



**California Regional Water Quality Control Board  
Central Valley Region  
Katherine Hart, Chair**



Linda S. Adams  
Acting Secretary for  
Environmental Protection

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

Edmund G. Brown Jr.  
Governor

**TO:** Charlie Hoppin, Chair  
State Water Resources Control Board

**FROM:** Pamela C. Creedon  
Executive Officer

**DATE:** 23 June 2011

**SIGNATURE:** Original signed by Pamela Creedon

**SUBJECT: FINAL REPORT ON MOU PILOT PROGRAM**

The Pilot Program is a collaborative effort between the Central Valley Water Board and the Agricultural Commissioners Offices of Glenn and Butte Counties. The Memorandum of Understanding (MOU) that created this collaboration and Pilot Program includes a requirement to report quarterly to the State Water Board. The final quarter of activities performed by the Butte and Glenn County Agricultural Commissioners for the Pilot Program are integrated into the attached final Pilot Program Report. This report contains a detailed summary of the activities of the Butte and Glenn County Agricultural Commissioners in support of the Central Valley Water Board's Irrigated Lands Regulatory Program (ILRP).

The MOU is to be reviewed by the signatories (the State Water Board, the Central Valley Water Board, the Department of Pesticide Regulation, and the Butte and Glen County Agricultural Commissioners) by 29 June 2011 regarding its effectiveness and to determine whether it should be renewed.

I believe the Pilot Program has been a successful collaboration and have directed staff to work with the signatories on renewal of the MOU.

If you have questions, please contact me at (916) 464-4639, or Joe Karkoski at (916) 464-4668.

**CC:**

Mr. Tom Howard, Executive Director, State Water Resources Control Board  
Ms. Caren Trgovcich, Chief Deputy Director, State Water Resources Control Board  
Mr. Christopher Reardon, Chief Deputy Director, Department of Pesticide Regulation  
Mr. John Sanders, Chief, Department of Pesticide Regulation  
Mr. Tom Babb, Agricultural Commissioner Liaison, Department of Pesticide Regulation  
Mr. Jim Donnelly, Agricultural Commissioner, Glenn County  
Mr. Richard Price, Agricultural Commissioner, Butte County  
Mr. Johnny Gonzales, Program Manager, State Water Resources Control Board

**California Environmental Protection Agency**

# **MEMORANDUM OF UNDERSTANDING PILOT PROGRAM**

## **FINAL REPORT**

### **JUNE 2011**

#### **INTRODUCTION**

The Memorandum of Understanding (MOU) between the California Department of Pesticide Regulation (DPR), the Agricultural Commissioners of Butte County and Glenn County (Commissioners), the Central Valley Regional Water Quality Control Board (Central Valley Water Board), and the State Water Resources Control Board (State Water Board) established the framework for the Pilot Program that has been in existence for five years. The objective of the MOU was to enhance the interaction between the Central Valley Water Board and the Commissioners as well as with growers on a local level. The Pilot Program was the vehicle by which this was accomplished.

This report documents the accomplishments of the Pilot Program and how it has enhanced the Irrigated Land Regulatory Program (ILRP). Emphasis is on how the Commissioners supported the ILRP.

#### **HISTORY OF THE MOU AND ILRP**

The Pilot Program was created in the original MOU signed on 29 June 2005. The MOU specified funding by the State Water Board for a two-year period to support activities related to the ILRP. The MOU also specified quarterly reporting on the Pilot Program and a review by all parties in 24 months to assess its effectiveness in addressing water quality impacts from agricultural activities observed by ILRP monitoring. The MOU was renewed and extended by all parties in June 2007. The 2007 MOU states that a review by all parties occur at the end of four years to again assess its effectiveness.

The ILRP was created by the Central Valley Water Board through a conditional waiver of waste discharge requirements for irrigated lands (Order No. R5-2003-0105) in July 2003. The conditional waiver was renewed in August 2005 (Order No. R5-2005-0833) and amended in June 2006 (Order R5-2006-0083). The conditional waiver expires 30 June 2011 unless renewed by the Central Valley Water Board. The current ILRP covers all discharges from commercial irrigated agricultural lands, including storm runoff, that could directly or indirectly reach surface waters of the State.

#### **BACKGROUND ON THE AGRICULTURAL COMMISSIONER**

Each County Agricultural Commissioner (CAC) is appointed by and reports to the County Board of Supervisors. The CACs are local, public officers required in each county as provided by the California Food and Agricultural Code (FAC), section 2001. Powers and duties of the CAC are set forth in the FAC, section 2271-2287. CAC regulatory authority is under the California Department of Food and Agriculture (CDFA) and the Department of Pesticide Regulation (DPR) for the implementation of state programs for food/crop safety and pesticide use. The CACs are provided with regulatory funding from CDFA and DPR through contracts with tailored work performance objectives in each county.

The CAC deals with enforcement of pesticide use and reporting on the local level. Growers are required to apply for pesticide permits from the CAC and report information after the application, such as the date and location of the application, the method of application (e.g.,

ground, aerial, or other), the name and volume of the pesticide used, and the crop and acreage the pesticide was applied. The CAC also generates the annual reporting of crops and their revenue under its CDFA authority.

## **OBJECTIVES AND ACCOMPLISHMENTS OF THE PILOT PROGRAM**

The primary objective of the Pilot Program was to enhance interactions between the Central Valley Water Board's ILRP and the Commissioners as well as with growers on a local level. The CACs were identified as the organization most growers contacted and trusted.<sup>1</sup> No other state or federal institution has interacted directly with the California farmer to the degree of the CAC staff. The institutional knowledge of the diverse and multi-faceted California agricultural industry, possessed by the CACs and their staff, is un-paralleled. CACs have a long standing positive relationship with the entire agricultural industry that proved to be of great value to the Pilot Program.

Initially, the five tasks outlined in the contract between the Central Valley Water Board and the Commissioners included:

- providing information and maps;
- inspecting, assessing and documenting management practices used in agricultural operations to protect water quality;
- assisting the Central Valley Water Board in evaluating sample monitoring points for agricultural wastewater discharges;
- coordinating and conducting outreach to growers on management practices that protect water quality; and
- providing information and input to the Central Valley Water Board staff that would further the implementation of the ILRP.

The following sections outline how the Commissioners performed the above tasks and supported the ILRP.

### ***Mapping of crops, pesticide use, and management practices***

One of the first tasks undertaken by the Commissioners' staff was to develop maps to assist the Central Valley Water Board with gaining a better understanding of the agricultural activities within the counties. Initially, the maps showed natural water bodies (creeks, streams, etc) and irrigation and water district canals and drainage. Additional information using a geographical information system (GIS) were added to include property operators, parcels, cropping, drainages, irrigation type, and other information relevant to the overall activities being undertaken by the ILRP.

Mapping, inspecting and assessing management practices in use by agricultural operators became a major portion of the workload taken on by the Commissioners. These practices included those used for pesticide application, irrigation management, and runoff control. By the end of the first year, the Commissioners were visually observing and documenting management practices within watersheds that were being monitored by the Sacramento

---

<sup>1</sup> Lubell, M., Fulton, A. 2006. *Agricultural Water Quality Management in the Sacramento River Valley: A Survey of Producers' Opinions*. UC Davis Center for Environmental Policy and Behavior.

Valley Water Quality Coalition Group (SVWQCG) for the ILRP. The effectiveness of the management practices already in place could be assessed by providing a baseline for comparison if any exceedances of water quality objectives were observed.

Management practices (MPs) being utilized on agricultural lands were quantified during farm site evaluations. Numerous individual grower operations were inspected and a basic list of commonly used MPs were developed and aligned into categories. It became apparent that a majority of growers employed practices beneficial to water quality.

### ***Watershed Management Practice Surveys and Inspections***

At the beginning of the second year, the watershed MP survey procedures were expanded to document observed management practices within a watershed. Five watersheds were surveyed and/or inspected to document implemented management practices. Actual inspections of the farms were performed and growers were asked to fill out surveys on management practices used at their farm that are not readily visible to CAC staff.

The following watersheds were inspected and/or surveyed, then mapped using geographical information system (GIS) software. Additional information on each watershed are presented in Appendices A through E, including tables summarizing implemented management practices observed to be in-place during the inspection period.

1. Pine Creek located in Tehama and Butte Counties was inspected by staff of the Butte County Agricultural Commissioner. Additional information in Appendix A.
2. Walker Creek located in Glenn County was surveyed and inspected by staff of the Glenn County Agricultural Commissioner. Additional information is in Appendix B.
3. Logan Creek located in Glenn and Colusa Counties was surveyed and inspected by staff of the Glenn County and Colusa County Agricultural Commissioners. Additional information is in Appendix C.
4. Honcut Creek located in Butte and Sutter Counties and inspected by staff of the Butte County Agricultural Commissioner. Additional information is in Appendix D.
5. Freshwater Creek located in Colusa County was inspected and surveyed by staff of the Colusa County Agricultural Commissioner. Glenn County Agricultural Commissioner staff provided technical assistance with database development and GIS basics as a training exercise. The training time attributed to this project was 25 hours. Additional information is in Appendix E.

Table 1 shows a summary of the watersheds surveyed and/or inspected. The MP surveys gave a baseline for management practices in-place within the watershed. Water quality monitoring by the SVWQCG in the watershed gave an assessment of the effectiveness of those management practices in protecting water quality.

Management practices, observed in the field, were documented and compiled in written reports to the Central Valley Water Board. MP survey reports for Pine Creek, Walker Creek and Logan Creek are posted on the ILRP website at [http://www.waterboards.ca.gov/centralvalley/water\\_issues/irrigated\\_lands/ag\\_commissioners\\_pilot/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/ag_commissioners_pilot/index.shtml).

**Table 1. Summary of Watershed Survey/Inspections**

<b>Watershed information</b>	<b>Walker Creek</b>	<b>Logan Creek</b>	<b>Freshwater Creek</b>	<b>Pine Creek</b>	<b>Honcut Creek</b>
Total miles of watershed examined (estimate)	25	17	16	24.1	8.7
Total number of sites inspected/surveyed	365	465	214	50	32
Total acreage inspected	27,128	39,783	19,789	9,195	2,109
Total hours on inspections/surveys <sup>1</sup>	562	470	364	747	281

<sup>1</sup> Hours for management practice evaluations includes project planning, field work, and database development

Information from the field evaluation forms were entered in a database and are presented in GIS layers within the reports. Examples of the queries and GIS layers are shown for some of the watersheds in the appendices.

***Outreach and Education***

Under the Pilot Program, the Commissioners could undertake activities related to this MOU throughout the Sacramento Valley Region. As part of their outreach, the following agencies were contacted and offered information regarding the Pilot Program and the ILRP:

- County Resource Conservation Districts including the counties of Glenn, Butte, Colusa, Sutter, and Yuba.
- Natural Resources Conservation Services in Butte and Glenn Counties.
- SVWQCG subwatershed groups including Colusa-Glenn Subwatershed and Butte-Yuba-Sutter Subwatershed.
- California County Farm Bureaus including the counties of Glenn, Butte, Yuba, and Sutter.
- The California Agricultural Commissioners and Sealers Association (CACASA) members were kept informed about the ILRP and the status of the Pilot Program. Presentations were also given to the Sacramento Valley regional group of CACASA.

ILRP information and management practice data accumulated by the Commissioners were disseminated on request and through Outreach and Education efforts to ranchers, growers and other interested parties. The Commissioners provided this information to other CACs, coalition groups, or subwatershed groups through the Pilot Program.

***Support of ILRP Compliance***

The Pilot Plan performance goals were modified in the 2009-2010 MOU work plan to direct the Commissioners and staff to provide field and compliance support for the ILRP. By performing these tasks the ILRP staff was more efficient with its limited resources. These activities included the following:

- Inspection of farms where growers indicated there was no discharge or storm runoff to surface water.

- Review of prospective grower mailing lists to eliminate non-commercial, non-agricultural, or rice growers.
- Provide GIS maps with the most current aerial images, assessor parcel numbers and grower/crop type information to help identify program participants and non-participants.

In-the-field inspection confirmed if the parcels were non-agricultural or non-commercial. Inspection also confirmed if no surface discharge was possible, as was found with some areas that were surrounded by levees.

CAC staff reviewed mailing lists to assist the ILRP with enforcement activities. The Commissioners were asked to preview the ILRP 13267 mailing lists to eliminate non-agricultural or non-commercial property within their counties. This allowed Central Valley Water Board staff to concentrate on parcels that should be covered by the ILRP but were not reflected on watershed participant lists. The 13267 mailings required contact by phone or email with ILRP staff. Eliminating any names from the mailing list meant savings in delivery, less staff time answering phone calls or emails, and reduced mailing follow-up documentation on the owner's response. For example, Butte County staff reviewed a 13267 list for the Butte-Yuba-Sutter subwatershed. Eighty-five (85) parcels were eliminated as being non-agricultural, rice growers<sup>2</sup>, or already members of the subwatershed/SVWQCG.

### ***Coordination with Management Plans***

Assisting in watershed Management Plan development has been the most recent activity undertaken by the Commissioners and staff. Management Plans are triggered for a watershed when two or more exceedances of a water quality parameter are observed in a three year period. Working with the SVWQCG and sub-watershed groups, all of the elements listed below have been utilized in development of one or more Management Plans.

- Forms and documents for conducting management practice surveys, watershed surveys, and monitoring site and discharger evaluations.
- Procedural outlines and examples for the various ILRP-related surveys, evaluations and inspections.
- Contact lists with ILRP-related resources and program cost analyses compiled during the program activities.
- Management Practice analysis and data resources in the form of a written report, which includes electronic visual presentations.
- A list of visual Management Practices observed in the field, which are also compiled in the written reports.
- The GIS mapping program developed for comparative ILRP watershed analyses and useful training examples.

---

<sup>2</sup> Rice growers in the Sacramento Valley are all members of the California Rice Commission (CRC) which acts as the coalition group. As a state statutory organization established by California Food and Agricultural Code, the CRC can not release information regarding its members.

In 2007, the Walker Creek monitoring site in Glenn County exceeded the water quality objective for chlorpyrifos<sup>3</sup> triggering a management plan. The Glenn CAC worked with the SVWQCG and the local subwatershed group to inform the growers of the findings and emphasize proper application and use (Appendix F). Since then, only one chlorpyrifos exceedance was observed in three years of monitoring.

### ***Extension of activities to other counties***

The Commissioners were able to offer their knowledge and services to other counties in the Sacramento Valley due to mutual agreements.

- The Pine Creek MP survey was extended to the headwaters in Tehama County.
- The Logan Creek MP survey extended into Colusa County.
- The Honcut Creek MP survey extended into Sutter County
- The Freshwater Creek MP survey is entirely in Colusa County.

The tools and procedures created by the Commissioners were adapted to the resources available in the other counties. These program products attest to the capabilities of the CACs and their abilities (if properly funded) to accept supporting roles in the ILRP long-term program. The Freshwater Creek MP survey was essentially a training opportunity by the Glenn County staff to teach and impart the techniques developed by the Pilot Program to further support the ILRP. Colusa CAC staff performed the survey and entered the data for Freshwater Creek. GIS layers representing the information gathered is in Appendix E.

## **CONCLUSIONS AND RECOMMENDATIONS**

### ***CAC contributions to ILRP***

The Pilot Program allowed the Commissioners to become in-the-field representatives for the limited Central Valley Water Board staff. As a familiar and trusted entity that growers deal with on a regular basis, the Commissioners staff could inform and explain the ILRP to growers and other interested parties. Their ability to interact with other stakeholders in the agricultural community, such as the Resource Conservation Districts, water and irrigation districts, the County Farm Bureaus, and the Natural Resources and Conservation Service, is unparalleled and unique.

The Pilot Program demonstrated the abilities and resources that the ILRP can draw upon in implementing a long-term program These benefits include:

- local knowledge of economic, agricultural, political, and individual grower resources
- trust of the agricultural community
- ability to provide direction and encouragement towards compliance
- resource for outreach and education
- resource for tools not readily available to subwatershed groups
- provide technical support for exceedances
- can provide feedback from other statewide organizations
- can assist with focusing on local management and leadership

---

<sup>3</sup> Water quality objective of 0.015 µg/L.

### ***Roadblocks found in the Pilot Program***

The Pilot Program also demonstrated the differences between the Commissioners and their respective resources in personnel, expertise, and training. Limitations in working with the CACs that need to be addressed include the following:

- The CAC reports to the County Board of Supervisors that dictate, to some degree, the priorities for the office through funding not provided by CDFA and DPR.
- The CAC's comfort level in undertaking new roles and responsibilities not covered under CDFA or DPR regulatory authority or funding needs to be considered.
- Actions and activities of the CAC with the ILRP will differ according to each county's commitments, priorities, and resources.

### ***Training and communications***

Through the Pilot Program, Commissioners' staff was afforded the opportunity to attend training beneficial to the agricultural community as well as the Central Valley Water Board.

This training included the following:

- GIS systems
- data base development
- field sampling techniques
- protocol for sampling analysis
- quality assurance and quality control objectives

CAC staff assigned to support the long-term ILRP should become as knowledgeable as possible about the regulatory programs and the tools available to them. Commissioners staff recommends, at a minimum, one full-time staff person in the CAC office be familiar with all aspects of the ILRP and requirements associated with the program.

### **AGRICULTURAL COMMISSIONERS' ROLE IN THE LONG-TERM ILRP**

On 7 April 2011, the Central Valley Water Board approved the long-term ILRP Environmental Impact Report (EIR) and indicated ILRP staff should proceed with Waste Discharge Requirements (WDRs) for Coalition Groups and any other entities filing a report of waste discharge (RWD) in accordance with the recommended staff framework.

The proposed framework for the long-term ILRP covers surface and groundwater components with priorities based on a geographical tiered system with high-priority areas identified as having exceeded water quality objectives or limits. The tiered system would separate each agricultural area into surface water and groundwater components, so the tier may differ between the components.

Third parties interacting with the Central Valley Water Board on behalf of the dischargers would continue. Regional water quality plans were recommended with monitoring of surface and groundwater to determine irrigated agricultural waste contributions. Individual monitoring would be required if regional water quality management plans were ineffective or if third-party monitoring failed to provide necessary information.

The possible role of the CACs in the long-term ILRP include the following:

- Providing technical assistance such as pesticide use reports when a water quality goal is exceeded.
- Providing crop and pesticide use information
- Providing outreach and education regarding the long-term ILRP to growers and other agencies
- Providing assistance and knowledge of groundwater resources (DPR well head protection program)
- Assisting growers with the development of documentation of management practices as part of a farm water quality management plan if implemented
- Performing on-the-ground inspections of management practices

### **NEXT STEPS FOR CONTINUATION OF CAC SUPPORT FOR ILRP**

Continuation and/or expansion of a program with CACs to support the ILRP will require the following items be addressed:

#### ***Renewing the MOU***

The present MOU is between the State Water Board, the Central Valley Water Board, DPR, and the Butte County and Glenn County Agricultural Commissioners. The MOU will terminate on 29 June 2011 unless renewed by the above parties. Expansion of the MOU to other CACs will require a new MOU that may be delayed if the County Board of Supervisor approval is required.

#### ***Long-term funding***

To ensure proper staffing at the CACs in support of the long-term ILRP, reliable and multiple year funding must be found. CACs and the County Board of Supervisors will not invest in a long-term effort with dedicated staff that does not offer secure and reliable funding over a period of years, especially in today's economic climate where staffing is being cut. And even if a project is funded, staffing may not be available to immediately take on the project.

#### ***Coordination and communication***

Most CACs have mutual aid agreements with adjoining counties for the purpose of sharing staff, equipment, expertise, information and other resources necessary to meet the needs of their duties<sup>4</sup>. These mutual agreements, if not already in place, will need to be executed to allow for communication and coordination across county lines for both surface water and groundwater monitoring and assessment.

#### ***Training of CAC staff***

CAC staff will need to be trained on the ILRP, its requirements, and the quality assurance/quality control (QA/QC) objectives to ensure data collected can be validated. If

---

<sup>4</sup> California Food and Agricultural Code Section 2287 program duties listed in subdivision (b) of Section 2282 that includes pest eradication and pest management control. These mutual agreements can be expanded to include water quality pertaining to pesticide application and use.

CAC staff are utilized as in-the-field inspectors for sampling and management practices. Database management and GIS training are also recommended for transfer and flow of information between CACs and other parties.

***ILRP liaison to CACs***

A point of contact for the CAC in the ILRP is essential. Familiarity with the priorities and resources of the CAC in each county must be determined by the ILRP liaison to ensure proper communication and priorities.

**APPENDICES**

Appendix A: Pine Creek Management Practices Survey (summary)

Appendix B: Walker Creek Watershed Best Management Practices (BMP) Evaluation

Appendix C: Logan Creek Watershed Best Management Practices (BMP) Evaluation

Appendix D: Honcut Creek Management Practice Survey and Monitoring Site Evaluation

Appendix E: Freshwater Creek Watershed Best Management Practices (BMP) Evaluation

Appendix F: Walker Creek Chlorpyrifos Outreach