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**RECOMMENDATIONS TO ASSIST IN ADDRESSING THE  
ADVERSE ENVIRONMENTAL IMPACTS OF AGRICULTURAL  
ACTIVITIES AND OPERATIONS**

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**REPORT TO THE LEGISLATURE  
SUPPLEMENTAL REPORT OF THE 2004 BUDGET ACT  
ITEM 3940-001-0001**

**DECEMBER 2004**

**STATE WATER RESOURCES CONTROL BOARD  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY**

## INTRODUCTION

The Supplemental Report of the 2004 Budget Act directs the State Water Resources Control Board (SWRCB), in consultation with entities within the California Environmental Protection Agency (Cal/EPA) and the California Department of Food and Agriculture (CDFA), on or before December 31, 2004, to prepare:

“...a report setting forth its recommendations for any legislation and budgetary actions that would identify and maximize state and federal funding opportunities to assist in addressing the adverse environmental impacts of agricultural activities and operations....The report shall include recommendations on how the State of California may access federal funds available for dairy environmental enhancement purposes pursuant to the conservation programs of the Farm Security and Rural Investment Act of 2002, and any other federal funds.”

The Legislative Analyst’s Office is to provide the Legislature with an analysis of the SWRCB’s report, and make recommendations as appropriate, as part of its analysis of the 2005-06 Budget Bill.

California’s agriculture is a \$27.5 billion dollar industry that produces 350 crop and livestock commodities. This abundance generates an estimated \$100 billion in related economic activity for the state and has had a large positive impact on individual households. One in ten jobs in the state is related to agriculture or food production. However, along with the economic and natural resource contributions from agriculture to California, there are adverse environmental impacts.

The SWRCB and Regional Water Quality Control Boards (RWQCBs) are the principal state agencies with responsibility for the protection of water quality. As such, this report focuses primarily on the water quality impacts of agriculture in California. There are related multi- or cross-media issues, such as air quality impacts, that require additional evaluation and collaborative efforts to develop comprehensive recommendations. State, federal and local agencies must continue to explore cross-media approaches to environmental protection in order to solve the complex environmental and economic issues.

In order to provide context for the recommendations requested by the Supplemental Language, this report first discusses four key topics, and thus the report’s contents are as follows:

- Agricultural water quality concerns in California
- 2 Water quality regulatory structure for agriculture
- 3 Funding programs; federal and state
- 4 Collaborative approaches to agricultural water quality control, and
- 5. Recommendations for Legislative and budgetary actions.

## **AGRICULTURAL WATER QUALITY CONCERNS IN CALIFORNIA**

Agriculture, including dairy operations, is one of the largest sources of water pollution in the State. The major pollutants from agriculture include pesticides, nutrients, salts, sediment, bacteria, and heavy metals. These agricultural pollutants impair the beneficial uses of many water bodies in the State. The SWRCB and RWQCBs set water quality standards to protect the beneficial uses of the State's water resources, and assess whether those standards are being met. The SWRCB prepares a list of impaired surface water bodies in accordance with the federal Clean Water Act (CWA) Section 303(d). In 2002, 205 water bodies (about 30 percent of the entire list) were listed as impaired by agriculture or dairy sources. In the Central Valley alone, approximately 40 water bodies that represent over 400 miles of streams are impaired by agricultural discharges. In addition, the Sacramento/San Joaquin Delta has over 40,000 acres impaired by agricultural discharges. Groundwater bodies (aquifers) in the State are also impaired by agricultural or dairy operations (e.g. in the Chino basin and in the Central Valley).

The extent of water quality impacts from all sources, including agriculture, needs to be further and better defined. Surface and ground water monitoring data have been collected by dischargers, other agencies and the SWRCB/RWQCBs over several years. Funding for this type of monitoring has been sporadic and limited, however. As a result, not all sources of agricultural pollution have been defined to the extent necessary to determine appropriate remedies. In addition, the lack of sufficient monitoring makes it difficult to determine water pollution trends over time.

The SWRCB's Surface Water Ambient Monitoring Program (SWAMP) was established to provide the water quality framework necessary to document beneficial use impairments and water quality trends. The SWAMP has identified additional funding, monitoring and related activities that are needed to adequately define agricultural problems and solutions. These include work in the areas of: monitoring objectives and designs; water quality indicators; quality assurance; data management; data assessment and analysis; reporting; programmatic evaluations; and coordination with other agencies that collect relevant environmental data. These State activities must be completed to fully address the impacts of agriculture on the State's surface waters.

Groundwater is the source of approximately 30 percent of the State's water supply in a typical year and 40 percent in a drought. Agricultural fertilizers, pesticides, and waste disposal practices can and have impacted shallow groundwater in many areas. The SWRCB is conducting a comprehensive Groundwater Ambient Monitoring Assessment (GAMA) to 1) determine groundwater quality of the priority basins statewide and 2) identify contamination risks to specific groundwater resources. The GAMA Program will assess basins that account for greater than 75 percent of the public water supply wells and 90 percent of the groundwater use in the state. The GAMA Program is funded through Propositions 40 and 50.

The SWRCB and RWQCBs need the ability to adequately monitor water quality impacts from agricultural sources in order to address the following questions:

What is the current condition of waters in the State?

2. How is the water quality in these waters changing over time?
3. Where are the most serious impacts occurring and which areas are most in need of protection?
4. What sorts of controls will be needed to prevent agricultural impacts to surface and ground waters?
5. How effective are the existing regulatory programs and non-regulatory programs (i.e. grant and loan funding) at addressing agricultural pollution?
6. How effective are discharger activities and projects at reducing agricultural pollution?

Additional work is still needed to:

1. Verify the monitoring data collected by agricultural dischargers,
2. Determine baseline conditions of ground and surface water quality in agricultural areas,
3. Monitor changes over time in the quality of the State's water bodies affected by agriculture,
4. Evaluate how effective grant funded programs (e.g. Proposition 13) have been at reducing agricultural impacts to State waters,
5. Provide training and tools to staff to be able to assess cumulative impacts, and
6. Determine whether existing water quality standards for agriculturally impacted waters are adequate to protect these waters or whether they should be changed.

### **WATER QUALITY CONTROL REGULATORY STRUCTURE FOR AGRICULTURE**

State and federal water quality control policies and regulations categorize discharges as either point sources or nonpoint sources (NPS). Facilities are regulated as point sources under the National Pollutant Discharge Elimination System (NPDES) program if they discharge to surface waters or under Waste Discharge Requirements (WDRs) if they discharge to land. Agricultural activities, excluding confined animal facilities, are exempt from the federal point source permitting NPDES program, but these activities are subject to state-issued WDRs or waivers. Confined animal facilities of sufficient size (i.e., dairies over 700 head) are subject to the federal Concentrated Animal Feeding Operation (CAFO) rules and require NPDES permits.

In California, agriculture is the largest single component of NPS pollution. In May 2004, the SWRCB adopted its "Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program". It supports the idea that the most successful control of NPS pollution is achieved by prevention or by minimizing the generation of NPS discharges. Most NPS management programs typically depend, at least in part, upon discharger implementation of management practices (MPs) to control nonpoint sources of pollution. However, implementation of MPs should not be substituted for actual compliance with water quality requirements.

Most discharges from agricultural lands were historically regulated under waiver policies adopted by the RWQCBs. SB 390 (Chapter 686, statutes of 1999) required the RWQCBs to review and readopt existing waivers or to regulate dischargers with another control mechanism (i.e., WDRs) by January 2003. The Central Valley RWQCB adopted a conditional waiver for discharges from irrigated agricultural lands in July 2003. This waiver could potentially cover over seven million acres of irrigated lands.

SB 923 (Chapter 801, statutes of 2003) authorized the SWRCB to assess fees for dischargers covered by waiver policies. The SWRCB/RWQCBs budgets were augmented in fiscal year 04-05 by 22.3 positions and \$1.2 million in contract funds to process agricultural waivers. An estimated 80,000 agricultural dischargers are expected to pay fees under this new program.

The California Dairy Quality Assurance Program (CDQAP) is a partnership of government, educators, and the dairy industry working together to help the State's dairy producers to understand and comply with federal, State, and local laws and regulations. This voluntary program provides education, technical assistance, and funding for the certification of dairy producers. CDQAP's Environmental Short Course is a six-hour training for dairy producers covering compliance with different environmental laws. More than 950 producers have finished the course. Following the training, dairy producers prepare a management plan tailored to their facility and are then eligible for independent third-party compliance evaluations to meet all local, state and federal environmental laws. Dairies completing the evaluation become certified for environmental stewardship.

## **FUNDING PROGRAMS**

In addition to using the SWRCB and RWQCB's planning, permitting, and enforcement authorities to prevent and control NPS pollution from agricultural sources, the SWRCB and RWQCBs have implemented a broad program of outreach, education, technical assistance, and financial incentives. These programs are supplemented by collaborative efforts with other agencies and non-governmental organizations (NGOs) to help implement and coordinate the use of their programs that contribute to NPS control. Among those programs financial assistance plays a very important role. The most notable Federal financial support comes from the Farm Bill and federal CWA 319 funds; the State's financial support is largely derived from General Obligation bonds, such as Propositions 13, 40, and 50.

### **Federal Funding Programs- U.S. Department of Agriculture (USDA)**

The federal Farm, Security and Rural Investment Act of 2002 (2002 Farm Bill) authorized several financial assistance programs administered by the USDA's Natural Resource Conservation Service (NRCS). The Environmental Quality Incentives Program (EQIP) was established in 1996 and reauthorized through 2007 by the 2002 Farm Bill. It is by far the largest of the funding programs authorized by the 2002 Farm Bill. EQIP provides cost share and incentive payments for producers to implement conservation practices. USDA has obligated nearly \$1.08 billion since EQIP began. The national EQIP priorities are:

1. Reduction of NPS pollution in water quality impaired watersheds, as well as reduction of groundwater contamination and conservation of ground and surface water resources
2. Reduction of air emissions that contribute to air quality impairment violations of National Ambient Air Quality Standards
3. Reduction in soil erosion and sedimentation from agricultural lands, and
4. Promotion of at-risk species habitat conservation.

The Chief of the NRCS uses these priorities to allocate funds to the states. In 2004, California is targeted to receive \$45,400,000 of EQIP funding. The NRCS' State Conservationist determines how the funds are allocated to the local NRCS district offices. In California, the distribution is based on a set formula by county. Each district, with input from the Local Work Group, decides which projects in the county will be funded. Cost share grants normally will cover up to 50 percent of the total project cost, but for first time or economically disadvantaged applicants, the cost share can cover up to 90 percent of the project cost. California's EQIP program is always oversubscribed, so a 50 percent cost share is used in order to fund more projects.

Applicants for EQIP funds from facilities that generate, process or store animal wastes (e.g. dairies and feedlots) are required to develop and implement a Comprehensive Nutrient Management Plan (CNMP). EQIP funds can also be used to fund on-farm planning activities that are normally done by approved Technical Service Advisors. To date, there are not adequate technical services available for the project level development of on-farm management practices or CNMPs.

EQIP funding goes directly from NRCS to agricultural producers. NRCS keeps confidential the information generated by these funded projects for protection of the producer. As a result, information regarding the management practices used, and the effectiveness of those measures in providing environmental improvements, is not available to regulatory agencies.

The 2002 Farm Bill added EQIP funding for ground and surface water conservation practices. \$50,000,000 was appropriated for producer's cost share to support use and installation of these conservation practices in the Klamath River Basin of Oregon and California. Other 2002 Farm Bill funding programs include: the Conservation Security Program; the Conservation Reserve Enhancement Program; the Farm and Ranch Lands Protection Program; the Grasslands Reserve Program; and the Wetlands Reserve Program.

Starting in November 2004, five California watersheds have been invited to participate in the Conservation Security Program (CSP), a new USDA program designed to reward farmers for long-term stewardship. The USDA Farm Service Agency operates the CSP. Participants will be enrolled in one of three tiers in the program, depending on the extent of the conservation treatment in place on their farm or ranch. Payments will be based in part on existing conservation treatment as well as their willingness to undertake additional environmental enhancements. CSP will continue to be offered each year, on a rotational basis, in as many watersheds as funding allows.

The NRCS, as required by federal law, convenes quarterly meetings of the State Technical Advisory Committee (STAC) to provide advice to NRCS on how they should run their conservation programs. The STAC identifies priority natural resource concerns and recommends the types of projects that NRCS should fund with their Farm Bill money. The SWRCB is a member of STAC and has supported using funds to support regulatory compliance projects. One of the six factors that the State Conservationist is required to use to rank applications is "Compliance with federal, state, local or tribal regulatory requirements concerning soil, water,

air quality, wildlife habitat, and ground and surface water conservation”. To date, NRCS has not incorporated statewide water quality priorities into the local EQIP project selection process.

### **Federal Funding Programs- U.S. Environmental Protection Agency (USEPA)**

The USEPA provides an annual grant using Federal CWA Section 319 funds for implementation of NPS projects. These grants are administered by the SWRCB and RWQCBs. All types of NPS projects including agriculture and dairy are eligible. The SWRCB’s CWA 319 program has been offering these NPS grants annually for over 14 years. The funding levels were at/ about \$2.6 million per year prior to 1999 when they jumped to about \$5.5 million per year. These grants typically require non-federal matching funds between 20 percent and 50 percent of total project costs.

Starting in 1999, the USEPA provided two grants to support the California Dairy Quality Assurance Program (CDQAP). These two grants are managed through contracts by the SWRCB (with \$443,000 of federal money and \$147,000 of matching money). One contract is with UC Davis for educational services and the other is with the CDFA to evaluate and certify dairies for environmental compliance. In 2004, the USEPA provided a grant of \$1,000,000 to the California Dairy Campaign (CDC) for a multi-year project titled “Dairy Waste Lagoon Irrigation Water Management”. The CDC is a dairy industry non-profit organization.

### **SWRCB Funding Programs**

Significant funding has become available for agricultural and dairy water quality improvements as a result of bond measures passed by California voters. In some instances, these bond funds have been used to match federal funds. Key bonds measures that have passed in the last five years that provided funding through the SWRCB include:

Proposition 13: Costa-Machado Water Act of 2000 (Prop 13)

Proposition 40: Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (Prop 40)

Proposition 50: Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Prop 50)

Since 2001, the SWRCB has administered three phases of Prop 13 grant programs and funded many agricultural water quality improvement projects. The SWRCB offered \$100 million in competitive grants under the NPS Pollution Control Program. This program included \$10 million for the Pesticide Research and Identification of Source and Mitigation grant program and \$5 million in grants to local public agencies to develop ordinances and regulations related to Animal Feeding Operations. The Watershed Protection Program (\$90 million) and the Coastal Nonpoint Source Pollution Control Programs (\$90 million) also provided grant funds that could be used for agricultural and dairy water quality improvement activities as part of larger watershed management and coastal NPS projects.

The SWRCB is administering the Agricultural Water Quality Grant Program (AWQGP) with funds from Prop 40 (\$11.4 million) and Prop 50 (\$29.5 million). These grants will be used for

improving agricultural water quality through monitoring, demonstration projects, research, construction of agricultural drainage improvements, and for projects to reduce pollutants in agricultural drainage water through reuse, integrated management, or treatment. The SWRCB solicited projects for the AWQGP in fall 2004 and expects to award grants in the spring of 2005. The SWRCB will also administer the Dairy Water Quality Grant Program funded from Prop 50. Guidelines will be adopted by June 30, 2005. One of the criteria for these grants will be evidence of good environmental stewardship as exemplified by the CDQAP.

The SWRCB has also administered grants for the California Bay-Delta Authority (CALFED) Watershed Program and the CALFED Drinking Water Program with funding from Props 13 and 50. Some of these funds went to projects to reduce agricultural impacts to surface and ground waters. Prop 50 also contains \$180 million for the CALFED Ecosystem Restoration Program (ERP). While not administered by SWRCB, not less than \$20 million of those ERP funds will be used for projects that assist farmers in integrating agricultural activities with ecosystem restoration. Projects that maximize use of existing farm conservation programs to leverage non-CALFED funds are priorities.

Other programs authorized by earlier bond measures were directed at improving agricultural water quality and are currently managed by the SWRCB. These programs include:

The Agricultural Drainage Management Loan Program provides loan and grant funding for Drainage Water Management Units (from Proposition 204). Drainage Water Management Units are land and facilities for the treatment, storage, conveyance, reduction or disposal of agricultural drainage water that, if discharged untreated, would pollute or threaten to pollute the waters of the State. This program is available to any city, county, district, joint power authority, or other political subdivision of the State involved with water management. There is about \$19 million in loans available in this program; all of the grant funding has been disbursed.

The Agricultural Drainage Loan Program was created by the Water Conservation and Water Quality Bond Act of 1986 to address treatment, storage, conveyance, or disposal of agricultural drainage water that threatens waters of the State. There is about \$11 million left to spend in this program.

The State Revolving Fund (SRF) is another major loan program administered by the SWRCB. The program is funded by federal grants and State bond funds. The purpose of the SRF Loan Program is to implement the CWA and various State laws by providing financial assistance for the construction of facilities or implementation of measures necessary to address water quality problems and to prevent pollution of the waters of the State.

The SRF Loan Program provides low-interest loan funding for construction of a variety of water quality improvement projects including infrastructure improvements such as publicly-owned wastewater treatment facilities, local sewers, sewer interceptors, water reclamation facilities, as well as NPS projects or programs, and storm water treatment. The SRF Priority List is a statewide listing of all potential SRF projects and is approved annually by the SWRCB. A limited number of agriculture and dairy projects have been funded by the SRF. For example,



Merced County received a \$10 million loan in 1998 to benefit small dairies by paying for on-site water quality improvements.

### **COLLABORATIVE APPROACHES TO AGRICULTURAL WATER QUALITY CONTROL**

Several State agencies and departments address environmental effects from agricultural activities and provide funding and incentive programs. Several key agencies that regularly interact with SWRCB and RWQCB programs have been discussed above. Many other agencies such as the Air Resources Board, the Department of Pesticide Regulation (DPR), the Department of Food and Agriculture, the Department of Health Services, the California Pollution Control Financing Authority, the Business, Transportation, and Housing Agency, and the Department of Fish and Game are involved with the agricultural industry. With so many involved stakeholders, it is clear that collaborative approaches to solving environmental problems associated with agriculture are required. Multi-media solutions must be developed to ensure that solving one problem does not result in exacerbating another.

There are several existing efforts underway to encourage such collaborative approaches. Following are examples of existing interagency coordination on agricultural issues:

The Interagency Coordinating Committee (IACC) - is a cooperative working group composed of 28 State agencies involved in implementing California's NPS Program. The primary duties of the IACC are to: (a) improve interagency coordination and to promote statewide consistency in NPS Programs; (b) promote a watershed approach in addressing NPS pollution; and (c) provide a forum for resolving policy and programmatic conflicts among State agencies involved in NPS pollution control. The IACC has an agricultural subcommittee to specifically address NPS pollution from agricultural sources.

The DPR and the SWRCB entered into a Management Agency Agreement (MAA) in 1997 to protect water quality from the adverse effects of pesticides. The two agencies also created the California Pesticide Management Plan for Water Quality (Plan) to implement the MAA. The Plan generally describes how DPR and the County Agricultural Commissioners will work with the SWRCB and RWQCBs to protect water quality from pesticides. It contains provisions for outreach programs, compliance with water quality standards, groundwater and surface water protection programs, a regulatory response process, interagency communication procedures and dispute and conflict resolution.

CALFED - is a working coalition of state and federal agencies with management and regulatory responsibilities in the San Francisco Bay watershed. The California Bay-Delta Act of 2003 (SB 1653, Chapter 812, Statutes of 2002) established the Authority as the new governance structure and charged it with providing accountability, ensuring balanced implementation, tracking and assessing Program progress, using sound science, assuring public involvement and outreach, and coordinating and integrating related government programs.

The California Bay-Delta Public Advisory Committee (BDPAC) is a cornerstone of CALFED's public involvement. One of these BDPAC subcommittees is the Working Landscapes Workgroup. In an effort to address landowner and local concerns with CALFED, the Secretaries for the Resources Agency and the Department of Food and Agriculture established a Working Landscapes Workgroup under the auspices of CALFED. The Workgroup was directed to promote partnerships between CALFED agencies, private landowners, local governments and conservation groups to address local concerns while achieving CALFED goals. The Workgroup's effort resulted in a recommended approach to Bay-Delta Program implementation called the *Local Partnerships Planning Process*. At its July 2002 meeting, BDPAC concurred with the approach set forth in the *Local Partnerships Planning Process* and established the Working Landscapes Subcommittee to implement it.

Interagency Funding Coordination Forums – are scheduled quarterly between SWRCB, NRCS, USEPA, Air Resources Board, and Department of Food and Agriculture to look for ways to better coordinate agricultural/environmental funding priorities and funds.

The SWRCB, USEPA, and USDA convened the “Watershed Working Lands Summit: Better Water Quality Through Better Government Collaboration” in October 2004 to explore opportunities to work together toward common goals. Collaboration among the agencies that attended this meeting (and others) is critical to address the water quality issues facing the agricultural industry. Attendees generated specific recommendations with timelines and resource needs for implementation to improve program implementation for all of the agencies. The momentum generated at this meeting should be used to catalyze additional cooperative relationships to improve efficiencies of agricultural water quality program implementation and increase the environmental benefits.

Cross-media issues refer to those that consider the impacts from agriculture on multiple resources including water quality, air quality, and wildlife habitat, etc. Although this report is focused on the water quality aspects of agriculture, the activities of State agencies not directly involved in water quality can affect water quality. Agriculture is a major source of air pollutants and addressing those pollutants at the farm level is as important as addressing water quality at that level, but the two efforts should be coordinated. A comprehensive approach to environmental impacts from agriculture will be needed to address these cross-media issues.

Cross-media issues also arise when State Laws passed for one purpose may unintentionally affect pollution reduction efforts implemented by existing agency programs. For example, AB 58, Chapter 836, Statutes of 2002 (i.e. PRC Code Section 2827) affects the ability of dairy operators to reduce their air emissions by limiting their ability to sell to the local electrical utility the energy they generate from composted manure.

## **RECOMMENDATIONS FOR STATE LEGISLATIVE AND BUDGETARY ACTIONS**

The SWRCB believes the following actions could improve the management of water quality impacts associated with California's agricultural industry:

The State should commit to conduct a comprehensive program to monitor and assess water quality to:

- Assess agricultural pollutant sources
  - Track water quality conditions of agriculturally impaired waters over time
  - Evaluate the effectiveness of State's agricultural grant program to reduce water quality impairments
- Evaluate the effectiveness of regulatory programs for agricultural dischargers to correct water quality impacts
2. Agencies efforts to enhance and encourage cross-agency and multi-media collaborative efforts should be encouraged and supported. A range of options, from formal to relatively informal structure, need to be further evaluated, to determine resource needs and efficiency. These options include:
    - a. Revision of Division 9 of the Public Resources Code to reinvent and re-establish the Resource Conservation Commission as a state-federal-local coordinating body that identifies state and federal resource conservation priorities, programmatic resources to address them, and strategies to coordinate delivery of these resources to on-the-ground solutions that engage landowners through local resource conservation districts.
    - b. Development of a Memorandum of Understanding (MOU) to establish a Conservation Partnership of state and federal agencies as a venue to evaluate funding sources and agency coordination to support agricultural water quality improvements in the State. This would allow the funds the State already spends on agriculture to be counted by NRCS to demonstrate a larger state contribution thus enabling more federal contributions. A Conservation Partnership could also improve the dissemination of State and federal information down to the local level. Since most agencies do not have staff resources to commit to such a partnership, initial funding could be provided by the Legislature on a limited term basis. Long term funding based on an assessment of agricultural commodities at the retail level could also be established by the Legislature.
    - c. Continued and expanded State and Federal agency, or Regional forums, to bring top level managers together to discuss funding priorities and coordination.
  3. The Legislature and Administration should encourage the California Congressional delegation to obtain additional federal funding for Farm Bill Programs. California's share of the Farm Bill funding should be proportionate to the value of the State agricultural output compared to other States.
  4. State Agencies should request assistance from NRCS to evaluate models for providing technical assistance to farmers to support activities that are not receiving adequate funding from federal sources.
  5. The Legislature should ensure that future water bond legislation specifically includes the use of those bond funds to act as matches for federal environmental and conservation programs such as EQIP.