesticide(s) of concern | SVWQC; SWC; AC; ILRP | |
| | | Source Evaluation Report | Source Evaluation Report: Prioritize potential sources by reported use of pesticides of concern, percentage of crops from annual crop reports or permit data, pesticide applications, irrigation practices, and current management practices | SVWQC; SWC | 07/31/2012 |
| | | Survey Coalition members | If agriculture is identified as a potential source, conduct surveys of Coalition members for current level of implementation of relevant management practices | SWC; SVWQC | |
| | | Develop list of Management Practices | Develop list of crop-specific potential Management Practices specific to pesticides | SWC; SVWQC; LOG | |
| | | Meet with landowners and growers | Meetings with individual landowners and growers to discuss exceedances, possible sources, and management plan requirements and goals. | SVWQC; SWC; AC | |
| | | Set goals and schedule for implementation | MPIPG: Set goals and schedule for implementation of specific additional Management Practices | SWC; SVWQC | TBD |
| | | Implement additional Management Practices | Implement additional Management Practices per established Management Plan goals | LOG | |
| | | Conduct follow-up implementation surveys | Follow-up surveys for tracking implementation progress | SWC; SVWQC | |
| | | Conduct effectiveness monitoring | Conduct effectiveness monitoring for tracking goals established for implementation | SVWQC | |

SVWQC=Coalition; SWC=Subwatershed Coordinators; AC=Agricultural Commisioners; ILRP=Water Board ILRP Staff; LOG=Landowners and Growers; CVS=CV-SALTS

TMDL COMPLIANCE REPORTING

Currently, TMDL compliance monitoring and reporting by the Coalition is limited to the TMDLs for chlorpyrifos and diazinon discharges to the Sacramento and Feather Rivers and the Sacramento-San Joaquin Delta, and for the Clear Lake Nutrient TMDL.

Chlorpyrifos and Diazinon TMDL

The Basin Plan amendments (R5-2007-0034 and R5-2006-0061) require dischargers, either individually or as a coalition, to submit a management plan that describes the actions that they will take to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations by the required compliance dates. The Coalition's Management Plan (SVWQC 2009) includes a process for source identification and identification of additional management practices that may be needed to achieve additional reductions in diazinon and chlorpyrifos discharges. Approximately quarterly meetings are held with the Regional Water Board in order to evaluate progress in meeting these reductions, and revisions to the Management Plan will be made if sufficient progress is not being achieved.

The Coalition continues to monitor chlorpyrifos and diazinon according to the SVWQC 2010-2014 MRP Order³ and the Coalition's approved 2012 ILRP Monitoring schedule. The monitoring locations are representative of discharges to the Sacramento River, Feather River, and Delta. This monitoring will continue to provide information on the wide range of discharges and hydrologic conditions likely to occur in the Sacramento Valley watershed and Delta. The Coalition's 2010 MRP and the *Addendum to Sacramento Valley Water Quality Coalition Management Plan: Chlorpyrifos and Diazinon TMDLs* present the technical approach and rationale for the monitoring. The schedule for TMDL monitoring at these locations is also included in the 2012 ILRP Monitoring Plan (the 2012 monitoring schedule specifically for TMDLs and the Management Plan is provided in **Appendix B**).

The seven Basin Plan requirements for TMDL compliance monitoring are:

1. Determine compliance with established water quality objectives and loading capacities in Sacramento-San Joaquin Delta and the Sacramento and Feather rivers;
2. Determine compliance with established waste load allocations and load allocations for diazinon and chlorpyrifos;
3. Determine the degree of implementation of management practices to reduce off-site migration of diazinon and chlorpyrifos;
4. Determine the effectiveness of management practices and strategies to reduce off-site migration of diazinon and chlorpyrifos;

³ Monitoring And Reporting Program Order No. R5-2009-0875 for Sacramento Valley Water Quality Coalition Under Amended Order No. R5-2006-0053 Coalition Group Conditional Waiver Of Waste Discharge Requirements For Discharges From Irrigated Lands. California Regional Water Quality Control Board Central Valley Region, Rancho Cordova, California. December 2009.

5. Determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts;
6. Determine whether the discharge causes or contributes to a toxicity impairment due to additive or synergistic effects of multiple pollutants; and
7. Demonstrate that management practices are achieving the lowest pesticide levels technically and economically achievable.

The Coalition's approach in addressing these requirements has been described previously in the *Addendum to Sacramento Valley Water Quality Coalition Management Plan: Chlorpyrifos and Diazinon TMDLs*.

The results of the Coalition's TMDL compliance monitoring through 2010 were reported in *Management Of Chlorpyrifos And Diazinon Discharges To The Sacramento And Feather Rivers And The Sacramento-San Joaquin Delta: 2009-2010 TMDL Compliance Monitoring Report* (SVWQC 2011). The conclusions of this report of TMDL compliance monitoring results were as follows:

Based on the results of ILRP and TMDL monitoring, compliance with the TMDL water quality objectives and load allocations is achieved in the overwhelming percentage of samples. These results demonstrate that outreach and education, the resulting changes in diazinon use patterns and changes in management practices, and modifications to labeling have been successful in reducing instream ambient concentrations of chlorpyrifos and diazinon to the degree required by the TMDL. The relatively low rate of exceedances since the beginning of the ILRP suggests that much of the changes were successfully implemented prior to or soon after 2005. Although exceedances are still being observed, the overall trend from 2005-2010 has been a decrease in the rate of annual exceedances.

Continuing efforts to further reduce exceedances are being implemented through the Coalition Management Plan for sites that have triggered the Management Plan requirement for these pesticides. Additionally, the Coalition aggressively investigates all exceedances and conducts follow-up contacts with growers reporting applications with the potential to cause specific observed exceedances. These combined efforts are expected to continue the decreasing trend in the number of exceedances for these pesticides.

These conclusions still stand as of September 2011. The results of monitoring conducted at TMDL compliance sites from October 2010-September 2011 continued the pattern of infrequent exceedances (6 chlorpyrifos and 1 diazinon exceedance in 94 samples), and support the conclusions of the January 2011 compliance report.

Clear Lake Nutrient TMDL

At the request of the Central Valley Regional Water Quality Control Board (Regional Board) staff, the Sacramento Valley Water Quality Coalition (Coalition) provided information to assist them in preparation of its 2012 update of the Clear Lake Nutrient TMDL. In 2006, the Regional Board adopted the TMDL with the goal of achieving a 40% reduction in non-point source contributions. Nonpoint source dischargers – the U.S. Bureau of Land Management, the U.S. Forest Service, irrigated agricultural dischargers

and Lake County – were given a load allocation of 85,000 kg phosphorus per year. As specified in the TMDL responsible parties may choose to estimate their phosphorus loading through monitoring.

A Memorandum of Understanding (MOU) developed in October 2008 documented a roadmap for a collective approach among all the “responsible parties” for proceeding with the development of the Nutrient TMDL and resulted in a five (5) year plan. The Coalition in coordination with the Lake County Farm Bureau’s Lake County Farm Bureau Education Corporation (LCFBEC) conducted water quality monitoring as part of the 5-year plan. The Coalition’s November 2011 memorandum⁴ to the Water Board provides the results of that monitoring and information on management practices documented by the LCFBEC in 2007, current efforts to increase the use of management practices and additional goals the LCFBEC will consider as more becomes know about the causes of algae blooms in Clear Lake.

SUMMARY: EVALUATION OF PROGRESS

The Coalition’s Management Plan approach implements the processes and elements needed to comply with the requirements of the Monitoring and Reporting Program (MRP) adopted by the Regional Water Board in December 2009 (*Order No. R5-2009-0875*). These requirements are addressed by specific deliverables or processes of the Management Plan as described below:

- 1) Identification of potential sources of the observed exceedances, and identification of the irrigated agriculture source that may be the cause of the water quality problem, or a study design to determine the source.
This requirement is addressed by the Source Evaluation Reports developed for site-specific Management Plan elements (e.g., pesticides or toxicity in specific drainages) or regionally for some categories of Management Plan parameters (e.g., pathogen indicators).
- 2) Identification of management practices to be implemented to address the exceedances.
- 3) Management practice implementation schedule. (Implementation may occur through another Water Board regulatory program designed to address the specific exceedances.)
- 4) Management practice performance goals with a schedule.
Requirements 2) – 4) are being addressed in Management Practice Implementation and Performance Goals and schedule documents that are developed after agriculture is determined to be a probable contributor to exceedances of ILRP trigger limits. These are developed based on the results of surveys conducted to estimate a baseline level of management practice implementation in the specific drainages.

⁴ *Memorandum: Clear Lake Nutrient TMDL Progress Information Request.* November 23, 2011. Prepared for the Sacramento Valley Water Quality Coalition by Larry Walker Associates, Davis, CA.

- 5) Waste-specific monitoring schedule.
A monitoring plan and schedule for Management Plan monitoring and routine Core and Assessment monitoring is prepared annually for review and approval by the Water Board. The Coalition is currently implementing the approved monitoring plan for 2011.
- 6) A process and schedule for evaluating management practice effectiveness. *The process and schedule is established in the Management Practice Implementation and Performance Goals and schedule documents developed for specific Management Plan requirements (e.g., for diuron in the region represented by Ulatis Creek). The overall effectiveness of the recommended practices and achievement of implementation goals will be assessed based on monitoring results and compliance with relevant water quality objectives, ILRP trigger limits, or relevant toxicity benchmarks.*
- 7) Identification of the participants and Coalition Group(s) that will implement the Management Plan.
The responsibilities to implement specific tasks are described generally in the Coalition's Monitoring Plan and specifically in the detailed descriptions and schedule of Management Plan tasks updated annually with this Management Plan Progress Report. Responsibilities for management practice implementation are further specified in Management Practice Implementation and Performance Goals documents.
- 8) An identified routine schedule of reporting to the Central Valley Water Board.
This requirement is addressed by the numerous specific reporting requirements for the Management Plan, including Management Plan Progress Reports, Source Evaluation Reports, Management Practice Implementation and Performance Goals documents, and Management Practices Survey Report(s). Additionally, the Coalition conducts regular (approximately quarterly) meetings with designated Water Board ILRP staff to discuss Management Plan progress, products, and decisions.

In general terms, the processes to meet the requirements of the Management Plan can be distilled down to source evaluation; identification of management practices needed to address exceedances; implementation of management practices; evaluation of effectiveness; and regular assessment of progress toward completion of the management plan. The Coalition has successfully developed and implemented processes for source evaluation and identification of management practices needed. Source evaluations have been completed and provided to the Water Board for a large number of management plan requirements for pesticides, toxicity, pathogen indicator, and legacy organochlorine pesticide exceedances.

Changes in practices and implementation of additional management practices to minimize discharges of waste contributing to exceedances have been ongoing since the ILRP was initiated, due to the outreach and education efforts of the Coalition and its members and partners. Specific trackable goals (Management Practice Implementation and Performance Goals) for a number of pesticide and toxicity Management Plans were developed and submitted to the Water Board in 2011 and are still under review by the

Water Board. Further implementation needed to meet these goals has already begun in advance of Water Board approval. Assessment of progress toward specific implementation goals will be conducted regularly as documented in individual MPIPG documents (when they are approved). Meeting water quality objectives is the ultimate goal and measure of effectiveness of the implemented management practices and progress for the Management Plan. Water quality monitoring to measure this progress is ongoing and assessed annually, and has resulted in the completion of several management plans to date. As measured by the completion and ongoing work on specific Management Plan tasks and deliverables summarized above and documented throughout this Progress Report, the Coalition is making good progress toward meeting all of these requirements and expects to achieve the goals of the Management Plan.

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Appendix A: Summary of 2011 Management Plan Outreach Efforts

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # Attending Meeting/ # Successfully Contacted by Phone/ # on Mailing Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|--|--|---|--|--|--|
| Spring 2011 | SCRCD | BMPs | BYSWQC Members | On Mailing Distribution List | Article/Newsletter | | BYSWQC Quarterly Newsletter |
| Summer 2011 | SCRCD | BMPs | BYSWQC Members | On Mailing Distribution List | Article/Newsletter | | BYSWQC Quarterly Newsletter |
| Fall 2011 | SCRCD | BMPs | BYSWQC Members | On Mailing Distribution List | Article/Newsletter | | BYSWQC Quarterly Newsletter |
| Nov/Dec 2011 | Yuba/Sutter Ag Department | BMPs | BYSWQC Members | Sutter County Ag Department Grower List | Flyer | | BMP Handbook |
| Winter 2012 | SCRCD | BMPs | BYSWQC Members | On Mailing Distribution List | Article/Newsletter | | BYSWQC Quarterly Newsletter |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) | Document(s) Provided? (Select Y/N) |
|------------------|---|--|---|---|-------------------------------------|-------------------------------|--|------------------------------------|
| 11/1/10 | Natural Resources Conservation Service & Glenn County Resource Conservation District | Glenn County Conservation News; Agricultural Water Enhancement Program (AWEP) | Glenn County NRCS/RCD Clients | 524 | Newsletter | | Glenn County Conservation News, Fall 2010 | Yes |
| 11/9/10 | Colusa Glenn Subwatershed and Natural Resources Conservation Service | Irrigated Lands Regulatory Program history and future, Agricultural Water Enhancement Program (AWEP) | Colusa County Industrial Park, City of Colusa | 8 | None | | | No |
| 12/3/10 | Colusa Glenn Subwatershed Program | Annual Newsletter | Colusa & Glenn County irrigated landowner participants | 1739 | Newsletter | | Colusa Glenn Subwatershed Program, News and Information: Irrigated Lands Regulatory Program, 2010 Fall/Winter Issue | Yes |
| 12/8/10 | Glenn County Ag Department | Grower Meeting; Round-Up Resistant Weed Control, Electronic Filing of Regulatory Forms, Rice Pest Management, Noxious Weeds ID and Control, Monitoring Results and Long-Term ILRP | Ord Bend Community Hall, Ord Bend | 67 | Agenda, PowerPoint | | Glenn County Department of Agriculture, 2010 Annual Grower Meeting | Yes |
| 12/9/10 | Colusa County Ag Department | Grower Meeting; 2011 Pesticide Program Changes and Issues, Pesticides in Surface Water, is the news better yet?, Worker Safety Regulations, Electronic Use Reporting, ILRP and Coalition Activities, DOT Regulations for Hazardous Materials Transportation, Drift Reduction Techniques, Crop Research | Colusa County Industrial Park, City of Colusa | 75 | Agenda, PowerPoint | | Colusa County Department of Agriculture, Private Applicator Certification Training | Yes |
| 12/13/10 | Colusa Glenn Subwatershed Program | Annual Meeting; all ILRP information | Colusa County Industrial Park, City of Colusa | 11 | Agenda | | Colusa Glenn Subwatershed Program, Annual Meeting/Board Meeting Agenda | Yes |
| 1/7/11 | Colusa Glenn Subwatershed Program | Colusa County Directors Elections | Colusa | 6100 | Press Release; New Article | | Press Release, January 7, 2011 | Yes |
| 1/18/11 | Colusa Glenn Subwatershed Program | Notice of Exceedance = Workshop to discuss Malathion Exceedance at Rough & Ready Pumping Plant (Storm Event 49); Local Implementation of ILRP, Coalition Perspective, Pesticide Regulations, Best Management Practices | Colusa County Industrial Park, City of Colusa | 60 | Malathion Exceedance Notice Letter | | Malathion Exceedance Notice | Yes |
| 1/21/11 | Colusa County Resource Conservation District & Natural Resources Conservation Service | Navigating NRCS Programs and Processes; Agricultural Water Enhancement Program | Colusa County Industrial Park, City of Colusa | 15 | EQIP - AWEP Flier | | Environmental Quality Incentives Program-- Agricultural Water Enhancement Program, Special Funding for Colusa and Glenn Counties | Yes |
| 2/1/11 | Glenn County Board of Supervisors Meeting | Local Implementation of the Irrigated Lands Regulatory Program and Long-Term Irrigated Lands Regulatory Program | Glenn County Board of Supervisors Chambers, City of Willows | 16 | Agenda, PowerPoint | | Glenn County Board of Supervisors Regular Meeting Agenda | Yes |
| 2/4/11 | Colusa Glenn Subwatershed Program | Regional approach to water quality working | Willows Journal | 1288 | News Article | | Willows Journal, "Regional approach to water quality working" | Yes |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) | Document(s) Provided? (Select Y/N) |
|------------------|---|---|---|---|--|--|---|------------------------------------|
| 2/9/11 | Colusa Glenn Subwatershed Program & Colusa County Agricultural Department | Workshop to discuss Malathion Exceedance at Rough & Ready Pumping Plant (Storm Event 49); Local Implementation of ILRP, Coalition Perspective, Pesticide Regulations, Best Management Practices | Colusa County Industrial Park, City of Colusa | 29 | Agenda | | Rough & Ready Pumping Plant Water Quality Workshop | Yes |
| 3/22/11 | Colusa County Board of Supervisor Meeting | Local Implementation of the Irrigated Lands Regulatory Program and Long-Term Irrigated Lands Regulatory Program | Colusa County Board of Supervisors Chambers, City of Colusa | 32 | BOS Agenda, PowerPoint Presentation | | Agenda, March 22, 2011; Colusa Glenn Subwatershed Program, Local Implementation of the Irrigated Lands Regulatory Program | Yes |
| 4/5/11 | California Agricultural Leadership Foundation: Industrial College of the Armed Forces | Water topics in general: quality, quantity, infrastructure, etc | | 30 | None | | | No |
| 6/20/11 | Colusa Glenn Subwatershed Program | Best Management Practices for Chlorpyrifos | Walker Creek Watershed | 100 | Special Edition Newsletter and Stewardship of Chlorpyrifos to Avoid Water Quality Issues Handout | | Colusa Glenn Subwatershed Program, ALERT: Irrigated Lands Regulatory Program, BMPs for Chlorpyrifos... Use Them! | Yes |
| 6/24/11 | Colusa Glenn Subwatershed Program | Best Management Practices for Chlorpyrifos | Distribution List | 125 | Special Edition Newsletter and Stewardship of Chlorpyrifos to Avoid Water Quality Issues Handout | | Colusa Glenn Subwatershed Program, ALERT: Irrigated Lands Regulatory Program, BMPs for Chlorpyrifos... Use Them! | Yes |
| 6/27/11 | Colusa County Farm Bureau | Update on Irrigated Lands Regulatory Program, Long-Term Irrigated Lands Regulatory Program and local monitoring results; Best Management Practices for Chlorpyrifos | Colusa County Farm Bureau, City of Colusa | 20 | Agenda; PowerPoint; Special Edition Newsletter in Press Release Format | | Colusa County Farm Bureau, Board of Directors Meeting, Monday, June 27, 2011 Agenda | Yes |
| 7/1/11 | Glenn County Farm Bureau | Best Management Practices for Chlorpyrifos | Glenn County Farm Bureau, City of Orland | 786 | Special Edition Newsletter | | Colusa Glenn Subwatershed Program, ALERT: Irrigated Lands Regulatory Program, BMPs for Chlorpyrifos... Use Them! | Yes |
| 7/1/11 | Family Water Alliance | Best Management Practices for Chlorpyrifos | Colusa and Glenn Counties | 4300 | Special Edition Newsletter in Press Release Format | | Colusa Glenn Subwatershed Program, ALERT: Irrigated Lands Regulatory Program, BMPs for Chlorpyrifos... Use Them! | Yes |
| 8/17/11 | Colusa Glenn Subwatershed Program | Agricultural Water Enhancement Program (AWEP); OMB tour for water quality and water conservation assistance | Glenn County | 4 | None | | | No |
| 9/20/11 | Colusa Glenn Subwatershed Program | Glenn County Directors Elections | Glenn County | 6100 | Press Release | | Colusa Glenn Subwatershed Program, Press Release, September 20, 2011 | Yes |
| 3/1/12 | Colusa Glenn Subwatershed Program | Local implementation of ILRP; SVWQC Perspective of ILRP; Pesticide Regulations of Malathion; BMPs for Malathion Use | Colusa Industrial Park, Colusa | Pending | Other (SPECIFY) | Exceedance Notice Letter Mailed 2/8/2012 and Water Quality Workshop 3/1/2012 | Malathion 2nd Exceedance Notice | Yes |
| 10/1-12/31/2010 | Kelly A. Kampschmidt Payroll & Accounting Services Clients | Irrigated Lands Regulatory Program information | Phone | 6 | Verbal conversations only | | | No |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) | Document(s) Provided? (Select Y/N) |
|-------------------------|---|--|--|--|---|--------------------------------------|--|---|
| 10/1/2010 - present | Colusa Glenn Subwatershed Program & Natural Resources Conservation Service | Agricultural Water Enhancement Program (AWEP); water quality and water conservation assistance | Willows USDA Service Center, City of Willows | 65 | Program Information | | | No |
| 10/1/2010 - present | Colusa Glenn Subwatershed Program & Natural Resources Conservation Service | Agricultural Water Enhancement Program (AWEP); water quality and water conservation assistance | Colusa USDA Service Center, City of Colusa | 65 | Program Information | | | No |
| 2/1-3/2011 | Colusa County Farm Show (Colusa County Resource Conservation District & Farm Service Agency Booths) | Agricultural Water Enhancement Program (AWEP); water quality and water conservation assistance | Colusa County Fairgrounds, City of Colusa | 100 | EQIP - AWEP Flier | | Environmental Quality Incentives Program-- Agricultural Water Enhancement Program, Special Funding for Colusa and Glenn Counties | Yes |
| Monthly | Glenn County Farm Bureau | Program elements, monitoring results/exceedances, Q&A | Glenn County Farm Bureau, City of Orland | 20 - 30 each month | Verbal reports only | | | No |
| Monthly | Colusa County Farm Bureau | Program elements, monitoring results/exceedances, Q&A | Colusa County Farm Bureau, City of Colusa | 20 - 30 each month | Verbal reports only | | | No |
| Monthly | Glenn County Resource Conservation District | Program elements, monitoring results/exceedances, Q&A | Glenn County USDA Service Center, City of Willows | 10 - 20 each month | Verbal reports mainly, agenda attached when appropriate | | | No |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|---|--|--|--|--------------------------------------|--|
| 11/15/10 | Dixon Solano Water Quality Coalition | Update for Coalition members included with membership billing (Coalition finance update, Long Range Program development) | | 626 | Flyer | Sent to membership by mail | November 2010 Update |
| 11/1/2011 to 11/30/11 | Dixon Solano Water Quality Coalition | Individual phone calls and mailing of info packets to discuss diuron, malathion exceedances with all registered ag users | | 36 | Phone Call | Sent to membership by mail | Diuron Recommended Practices; Pesticide Choice: Best Management Practice (BMP) for Protecting Surface Water Quality in Agriculture |
| 12/2/10 | Solano County Agricultural Commissioner | Group session (including a product rep) to discuss diuron exceedances and recommended management practices for right-of-way users | Growers Ag Service, Dixon | 8 | Other (SPECIFY) | Meeting | Diuron Recommended Practices |
| 12/2/10 | Dixon Solano Water Quality Coalition | Monitoring Results & Program Requirements presentation for Solano growers | Solano County Ag Commissioner's Pesticide Applicator Training (for ag applicators) | 35 - 40 | Other (SPECIFY) | Meeting | Dixon/Solano Irrigated Lands Water Quality Program Update |
| 12/27/10 | Solano County Agricultural Commissioner | Group (including Cal Trans) session to discuss Diuron exceedances and recommended management practices for right-of-way users | Solano County Ag Commissioner's Conference Room | 2 | Other (SPECIFY) | Meeting | Diuron Recommended Practices |
| 1/13/11 | Dixon Solano Water Quality Coalition | Monitoring Results & Program Requirements presentation | Solano County Resource Conservation District Weed Management Area Meeting | 63 | Other (SPECIFY) | Meeting | Dixon/Solano Irrigated Lands Water Quality Program Update |
| 1/20/11 | Dixon Solano Water Quality Coalition | Monitoring Results & Program Requirements presentation for Solano non-ag applicators | Solano County Ag Commissioner's Pesticide Applicator Training (for non-ag applicators) | 56 | Other (SPECIFY) | Meeting | Dixon/Solano Irrigated Lands Water Quality Program Update |
| 1/27/11 | Dixon Solano Water Quality Coalition | Monitoring Results & Program Requirements presentation for Solano growers | Solano County Ag Commissioner's Pesticide Applicator Training (for ag applicators) | 35-40 | Other (SPECIFY) | Meeting | Dixon/Solano Irrigated Lands Water Quality Program Update |
| 2/3/11 | Yolo/Solano County Farm Bureaus, Ag Commissioners & Dixon/Solano Water Quality Coalition | SPRAY SAFE meeting presentation of local pesticide exceedances & recommendations | Yolo County Fairgrounds | see YCFBEC data | Other (SPECIFY) | Meeting | |
| 03/1/2011 to 06/01/2011 | Dixon Solano Water Quality Coalition | Individual phone calls and mailing of info packets to discuss Pyrethroids & Sediment Toxicity & Malation Exceedances and BMPS with all registered users | phone calls | 58 | Phone Call | | Why Are you Receiving This? |
| 5/1/11 | Dixon Solano Water Quality Coalition | Long Range Regulatory Program changes information | by mail | 587 | | by mail | Heads Up on Likely Program Changes! |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|--|--|--|--|--------------------------------------|--|
| 5/1/11 | Dixon Solano Water Quality Coalition for CURES | Information on cost-share program for implementation of water quality protection practices | by mail | 587 | | by mail | \$8 million in new State funding for BMP installations |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|------------------|----------------------------------|--|--|---|-------------------------------------|-------------------------------|-----------------------------------|
| 3/17/11 | NECWA | Annual Meeting | Membership Area | 45 | Other (SPECIFY) | Meeting | |
| 4/18/11 | NECWA | Member Update | Membership Area | 10 Board members, 5 members | Other (SPECIFY) | Email | |
| 4/25/11 | NECWA | Member Update | Membership Area | 10 Board members, 5 members | Other (SPECIFY) | Email | |
| 5/2/11 | NECWA | Member Update | Membership Area | 10 Board members, 5 members | Other (SPECIFY) | Email | |
| 5/8/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email | |
| 5/9/11 | NECWA | Member Update | Membership Area | 10 Board members, 5 members | Other (SPECIFY) | Email | |
| 5/11/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 2 others | Other (SPECIFY) | Email | |
| 5/17/11 | NECWA | Board Member Reminders | Membership Area | 10 Board members | Phone Call | Email and phone | |
| 5/19/11 | NECWA | Board Meeting | McArthur | 8 Board members, 4 others | Other (SPECIFY) | Meeting | |
| 5/28/11 | NECWA | <i>Ceriodaphnia</i> exceedance (5/18/2011) | NECWA Board Members: Bieber, Adin, McArthur, Alturas, Fall River, Burney | 10 Board members, Ag Commissioners | Phone Call | Email to Board | |
| 5/28/11 | NECWA | Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email | |
| 6/5/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email and mail | |
| 6/11/11 | NECWA | Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 6/17/11 | NECWA | Newsletter | Membership Area | 172 members | Other (SPECIFY) | Email and mail | |
| 6/21/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email and mail | |
| 6/25/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email and mail | |
| 7/4/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 7/14/11 | NECWA | Board Meeting | McArthur | 4 Board members | Other (SPECIFY) | Meeting | |
| 7/19/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 8/1/11 | NECWA, SCFB, FRBVCA | Joint Membership Meeting | Membership Area | 45 landowners, 6 others | Other (SPECIFY) | Meeting | |
| 8/27/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 9/10/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 9/17/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 9/29/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 10/5/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email and mail | |
| 10/6/11 | NECWA | Board Meeting | McArthur | 7 Board members | Other (SPECIFY) | Meeting | |
| 10/14/11 | NECWA | Newsletter | Membership Area | 172 members | Other (SPECIFY) | Email and mail | |
| 10/22/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 7 others | Other (SPECIFY) | Email and mail | |
| 10/29/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 10 others | Other (SPECIFY) | Email and mail | |
| 11/10/11 | NECWA | Board Meeting | McArthur | 7 Board members | Other (SPECIFY) | Meeting | |
| 11/16/11 | NECWA | Board Member Update | Membership Area | 10 Board members | Other (SPECIFY) | Email and mail | |
| 12/3/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 10 others | Other (SPECIFY) | Email and mail | |
| 12/11/11 | NECWA | Board Member Update | Membership Area | 10 Board members, 10 others | Other (SPECIFY) | Email and mail | |
| 12/19/11 | NECWA, Goose Lake, Upper Feather | Joint Coalition Meeting | Membership Areas for Each Subwatershed Coalition | 30 landowners, 4 others | Other (SPECIFY) | Meeting | |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|---|---|--|--|--|--------------------------------------|---|
| Fall-Winter 2011 | Subwatershed Newsletter | Fertilization and Water Quality; Chlorpyrifos detected | Newsletter/website | 800 | Article/Newsletter | | PNSSNS News, Winter 2011 Volume 2, Issue 7 |
| 2/23/11 | 5 th Annual Membership Meeting | Cattle/Row Crop BMPs; ILRP Update; water monitoring results | PCWA | 50 | Other (SPECIFY) | Presentations | Best Management Practices for Farm Water Quality: Orchards & Row Crops; two Grazing Practices presentations |
| 2/23/11 | 5 th Annual Membership Meeting | Cattle/Row Crop BMPs; ILRP Update; water monitoring results | PCWA | 50 | Other (SPECIFY) | Presentations | Best Management Practices for Farm Water Quality: Orchards & Row Crops; two Grazing Practices presentations |
| 1/26/11 | SVWQC, Advisory Council | Mgmt Plans Review | SVWQC | Lesla Osterholm | | | |
| 1/28/11 | Board Meeting | Regroup, pending proposed ILRP | WPWMA | Bd & Advisory Bd. | | | |
| Summer 2011 | Subwatershed Newsletter | Chlorpyrifos BMPs; Pesticide Management | Newsletter/website | 800 | | | PNSSNS News, Winter 2011 Volume 2, Issue 6 |
| 4/7/11 | Regional Board Hearing | New ILRP | Rancho Cordova | Several; Mass emailing | | | |
| April/May 2011 | Reg. Bd./Legislators | New ILRP (Tier 1 considerations) | Mass emailing | Several | | | |
| June 2011 | SVWQC Advisory Council | Upper Watershed Concerns | Butte County | 2 | | | |
| 6/22/11 | Upper Watershed Groups | Upper Watershed Concerns | Yolo County | 14 | | | |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|------------------|---------------------------------|---|---|--|-------------------------------------|-------------------------------|-----------------------------------|
| Winter 2011 | SAWQA | Long Term ILRP; 2010 Monitoring Results | Amador County | Sent to all irrigators within the Sacramento/Amador subwatershed | Article/Newsletter | | Winter 2011 SAWQA Notice |
| 1/13/11 | SAWQA | General report - documented E. coli, conductivity exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 3/17/11 | SAWQA | General report - documented E. coli, conductivity exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 5/19/11 | SAWQA | General report - documented arsenic and conductivity exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 7/20/11 | SAWQA | General report - documented arsenic, copper, E. coli, sediment toxicity exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 8/18/11 | SAWQA | General report - documented conductivity, E. coli exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 9/15/11 | SAWQA | General report - documented arsenic, conductivity, E. coli, sediment toxicity, copper exceedances | Elk Grove | 4 | Report, Quarterly | | Lower Cosumnes Qtly Report |
| 10/10/11 | SAWQA | General report - documented arsenic, DO exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 11/17/11 | SAWQA | General report - documented E. coli, DO exceedances | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |
| 12/6/11 | SAWQA | General report - documented arsenic, DO, E.coli exceedances | Elk Grove | 4 | Report, Quarterly | | Lower Cosumnes Qtly Report |
| 12/15/11 | SAWQA | General report - documented conductivity exceedance | Amador County | 7 | Report, Monthly | | SAWQA Monthly Status Report |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|--|--|--|--|--------------------------------------|--|
| Winter 2010 | STWEC | Grazing Practices and Water Quality | Red Bluff, California | 1200 | Article/Newsletter | | STWEC Newsletter Winter 2010 |
| 4/9/11 | STWEC | Irrigated Pasture Workshop | Palo Cedro, California | | Other (SPECIFY) | Workshop | Irrigated Pasture Workshop |
| Spring 2011 | STWEC | New ILRP; Irrigation Evaluations | Red Bluff, California | 1200 | Article/Newsletter | | STWEC Newsletter Spring 2011 |
| Winter 2012 | STWEC | BMPs for E. coli | Red Bluff, California | 1200 | Article/Newsletter | | STWEC Newsletter Winter 2012 |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|--|--|--|--|--------------------------------------|--|
| 10/28/11 | UFRWG | Toxaphene information in response to toxaphene exceedance | Annual Membership Meeting | 20 meeting attendees | Flyer | | Toxaphene Facts |
| | UFRWG | Toxaphene information in response to toxaphene exceedance | Watershed-wide | 105 mail recipients | Flyer | | Toxaphene Facts |
| Spring 2011 | UFRWG | Received a determination letter from Regional Board on 5/25/2011 regarding agriculture not being a source of DO exceedances. | Copy of determination letter distributed at annual membership meeting. | 20 meeting attendees | Letter | | RB Letter Approving DO & pH Management Plan Completion |
| 2012 | UFRWG | Received a determination letter from Regional Board on 5/25/2011 regarding agriculture not being a source of DO exceedances. | Copy of determination letter to be mailed with 2012 invoices. | 105 mail recipients | Letter | | RB Letter Approving DO & pH Management Plan Completion |

| Date of Outreach | Organization Providing Outreach | Focus of Outreach (Topics/ Exceedances) | Location Where Outreach Conducted (include Phone Calls) | # of People in Attendance or on Distribution List | Outreach Type (Select from Options) | Other Outreach Type (SPECIFY) | Document Title(s) (if applicable) |
|-------------------------|--|---|--|---|--|--------------------------------------|---|
| January 2010 | YCFBEC | Review of program/exceedances | 2010 Annual meeting/recap held in Clarksburg, Winters and Woodland | 1700 names on distribution lists | Article/Newsletter | Annual Meeting | Irrigated Lands Program Update for Landowners and Growers |
| 2/3/11 | YCFBEC | Pesticide BMPs, ILRP, water quality exceedances | Woodland (Yolo County Fairgrounds) | Mailed to 800 Pesticide Permit holders in Yolo; 350 from Yolo and 50 from Solano attended | Flyer | Spray Safe Event | Spray Safe Flyer |
| Summer 2011 | YCFBEC | Water quality results & exceedances | | 1700 names on distribution lists | Article/Newsletter | | Summer 2011 Subwatershed Newsletter |
| Fall 2011 | YCFBEC | State Fees for ILRP, 2010-2011 monitoring results | | 1700 names on distribution lists | Article/Newsletter | | Fall 2011 Subwatershed Newsletter |
| 12/1/11 | YCFBEC | Review of program/exceedances | 2011 Annual meeting/recap held in Clarksburg, Winters and Woodland | 1700 names on distribution lists | Article/Newsletter | Annual Meeting | Irrigated Lands Program Update for Landowners and Growers |

Appendix B: 2011 Management Plan Monitoring

2012 Management Plan Monitoring from Attachment D of the *2012 ILRP Monitoring Plan*. Prepared by Larry Walker Associates for the Sacramento Valley Water Quality Coalition, November 2011.

| Subwatershed | Water Body | Monitoring Site | MgtPlanCategory | Mgt Plan Analyte | Monitored Analytes | Parameter-specific Schedule | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | 2011 outcomes |
|-------------------|--------------------|---|-----------------------|-------------------------|--|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Butte Yuba Sutter | Butte Slough | Butte Slough at Pass Road | DO and pH | DO | DO | Alternate representative months; | | X | X | X | X | X | X | X | X | X | X | X | 6 samples, 0 exceedances; |
| Butte Yuba Sutter | Butte Slough | Butte Slough at Pass Road | Toxicity | Toxicity - Selenastrum | Toxicity - Selenastrum | NOV-APR | X | X | X | X | | | | | | | X | X | 6 samples, no toxicity, no detection of targeted pesticides; |
| Butte Yuba Sutter | Butte Slough | Butte Slough at Pass Road | Toxicity | Toxicity - Selenastrum | OXYFLUORFEN | NOV-APR | X | X | X | X | | | | | | | X | X | 6 samples, 0 exceedances; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | DO and pH | pH | pH | Alternate representative months; | | X | | X | | X | | X | | | | | 3 samples, 0 exceedances; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | DO and pH | DO | DO | Alternate representative months; | | X | | X | | X | | X | | | | | 3 samples, 0 exceedances; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | Not Sampled in 2011; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Pathogen Indicators | E. coli | E. coli | None in 2012; | | | | | | | | | | | | | Not Sampled in 2011; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Registered Pesticides | Diazinon | Diazinon | 3 events FEB-MAY | | X | X | | | | | | | | | | 3 samples, 1 exceedance; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Registered Pesticides | Malathion | Malathion | 3 events FEB-MAY | | X | X | | | | | | | | | | 3 samples, 0 exceedances; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Salinity | EC | EC | Alternate representative months; | | X | | X | | X | | X | | | | | 3 samples, 0 exceedances; |
| Butte Yuba Sutter | Lower Honcut Creek | Lower Honcut Creek at Hwy 70 | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 0 exceedances; |
| Butte Yuba Sutter | Lower Honcut Creek | Lower Honcut Creek at Hwy 70 | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 2 exceedances; |
| Butte Yuba Sutter | Lower Snake River | Lower Snake R. at Nuestro Rd | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 7 exceedances; |
| Butte Yuba Sutter | Lower Snake River | Lower Snake R. at Nuestro Rd | Registered Pesticides | Chlorpyrifos | Chlorpyrifos | MAY-AUG | | | | | X | X | X | X | | | | | 9 samples, 0 exceedances; |
| Butte Yuba Sutter | Lower Snake River | Lower Snake R. at Nuestro Rd | Toxicity | Toxicity - Ceriodaphnia | Toxicity - Ceriodaphnia | MAY-SEP | | | | | X | X | X | X | X | | | | 8 samples, 1 exc (no toxic pesticides detected, TIE performed, no cause identified, other potential pesticide causes identified in AMR); |
| Butte Yuba Sutter | Pine Creek | Pine Creek at Nord Gianella Road | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 3 exceedances due to lack of flow; |
| Butte Yuba Sutter | Pine Creek | Pine Creek at Nord Gianella Road | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 5 exceedances; |
| Butte Yuba Sutter | Pine Creek | Pine Creek at Nord Gianella Road | Registered Pesticides | Chlorpyrifos | Chlorpyrifos | MAY-AUG | | | | | X | X | X | X | | | | | 9 samples, 4 exceedances (no flows, no loads); |
| Butte Yuba Sutter | Sacramento Slough | Sacramento Slough bridge near Karnak | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 11 samples, 0 exceedances; |
| Butte Yuba Sutter | Wadsworth Canal | Wadsworth Canal at South Butte Rd | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Colusa Basin Drain | Colusa Basin Drain above KL | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 9 samples, 3 exceedances; |
| Colusa Glenn | Colusa Basin Drain | Colusa Basin Drain above KL | Pathogen Indicators | E. coli | E. coli | None in 2012; | X | X | X | X | X | X | X | X | | | X | X | 8 samples, 0 exceedances; |
| Colusa Glenn | Colusa Basin Drain | Colusa Basin Drain above KL | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 9 samples, 4 exceedances; |
| Colusa Glenn | Colusa Basin Drain | Colusa Basin Drain at Maxwell road | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Freshwater Creek | Freshwater Creek at Gibson Rd | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 0 exceedances; |
| Colusa Glenn | Freshwater Creek | Freshwater Creek at Gibson Rd | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | 2 samples, 0 exceedances; |
| Colusa Glenn | Freshwater Creek | Freshwater Creek at Gibson Rd | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 2 exceedances; |
| Colusa Glenn | Freshwater Creek | Freshwater Creek at Gibson Rd | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 6 exceedances; |
| Colusa Glenn | Logan Creek | Logan Creek at 4 Mile-Excelsior Rd | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Lurline Creek | Lurline Creek at 99W | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | Not Sampled in 2011; |
| Colusa Glenn | Lurline Creek | Lurline Creek at 99W | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Lurline Creek | Lurline Creek at 99W | Salinity | EC | EC | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Colusa Glenn | Sycamore Slough | Rough and Ready Pumping Plant (RD 108) | DO and pH | DO | DO | Alternate representative months; | | | X | | X | X | X | | | | | | 3 samples, 0 exceedances; |
| Colusa Glenn | Sycamore Slough | Rough and Ready Pumping Plant (RD 108) | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | Not Sampled in 2011; |
| Colusa Glenn | Sycamore Slough | Rough and Ready Pumping Plant (RD 108) | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Sycamore Slough | Rough and Ready Pumping Plant (RD 108) | Salinity | EC | EC | Alternate representative months; | | | X | | X | X | X | | | | | | 3 samples, 2 exceedances; |
| Colusa Glenn | Stone Corral Creek | Stone Corral Creek near Maxwell Road | DO and pH | DO | DO | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Colusa Glenn | Stone Corral Creek | Stone Corral Creek near Maxwell Road | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Colusa Glenn | Stone Corral Creek | Stone Corral Creek near Maxwell Road | Salinity | EC | EC | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Colusa Glenn | Stony Creek | Stony Creek on Hwy 45 near Rd 24 | DO and pH | pH | pH | Alternate representative months; | | X | | X | | X | | X | | | | | 4 samples, 0 exceedances; |
| Colusa Glenn | Stony Creek | Stony Creek on Hwy 45 near Rd 24 | Toxicity | Toxicity - Hyalella | Sediment toxicity; pesticides in sediments | APR, AUG | | | | X | | | | X | | | | | 2 samples, no toxicity; |
| Colusa Glenn | Stony Creek | Stony Creek on Hwy 45 near Rd 24 | Toxicity | Toxicity - Ceriodaphnia | Toxicity - Ceriodaphnia, or Pesticides | 2 Wet season storm events | | X | | X | | | | | | | | | 2 samples, 1 exc (TIE performed, no cause identified, potential pesticide causes identified in AMR); |
| Colusa Glenn | Walker Creek | Walker Creek at Co Rd 48 | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 0 exceedances; |
| Colusa Glenn | Walker Creek | Walker Creek at Co Rd 48 | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 5 exceedances; |
| Colusa Glenn | Walker Creek | Walker Creek at Co Rd 48 | Registered Pesticides | Chlorpyrifos | Chlorpyrifos | MAR, JUN-AUG | | | | X | | X | X | | | | | | 8 samples, 0 exceedances; |
| Colusa Glenn | Walker Creek | Walker Creek at Co Rd 48 | Toxicity | Toxicity - Ceriodaphnia | Toxicity - Ceriodaphnia | JAN-AUG | X | X | X | X | X | X | X | X | | | | | 8 samples, no toxicity; no toxicity in last 24 samples; |
| El Dorado | Coon Hollow Creek | Coon Hollow Creek | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | Not Sampled in 2011; |
| El Dorado | Coon Hollow Creek | Coon Hollow Creek | Toxicity | Toxicity - Ceriodaphnia | None (Completed); | Completed; (Pilot BMP Program) | | | | | | | | | | | | | Completed; Not Sampled in 2011; |
| El Dorado | North Canyon Creek | North Canyon Creek | Legacy Pesticides | DDE | DDE | APR, AUG | | | | X | | | | X | | | | | Not Sampled in 2011; |
| El Dorado | North Canyon Creek | North Canyon Creek | Pathogen Indicators | E. coli | E. coli | None; (Pilot BMP Program) | | | | | | | | | | | | | Not Sampled in 2011; |

| Subwatershed | Water Body | Monitoring Site | MgtPlanCategory | Mgt Plan Analyte | Monitored Analytes | Parameter-specific Schedule | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | 2011 outcomes |
|-------------------|----------------|---|-----------------------|-------------------------|--|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Napa | Capell Creek | Capell Creek upstream from Lake Berryessa | Pathogen Indicators | E. coli | E. coli | None; (Pilot BMP Program) | | | | | | | | | | | | | Not Sampled in 2011; |
| Lake | McGaugh Slough | McGaugh Slough | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Pit River | Fall River | Fall River at Fall River Ranch Bridge | DO and pH | pH | pH | Irrigation Season months; | | | | | X | X | X | X | | | | | Not Sampled in 2011; |
| Pit River | Pit River | Pit River at Canby Bridge | DO and pH | DO | DO | Irrigation Season months; | | | | | X | X | X | X | | | | | Not Sampled in 2011; |
| Pit River | Pit River | Pit River at Canby Bridge | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Pit River | Pit River | Pit River at Pittville Bridge | DO and pH | DO | DO | Core sampling schedule; | | | X | X | X | X | X | X | | | | X | 6 samples, 0 exceedances; |
| Pit River | Pit River | Pit River at Pittville Bridge | DO and pH | pH | pH | Core sampling schedule; | | | X | X | X | X | X | X | | | | X | 6 samples, 0 exceedances; |
| PNSSNS | Coon Creek | Coon Creek at Brewer Road | DO and pH | DO | DO | Core sampling schedule; | | X | X | X | X | X | X | X | X | | | | 8 samples, 0 exceedances; |
| PNSSNS | Coon Creek | Coon Creek at Brewer Road | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | | X | X | X | X | X | X | X | X | | | | 8 samples, 1 exceedances; Coon Creek E. coli plan approved as completed in 2010; |
| PNSSNS | Coon Creek | Coon Creek at Striplin Road | DO and pH | DO | DO | Alternate representative months; | | | X | | X | | X | X | | | | | 2 samples, 0 exceedances; |
| PNSSNS | Coon Creek | Coon Creek at Striplin Road | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not sampled in 2011; Coon Creek E. coli plan approved as completed in 2010; |
| PNSSNS | Coon Creek | Coon Creek at Striplin Road | Registered Pesticides | Chlorpyrifos | None (Completed); | None (Completed); | | | | | | | | | | | | | 2 samples, 1 exceedance (chlorpyrifos); |
| Sacramento Amador | Cosumnes River | Cosumnes River at Twin Cities Road | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 11 samples, 1 marginal exceedance; |
| Sacramento Amador | Cosumnes River | Cosumnes River at Twin Cities Road | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 11 samples, 2 exceedances; |
| Sacramento Amador | Cosumnes River | Cosumnes River at Twin Cities Road | DO and pH | pH | pH | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 11 samples, 0 exceedances; |
| Sacramento Amador | Cosumnes River | Cosumnes River at Twin Cities Road | Toxicity | Toxicity - Hyalella | Sediment toxicity; pesticides in sediments | APR, AUG | | | | X | | | | X | | | | | 2 samples, 0 exceedances; |
| Sacramento Amador | Dry Creek | Dry Creek at Alta Mesa Rd | DO and pH | pH | pH | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Sacramento Amador | Dry Creek | Dry Creek at Alta Mesa Rd | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Sacramento Amador | Grand Island | Grand Island Drain near Leary Road | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 1 exceedance; |
| Sacramento Amador | Grand Island | Grand Island Drain near Leary Road | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 2 exceedances; |
| Sacramento Amador | Grand Island | Grand Island Drain near Leary Road | Legacy Pesticides | DDE/DDT | DDE | APR, AUG | | | | X | | | | X | | | | | 2 samples, 0 exceedances; |
| Sacramento Amador | Grand Island | Grand Island Drain near Leary Road | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 5 exceedances; |
| Sacramento Amador | Laguna Creek | Laguna Crk at Alta Mesa Rd | DO and pH | pH | pH | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Sacramento Amador | Laguna Creek | Laguna Crk at Alta Mesa Rd | DO and pH | DO | DO | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Sacramento Amador | Laguna Creek | Laguna Crk at Alta Mesa Rd | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Sacramento Amador | Laguna Creek | Laguna Crk at Alta Mesa Rd | Toxicity | Toxicity - Ceriodaphnia | None (Completed); | None; Mgt Plan Completed; | | | | | | | | | | | | | Completed; Not Sampled in 2011; |
| Shasta Tehama | Andersen Creek | Andersen Creek at Ash Creek Rd | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 0 exceedances; |
| Shasta Tehama | Andersen Creek | Andersen Creek at Ash Creek Rd | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | X | X | X | X | 12 samples, 9 exceedances (known wildlife and homeless, and possible septic sources); |
| Shasta Tehama | Burch Creek | Burch Creek above Woodson Ave Bridge | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Shasta Tehama | Coyote Creek | Coyote Creek at Tyler Road | DO and pH | DO | DO | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Shasta Tehama | Coyote Creek | Coyote Creek at Tyler Road | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Yolo | Cache Creek | Cache Creek at Capay Diversion Dam | DO and pH | DO | DO | Alternate representative months; | | X | | X | | X | | X | | | | | 4 samples, 0 exceedances; |
| Yolo | Cache Creek | Cache Creek at Capay Diversion Dam | Salinity | EC | EC | Alternate representative months; | | X | | X | | X | | X | | | | | 4 samples, 0 exceedances; |
| Yolo | Cache Creek | Cache Creek at Capay Diversion Dam | Salinity | Boron | Boron | None (Completed); | | | | | | | | | | | | | Completed; Not Sampled in 2011; |
| Yolo | Cache Creek | Cache Creek at Capay Diversion Dam | Toxicity | Toxicity - Ceriodaphnia | Toxicity - Ceriodaphnia, OP Pesticides | MAY-AUG | | X | | X | | X | | X | | | | | 4 samples, 1 exceedance (no pesticides detected, TIE conducted with no cause determined); SER concluded no likely ag source; Possible Clear Lake cyanobacteria cause based on July-Aug timing of toxicity and lack of pesticide use; |
| Solano | Shag Slough | Shag Slough at Liberty Island Bridge | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | X | 10 samples, 1 exceedances; |
| Yolo | Tule Canal | Tule Canal at I-80 | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Yolo | Tule Canal | Tule Canal at I-80 | Salinity | Boron | Boron | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Yolo | Tule Canal | Tule Canal at I-80 | Salinity | EC | EC | Alternate representative months; | | X | | X | | X | | X | | | | | Not Sampled in 2011; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | DO and pH | pH | pH | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | X | 11 samples, 0 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | DO and pH | DO | DO | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | X | 11 samples, 0 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Nutrients | Nitrate as N | Nitrate as N | All sampled events | X | X | X | X | X | X | X | X | | | | X | 11 samples, 2 exceedances; Request for completion approved (non ag source); |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | X | 11 samples, 5 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Registered Pesticides | Malathion | Malathion | MAR, MAY-AUG | | | | X | | X | X | X | | | | | 8 samples, 0 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Registered Pesticides | Diuron | Diuron | DEC-FEB | X | X | | | | | | | | | | X | 3 samples, 0 exceedances (incl DEC 2010); Note exceedance JAN 2012!; |

| Subwatershed | Water Body | Monitoring Site | MgtPlanCategory | Mgt Plan Analyte | Monitored Analytes | Parameter-specific Schedule | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | 2011 outcomes |
|---------------------|---------------------------|--|-----------------------|-------------------------|--|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | X | | X | X | 11 samples, 8 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Toxicity | Toxicity - Selenastrum | Selenastrum toxicity | DEC-FEB | X | X | | | | | | | | | | X | 9 samples, no toxicity in 2011; no tox in last 13 events; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | DO and pH | pH | pH | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 11 samples, 0 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Legacy Pesticides | DDE | DDE | APR, AUG | | | X | | | | | X | | | | | 2 samples, 0 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 1 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Registered Pesticides | Chlorpyrifos | Chlorpyrifos | MAR-AUG | | | X | X | X | X | X | X | | | | | 7 samples, 0 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Registered Pesticides | Diuron | Diuron | DEC-FEB | X | X | | | | | | | | | | X | 3 samples, 0 exceedances (incl DEC 2010); |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Registered Pesticides | Malathion | Malathion | MAR-APR, JUN-AUG | | | X | X | | X | X | X | | | | | 7 samples, 0 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 8 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Salinity | Boron | Boron | JAN-APR | X | X | X | X | | | | | | | | | 4 samples, 4 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Toxicity | Toxicity - Selenastrum | Selenastrum toxicity | NOV-JUL | X | X | X | X | X | X | X | | | | X | X | 9 samples, no toxicity in 2011; no tox in last 11 events; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Toxicity | Toxicity - Ceriodaphnia | Toxicity - Ceriodaphnia | FEB-AUG | | X | X | X | X | X | X | X | | | | | 7 samples, 1 toxicity exceedance in 2011 (TIE conducted -inconclusive, no OPPs or pyrethroids detected in toxic concentrations, no cause determined); 1 tox in last 19 samples; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Trace Metals | Selenium | Selenium | JAN-APR | | | | | | | | | | | | | 4 samples, 1 exceedances; |
| Solano | Z Drain | Z Drain | DO and pH | pH | pH | Alternate representative months; | | X | X | | X | X | X | | | | | | 4 samples, 0 exceedances; |
| Solano | Z Drain | Z Drain | DO and pH | DO | DO | Alternate representative months; | | X | X | | X | X | X | | | | | | 4 samples, 0 exceedances; |
| Solano | Z Drain | Z Drain | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Solano | Z Drain | Z Drain | Salinity | EC | EC | Alternate representative months; | | X | X | | X | X | X | | | | | | 4 samples, 3 exceedances; |
| Solano | Z Drain | Z Drain | Toxicity | Toxicity - Hyalella | Sediment toxicity; pesticides in sediments | APR, AUG | | | | X | | | | X | | | | | 4 pesticide samples; L-Cyhalothrin was detected in 3 samples at concentrations that could contribute to or cause significant toxicity; |
| Upper Feather River | Indian Creek | Indian Creek at Arlington Bridge | DO and pH | DO | DO | Alternate representative months; | | | | | X | X | X | X | | | | | Not Sampled in 2011; |
| Upper Feather River | Indian Creek | Indian Creek at Arlington Bridge | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Upper Feather River | Middle Fork Feather River | Middle Fork Feather River at Co Rd A-23 | DO and pH | DO | DO | Core sampling schedule; | | | | | X | X | X | X | X | | | | 5 samples, 1 exceedance (sampled at MFFGR); |
| Upper Feather River | Middle Fork Feather River | Middle Fork Feather River at Co Rd A-23 | DO and pH | pH | pH | Core sampling schedule; | | | | | X | X | X | X | X | | | | 5 samples, 0 exceedances; |
| Upper Feather River | Spanish Creek | Spanish Creek below Greenhorn Creek | Pathogen Indicators | E. coli | E. coli | None; | | | | | | | | | | | | | Not Sampled in 2011; |
| Upper Feather River | Spanish Creek | Spanish Creek below Greenhorn Creek | DO and pH | DO | DO | Alternate representative months; | | | | | X | X | X | X | | | | | Not Sampled in 2011; |
| Butte Yuba Sutter | Gilsizer Slough | Gilsizer Slough at George Washington Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | JAN-FEB, MAY-AUG | X | X | | | X | X | X | X | | | | | 3 samples, 1 exceedance (diazinon); |
| Colusa Glenn | Sycamore Slough | Rough and Ready Pumping Plant (RD 108) | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | FEB-MAY, JUL-AUG | | | X | X | X | X | X | X | | | | | 3 samples, 0 exceedances; |
| PNSSNS | Coon Creek | Coon Creek at Striplin Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | JAN, MAY, JUL-SEP | X | | | | X | X | X | X | | | | | 2 samples, 1 exceedance (chlorpyrifos); |
| Solano | Shag Slough | Shag Slough at Liberty Island Bridge | Salinity | EC | EC | Core sampling schedule; | X | X | X | X | X | X | X | X | | | X | X | 10 samples, 3 exceedances; |
| Lake | McGaugh Slough | McGaugh Slough | Nutrients | Phosphorus; Nitrate | Phosphorus; Nitrate | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | | Not Sampled in 2011; |
| Lake | Middle Creek | Middle Creek u/s from Highway 20 | Nutrients | Phosphorus; Nitrate | Phosphorus; Nitrate | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | | 8 samples, no exceedances; |
| Lake | Middle Creek | Middle Creek u/s from Highway 20 | Pathogen Indicators | E. coli | E. coli | Core sampling schedule; | X | X | X | X | X | X | X | X | | | | | 8 samples, 0 exceedances; |
| Napa | Pope Creek | Pope Creek upstream from Lake Berryessa | DO and pH | pH | pH | None; (Pilot BMP Program) | | X | X | | X | | | | | | | X | Not Sampled in 2011; |
| Upper Feather River | Middle Fork Feather River | Middle Fork Feather River above Grizzly Cr | Salinity | EC | EC | Core sampling schedule; | | | | | X | X | X | X | X | | | | 5 samples, 1 exceedances; |
| Butte Yuba Sutter | Lower Honcut Creek | Lower Honcut Creek at Hwy 70 | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | DEC-FEB, JUL-AUG | X | X | | | | | X | X | | | | X | 9 samples, 0 exceedances; |
| Butte Yuba Sutter | Lower Snake River | Lower Snake R. at Nuestro Rd | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | JAN-MAR, MAY-AUG | X | X | X | | X | X | X | X | | | | | 9 samples, 0 exceedances; |
| Butte Yuba Sutter | Pine Creek | Pine Creek at Nord Gianella Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | JAN-FEB, JUN-AUG | X | X | | | | X | X | X | | | | | 9 samples, 4 exceedances (no flows, no loads); |
| Butte Yuba Sutter | Sacramento Slough | Sacramento Slough bridge near Karnak | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | MAR-MAY, JUL-AUG | | | X | X | X | X | X | X | | | | | 9 samples, 0 exceedances; |
| Colusa Glenn | Colusa Basin Drain | Colusa Basin Drain above KL | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | FEB-AUG | | | X | X | X | X | X | X | | | | | 8 samples, 0 exceedances; |
| Colusa Glenn | Walker Creek | Walker Creek at Co Rd 48 | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | JAN-MAR, JUL | X | X | X | | | | X | | | | | | 8 samples, 0 exceedances; |
| Sacramento Amador | Cosumnes River | Cosumnes River at Twin Cities Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | MAR, AUG-OCT | | | X | | | | X | X | X | | | | 6 samples, 0 exceedances; |
| Sacramento Amador | Grand Island | Grand Island Drain near Leary Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | FEB-MAR, AUG-OCT | | | X | X | | | X | X | X | | | | 8 samples, 0 exceedances; |
| Solano | Shag Slough | Shag Slough at Liberty Island Bridge | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | MAR, MAY-OCT | | | X | X | X | X | X | X | X | | | | 7 samples, 0 exceedances; |
| Yolo | Willow Slough | Willow Slough Bypass at Pole Line | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | FEB-MAY, JUL-AUG | | X | X | X | X | X | X | X | | | | | 7 samples, 0 exceedances; |
| Solano | Ulatis Creek | Ulatis Creek at Brown Road | Chlorpyrifos/diazinon | Chlorpyrifos, diazinon | Chlorpyrifos, diazinon | MAR-AUG | | | X | X | X | X | X | X | | | | | 8 samples, 2 exceedances; |

Appendix C: Management Plan Deliverables

Revised Schedule of Deliverables. December 5, 2011 Memorandum to Sacramento Valley Water Quality Coalition from Pamela Creedon, Executive Officer, Central Valley Regional Water Quality Control Board.



California Regional Water Quality Control Board

Central Valley Region

Katherine Hart, Chair



Matthew Rodriguez
Secretary for
Environmental Protection

11020 Sun Center Drive, #200, Rancho Cordova, California 95670-6114
(916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>

Edmund G. Brown Jr.
Governor

5 December 2011

David Guy, President
Northern California Water Association
Sacramento Valley Water Quality Coalition
455 Capitol Mall, Suite 335
Sacramento, CA 95814

REVISED SCHEDULE OF DELIVERABLES, SACRAMENTO VALLEY WATER QUALITY COALITION

On 24 January 2011, the Sacramento Valley Water Quality Coalition (Coalition) submitted a Schedule of Deliverables for 2011. The Coalition's proposed schedule included submittal dates for Source Evaluation Reports, a Management Practices Survey Results Report, and Management Practices Performance Goals, as well as other routine reports required from the Coalition. I approved the Schedule of Deliverables on 25 May 2011.

The Coalition met their submittal goals for routine reporting requirements (e.g. data submittals, annual reports, 2012 monitoring plan), but not for the majority of management plan deliverables. As discussed in a meeting with the Coalition on 6 July 2011, I directed ILRP staff to revise the Coalition's deliverables schedule (see Attachment) in order to reduce the Coalition and ILRP Staff's workload on items related to the current program. This adjustment will allow progress on development of the Coalition's WDR and MRP Orders for the Long-term Irrigated Lands Program.

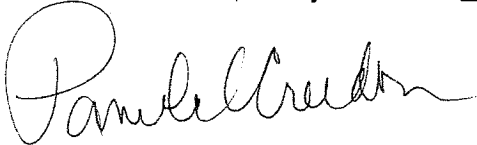
Staff has reviewed the Schedule of Deliverables and identified items that are related to high priority management plans (pesticides, toxicity and salinity) and therefore must be submitted in a timely manner (see Attachment). Staff also identified management plan parameters that should be addressed as part of the Coalition's Long-term Program Orders, including legacy pesticides, dissolved oxygen, and pH. *E. coli* management plan tasks are suspended, pending direction from the Executive Officer regarding development of a region-wide approach. Lastly, the Coalition was to submit a Management Plan Survey Results Report, which has not been received. I have established a revised due date of 30 December 2011.

The attached table indicates the status of each management plan deliverable, revised next steps and submittal dates for deliverables, where applicable. The table

California Environmental Protection Agency

does not include the Coalition's routine reports and planning documents, since those submittal dates were established in the current MRP Order and have not changed.

If you have any questions regarding this letter, please contact Mark Cady at 916-464-4654, or by email at mcady@waterboards.ca.gov.

A handwritten signature in black ink, appearing to read "Pamela C. Creedon". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Pamela C. Creedon
Executive Officer

cc: Bruce Houdesheldt, NCWA
Claus Suverkropp, LWA

Attachment

SWWQC Management Plan Revised Schedule of Deliverables - December 2011

| Category | Sub-shed | Waterbody | Parameter | Status | Next Step | Due Date |
|-----------------------|-----------------|------------------|-------------------------|--|--|---|
| Registered Pesticides | PNSS- NS | Coon Creek | Chlorpyrifos | New exceedances on 5/17/11, 8/17/11 triggered 2nd Management Plan: First Mgt Plan was considered complete on 9/21/10 | Action Plan and Continue monitoring | 12/31/2011 |
| Registered Pesticides | BYS | Gilsizer Slough | Diazinon | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Registered Pesticides | BYS | Gilsizer Slough | Malathion | Source Evaluation Report received 9/11; Currently under staff review | Dependent upon RB review outcome | |
| Registered Pesticides | BYS | Lower Snake R. | Chlorpyrifos | Source Evaluation Report received 9/11; Currently under staff review | Submit Performance Goals Document | 60 days after receipt of RB review memo |
| Registered Pesticides | CG | Pine Creek | Chlorpyrifos | Additional exceedances 7/11 & 8/11 Coalition submitted Action Plan 10/20/11 | Report results of action plan | 2/28/2012 |
| Registered Pesticides | YS | Ulati Cr. | Diuron | Performance Goals received 7/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Registered Pesticides | YS | Ulati Cr. | Malathion | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Registered Pesticides | CG | Walker Cr. | Chlorpyrifos | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Registered Pesticides | YS | Willow Slough | Chlorpyrifos | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Registered Pesticides | YS | Willow Slough | Diuron | Not currently on Coalition Deliverable Schedule | Submit Source Evaluation Report | 3/15/2012 |
| Registered Pesticides | YS | Willow Slough | Malathion | Source Evaluation Report received 9/11; Currently under staff review | Submit Performance Goals Document | 60 days after receipt of RB review memo |
| Toxicity * | BYS | Butte Slough | Toxicity - Selenastrum | Source Evaluation Report received 3/10; Conducted additional source investigation in 2011 | Report on 2011 Source Evaluation progress. | 3/15/2012 |
| Toxicity | YS | Cache Cr. | Toxicity - Ceriodaphnia | Source Evaluation Report received 9/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Toxicity | ED | Coon Hollow Cr. | Toxicity - Ceriodaphnia | Management Plan complete 2/11 | N/A | N/A |
| Toxicity | SA | Cosumnes R. | Toxicity - Hyalella | Source Evaluation Report received 9/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |

SWQOC Management Plan Revised Schedule of Deliverables - December 2011

| Category | Sub-water shed | Waterbody | Parameter | Status | Next Step | Due Date |
|------------|----------------|----------------|-------------------------|---|--|---|
| Toxicity | SA | Laguna Cr. | Toxicity - Ceriodaphnia | Management Plan complete | 10/10 | N/A |
| Toxicity * | BYS | Lower Snake R. | Toxicity - Ceriodaphnia | Source Evaluation Report received 9/11; Currently under staff review | Submit Performance Goals Document | 60 days after receipt of RB review memo |
| Toxicity | CG | Stony Cr. | Toxicity - Ceriodaphnia | Source Evaluation Report received 9/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Toxicity | CG | Stony Cr. | Toxicity - Hyalella | Source Evaluation Report received 3/10; Conducted additional source investigation in 2011 | Report on 2011 Source Evaluation progress. | 3/15/2012 |
| Toxicity * | YS | Ulatis Cr. | Toxicity - Selenastrum | Performance Goals received 10/11; Currently under staff review. | Address staff review comments | 30 days after receipt of RB review memo |
| Toxicity * | CG | Walker Cr. | Toxicity - Ceriodaphnia | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Toxicity * | YS | Willow Slough | Toxicity - Ceriodaphnia | Performance Goals received 2/12; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Toxicity * | YS | Willow Slough | Toxicity - Selenastrum | Source Evaluation Report received 3/10; Diuron likely source | Submit Performance Goals Document | Past due |
| Toxicity * | YS | Z Drain | Toxicity - Hyalella | Performance Goals received 10/11; Currently under staff review | Address staff review comments | 30 days after receipt of RB review memo |
| Nutrients | YS | Ulatis Cr. | Nitrate | Source Evaluation Report received 9/11; Currently under staff review | Dependent upon RB review outcome | |

SWWQC Management Plan Revised Schedule of Deliverables - December 2011

| Category | Sub-watershed | Waterbody | Parameter | Status | Next Step | Due Date |
|-------------------|---------------|---|----------------|--|--|-----------|
| Salinity | YS | Cache Cr. | EC, Boron | | | |
| Salinity | CG | Colusa Basin Dr. | EC | | | |
| Salinity | SA | Dry Creek | TDS | | | |
| Salinity | CG | Freshwater Cr. | EC | | | |
| Salinity | BYS | Gilizer Slough | EC | | | |
| Salinity | SA | Grand Island Dr. | EC, TDS | | | |
| Salinity | CG | Logan Cr. | TDS | | | |
| Salinity | CG | Lurline Cr. | EC, TDS | Identify areas of elevated salinity; Compile information about potentially salt-sensitive crops; Source Evaluation Report: All past due. | Submit report identifying areas of elevated salinity, detailing information about potentially salt-sensitive crops and describing source, fate and transport of salts in the affected drainages. Provide a draft report to the CV-SALTS technical advisory committee for comments before final report is prepared. | 3/15/2012 |
| Salinity | BYS | Sycamore Slough | EC, TDS | | | |
| Salinity | CG | Stone Corral Cr. | EC | | | |
| Salinity | YS | Tule Canal | EC, TDS, Boron | | | |
| Salinity | YS | Ulatia Cr. | EC, TDS | | | |
| Salinity | YS | Willow Slough | EC, TDS, Boron | | | |
| Salinity | YS | Z Drain | EC, TDS | | | |
| Trace Metals | YS | Willow Slough | Selenium | Source Evaluation Past Due | Source Evaluation Report | 3/15/2012 |
| Path. Indicators | All | All 30 waterbodies with pathogen indicator management plans | E. Coli | Source Evaluation Reports submitted for 24 waterbodies; Task schedule suspended | Pending direction from Executive Officer | |
| Legacy Pesticides | All | All 8 waterbodies with legacy pesticide Management Plans | DDT, DDE | | Develop Management Plan approach with development of Order | N/A |
| DO and pH | All | All 22 sites with DO Management Plan | DO | | Develop Management Plan approach with development of Order | N/A |