Chapter 3
Program Description

3.1 Introduction

This chapter presents a description of all program alternatives developed by the Workgroup and considered in this draft PEIR. Four alternatives are described in addition to the "No Project" Alternative (Alternative 1), which is defined as full implementation of the present program. In some instances, differences between the alternatives are difficult to distinguish. Table 3-1 is provided to highlight significant differences between the alternatives.

Upon consideration of the environmental and economic impact analyses of the five program alternatives, the Central Valley Water Board developed a sixth staff-recommended alternative. This alternative, a conglomeration of elements presented in the following five alternatives, is analyzed in the Staff Report, which is included in this draft PEIR as Appendix A.

Table 3-1. Comparison of Alternatives

Alternative Description and Summary	Lead Entity	Lead Entity Responsibilities	Central Valley Water Board Responsibilities	Growers Regulatory Requirements	Surface Water Monitoring	Groundwater Monitoring	Tracking
Alternative 1 – Full Implementation of Current Program. This is the CEQA "No Project" Alternative. Renewal and full implementation of the current program. Coalition groups would function as lead entities. Where monitoring indicates a problem, third-party groups and growers implement management practices in response.	Coalition groups	1. Enroll member growers. 2. Develop monitoring plans. 3. Conduct surface water monitoring. 4. Develop and implement surface water quality management plans where monitoring data show two or more exceedances of an applicable water quality objective. 5. Inform/coordinate with growers.	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.	1. Submit application and pay fees. 2. Implement management practices. 3. Prevent nuisance conditions and/or exceedance of water quality objectives. 4. Provide requested information to coalition group.	Watershed-based (same as current ILRP)	None	None
Alternative 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 surface water quality management plans are developed. This alternative also requires development of groundwater quality management plans to minimize discharge of waste to groundwater.	Third-party groups	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 show two or more exceedances of an applicable water quality objective. 8. Develop groundwater quality management plans within 4 years of adoption of the ILRP. 9. Inform/coordinate with growers.	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 optional watershed/ area management objectives plans. 6. Review monitoring reports. 7. Review ILRP performance. 8. Respond to complaints. 9. Require additional monitoring and practices where water quality objectives are not being met. 10. Enforce ILRP.	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 water quality objectives. 4. Provide ILRP information to third-party group.	Watershed-based (same as current ILRP) with option for reduced monitoring where optional watershed/ area management plan is developed.	Regional monitoring for, at a minimum, nitrates and salts (under a local groundwater management plan). ***Or*** Tracking implementation of required management practices along with a limited number of site-specific studies (under third-party developed groundwater quality management plans).	Management practice tracking.
Alternative 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.	1. Enroll growers. 2. Require 100% participation. 3. Review applications, prioritize review of farm water quality management plans. 4. Negotiation memoranda of understanding (MOUs) with technical service providers. 5. Conduct grower site inspections. 6. Coordinate with growers to ensure that plans/practices are addressing water quality problems. 7. Review monitoring reports. 8. Review ILRP performance. 9. Respond to complaints. 10. Certify that participating growers are implementing practices that protect water quality. 11. Require additional monitoring and practices where water quality objectives are not being met. 12. Enforce ILRP.	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 water quality objectives. 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.

Alternative Description and Summary	Lead Entity	Lead Entity Responsibilities	Central Valley Water Board Responsibilities	Growers Regulatory Requirements	Surface Water Monitoring	Groundwater Monitoring	Tracking
Alternative 4 – 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 monitoring and reporting conducted by a third-party group. 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.	CVWB or "legal entity"	Third-party monitoring group: 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.	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 that 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 water quality objectives are not being met. 10. Enforce ILRP.	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 water quality objectives. 6. Maintain facility records of each field's nutrient budget. 7. Complete 15 hours of farm water quality education within 2 years. 8. Submit annual certified statement to CVWB regarding appropriate tier application.Tier 1 only: submit site-specific evaluation to CVWB demonstrating minimal potential impact of waste discharge to surface water and/or groundwater.Tier 3 only: develop a nutrient management plan and/or implement additional pesticide management practices.	Tiers 2 and 3 operations would conduct individual monitoring or would participate in regional monitoring; monitoring requirements for Tier 2 operations would be reduced.	Tier 3 operations would conduct individual monitoring and participate in regional monitoring; Tier 2 operations would choose individual or regional monitoring.	Nutrient/ pesticide applications, management practices.
Alternative 5 – 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.	CVWB	See CVWB responsibilities.	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 that 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 water quality objectives are not being met. 10. Enforce ILRP.	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 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 water quality objectives. 7. Maintain facility records of each field's nutrient budget.	Individual farm monitoring for constituents of concern in tailwater and stormwater.	Individual supply well monitoring. Installation and sampling of monitoring wells where CVWB requires, based on vulnerability factors.	Nutrient/ pesticide applications, management practices.

Notes: CVWB = Central Valley Regional Water Quality Control Board; ILRP = Irrigated Lands Regulatory Program.

3.2 Alternative 1 – Full Implementation of Current Program (No Project Alternative)

3.2.1 Introduction

Under Alternative 1, the Central Valley Water Board would renew the current program and continue to implement it into the future. This would be considered the "No Project" Alternative per CEQA guidance at Title 14 CCR Section 15126.6(e)(3)(A): "When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the 'No Project' Alternative will be the continuation of the existing plan, policy, or operation into the future." Given the ministerial nature of the extension or renewal of the ongoing waiver, which would allow continuation of the existing program, Alternative 1 is best characterized as the "No Project" Alternative. This approach best serves the purpose of allowing the Central Valley Water Board to compare the impacts of revising the ILRP with those of continuing the existing program (Title 14 CCR Section 15126.6[e][1]).[1]

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

Alternative 1 would not establish any new Central Valley Water Board requirements for discharges to groundwater from irrigated agricultural lands. Local agencies throughout the Central Valley have developed groundwater management programs pursuant to Water Code Section 10750. However, local programs in place provide varying degrees of groundwater management and oversight in the Central Valley (i.e., these programs were not developed to specifically meet the goals of this ILRP), and some areas throughout the Central Valley are not covered by local agency groundwater management plans. The following is a brief description of the local groundwater management programs.

AB 3030, which is codified in Water Code Section 10750 et seq., authorizes local agencies within groundwater basins to prepare and adopt groundwater management plans. Water Code Section 10753.8 enumerates the following recommended components:

- Control of saline water intrusion.
- Identification and management of wellhead protection areas and recharge areas.
- Regulation of the migration of contaminated groundwater.
- Administration of a well abandonment program.
- Mitigation of conditions of overdraft.

[1] The existing environmental setting, not the "No Project" Alternative, constitutes the baseline for determining whether a project's environmental impacts may be significant (Title 14 CCR Section 15126.5[e][1]). Therefore, defining the "No Project" Alternative as continuing the existing program does not change the analysis of the significance of environmental impacts under the remaining alternatives.

- Replenishment of groundwater extracted by water producers.
- Monitoring of groundwater levels and storage.
- Facilitating conjunctive use operations.
- Identification of well construction policies.
- Construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.
- Development of relationships with state and federal regulatory agencies.
- Review of land use plans and coordination with land use planning agencies to assess activities that create a reasonable risk of groundwater contamination.

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

In addition to local groundwater management plans, DPR regulates the use of pesticides that pose a threat to groundwater through its Groundwater Protection Program. This program requires that growers implement management practices to prevent pesticides from moving to groundwater. DPR also monitors groundwater for the presence of pesticides to evaluate management practices and overall program effectiveness.

Alternative 1 would not establish new Central Valley Water Board requirements for regulating irrigated agricultural discharges to groundwater. The alternative would recognize that local groundwater management programs currently exist in some localities and that DPR currently implements a Groundwater Protection Program to protect groundwater quality from pesticide impacts.

3.2.2 Program Components

Implementation Mechanisms and Lead Entity Responsibilities

Under Alternative 1, the Central Valley Water Board would renew the current program through WDRs or a waiver of WDRs. Water quality coalition groups have formed throughout the Central Valley to function as representative or "lead" entities in administration of the current ILRP. Coalitions represent growers (irrigated landowners, wetland managers, nursery owners, and water districts), provide education, organize monitoring, and work with the Central Valley Water Board to help ensure that the current program is effectively implemented. These third-party water quality coalition groups would continue to function as lead entities for their members to ensure that all Central Valley Water Board requirements are met.

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

- Enroll member growers in the program.
- Develop monitoring plans.

- Conduct required water quality monitoring.
- Develop and implement surface water quality management plans where surface water monitoring results indicate two or more exceedances of any applicable water quality objective in a 3-year period.
- Inform growers of program requirements and provide coordination to ensure that water quality concerns are addressed.

General Roles and Responsibilities of the Central Valley Water Board

Under Alternative 1, the Central Valley Water Board would continue to carry out the following general roles and responsibilities:

- Require 100 percent participation by discharging growers in the ILRP.
- Review and approve monitoring plans.
- Review monitoring reports.
- Review and approve surface water quality management plans.
- Review overall program performance with regard to achieving ILRP objectives.
- Respond to individual problems and complaints dealing with irrigation discharge.
- Enforce ILRP requirements.

3.2.3 Regulatory Requirements and Approvals

To be eligible for a conditional waiver under Alternative 1, growers would be required to:

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

Growers who do not meet these requirements would be required to work directly with the Central Valley Water Board and to obtain WDRs or an individual waiver of WDRs.

Monitoring Provisions

Monitoring under Alternative 1 would be the same as the watershed-based assessment and core monitoring required for the current ILRP. Under this monitoring scheme, coalition groups would work with the Central Valley Water Board to develop monitoring plans for Central Valley Water

Board approval. These plans would specify monitoring parameters and site locations. Required monitoring would include the parameters and frequencies shown in Table 3-2.

Table 3-2. Monitoring Requirements under Alternative 1

Parameter	Frequency
Assessment Monitoring for 1 Year of Every 3 Years	
Section 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	
General physical parameters, nutrients, pathogens	Monthly
Parameters/constituents of concern as determined by the Central Valley Regional Water Quality Board	Monthly
Photo monitoring	During every monitoring event
Note: The current Irrigated Lands Regulatory Program monitoring program provides flexibility to reduce the monitoring shown above.	

3.3 Alternative 2 – Third-Party Lead Entity

3.3.1 Introduction

Under Alternative 2, the Central Valley Water Board would develop a single mechanism or series of regulatory mechanisms (e.g., waivers of WDRs, WDRs, or conditional prohibitions of discharge) for waste discharge from irrigated agricultural lands to groundwater and surface water. The series of regulatory mechanisms would be designed to provide flexibility in establishing requirements for growers, considering the variety of environmental conditions and agricultural operations throughout the Central Valley.

Under this alternative, third-party groups (e.g., water quality coalitions) would function as lead entities representing growers. Regulation of discharges to surface water under Alternative 2 would be similar to Alternative 1 (the current ILRP). However, this alternative allows for a reduction in monitoring under lower threat circumstances and where watershed or area management objectives plans are developed. This alternative also includes requirements for GQMPs to minimize discharge of waste to groundwater from irrigated agricultural lands. Alternative 2 relies on coordination with DPR for regulating discharges of pesticides to groundwater.

3.3.2 Program Components

Implementation Mechanisms and Lead Entity Responsibilities

Implementation mechanisms for Alternative 2 could include WDRs, conditional waivers of WDRs, or conditional prohibitions of discharge.

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

- Enroll member growers in the program. Provide summary member information to the Central Valley Water Board (see Regulatory Requirement No. 1 under "Regulatory Requirements and Approvals").
- Provide members and the Central Valley Water Board an organizational or management structure identifying persons responsible for ensuring that program requirements are fulfilled.
- Agree to provide or make available to group members the annual summaries of expenditures of fees used to comply with the ILRP.
- 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.
- Develop and implement monitoring/management practice tracking plans.
- Conduct required water quality monitoring.
- Develop and implement surface water quality management plans (similar to the current ILRP) where surface water monitoring results indicate two or more exceedances of any applicable water quality objective in a 3-year period.
- Develop GQMPs for third-party identified groundwater management areas within 4 years of adoption of the ILRP by the Central Valley Water Board (*except in areas where a local groundwater management plan has been developed and approved [by the Central Valley Water Board] for substitution—see the section titled "Groundwater Quality Management Plan" below*).
- Inform growers of program requirements and provide coordination to ensure that water quality concerns are addressed.

Optional Watershed or Area Management Objectives Plan (Surface Water)

Third-party groups would have the option of developing a watershed or area management objectives plan. The goal of this plan would be to meet source control management objectives that would reduce the threat to surface water quality from waste discharge associated with irrigated agriculture.

Throughout much of the Central Valley Water Board area, watershed management plans have been or are being developed by local management entities (RCDs, watershed alliances, and district organizations). These plans typically identify 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 a watershed or area management objectives plan. The implementation of management practices is based on the premise that individual group members will be actively involved in implementing an area or watershed management objectives plan.

For a watershed or area management objectives plan, the expectation would be 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 [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). The appropriate management practice is typically selected on a site-specific or property-specific basis.

The watershed or area management objectives plan would specify optional management practices that could be implemented to achieve plan objectives. The plan would be developed consistent with the area or watershed commodity types, common agricultural practices, pesticides commonly used, and local land characteristics. Optional practices would be provided to allow growers to adapt to their specific conditions for compliance with the ILRP. The plan also would consider the results of previous water quality sampling, including results from monitoring conducted under the current ILRP. This plan need not include a requirement that every grower implement a list of specific practices. It could, for example, involve implementing management practices that serve a group of growers.

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

- Inform local growers of the requirements in the watershed or area management objectives plan through an education and outreach program.
- Obtain local grower input for plan development.
- Determine local needs for compliance.
- Facilitate and develop a verification program for ensuring implementation of the management plan.

In areas implementing a Central Valley Water Board–approved watershed or area management objectives plan, surface water monitoring would be reduced. The Central Valley Water Board may require revision of the plan to include additional management objectives (in an iterative approach to address identified water quality concerns), revoke approval, or decline to approve a plan and the associated reduction in monitoring for the following reasons:

- Evidence exists that effective implementation of the plan may allow an exceedance, caused by waste discharge from irrigated agricultural lands, of applicable water quality objectives in surface waters.

- Available surface water quality monitoring data show continuing exceedances of applicable water quality objectives within the area or watershed (where agriculture is a contributing source).
- Changes in agricultural operations or environmental conditions limit the plan's applicability within the area or watershed.
- Evidence exists that growers are not implementing the plan.

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 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.

Groundwater Quality Management Plans

Third-party groups would be required to develop GQMPs designed to minimize waste discharge to groundwater from irrigated agricultural lands. As part of GQMP development, the third party would collect and evaluate available groundwater data, identify groundwater management areas (GMAs) of concern, identify constituents of concern within the GMAs, prioritize the GMAs and constituents of concern, identify agricultural practices that may be causing or contributing to the problem, and identify agricultural management practices that should be implemented by local growers to address the constituents of concern. Additional GQMP requirements are listed below.

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

Additional Requirements

GQMPs for third-party group identified 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 Board's Groundwater Ambient Monitoring and Assessment and other agency programs (e.g., USGS, DPH, DPR, and DWR).
- Prioritization of GMAs and constituents of concern for implementation of agricultural management practices based on available data, and 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 Groundwater Protection Program, the GQMP would defer to the DPR 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 CAC 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 GMA.

Local Groundwater Management Plans

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

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 that are 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.

General Roles and Responsibilities of the Central Valley Water Board

Under Alternative 2, the Central Valley Water Board would assume the following general roles and responsibilities:

- Require 100 percent participation by discharging growers in the ILRP.

- Review and approve monitoring plans.
- Review and approve surface water quality management plans.
- Review and approve GQMPs (and, where applicable, local groundwater management plans requested to substitute for GQMPs) and GMAs.
- Review and approve optional area or watershed management objectives plans.
- Review monitoring reports.
- Review overall program performance with regard to achieving ILRP objectives.
- Respond to individual problems and complaints dealing with irrigation discharge and informing/coordinating with the responsible third-party group.
- In an iterative process, require additional monitoring, information, and/or management measures where applicable water quality objectives are not being met.
- Enforce ILRP requirements.

3.3.3 Regulatory Requirements and Approvals

In order to be eligible for a conditional waiver under Alternative 2, growers would be required to:

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

Growers who do not meet the above requirements would be required to work directly with the Central Valley Water Board and to obtain WDRs or an individual waiver of WDRs.

Monitoring Provisions

Under Alternative 2, growers would be required to track implemented management practices and submit the results to the third-party group. The third-party group would report summary results to the Central Valley Water Board.

The third-party group would be required to summarize groundwater and surface water monitoring and tracking results in an annual monitoring report to the Central Valley Water Board.

Surface Water Monitoring

Surface water monitoring under Alternative 2 would consist of **one** of the following options:

- Watershed-based assessment and core monitoring similar to the monitoring required under the current ILRP (Central Valley Water Board Order No. R5-2008-0005). Under this monitoring scheme, third-party groups would work with the Central Valley Water Board to develop monitoring plans for approval by a Central Valley Water Board Executive Officer. These plans would 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 1 year of every 5 years (similar to the assessment monitoring required under the current ILRP).

Groundwater Monitoring

Where a local groundwater management plan has been substituted for a GQMP, monitoring would consist of groundwater quality monitoring for, at a minimum, nitrates and salts. For all other cases, groundwater monitoring under Alternative 2 would consist of the following:

- Tracking the level of GQMP 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.
- 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.

3.4 Alternative 3 – Individual Farm Water Quality Management Plans

3.4.1 Introduction

Under Alternative 3, growers would have the option to work directly with the Central Valley Water Board or another implementing entity (e.g., CACs) in development of a FWQMP. Growers would individually apply for a conditional waiver or WDRs that would require they obtain Central Valley Water Board approval of their FWQMP.

On-farm implementation of effective 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 a Central Valley Water Board certification, verifying that they are implementing farm management practices to protect state waters.

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

3.4.2 Program Components

Implementation Mechanisms and Lead Entity Responsibilities

Implementation mechanisms for Alternative 3 could include conditional waivers of WDRs or WDRs.

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.

Roles and Responsibilities of the Central Valley Water Board

Under Alternative 3, the roles and responsibilities of the Central Valley Water Board would be as follows:

- Enroll growers in the program.
- Require 100 percent participation by discharging growers in the ILRP.
- Review applications and determine priorities for FWQMP review and approval. Criteria for priority would include size of operation, likelihood for water quality impacts (potential impacts to groundwater and surface water would be considered), and operations in areas with documented problems. In the review and approval of FWQMPs, Central Valley Water Board staff would conduct inspections of ranch/farm operations, as needed, to evaluate existing irrigated production areas and management practices, and to verify that management practices referenced in the FWQMP are accurate and appropriate. Any needed changes to existing operations would be discussed, negotiated, and documented in the FWQMP.
- Negotiate and enter into a memorandum of understanding (MOU) with technical service providers wanting to assume the role of assisting growers in development of an FWQMP. The Central Valley Water Board may choose to delegate FWQMP review and approval authority to the technical service entity.
- Conduct a specified number of grower site inspections annually. Site inspection priority would 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., CACs or another entity). Site inspections would include evaluation of FWQMPs and implemented management practices, among other things.
- Follow up and coordinate with growers to ensure that FWQMPs and implemented management practices are addressing identified water quality problems. This would include providing information to help focus grower-developed FWQMPs (e.g., results of monitoring and studies showing constituents of concern for different geographic areas).
- Review monitoring reports (monitoring would be specified in the FWQMP).
- Review overall program performance with regard to achieving ILRP objectives.
- Respond to individual problems and complaints dealing with irrigation discharge.
- Issue certification that the participating grower is implementing management practices that protect water quality (following FWQMP review and approval).

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

3.4.3 Regulatory Requirements and Approvals

Regulatory Requirements

In order to be eligible for a conditional waiver under Alternative 3, growers would be required to:

- Submit an application to the Central Valley Regional Water Board to enroll in the program and pay fees. Minimum required information for an application[2] for coverage under Alternatives 3, 4, and 5 would include:
  - Name and contact information of owner/operator.
  - Discharge location and operations.
  - Receiving water information.
  - Irrigation method(s).
  - Site map.
  - Parcel numbers, acreages, and crop types.
  - Location of any potential conduits to groundwater (e.g., active, inactive, or abandoned wells; dry wells; recharge basins; or ponds).
- Working directly with the Central Valley Water Board and/or with another implementing entity (e.g., a coalition or private consultant), within 2 years of enrollment in the program, develop and implement an FWQMP aimed to minimize waste discharge to groundwater and surface water (to include wellhead protection practices).
  - Alternatives 3, 4, and 5 would require that irrigated agricultural operations develop individual 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 RCDs and the University of California Cooperative Extension in 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 management practices used to achieve general ranch/farm management objectives and reduce or eliminate discharge of waste to groundwater and surface waters; (5) measures instituted to comply with CCR 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

[2] This "application" would be a Notice of Intent to comply with program requirements.

ponds) and steps taken, or to be taken, to ensure that all identified potential conduits do not carry contamination to groundwater.

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

Monitoring Provisions

Under Alternative 3, unless specifically required in response to water quality problems, owners/operators would not be required to conduct water quality monitoring of adjacent receiving waters or underlying groundwater. Required monitoring would include evaluating the effectiveness of management practices (e.g., monitoring that an installed tailwater return system is preventing off-site discharge, review of erosion prevention practices after storm events, visual monitoring of turbidity of field discharge, and review of nutrient applications and estimated crop uptake). An annual report to the Central Valley Water Board would be required that discusses the status of management practice implementation and an evaluation of the performance of those practices.

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

3.5 Alternative 4 – Direct Oversight with Regional Monitoring

3.5.1 Introduction

Under Alternative 4, the Central Valley Water Board would develop WDRs and/or a conditional waiver of WDRs for waste discharge from irrigated agricultural lands to groundwater and surface water. Growers, or legal entities responsible for a group of growers' waste discharges, would apply directly with the Central Valley Water Board to obtain coverage ("direct oversight"). As in Alternative 3, growers would be required to develop and implement individual FWQMPs in order to minimize discharge of waste to groundwater and surface water from irrigated agricultural lands. However, this alternative also would include an option for third-party–run regional monitoring instead of individual grower monitoring.

Under this alternative, discharge of waste to surface water and groundwater would be regulated using a tiered approach. Fields would be placed in one of three tiers based on their threat to water

quality. The tiers represent fields with minimal (Tier 1), low (Tier 2), and high (Tier 3) potential threat to water quality. Requirements to avoid or minimize discharge of waste would be the least stringent for Tier 1 fields and the most stringent for Tier 3 fields. This would allow for less regulatory oversight for low-threat operations while establishing necessary requirements to protect water quality from higher-threat discharges. This alternative relies on coordination with DPR for regulating discharges of pesticides to groundwater.

Criteria for Tier System

Table 3-3 provides a summary of the tier system.

Tier 1 (Minimal Threat)

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

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

Tier 2 (Low Threat)

Tier 2 fields would have a low potential to affect water quality and would meet each of the following conditions:

- Have low-threat pesticide and fertilizer use. Low-threat pesticide and fertilizer operations are those that (1) for groundwater, do not use pesticides that have been found in or have the potential to move to groundwater as evaluated by the DPR's Groundwater Protection Program (Title 3 CCR Section 6800) or for surface water, do not use pesticides with the potential to cause exceedance of applicable surface water quality objectives (defined as any pesticide for which monitoring data have shown two or more exceedances of applicable water quality objectives in three or more subbasins [Federal Watershed Boundary Dataset]); and (2) use fertilizer application rates that are not expected to result in nitrogen exceedances in a groundwater basin.
- Are not located in a vulnerable hydrologic environment. Vulnerable hydrologic environments would be defined by:
    - **Groundwater.** Square-mile sections of land where monitoring data from one well confirms any **one** of the following: (i) nitrate concentrations are greater than the maximum contaminant level (elevated nitrate levels); (ii) have measurable levels of agriculturally used pesticides; or (iii) salts or pathogens (where manure is used) are above an applicable water quality objective. GWPAs also would be considered vulnerable hydrologic environments. Information on the GWPAs is available at: http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_regs.htm.

      Square-mile sections where agriculture is not a source of high levels of pesticides, salts, pathogens, or nitrate may not be considered "vulnerable hydrologic environments" under this alternative.

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

Tier 3 (High Threat)

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

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

Table 3-3. Tier System Matrix under Alternative 4

	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. *Surface water* – not a potential source of a water quality problem within the subwatershed; does not use pesticides that have been identified as causing water quality problems in three or more sub-basins. 2. *Groundwater* – low-threat fertilizer use; no use of Title 3, California Code of Regulations Section 6800 pesticides; not within a vulnerable hydrologic 1-mile section of land as identified by well data.	Fields with waste discharge to surface water or groundwater that do not meet Tier 1 or 2 definitions
Specific requirements[b]	Submit site-specific information demonstrating minimal potential to affect surface water or groundwater quality		Nutrient management plans and/or additional pesticide management practices
Surface water monitoring[b]		*Individual* tailwater, stormwater, tile drainage monitoring for constituents of concern 1 year of every 5 years ***Or*** *Regional* ambient water quality monitoring for constituents of concern 1 year of every 5 years	*Individual* tailwater, stormwater, tile drainage monitoring for constituents of concern ***Or*** *Regional* ambient water quality monitoring for constituents of concern
Groundwater monitoring[b]		*Individual* semi-annual monitoring of onsite wells for nitrate, phosphorus, total dissolved solids, and pathogens ***Or*** *Regional* groundwater monitoring for constituents of concern	*Individual* semi-annual monitoring of onsite wells for nitrate, phosphorus, total dissolved solids, and pathogens ***And*** *Regional* groundwater monitoring for constituents of concern

[a] An operation may be in a different tier for surface water and groundwater discharges.

[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.

3.5.2 Program Components

Implementation Mechanisms and Lead Entity Responsibilities

Implementation mechanisms for Alternative 4 could include WDRs and/or waivers of WDRs.

Under Alternative 4, growers would be lead entities in working directly with the Central Valley Water Board and would be responsible for applying for coverage, developing FWQMPs, and conducting any required monitoring and reporting. This alternative also would allow for the formation of responsible legal entities that could serve a group of growers who discharge to the same general location and share monitoring locations. In such cases, the legal entity would be required to assume responsibility for member grower waste discharge, be approved by the Central Valley Water Board, and ultimately be responsible for compliance with ILRP requirements. One example would be 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.

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

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

- Provide members and the Central Valley Water Board an organizational or management structure identifying persons responsible for ensuring that monitoring requirements are fulfilled.
- Agree to provide or make available to group members summaries of expenditures of fees for compliance with the ILRP.
- Develop monitoring plans.
- Conduct required water quality monitoring.
- 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 Roles and Responsibilities of the Central Valley Water Board

Under Alternative 4, the Central Valley Water Board would assume the following general roles and responsibilities:

- Enroll growers and or responsible legal entities (where applicable).
- Require 100 percent participation by discharging growers in the ILRP.

- Review and approve monitoring plans of third parties and any responsible legal entity.
- Review monitoring reports.
- 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.
- Review overall program performance in regard to achieving ILRP objectives.
- Respond to individual problems and complaints dealing with irrigation discharge.
- Conduct a specified number of grower site inspections annually. Site inspection priority would 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., CACs). Site inspections would include evaluation of FWQMPs, nutrient management plans, management practices, monitoring information, and nutrient budgets.
- In an iterative process, require additional monitoring, information, and/or management measures where applicable water quality objectives are not being met.
- Enforce ILRP requirements.

3.5.3 Regulatory Requirements and Approvals

Regulatory Requirements

In order to be eligible for a conditional waiver under Alternative 4, growers would be required to:

- 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. In addition to the requirements identified under "Regulatory Requirements" for Alternative 3, required application information under Alternative 4 would include the following:
    - Available site-specific groundwater monitoring data for nitrates, salts, and pathogens.
    - 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.

  Where applicable, responsible legal entities would collect the application information for each member grower and report summary information to the Central Valley Water Board.
- Within 2 years of enrollment in the program, prepare and implement an FWQMP aimed to minimize waste (e.g., nutrients, pesticides, sediment, and pathogens) discharge to surface water and groundwater (to include wellhead protection practices). This plan also would be kept on the site and submitted to the Central Valley Water Board upon request. Proposed FWQMP

requirements are summarized under "Regulatory Requirements" for Alternative 3. Where applicable, the FWQMP would be submitted to responsible legal entities upon request.

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

- Maintain and update the FWQMP as operations and conditions change.
- Allow inspection of the production area by the Central Valley Water Board, or representative, to verify satisfactory implementation of management practices and accuracy of the FWQMP.
- Prevent nuisance conditions and/or exceedance of water quality objectives in state waters associated with waste discharge from their irrigated agricultural lands.
- Keep and maintain facility records of each field's nutrient budget. These records would be made available to the Central Valley Water Board (or, where applicable, the responsible legal entity) during an inspection or upon request.
- Within 2 years of enrollment in the program, complete 15 hours of farm water quality education.
- Submit an annual certified statement to the Central Valley Water Board (or, where applicable, the responsible legal entity) indicating whether changes have been made to fertilizer or pesticide use, or if additional information is available on existing water quality that would change a field's potential impact to surface or groundwater, thus allowing (or requiring) the field to move from one tier to another.

Additional Requirements – Only Tier 1 Operations

Specific regulatory requirements for only Tier 1 operations would include the following:

- Submit a site-specific evaluation to the Central Valley Water Board or, where applicable, the responsible legal entity, demonstrating that waste discharge from irrigated agricultural operations has minimal potential impact to surface water and/or groundwater quality. The site-specific evaluation would include the following information:
    - For waste discharge to groundwater. Information on operations, existing groundwater quality, depth to groundwater, groundwater flow direction, description of subsurface sediments, and nutrient and irrigation management practices.
    - For waste discharge to surface water. Information on operations, existing surface water quality**,** distance to surface water bodies, identification of conduits to surface water (e.g., pipes, ditches, and canals), estimated volume and waste composition of water discharged off the site, and nutrient and irrigation management practices.

This evaluation would be tailored to the discharge considered a minimal threat. For example, where surface water discharge is considered a minimal threat, the required information would be tailored to the surface water discharge. These site-specific evaluations would be subject to Central Valley Water Board review and approval.

Additional Requirements – Only Tier 3 Operations

Specific regulatory requirements for only Tier 3 operations would include the following:

- Where Tier 3 characterization is based on fertilizer application rate or the section of land is defined as a vulnerable hydrologic environment in regard to nitrate. If commercial fertilizers or manure are used, develop and implement a nutrient management plan that is certified by a crop specialist and that provides protection for both surface water and groundwater. *Certified crop specialist* is defined as a specialist certified in developing nutrient management plans. The definition includes professional soil scientists, professional agronomists, professional crop scientists, and crop advisors certified by the American Society of Agronomy; technical service providers certified in nutrient management in California by the Natural Resources Conservation Service; and other specialists approved by the Central Valley Water Board Executive Officer. The nutrient management plan must consider the rate, timing, and method of nutrient applications to avoid exceeding the crop's nutrient requirements considering the stage of plant growth, all nutrient sources, soil and climatic conditions, crop water use requirements, and minimum leaching requirements to reduce deep percolation of irrigation water to groundwater.

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

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

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

Monitoring Provisions

Under Alternative 4, all growers would be required to conduct the following tracking and submit the results to the Central Valley Water Board (or an approved third-party monitoring group) annually.

- Nutrient tracking
  - All nutrients applied (e.g., commercial fertilizers, manure, and irrigation water).
  - Ratio of nutrients applied to the needs of the crop(s) (as recommended by the *University of California Western Fertilizer Handbook* [9th Edition; California Plant Health Association 2002] or from historical crop removal rates).
- Pesticide tracking
  - The types and amounts of pesticides applied. The Central Valley Water Board would coordinate with DPR and CACs to gather this information.
- Implemented tracking of management practices

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

Surface Water Monitoring

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

Individual Monitoring

Individual discharge monitoring for constituents of concern for Tier 3 operations would consist of the following:

- Tailwater discharges during the first discharge of the irrigation season and once mid-season.
- Storm water discharges during the first event of the wet season (between October 1 and May 31) and once during the peak storm season (typically February).
- Discharges of subsurface (tile) drainage systems annually.

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

For Tier 3 operations, monitoring results would be submitted in an annual report to the Central Valley Water Board.

Regional Monitoring

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

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

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

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

Groundwater Monitoring

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

Individual Monitoring

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

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

Regional Monitoring

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

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

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

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

3.6 Alternative 5 – Direct Oversight with Farm Monitoring

3.6.1 Introduction

Alternative 5 would consist of general WDRs designed to protect surface water and groundwater from discharges associated with irrigated agriculture.

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

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

3.6.2 Program Components

Implementation Mechanisms and Lead Entity Responsibilities

Under Alternative 5, the Central Valley Water Board would develop general WDRs for irrigated agriculture.

Under this alternative, growers would be the lead entity in working with the Central Valley Water Board. The Central Valley Water Board would adopt the WDRs, enroll individual operations under the program, provide regulatory oversight, and enforce the requirements of the ILRP.

General Roles and Responsibilities of the Central Valley Water Board

Under Alternative 5, the Central Valley Water Board would assume the following general roles and responsibilities:

- Enroll growers in the program.
- Require 100 percent participation by discharging growers in the ILRP.
- Review monitoring reports.
- Develop a prioritization scheme for determining where monitoring wells would be required in order to assess potential impacts to groundwater quality and overall program effectiveness.
- Follow up and coordinate with growers to ensure that FWQMPs and implemented management practices are addressing identified water quality problems. This would include providing information to help focus grower-developed FWQMPs (e.g., results of monitoring and studies showing constituents of concern for different geographic areas).
- Review overall program performance in regard to achieving ILRP objectives.
- Respond to individual problems and complaints dealing with irrigation discharge.

- Conduct a specified number of grower site inspections annually. Site inspection priority would 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., CACs). Site inspections would include evaluation of FWQMPs, nutrient management plans, management practices, monitoring information, and nutrient budgets.
- In an iterative process, require additional monitoring, information, and/or management measures where applicable water quality objectives are not being met.
- Enforce ILRP requirements.

3.6.3 Regulatory Requirements and Approvals

In order to be eligible for a conditional waiver under Alternative 5, growers would be required to:

- Submit an application to the Central Valley Water Board to enroll in the program. In addition to the requirements described under "Regulatory Requirements" for Alternative 3, required application information would include the following:
  - Available site-specific groundwater monitoring data for nitrates, salts, and pathogens.
  - Information to determine the whole farm nitrogen balance (estimated total nitrogen applied to crops, acreages of crops grown, and the crop nitrogen needs).
- Within 2 years of enrollment in the program, prepare and implement an FWQMP aimed to minimize waste (e.g., nutrients, pesticides, sediment, and pathogens) discharge to surface water and groundwater (to include wellhead protection practices)—this plan also would be kept on the site and submitted to the Central Valley Water Board upon request. Proposed FWQMP requirements are described under "Regulatory Requirements" for Alternative 3.
- Maintain and update the FWQMP as operations and conditions change.

  If commercial fertilizers or manure are used, develop and implement a nutrient management plan that is certified by a crop specialist and that provides protection for both surface water and groundwater. *Certified crop specialist* is defined as a specialist certified in developing nutrient management plans. The definition includes professional soil scientists, professional agronomists, professional crop scientists, or crop advisors certified by the American Society of Agronomy; technical service providers certified in nutrient management in California by the NRCS; or other specialists approved by the Central Valley Water Board Executive Officer. The nutrient management plan must consider the rate, timing, and method of nutrient applications to avoid exceeding the crop's nutrient requirements considering the stage of plant growth; all nutrient sources; soil and climatic conditions; crop water use requirements; and minimum leaching requirements to reduce deep percolation of irrigation water to groundwater. Growers would be required to update and maintain the nutrient management plan at the facility and submit it to the Central Valley Water Board upon request.
- Allow inspection of the production area by the Central Valley Water Board, or representative, to verify satisfactory implementation of management practices and accuracy of the FWQMP and nutrient management plan.

- Prevent nuisance conditions and/or exceedance of water quality objectives in state waters associated with waste discharge from their irrigated agricultural lands.
- Keep and maintain facility records of each field's nutrient budget. These records would be made available to the Central Valley Water Board during an inspection or upon request.

Monitoring Provisions

Under Alternative 5, each operation would be required to conduct the following monitoring and tracking for each field and submit the results to the Central Valley Water Board annually.

- Discharge monitoring for constituents of concern
  - Tailwater discharges monthly.
  - Storm water discharges during the first event of the wet season (between October 1 and May 31) and once during the peak storm season (typically February).
  - Discharges of subsurface (tile) drainage systems annually.
- Nutrient tracking
  - All nutrients applied (e.g., commercial fertilizers, manure, and irrigation water).
  - Soil nitrogen and phosphorus once every 5 years.
- Pesticide tracking
  - Types and amounts of pesticides applied—The Central Valley Water Board will coordinate with DPR and the CACs to gather this information.
- Groundwater monitoring
  - Sample all supply wells annually for nitrate and electrical conductivity (or total dissolved solids) and for major cations and anions if elevated concentrations of nitrate or electrical conductivity are detected.
  - Install monitoring wells or use a Central Valley Water Board-approved alternative technology (e.g., well point or direct push method) to collect groundwater quality samples semiannually if requested by the Executive Officer. Locations chosen for groundwater monitoring would be prioritized based on Central Valley Water Board staff-developed vulnerability factors. These factors would include nitrate concentrations in the supply wells, nitrate concentrations in domestic wells adjacent to the property, location of the property relative to a GWPA, distance from an artificial recharge area as identified by DWR or the Central Valley Water Board, distance between the property and the nearest off-property domestic well, distance from the property to the nearest off-property municipal well, number of crops grown per year per field, nutrient management plan completed by deadline, and whole farm nitrogen balance.

3.7 Alternatives Considered and Rejected

Because of the cooperative method in which the alternatives were developed, program components were proposed, discussed, and eliminated from further consideration in a workgroup setting. Elements were removed from consideration if they were infeasible, in that they failed to meet the

program goals and objectives, or conflicted with other mandated policies of the Central Valley Water Board and its mission. Alternatives or alternative components that were rejected as infeasible are discussed below.

3.7.1 Elimination of the ILRP

The Lead Agency considered and removed from further analysis any alternative representing elimination of the ILRP. This alternative would not prevent waste discharges from irrigated agricultural lands, leading to continued degradation of water quality and interfering with the recognized beneficial uses of waters of the state. Thus, this alternative does not meet the Central Valley Water Board's obligations nor the goals and objectives of the program.

The current regulatory program for irrigated agriculture, the 2006 waiver, expires at the end of June 2011. If the Central Valley Water Board fails to take the ministerial action to extend or renew the waiver program, regulation of irrigated agriculture would not cease. Rather, agricultural dischargers, as persons "discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state," will have the ongoing obligation under Water Code Section 13260 to file a Report of Waste Discharge; and the Central Valley Water Board will need to issue individual or general WDRs to regulate the discharges or adopt a new waiver. As such, the scenario under which no Central Valley Water Board action is taken in June 2011 is not a stable alternative that lends itself to analysis. Accordingly, this alternative also was ruled out as the "No Project" Alternative.

3.7.2 Direct Permitting of Each Discharging Grower

The Lead Agency considered and removed from further analysis any alternative representing direct regulation of all individual growers by the Central Valley Water Board. Due to the tens of thousands of growers in the region's boundaries, such an alternative would overwhelm the resources of the Central Valley Water Board and lead to an inability to meet its mission. Thus, this alternative does not meet the Central Valley Water Board's obligations nor the goals and objectives of the program.