

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

Recommended Irrigated Lands  
Regulatory Program Framework

**Staff Report**

**March 2011**





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**DISCLAIMER**

*This publication is a report by staff of the California Regional Water Quality Control Board, Central Valley Region. This report contains the evaluation of the staff-recommended long-term Irrigated Lands Regulatory Program Framework. Mention of specific products does not represent endorsement of those products by the Central Valley Water Board.*

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Lands Regulatory Program Framework

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## List of Acronyms/Abbreviations

AB	Assembly Bill
Appendix A	Volume II, Appendix A of the <i>Irrigated Lands Regulatory Program Final Program Environmental Impact Report</i> (ICF International 2011)
BMP	best management practice
BPTC	best practical treatment or control
Board	California Regional Water Quality Control Board, Central Valley Region
CEQA	California Environmental Quality Act
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
CWC	California Water Code
DPH	California Department of Public Health
DPR	California Department of Pesticide Regulation
DWR	California Department of Water Resources
Economics Report	<i>Draft Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program</i> (ICF International 2010)
EIR	Environmental Impact Report
Final PEIR	<i>Irrigated Lands Regulatory Program Final Program Environmental Impact Report</i> (ICF International 2011)
Framework	staff-recommended long-term Irrigated Lands Regulatory Program framework
FWQMP	farm water quality management plan
GMA	groundwater quality management area
GQMP	groundwater quality management plan
ILRP	Irrigated Lands Regulatory Program
MCL	maximum contaminant level
NPDES	National Pollutant Discharge Elimination System
NPS Policy	State Water Board Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program
NPS	nonpoint source
PEIR	Program Environmental Impact Report
State Water Board	State Water Resources Control Board
SB	Senate Bill
SWAMP	Surface Water Ambient Monitoring Program
TMDL	total maximum daily load
USGS	U.S. Geological Survey
WDRs	waste discharge requirements

## **I. EXECUTIVE SUMMARY**

This document contains the staff-recommended Long-Term Irrigated Lands Regulatory Program framework (“Framework” or “ILRP Framework”) and provides the rationale for selection of key elements. The staff recommendations are informed by the findings of the *Irrigated Lands Regulatory Program Final Program Environmental Impact Report* (“Final PEIR”) (ICF International 2011); Volume II, Appendix A of the Final PEIR (Appendix A); *Draft Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program* (“Economics Report”) (ICF International 2010); and the many thoughtful comments that have been provided by stakeholders on the draft recommendation.

In preparing this recommendation, staff recognizes there is no “perfect” regulatory framework that can anticipate all issues and challenges that will occur. Given lack of perfect foresight on the effects and effectiveness of any regulatory program, it is difficult to strike the correct balance between enough regulation to ensure that water quality is protected and too much regulation that creates unnecessary costs to business and government.

Staff are not suggesting that this recommended regulatory Framework has achieved that correct balance – we cannot know until this Framework, or some other alternative, is implemented. Given the variety of irrigated agricultural operations, the appropriate balance point may vary by geographic area, crop type, and other factors. However, we do believe that this Framework offers for Board consideration a fair approach that reflects and attempts to integrate the Board’s duty under the law, stakeholder interests and concerns, and the information that we have available to us.

It is important to recognize that this Framework is not rigid, but flexible. Should it be adopted, the Framework will provide a general structure for the California Regional Water Quality Control Board, Central Valley Region (Board) staff to consider as the implementing Orders are developed. However, the Board will be free to adopt requirements outside of this Framework or not apply elements described in this Framework. In so doing, the Board will need to ensure that any Order is consistent with applicable law and that the appropriate findings have been made and analyses have been conducted.

### **A. Summary of Elements of the Recommended Long-Term Irrigated Lands Regulatory Program Framework**

The following provides a high-level summary of the key elements of the recommended ILRP Framework. The exact language of the Framework can be found in the Attachment to this report.

Scope – The program scope applies to all irrigated agricultural lands in the Central Valley and includes managed wetlands, as well. Any waste (e.g., pesticides, nutrients, and sediment) that leaves the irrigated land surface and reaches groundwater or surface water is regulated. Because irrigation water readily transports these waste materials, we expect that all irrigated agricultural lands, with limited exceptions, will fall under this program.

Goals and Objectives – The goals and objectives of the ILRP were developed by the Stakeholder Advisory Workgroup and include protecting the beneficial uses of the Central Valley’s groundwater and surface waters, minimizing waste discharge from irrigated lands, maintaining the economic viability of agriculture, and ensuring that irrigated agricultural discharges do not impair access to safe and reliable drinking water.

Timeframe for Implementation – A program is currently in place to regulate irrigated agricultural discharges to surface water. We know that time will be required before the new requirements are in place (the Board will need to issue approximately a dozen new Orders) and to ensure that irrigated land operators have the proper regulatory coverage. To avoid the confusion of an immediate change from the current program to a new program, we have proposed a 3-year transition period.

Implementation Mechanisms – The program envisions using a “tiering” system to match regulatory requirements with the water quality issues. The tiers will be assigned based on a review of data available for groundwater and surface waters in an area. Tier 1 will be assigned to those constituents (e.g., pesticides, nutrients, and sediment) in an area that could affect, but do not pose a threat to, water quality. Tier 2 will be assigned if the threat level from irrigated agriculture is unknown. Tier 3 will be assigned if there is a known water quality problem for a constituent and irrigated agriculture is causing or contributing to that problem. Either general waste discharge requirements (WDRs) or waivers of WDRs will be issued on a geographic area or commodity basis after an analysis of what is known about water quality threats.

Lead Entity – We continue to believe that third-party groups working with the Board, such as the Coalitions in the current program, are the best approach to regulating tens of thousands of growers. If the third-party groups are not effective or growers are not responding to their efforts, the recommended Framework includes provisions to transition to direct regulation of growers in those areas.

Regulatory Requirements for Irrigated Agricultural Operations – The initial responsibility of growers is to obtain proper regulatory coverage, if they are not already in a Coalition. To make the Coalition or “third-party” approach work, growers and wetland managers will need to become informed of the water quality issues in their area, respond to identified problems by evaluating and improving their practices, contribute to regional monitoring efforts, provide information to the

Board, and contribute to studies on the effectiveness of practices. Growers will also need to prepare nutrient management plans in areas where the groundwater is impacted or threatened by nitrate contamination.

Management Plan and Practices Requirements – Third parties will be responsible for preparing regional plans that describe how water quality will be protected and improved. However, the success of those plans depends on what growers and wetland managers do on the ground. Growers will be expected to conduct a farm evaluation, identify the practices they have in place to protect water quality, implement changes if needed, and report that information to the third party (who will prepare a summary report for the Board). The Board will periodically evaluate how successfully regional plans are being implemented. Lack of progress will result in more direct Board oversight of growers, which will certainly add to grower costs.

Water Quality Monitoring and Assessment Requirements – Monitoring efforts will be focused in Tier 3 areas to track progress in addressing known water quality problems and in Tier 2 areas where irrigated agricultural effects on water quality are not known. Field studies will be important in Tier 3 areas that are not showing improvement to help determine what kinds of crops and practices generate the least pollution and the most pollution, and how best to achieve compliance. Tier 1 areas are generally considered sufficiently assessed that additional monitoring is not needed. However, the Board will periodically review available data to determine whether any adjustment to the tiers needs to be made. A lot of monitoring is ongoing, so it will be important to coordinate these efforts with other ongoing efforts to minimize duplication and cost and to maximize the water quality information derived from the sampling programs.

Time Schedule for Compliance – The Board and agricultural community will not be able to address all water quality problems at once; therefore, the Board is proposing specific time schedules for water quality problems that will be the focus of our initial efforts. These time schedules are important both to focus our attention and to ensure that progress is being made to correct the identified water quality problems. In the Orders issued to implement the recommended Framework, the Board will develop any needed time schedules for other water quality problems.

State Fees and Third-Party Costs – One of the biggest concerns for those being regulated by the Board is the cost of the program. The State often requires dischargers to pay fees to cover the State's administrative costs of the respective programs. The third parties will charge their members fees to cover their costs associated with monitoring and reporting requirements. In the recommended Framework, staff has tried to minimize administrative costs by giving growers an opportunity to make improvements within a less costly third-party framework. Also, staff believes that State and third-party fees can be adjusted to lessen the economic impact on those operators whose viability is most sensitive to cost

increases and that fees can be adjusted based on potential contribution to identified water quality issues.

## **B. Key Differences between the Draft Recommended Program (Alternative 6) and This Recommended Framework**

Since staff began engaging with stakeholders in developing the alternatives, we have tried to address fundamental stakeholder interests while meeting the Board's statutory mandates. We have also gained more knowledge and a better understanding of the various perspectives through our interactions with a diversity of interested parties. In reviewing and addressing the many comments we received, a number of changes in our original recommendation have been made.

### What issues/comments led to changes in the recommendation?

Requests for greater clarity – A number of comments either directly asked for clarification on a number of issues or misinterpreted the intent of an element in the recommended program. Staff has, therefore, tried to clarify or provide greater explanation of key elements of the recommended program. However, the reality is that a document describing a program of this scale is necessarily broad and cannot provide clear answers to all questions regarding the implications of the various elements. Additional definition will be provided in the subsequent Orders adopted by the Board. Other issues will not be fully clarified until the program is actually implemented and everyone has a better sense of how growers are responding, whether the requirements are achieving their intended benefit, whether data collected are sufficient to understand what is occurring, what the costs are, and whether water quality is improving.

How will the tiers be applied? – The application of the two tiers was not clear to many commenters, in addition to an issue of how to deal with lack of data. For example, agricultural interests felt parameters such as dissolved oxygen and *E. coli* should be in Tier 1 – low threat, rather than Tier 2 (previously defined as high threat), because irrigated agriculture may not be contributing to those water quality problems. To address these comments, staff added another tier to deal with lack of data or understanding of irrigated agriculture's contribution to a water quality problem. We also clarified that the tier classification would be evaluated separately for different parameters in different areas. Although staff realizes that this approach can be complicated, it is likely the best way of dealing with the environmental realities, while trying to minimize costs. Requirements will be minimal for Tier 1 parameters; additional information collection will be needed for Tier 2 parameters; and specific plans and on-the-ground practice implementation will be needed for Tier 3 parameters.

Grower / coalition accountability – A number of concerns expressed that the lack of direct regulation by the Board over irrigated lands operations leads to an over-reliance on the good faith efforts of third parties, over whom the Board has no

regulatory authority. Staff believe that third parties with local presence and expertise provide the best opportunity to both improve water quality and minimize cost. Under the current program, however, it has not been clear that growers are aware of the water quality issues in their area or have taken steps to evaluate their practices. In addition, although Coalitions have generally met their obligations under the current waiver, options have been limited for the Board when a Coalition has failed to submit timely or complete reports.

To address these issues, the recommended program requires grower participation in education / outreach and completion of a farm evaluation. These requirements should raise general awareness of water quality issues and allow farmers to consider specific actions that can be taken on their farms. Greater specificity has been provided on the expectations and eligibility requirements for third-party groups and the consequences to members for any failures on the part of the third party. In addition, greater accountability to their members has been specified for fees charged by third parties and their affiliated sub-watershed groups.

Farm plans / nutrient management plans – A number of commenters stated that all farmers should develop a certified farm plan; other commenters felt that farm plans were unnecessary, if a regional plan had been prepared. The Board believes that regional plans can be effective. However, the Board staff believe that a reasonable and minimal step for a grower to take is to conduct a farm evaluation, which can be accomplished in a cost-effective manner and retained onsite. In considering the seriousness and extent of nitrate contamination in the Central Valley's aquifers, staff believe that a requirement for farm-specific certified nutrient management plans (similar to the General Order for dairy operations) in Tier 3 groundwater areas is reasonable and will catalyze reductions in nitrate inputs from irrigated agriculture. Staff do not believe that the benefits of preparing comprehensive certified farm management plans, other than for nutrients in Tier 3 groundwater areas, are justified by the costs—unless regional plans have not been adequately implemented.

Water quality monitoring – A number of comments suggested that monitoring requirements for low threat areas were an unnecessary cost, and other comments suggested that all growers should conduct some amount of farm monitoring. Staff believe that monitoring efforts should focus on areas and parameters for which agricultural impacts are unknown and to track trends of known water quality impacts. Where sufficient data exist to conclude that an area or commodity is low threat, additional monitoring should not be necessary. Periodic staff review of available data can be conducted to determine whether a low threat status should change. This approach will allow resources to be focused in areas that need the greatest attention. Another issue raised related to monitoring was the lack of data on management practice efficacy. Staff agree with this concern and recommend that the monitoring programs for Tier 3 areas be designed to evaluate practice efficacy (e.g., through representative field studies, modeling, or other appropriate means).

Program cost / economic impact – Many growers with small farms or operations with low-value crops, such as irrigated pasture, were concerned about the impact of any additional cost on their ability to continue farming. As discussed above, the general approach outlined by staff is to provide growers an opportunity to address water quality issues in a lower cost, third-party framework, while providing a “backstop” of direct Board oversight if water quality improvements are not being made. The three-tier approach should help to minimize costs by focusing regulatory efforts in areas with identified water quality issues. Staff have proposed a conditional waiver of WDRs for irrigated pasture, which should address the most significant projected economic impacts.

In addition, Board staff recognize that the majority of fees associated with the program are related to the third party’s cost for conducting monitoring and reporting on behalf of its members. The recommended program includes a provision for third parties to consider a fee structure that would account for the potential impact on marginally viable irrigated land operations as well as the potential contribution of a grower to identified water quality issues.

Removal of the conditional prohibition of discharge – A number of commenters raised procedural concerns regarding the prohibition of discharge that would apply to irrigated land operations without appropriate regulatory coverage. Staff do not agree that any legal issues are raised by adopting a conditional prohibition of discharge, because the conditional prohibition would be properly noticed, substantial public outreach would be conducted prior to the prohibition becoming effective, and adequate time to obtain proper coverage would be provided. However, staff are concerned that the prohibition could reduce the Board’s enforcement discretion and divert staff resources to enforce the prohibition, even if there were higher priority compliance/ enforcement issues. The Board can still use its authorities under California Water Code (CWC) § 13260 and § 13267 to require the submittal of reports of waste discharge or technical reports, respectively, to allow the Board to determine whether regulatory coverage is necessary.

### **C. Summary of Environmental Impact Analysis**

The California Environmental Quality Act (CEQA) requires the Board (and any other permitting authority) to disclose the potential environmental impact of any discretionary projects, which may include permitting or regulatory actions. Although we expect significant environmental benefits from improving and protecting water quality, CEQA is designed to focus on the potential adverse environmental effects of an action, even when there are net environmental benefits (e.g., pressurized irrigation requires a pump, which can result in impacts; pressurized irrigation is more efficient, however, so the pumping required to deliver water to the farmer, and the associated impacts, will decrease).

In conducting a CEQA analysis, the Board is not required to speculate on potential effects or quantify an impact, if the information is not available. The

Board is required to do its best to identify impacts and to choose an option that meets our water quality protection mandates, while avoiding or mitigating any potential environmental impacts. If potential impacts cannot be avoided, then the Board can still take action to meet its statutory responsibilities, as long as it clearly states the rationale for proceeding in light of any adverse environmental effects.

As the Board and its contractors developed the environmental analysis to ensure compliance with CEQA, a number of unique issues needed to be considered that were challenging to address.

First, the Board is not looking at permitting a traditional “project,” like a new arena or treatment plant. Instead, the Board is considering a new regulatory program. It is much easier to anticipate the environmental impacts of a traditional project located in a specific location, than it is to anticipate how tens of thousands of growers might respond to new requirements and which growers might respond in a manner that could negatively affect the environment. The potential impacts we have identified are based on how staff anticipate irrigated land operators to respond to the requirements. However, nothing in the recommended Framework requires specific actions that would adversely impact the environment.

Second, we are looking at program-level impacts, rather than project-specific level effects. Staff are trying not only to anticipate how growers might respond to the new requirements but also to anticipate how the Board will implement the new program through individual Orders. If the Board includes requirements that could create impacts not addressed in the PEIR, additional CEQA analysis and findings would be required.

Third, a traditional CEQA analysis starts with a preferred alternative. The preferred alternative is analyzed more thoroughly than the other alternatives. In this case, we reviewed all six alternatives advanced by the Stakeholder Advisory Workgroup and staff to the same level of detail.

Fourth, it is important to keep in mind that the Board is not bound to adopt one of the analyzed alternatives without changes. In fact, the point of the CEQA analysis is to allow the decision-making body to modify the proposal (if it chooses) to select an approach that will accomplish the project (or program) goals while minimizing or mitigating any environmental impacts. As long as the adopted program falls within the range of alternatives analyzed and the appropriate findings have been disclosed, the Board may adopt a program that is a variation on the alternatives analyzed without the need to conduct additional CEQA analysis.

#### How do we know how growers will react to our program?

We do not know the precise on-the-ground response of each of the 30,000+ growers to the recommended Framework. However, there are common

practices that some growers already implement that can benefit water quality. We analyzed a selection of those commonly used practices that could meet our water quality protection goals and were likely to be representative of impacts of new practices on the environment and indicative of likely costs. Those practices include (1) nutrient management; (2) improved irrigation water management; (3) tailwater recovery systems; (4) pressurized irrigation; (5) sediment traps, hedgerows, or vegetated buffers; (6) cover cropping or conservation tillage; and (7) wellhead protection.

It is important to point out that these actions are common practices used in agriculture that a grower might take, even in the absence of Board regulatory action (e.g., improving irrigation management). However, implementation of a new irrigated lands program should result in more widespread adoption of practices that will reduce the discharge of waste to groundwater and surface waters.

What are the potential environmental impacts from implementation of these practices?

Potential impacts related to the recommended program were identified in the following resource areas: (1) cultural resources; (2) noise; (3) air quality; (4) climate change; (5) vegetation and wildlife; (6) fisheries; and (7) agriculture resources.

As mentioned previously, the Board does not know exactly how growers will respond or—for those growers who do need to improve their practices—which ones might respond in a manner that could result in a negative environmental impact. However, we can make a reasoned assessment of what those impacts might be.

Impacts related to cultural resources, vegetation and wildlife, and fisheries:

Although growers will generally implement practices on portions of their land that have already been cultivated or disturbed, it is possible that implementation of a new practice might result in modifying previously undisturbed areas. For example, a tailwater recovery system might be constructed in an area that had been undisturbed native vegetation. Construction activities may result in an impact to cultural resources (e.g., Native American artifacts). Removal of native vegetation might impact special-status species. If vegetation disturbance is next to a stream, special-status fish species could be impacted. Reduction in return flows could negatively affect downstream wetlands, including riparian habitat.

Because native habitat could be removed or altered to implement practices in response to this program, the potential exists for significant impacts on cultural resources, vegetation and wildlife, and fisheries. The primary mitigation measure for these potential impacts is to encourage avoidance of locating practices in an area where native habitat could be altered. If the grower cannot find another practice, or location of the practice, to protect water quality and avoid these

impacts, the grower will need to consult with the appropriate experts and develop a site-specific approach to avoid the impact.

Impacts related to noise, air quality, and climate change: Potential impacts associated with noise, air quality, and climate change are anticipated from short-term construction activities, longer term operation of irrigation pumps, and anticipated increases in vehicle trips associated with monitoring. Heavy machinery can increase noise locally; increase dust and emissions from diesel engines, impacting air quality; and result in an increase of greenhouse gas emissions, contributing to a cumulative effect on climate change. Unenclosed pumps can increase noise locally; diesel pumps can impact air quality; and emissions from diesel pumps can increase greenhouse gas emissions, contributing to a cumulative effect on climate change. Any increase in monitoring requirements would require more sampling trips and increased vehicle travel, which could increase noise locally, impact air quality, and increase greenhouse gas emissions.

Any noise impacts on sensitive receptors (e.g., noise near homes, schools, or businesses) can be mitigated by complying with local noise ordinances. Increased vehicle miles are not expected to be sufficiently significant to require operators to provide mitigation. Local air district requirements will apply to any new pumps, which will mitigate any potential impacts. There is no clear guidance on how to consider contributions to climate change. Although the program should increase the efficiency of agricultural operations, reducing energy demands and associated greenhouse gas emissions, the net change cannot be quantified. Therefore, we are assuming that the program will result in a cumulative impact on climate change.

Impacts related to agriculture resources: The recommended ILRP will result in greater costs, primarily for growers who need to implement new practices in order to protect water quality. The economic analysis we conducted indicated that growers of lower value crops have the least margin for absorbing additional costs. We have tried to minimize the regulatory costs through our tiered approach, so that growers who are not contributing to water quality problems will incur minimal costs to obtain regulatory coverage. Because some growers of lower-value crops might not be able to afford to implement improved practices, it is possible that some agricultural land will go out of production and be converted to a non-farming use. The Board will try to mitigate this impact by working with the Natural Resources Conservation Service, the California Department of Food and Agriculture, and other funding agencies to assist with financing of improved practices. However, there is a potential loss of agricultural land use that cannot be mitigated.

#### **D. Summary of Policy / Legal Analysis**

In developing the ILRP Framework, the Board needs to make sure that implementation of the Framework is consistent with Porter-Cologne and State

Water Board policies. The Clean Water Act has no direct regulatory authority over agricultural discharge; therefore, no applicable federal provisions need to be analyzed. Analyses of the primary State provisions applicable to the recommended ILRP Framework are summarized below.

Estimate of Total Cost – Porter-Cologne (§ 13141) requires the Board to estimate the total cost of an agricultural water quality control program and the potential sources of financing. An extensive economic analysis of the six program alternatives has been conducted, and cost estimates have been developed for the recommended ILRP Framework (see Section IV.C. of this report). The actual cost will depend on a number of factors that are not well known, including (1) the extent to which growers have already implemented management practices to protect water quality; (2) whether the third-party framework will be successful or greater direct Board oversight will be required; and (3) how adequate the existing groundwater monitoring is in evaluating the impacts of irrigated land discharges.

If growers have already made great progress in implementing practices protective of water quality, the third-party framework is successful, and existing groundwater quality monitoring is by and large adequate, the administrative and monitoring costs should be similar to those under Alternative 2. The anticipated degree of management practice implementation should be less than originally estimated, resulting in an estimated averaged annualized total cost of \$29 per acre. If more extensive implementation of practices is needed, direct Board regulation of growers is required, and significant increases groundwater quality monitoring are needed, the costs should be similar to those under Alternative 5 – an estimated average annualized cost of \$176 per acre. Therefore, the estimated average annualized costs per acre<sup>1</sup> are from \$29 to \$176 (see Section IV.C. for total cost estimate and assumptions).

State Water Board Nonpoint Source Policy – The State Water Board’s nonpoint source policy includes five key elements that must be included in any nonpoint source implementation program adopted by the Regional Water Quality Control Boards (Regional Water Boards). Those elements include (1) the purpose of the program; (2) the practices to be implemented and how they will be evaluated; (3) the time schedule for achieving water quality requirements; (4) feedback mechanisms to determine whether the program is achieving its purpose; and (5) the consequences of failure to achieve the stated purpose.

The recommended ILRP Framework addresses each of these elements, as described below and each of the elements will be addressed in more detail with issuance of the Orders implementing the program.

- (1) The purpose is stated in the program goals and objectives, which include meeting water quality objectives and complying with antidegradation requirements.

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<sup>1</sup> Assumes 7.5 million irrigated acres.

- (2) The types of practices to be implemented were evaluated, and mechanisms are in place for growers to report the practices they are implementing. The regional management plans must include a description of how management practice effectiveness will be evaluated.
- (3) Time schedules for the water quality issues that will be the primary focus of the program have been identified in the programmatic framework. Other time schedules will be adopted, as needed, in the Orders implementing the program.
- (4) Water quality monitoring is required in those areas with water quality problems or where the irrigated agricultural contribution to water quality problems is unknown. Feedback also will occur through tracking of management practice implementation and effectiveness.
- (5) The consequences of failure of the third-party framework have been spelled out—direct oversight by the Board with a requirement for individual farm water quality management plans. The enforcement policy also will be followed to ensure compliance.

Resolution 68-16 (the “Antidegradation” Policy) –The recommended program explicitly recognizes degradation of high-quality water as a water quality threat that triggers a requirement to develop a management plan. The management practices implemented under that management plan must achieve best practical treatment or control (BPTC) where the potential exists for degradation of high-quality waters. Some degradation of high-quality waters will be allowed, as long as practices that achieve BPTC are implemented and beneficial uses are protected.

In addition to the Executive Summary, this report contains the following sections: Introduction, Environmental Impacts, Evaluation of Recommended Irrigated Lands Regulatory Program Framework, References, and an Attachment containing the Recommended Long-Term ILRP Framework.

## II. INTRODUCTION

The staff-recommended long-term Irrigated Lands Regulatory Program Framework (Framework) is the product of many years of development and countless meetings and conversations with stakeholders and experts. Throughout the process, staff have felt it was important to be clear about our mandate to protect water quality, while recognizing that there are many ways to go about water quality protection that can affect the likelihood of success and the impact on affected stakeholders. Understanding that, we went about the task of developing this staff-recommended Framework by seeking the advice and opinions of those with an interest in how the program would be structured.

Through that process, we received specific recommendations from agricultural representatives; environmental and environmental justice groups; local, State, and federal agencies; and other groups and individuals interested in irrigated agricultural water quality issues. Based on their thoughtful recommendations, we crafted a draft staff recommendation that tried to balance our mandates under the law, the reality of resource limitations of growers and the State, and the need to address water quality problems as expeditiously as possible. After receiving numerous comments on the draft recommendation, we have made a number of changes that are aimed to improve the draft in three fundamental ways:

- (1) By increasing expectations and requirements for areas with identified water quality problems, especially groundwater quality issues. The emphasis on groundwater is needed, because once groundwater is polluted, it may take decades or longer to see improvements or attainment of objectives.
- (2) By reducing expectations and requirements for areas with no known water quality problems. Regulatory coverage is still needed, but we want to minimize resources dedicated to areas where water quality issues are unlikely.
- (3) By providing more explanation, where possible, to enhance clarity as to the intent or expectations of the proposed provisions. We have provided greater explanation to help guide, while trying to avoid unnecessarily constraining, the future implementation of the program.

This report focuses on the recommended ILRP Framework that staff would like the Board to consider adopting. The foundation for the recommendation can be found in the Final PEIR. Background information and analysis can be found in the Final PEIR and is not repeated here. This report focuses on the issues and analyses unique to this recommendation.

The Attachment to this report includes the provisions of the recommended ILRP Framework. Staff intend to ask the Board to adopt the Framework by a resolution. The resolution will not adopt the Framework as a rule or regulation;

therefore, it will not be binding on subsequent Board actions on irrigated lands. In adopting subsequent Orders, the Board will be able to develop requirements that are not articulated in the ILRP Framework or disregard provisions of the Framework. In so doing, the Board may need to conduct additional analysis or make other findings that are not included in the Final PEIR, Economics Report, or this report. To the extent that the Board adheres to the Framework in its subsequent Orders, such additional analysis will not be necessary.

The following sections describe the environmental impacts identified in the PEIR that pertain to the recommendation, analysis of conformance of the Framework with Porter-Cologne and State Water Board policies; and an estimate of the total cost of the program. The Attachment contains the recommended ILRP Framework.

### **III. ENVIRONMENTAL IMPACTS**

In analyzing the potential environmental impacts of the recommended ILRP Framework, staff relied on the analysis in the Final PEIR. This analytical approach is appropriate for two primary reasons:

- (1) Although the recommended ILRP Framework provides more detail than the six alternatives analyzed in the Final PEIR, the recommended Framework includes regulatory elements that are explicitly described within the six alternatives or are within the range of actions and related impacts encompassed by the six alternatives.
- (2) The actions of the regulated dischargers (irrigated land operations) in response to requirements to protect surface water and groundwater quality are expected to be the similar under the recommended Framework as under Alternatives 2–6 (Alternative 1 does not include a groundwater quality protection element). The potential environmental impacts (with the exception of agriculture resources) are driven by the practices implemented by irrigated land operators in response to the new requirements, rather than by any specific practice or on-the-ground action required by the Board. Therefore, the mitigation actions proposed with the recommended ILRP Framework will be the same as those analyzed in the Final PEIR (with the exception of agriculture resources, as discussed below).

#### **A. Potentially Significant Impacts Common to All Alternatives**

In general, potential environmental impacts of long-term ILRP alternatives are associated with implementation (e.g., construction and operation) of water quality management practices and construction of monitoring wells (see Final PEIR). The alternatives analyzed in the Final PEIR and the recommended Framework require irrigated agricultural operations to implement management practices in

areas throughout the region to address water quality concerns. The management practices analyzed are not a mandatory part of any alternative, but are identified in the Economics Report as practices likely to be implemented to meet water quality and other management goals on irrigated lands, including fields, managed wetlands, and nurseries. The analyzed management practices are representative of those most likely to be implemented and those most likely to result in the most significant environmental and economic impacts. These water quality management practices include:

- nutrient management;
- improved water management;
- tailwater recovery system;
- pressurized irrigation;
- sediment trap, hedgerow, or buffer;
- cover cropping or conservation tillage; and
- wellhead protection.

The Final PEIR includes a more detailed description of the activities associated with the above practices that could result in potentially significant impacts; however, a brief summary is provided below.

Nutrient Management – The only potential impact associated with nutrient management is additional planning and management costs, which may be largely offset by savings related to fertilizer material and operations. Increases in cost can negatively affect marginally viable operations, leading to a potential loss of agricultural land use (from land being converted to a non-farming use). A potential impact on agriculture resources is associated with the practice of nutrient management.

Under the recommended ILRP Framework, nutrient management is required in Tier 3 groundwater areas potentially impacted by nitrates, and is considered and evaluated as a likely response in areas with nitrate-impacted aquifers under Alternatives 2–6 of the Final PEIR.

Improved Water Management – In addition to increases in cost, improved water management can result in reduction in surface runoff. Substantial reduction in surface runoff to streams dominated by irrigation runoff could affect fisheries due to lack of flow. In addition, riparian vegetation and any wildlife that rely on the riparian corridor could be impacted by a reduction in surface runoff. The use of certain additives as a coagulant for sediment particles could be toxic in the aquatic environment. Potential impacts on agriculture resources, fisheries, and vegetation and wildlife are associated with improvement water management.

Improved water management is considered a likely response to the requirements of the recommended ILRP Framework, and was considered and evaluated as a

likely response in areas with surface water and groundwater quality problems under Alternatives 1–6 of the Final PEIR.

Tailwater Recovery Systems – The potential impacts associated with a tailwater recovery system would be the same as those described for improved water management. Ponding of water in the tailwater recovery pond could lead to an increase in percolation to groundwater, which could impact groundwater quality—absent requirements to protect groundwater from the discharge of waste. The recommended ILRP Framework includes groundwater protection elements to address any potential groundwater impacts. In addition, construction activities associated with installing the system could result in additional impacts. Ground-disturbing activities on previously undisturbed ground could alter riparian or other habitats used by wildlife habitat, negatively affecting the species that rely on those habitats. Such activities also could disturb cultural resources, such as Native American artifacts. The construction activity could result in temporary impacts related to noise and air emissions (e.g., fugitive dust). Ongoing operation of a tailwater recovery system involves pumps, which also could cause noise impacts, as well as air quality and climate change impacts due to the emissions from a diesel pump. Potential impacts related to cultural resources, noise, air quality, climate change, vegetation and wildlife, fisheries, and agriculture resources are associated with tailwater recovery systems.

Tailwater recovery systems are considered a likely response to the requirements of the recommended ILRP Framework, and are considered and evaluated as a likely response in areas with surface quality problems under Alternatives 1–6 of the Final PEIR.

Pressurized Irrigation – Pressurized irrigation involves conversion of a surface (gravity) system to a pressurized irrigation system. The pumps required to pressurize the water could cause noise impacts and air quality and climate change impacts due to emissions from a diesel pump. Pressurized irrigation systems are more costly than gravity systems, which can negatively impact marginally viable operations and lead to a potential loss of agricultural land use. In addition, conversion from a gravity system to a pressurized system could reduce agricultural water return flows to local streams, adversely affecting fish and vegetation and wildlife resources. Potential impacts on agriculture resources, noise, air quality, fisheries, vegetation and wildlife, and climate change associated with pressurized irrigation.

Pressurized irrigation is considered a likely response to the requirements of the recommended ILRP Framework, and is considered and evaluated as a likely response in areas with surface water and groundwater quality problems under Alternatives 1–6 of the Final PEIR.

Sediment Traps, Hedgerows, or Buffers – The potential construction- and operations-related impacts of sediment traps would be similar to those described for tailwater recovery systems and would be associated with ground-disturbing

activities, and reductions in surface flows from the fields. As described for tailwater recovery systems, an increase in percolation to groundwater could adversely affect groundwater—absent requirements to protect groundwater from the discharge of waste. However, the recommended ILRP Framework includes groundwater protection elements to address any potential groundwater impacts. The periodic maintenance activities required to clean out the sediment trap are not expected to cause any potentially significant adverse impacts. The costs associated with installing sediment traps, hedgerows, or buffer strips can negatively affect marginally viable operations, leading to a potential loss of agricultural land use. Potential impacts on agriculture resources, cultural resources, noise, air quality, fisheries, and vegetation and wildlife are associated with sediment traps, hedgerows, or buffers.

Sediment traps, hedgerows, or buffers are considered a likely response to the requirements of the recommended ILRP Framework, and are considered and evaluated as a likely response in areas with surface water quality problems under Alternatives 1–6 of the Final PEIR.

Cover Cropping or Conservation Tillage – Cover cropping and conservation tillage could lead to an increase in percolation to groundwater, which could impact groundwater quality—absent requirements to protect groundwater from the discharge of waste. However, the recommended ILRP Framework includes groundwater protection elements to address any potential groundwater impacts. The costs associated with planting and maintaining a cover crop can negatively affect marginally viable operations, leading to a potential loss of agricultural land use. Potential impacts on agriculture resources are associated with cover cropping or conservation tillage.

Cover cropping or conservation tillage is considered a likely response to the requirements of the recommended ILRP Framework, and was considered and evaluated as a likely response in areas with surface quality problems under Alternatives 1–6 of the Final PEIR.

Wellhead Protection – Protection of wellheads may require the use of heavy machinery, which may temporarily increase noise levels and construction-related air emissions. The costs associated with establishing and maintaining wellhead protection measures can negatively impact marginally viable operations, leading to a potential loss of agricultural land use. Potential impacts on agriculture resources, noise, air quality, and climate change are associated with wellhead protection.

Wellhead protection is considered a likely response to the requirements of the recommended ILRP Framework, and is considered and evaluated as a likely response in areas with groundwater quality problems under Alternatives 2–6 of the Final PEIR.

## **B. Board Requirements and Potentially Significant Impacts**

The Final PEIR also addresses Board requirements with the potential to result in significant environmental impacts, which are summarized below.

Monitoring – Board requirements can lead to additional monitoring activities related to surface water and groundwater quality. The additional vehicle trips required to collect and submit samples for analysis could affect air quality and contribute to global climate change through increased emissions of greenhouse gases. New groundwater monitoring wells may need to be installed. Installation of new monitoring wells could result in impacts similar to those described earlier for ground-disturbing and construction activities. The costs associated with establishing and maintaining monitoring wells, and the additional costs associated with collecting and analyzing water samples can negatively impact marginally viable operations, leading to a potential loss of agricultural land use. Potential impacts on agriculture resources, climate change, cultural resources, noise, air quality, fisheries, and vegetation and wildlife are associated with fulfilling monitoring requirements.

Additional monitoring is considered a likely requirement in the issuance of Orders to implement the recommended ILRP Framework, and is considered and evaluated as a component of the regulatory program associated with Alternatives 2–6 of the Final PEIR.

Program Administration – In general, dischargers are assessed fees to cover the State's costs to administer programs governing their discharge. In addition, reporting requirements can add additional costs, especially when the expertise of an outside consultant is needed to complete required technical reports. The costs associated with assessed fees and professional services to complete required technical reports can negatively impact marginally viable operations, leading to potential loss of agricultural land use. Potential impacts on agriculture resources are associated with funding program administration.

Additional program administration costs are considered a likely outcome of the issuance of Orders to implement the recommended ILRP Framework, and are considered and evaluated as a component of the regulatory program associated with Alternatives 2–6 of the Final PEIR.

## **C. Limitations in Quantifying and Assessing Impacts**

A number of limitations are associated with quantifying and assessing the impacts associated with the recommended ILRP Framework. These limitations are discussed below.

The geographic extent, and in some cases the severity, of impacts cannot be reasonably forecasted. The ILRP Framework does not specify practices to be implemented. The practices that growers would use are common agricultural practices that might be implemented for a variety of economic and agronomic

reasons, not only to protect water quality. Given the programmatic, rather than the site-specific nature, of the ILRP Framework, the Board can neither determine what practices a grower will implement in response to the subsequent Orders issued pursuant to the Framework nor identify which growers may implement the practices in a manner that could cause a significant environmental impact. The geographic extent, and in some cases the severity, of impacts associated with the ILRP Framework, therefore, cannot be reasonably forecasted.

Economic effects on marginally viable operations are difficult to predict. The ILRP Framework is flexible in its approach to regulating irrigated land operations. If growers are effective at working within a third-party framework to protect water quality, the regulatory burden and associated costs will be reduced. If water quality is not being protected under the third-party framework, the Board will directly regulate growers, which will increase costs. Because the ultimate costs of the program will be largely dictated by growers, the economic effects on marginally viable operations are difficult to predict.

The costs associated with monitoring are difficult to quantify. The Board received many comments suggesting that current groundwater monitoring conducted locally would provide adequate information. Because these data have not been compiled or provided to the Board, it is unclear where data gaps may exist or how much additional groundwater quality monitoring may be needed. In addition, the recommended ILRP Framework requires evaluation of the effectiveness of management practices. Such an evaluation (and the studies associated with those evaluations) is most important when water quality is not improving, despite information indicating implementation of practices. It is therefore difficult to predict the extent to which field studies will be needed to evaluate the effectiveness of practices.

#### **D. Impacts and Mitigation**

As described above, a number of potential environmental impacts are related to the responses of irrigated land operators to the recommended ILRP Framework and the costs associated with complying with the regulatory requirements. In general, the identified potential impacts can be reduced to a less-than-significant level by using an alternate practice (e.g., use of a pesticide that will not cause toxicity rather than construction of a tailwater return system) or by choosing a location for the practice that avoids sensitive areas (e.g., installing a sedimentation basin in a portion of the property that is already developed rather than in an area that provides riparian habitat). Where no alternate practice or less sensitive location for the practice exists, irrigated agricultural operations that choose to implement these practices would be directed to avoid impacts to sensitive resources by following project-level mitigation measures. These measures will be required for a grower to qualify for coverage under the applicable general Order (i.e., WDRs or a conditional waiver of WDRs). Specific

mitigation measures will be identified<sup>2</sup> in conjunction with the Board's issuance of subsequent Orders for the ILRP.

Performance standards for development of such mitigation and program-level mitigation measures are discussed in each resource section of the PEIR. The environmental impacts and mitigation measures associated with the recommended ILRP Framework are summarized below.

Cultural Resources (less-than-significant impact with mitigation and a less than cumulatively considerable contribution to impacts with mitigation) – As discussed above, a number of construction activities associated with irrigated agricultural management practices could impact cultural resources. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact CUL-1” (associated with Alternatives 1–6) and “Impact CUL-2” (associated with Alternative 5). The mitigation measure “CUL-MM-1” identified in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. Implementation of the mitigation measure will reduce the impact to a less-than-significant level and to a less-than-cumulatively-considerable impact.

Noise (less-than-significant impact with mitigation and a less than cumulatively considerable contribution to impacts with mitigation) – As discussed above, a number of construction and operation activities associated with irrigated agricultural management practices could affect noise. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact NOI-1” and “Impact NOI-2” associated with Alternatives 1–6. The mitigation measures “NOI-MM-1” and “NOI-MM-2” identified in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. Implementation of the mitigation measures will reduce the impacts to a less-than-significant level and to a less-than-cumulatively-considerable impact. Potential noise impacts related to vehicle trips associated with the recommended ILRP Framework are the same as those discussed in the Final PEIR for Alternatives 1–6; these impacts would be less than significant and would not result in a cumulatively considerable impact. Therefore, no mitigation is required associated with vehicle trips.

Air Quality (less-than-significant impact with mitigation and a less than cumulatively considerable contribution to impacts with mitigation) – As discussed above, a number of construction and operation activities associated with irrigated agricultural management practices could result in impacts on air quality. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact AQ-1,” “Impact AQ-2,” and “Impact AQ-3” associated with Alternatives 1–6. The mitigation measures “AQ-MM-1,”

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<sup>2</sup> Such mitigation measures will include those identified in the PEIR and may include other mitigation measures necessary to meet the mitigation performance standards described in the PEIR. Should any additional identified mitigation measures potentially cause environmental impacts, additional environmental impact analysis will be conducted.

“AQ-MM-2,” and “AQ-MM-3” identified in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. Implementation of the mitigation measures will reduce the impacts to a less-than-significant level and to a less-than-cumulatively-considerable impact.

Climate Change (less-than-significant impact at the local level and a cumulatively considerable contribution to impacts even with mitigation) – As discussed above, a number of construction and operation activities associated with irrigated agricultural management practices could increase greenhouse gas emissions. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact CC-1” associated with Alternatives 1–6. The mitigation measures “CC-MM-1” and “CC-MM-2” identified in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. Local impacts on climate change are considered less than significant. However, any increase in greenhouse gas emissions is considered a cumulatively considerable impact on climate change, even with the mitigation requirements. It is important to note that the anticipated reduction in fertilizer, pesticide, and water use may result in a net reduction in greenhouse gas emissions. Because these benefits have not been quantified, we are considering only the potential negative impacts of improved management practices on greenhouse gas emissions.

Vegetation and Wildlife (less-than-significant impact with mitigation and a cumulatively considerable contribution to impacts even with mitigation) – As discussed above, a number of construction and operational activities associated with irrigated agricultural management practices could adversely affect vegetation and wildlife. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact BIO-1,” “Impact BIO-2,” and “Impact BIO-3” associated with Alternatives 1–6; “Impact BIO-4” and “Impact BIO-5” associated with Alternatives 2–6; and “Impact BIO-6” and “Impact BIO-7” associated with Alternative 5. The mitigation measures “BIO-MM-1” and “BIO-MM-2” in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. Implementation of the mitigation measures will reduce the impacts to less than significant. However, as discussed in the PEIR, impacts on vegetation and wildlife impacts would be cumulatively considerable, even with mitigation.

Fisheries (less-than-significant impact with mitigation and a less than cumulatively considerable contribution to impacts with mitigation) – As discussed above, a number of construction and operation activities associated with irrigated agricultural management practices could affect fisheries. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact FISH-1,” “Impact FISH-2,” “Impact FISH-3,” and “Impact FISH-4” associated with Alternatives 1–6; “Impact FISH-5” associated with Alternatives 2–6; and “Impact FISH-6” and “Impact FISH-7” associated with Alternative 5. The mitigation measures “FISH-MM-1” and “FISH-MM-2” in the Final PEIR will be incorporated into any Orders implementing the recommended

ILRP Framework. Implementation of the mitigation measures will reduce the impacts to a less-than-significant level and to a less-than-cumulatively-considerable impact.

Hydrology and Water Quality (beneficial impact and no cumulatively considerable contribution to impacts) – As discussed in the PEIR, the alternatives that address groundwater quality and surface water quality (Alternatives 2–6) are expected to result in a beneficial impact on water quality. Therefore, no mitigation is required. The recommended ILRP Framework also addresses groundwater quality and surface water quality and therefore is expected to result in a beneficial impact on water quality. As discussed in the PEIR and applicable to the recommended ILRP Framework, comments received suggesting that protecting groundwater quality could substantially interfere with recharge or substantially deplete groundwater supplies are speculative and are not based on substantial evidence. Recharge can occur without the discharge of waste that would cause or contribute to exceedance of water quality objectives or degradation. In fact, improved irrigation practices likely would enhance groundwater resources because less water would be pumped from aquifers for irrigation supply.

Agriculture Resources (potentially significant impact and potentially cumulatively considerable contribution to impacts) – As discussed above, all of the management practices involve some cost. Therefore, any irrigated land operation that must add these management practices to meet the conditions of the ILRP Framework will experience increased operation costs. The potential impacts of the recommended ILRP Framework are the same as those identified in the Final PEIR as “Impact AG-1” associated with Alternatives 1–6. The mitigation measure “AG-MM-1” in the Final PEIR will be incorporated into any Orders implementing the recommended ILRP Framework. This mitigation measure reflects the Board’s commitment to work with the agricultural community to pursue funding in order to offset costs for those sectors of agriculture least able to absorb the increased cost associated with the recommended ILRP Framework.

It is also important to note that the recommended ILRP Framework is structured to mitigate the potential impact on agricultural land use associated with the new regulatory requirements. No monitoring and minimal reporting requirements are required for Tier 1 areas. In addition, a conditional waiver of WDRs is proposed for irrigated pasture, one of the agricultural sectors that would be most affected by any increase in cost. Despite these measures, implementation of the recommended Framework may result in some irrigated land operations that would not be viable, resulting in the loss of important farmland. Should growers effectively address water quality issues through the third-party framework, the impacts to agriculture resources would be similar to those described in the PEIR for Alternatives 1 and 2. Should individual regulation of irrigated land operations be required, the impacts would be between those predicted in the PEIR for Alternatives 4 and 5. Even with mitigation, implementation of the recommended

ILRP Framework has the potential to result in significant unavoidable impacts and cumulatively considerable impacts to agriculture resources.

#### **IV. EVALUATION OF RECOMMENDED IRRIGATED LANDS REGULATORY PROGRAM FRAMEWORK**

In this section, the recommended ILRP Framework is evaluated for consistency with the evaluation measures considered in Section IX of the *Draft Irrigated Lands Regulatory Program Environmental Impact Report*, Volume II: Appendix A – July 2010 (hereinafter, “Appendix A”). The measures include program goals and objectives, the California Water Code (CWC), the State Water Board Nonpoint Source Policy, and the State Antidegradation Policy. The recommended ILRP Framework has been developed using the components of Alternatives 1–6 in the PEIR. The following discussion is based on the results of the evaluation of the six alternatives found in Appendix A. To fully understand the evaluation presented in this section, the reader should be familiar with, and is referred to, Section IX of Appendix A.

The qualitative system described in Section IX of Appendix A is used in Section IV.A below to establish a measure of how well the recommended alternative fulfills the evaluation measures. The qualitative system is based on whether alternatives are expected to meet existing requirements (i.e., would the alternative be consistent with goals/policy/laws).

In addition to the evaluation in Section IV.A, Sections IV.B–D provide a discussion of (1) how effectively the Board could administer the recommended ILRP Framework, and (2) estimated economic impacts of the recommended ILRP Framework.

##### **A. Consistency with Program Goals and Objectives and Policies**

The qualitative scoring system for the goals and objectives and policy evaluation measures uses the following factors:

- recommended alternative is consistent with the requirement,
- recommended alternative is partially consistent with the requirement, and
- recommended alternative is not consistent with the requirement.

##### **1. Program Goals and Objectives**

In this section, the recommended ILRP Framework is evaluated against the goals and objectives of the long-term program—considering the results of the full evaluation of Alternatives 1–6 (Appendix A, Sections IX.A and XI.A). Goals 1 and 2 and Objectives 1 and 2 are similar and are evaluated together, Goals 3

and 4 are evaluated separately, and Objectives 4 and 5 are evaluated together. See the Attachment to this report for a description of these goals and objectives.

**1.a. Consideration of Goals 1 and 2 and Objectives 1 and 2**

The evaluation of Alternatives 1–6 conducted in Appendix A stated that successful implementation of management measures will work to achieve Goals 1 and 2 and Objectives 1 and 2. Alternatives requiring implementation of management measures for surface water and groundwater were found to be consistent with these goals and objectives.

The recommended ILRP Framework requires implementation of management practices to attain objectives and comply with antidegradation requirements (i.e., achieve best practical treatment or control [BPTC]) and antidegradation-related requirements (i.e., achieve best efforts) for groundwater and surface water. Two key considerations in crafting the provisions of the recommended Framework were (1) including provisions to provide assurance that practices would be implemented and effective; and (2) targeting requirements in a manner to avoid or minimize unnecessary regulatory costs.

The recommended ILRP Framework requires that third-party groups develop regional surface water and groundwater quality management plans, and that growers implement practices to achieve the objectives of those plans. The regional approach is expected to be more cost effective than direct regulation of individuals. However, a regional approach can obscure the actions (or inactions) of individuals who continue to cause or contribute to water quality problems. Given the potential difficulty in identifying non-compliant individuals, the Framework includes provisions for development of individual farm water quality management plans and individual regulation, if regional efforts are not successful. Required monitoring and reporting of management practices will provide the information necessary to evaluate the success of regional efforts.

Regional groundwater quality plans will be supplemented by a requirement for development of individual certified nutrient management plans in areas impacted or potentially impacted by nitrates. This individual requirement is necessary due to the difficulty and expense of evaluating the performance of regional plans solely through assessment of groundwater quality data.

The recommended ILRP Framework focuses on areas with data gaps where more monitoring is required and on areas with identified water quality problems. That targeting, combined with providing an opportunity to make a regional effort successful, should help avoid or minimize unnecessary regulatory costs.

*Implementation of the recommended ILRP Framework would be consistent with Goals 1 and 2 and Objectives 1 and 2.*

### **1.b. Consideration of Goal 3**

Goal 3 requires the Board to consider economic impacts on the overall viability of agriculture in the Central Valley. The analysis in Section IV.C provides a discussion of costs and consideration of how well the recommended ILRP Framework meets this goal. Fundamentally, achievement of Goal 3 will depend largely on how well third parties and their members can demonstrate success within the third-party framework. If demonstrated improvement in water quality and achievement of objectives occurs through the regional approach, the economic impact is anticipated to be minimal. If individual regulation becomes necessary to protect water quality, the cost burden on growers will increase and will jeopardize the viability of irrigated agricultural operations that cannot absorb the incremental cost increase (e.g., low-value crops and irrigated pasture).

*Implementation of the recommended long- ILRP Framework would be consistent with Goal 3.*

### **1.c. Consideration of Goal 4**

Goal 4 requires the ILRP to ensure that irrigated agricultural discharges do not impair access of Central Valley communities and residents to safe and reliable drinking water. The evaluation of Alternatives 1–6 conducted in Appendix A identified the requirement of groundwater quality management measures as a key factor in evaluating the alternatives for consistency with Goal 4. Alternatives 2–6 were found to be consistent with Goal 4. Alternatives 4 and 5 not only include individual groundwater quality monitoring but also require growers to account for their potential nitrate discharge to groundwater through development of nutrient management plans. The individual groundwater quality monitoring associated with Alternatives 4 and 5 should not be needed if regional and representative monitoring efforts described in the recommended ILRP Framework provide sufficient feedback.

Under the recommended ILRP Framework, third-party groups would develop regional surface water and groundwater management plans (similar to the plans required under Alternative 2, with additional requirements to develop individual plans where regional management is ineffective). However, as discussed above (Goals 1 and 2 and Objectives 1 and 2), an approach that is primarily or solely regional, or primarily or solely individual, can obscure the water quality impacts of non-compliant individuals in the former case or over-regulate compliant individuals in the latter case. Staff believe that the recommended ILRP Framework provides an appropriate balance between a regional approach and a back-up of direct regulation of individuals. However, we recognize that, in order to achieve Goal 4, sole reliance on a regional groundwater approach is not likely to be effective. The time lag between actions on the land surface and resulting change in the underlying aquifer is too long. Because there are known areas in which access to safe and reliable drinking water is impacted by high nitrates, it is important that individual growers begin actively reducing their excess nitrate discharges to groundwater. Developing and implementing certified nutrient

management plans, similar to requirements for dairy operators, is a reasonable requirement to begin protecting drinking water resources. The regional plans would specify additional management measures that would work to protect surface water and groundwater quality. Between requirements for individual nutrient management plans and regional plans, the recommended long-term ILRP Framework would include requirements to implement management measures to protect surface water and groundwater quality and ultimately would promote reliable drinking water sources for Central Valley communities.

*Implementation of the recommended ILRP Framework would be consistent with Goal 4.*

#### **1.d. Consideration of Objective 3**

The evaluation of Alternatives 1–6 conducted in Appendix A describes that factors for consistency with Objective 3 include whether the ILRP would provide incentives for operations to minimize waste discharge. Alternatives that provide reduced oversight and monitoring for lower-priority/lower-threat operations were found to be consistent with this objective (Alternatives 2–4 and 6). The recommended ILRP Framework includes a prioritization system that would allow reduced monitoring, reporting, and management requirements in lower-priority areas (similar to the prioritization systems given in Alternatives 2, 4, and 6).

*Implementation of the recommended ILRP Framework would be consistent with Objective 3.*

#### **1.e. Consideration of Objectives 4 and 5**

Objectives 4 and 5 essentially require that the ILRP promote coordination with other Board programs and other regulatory and non-regulatory agencies. As described in Section IX.A.1 of Appendix A, ILRP management at the regional level would likely better facilitate coordination with other programs and agencies. Management at the farm level would not work to promote coordination with other Board programs and regulatory and non-regulatory agencies (e.g., tens of thousands of individual farm water quality management plans [FWQMPs] would be much more difficult to coordinate than regional management plans). Based on their proposed regional management approach, Alternatives 1, 2, and 6 are consistent with Objectives 4 and 5. The individual management approach described in Alternatives 3–5 (i.e., individual FWQMPs) is partially consistent with the objectives (coordination can occur with some difficulty). The recommended ILRP Framework would be managed primarily at the regional level, similar to the approach in Alternatives 1, 2, and 6. The recommended ILRP Framework includes a nutrient management plan requirement similar to requirements for the dairy program to promote consistency and coordination with that program; allows management plans to rely on actions of other regulatory agencies, such as the California Department of Pesticide Regulation (DPR); and specifically identifies expectations for coordination with respect to monitoring.

*Implementation of the recommended ILRP Framework would be consistent with Objectives 4 and 5.*

## **2. California Water Code**

The primary CWC consideration for the programmatic Framework is the total cost of the program and the sources of financing (CWC § 13141). The specific requirements of CWC § 13263 and § 13269 will be addressed when the Orders implementing the ILRP Framework are adopted.

CWC § 13141 requires that:

*“...prior to implementation of any agricultural water quality control program, an estimate of the total cost of such a program, together with an identification of potential sources of financing, shall be indicated in any regional water quality control plan.”*

The estimated total cost and potential sources of financing of the recommended ILRP Framework are described below in Section IV.C.1. The estimated total cost and potential sources of financing will be incorporated into the Basin Plans after approval of the ILRP Framework.

*Implementation of the recommended ILRP Framework would be consistent with § 13141 of the CWC.*

## **3. Nonpoint Source Policy**

The recommended ILRP Framework would regulate waste discharges from irrigated agricultural lands to State waters as a nonpoint source (NPS) program. Accordingly, the long-term ILRP must meet the provisions of the State Water Board NPS Policy. The NPS Policy is described in Appendix A. In this section, the recommended ILRP Framework is evaluated against the five key elements of the NPS Policy, in light of the full evaluation of Alternatives 1–6 (see Appendix A).

### **3.a. Consideration of Key Element 1**

The evaluation in Appendix A found that Alternatives 1–6 meet the requirements of Key Element 1. This is mainly because the key element requires, in part, that the ultimate purpose of the NPS control implementation program be explicitly stated (other portions of this key element are evaluated as part of other sections, see Appendix A for more information). The purpose of the long-term ILRP is explicitly stated in the Goals and Objectives section of the recommended ILRP Framework, and the Framework includes the elements necessary to meet the stated Goals and Objectives.

*Implementation of the recommended ILRP Framework would be consistent with this requirement in Key Element 1.*

### **3.b. Consideration of Key Element 2**

Key Element 2 requires that an NPS implementation program include a description of the management practices expected to be implemented to ensure attainment of the program's purpose (goals and objectives), and the process used to select and ensure proper implementation of management practices. The Final PEIR and Economics Report discuss the types of management practices that may be implemented for all of the alternatives, including the recommended ILRP Framework. However, there are many practices that could be implemented by growers that protect groundwater and surface water quality.

Implementation of the ILRP Framework requires identification of specific practices that will be used to address constituents of concern and requires tracking of management practice implementation. Proper implementation of practices will be tracked through required monitoring and evaluation. In addition, for areas impacted by nitrate, individual certified nutrient management plans will be required. If the regional planning efforts are not successful, individual plans and reporting will be required.

*Implementation of the recommended ILRP Framework would be consistent with Key Element 2.*

### **3.c. Consideration of Key Element 3**

If the Board determines that it is necessary to allow time to achieve water quality requirements in an NPS program, Key Element 3 requires that the program include a time schedule with quantifiable milestones. The recommended ILRP Framework includes specific compliance time schedules for water quality issues that will be the primary focus of program efforts. In addition, regional management plans must have specific schedules and milestones for implementation of actions and for compliance with objectives. Any additional time schedule requirements can be incorporated, as needed, into the Orders that will be adopted to implement the Framework.

*Implementation of the recommended ILRP Framework would be consistent with Key Element 3.*

### **3.d. Consideration of Key Element 4**

Key Element 4 requires that an NPS program include feedback mechanisms so that the Board, regulated operations, and the public can determine whether the program is effective. The recommended ILRP Framework includes monitoring requirements for areas in which the effects of irrigated agriculture on water quality are not known and monitoring in areas with known impacts on water quality. In addition, the ILRP Framework requires that implementation of management practices be tracked and that the effectiveness of the practices be evaluated. These monitoring, tracking, and assessment elements of the Framework are expected to provide sufficient feedback to evaluate program effectiveness.

*Implementation of the recommended ILRP Framework would be consistent with Key Element 4.*

### **3.e. Consideration of Key Element 5**

Key Element 5 requires the Board to make clear, in advance, the potential consequences for failure to achieve the stated purposes of an NPS control implementation program.

The recommended ILRP Framework includes a number of elements that describe the consequences of failure to achieve the program's purposes. Those elements include (1) the individual irrigated land operations are responsible for compliance should the third party fail to fulfill its obligations; (2) failure of regional planning efforts will result in the requirement to develop and implement individual farm plans; (3) growers who do not comply under a third-party Order will be regulated individually; (4) the Board will take enforcement action, consistent with its enforcement discretion, to ensure that all irrigated agricultural operations obtain the proper regulatory coverage; and (5) the Board will take enforcement action, consistent with its enforcement discretion, on individuals for any actions or inactions that result in non-compliance with any applicable Board Orders.

*Implementation of the recommended ILRP Framework would be consistent with Key Element 5.*

## **4. Antidegradation Requirements**

The ILRP Framework must be consistent with State Water Board Resolution 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). The ILRP Framework requires development of a management plan for those constituents and areas in which degradation of high-quality waters could occur. The management plan for those areas is focused on achieving BPTC. Monitoring and evaluation of management practices will determine whether BPTC is being achieved. The monitoring and implementation process is iterative and will continue until BPTC is achieved.

*Implementation of the recommended ILRP Framework would be consistent with applicable antidegradation requirements.*

## **B. Anticipated Effectiveness of Administration**

A key consideration in developing the recommended ILRP Framework is how effectively the Board could administer the recommended ILRP. The following discussion is based on the evaluation and discussion of Alternatives 1–6 in Appendix A.

The recommended ILRP Framework contains elements of the structure and approach described in Alternative 2 with its reliance on third parties, as well as elements of the direct oversight approach described in Alternatives 4 and 5. The

recommended ILRP Framework attempts to take advantage of the administrative strengths of the respective alternatives while avoiding their weaknesses.

By providing for a third-party framework, the Board and regulated irrigated land operators have an opportunity to meet water quality goals with lower administrative costs. A third party with a local presence will have more opportunities for working directly with growers. The third party also will be better able to lead and coordinate regional discharger monitoring and management planning efforts.

Under a third-party framework, potential problems are associated with ensuring individual grower accountability. The Board's interaction is with the third party, rather than the individuals. The introduction of a third party can shield from the Board's oversight any action (or inaction) by the regulated individuals that conflicts with applicable requirements. To address these issues, the recommended ILRP Framework includes the following provisions<sup>3</sup>: (1) a process for direct Board regulation of individuals if the third-party effort is not effective; and (2) additional requirements to enhance accountability and transparency. These additional measures are described below.

### **1. Individual Water Quality Plans Where Regional Approach Is Ineffective**

In the proposed regional water quality management plan approach, the Board would not have a direct relationship with each irrigated agricultural operation (the entity discharging waste) and would not have information regarding the specific method(s) and practices the operation is implementing, or plans to implement, to work toward solving identified water quality concerns. This potential problem is addressed in the ILRP Framework by requiring that individual water quality management plans be developed when a regional water quality plan is determined to be ineffective. The effectiveness of the regional efforts will be determined by reviewing progress in improving water quality and achieving objectives, as well as evaluating the degree to which improved practices are being implemented.

### **2. Enrollment and Transparency Requirements**

As described in Section IX.B of Appendix A, enforcement of program requirements can be difficult in a third-party framework. Because third parties are not dischargers, Board actions are limited to informal enforcement (e.g., an enforcement letter or notice of violation) or disbanding the third party. In addition, the Board does interact directly with individual members in a third-party framework, so it is difficult to determine whether individual growers are complying with requirements.

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<sup>3</sup> These provisions were also in Alternative 6, which reflected the initial staff-recommended program. Based on comments received from the public, more detail and greater accountability and transparency measures have been added to the recommended ILRP Framework.

To address these issues, the recommended Framework (1) requires the third party to report to their members when they have received a notice of violation; (2) makes it clear that the individual members are responsible if the third party does not fulfill requirements; and (3) requires the third party to identify members whose membership is revoked based on failure to meet requirements.

The Framework also includes requirements to ensure that the third party is accountable to its members. Annual summaries of fees and expenditures must be provided, and the governance structure of the third party must include member representatives or a process that allows members to influence the governance of the third party.

### **C. Estimated Total Cost and Potential Sources of Financing**

An extensive economic analysis (Economics Report) has been conducted to estimate the cost and broader economic impact on irrigated agricultural operations associated with the six alternatives (ICF International 2010). CWC § 13141 requires the Board to develop an estimate of the total cost and identify potential sources of financing prior to the implementation of any agricultural water quality control program. An estimated total cost of the recommended ILRP Framework also has been developed and differs from the estimation approach used for the six alternatives in the following ways:

- (1) The original estimates assumed that practices would need to be implemented to address all identified surface water quality impairments. Comments received suggest that agriculture is not contributing to a number of those impairments (e.g., dissolved oxygen and pH). The ILRP Framework estimates include a range assuming that (a) all impairments with unknown sources do not have an irrigated agricultural source (lower end cost range); and (b) further source analysis for all impairments with unknown sources will identify an irrigated agricultural source, requiring implementation of practices (higher end cost range).
- (2) A range of administrative costs were estimated assuming that (a) the third-party framework is wholly effective at addressing water quality issues (lower end cost range); and (b) the third-party framework will not be effective and individual regulatory oversight will be required in Tier 3 areas (higher end cost range).
- (3) A range of costs and impacts on irrigated pasture was evaluated. The recommended ILRP Framework includes a proposed waiver of WDRs for irrigated pasture based on comments suggesting that irrigated pasture does not contribute to water quality problems and that costs associated with the original proposal could affect the economic viability of irrigated pasture. The range of costs assumed that (a) irrigated pasture operations are not causing or contributing to identified water quality issues in

watersheds with pasture land (lower end cost range); and (b) irrigated pasture operations are causing or contributing to identified water quality issues in watersheds with pasture land (higher end cost range).

Information on the extent of management practice implementation is limited, and much of the available data are approximately 10 years old. The estimated cost of management practice implementation represents the largest cost, with the greatest uncertainty. However, a number of comments received from growers and agricultural representatives indicated that many of the improved practices are being implemented already, suggesting that the cost estimates are likely too high.

The recommended ILRP Framework primarily relies on third-party groups (similar to Alternative 2), but has a backstop of direct Board regulation (similar to Alternative 5), if the third-party framework is not successful. The administrative and monitoring costs will fall within the range of those two alternatives and will depend on whether growers can demonstrate that they can improve water quality within a third-party framework.

Staff received many comments from agricultural representatives suggesting that additional groundwater monitoring is not necessary because sufficient data are available to characterize groundwater quality conditions. Should this be the case, additional costs associated with groundwater quality monitoring should be minimal. If, in fact, data are limited and it is not possible to determine groundwater quality conditions or the effectiveness of irrigated agricultural efforts to reduce groundwater quality impacts, additional monitoring will be needed.

Costs were estimated for administration of the program (e.g., Board oversight and third-party activities), monitoring (for groundwater and surface water quality), and implementation of management practices. The costs that dominated the estimates are associated with the category for which data are most sparse – management practice implementation. In addition, the management practices evaluated generally result in multiple benefits, not only protection of water quality (e.g., more efficient irrigation reduces water costs and generally increases yields).

## **1. Total Estimated Costs**

The estimates of total annualized costs for the recommended ILRP Framework provided in Table 1 are based on the cost estimates provided in the Economics Report and specific management practice estimates for the recommended Framework provided by a member of the economics consulting team (Roberson 2011). The total estimated cost was found to be between \$216 and \$1,321 million per year.

Costs at the low end of the range assumed that (1) the third-party framework will be successful in addressing identified water quality problems; (2) existing groundwater monitoring networks will be adequate; (3) irrigated pasture will not

require “hardware” management practices (e.g., tailwater recovery systems) to address any pasture-related issues; (4) the existing use of improved management practices on field crops in areas with constituents of concern is greater than assumed in the PEIR; and (5) for constituents identified as Tier 2, with an unknown contribution by irrigated lands, irrigated lands will be found not to cause or contribute to the identified water quality problem.

Costs at the high end of the range assumed that (1) direct regulatory oversight by the Board will be required due to widespread failure of the third-party framework; (2) individual groundwater monitoring and surface water monitoring will be required; (3) irrigated pasture will require hardware management practices; (4) the estimates of management practice implementation reflect current conditions; and (5) for all constituents identified as Tier 2, with an unknown irrigated lands contribution, irrigated lands will be found to cause or contribute to the identified water quality problem. These assumptions resulted in a cost estimate identical to Alternative 5, which is the alternative analyzed in the Economics Report.

**Table 1. Estimates of Total Annualized Costs for the Recommended ILRP Framework**

	<b>Low-End Estimate</b>	<b>High-End Estimate</b>
Total administration	\$6.5 million	\$67 million
Monitoring	\$10.6 million	\$302 million
Management practices	\$199 million	\$952 million
<b>Total</b>	<b>\$216 million</b>	<b>\$1,321 million</b>

## 2. Economic Impacts

As shown in Table 1, the annualized cost estimate for the recommended ILRP Framework is between \$216 and \$1,321 million. The potential economic effects to Central Valley irrigated agriculture under the high-end range of these costs are analyzed in the Economics Report (as Alternative 5). As described above, this represents a worst-case scenario in which the third-party framework is ineffective, individual monitoring is required, estimates for implementation of management practices in the Economics Report reflect current conditions<sup>4</sup>, and irrigated agriculture is found to be a contributing source for all Tier 2 constituents, as described in the recommended ILRP Framework (e.g., DO and pH). The

<sup>4</sup> Comments on the PEIR have stated that the Economics Report has underestimated the level of management practices in place – see Master Response 17, Chapter 2, Final PEIR (ICF International 2011).

estimated economic effects, at the high end of the annualized cost estimate, would be identical to those described for Alternative 5 (see Tables 19, 20, and 21 in Appendix A). Alternative 5 projects an annual loss of \$605 million in total value of production and a loss of 3,927 agricultural sector jobs.

The lower end of the annualized cost estimate, \$216 million, is reduced from that shown for Alternative 1 in the Economics Report (\$478 million). It is anticipated that the lower cost would reduce the economic effects identified for Alternative 1 in the Economics Report (see pages 124 and 125 of Appendix A)—especially impacts to lower value crop types (e.g., irrigated pasture and hay). Alternative 1 (continuation of the current ILRP) projects an annual loss of \$336 million in total value of production and a loss of 2299 agricultural sector jobs.

One lower value crop type that was given consideration in the recommended ILRP Framework, leading to a reduction in estimated costs, is irrigated pasture. Based on comments received, it appears likely that a significant number of irrigated pasture operations use minimal amounts of pesticides and do not apply fertilizers. This information has prompted staff to recommend regulation of these operations in a separate commodity-based ILRP Order that would provide reduced oversight and monitoring. In addition to reduced oversight and monitoring, it is estimated that irrigated pasture operations—due to their minimal pesticide and fertilizer usage—would not need to implement the more expensive management practices to be in compliance with the ILRP (e.g., tailwater return systems). Page 3-9 of the Economics Report describes that ILRP acreage and revenue impacts would be substantially reduced if lower value crop types (e.g., irrigated pasture and hay) could identify less expensive practices, such as avoiding the use of certain pesticides. As described on page A-2 of the Economics Report, if tailwater return systems were not implemented by irrigated pasture operations, management practice costs would be reduced by an estimated 61 percent. Further, sensitivity analysis indicates that a 50-percent reduction in ILRP costs per acre would reduce estimated acreage impacts of Alternative 1 (i.e., loss of acreage) by 75 percent (see page 3-9 of the Economics Report). From the results of this sensitivity analysis, it is expected that the reduction in costs to irrigated pasture lands will significantly reduce the potential economic impacts of the recommended ILRP Framework.

### **3. Potential Sources of Financing**

The Final PEIR (ICF International 2011) describes potential funding for irrigated agricultural operations. As indicated in the report, funding that is targeted toward lands, crops, or growers with the greatest potential for losses and economic hardship would be most effective at reducing economic impacts. Many of the funding mechanisms would help reduce and defray the costs associated with implementing water quality management practices, thereby reducing the economic impact of the alternatives. Potential funding mechanisms include those listed below.

- Federal Farm Bill – Title II of the 2008 Farm Bill (the Food, Conservation, and Energy Act of 2008, in effect through 2012) authorizes funding for conservation programs such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program.
- The State Water Board, Division of Financial Assistance, currently administers two programs that improve water quality: the Agricultural Drainage Management Loan Program and the Agricultural Drainage Loan Program. Both of these programs were implemented to reduce the impacts of agricultural drainage on surface water. The State Water Board also administers Clean Water Act funds that can be used for agricultural water quality improvements.
- The Agricultural Water Quality Grant Program provides funding to reduce or eliminate the discharge of nonpoint source pollution from agricultural lands into surface water and groundwater. It is funded through bonds authorized by Proposition 84.
- The State Water Pollution Control State Revolving Fund Program also has funding authorized through Proposition 84. It provides loan funds to a wide variety of point source and nonpoint source water quality control activities.
- Other funding programs exist, including Integrated Regional Water Management grants that were authorized and funded by Proposition 50 and now by Proposition 84.

## V. REFERENCES

ICF International. 2011. *Irrigated Lands Regulatory Program Final Program Environmental Impact Report EIR*. March. Prepared for: Central Valley Regional Water Quality Control Board, Rancho Cordova, CA.

ICF International. 2010. *Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program*. Draft. July. (ICF 05508.05.) Prepared for: Central Valley Regional Water Quality Control Board, Rancho Cordova, CA.

Roberson, M. 2011. *Recommended ILRP Framework Management Practice Cost Analysis*. Memorandum dated February 28, 2011, from Mark Roberson (ILRP Subconsultant) to Adam Laputz (Central Valley Regional Water Quality Control Board). Prepared for: Central Valley Regional Water Quality Control Board, Rancho Cordova, CA.

Attachment

RECOMMENDED  
LONG-TERM IRRIGATED LANDS  
REGULATORY PROGRAM FRAMEWORK

RECOMMENDED LONG-TERM IRRIGATED LANDS REGULATORY PROGRAM FRAMEWORK

## **ATTACHMENT – RECOMMENDED LONG-TERM IRRIGATED LANDS REGULATORY PROGRAM FRAMEWORK**

The following describes the general programmatic framework that the Central Valley Water Board will use to establish its long-term irrigated lands regulatory program (ILRP). In considering the long-term ILRP, the Central Valley Water Board certified a Final Program Environmental Impact Report (Final PEIR or PEIR) on **{{insert date of certification}}** to comply with the California Environmental Quality Act (CEQA). In adopting Orders to implement this framework, the Board intends that such Orders be consistent with the regulatory approach outlined below. However, the Board may deviate from the general programmatic framework in adopting any such Orders, provided any additional analysis (e.g., under CEQA, State Water Board Resolution 68-16) has been conducted and appropriate findings made, if required.

### **1. SCOPE**

The scope of the irrigated lands regulatory program will include all waste discharges from irrigated lands that could affect the quality of waters of the State in the Central Valley region.

Irrigated lands include land irrigated to produce crops for commercial purposes; nurseries; private and public managed wetlands; and irrigated pasture.

Waste discharges (hereinafter, “discharges”) from irrigated lands include discharges to surface water, including, but not limited to irrigation return flows, tailwater, drainage water, subsurface drainage generated by irrigating crop land or by installing and operating systems to lower the water table below irrigated lands (tile drains), stormwater runoff flowing from irrigated lands, and non-runoff discharges (e.g., aerial drift or overspray of pesticides). Waste discharges from irrigated lands also include discharge to groundwater, including but not limited to leaching of waste to groundwater, waste discharge to groundwater as a result of backflow of waste into wells (e.g., backflow during chemigation), and irrigated agricultural waste discharged into unprotected wells and dry wells.

Irrigated lands that are regulated under another Water Board Order (e.g., waste discharge requirements [WDRs], including National Pollutant Discharge Elimination System [NPDES] permits) would not be regulated under the ILRP. However, if the other Water Board Order governs only some of the waste discharge activities (e.g., application of treated wastewater to crop land), the owner/operator of the irrigated lands must obtain regulatory coverage for any discharges of waste that are not regulated by the other Order(s). Such regulatory coverage may be sought through the ILRP or by obtaining appropriate changes in the owner/operator’s existing WDRs.

## 2. GOALS AND OBJECTIVES

### 2.1. Goals

The overall goals of the ILRP are to:

1. Restore and/or maintain the highest reasonable quality of State waters<sup>5</sup> considering all the demands being placed on the water.
2. Minimize waste discharge from irrigated agricultural lands that could degrade the quality of State waters.
3. Maintain the economic viability of agriculture in California's Central Valley.
4. Ensure that irrigated agricultural discharges do not impair Central Valley communities' and residents' access to safe and reliable drinking water.

In accordance with these goals, the objectives of the ILRP are listed below.

### 2.2. Objectives

1. Restore and/or maintain applicable beneficial uses established in [Central Valley Water Board Water Quality Control Plans](#) by ensuring that all State waters within the Central Valley meet applicable water quality objectives.
2. Encourage implementation of management practices that improve water quality in keeping with the first objective without jeopardizing the economic viability for all sizes of irrigated agricultural operations in the Central Valley or placing an undue burden on rural communities to provide safe drinking water.
3. Provide incentives for agricultural operations to minimize waste discharge to State waters from their operations.
4. Coordinate with other Central Valley Water Board programs, such as the Grassland Bypass Project waste discharge requirements for agricultural lands, total maximum daily load (TMDL) development, Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS), and WDRs for dairies.
5. Promote coordination with other regulatory and non-regulatory programs associated with agricultural operations (e.g., the California Department of

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<sup>5</sup> California Water Code § 13050 defines "State waters" as "any surface water or groundwater, including saline waters, within the boundaries of the state."

Pesticide Regulation [DPR], the California Department of Public Health [DPH] Drinking Water Program, the California Air Resources Board, the California Department of Food and Agriculture, Resource Conservation Districts, the University of California Extension, Natural Resource Conservation Service, National Organic Program, California Agricultural Commissioners, State Water Resources Control Board Groundwater Ambient Monitoring and Assessment program, U.S. Geological Survey (USGS), and local groundwater programs such as Senate Bill [SB] 1938, Assembly Bill [AB] 3030, and Integrated Regional Water Management Plans]) to minimize duplicative regulatory oversight while ensuring program effectiveness.

### 3. TIMEFRAME FOR IMPLEMENTATION

**Table 1. Timeframe for Implementation of the Long-Term Irrigated Lands Regulatory Program**

Phase/Action	Completion Date (from Approval of Long-Term ILRP Framework) <sup>a</sup>	Responsible Party
Identification of geographic areas/commodities to receive Orders <sup>b</sup> and associated third-party representative groups	3 months	Central Valley Water Board/ third parties
Board issuance of geographic-/ commodity-specific Orders <sup>c</sup>	12 months	Central Valley Water Board
Enrollment of new participants/ irrigated lands	30 months	Operations/ Central Valley Water Board
New program fully in effect	3 years	Central Valley Water Board/ third parties/operations
<sup>a</sup> Date of Central Valley Water Board approval of the long-term Irrigated Lands Regulatory Program (ILRP) Framework. <sup>b</sup> Waste discharge requirements (WDRs) and conditional waivers of WDRs. <sup>c</sup> The Board intends to extend the existing irrigated lands coalition group waiver until the new Orders are issued. Compliance with the existing conditional waiver will be required in the interim.		

Current ILRP participants would be enrolled automatically (i.e., grandfathered into new program; reapplication would not be required) as the Orders implementing the long-term program are issued. However, within 3 months of the applicable Order's issuance, the third-party groups will be required to inform their participants of the new requirements and within 12 months receive confirmation from each participant that they intend to remain associated with the third-party group and comply with the requirements.

The Board intends to develop information management systems that will facilitate the transmittal of information electronically from individual growers to the Board. Should such a system be available for purposes of tracking enrolled growers, the

Board may require both current and new ILRP participants to enroll directly with the Board.

## **4. IMPLEMENTATION MECHANISMS**

The requirements that will apply to discharges from irrigated agriculture will be based on an assessment of the relative threat to water quality in a given area and data availability. For a given area, an assessment will be performed for each constituent that could be in the waste discharge from irrigated lands. The assessment will be performed for discharge pathways to both groundwater and surface water.

### **4.1. Threat to Water Quality**

A “threat” to water quality means the potential for a constituent discharged from irrigated lands to cause or contribute to an exceedance of water quality objectives, or to degrade water quality as defined by applicable antidegradation requirements.

A “low threat” means that there is a low threat to water quality for a constituent potentially discharged from irrigated lands in an area has been well characterized<sup>6</sup>. The discharge of that constituent is not likely to cause or contribute to an exceedance of water quality objectives, or to degrade water quality as defined by applicable antidegradation requirements. A low threat determination can be made where there are infrequent or only localized (associated with one or a few farms) threats to ground or surface water quality.

An “unknown threat” means that either (1) data are not available for a constituent or parameter to determine the relative threat or (2) there is a known water quality threat, but it is unknown as to whether irrigated agriculture is causing or contributing to that water quality problem. Unless otherwise determined by the Board or Executive Officer based on available information, the following surface water quality parameters are considered to have an “unknown” irrigated agricultural contribution until source identification studies have been conducted: pH, dissolved oxygen, electrical conductivity, E. coli, fecal coliform, total coliform, metals (except selenium and copper), and water column toxicity.

A “high threat” means that the constituent discharged from irrigated lands in an area has been sufficiently characterized and assessed to conclude that the

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<sup>6</sup> The State Water Board’s “Water Quality Control Policy for Developing California’s Clean Water Act 303(d) List” and the State Water Board’s staff report “2010 Integrated Report Clean Water Act Sections 303(d) and 305(b),” April 19, 2010, provide a general approach for determining whether water quality objectives and beneficial uses are attained in surface waters. As described in these documents, fewer samples are required to make a determination that objectives are exceeded than are required to conclude that objectives are met.

constituent discharged from irrigated agriculture poses a high threat to water quality. The discharge of that constituent does or is likely to cause or contribute to an exceedance of water quality objectives, or to degrade water quality as defined by applicable antidegradation requirements.

For groundwater aquifers, the following areas will be considered in identifying “high threat” areas: 1) aquifers identified as vulnerable to groundwater pollution by State or federal agencies (e.g., the Department of Pesticide Regulation Ground Water Protection Areas; the State Water Board’s groundwater vulnerability areas), or peer reviewed scientific studies; 2) any areas that contain drinking water wells (municipal or domestic) that have been closed or contain drinking water wells with pollutants greater than the maximum contaminant level with irrigated agriculture as a potential source; or 3) aquifers with a drinking water use that contain elevated nitrate concentrations (i.e., above natural background or the MCL). The Board or Executive Officer may reclassify a high threat groundwater area by concurring with aquifer specific studies that conclude that irrigated agriculture is not contributing to the elevated concentrations.

#### **4.2. Tiering of Constituents**

A “tier” designation will be assigned to each constituent in a given area.

“Tier 1” – means that the discharge of the constituent from irrigated agriculture poses a low or limited threat in that area.

“Tier 2” – means that it is unknown whether the discharge of the constituent from irrigated agriculture poses a high or low threat in that area.

“Tier 3” – means that the discharge of the constituent from irrigated agriculture poses a high threat in that area.

The Board may designate the tier based on an assessment of general categories of constituents (e.g., sediment, nutrients, pathogens, pesticides, and salts) or based on an assessment of specific constituents or parameters (e.g., nitrate, chlorpyrifos, sediment toxicity). The Board will make the final determination of the spatial resolution for designating tier categories as part of the development of the Orders described below. Subsequent to adoption of the Order, changes in the tier category may be made by the Board or Executive Officer.

#### **4.3. Tiering of Areas**

An area will be designated as Tier 1, if the Board’s assessment concludes that all constituents that could be discharged from irrigated agriculture to ground or surface water pose a low or limited threat. An area would not be designated as Tier 1, if Tier 2 or Tier 3 constituents were in the area.

An area will be designated as Tier 2, if the Board’s assessment concludes that there are any constituents discharged from irrigated agriculture for which the

threat is unknown. Tier 2 areas can include constituents that meet the Tier 2 definition and the Tier 1 definition. Tier 2 requirements will only apply to Tier 2 constituents. An area would not be designated Tier 2, if Tier 3 constituents were in the area.

An area will be designated as Tier 3, if the Board's assessment concludes that there are any constituents discharged from irrigated agriculture for which the threat is high. Tier 3 areas can include constituents that meet the Tier 3 definition, the Tier 2 definition and the Tier 1 definition. Tier 3 requirements will apply only to Tier 3 constituents.

#### **4.4. Best Practical Treatment or Control and Best Efforts**

"BPTC" or "best practical treatment or control" applies to irrigated agricultural discharge of constituents that may degrade waters that are high quality with respect to that constituent. BPTC will be achieved through the iterative implementation of management practices to reduce or eliminate the irrigated agricultural discharge of that constituent to prevent or minimize degradation and to ensure any irrigated agricultural contribution to any allowed degradation does not result in a condition of pollution or nuisance.

"Best efforts" applies to irrigated agricultural discharge of constituents to waters which are at or exceeding water quality objectives for that constituent. "Best efforts" will be achieved through the iterative implementation of management practices to reduce or eliminate the irrigated agricultural discharge of that constituent so that the irrigated agricultural discharge is no longer causing or contributing to the condition of pollution or nuisance.<sup>7</sup>

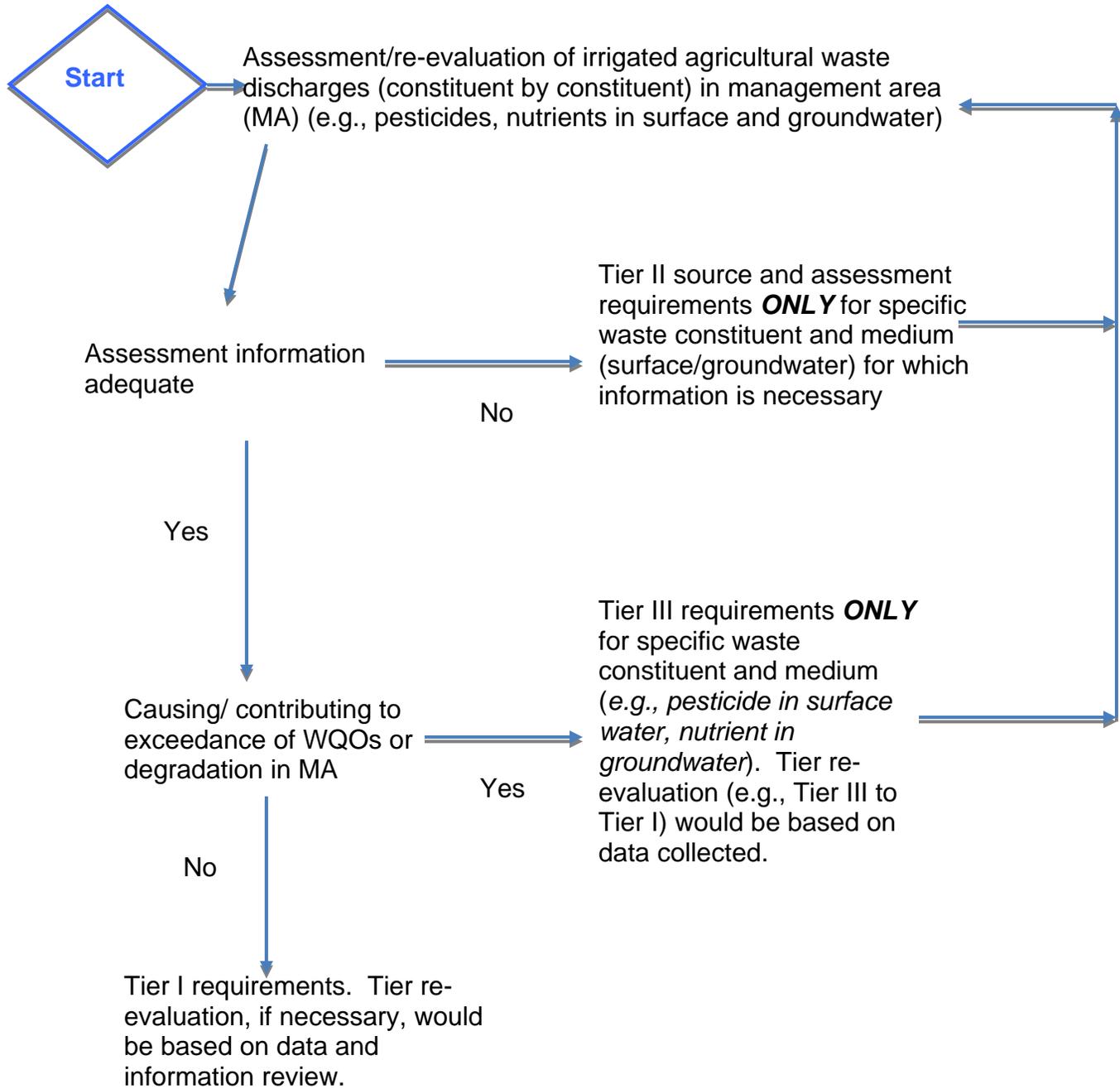
The Central Valley Water Board will use existing information to determine the appropriate threat designation and associated tier designation as part of the development of specific Orders. However, there will be the flexibility for third-party groups and other interested stakeholders to provide additional information during the process.

The threat designation for an area may be re-classified by the Central Valley Water Board based on review of new information collected during program implementation (see feedback loop in Figure 1). The Central Valley Water Board intends to review such information periodically (at least once every 5 years for areas covered by a waiver of waste discharge requirements).

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<sup>7</sup> The types of management practices employed to meet the "BPTC" or "best efforts" will be similar, although the goals associated with the two practice standards are different – achieving compliance with antidegradation for BPTC and compliance with water quality objectives for "best efforts".

Figure 1. Flowchart Showing the Three-Tier Prioritization System



*Note: Tiering requirements are constituent and surface water/ groundwater specific. For example, an area could have Tier III requirements in surface water for chlorpyrifos, and Tier I requirements for all other constituents in surface water and groundwater.*

#### **4.5. Water Quality Threat Factors**

The factors that the Central Valley Water Board will use to determine the water quality threat and the associated requirements for a given area include, but are not limited to:

1. The type and extent of irrigated agricultural operations and an evaluation of waste constituents that may cause or contribute to a water quality problem for surface water and/or groundwater (e.g., potential effect on beneficial uses, exceedance of water quality objectives, or degradation of water quality);
2. The environmental conditions in the geographic area (e.g., groundwater vulnerability area, intensity of operations,<sup>8</sup> geology, topography, proximity to surface water bodies, or in an area of shallow groundwater);
3. The documented management practices in place to protect water quality and an evaluation of the available data on the efficacy of those practices; and
4. The spatial and temporal extent of available water quality data to assess potential water quality impacts and potential contributions from irrigated agriculture.

Through the implementation mechanisms described below, the Central Valley Water Board intends to focus on those areas in which irrigated agriculture is known or likely to be contributing to a water quality problem (Tier 3) or where data are insufficient to characterize the potential effect of irrigated agriculture on water quality (Tier 2). By focusing the Board's and irrigated agriculture's resources in this manner, the goal is to move areas in Tier 2 or Tier 3 into Tier 1 (well characterized, no / low threat from irrigated agriculture) as expeditiously as possible.

Growers following an individual farm water quality management plan that has been certified by a Central Valley Water Board approved entity (see Section 9) are considered to be in a Tier 1 area for monitoring and reporting purposes.

The requirements established in any given area will be applied separately to surface water and groundwater depending on the above factors. However, the decision on the type of implementation mechanism will be based on whether the geographic area to which the Order applies contains any Tier 3 areas for surface water or groundwater.

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<sup>8</sup> Consideration of intensity of operations would include information such as estimations of amount of waste discharge, relative amount of irrigated agricultural use compared to other land uses in the geographic area, and pesticide use.

Waste discharge requirements will be issued for those geographic areas that include any groundwater basins or watersheds that are considered Tier 3. Tier 3 requirements will only apply to those basins or watersheds and for those constituents within the larger geographic area covered by the Order that are considered high threat. Tier 2 and Tier 1 requirements would apply to those low and unknown threat areas and constituents, as described above.

Either conditional waivers of waste discharge requirements or waste discharge requirements will be issued for those geographic areas in which all groundwater basins and watersheds fall into Tier 1 or Tier 2.

Based on the preliminary assessment of Tier 1/Tier 2 and Tier 3 areas and commodities and the potential third-party representatives, the Central Valley Water Board will consider issuing the following Orders<sup>9</sup>:

1. General WDR applicable to individual growers who are not enrolled under a third-party administered Order or who have had their enrollment under such an Order revoked.
2. General WDRs for the following geographic areas: (1) Sacramento Valley; (2) San Joaquin County and Delta; (3) Westside San Joaquin River Watershed; (4) Eastside San Joaquin River Watershed; (5) Westlands Water District (including the Pleasant Valley Water District); and (6) Tulare Lake Basin (excluding the Tulare Lake Bottom [see under conditional waiver of WDRs] and the Westlands Water District).
3. General WDRs for the following commodity: (1) rice in the Sacramento Valley.
4. Conditional waivers of WDRs for the following geographic areas: (1) foothills of the Central Valley; and (2) the Tulare Lake Bottom.
5. Conditional waivers of WDRs for the following commodities: (1) irrigated pasture<sup>10</sup>; and (2) certified organic farmers<sup>11</sup>.

**No regulatory program**—Where evidence has been provided to the Central Valley Water Board and the Board has concurred that an irrigated land operation will not generate a discharge of waste that could affect the quality of the State's waters, that operation will not be regulated by the Board. This determination

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<sup>9</sup> This is a tentative list and may be modified based on the Board's evaluation of whether a third-party is able to administer the respective geographic/commodity based Orders and based on whether information available to the Board would require the issuance of a waiver of WDRs or WDRs. The precise delineation of the geographic areas will be incorporated into the applicable Order.

<sup>10</sup> Conditions will include minimizing tailwater/stormwater runoff; keeping cattle from watercourses with designated contact recreational or drinking water uses.

<sup>11</sup> Conditions will include minimizing erosion/sediment runoff and preparation and implementation of a nutrient management plan.

would include a thorough review of site-specific information that would be used to characterize and determine whether the operation's irrigated land waste discharges could affect the quality of the State's groundwater and/or surface water.<sup>12</sup>

## 5. LEAD ENTITY

This section describes the lead entity categories and their roles and responsibilities.

### 5.1. Third Party

A coalition or other third-party group would be responsible for fulfilling the regional requirements and conditions (e.g., regional monitoring, regional management plan development and tracking) of the Orders issued by the Central Valley Water Board. By joining a third-party group, discharger participants are agreeing to be represented by the third party. Any requirements or conditions not fulfilled by the third party are the responsibility of the individual discharger participant to fulfill. To be eligible for administration of this alternative, third-party groups would need to assume the following responsibilities.

1. Provide members and the Central Valley Water Board an organizational or management structure identifying persons responsible for ensuring that program requirements are fulfilled.
2. Provide or make readily available to group members the annual summaries of expenditures of fees and revenue used to comply with the ILRP.<sup>13</sup> The third party must make the summary of expenditures and revenue available to its members in the timeframe established in the applicable Order. Should there be any subwatershed groups associated with the third party that charge members fees, a summary of those fees and expenditures must also be provided or made readily available to members of the third party.
3. Notify potentially affected third-party group members each time the third party has received a notice of violation from the Central Valley Water Board and provide information regarding the reason(s) for the violation. The notification must be provided to those members within the area affected by the notice of

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<sup>12</sup> This option is identified because the Central Valley Water Board can have a regulatory program only if the discharge of waste could affect the quality of waters of the State. The Central Valley Water Board currently does not have information identifying any irrigated agricultural areas in which such an option could apply. Given the potential discharge pathways to ground and surface waters from irrigated agriculture, the Board expects that this option may not be applicable or may apply in only limited, site-specific circumstances.

<sup>13</sup> It is not the intent of this provision for the Central Valley Water Board to review and approve these reports. The intent is to promote accountability and transparency on the part of the third-party entities.

violation. A summary of all notices of violation must be provided to all third-party group members annually.

4. Develop and implement plans to track and evaluate the effectiveness of management practices and provide timely and complete submittal of any plans or reports required by the Board.
5. Conduct required water quality monitoring and assessments and provide timely and complete submittal of any reports required by the Board.
6. Within 3 months of adoption of the Board Order applicable to the third party's geographic area or commodity inform enrolled growers of program requirements. Within 12 months of adoption of the applicable Board Order submit confirmation that the enrolled growers have acknowledged those requirements<sup>14</sup>.
7. Conduct education and outreach activities to inform growers of program requirements; maintain attendance lists for outreach events; provide growers with information on management practices that will address identified water quality issues and minimize the discharge of wastes from irrigated lands; and provide informational materials on potential environmental impacts of water quality management practices. The third party must provide copies to the Central Valley Water Board of the information provided to growers. An annual summary of education and outreach activities must be provided to the Central Valley Water Board.<sup>15</sup>
8. Work cooperatively with the Central Valley Water Board to ensure all third-party group members are providing any required information and taking necessary steps to address any identified water quality issues. Provide an annual summary to the Central Valley Water Board of members whose membership has been revoked or is pending revocation due to: (1) failure to implement improved management practices within the timeframe specified by any applicable management plan, where compliance with water quality objectives has not been achieved; (2) failure to respond to an information request associated with any applicable management plan; (3) failure to participate in any site-specific or representative monitoring studies required

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<sup>14</sup> The Food and Agriculture Code restricts the ability of the California Rice Commission (CRC) to identify the names and addresses of the members of the CRC. Should the CRC serve as a third-party, an appropriate means of affirming CRC grower knowledge of any new rice specific Order will be described in that Order.

<sup>15</sup> The third-party would be required to inform irrigated agricultural operations of potential environmental impacts of water quality management practices. However, it is the individual grower's responsibility to assess the potential for impacts on the grower's farm and to avoid or mitigate those impacts.

by the Central Valley Water Board for which the third party is the lead; or  
(4) failure to submit required fees.<sup>16</sup>

9. If a monitoring well is proposed by the third party that may affect a sensitive resource (e.g., endangered species habitat, sensitive plant communities), the third party must (1) select a different monitoring well location that meets water quality goals, but does not involve impacts on the resource; (2) implement the mitigation measures described in the implementation mechanism (e.g., WDRs/ waiver) for the potentially affected resource; or (3) work with the Central Valley Water Board to obtain a site-specific CEQA analysis.<sup>17</sup>
10. Ensure that any activities conducted on behalf of the third party by a subsidiary group (e.g., subwatershed group) meet Board requirements. The third party must assume responsibility for any activities conducted on the third party's behalf.
11. Additional third-party requirements are included below in the regulatory requirements section.

#### Factors to be Considered in Central Valley Water Board Approval of Third Parties

The third party must submit to the Executive Officer for approval a notice of intent to carry out the third-party responsibilities. The Executive Officer will consider the following factors in determining whether to approve or deny any request to serve as a third party under the ILRP.

1. Ability of the third party to carry out the identified third-party responsibilities.
2. Determination that the organization that will represent the geographic area (or commodity) is a legally defined entity (i.e., non-profit corporation; local or State government; Joint Powers Authority) or has a binding agreement among multiple entities that clearly describes the mechanisms in place to ensure accountability to its members and the capacity to meet the third-party eligibility requirements of the ILRP.
3. Determination that the necessary agreements are in place between the third party and any subsidiary group (e.g., subwatershed group) to ensure any third-party responsibilities carried out by the subsidiary group, including the collection of fees, are carried out in a transparent manner and are accountable to the third party.

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<sup>16</sup> The Central Valley Water Board expects that the third-party will have the information required to identify such members, as part of the normal course of carrying out its third-party responsibilities.

<sup>17</sup> This requirement is considered to ensure that any installed monitoring wells do not cause unintended environmental impacts on sensitive resources (see Final PEIR).

4. Determination that the third party has a governance structure that includes a governing board with members of the third party, or otherwise provides members with a mechanism to direct or influence the governance of the third party.

## **5.2. General Central Valley Water Board Role and Responsibilities**

1. Require 100 percent ILRP participation for applicable dischargers. In implementing this requirement, the Central Valley Water Board would work with third-party groups to identify non-participants. The Board would be responsible for any necessary enforcement action (e.g., using CWC § 13260 or § 13267) to achieve the 100 percent participation goal. Third-party groups would be required to assist the Board by providing non-participant information.
2. Review and determine whether to approve the application of an entity wishing to serve as a third-party representative. Periodically (at least biennially) review the performance of approved third-party entities in meeting ILRP requirements. Based on the review, determine whether to continue or revoke the third-party's approval to represent their grower participants. Criteria to be used to determine adequacy of performance will include, but not be limited to: (a) an assessment of fulfilling the roles and responsibilities described above; (b) timeliness and completeness of submittal of any required reports; (c) progress in addressing identified water quality issues relative to any established compliance schedules or performance milestones; (d) timeliness and completeness of response to any notice of violation; and (e) demonstrated ability to influence member growers to implement management practices to address identified water quality problems.
3. Enroll irrigated agricultural operations in the ILRP and provide them with approval to join a third-party group.
4. Review and approve monitoring plans and Quality Assurance Project Plans.
5. Review and approve surface water quality management plans (SQMPs).
6. Review and approve groundwater quality management plans (GQMPs) (and, where applicable, local groundwater management plans requested to substitute for GQMPs).
7. Review monitoring and technical reports provided by third parties and individuals.
8. Review overall program performance with regard to achieving ILRP objectives.

9. Respond to individual problems and complaints dealing with discharge from irrigated lands and informing/coordinating with the responsible third-party group.
10. In an iterative process, require additional monitoring, information, and/or management measures where applicable water quality objectives are not being met or degradation is occurring.
11. Enforce ILRP requirements. Enforcement on individuals will be for their action or inaction that results in non-compliance with any applicable Board Order, or for failure to obtain appropriate regulatory coverage for irrigated lands discharges.
12. Promote coordination with third-party groups; other Central Valley Water Board programs; water quality related efforts of local and State agencies; and watershed and regional stakeholder efforts. Coordination will include, but not be limited to, the following areas: (a) development of Orders; (b) preparation and review of monitoring programs and management plans; (c) review and assessment of data; (d) policy development; and (e) funding.

The Central Valley Water Board will be the lead entity working directly with operators (1) who have chosen not to enroll with a third-party entity, (2) where a third-party entity is unavailable or has demonstrated noncompliance with ILRP requirements, or (3) who, through their action or inaction, demonstrate that direct Central Valley Water Board oversight is required to ensure compliance with the ILRP.

## **6. REGULATORY REQUIREMENTS FOR IRRIGATED AGRICULTURAL OPERATIONS**

To enhance the administrative efficiency of the program and enhance program transparency, the Central Valley Water Board intends to maximize the use of electronic data submittals from individual dischargers to the Board. Prior to the availability of the required information technology infrastructure to achieve this goal, the Board may allow the individual discharger to retain documents on-site and be made available for Board inspection or allow the discharger to submit information to the third party for compilation, as long as the information is available to the Board upon request. The Board Orders to be issued under this Program will provide the specific reporting requirements.

Regulatory requirements for dischargers that fall within the scope of this program (irrigated agricultural operations) will include the following:

1. Submit an application to the Central Valley Water Board to enroll in the program (if not already enrolled in the current program) or confirm with the third party or Central Valley Water Board continued participation with the third-party group. Where required, join a third-party group and pay applicable

program fees. Irrigated agricultural operations would not be required to submit a formal report of waste discharge unless applying for individual WDRs, or in cases of enforcement.

2. Participate in third-party outreach events and review outreach materials to become informed of any water quality issues that the grower must address and the practices that are available to address those issues. Documented participation in outreach events for members of third-party groups or regulated individuals must occur at least annually for those in Tier 3 areas and at least every 5 years for those in Tier 1/2 areas.
3. Implement water quality management practices in accordance with any water quality management plans approved by the Central Valley Water Board. Water quality management practices could be instituted on an individual basis, or be installed to serve a group of growers discharging to a single location.
4. Prevent nuisance conditions and/or exceedance of water quality objectives in State waters associated with waste discharge from their irrigated agricultural lands.
5. Provide the third-party group with information requested for compliance with the ILRP.
6. Provide the Central Valley Water Board with any information required pursuant to an applicable Order.
7. Provide any required fees to the third party to conduct any regional monitoring, representative monitoring, special studies, or field studies required by the Central Valley Water Board.
8. Conduct any site-specific monitoring required by the Central Valley Water Board in conformance with any quality assurance/quality control requirements.
9. Where a management practice is considered, in order to comply with the ILRP, and the irrigated agricultural operation determines that it may affect a sensitive resource(e.g., endangered species habitat, sensitive plant communities), the irrigated agricultural operation must (a) select a different management practice that meets water quality goals, but does not involve impacts on a sensitive resource; (b) locate the management practice outside of sensitive resource areas; (c) implement the mitigation measures described in the implementation mechanism (e.g., WDRs/ waiver) for the potentially affected resource and report to the third party on the implementation of those measures; or (d) obtain individual waste discharge requirements from the

Central Valley Water Board and conduct any required site-specific CEQA analysis.<sup>18</sup>

10. If located within a Tier 3 groundwater basin for which nitrate is the identified constituent of concern, prepare a farm-specific nutrient management plan certified by a certified crop advisor and provide any required nutrient information for submittal to the third party or Central Valley Water Board.
11. If located within a Tier 3 groundwater basin or watershed, prepare an individual farm water quality management plan certified by a certified crop advisor, if the Central Valley Water Board determines that adequate progress in the implementation of the regional GQMP or SQMP has not been made.

Irrigated agricultural operations that do not meet the above requirements as members of a third-party group would be required to obtain WDRs or an individual waiver of WDRs from the Central Valley Water Board.

## **7. MANAGEMENT PLAN AND PRACTICES REQUIREMENTS**

1. Management objectives plan – Third-party groups must prepare a management objectives plan for their Tier 1 and Tier 2 groundwater and surface water areas. The management objectives plan must include objectives to continue to protect water quality and prevent degradation associated with sediment, salt, nutrients, pathogens, and pesticides. The management objectives plan would describe the ground and surface water quality protection objectives for the growers in the Tier 1 or 2 area. The plan must also identify the types of practices being used to meet the management objectives.
2. Summary and assessment of management practices – Third-party groups must prepare a base line summary and assessment of management practices being implemented to meet the management objectives incorporated into the management objectives plan for Tier 1 and Tier 2 areas. The summary and assessment of management practices must be updated every 5 years.
3. Farm Evaluation – All irrigated agricultural operations (in Tier 1, Tier 2, or Tier 3 areas) must complete a farm-specific evaluation and identification of their management practices and have the evaluation available for Board inspection. Per the Board-issued Order for their geographic area, the irrigated agricultural operation must submit the management practice information to its representative third party (or Board) to provide the necessary information for the management practices summary and assessment for the geographic area or commodity.

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<sup>18</sup> This requirement is considered to ensure that implemented water quality management practices do not cause unintended environmental impacts on sensitive resources (see Final PEIR).

- a. Evaluation template/checklist – A commodity-specific, third-party, or Central Valley Water Board-provided template or checklist may be used to complete the farm-specific evaluation.
  - b. Evaluation submittal – The farm-specific evaluation will not be submitted to the Central Valley Water Board, unless required by the Water Board. The evaluation must be produced, if requested, should Board staff conduct an inspection of the irrigated lands operation.
4. Nutrient management plan (Tier 3 groundwater areas for which nitrate is the identified constituent of concern) – For potential dischargers of nutrients in Tier 3 groundwater areas, a farm-specific nutrient management plan must be prepared and certified by a certified crop advisor. The nutrient management plan must include a system to track nutrient inputs and outputs to allow an estimate of nitrate loading below the crop root zone to be made. The Board issued Order for the geographic area will establish reporting and plan submittal requirements. At a minimum, individual irrigated land operations must provide confirmation to its representative third party that they have completed and are implementing a properly certified nutrient management plan.
5. Surface water quality management plan (SQMP) – The representative third party must develop and submit for approval an SQMP for any parameter that exceeds water quality objectives two or more times in a 3-year period<sup>19</sup> or for any parameter for which there is degradation of high quality waters. This requirement only applies to those parameters for which irrigated agriculture is causing or contributing to the exceedance or degradation. Surface water quality management plans developed and approved under the existing ILRP must continue to be implemented under the long-term ILRP. Existing management plans for those parameters for which the irrigated agricultural contribution has not been determined may include completion of source identification studies (as identified under Tier 2 requirements). Based on the results of such studies, the Executive Officer will determine whether the implementation of management practices is required to address any irrigated agricultural contribution to the water quality problem. Under SQMPs, irrigated agricultural operations are required to implement management practices to achieve BPTC or best efforts, as applicable, for the constituent of concern. Monitoring and other collected information will be used to assess the effectiveness of management practices and whether the BPTC or best efforts standard has

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<sup>19</sup> Exceedances will be determined based on available data and application of the appropriate averaging period. The averaging period will either be defined in the Basin Plan; as part of the water quality standard established by the U.S. EPA; or as part of the criteria being used to interpret narrative objectives. If averaging periods are not defined in the Basin Plan; U.S. EPA standard; or criteria, the Central Valley Water Board will use the best available information to determine an appropriate averaging period.

been achieved. Additional practices/monitoring may be necessary, in an iterative process, to address water quality concerns. Required elements of SQMPs are given in Section 13.1.

6. Groundwater quality management plan (GQMP) – The representative third-party group must develop and submit for approval a GQMP within 18 months of issuance of the geographic/commodity specific WDRs by the Central Valley Water Board [except in areas where a local groundwater management plan has been developed and approved (by the Central Valley Water Board) for substitution].<sup>20</sup> The GQMP must be developed for any parameter that exceeds water quality objectives or causes degradation of high quality waters, for which irrigated agricultural could be a source. Under GQMPs or local groundwater management plans, irrigated agricultural operations would be required to implement management practices to achieve BPTC or best efforts, as applicable, for the constituent of concern.<sup>21</sup> Monitoring and other collected information would be used to assess the effectiveness of management practices and whether the BPTC or best efforts standard has been achieved. Additional practices/monitoring may be necessary, in an iterative process, to address water quality concerns.

As part of GQMP development, the third party would collect and evaluate available groundwater data, identify groundwater quality management areas (GMAs) of concern, identify constituents of concern in the GMAs, prioritize the GMAs and constituents of concern, identify agricultural practices that may be causing or contributing to the problem, and identify agricultural management practices that should be employed by local growers to address the constituents of concern.

7. Water quality management plan approval – Based on information provided by the representative third party and other interested stakeholders, the Central Valley Water Board’s Executive Officer will: (a) approve the SQMP or GQMP; (b) conditionally approve the SQMP or GQMP and require revisions to address other surface waters or constituents of concern; (c) conditionally approve the SQMP or GQMP and require other revisions necessary to meet program requirements and goals; or (d) disapprove the

<sup>20</sup> Where local agencies have developed local groundwater management plans (e.g., AB 3030, SB 1938, Integrated Regional Water Management plans) that meet the requirements of GQMPs, the Central Valley Water Board may approve the local groundwater management plan to be substituted for the GQMP. However, irrigated agricultural operations still would be required to enroll with an approved third-party group. The third-party group would be the responsible lead entity for ILRP administration, monitoring and reporting.

<sup>21</sup> For example, where the constituent of concern is nitrate, and the discharge pathway of concern is leaching to groundwater, the GQMP would need to include nutrient budgeting and efficient irrigation. In such cases, plan implementation would be tracked, and groundwater monitoring data and/or other information would be reviewed to determine whether program objectives are being met. Plan requirements may need to be iteratively adjusted based on program tracking/monitoring feedback.

- SQMP or GQMP or portions of the SQMP or GQMP. Review of the SQMP or GQMP and the associated action by the Executive Officer will be based on findings as to whether the SQMP or GQMP meets program requirements and goals and contains the information required for a SQMP or GQMP (see Section 13). Failure by a third party to submit a SQMP or GQMP that receives Executive Officer approval will result in the issuance of 13267 Orders requiring the irrigated agricultural operators in the affected areas to submit the required reports and information.
8. Public input on water quality management plans – Interested stakeholders will be provided an opportunity to provide input on water quality management plans submitted to the Board's Executive Officer for approval; requests for changes in water quality management plans requiring Board or Executive Officer approval; and periodic reviews of water quality management plans conducted by the Board or Executive Officer.
  9. Periodic review of water quality management plans – At least every 3 years for SQMPs and every 5 years for GQMPs, the Central Valley Water Board intends to review available data to determine whether the approved SQMP or GQMP is resulting in improvements in water quality. The Central Valley Water Board will meet with third-party groups and other interested parties to evaluate the sufficiency of SQMPs and GQMPs. Based on input from all parties, the Board or Executive Officer will determine whether and how the SQMP or GQMP should be updated based on new information and progress in achieving compliance with water quality objectives. The Board or Executive Officer also may require revision of the SQMP or GQMP based on available information indicating that exceedances of water quality objectives or degradation of water call for the inclusion of additional waters or constituents of concern(s) in the SQMP or GQMP.
    - a. Adequate progress – The Executive Officer or Board will make a determination of adequate progress in implementing the plan if water quality improvement milestones and compliance time schedules have been met or water quality objectives have been attained.
    - b. Inadequate progress – The Executive Officer or Board will make a determination of inadequate progress in implementing the plan if recurring exceedances of objectives or degradation have occurred with no demonstrated improvement in water quality or water quality improvement milestones and if compliance time schedules in the approved management plan have not been met.
    - c. Additional requirements for inadequate progress – The actions taken by the Executive Officer or Board upon a determination of

inadequate progress include, but are not limited to, one or more of the following for the area in which inadequate progress has been made:

- i. BMP field monitoring studies – The representative third party (or individual dischargers) will be required to develop and implement a field monitoring study plan to characterize the commodity-specific discharge of the constituent of concern and evaluate the pollutant reduction efficacy of specific management practices. Based on the study and evaluation, the Executive Officer will require the SQMP or GQMP to be revised to include improved practices to achieve water quality objectives or prevent degradation.
  - ii. Individual farm water quality management plans (FWQMPs) – Individual irrigated agricultural operations will be required to develop and implement a FWQMP certified by a certified crop advisor. FWQMP requirements are summarized in Section 13.3.
  - iii. Individual WDRs or waiver of WDRs – The Board or Executive Officer may revoke the third-party coverage for individual irrigated agricultural operations and require submittal of a report of waste discharge.
10. Individual FWQMPs – In addition to the circumstances identified above, individual FWQMPs will be required where irrigated agricultural operations are not implementing requirements in SQMPs/GQMPs. Should an irrigated lands discharger fail to provide requested information to the representative third party or fail to implement practices to address a constituent of concern, the Executive Officer will require development and implementation of a FWQMP certified by a certified crop advisor. FWQMP requirements are summarized in Section 13.3.

## **8. WATER QUALITY MONITORING AND ASSESSMENT REQUIREMENTS**

1. General goals of the surface and groundwater quality monitoring and assessment efforts – The general goals of monitoring and assessment efforts associated with the constituents and areas in the ILRP are to determine:
  - a. whether the receiving waters to which waste from irrigated lands discharge are in compliance with applicable water quality objectives, TMDLs, and implementation plans in the Basin Plans (Tiers 1, 2, and 3);

- b. whether irrigated agricultural operations are causing or contributing to identified water quality problems (Tier 2);
  - c. the appropriate threat level (high or low – Tier 3/Tier 1) for areas with insufficient information to determine the relative threat (Tier 2);
  - d. whether water quality conditions have changed to the extent that the relative water quality threat has changed (Tier 1, Tier 2, Tier 3);
  - e. compliance with the requirements or conditions of applicable WDRs or waivers of WDRs (Tier 1, Tier 2, Tier 3).
  - f. the extent of management practice implementation (Tier 1, Tier 2, Tier 3);
  - g. the effectiveness of implemented management practices and whether those practices achieve BPTC/ best efforts (Tier 3); and
  - h. the effectiveness of any applicable regional GQMP or SQMP (Tier 3).
2. General data requirements – Data and information used to meet the requirements of the program must:
- a. Have been collected and analyzed in a manner that assures the quality of the data.
  - b. Be collected in a manner<sup>22</sup> and at a location that reflects the timing, frequency, and the conditions and pollutant pathways that are relevant to the pollutant of concern and under conditions that are most likely to reflect the greatest potential impact of the pollutant on the most sensitive beneficial uses.
    - i. The timing of the data collection must be when beneficial use impact could occur (if there is a temporal component to the beneficial use); and when the pollutant is most likely to be present.
    - ii. The location of data collection must be representative of irrigated lands discharging the pollutant.
3. The frequency of data collection must be sufficient to allow determination of compliance with the relevant numeric water quality objective or criteria being applied to interpret compliance with narrative objectives.
4. General considerations – Monitoring requirements will be tailored to address the concerns specific to the areas or commodities for which they would apply. The monitoring requirements, including time schedule, frequency, locations, and parameters will be developed during the

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<sup>22</sup> For groundwater quality monitoring, alternative technologies (e.g., well point or direct push method) may be utilized with approval by the Executive Officer.

development of the geographic or commodity specific Orders. The Central Valley Water Board intends that regional monitoring programs would be coordinated with DPR's surface water and groundwater monitoring, local groundwater management plans, the Central Valley Water Board Dairy Program, and other existing programs. The primary goal of this coordination is to prevent duplicative monitoring programs. For example, existing water quality data (e.g., the Surface Water Ambient Monitoring Program, SWAMP data, and DPR groundwater data) could be used, and the monitoring parameters would be tailored to the farm inputs and water quality issues in the watershed or groundwater basin. However, the Central Valley Water Board does not intend to monitor every surface water body or aquifer in the Central Valley as part of the long-term ILRP. Therefore, "representative" monitoring and other information will be considered.

5. Assessment monitoring –
  - a. General assessment monitoring for surface waters (Tier 3 areas) - every 3 years, the third party must monitor parameters in its watersheds that have been determined by the Central Valley Water Board or Executive Officer to represent or potentially represent the effect of waste discharges from irrigated agriculture on receiving waters.
  - b. General assessment and trend monitoring for groundwater (Tier 3 areas) – the third party must conduct regional monitoring for constituents of concern to provide baseline groundwater quality information and track trends in groundwater quality. In their proposed monitoring design, the third party may rely on existing groundwater quality monitoring networks in whole or part, provided the Executive Officer determines that reliance on such networks will provide adequate baseline and trend information. Nutrient/pesticide application tracking and associated modeling may be used to evaluate discharges to groundwater in place of monitoring, where technically feasible and appropriate.
  - c. Tier reassessment (Tier 1, Tier 2, Tier 3) – The Water Board will periodically assess available groundwater and surface water quality data to determine whether the tier classification for specific areas and parameters require modification.
6. Source identification / data gaps – Where additional data collection is needed to determine the relative threat to water quality and to determine sources of identified threats, the Central Valley Water Board will prioritize data collection efforts. The purpose of the source identification studies and addressing data gaps is to resolve uncertainty and place those areas/parameters in Tier 1 or Tier 3.

- a. Source identification for surface waters (Tier 2 parameters) – Areas with surface water quality problems (e.g., exceedance of water quality objectives, degradation of water quality), where irrigated agricultural operations have not been identified as a source but may be a potential contributor, would be required to conduct monitoring and applicable source studies. A component of the assessment of the potential contribution of irrigated lands discharges to the surface water body may include an evaluation of the intensity and type of irrigated land use in the watershed; and the relevant geologic, chemical, and hydrologic characteristics of the watershed. In submitting source identification studies for Executive Officer approval, the discharger (or third party) must provide the justification for their proposed study design, specifically identifying how the study design will resolve any uncertainty regarding the potential irrigated agricultural contribution to the water quality problem. The proposed study must include an evaluation of the feasibility of conducting commodity specific field studies for those commodities that could potentially be associated with the pollutant of concern.
  - b. Data gaps (Tier 2 areas/parameters) – The third party must monitor any parameter in a watershed that has been determined by the Central Valley Water Board or Executive Officer to be insufficiently monitored (i.e., a data gap exists). Should the Central Valley Water Board determine that potentially vulnerable groundwater aquifers<sup>23</sup> are inadequately characterized; the Water Board may require the third party (or individual dischargers) to collect samples from existing wells and characterize groundwater quality in the vulnerable aquifer.
7. Special project / site specific monitoring
- a. Special project monitoring for surface waters (Tier 3 parameters) – The third party must conduct receiving water trend monitoring and site-specific studies that are representative of the effects of changes in management practices for the parameters of concern. In submitting special project monitoring proposals, the discharger (or third party) must provide the justification for their proposed study design, specifically identifying how the study design will quantify irrigated agricultural contribution to the water quality problem; identify sources; and evaluate management practice effectiveness. The proposed study must include an evaluation of the feasibility of conducting commodity and management practice specific field studies for those commodities

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<sup>23</sup> For purposes of this assessment and monitoring requirement, a potentially vulnerable groundwater aquifer is one in which one or more domestic wells exist and data are not available to determine whether degradation of water quality or exceedances of objectives are occurring with respect to pollutants of concern.

and practices that could potentially be associated with the pollutant of concern.

- b. Special project monitoring for groundwater (Tier 3 parameters) – The third party must conduct site-specific studies that are representative of the effects of changes in management practices on groundwater quality (this would occur only at a selected number of sites).
- c. Local or site-specific monitoring – The Board may require individuals or third parties to conduct local or site-specific monitoring where assessment monitoring identifies a localized water quality problem.

## **9. OPTIONAL CERTIFIED FARM WATER QUALITY MANAGEMENT PLAN**

This is an *optional* program component, unless the Board or Executive Officer has specifically required a certified individual farm water quality management plan. This program component would not apply geographically, but at the individual farm level. In this option, the operation would implement a certified FWQMP. Certification includes Central Valley Water Board approved Certification Entity review and certification of the plan. As part of certification program, the Certification Entity would conduct an initial certification inspection and a minimum annual inspection frequency of 5% of operations with approved plans. Certification entities would report results to the Central Valley Water Board. It is envisioned that these plans would be developed by commodity groups or other third parties for operations with similar waste discharges; however, individual operations would be required to implement practices in the certified plan. Individual operations also could develop and implement their own certified FWQMP. The certified FWQMP must address discharges to both ground and surface water. Irrigated agricultural operations implementing certified plans would be considered lower priority because there has been on-farm verification (by an approved certifier) of practices implemented to control waste discharge to surface water and groundwater. The approved certifier(s) would be the lead entity for this option.

## **10. TIME SCHEDULE FOR COMPLIANCE**

Surface and groundwater quality issues that will be the primary focus of initial regional board and discharger efforts are identified below and would be subject to the compliance time schedules described. It is likely that the practices to address the issues that receive initial focused attention will also lead to improvement or achievement of objectives for other water quality issues. In issuing the Orders implementing the ILRP Framework, the Central Valley Water Board will establish any other necessary compliance time schedules to address other identified water quality issues.

The following general time schedules apply when irrigated lands are causing or contributing to a discharge that results in exceedance of a water quality objective. The Executive Officer or Water Board may modify these schedules based on evidence that meeting the compliance date is technically or economically infeasible (e.g., where irrigated agriculture demonstrates reduction in contributions, but cannot influence complete compliance because of other sources; where irrigated agriculture has implemented best efforts and water quality objectives are not achieved).

Management plan time schedules developed under the current ILRP would continue to apply in the long-term ILRP. Any other applicable time schedule for compliance established in the Central Valley Water Board's Basin Plans would take precedence over the schedules below.

### **10.1. Surface Water Quality Issues: Primary Focus**

1. Which water bodies are considered the primary focus?—specific water bodies with beneficial uses identified in the Basin Plans, streams tributary to water bodies in the Basin Plan with aquatic life uses based on the “tributary rule,”<sup>24</sup> tributary streams with identified municipal or domestic drinking water intakes, and water bodies with specific compliance time schedules established in the Basin Plans.
2. Which beneficial uses are considered the primary focus?—aquatic life, drinking water, and human consumption uses<sup>25</sup> in the above water bodies.
3. Which pollutants are considered the primary focus?—those pollutants that cause or contribute to a violation of water quality objectives or degradation of surface water quality associated with the priority beneficial uses and water bodies.

*Compliance time schedule—5 to 10 years.* For watershed areas with multiple water body/pollutant issues to address, compliance schedules may be staggered between 5 and 10 years, but cannot exceed 10 years.

### **10.2. Groundwater Quality Issues: Primary Focus**

1. Which groundwater aquifers are considered the primary focus?—aquifers with identified municipal or domestic drinking water wells; aquifers in which

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<sup>24</sup> Resolution R5-2005-0137 describes the application of the tributary rule. Constructed supply and drainage conveyances (with the exception of those identified in the Basin Plans) would not be considered part of the initial focused efforts.

<sup>25</sup> In the Basin Plans, the specific beneficial uses within these general categories include Warm Freshwater Habitat, Cold Freshwater Habitat, Estuarine Habitat, Preservation of Biological of Special Significance; Rare, Threatened, or Endangered Species; Migration of Aquatic Organisms; Spawning, Reproduction, and/or Early Development; Municipal and Domestic Supply; Commercial and Sport Fishing; Shellfish Harvesting; and Water Contact Recreation.

drinking wells were closed because of exceedance of a water quality objective.

2. Which beneficial uses are considered the primary focus?—drinking water uses (i.e., municipal and domestic supply).
3. Which pollutants are considered the primary focus?—those pollutants that cause or contribute to a violation of water quality objectives or degradation of groundwater quality associated with drinking water uses.

*Compliance time schedule—5 to 10 years.* For areas with multiple aquifer/pollutant issues to address, compliance schedules may be staggered between 5 and 10 years, but cannot exceed 10 years.

Compliance is considered to be demonstrated improvement in water quality or reduction in discharge based on evaluation of available data of first encountered groundwater.

With Central Valley Water Board approval, compliance can be demonstrated through documented implementation of management practices (e.g., nutrient budgeting with estimated associated changes in nitrate loading), assessment of water quality data, and/or groundwater quality modeling.

## **11. STATE FEES AND THIRD-PARTY COSTS**

Fees charged will be dependent on the amount of State funding allocated through legislative appropriation and the State Water Board's analysis of the level of staff effort required to implement the ILRP. The Central Valley Water Board will recommend that the fee structure reflect the differing levels of effort for the different tiers and oversight of irrigated agricultural operations as individuals versus those that are part of a third-party group.

To comply with the requirements of the ILRP, third-party groups charge their grower members fees to cover the costs of compliance. The Central Valley Water Board recognizes that these marginal costs can have a disproportionate impact on the economic viability of certain farming operations (e.g., producers of lower value crops and small agricultural operations). In establishing their fee structure, the third party should take into account these potential economic impacts (e.g., by adjusting the fee structure to take into consideration potential economic impact or potential contribution to identified water quality issues). To ensure growers understand how the fee structure is established, third-party groups will provide their members and the Central Valley Water Board with a description and explanation of the fee structure, including any fees charged by subwatershed groups. The Board will not take any action regarding the appropriateness or adequacy of the fee structure established by the third-party group.

## **12. MITIGATION MEASURES AND MITIGATION MONITORING AND REPORTING PROGRAM**

The Final PEIR identifies various potentially significant environmental impacts and cumulatively considerable impacts associated with implementation of a long-term irrigated lands regulatory program. As described in the CEQA findings associated with this Framework, those mitigation measures will be incorporated into the Orders that implement this Framework. Any necessary mitigation monitoring and reporting program (MMRP) will be incorporated into the monitoring and reporting requirements that accompany the WDRs or conditional waivers of WDRs issued to implement this Framework.

## **13. REQUIREMENTS FOR SURFACE WATER QUALITY, GROUNDWATER QUALITY, AND INDIVIDUAL FARM WATER QUALITY MANAGEMENT PLANS**

### **13.1. Surface Water Quality Management Plan Requirements**

The surface water quality management plan (SQMP) prepared by third-party groups must include the following elements.

1. Identification of the watershed areas and associated parameters addressed by the management plan. For exceedances in a water body that is representative of other water bodies/watersheds, those areas represented by the water body monitored must be identified in the management plan.
2. A summary and assessment of the available water quality data for surface waters and parameters addressed by the management plan.
3. Identification of irrigated agriculture source(s), general practice(s) or specific location(s) that may be the cause of the water quality problem. If the potential sources are not known, a study design must be included to determine the source(s) or to eliminate agriculture as a potential source. Source identification can include more intensive sampling in the watershed or field studies to quantify the relevant waste discharge from irrigated lands. In lieu of conducting additional source analysis, the management plan can focus on ensuring that all growers are implementing practices that achieve BPTC/ best efforts for the parameter(s) of concern.
4. Identification of practices to address the constituents of concern. The practices that growers will implement must be identified, along with an estimate of their effectiveness or any limitations on the effectiveness of the

practice. Practices identified may include those that are required by local, State, or federal law<sup>26</sup>.

5. Evaluation of management practice effectiveness. The approach for determining the effectiveness of the management practices implemented must be described. Acceptable approaches include field studies of management practices at representative sites and modeling or assessment to associate the degree of management practice implementation to changes in water quality.
6. Description of outreach to growers. The strategy for informing growers of the water quality issues that need to be addressed and relevant management practices must be described. The outreach strategy must describe the methods that will be used to inform growers and how the effectiveness of the outreach efforts will be evaluated. The third party may conduct outreach efforts or work with the assistance of the County Agricultural Commissioners, U.C. Cooperative Extension, Natural Resources Conservation Service, Resource Conservation District, or other appropriate groups or agencies.
7. Tracking of management practice implementation. The process for tracking implementation of management practices must be described. The process must include a description of how the information will be collected from growers; the type of information being collected; how the information will be verified<sup>27</sup>; and how the information will be reported.
8. Monitoring plan to track changes in water quality. A monitoring plan for the constituent(s) of concern must be prepared to determine whether the management plan is improving water quality. The monitoring plan may need to include other sites or different timing or frequency of sample collection to adequately assess the effectiveness of the management plan. The monitoring plan must include an associated Quality Assurance Project Plan, and the data must be submitted electronically in a format required by the Central Valley Water Board.
9. Schedules and milestones. Milestones and schedules must be described for the actions to be taken (e.g., outreach, management practice implementation), as well as for the anticipated improvements in water quality (e.g., milestones for reduced frequency of exceedance; anticipated date for achieving water quality objectives). The schedule for achieving compliance with water quality objectives must be consistent with any compliance dates established in the relevant water quality control plan.

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<sup>26</sup> For example, practices required to be implemented under Department of Pesticide Regulation or County Agricultural Commissioner regulations or permit requirements may be referenced.

<sup>27</sup> The intent of data verification is to provide confidence that the information being reported is accurate. This may include field visits to a subset of growers reporting their data or other methods to confirm data validity.

If the SQMP addresses multiple exceedances of different types of wastes at multiple locations, a prioritization of the water quality problems to be addressed may be developed. The prioritization may include considerations such as extent, magnitude, and duration or be based on a design that assumes that resolution of one type of contaminant (such as sedimentation) may help resolve other types of measured exceedances (such as pesticides, toxicity, dissolved oxygen, and pH). The assumptions and prioritizations will be developed in coordination with the Central Valley Water Board and must be included as part of the management plan to be approved by the Executive Officer.

At least annually, the third party must prepare a report that summarizes the progress in implementing the management plan. At a minimum, the report must include (1) a summary of the grower outreach conducted; (2) results from evaluation of management practice effectiveness; (3) a summary of the degree of implementation of management practices; (4) an assessment of the monitoring data collected; and (5) a summary of progress in meeting milestones and schedules and any recommendations for changes to the management plan.

The Executive Officer or the Central Valley Water Board must approve the management plan. Changes to the management plan may be implemented by the third party only after approval by the Executive Officer.

At the request of the third party or upon recommendation by the Central Valley Water Board, the Executive Officer may exempt a third party from the development of a management plan. Such an exemption may be issued only if sufficient evidence is provided indicating that the implementation of management practices by growers will not result in water quality improvements. The Executive Officer also may require the third party or its members to develop a management plan or to take additional actions if monitoring data or other information indicates that water quality may be jeopardized. The Executive Officer also may increase the monitoring requirements where monitoring results, pesticide use patterns, or other indicators suggest that the increase is warranted.

### **13.2. Groundwater Quality Management Plan Requirements**

The groundwater quality management plan (GWMP) prepared by third-party groups must include the following elements.

1. Identification of the groundwater quality management areas (GMAs) and constituents of concern addressed by the management plan. For exceedances in a groundwater basin or aquifer that is representative of other basins/aquifers, those areas represented by the aquifer monitored must be identified in the management plan.
2. A summary and assessment of the available water quality data for the aquifers and parameters addressed by the management plan. Available data from existing groundwater quality programs can be used, including but not

limited to the State Water Board's Groundwater Ambient Monitoring and Assessment, USGS, DPH, DPR, DWR, and local groundwater management programs.

3. Identification of irrigated agriculture source(s), general practice(s) or specific location(s) that may be the cause of the water quality problem. If the potential sources are not known, a study design must be included to determine the source(s) or to eliminate agriculture as a potential source. Source identification can include more intensive sampling in the relevant aquifer or field studies to quantify the relevant waste discharge from irrigated lands. In lieu of conducting additional source analysis, the management plan can focus on ensuring that all growers are implementing practices that achieve BPTC/ best efforts for the constituent(s) of concern.
4. Identification of practices to address the constituents of concern. The practices that growers will implement must be identified, along with an estimate of their effectiveness or any limitations on the effectiveness of the practice. Practices identified may include those that are required by local, State, or federal law. Where an identified constituent of concern is a pesticide that is subject to DPR's groundwater protection program, the GQMP may refer to DPR's regulatory program for that pesticide and any requirements associated with the use of that pesticide.
5. Evaluation of management practice effectiveness. The approach for determining the effectiveness of the management practices implemented must be described. Acceptable approaches include field studies of management practices at representative sites and modeling or assessment to associate the degree of management practice implementation to changes in water quality.
6. Description of outreach to growers. The strategy for informing growers of the water quality issues that need to be addressed and relevant management practices must be described. The outreach strategy must describe the methods that will be used to inform growers and how the effectiveness of the outreach efforts will be evaluated. The third party may conduct outreach efforts or work with the assistance of the County Agricultural Commissioners, U.C. Cooperative Extension, Natural Resources Conservation Service, Resource Conservation District, California Department of Food and Agriculture, or other appropriate groups or agencies.
7. Tracking of management practice implementation. The process for tracking implementation of management practices must be described. The process must include a description of how the information will be collected from

growers, the type of information being collected, how the information will be verified<sup>28</sup>, and how the information will be reported.

8. Monitoring plan to track changes in water quality. A monitoring plan for the constituent(s) of concern must be prepared to determine whether the management plan is improving water quality. The monitoring plan may need to include other sites or a different depth to groundwater (e.g., monitor first encountered groundwater versus supply wells) or frequency of sample collection to adequately assess the effectiveness of the management plan. Monitoring may include focused studies of selected agricultural management practices, constituents, or physical settings to inform refinement of GMA and constituent prioritization, or of practices that provide needed groundwater protection from degradation by constituents of concern. The monitoring plan must include an associated Quality Assurance Project Plan, and the data must be submitted electronically in a format required by the Central Valley Water Board.
9. Schedules and milestones. Milestones and schedules must be described for the actions to be taken (e.g., outreach, management practice implementation), as well as for the anticipated improvements in water quality (e.g., milestones for declining trends in concentrations of constituents of concern). The schedule for achieving compliance with water quality objectives must be consistent with any compliance dates established in the relevant water quality control plan.

The GQMP would not include or address issues related to groundwater supply, including issues regarding the volume of groundwater pumped or used by growers within a GMA.

If the GQMP addresses exceedances in multiple aquifers or for multiple constituents of concern, a prioritization of the water quality problems to be addressed may be developed. The prioritization may include considerations such as the threat to drinking water supply wells, aquifer condition, risk of contamination because of soil type, known agricultural practices/crops grown, and likelihood of irrigated agricultural contribution to the water quality problem. The assumptions and prioritizations will be developed in coordination with the Central Valley Water Board and must be included as part of the management plan to be approved by the Executive Officer.

At least annually, the third party must prepare a report that summarizes the progress in implementing the management plan. At a minimum, the report must include (1) a summary of the grower outreach conducted; (2) results from evaluation of management practice effectiveness; (3) a summary of the degree of implementation of management practices; (4) an assessment of the monitoring

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<sup>28</sup> The intent of data verification is to provide confidence that the information being reported is accurate. This may include field visits to a subset of growers reporting their data or other methods to confirm data validity.

data collected; and (5) a summary of progress in meeting milestones and schedules and any recommendations for changes to the management plan.

The GQMP may rely wholly or in part on a local groundwater plan to the extent that plan includes the required elements described above. The Executive Officer of the Central Valley Water Board must approve the GQMP, including any elements of the plan that rely on an existing local groundwater plan. Changes to the management plan may be implemented by the third party only after approval by the Executive Officer.

At the request of the third party or upon recommendation by the Central Valley Water Board, the Executive Officer may exempt a third party from the development of a management plan. Such an exemption may be issued only if sufficient evidence is provided indicating that the implementation of management practices by growers will not result in water quality improvements. The Executive Officer also may require the third party or its members to develop a management plan or to take additional actions if monitoring data or other information indicates that water quality may be jeopardized. The Executive Officer also may increase the monitoring requirements where monitoring results, pesticide use patterns, or other indicators suggest that the increase is warranted.

### **13.3. Individual Farm Water Quality Management Plan Requirements**

At a minimum, farm water quality management plans (FWQMPs) would describe those practices needed or currently in use to achieve groundwater and surface water quality protection. Growers would be encouraged to work with technical service organizations such as resource conservation districts and the University of California Cooperative Extension in the development of FWQMPs.

FWQMP content at a minimum would include (1) name and contact information of owner/operator; (2) description of operations, including number of irrigated acres, crop types, and chemical/fertilizer application rates and practices; (3) maps showing the location of irrigated production areas, discharge points and named water bodies; (4) applicable information on water quality management practices used to achieve general ranch/farm management objectives and reduce or eliminate discharge of waste to groundwater and surface waters; (5) measures instituted to ensure wellhead protection from fertilizer use; and (6) identification of any potential conduits to groundwater aquifers on the property (e.g., active, inactive, or abandoned wells; dry wells; recharge basins; ponds) and steps taken, or to be taken, to ensure all identified potential conduits do not carry contamination to groundwater.

In addition to the minimum elements described above, the Executive Officer may require groundwater or surface water quality monitoring to evaluate the effectiveness of the practices implemented by the grower.