

PROPOSED

**LONG-TERM IRRIGATED LANDS
REGULATORY PROGRAM ALTERNATIVES**

PREPARED FOR:

Long-Term Irrigated Lands Regulatory Program
Stakeholder Advisory Workgroup

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Acronyms and Abbreviations

Basin Plan	Water Quality Control Plan
Central Valley Water Board	California Regional Water Quality Control Board, Central Valley Region
CEQA	California Environmental Quality Act
Conditional Waiver	Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands
DPH	California Department of Public Health
DPR	California Department of Pesticide Regulation
DWR	California Department of Water Resources
EIR	Environmental Impact Report
FREP	Fertilizer Research and Education Program
FWQMP	Farm Water Quality Management Plan
GAMA	Groundwater Ambient Monitoring and Assessment
GMAs	groundwater management areas (GMAs)
GQMPs	groundwater quality management plans
GW	groundwater categories
ILRP	Irrigated Lands Regulatory Program
IWMP	Irrigation Water Management Plan
JPA	joint powers authority
MOU	Memorandum of Understanding
NMP	Nutrient Management Plan
NRCS	National Resources Conservation Service
PRC	Public Resources Code
RCD	Resource Conservation Districts
SW	surface water categories
UC	University of California
WDRs	waste discharge requirements
Workgroup	Long-Term Irrigated Lands Regulatory Program Stakeholder Advisory Workgroup
WQMP	Water Quality Management Plan

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Proposed Long-Term Irrigated Lands Regulatory Program Alternatives December 2009

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Introduction

6 The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water
7 Board) Irrigated Lands Regulatory Program (ILRP) was initiated in 2003 with the adoption of a
8 Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands
9 (Conditional Waiver). Under the 2003 Conditional Waiver, the Central Valley Water Board directed
10 staff to prepare an Environmental Impact Report (EIR) for a long-term ILRP. The 2003 Conditional
11 Waiver expired in 2006, at which time a Revised Conditional Waiver was adopted that continues the
12 Conditional Waiver until June 2011.

13 The Central Valley Water Board must develop recommendations for a long-term ILRP by summer
14 2009 in order to have enough time to complete the necessary California Environmental Quality Act
15 (CEQA) and economic review prior to the expiration of the interim program in June 2011. Proposed
16 modifications to the ILRP must be approved by the Central Valley Water Board and may include:

- 17
- 18 • Establishing subcategories and related requirements for different types of agricultural
operations and/or geographic areas.
 - 19 • Adding requirements to protect groundwater from potential impacts related to irrigated
20 agriculture.
 - 21 • Considering various regulatory approaches, such as use of management practice requirements,
22 technology performance standards, narrative or numeric water quality-based limits, or a
23 combination of approaches.

24 This draft provides a summary of 1) the overall goals of the Central Valley Water Board's ILRP, 2)
25 the process that was used to develop the proposed alternatives in collaboration with stakeholders,
26 and 3) the range of proposed ILRP alternatives that were developed by the Long-Term ILRP
27 Stakeholder Advisory Workgroup (Workgroup) and Central Valley Water Board staff. All
28 alternatives must be consistent with program goals and meet minimum statutory requirements. To
29 this end, each alternative advanced for evaluation in the EIR will be reviewed by Central Valley
30 Water Board staff and may be subject to modifications. However, any such modifications will be
31 done only after discussion with Workgroup members.

32 During the course of reviewing the alternatives, Central Valley Water Board staff may identify other
33 feasible alternatives that are more cost effective, are less likely to have a negative impact on the
34 environment, or have other desirable characteristics. If such alternatives are developed by staff,
35 those alternatives will be discussed with the Workgroup prior to their inclusion for evaluation in the
36 EIR.

Goals and Objectives of the Long-Term Irrigated Lands Regulatory Program

Irrigated agricultural lands include lands where water is applied to produce crops, fiber, or livestock for commercial sale or use. For the purposes of this ILRP, irrigated agricultural lands also include managed wetlands, nurseries, and water districts¹. Understanding that irrigated agriculture in the Central Valley provides valuable food and fiber products to communities worldwide, the overall goals of the ILRP are to 1) restore and/or maintain the highest reasonable quality of state waters² considering all the demands being placed on the water, 2) minimize waste discharge from irrigated agricultural lands³ that could degrade the quality of state waters, 3) maintain the economic viability of agriculture in California’s Central Valley, and 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 to:

- Restore and/or maintain appropriate beneficial uses established in [Central Valley Water Board Water Quality Control Plans](#) by ensuring that all state waters meet applicable water quality objectives.⁴
- 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.
- Provide incentives⁵ for agricultural operations to minimize waste discharge to state waters from their operations.
- Coordinate with other Central Valley Water Board programs, such as the Grasslands Bypass Project waste discharge requirements for agricultural lands, the Westlands Water District’s effort to develop waste discharge requirements for agricultural lands, total maximum daily load development, CV-Salts, and waste discharge requirements for dairies.
- Promote coordination with other regulatory and non-regulatory programs associated with agricultural operations (e.g., the California Department of 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, United States Geological Survey, and local groundwater programs [SB 1938, AB 3030, Integrated Regional Water Management Plans]) to minimize duplicative regulatory oversight while ensuring program effectiveness.

¹ Water districts would be included only if it accepts or receives discharges from irrigated lands, and discharges or threatens to discharge waste to waters of the state.

² California Water Code section 13050 defines state waters as any surface water or groundwater, including saline waters, within the boundaries of the state.

³ Irrigated agricultural lands include managed wetlands, nurseries, and water districts.

⁴ This objective did not receive Workgroup consensus and consequently was not recommended by the Workgroup. In general, concerns regarding this proposed objective have to do with whether there should be some qualifier that accounts for the feasibility and reasonableness of restoring all state waters to applicable water quality objectives.

⁵ Incentives could include financial, monitoring reductions, certification, or technical help.

1 Alternatives Development and Screening

2 CEQA Requirements

3 In accordance with State CEQA Guidelines Section 15126.6(a), EIRs must evaluate a “range of
4 reasonable alternatives to the project, or to the location of the project, which would feasibly attain
5 most of the basic objectives of the project.” State CEQA Guidelines Section 21061.1 defines *feasible*
6 as “capable of being accomplished in a successful manner within a reasonable period of time, taking
7 into account economic, environmental, legal, social, and technological factors.” Selecting a range of
8 project alternatives for evaluation is the responsibility of the lead agency, which must “publicly
9 disclose its reasoning for selecting those alternatives.” [State CEQA Guidelines Section 15126.6(a)].

10 State CEQA Guidelines Section 15126.6(c) also directs that EIRs should “identify any alternatives
11 that were considered...but were rejected as infeasible,” and “briefly explain the reasons” for the
12 determination. It explains that alternatives may be rejected due to “(i) failure to meet most of the
13 basic project objectives, (ii) infeasibility, and (iii) inability to avoid significant environmental
14 impacts.” The factors that will be weighed to determine the feasibility of ILRP alternatives include
15 economic viability⁶, consistency with existing plans or planning documents, regulatory limitations,
16 and jurisdictional authority.

17 Considered alternatives must include the specific alternative of "no project," or conditions at the
18 time the notice of preparation is published. When the project is the revision of an existing land use
19 or regulatory plan, policy, or ongoing operation, the "no project" alternative is the continuation of
20 the existing plan, policy or operation into the future. [State CEQA Guidelines Section 15126.6(d)-
21 (e)]. In this instance, the "no project" scenario will be presented as the "proposed project", the
22 project against which the range of identified alternatives is compared.

23 In most CEQA documents, the lead agency has identified the proposed project as the "preferred
24 project", and thus the alternatives may typically receive a reduced level of analysis in comparison.
25 However, in this document, no preferred project will be identified by the Central Valley Water
26 Board. Instead, each chosen project alternative will receive a full measure of analysis, to the extent
27 necessary to determine and compare all anticipated impacts.

28 An EIR “shall include sufficient information about each alternative to allow meaningful evaluation,
29 analysis, and comparison with the proposed project.” [State CEQA Guidelines Section 15126.6(d)].
30 The State CEQA Guidelines Section 15126.6(b) provides that the discussion of alternatives should
31 focus on alternatives “which are capable of avoiding or substantially lessening any significant effects
32 of the project, even if these alternatives could impede to some degree the attainment of the project
33 objectives or would be more costly.”

34 The final decision regarding the feasibility of alternatives lies with the decision maker for a given
35 project, who must make the necessary findings addressing the potential feasibility of reducing the
36 severity of significant environmental effects. (Public Resources Code [PRC] 21081, State CEQA
37 Guidelines Section 15091).

⁶ Unlike other CEQA lead agencies, Regional Water Boards are directed by California Water Code section 13241 to consider economics when establishing water quality objectives.

1 Stakeholder Process

2 In fall 2008, the Central Valley Water Board convened the Workgroup to provide staff with input on
3 the development of the ILRP. The Workgroup includes a range of stakeholder interests representing
4 local government, industry, agricultural, and environmental coalitions throughout the Central
5 Valley.

6 The Workgroup operates under a [Charter](#) document that contains a plan for communicating
7 Workgroup recommendations to the Central Valley Water Board, establishes the Workgroup
8 structure, and clarifies roles and responsibilities. Workgroup meetings conducted to date are
9 summarized here.

- 10 • October 9, 2008: [Organizational Workgroup Meeting](#).
- 11 • December 17, 2008: [Workgroup Meeting to Discuss Strategy](#).
- 12 • February 2, 2009: Groundwater Information Session.
- 13 • February 17, 2009: [Workgroup Meeting to Present Participant Proposed Alternatives](#).
- 14 • April 15, 2009: Groundwater Nitrate Information Session.
- 15 • May 19, 2009: [Workgroup Meeting to Discuss Proposed Long-term ILRP alternatives](#).
- 16 • August 20, 2009: [Final Workgroup Meeting to Discuss Proposed Long-term ILRP alternatives](#).

17 The Workgroup meetings provide a forum for stakeholder input and deliberation. Because the ILRP
18 is complex, information sessions were arranged to share technical information.

19 Alternatives Development Process

20 Alternatives that will be evaluated in the EIR need to meet the goals and objectives for the ILRP and
21 be substantially different so that the alternatives can be compared to each other. Initially, Central
22 Valley Water Board staff proposed a two-phase process for developing alternatives.

- 23 • **Phase I:** Develop a comprehensive list of alternatives and prioritize the alternatives using an
24 evaluation measures-based (e.g., effectiveness, cost) quantitative scoring system. The goal of the
25 Phase I step is to develop a comprehensive list of alternatives that could meet the goals and
26 objectives for the ILRP for further Workgroup consideration.
- 27 • **Phase II:** Collaboratively screen the comprehensive list of alternatives to determine which
28 alternatives would be evaluated in the EIR for the ILRP.

29 At the December 17 Workgroup meeting, the Workgroup decided to refine the approach for
30 evaluating alternatives by combining the two phases into a shortened process. It was decided that
31 the Workgroup and Central Valley Water Board staff would develop a range of alternatives that
32 could meet the objectives of the ILRP, and sort through those alternatives as they were being
33 developed. Ultimately, the Workgroup will provide input to assist the Central Valley Water Board in
34 determining the alternatives to be evaluated in the EIR.

35 Central Valley Water Board staff developed a template and program matrix to assist Workgroup
36 participants in the development of alternatives. The template and matrix were included in a
37 [Workgroup Strategy Document](#) dated January 9, 2009. The Workgroup Strategy Document included

1 a discussion of minimum requirements for alternatives, a Workgroup meeting schedule, and a
2 process for selecting ILRP alternatives for EIR analysis.

3 On February 17, 2009, Workgroup participants presented proposed ILRP alternatives. After the
4 February 17 Workgroup meeting Central Valley Water Board staff began working with Workgroup
5 participants that proposed alternatives to develop the details of their alternatives. Central Valley
6 Water Board staff have also developed additional alternatives as necessary to represent a range of
7 possible programs to evaluate in the EIR (per the State CEQA Guidelines requirements). Many of the
8 proposed alternatives that were presented were combined, or additional features were added, to
9 develop complete alternatives that could meet the goals and objectives of the program.

10 At the final Workgroup meeting on August 20, 2009 the Workgroup voted on the proposed range of
11 alternatives and each program goal and objective. The workgroup came to consensus that the
12 proposed range of alternatives should be evaluated in the Environmental Impact Report. Also, the
13 Workgroup has come to consensus on each of the proposed program goals and all but one of the
14 proposed objectives (see Goals and Objectives section). Following the August 20 meeting,
15 Workgroup participants provided additional written comments on the proposed alternatives. The
16 additional written comments will be considered during the EIR process.

17 Alternatives Screening

18 In order to be considered alternatives under CEQA, ILRP alternatives must meet the goals and
19 objectives of the project (as defined above). At a minimum, alternatives must also meet statutory
20 requirements established in applicable state policy and regulations (e.g., the [California Water Code](#);
21 the [Central Valley Water Board Water Quality Control Plan](#), or the *Basin Plan*; the [State Water](#)
22 [Resources Control Board Policy for Implementation and Enforcement of the Nonpoint Source](#)
23 [Pollution Control Program](#); and the [State Antidegradation Policy](#)). Alternatives that do not meet
24 minimum statutory requirements will not be considered for inclusion in the ILRP.

25 An effort has been made throughout the development process to ensure that the alternatives meet
26 statutory requirements as well as the goals and objectives for the program. This effort included
27 circulating an alternative development template (included in the Workgroup Strategy Document)
28 and Central Valley Water Board staff conducted meetings with Workgroup participants.

29 The Central Valley Water Board staff-recommended ILRP will be selected from among the
30 alternatives considered in the EIR. Rather than the typical EIR approach of starting with a project
31 and then looking at alternatives to that project, the EIR will be used as a tool to inform decision
32 makers during the selection process. In explanation, each alternative will be evaluated equally in the
33 EIR. In addition to environmental analysis, economics and policy considerations will also be
34 evaluated in order to inform the selection of a staff-recommended ILRP alternative that would be
35 considered by the Central Valley Water Board. As part of the policy analysis, each alternative will
36 need to be evaluated to determine how well the alternative implements minimum statutory
37 requirements and other required policy. [Chapter 2 of the ILRP Existing Conditions Report](#)
38 summarizes the main policies and statutory requirements that will be considered.

39 In addition to the aforementioned requirements for alternatives, the Workgroup Strategy Document
40 includes the following guidance for determining which alternatives will be evaluated in the EIR.

- 41 ● **Consensus alternatives.** All ILRP alternatives that receive Workgroup consensus (as defined in
42 Section 3.7 of the [Workgroup Charter](#)) for further consideration will be evaluated in the EIR.

- **Non-consensus alternatives.** Central Valley Water Board staff will make an effort to include non-consensus ILRP alternatives that are feasible and reasonable in the EIR analysis.

As required under the State CEQA Guidelines Section 15126.6(c), the EIR will also briefly describe those alternatives that were considered but rejected as infeasible. The reasons for their infeasibility will be summarized in the EIR.

Alternatives

Proposed ILRP alternatives are summarized in Table 1 and Attachment A. In order to evaluate the environmental, economic, and policy impacts of the alternatives, additional detail may be necessary. During the evaluation process, Central Valley Water Board staff will work to provide any necessary detail in a consistent manner over the entire range of alternatives. For example, assumptions would need to be made in order to estimate how a particular requirement may affect growers (e.g., costs of management plan development). In this scenario, any assumptions made for this evaluation would be applied, as appropriate, to all alternatives containing the particular requirement.

In conjunction with each alternative (described below), irrigated agricultural lands operations would have the option to work individually with the Central Valley Water Board to obtain an individual waiver of waste discharge requirements or waste discharge requirements.

Information submitted to the Central Valley Water Board under the ILRP would be required in an electronic format where feasible, unless there is a need for the information to remain confidential.

Table 1. Summary of Proposed ILRP Alternatives

No.	Alternative	Lead Entity ^a	WQ Plans ^b	Monitoring
1	No Change	Third-Party	To address water quality problems ^c	Regional
2	Third-Party Lead Entity	Third-Party	Yes, regional	Regional
3	Individual Farm Water Quality Management Plan (FWQMP)	CVWB ^d	Yes, farm	Farm
4	Direct Oversight with Regional Monitoring	Responsible Legal Entity ^e CVWB	Yes, farm	Regional and Farm
5	Direct Oversight with Farm Monitoring	CVWB	Yes, farm	Farm

^a Describes Central Valley Water Board interaction with growers. For more information on lead entity see Attachment II, page 3, of the Workgroup Strategy Document at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/long_term_program_development/advisory_wrgrp_strategy.pdf.

^b Water quality management plans (WQ Plans)—could be on the farm or regional level.

^c Water quality management plans are required only where water quality problems have been identified.

^d CVWB = Central Valley Regional Water Quality Control Board.

^e Legal entity assuming responsibility for waste discharge (e.g., Joint Powers Authority).

1 **Alternative 1—No Change Alternative (Maintain Current Program)**

2 **Surface Water**

3 Under this alternative, the Central Valley Water Board would renew the current program. This
4 would be considered the “no project” alternative per CEQA guidance at Title 14, California Code of
5 Regulations, Section 15126.6(e)(3)(A): “When the project is the revision of an existing land use or
6 regulatory plan, policy or ongoing operation, the “no project” alternative will be the continuation of
7 the existing plan, policy, or operation into the future.”

8 Coalition groups would continue to function as lead entities representing growers (irrigated
9 landowners, wetland managers, nursery owners, and water districts). This alternative would be
10 based on continuing watershed monitoring to determine whether operations are causing water
11 quality problems. Where monitoring indicates a problem, third-party groups and growers would be
12 required to implement management practices to address the problem and work toward compliance
13 with applicable water quality standards.

14 **Groundwater**

15 This alternative would not establish any new Central Valley Water Board requirements for
16 discharges to groundwater from irrigated agricultural lands. However, local programs in place
17 provide varying degrees of groundwater management and oversight in some areas of the Central
18 Valley (i.e., these programs were not developed to specifically meet the goals of this ILRP). The
19 following is a brief description of the local groundwater management programs.

20 Assembly Bill 3030, which is codified in the California Water Code section 10750, authorizes local
21 agencies within groundwater basins to prepare and adopt groundwater management plans with the
22 following recommended components:

- 23 1. Control of saline water intrusion.
- 24 2. Identification and management of wellhead protection areas and recharge areas.
- 25 3. Regulation of the migration of contaminated groundwater.
- 26 4. The administration of a well abandonment program.
- 27 5. Mitigation of conditions of overdraft.
- 28 6. Replenishment of groundwater extracted by water producers.
- 29 7. Monitoring of groundwater levels and storage.
- 30 8. Facilitating conjunctive use operations.
- 31 9. Identification of well construction policies.
- 32 10. The construction and operation by the local agency of groundwater contamination cleanup,
33 recharge, storage, conservation, water recycling, and extraction projects.
- 34 11. The development of relationships with state and federal regulatory agencies.
- 35 12. The review of land use plans and coordination with land use planning agencies to assess
36 activities that create a reasonable risk of groundwater contamination.

1 Local agencies throughout the Central Valley have developed groundwater management programs
2 pursuant to California Water Code section 10750. However, areas throughout the Central Valley are
3 not covered by local agency groundwater management plans.

4 Senate Bill 1938 imposed additional groundwater management program requirements on local
5 agencies seeking state funds, administered by the California Department of Water Resources (DWR),
6 for construction of groundwater projects. These requirements include a groundwater management
7 plan that includes components relating to the monitoring and management of groundwater levels
8 within the basin, groundwater quality degradation, inelastic land surface subsidence, and changes in
9 surface flow and surface water quality that directly affect groundwater levels or quality.

10 In addition to local groundwater management plans, the DPR regulates the use of pesticides that
11 pose a threat to groundwater (Groundwater Protection Program). The DPR's Groundwater
12 Protection Program requires that growers implement management practices to prevent pesticides
13 from moving to groundwater. The DPR also conducts monitoring for pesticides to evaluate
14 management practices and overall program effectiveness.

15 This alternative would not establish new Central Valley Water Board requirements for regulating
16 irrigated agricultural discharges to groundwater. The alternative would recognize that local
17 groundwater management programs currently exist in some localities and that the DPR currently
18 implements a groundwater protection program to protect groundwater quality from pesticide
19 impacts.

20 **Implementation Mechanisms and Lead Entity**

21 Under this alternative, the Central Valley Water Board would renew the current program through a
22 waiver of waste discharge requirements or through waste discharge requirements. Third-party
23 water quality coalition groups⁷ would continue to function as lead entities. These coalition groups
24 would continue to work on behalf of the members to ensure all Central Valley Water Board
25 requirements are met.

26 As in the current program, coalition groups would be approved by the Central Valley Water Board
27 prior to functioning as a lead entity. Specifically, coalition groups would:

- 28 1. Enroll member growers.
- 29 2. Develop monitoring plans.
- 30 3. Conduct required water quality monitoring.
- 31 4. Develop and implement surface water quality management plans where surface water
32 monitoring results indicate two or more exceedances of any applicable water quality objective
33 in a three-year period.
- 34 5. Inform growers of program requirements and provide coordination to ensure water quality
35 concerns are addressed.

⁷ Water quality coalition groups have formed throughout the Central Valley to function as representative or "lead" entities in the administration of the current ILRP. Coalitions represent growers, provide education, organize monitoring, and work with the Central Valley Water Board to help ensure that the current program is effectively implemented.

1 **General Central Valley Water Board Role and Responsibilities**

- 2 1. Require 100% ILRP participation.⁸
- 3 2. Review and approve monitoring plans.
- 4 3. Review monitoring reports.
- 5 4. Review and approve surface water quality management plans.
- 6 5. Review overall program performance with regard to achieving ILRP objectives.
- 7 6. Respond to individual problems and complaints dealing with irrigation discharge.
- 8 7. Enforce ILRP requirements.

9 **Regulatory Requirements**

10 In order to be eligible for this alternative, growers would be required to:

- 11 1. Submit an application to the Coalition group to enroll in the program and pay applicable
- 12 program fees. The Coalition group would apply for coverage on behalf of members. Required
- 13 application information would include name and contact information of owner/operator and
- 14 parcel numbers. Coalition groups would collect the application information for each member
- 15 grower and report the information to the Central Valley Water Board.
- 16 2. Implement water quality management practices in accordance with any water quality
- 17 management plans. Water quality management practices could be instituted on an individual
- 18 basis, or be installed to serve a group of growers discharging to a single location (e.g., combined
- 19 tailwater return or wetlands serving a group of growers).
- 20 3. Prevent nuisance conditions and/or exceedance of water quality objectives in state waters
- 21 associated with waste discharge from their irrigated agricultural lands.
- 22 4. Provide the Coalition group with information requested for compliance with the ILRP.

23 Growers who do not meet these requirements would be required to work directly with the Central

24 Valley Water Board and obtain waste discharge requirements or an individual waiver of waste

25 discharge requirements.

26 **Monitoring Provisions**

27 Monitoring under this alternative would be the same as the watershed-based assessment and core

28 monitoring required under the current ILRP. Under this monitoring scheme, coalition groups would

29 work with the Central Valley Water Board to develop monitoring plans for Central Valley Water

30 Board approval. These plans would specify monitoring parameters and site locations. Required

31 monitoring would include the parameters and frequencies shown in Table 2.⁹

⁸ Where growers have a waste discharge that would be regulated under the ILRP.

⁹ The current ILRP monitoring program provides flexibility to reduce the monitoring shown in Table 2.

1 **Table 2. Monitoring Requirements**

Assessment Monitoring for 1 Year Out of Every 3 Years	
Parameter	Frequency
303(d) listed constituents with agricultural source	Monthly
Water column toxicity, pesticides, metals, nutrients, pathogens, physical parameters	Monthly
Toxicity identification evaluation—as needed	Monthly
Sediment toxicity	Twice per year
Photo monitoring	During every monitoring event
Continuing Core Monitoring	
Parameter	Frequency
General physical parameters, nutrients, pathogens	Monthly
Parameters/constituents of concern as determined by the Central Valley Water Board	Monthly
Photo monitoring	During every monitoring event

2

3 **Alternative 2—Third-Party Lead Entity**

4 Under this alternative, the Central Valley Water Board would develop a single or series of regulatory
 5 mechanisms (e.g., waivers, waste discharge requirements, conditional prohibition of discharge) for
 6 waste discharge from irrigated agricultural lands to ground and surface water. The series of
 7 regulatory mechanisms would be designed to provide flexibility in establishing requirements for
 8 growers considering the variety of environmental conditions and agricultural operations
 9 throughout the Central Valley.

10 Under this alternative, third-party groups (e.g., water quality coalitions) would function as lead
 11 entities representing growers. Regulation of discharges to surface water under this alternative
 12 would be similar to Alternative 1 (current ILRP). However, this alternative allows for a reduction in
 13 monitoring under lower threat circumstances and where watershed or area management objectives
 14 plans are developed. This alternative also includes requirements for development of groundwater
 15 quality management plans to minimize discharge of waste to groundwater from irrigated
 16 agricultural lands. This alternative relies on coordination with the DPR for regulating discharges of
 17 pesticides to groundwater.

18 **Implementation Mechanisms and Lead Entity Responsibilities**

19 Implementation mechanisms for this alternative could include conditional waivers of waste
 20 discharge requirements, waste discharge requirements, or conditional prohibitions of discharge.

21 Under this alternative, a coalition or other third-party group would be responsible for general
 22 administration of the ILRP. In order to be approved by the Central Valley Water Board for
 23 administration of this alternative, third-party groups would need to agree to assume the following
 24 responsibilities.

- 25 1. Enroll member growers. Provide summary member information to the Central Valley Water
 26 Board (see Regulatory Requirement No. 1).

- 1 2. Provide members and the Central Valley Water Board an organizational or management
2 structure identifying persons responsible for ensuring that program requirements are fulfilled.
- 3 3. Agree to provide or make available to group members the annual summaries of expenditures of
4 fees used to comply with the ILRP.
- 5 4. Notify potentially affected third-party group members each time the group has received a notice
6 of violation or other enforcement action from the Central Valley Water Board and provide
7 information regarding the reason for the enforcement.
- 8 5. Develop and implement monitoring/management practice tracking plans.
- 9 6. Conduct required water quality monitoring.
- 10 7. Develop and implement surface water quality management plans (similar to the current ILRP)
11 where surface water monitoring results indicate two or more exceedances of any applicable
12 water quality objective in a 3-year period.
- 13 8. Develop groundwater quality management plans for third-party identified groundwater
14 management areas within 4 years of adoption of the ILRP by the Central Valley Water Board
15 *(except in areas where a local groundwater management plan has been developed and approved*
16 *(by the Central Valley Water Board) for substitution—see the section titled “Groundwater Quality*
17 *Management Plan” below).*
- 18 9. Inform growers of program requirements and provide coordination to ensure that water quality
19 concerns are addressed.

20 **Optional Watershed or Area Management Objectives Plan (surface water)**

21 Third-party groups would have the option of developing a watershed or area management
22 objectives plan. The goal of this plan would be to meet source control management objectives that
23 would reduce the threat to surface water quality from waste discharge associated with irrigated
24 agriculture. In areas implementing a Central Valley Water Board–approved watershed or area
25 management objectives plan, surface water monitoring would be reduced. The Central Valley Water
26 Board may require revision of the plan to include additional management objectives (in an iterative
27 approach to address identified water quality concerns), revoke approval, or decline to approve a
28 plan and the associated reduction in monitoring for the following reasons.

- 29 a. Evidence exists that effective implementation of the plan may allow an exceedance, caused
30 by waste discharge from irrigated agricultural lands, of applicable water quality objectives
31 in surface waters.
- 32 b. Available surface water quality monitoring data shows continuing exceedances of applicable
33 water quality objectives within the area or watershed (where agriculture is a contributing
34 source).
- 35 c. Changes in agricultural operations or environmental conditions limit the plan’s applicability
36 within the area or watershed.
- 37 d. Evidence exists that growers are not implementing the plan.

38 The plan would specify optional water quality management practices that could be implemented to
39 achieve plan objectives (see Attachment B). This plan would be developed consistent with the area
40 or watershed commodity types, common agricultural practices, pesticides commonly used, and local
41 land characteristics. Optional practices would be provided to allow growers to adapt to their specific

1 conditions for compliance with the ILRP. The plan would also consider the results of previous water
2 quality sampling, including results from monitoring conducted under the current ILRP. This plan
3 need not include a requirement that every grower implement a list of specific practices. It could, for
4 example, involve implementing management practices that serve a group of growers.

5 The plan would be developed by local agencies with expertise in agriculture. The third-party group
6 would also be responsible for the following when developing and implementing the watershed or
7 area management objectives plan.

- 8 1. Informing local growers of the requirements in the watershed or area management objectives
9 plan through an education and outreach program.
- 10 2. Obtaining local grower input for plan development.
- 11 3. Determining local needs for compliance.
- 12 4. Facilitating and developing a verification program for ensuring implementation of the
13 management plan.

14 **Groundwater Quality Management Plans**

15 Third-party groups would be required to develop groundwater quality management plans (GQMPs)
16 designed to minimize waste discharge to groundwater from irrigated agricultural lands. As part of
17 GQMP development, the third party would collect and evaluate available groundwater data, identify
18 groundwater management areas (GMAs) of concern, identify constituents of concern within the
19 GMAs, prioritize the GMAs and constituents of concern, identify agricultural practices that may be
20 causing or contributing to the problem, and identify agricultural management practices that should
21 be employed by local growers to address the constituents of concern. See Attachment C for
22 additional GQMP requirements.

23 *Periodic review of approved GQMPs:* Every 5 years, the Central Valley Water Board and third-party
24 groups would meet and confer to evaluate the sufficiency of GQMPs, and to determine whether and,
25 generally, how they should be updated to reflect new priorities based on new information.

26 *Where local agencies have developed local groundwater management plans (e.g., AB 3030, SB 1938,*
27 *Integrated Regional Water Management plans) that meet the requirements shown in Attachment D,*
28 *the Central Valley Water Board may approve the local groundwater management plan to be*
29 *substituted for the GQMP. However, growers would still be required to enroll with an approved third-*
30 *party group. The third-party group would be the responsible lead entity for ILRP administration,*
31 *monitoring and reporting.*

32 **General Central Valley Water Board Role and Responsibilities**

- 33 1. Require 100% ILRP participation.⁸
- 34 2. Review and approve monitoring plans.
- 35 3. Review and approve surface water quality management plans.
- 36 4. Review and approve GQMPs (*and, where applicable, local groundwater management plans*
37 *requested to substitute for GQMPs) and groundwater management areas.*
- 38 5. Review and approve *optional* area or watershed management objectives plans.
- 39 6. Review monitoring reports.

- 1 7. Review overall program performance with regard to achieving ILRP objectives.
- 2 8. Respond to individual problems and complaints dealing with irrigation discharge and
- 3 informing/coordinating with the responsible third-party group.
- 4 9. In an iterative process, require additional monitoring, information, and/or management
- 5 measures where applicable water quality objectives are not being met.
- 6 10. Enforcing ILRP requirements.

7 **Regulatory Requirements**

8 In order to be eligible for this alternative, growers would be required to:

- 9 1. Submit an application to the third-party group to enroll in the program and pay applicable
- 10 program fees. The third-party group would apply for coverage on behalf of members. Required
- 11 application information would include name and contact information of owner/operator and
- 12 parcel numbers. Coalition groups would collect the application information for each member
- 13 grower and report the information to the Central Valley Water Board.
- 14 2. Implement water quality management practices in accordance with any water quality
- 15 management plans, including GQMPs and/or watershed or area management practices plans.
- 16 Water quality management practices could be instituted on an individual basis, or be installed to
- 17 serve a group of growers discharging to a single location (e.g., combined tailwater return or
- 18 wetlands serving a group of growers).
- 19 3. Prevent nuisance conditions and/or exceedance of water quality objectives in state waters
- 20 associated with waste discharge from their irrigated agricultural lands.
- 21 4. Provide the third-party group with information requested for compliance with the ILRP.

22 Growers who do not meet the above requirements would be required to work directly with the

23 Central Valley Water Board and obtain waste discharge requirements or an individual waiver of

24 waste discharge requirements.

25 **Monitoring Provisions**

26 Growers would be required to track implemented management practices and submit the results to

27 the third-party group. The third-party group would report summary results to the Central Valley

28 Water Board.

29 The third-party group would be required to summarize ground and surface water monitoring and

30 tracking results in an annual monitoring report to the Central Valley Water Board.

31 **Surface Water**

32 Surface water monitoring under this alternative would consist of **one** of the following options:

- 33 • Watershed-based assessment and core monitoring similar to the monitoring required under the
- 34 current ILRP (Central Valley Water Board Order No. R5-2008-0005). Under this monitoring
- 35 scheme, third-party groups would work with the Central Valley Water Board to develop
- 36 monitoring plans for Central Valley Water Board Executive Officer approval. These plans would
- 37 specify monitoring parameters and site locations.

- Optional watershed or area management objectives plan—Where the Central Valley Water Board has approved a watershed or area management objectives plan, monitoring would consist of tracking the progress in implementing the watershed or area management objectives plan and watershed-based assessment monitoring for one year every five years (similar to the assessment monitoring required under the current ILRP).

Groundwater

Where a local groundwater management plan has been substituted for a GQMP, monitoring would consist of groundwater quality monitoring for, at minimum, nitrates and salts.

For all other cases, groundwater monitoring under this alternative would consist of:

1. Tracking the level of GQMP management practice implementation through grower completion of acknowledgement forms. Growers completing acknowledgment forms would agree to implement GQMP-identified groundwater quality management practices to the maximum extent practicable.
2. Results of any focused studies of selected agricultural management practices, constituents, or physical settings to inform refinement of GMAs and constituent prioritization, or of practices that provide needed groundwater protection from degradation by constituents of concern.

Alternative 3—Individual Farm Water Quality Management Plan

In this alternative, growers would have the option to work directly with the Central Valley Water Board or another implementing entity (e.g., Agricultural Commissioners) in the development of a farm water quality management plan (FWQMP). Growers would individually apply for a conditional waiver or waste discharge requirements that would require they obtain Central Valley Water Board approval of their FWQMP.

On-farm implementation of effective water quality management practices would be the mechanism to reduce or eliminate waste discharged to state waters. This alternative would provide incentive for individual growers to participate by providing growers with Central Valley Water Board certification that they are implementing farm management practices to protect state waters.

This alternative relies on coordination with the DPR for regulating discharges of pesticides to groundwater.

Implementation Mechanisms and Lead Entity

Implementation mechanisms for this alternative could include conditional waivers of waste discharge requirements or waste discharge requirements.

Under this alternative, growers would be lead entities working directly with the Central Valley Water Board and would be responsible for applying for coverage, developing FWQMPs, and conducting any required reporting.

General Central Valley Water Board Role and Responsibilities:

1. Enroll growers.
2. Require 100% ILRP participation.⁸

- 1 3. Review applications and determine priorities for FWQMP review and approval. Criteria for
2 priority would include size of operation, likelihood for water quality impacts (potential impacts
3 to surface and groundwater would be considered), and operations in areas with documented
4 problems. In the review and approval of FWQMPs, Central Valley Water Board staff would
5 conduct inspections of ranch/farm operations, as needed, to evaluate existing irrigated
6 production areas and management practices, and verify that management practices referenced
7 in the FWQMP are accurate and appropriate. Any needed changes to existing operations would
8 be discussed, negotiated, and documented in the FWQMP.
- 9 4. Negotiate and enter into a memorandum of understanding (MOU) with technical service
10 providers wanting to assume the role of assisting growers in the development of an FWQMP.
11 The Central Valley Water Board may choose to delegate FWQMP review and approval authority
12 to the technical service entity.
- 13 5. Conduct a specified number of grower site inspections annually. Site inspection priority will be
14 determined by the Central Valley Water Board using factors such as complaints received
15 regarding discharge, size of operations, types of operations, and location of operations in regard
16 to water quality problems. The Central Valley Water Board may work with, or contract with,
17 another entity to conduct these inspections in the most efficient manner (e.g., County
18 Agricultural Commissioners, or other entity). Site inspections would include evaluation of
19 FWQMPs, management practices, etc.
- 20 6. Follow up and coordinate with growers to ensure that FWQMPs and implemented management
21 practices are addressing identified water quality problems. This would include providing
22 information to help focus grower-developed FWQMPs (e.g., results of monitoring and studies
23 showing constituents of concern for different geographic areas).
- 24 7. Review monitoring reports (monitoring would be specified in the FWQMP).
- 25 8. Review overall program performance with regard to achieving ILRP objectives.
- 26 9. Respond to individual problems and complaints dealing with irrigation discharge.
- 27 10. Issue certification that the participating grower is implementing management practices that
28 protect water quality (following FWQMP review and approval).
- 29 11. In an iterative process, require additional monitoring, information, and/or management
30 measures where applicable water quality objectives are not being met.
- 31 12. Enforce ILRP requirements.

32 Regulatory Requirements

33 For program compliance, growers would be required to complete the following.

- 34 1. Submit an application to the Central Valley Regional Water Board to enroll in the program and
35 pay fees. See Attachment E for application information requirements.
- 36 2. Working either directly with the Central Valley Water Board and/or with another implementing
37 entity (coalition, private consultant, etc.), within **two years** of enrollment in the program,
38 develop and implement an FWQMP aimed to minimize waste discharge to surface and
39 groundwater (to include wellhead protection practices). Proposed FWQMP requirements are
40 summarized in Attachment F.

- 1 3. Water quality management practices could be instituted on an individual basis, or be installed to
2 serve a group of growers discharging to a single location (e.g., combined tailwater return or
3 wetlands serving a group of growers).
- 4 4. Submit the FWQMP for review and approval by the Central Valley Water Board.
- 5 5. Maintain and update the approved FWQMP as operations and conditions change.
- 6 6. Prevent nuisance conditions and/or exceedance of water quality objectives in state waters
7 associated with waste discharge from their irrigated agricultural lands.
- 8 7. Allow inspection of the production area by the Central Valley Water Board, or representative, to
9 verify satisfactory implementation of management practices and accuracy of the FWQMP.

10 **Monitoring Provisions**

11 Unless specifically required in response to water quality problems, owners/operators would not be
12 required to conduct water quality monitoring of adjacent receiving waters or underlying
13 groundwater. Required monitoring would include evaluation of management practice effectiveness
14 (e.g., monitoring that an installed tailwater return system is preventing off-site discharge, review of
15 erosion prevention practices after storm events, visual monitoring of turbidity of field discharge,
16 and review of nutrient applications and estimated crop uptake). An annual report to the Central
17 Valley Water Board would be required that discusses the status of management practice
18 implementation and an evaluation of the performance of those practices.

19 Requirements for individual ranch/farm monitoring would be agreed to by the owner/operator and
20 the Central Valley Water Board and would be included in the FWQMP. The Central Valley Water
21 Board and/or the MOU entity would conduct annual site inspections on a selected number of
22 operations and review available applicable water quality monitoring data as additional means of
23 monitoring the implementation of management practices and program effectiveness.

24 **Alternative 4—Direct Oversight with Regional Monitoring**

25 Under this alternative, the Central Valley Water Board would develop waste discharge requirements
26 and/or a conditional waiver of waste discharge requirements for waste discharge from irrigated
27 agricultural lands to ground and surface water. Growers, or legal entities¹⁰ responsible for a group
28 of growers' waste discharges, would apply directly with the Central Valley Water Board to obtain
29 coverage ("direct oversight"). However, this alternative would also include an option for third-
30 party-run regional monitoring instead of individual grower monitoring. This alternative would
31 require that growers develop and implement individual FWQMPs to minimize discharge of waste to
32 surface and groundwater from irrigated agricultural lands.

33 Under this alternative, discharge of waste to surface water and groundwater would be regulated
34 using a tiered approach. Growers' fields would be placed under one of three tiers based on the field's
35 threat to water quality. The tiers represent fields with minimal (Tier 1), low (Tier 2), and high (Tier
36 3) potential threat to water quality. Requirements to avoid or minimize discharge of waste would be

¹⁰ For example, a Joint Powers Authority. Under the Water Code, the discharger, as the party with operational control over waste discharges, is generally the party that is accountable for compliance with permit conditions. Accordingly, any proposal for a legal entity other than the discharger to assume responsibility for waste discharges under Alternative 4 would require careful legal scrutiny of the structure and powers of the entity to ensure consistency with the Central Valley Water Board's statutory mandates.

1 the least stringent for Tier 1 fields and the most stringent for Tier 3 fields. This would allow for less
2 regulatory oversight for low threat operations while establishing necessary requirements to protect
3 water quality from higher-threat discharges.

4 This alternative relies on coordination with the DPR for regulating discharges of pesticides to
5 groundwater.

6 **Criteria for Tier System¹¹**

7 ***Tier 1 (Minimal Threat)***

8 Tier 1 fields would be those that have a minimal potential to affect water quality. Such fields are
9 defined as those where the discharge is so minimal that it will not result in any detectable change in
10 water quality.

11 Tier 1 applicability would be based on a site-specific evaluation of an agricultural waste discharge's
12 potential impact to surface water and/or groundwater quality, considering such factors as the
13 existing water quality, hydrogeologic conditions, nitrogen loading, crop types, irrigation practices,
14 pesticides used, distance to surface water bodies, and whether the field is in a DPR Groundwater
15 Protection Area.

16 ***Tier 2 (Low Threat)***

17 Tier 2 fields would be those that have a low potential to affect water quality and would be defined as
18 those fields that meet each of the following conditions:

- 19 1. Have low-threat pesticide and fertilizer use. Low-threat pesticide and fertilizer operations are
20 those that (a) for groundwater, do not use pesticides that have been found in or have the
21 potential to move to groundwater as evaluated by the DPR's Groundwater Protection Program
22 (Title 3, California Code of Regulations section 6800) or for surface water, do not use pesticides
23 that have the potential to cause exceedance of applicable surface water quality objectives as
24 defined using monitoring data;¹² and (b) have fertilizer application rates that are not expected
25 to result in nitrogen exceedances in a groundwater basin.
- 26 2. Are not located in a vulnerable hydrologic environment. Vulnerable hydrologic environments
27 would be defined by:
 - 28 a. **Groundwater.** Square-mile sections of land where monitoring data from one well confirms
29 any **one** of the following: (i) nitrate concentrations are greater than the maximum
30 contaminant level (elevated nitrate levels), (ii) have measurable levels of agriculturally used
31 pesticides, or (iii) salts, pathogens (where manure is used) are above an applicable water
32 quality objective. DPR Groundwater Protection Areas would also be considered vulnerable
33 hydrologic environments. Information on the DPR's Groundwater Protection Areas is
34 available at: http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_regs.htm.
35 Square-mile sections where agriculture is not a source of high levels of pesticides, salts,
36 pathogens, or nitrate may not be considered "vulnerable hydrologic environments" under
37 this alternative.

¹¹ Attachment G includes a matrix summarizing the tier system.

¹² This is defined as any pesticide for which monitoring data has shown two or more exceedances of applicable water quality objectives in three or more subbasins (Federal Watershed Boundary Dataset).

- 1 b. **Surface water.** Subwatersheds where monitoring data confirms two or more exceedances
2 of an applicable water quality objective for agriculturally used pesticides, nutrients, salts,
3 sediment, or pathogens within a 3-year period (where agriculture is a contributing source).

4 **Tier 3 (High Threat)**

5 Tier 3 fields would be those that have a high potential to affect surface water and/or groundwater
6 quality and would be those fields that do not meet the Tier 1 or 2 criteria. Tier 3 fields would include
7 fields that have low-threat fertilizer or pesticide use but are located in a vulnerable hydrologic
8 environment. Tier 3 would also include fields that are not located in a vulnerable hydrologic
9 environment, but have high-threat fertilizer and/or pesticide use. A field may move from Tier 3 to
10 Tier 2 or vice versa depending upon changes in fertilizer or pesticide use or available information on
11 groundwater vulnerability.

12 *Growers could be in different tiers for surface water or groundwater discharge. For example, a field*
13 *may be in a vulnerable environment for groundwater (Tier 3), but minimal threat to surface water*
14 *(Tier 1) if all applied water immediately percolates, and does not run off.*

15 **Implementation Mechanisms and Lead Entity**

16 Implementation mechanisms for this alternative could include waivers of waste discharge
17 requirements and/or waste discharge requirements.

18 Under this alternative, growers would be lead entities in working directly with the Central Valley
19 Water Board and would be responsible for applying for coverage, developing FWQMPs, and
20 conducting any required monitoring and reporting. This alternative would also allow for the
21 formation of responsible legal entities that could serve a group of growers that discharge to the
22 same general location and share monitoring locations. In such cases, the legal entity would be
23 required to assume responsibility for member grower waste discharge, be approved by the Central
24 Valley Water Board, and would be ultimately responsible for compliance with ILRP requirements.¹³

25 For monitoring under this alternative, growers would have the option to enroll in a third-party
26 group regional monitoring program instead of conducting individual monitoring. In cases where
27 responsible legal entities are formed, these entities would be responsible for conducting monitoring.

28 Where third-party groups fail to adequately conduct monitoring, each grower would be responsible
29 for conducting individual monitoring. Third-party monitoring groups must be approved by the
30 Central Valley Water Board and would need to agree to assume the following responsibilities.

- 31 1. Provide members and the Central Valley Water Board an organizational or management
32 structure identifying persons responsible for ensuring that monitoring requirements are
33 fulfilled.
- 34 2. Agree to provide or make available to group members summaries of expenditures of fees for
35 compliance with the ILRP.
- 36 3. Develop monitoring plans.
- 37 4. Conduct required water quality monitoring.

¹³ See footnote 10.

5. Notify potentially affected third-party group members each time the group has received a notice of violation or other enforcement action from the Central Valley Water Board and provide information regarding the reason for the enforcement.

General Central Valley Water Board Role and Responsibilities:

1. Enroll growers and or responsible legal entities (where applicable).
2. Require 100% ILRP participation.⁸
3. Review and approve monitoring plans of third parties and any responsible legal entity.
4. Review monitoring reports.
5. Follow up and coordinate with growers to ensure that FWQMPs and implemented management practices are addressing identified water quality problems. This would include developing tier system information (e.g., delineating hydrologic vulnerable areas), informing the growers about the tiers that apply to them in regard to waste discharge, and providing information to help focus grower-developed FWQMPs (e.g., results of monitoring and studies showing constituents of concern for different geographic areas). Where responsible legal entities are formed, those legal entities would be responsible for follow-up and coordination with growers; the Central Valley Water Board would work with the legal entities.
6. Review overall program performance in regard to achieving ILRP objectives.
7. Respond to individual problems and complaints dealing with irrigation discharge.
8. Conduct a specified number of grower site inspections annually. Site inspection priority will be determined by the Central Valley Water Board using factors such as complaints received regarding discharge, size of operations, types of operations, and location of operations in regard to water quality problems. The Central Valley Water Board may work with or contract with another entity to conduct these inspections in the most efficient manner (e.g., County Agricultural Commissioners). Site inspections would include evaluation of FWQMPs, nutrient management plans (NMPs), management practices, monitoring information, nutrient budget, etc.
9. In an iterative process, require additional monitoring, information, and/or management measures where applicable water quality objectives are not being met.
10. Enforce ILRP requirements.

Regulatory Requirements

Specific regulatory requirements for *all* growers would include the following.

1. Submit an application to the Central Valley Water Board to enroll in the program or be a member of a legal entity that has assumed responsibility for their waste discharge. The legal entity would apply for coverage on behalf of members. Required application information would include the following in addition to the requirements shown in Attachment E.
 - a. Available site-specific groundwater monitoring data for nitrates, salts, and pathogens.
 - b. Information necessary to determine whether the operation would be in Tier 1, 2, or 3 in regard to each field's potential threat to water quality.

1 Where applicable, responsible legal entities would collect the application information for each
2 member grower and report summary information to the Central Valley Water Board.

- 3 2. Within **two years** of enrollment in the program, prepare and implement an FWQMP aimed to
4 minimize waste (e.g., nutrients, pesticides, sediment, and pathogens) discharge to surface water
5 and groundwater (to include wellhead protection practices). This plan would also be kept on the
6 site and submitted to the Central Valley Water Board upon request. Proposed FWQMP
7 requirements are summarized in Attachment F. Where applicable, the FWQMP would be
8 submitted to responsible legal entities upon request.

9 Water quality management practices could be instituted on an individual basis, or be installed to
10 serve a group of growers discharging to a single location (e.g., combined tailwater return or
11 wetlands serving a group of growers).

- 12 3. Maintain and update the FWQMP as operations and conditions change.
- 13 4. Allow inspection of the production area by the Central Valley Water Board, or representative, to
14 verify satisfactory implementation of management practices and accuracy of the FWQMP.
- 15 5. Prevent nuisance conditions and/or exceedance of water quality objectives in state waters
16 associated with waste discharge from their irrigated agricultural lands.
- 17 6. Keep and maintain facility records of each field's nutrient budget. These records would be made
18 available to the Central Valley Water Board (or, where applicable, responsible legal entity)
19 during an inspection or upon request.
- 20 7. Within **two years** of enrollment in the program, complete 15 hours of farm water quality
21 education.
- 22 8. Submit an annual certified statement to the Central Valley Water Board (or, where applicable,
23 responsible legal entity) indicating whether changes have been made to fertilizer or pesticide
24 use or if additional information is available on existing water quality that would change a field's
25 potential impact to surface or groundwater, thus allowing (or requiring) the field to move from
26 one tier to another.

27 **Additional Requirements—Tier 1 Operations Only:**

28 Submit a site-specific evaluation to the Central Valley Water Board or, where applicable, responsible
29 legal entity, demonstrating that waste discharge from irrigated agricultural operations has minimal
30 potential impact to surface water and/or groundwater quality. The site-specific evaluation would
31 include the following information:

- 32 1. **For waste discharge to groundwater**—information on operations, existing groundwater
33 quality, depth to groundwater, groundwater flow direction, description of subsurface sediments,
34 nutrient and irrigation management practices.
- 35 2. **For waste discharge to surface water**—information on operations, existing surface water
36 quality, distance to surface water bodies, identification of conduits to surface water (e.g., pipes,
37 ditches, canals), estimated volume and waste composition of water discharged off the site,
38 nutrient and irrigation management practices.

39 This evaluation would be tailored to the discharge considered a minimal threat. For example, where
40 surface water discharge is considered a minimal threat, the required information would be tailored

1 to the surface water discharge. These site-specific evaluations would be subject to Central Valley
2 Water Board review and approval.

3 **Additional Requirements—Tier 3 Operations Only:**

- 4 1. Where Tier 3 characterization is based on fertilizer application rate or the section of land is
5 defined as a vulnerable hydrologic environment in regard to nitrate: Develop and implement an
6 NMP, if commercial fertilizers or manure are used, that is certified by a crop specialist and that
7 provides protection for both surface and groundwater. Certified crop specialist is defined as a
8 specialist certified in developing NMPs. The definition includes professional soil scientists,
9 professional agronomists, professional crop scientists, or crop advisors certified by the
10 American Society of Agronomy; technical service providers certified in nutrient management in
11 California by the Natural Resources Conservation Service; or other specialists approved by the
12 Executive Officer. The NMP must consider the rate, timing, and method of nutrient applications
13 that do not exceed the crop's nutrient requirements considering the stage of plant growth; all
14 nutrient sources; soil and climatic conditions; crop water use requirements, and minimum
15 leaching requirements to reduce deep percolation of irrigation water to groundwater.

16 Growers would be required to update and maintain the NMP at the facility and submit it to the
17 Central Valley Water Board upon request. Where applicable, the NMP must be submitted to
18 responsible legal entities upon request.

- 19 2. ***Where the section of land is defined as a vulnerable hydrologic environment in regard to***
20 ***pesticides:*** Develop and implement management practices to minimize the potential discharge
21 of pesticides to surface water and groundwater (e.g., DPR-recommended management practices
22 for using the pesticide). These additional practices would be included in the FWQMP.

23 Growers who do not meet these requirements would work directly with the Central Valley Water
24 Board and obtain waste discharge requirements or an individual waiver of waste discharge
25 requirements.

26 **Monitoring Provisions**

27 All growers would be required to conduct the following tracking and submit the results to the
28 Central Valley Water Board (or an approved third-party monitoring group) annually.

- 29 1. Nutrient Tracking:
- 30 a. All nutrients applied (commercial fertilizers, manure, irrigation water, etc.).
- 31 b. Ratio of nutrients applied to the needs of the crop(s) (as recommended by the University of
32 California Western Fertilizer Handbook [9th Edition] or from historic crop removal rates).
- 33 2. Pesticide Tracking:
- 34 a. Types and amounts of pesticides applied—The Central Valley Water Board would
35 coordinate with the DPR and Agricultural Commissioners to gather this information.
- 36 3. Implemented Management Practices Tracking

37 In addition to these tracking requirements, growers in Tiers 2 and 3 would have the option of
38 conducting individual monitoring **or** forming third-party groups to conduct regional monitoring
39 programs (see below).

1 **Surface Water Monitoring**

2 All growers in Tiers 2 and 3 for surface water discharge may elect to conduct individual monitoring
3 or participate in regional monitoring by a third-party group or responsible legal entity.

4 **Individual Monitoring**

5 Individual monitoring would consist of the following for **Tier 3 operations**:

6 1. Discharge Monitoring:

7 a. Tailwater discharges (constituents of concern¹⁴) during the first discharge of the irrigation
8 season and once mid-season.

9 b. Stormwater discharges (constituents of concern) during the first event of the wet season
10 (between October 1 and May 31) and once during the peak storm season (typically
11 February).

12 c. Discharges of subsurface (tile) drainage systems (constituents of concern) annually.

13 **Tier 2 operations** would be required to conduct the above monitoring for 1 year every 5 years
14 (additional monitoring would apply where exceedances of applicable water quality objectives are
15 found if agricultural discharges are a contributing source).

16 Monitoring results would be submitted in an annual report to the Central Valley Water Board.

17 **Regional Monitoring**

18 Growers could form third-party groups to conduct regional monitoring programs. These groups
19 would work with the Central Valley Water Board to identify monitoring sites and specific
20 monitoring parameters (e.g., visual, chemical, etc.). Growers would be ultimately responsible for
21 ensuring that monitoring requirements are carried out according to the requirements in the
22 regional monitoring program. If legal entities are formed that serve a group of growers, the legal
23 entity would be responsible for regional monitoring.

24 Regional monitoring would include regional water quality monitoring for constituents of concern¹⁴.
25 Monitoring locations would be limited to waters of the state that are mainly runoff/discharge from
26 irrigated agricultural operations in order to determine whether they are meeting applicable water
27 quality objectives and to determine if agricultural discharges are causing or contributing to a
28 violation of applicable water quality objectives.

29 **Tier 2 growers would be required to participate in water quality monitoring (e.g., water
30 chemistry monitoring) for only 1 year every 5 years.**

31 Monitoring would also include gathering nutrient/pesticide use and management practices tracking
32 information from member growers and summarizing the information. Monitoring and tracking
33 results would be submitted in an annual report to the Central Valley Water Board.

¹⁴ Constituents of concern may be prioritized for monitoring using the tier system. For example, where a grower is in Tier 3 for nutrient use, but does not have high threat pesticide use, monitoring may be reduced to Tier 2 for pesticide use.

1 **Groundwater Monitoring**

2 All growers in Tiers 2 and 3 for groundwater discharge would be required to conduct the following
3 groundwater monitoring.

4 **Individual Monitoring**

5 *Tier 3 operations* would be required to conduct individual monitoring. Individual monitoring
6 would consist of semiannual (spring/fall) sampling of each existing domestic well and/or
7 monitoring well present on each field parcel for nitrate, phosphorus, total dissolved solids, and
8 pathogens (when manure is applied). Each grower would be required to submit an annual report on
9 their monitoring results to the Central Valley Water Board.

10 *Tier 2 operations* would be required to conduct the above individual monitoring **or** participate in
11 regional monitoring.

12 **Regional Monitoring**

13 All *Tier 3 operations* would be required to participate in a regional monitoring program in addition
14 to the individual monitoring described above. *Tier 2 operations* that do not conduct individual
15 monitoring would also be required to participate in a regional monitoring program. Regional
16 monitoring would consist of:

- 17 1. Regional monitoring for constituents of concern to provide baseline groundwater information
18 and track trends in groundwater quality over time.
- 19 2. Targeted site-specific studies to evaluate the effects of changes in management practices on
20 groundwater quality (this would occur only at a selected number of sites—the Fertilizer
21 Research and Education Program [FREP] would be approached as a potential funding source for
22 this monitoring).
- 23 3. Gathering nutrient/pesticide use and management practices tracking information from member
24 growers.
- 25 4. Submitting an annual report to the Central Valley Water Board summarizing nutrient, pesticide,
26 and management practice tracking and the regional and targeted site-specific monitoring
27 results.
- 28 5. Utilizing a database system to compile existing groundwater quality data and data collected
29 during regional and site-specific monitoring (e.g., the State Water Resources Control Board’s
30 Groundwater Ambient Monitoring and Assessment [GAMA]/GeoTracker database could be
31 used).

32 The Central Valley Water Board, the agricultural industry, and other stakeholders would identify
33 organization(s) or entities, such as the U.S. Geological Survey, the University of California, Lawrence
34 Livermore National Laboratory, or the DWR, suitable to conduct the regional monitoring and the
35 criteria for this monitoring. These organizations or entities could be funded by additional annual
36 fees, dues, or other funding mechanisms such as grant money.

37 Where legal entities are formed to take responsibility of waste discharge from a group of growers,
38 these entities would be responsible for regional monitoring.

1 **Alternative 5—Direct Oversight with Farm Monitoring**

2 This program would consist of general waste discharge requirements designed to protect surface
3 water and groundwater from discharges associated with irrigated agriculture.

4 All growers would be required to apply for and obtain coverage under the general waste discharge
5 requirements. This alternative would include requirements to (1) develop and implement an
6 FWQMP; (2) monitor discharges of tailwater, drainage water, and storm water to surface water;
7 applications of irrigation water, nutrients, and pesticides; and groundwater; (3) keep records of
8 irrigation water and pesticide applications and nutrients applied, harvested, and moved off the site;
9 and (4) submit an annual monitoring report.

10 This program would rely on coordination with the DPR Groundwater Protection Program for
11 protecting groundwater from agricultural use of pesticides.

12 **Implementation Mechanisms and Lead Entity**

13 Under this alternative, the Central Valley Water Board would develop general waste discharge
14 requirements for irrigated agriculture.

15 In this alternative, growers would be the lead entity in working with the Central Valley Water Board.
16 The Central Valley Water Board would adopt the waste discharge requirements, enroll individual
17 operations under the program, provide regulatory oversight and enforce the requirements of the
18 program.

19 **General Central Valley Water Board Role and Responsibilities:**

- 20 1. Enroll growers.
- 21 2. Require 100% ILRP participation.⁸
- 22 3. Review monitoring reports.
- 23 4. Develop a prioritization scheme for determining where monitoring wells would be required in
24 order to assess potential impacts to groundwater quality and overall program effectiveness.
- 25 5. Follow up and coordinate with growers to ensure that FWQMPs and implemented management
26 practices are addressing identified water quality problems. This would include providing
27 information to help focus grower-developed FWQMPs (e.g., results of monitoring and studies
28 showing constituents of concern for different geographic areas).
- 29 6. Review overall program performance in regard to achieving ILRP objectives.
- 30 7. Responding to individual problems and complaints dealing with irrigation discharge.
- 31 8. Conduct a specified number of grower site inspections annually. Site inspection priority will be
32 determined by the Central Valley Water Board using factors such as complaints received
33 regarding discharge, size of operations, types of operations, and location of operations in regard
34 to water quality problems. The Central Valley Water Board may work with, or contract with,
35 another entity to conduct these inspections in the most efficient manner (e.g., County
36 Agricultural Commissioners). Site inspections would include evaluation of FWQMPs, NMPs,
37 management practices, monitoring information, nutrient budget, etc.

- 1 9. In an iterative process, require additional monitoring, information, and/or management
2 measures where applicable water quality objectives are not being met.
- 3 10. Enforce ILRP requirements.

4 **Regulatory Requirements**

5 Specific regulatory requirements for growers would include the following.

- 6 1. Submit an application to the Central Valley Water Board to enroll in the program. Required
7 application information would include the following in addition to the requirements shown in
8 Attachment E.
 - 9 a. Available site-specific groundwater monitoring data for nitrates, salts, and pathogens.
 - 10 b. Information to determine the whole farm nitrogen balance (estimated total nitrogen applied
11 to crops, acreages of crops grown and the crop nitrogen needs).
- 12 2. Within **two years** of enrollment in the program, prepare and implement an FWQMP aimed to
13 minimize waste (e.g., nutrients, pesticides, sediment, and pathogens) discharge to surface water
14 and groundwater (to include wellhead protection practices)—this plan would also be kept on
15 the site and submitted to the Central Valley Water Board upon request. Proposed FWQMP
16 requirements are summarized in Attachment F.
- 17 3. Maintain and update the FWQMP as operations and conditions change.
- 18 4. Develop and implement an NMP, if commercial fertilizers or manure are used, that is certified by
19 a crop specialist and that provides protection for both surface and groundwater. *Certified crop*
20 *specialist* is defined as a specialist certified in developing NMPs. The definition includes
21 professional soil scientists, professional agronomists, professional crop scientists, or crop
22 advisors certified by the American Society of Agronomy; technical service providers certified in
23 nutrient management in California by the Natural Resources Conservation Service; or other
24 specialists approved by the Executive Officer. The NMP must consider the rate, timing, and
25 method of nutrient applications that do not exceed the crop’s nutrient requirements considering
26 the stage of plant growth; all nutrient sources; soil and climatic conditions; crop water use
27 requirements; and minimum leaching requirements to reduce deep percolation of irrigation
28 water to groundwater.

29 Growers would be required to update and maintain the NMP at the facility and submit it to the
30 Central Valley Water Board upon request.
- 31 5. Allow inspection of the production area by the Central Valley Water Board, or representative, to
32 verify satisfactory implementation of management practices and accuracy of the FWQMP and
33 NMP.
- 34 6. Prevent nuisance conditions and/or exceedance of water quality objectives in state waters
35 associated with waste discharge from their irrigated agricultural lands.
- 36 7. Keep and maintain facility records of each field’s nutrient budget. These records would be made
37 available to the Central Valley Water Board during an inspection or upon request.

1 **Monitoring Provisions**

2 Each operation would be required to conduct the following monitoring for each field and submit the
3 results to the Central Valley Water Board annually.

4 1. Discharge Monitoring:

- 5 a. Tailwater discharges (constituents of concern) monthly.
- 6 b. Stormwater discharges (constituents of concern) during the first event of the wet season
7 (between October 1 and May 31) and once during the peak storm season (typically
8 February).
- 9 c. Discharges of subsurface (tile) drainage systems (constituents of concern) annually.

10 2. Nutrient Tracking:

- 11 a. All nutrients applied (commercial fertilizers, manure, irrigation water, etc.).
- 12 b. Soil nitrogen and phosphorus once every 5 years.

13 3. Pesticide Tracking: Types and amounts of pesticides applied—The Central Valley Water Board
14 will coordinate with the DPR and Agricultural Commissioners to gather this information.

15 4. Groundwater Monitoring:

- 16 a. Sample all supply wells annually for nitrate and electrical conductivity (or total dissolved
17 solids) and for major cations and anions if elevated concentrations of nitrate or electrical
18 conductivity are detected.
- 19 b. Install monitoring wells, or use a Central Valley Water Board approved alternative
20 technology (e.g., well point or direct push method) to collect groundwater quality samples
21 semiannually if requested by the Executive Officer. Locations chosen for groundwater
22 monitoring will be prioritized based on Central Valley Water Board staff-developed
23 vulnerability factors. These factors would include nitrate concentrations in the supply wells,
24 nitrate concentrations in domestic wells adjacent to the property, location of property
25 relative to a DPR Groundwater Protection Area, distance from an artificial recharge area as
26 identified by the DWR or Central Valley Water Board, distance between the property and the
27 nearest off-property domestic well, distance from the property to the nearest off-property
28 municipal well, number of crops grown per year per field, NMP completed by deadline, and
29 whole farm nitrogen balance.

Attachment A
Alternatives Matrix

Attachment A Alternatives Matrix

No.	Alternative Description and Summary	Lead Entity	Lead Entity Responsibilities	CVWB Responsibilities	Growers' Regulatory Requirements	SW Monitoring	GW Monitoring	Tracking
1	No Change - CEQA "No Project" alternative. Renewal and continuation of the current program. Coalition groups function as lead entities. Where monitoring indicates a problem, third-party groups and growers implement management practices in response.	Coalition groups	<ol style="list-style-type: none"> 1. Enroll member growers. 2. Develop monitoring plans. 3. Conduct monitoring. 4. Develop and implement surface water quality management plans where monitoring data shows two or more exceedances of an applicable water quality objective. 5. Inform/coordinate with growers. 	<ol style="list-style-type: none"> 1. Require 100% participation. 2. Review and approve monitoring plans. 3. Review monitoring reports. 4. Review and approve surface water quality management plans. 5. Review ILRP performance. 6. Respond to complaints. 7. Enforce ILRP. 	<ol style="list-style-type: none"> 1. Submit application and pay fees. 2. Implement water quality management practices. 3. Prevent nuisance conditions and/or exceedance of WQOs. 4. Provide requested information to Coalition group. 	Watershed-based (same as current ILRP)	None	None
2	Third-Party Lead Entity - Third-party groups would function as lead entities representing growers. Regulation of discharges to surface water would be similar to Alternative 1. This alternative allows for a reduction in surface water monitoring under lower threat circumstances and where management plans are developed. This alternative also requires the development of groundwater quality management plans to minimize discharge of waste to groundwater.	Third-party groups	<ol style="list-style-type: none"> 1. Enroll member growers and provide member information to the CVWB. 2. Provide members and CVWB an organizational or management structure. 3. Make ILRP expenditure summaries available to members. 4. Notify affected group members of CVWB enforcement against the third-party. 5. Develop monitoring/management practice tracking plans. 6. Conduct monitoring. 7. Develop and implement surface water quality management plans where monitoring data shows two or more exceedances of an applicable water quality objective. 8. Develop groundwater quality management plans within four-years of adoption of the ILRP. 9. Inform/coordinate with growers. 	<ol style="list-style-type: none"> 1. Require 100% participation. 2. Review and approve monitoring plans. 3. Review and approve surface water quality management plans. 4. Review and approve groundwater quality management plans. 5. Review and approve <i>optional</i> watershed/area management objectives plans. 6. Review monitoring reports. 7. Review ILRP performance. 8. Respond to complaints. 9. Require additional monitoring and practices where WQOs are not being met. 10. Enforce ILRP. 	<ol style="list-style-type: none"> 1. Submit application and pay fees. 2. Implement water quality management practices in accordance with any approved plans. 3. Prevent nuisance conditions and/or exceedance of WQOs. 4. Provide ILRP information to third-party group. 	Watershed-based (same as current ILRP) with option for reduced monitoring where <i>optional</i> watershed/area management plan is developed.	<p>Regional monitoring for at a minimum nitrates and salts (under a local groundwater management plan).</p> <p><i>or</i></p> <p>Tracking implementation of required management practices along with a limited number of site specific studies (under third-party developed groundwater quality management plans).</p>	Management practice tracking.
3	Individual Farm Water Quality Management Plans - Individual growers would work with the CVWB, or designated implementing agency, to develop an individual farm water quality management plan. The CVWB would approve the plan.	CVWB	See CVWB responsibilities.	<ol style="list-style-type: none"> 1. Enroll growers. 2. Require 100% participation. 3. Review applications, prioritize review of farm water quality management plans. 4. Negotiation MOUs with technical service providers. 5. Conduct grower site inspections. 6. Coordinate with growers to ensure plans/practices are addressing water quality problems. 7. Review monitoring reports. 8. Review ILRP performance. 9. Respond to complaints. 10. Certify participating growers are implementing practices that protect water quality. 11. Require additional monitoring and practices where WQOs are not being met. 12. Enforce ILRP. 	<ol style="list-style-type: none"> 1. Submit application and pay fees. 2. Within 2-years, develop and implement a farm water quality management plan. 3. Submit plan for CVWB approval. 4. Maintain and update plan as needed. 5. Prevent nuisance conditions and/or exceedance of WQOs. 6. Allow inspection by CVWB or representative. 	Monitoring of management practices (e.g., visual monitoring, inspection of proper operation).	Monitoring of management practices (e.g., visual monitoring, inspection of proper operation).	Management practice tracking.

Attachment A Alternatives Matrix

No.	Alternative Description and Summary	Lead Entity	Lead Entity Responsibilities	CVWB Responsibilities	Growers' Regulatory Requirements	SW Monitoring	GW Monitoring	Tracking
4	<p>Direct Oversight with Regional Monitoring - Individual growers or "legal entities" assuming responsibility for waste discharge would work directly with the CVWB. This alternative provides the option for third-party group conducted monitoring and reporting. Under this approach, regulatory requirements would be scaled using tiered, threat-based criteria. Higher threat operations would be required to implement additional management practices and more extensive monitoring than lower threat operations. Under this alternative all growers would be required to develop an individual farm water quality management plan.</p>	CVWB or "legal entity"	<p>Third-party monitoring group:</p> <ol style="list-style-type: none"> 1. Provide members and CVWB an organizational or management structure. 2. Make ILRP expenditure summaries available to members. 3. Notify affected group members of CVWB enforcement against the third-party. 4. Develop monitoring/tracking plans. 5. Conduct monitoring. 	<ol style="list-style-type: none"> 1. Enroll growers or "legal entities." 2. Require 100% participation. 3. Review and approve monitoring plans. 4. Review monitoring reports. 5. Coordinate with growers to ensure plans/practices are addressing water quality problems; assign growers to appropriate tier or tiers. 6. Review ILRP performance. 7. Respond to complaints. 8. Conduct grower site inspections. 9. Require additional monitoring and practices where WQOs are not being met. 10. Enforce ILRP. 	<ol style="list-style-type: none"> 1. Submit application and pay fees. 2. Within 2-years, develop and implement a farm water quality management plan - the plan would be kept onsite and submitted to the CVWB upon request. 3. Maintain and update plan as needed. 4. Allow inspection by CVWB or representative. 5. Prevent nuisance conditions and/or exceedance of WQOs. 6. Maintain facility records of each field's nutrient budget. 7. Complete 15 hrs of farm water quality education within 2-years. 8. Submit annual certified statement to CVWB regarding appropriate tier application. <p>Tier 1 Only: submit site-specific evaluation to CVWB demonstrating minimal potential impact of waste discharge to SW and/or GW. Tier 3 Only: develop a nutrient management plan and/or implement additional pesticide management practices.</p>	<p>Tiers 2 and 3 would conduct individual monitoring, or participate in regional monitoring, with Tier 2 operations having reduced monitoring requirements.</p>	<p>Tier 3 operations would conduct individual monitoring <i>and</i> participate in regional monitoring; Tier 2 operations would choose individual or regional monitoring.</p>	<p>Nutrient/pesticide applications, management practices.</p>
5	<p>Direct Oversight with Farm Monitoring - Individual growers would work directly with the CVWB. Growers would be required to develop and implement a farm water quality management plan and nutrient management plan.</p>	CVWB	See CVWB responsibilities.	<ol style="list-style-type: none"> 1. Enroll growers. 2. Require 100% participation. 3. Review monitoring reports. 4. Develop prioritization scheme for installation of monitoring wells. 5. Coordinate with growers to ensure plans/practices are addressing water quality problems. 6. Review ILRP performance. 7. Respond to complaints. 8. Conduct grower site inspections. 9. Require additional monitoring and practices where WQOs are not being met. 10. Enforce ILRP. 	<ol style="list-style-type: none"> 1. Submit application and pay fees. 2. Within 2-years, develop and implement a farm water quality management plan - the plan would be kept onsite and submitted to the CVWB. 3. Maintain and update the plan as needed. 4. Develop and implement a nutrient management plan if commercial fertilizer or manure are used. 5. Allow inspection by CVWB or representative. 6. Prevent nuisance conditions and/or exceedance of WQOs. 7. Maintain facility records of each field's nutrient budget. 	<p>Individual farm monitoring for constituents of concern in tailwater and stormwater.</p>	<p>Individual supply well monitoring. Installation and sampling of monitoring wells where CVWB requires -based on vulnerability factors.</p>	<p>Nutrient/pesticide applications, management practices.</p>

Attachment B

Area or Watershed Management Objectives Plans

The implementation of water quality management practices is based on the premise that individual group members will be actively involved in implementing an area or watershed management objectives plan. Throughout much of the Central Valley Regional Water Board area, watershed management plans have been or are being developed by local management entities (RCDs, watershed alliances, district organizations, etc.). These plans typically include the identification of principal watershed issues and concerns and describe appropriate actions to address those issues and concerns. While they may include water quality impacts from agricultural discharge as a watershed concern, these plans are usually more general than envisioned for an ILRP area or watershed management objectives plan.

For an ILRP area or watershed management objectives plan, the expectation would be the identification of a set of management objectives and management practices that, if implemented, would be effective in addressing agricultural discharge-related impacts to water quality. Typically these management objectives and practices would be developed for crop types (e.g. wild rice, vineyards, and citrus) or general agricultural operations (e.g. livestock management with irrigated pasture and other animal forage production, i.e. ranch operations) that are common to that geographic or watershed area. Management objectives tend to be more general (e.g. “manage irrigation water to eliminate, reduce, or slow the direct discharge of tailwater to adjacent watercourses”), while management practices are the more specific method used to achieve the management objective (e.g. collect tailwater in ponds or wetlands, recycle tailwater, discharge tailwater to vegetated buffers zones, and modify irrigation methods). Selection of the appropriate management practice is typically done on a site-specific or property-specific basis.

In summary, an area or watershed management objectives plan would include management objectives (by crop type or type of agricultural operation), common management practices that could be used to achieve the management objective, the approach to be used by the coalition (or other third party) to promote the implementation of management objectives and practices, and the approach to be used to track the watershed-wide level of management practice implementation and its effectiveness.

Where watershed management plans already exist, these more specific area or watershed management practice plans could be made part of that broader watershed management plan.

Attachment C

Groundwater Quality Management Plans

Groundwater quality management plans (GQMPs) for third-party group identified groundwater management areas (GMAs) would include the following:

- Identification of GMAs and constituents of concern based on available data from existing groundwater management programs, including but not limited to the State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment, the U.S. Geological Survey, the DPH, the DPR, and the DWR.
- Prioritization of GMAs and constituents of concern for implementation of agricultural management practices based on available data, and also based on the risk of contamination due to soil type, known agricultural practices, crops grown, climate, proximity to wells, aquifer condition and uses, and other factors determined to be relevant and appropriate by the third party. Where an identified constituent of concern is a pesticide that is subject to the DPR's ground water protection program, the GQMP would defer to DPR's regulatory program for that pesticide and any requirements associated with the use of that pesticide.
- Identification of appropriate agricultural practices for high-priority constituents in high-priority GMAs.
- Describe how information regarding agricultural practices would be distributed to growers in high-priority areas. For example, such information would be prepared by the third parties for distribution by the county agricultural commissioner (CAC) offices at the time that growers file pesticide use reports, when they file an application for a private applicator's license, or when they obtain a restricted materials permit. When the information is distributed by the CAC or other identified entity, growers would sign a form acknowledging that they have received information regarding agricultural management practices for the protection of groundwater in the high-priority area, and that they will implement the practices to maximum extent practicable. Once executed, the CAC or other entity would then transmit completed forms back to the third party for assembly and annual reporting purposes.
- Include a tracking and reporting program that annually documents to the Central Valley Water Board implementation of agricultural management practices within the high-priority areas. Implementation of agricultural practices would be inferred by acknowledgement forms from the CACs office.
- The GQMP 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 results of focused studies would be documented in the annual report.
- 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 groundwater management area.

Attachment D

Local Groundwater Management Plan

In order to be substituted for GQMPs under Alternative 2, local groundwater management plans would be required to contain the following elements:

1. Program goals must be consistent with Basin Plan water quality objectives for groundwater.
2. Monitoring for groundwater quality.
3. Reporting of monitoring results in an aggregated manner.
4. Where necessary, recommended groundwater quality management practices.
5. Evaluation of effectiveness of existing groundwater management policies/practices.
6. Ability to amend the plan if objectives are not being met.

Attachment E

Minimum ILRP Application Requirements

Minimum required information for application¹⁵ for coverage under Alternatives 3, 4, and 5 would include:

- a. Name and contact information of owner/operator.
- b. Discharge location and operations.
- c. Receiving water information.
- d. Irrigation method(s).
- e. Site map.
- f. Parcel numbers, acreages, and crop types.
- g. Location of any potential conduits to groundwater (e.g., active, inactive, or abandoned wells; dry wells, recharge basins, or ponds, etc.).

¹⁵ This “application” would be a Notice of Intent to comply with program requirements.

Attachment F FWQMP Requirements

Alternatives 3, 4, and 5 would require that irrigated agricultural operations develop individual farm water quality management plans (FWQMPs). For guidance and consistency, the Central Valley Water Board would develop a standard FWQMP template, but it is expected that, at a minimum, plans would describe those practices needed or currently in use to achieve 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 would at a minimum 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 ground and surface waters; 5) measures instituted to comply with California Code of Regulations, Title 3, Section 6609 requirements for wellhead protection (from pesticide contamination) along with methods for 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, or ponds) and steps taken, or to be taken, to ensure all identified potential conduits do not carry contamination to groundwater.

Attachment G

Alternative 4 Tier System Matrix

	Tier 1	Tier 2	Tier 3
Definition ^a	Fields with minimal potential to affect water quality	Fields with low potential to affect water quality: 1. <i>Surface water</i> -not a potential source of a water quality problem within the sub-watershed; does not use pesticides that have been identified as causing water quality problems in three or more sub-basins 2. <i>Groundwater</i> -low threat fertilizer use; no use of Title 3, California Code of Regulations section 6800 pesticides; not within a vulnerable hydrologic one mile section of land as identified by well data	Fields with waste discharge to surface and/or groundwater that do not meet Tier 1 or 2
Specific requirements ^b	Submit site specific information demonstrating minimal potential to affect surface and/or groundwater quality		Nutrient management plans and/or additional pesticide management practices
Surface water monitoring ^b		<i>Individual</i> tailwater, stormwater, tile drainage monitoring for constituents of concern one year out of every five years Or <i>Regional</i> ambient water quality monitoring for constituents of concern one year out of every five years	<i>Individual</i> tailwater, stormwater, tile drainage monitoring for constituents of concern Or <i>Regional</i> ambient water quality monitoring for constituents of concern

	Tier 1	Tier 2	Tier 3
Groundwater monitoring ^b		<i>Individual</i> semiannual monitoring of onsite wells for nitrate, phosphorus, total dissolved solids, and pathogens <i>Or</i> <i>Regional</i> groundwater monitoring for constituents of concern	<i>Individual</i> semiannual monitoring of onsite wells for nitrate, phosphorus, total dissolved solids, and pathogens <i>And</i> <i>Regional</i> groundwater monitoring for constituents of concern
<p>a. An operation may be in a different tier for surface and groundwater discharges.</p> <p>b. The requirements summarized in this matrix are those specific to each tier. See Alternative 4, Regulatory Requirements, for requirements that apply to all tiers.</p>			