
Pesticide Regulation for Water Quality Protection



Annual BASMAA Participation Summary and Outcomes Assessment 2010

*Documentation of action taken to comply with San
Francisco Bay Area Municipal Regional Stormwater
NPDES Permit, Order R2-2009-0074, Section C.9.e.*

*Prepared for the Bay Area Stormwater
Management Agencies Association*

August 30, 2010

PREFACE

This is a report of research performed by TDC Environmental, LLC for the Bay Area Stormwater Management Agencies Association (BASMAA). This report was prepared to assist San Francisco Bay Area municipalities with documenting compliance with Municipal Regional Stormwater Permit Provision C.9.e. Preparation of this report was funded by the Alameda Countywide Clean Water Program through an agreement with Applied Marine Sciences, Inc.

TDC Environmental, LLC does not make any warranty, expressed or implied, nor assume any legal liability or responsibility for any third party's use of this report or the consequences of use of any information, product, or process described in this report. Mention of trade names or commercial products, organizations, or suppliers does not constitute endorsement or recommendation for or against use.

ACKNOWLEDGEMENTS

The author greatly appreciates assistance provided by members of the Urban Pesticides Committee in navigating California and Federal pesticide regulatory activities relating to water quality. TDC Environmental thanks the following colleagues and reviewers for their assistance with completing this report:

- BASMAA Monitoring and Pollutants of Concern Committee
- Geoff Brosseau, Bay Area Stormwater Management Agencies Association
- Jamison Crosby, Contra Costa Clean Water Program (CCCWP)
- Arleen Feng and James Scanlin, Alameda Countywide Clean Water Program (ACCWP)
- Athena Honore, San Francisco Estuary Partnership
- Dave Tamayo, Sacramento County Stormwater Quality Program

Thanks are also due to Jamison Crosby of CCCWP and Paul Salop of Applied Marine Sciences for project management.

REPORT PREPARER

TDC Environmental, LLC
4020 Bayview Avenue
San Mateo CA 94403
www.tdcenvironmental.com

Project Manager: Kelly D. Moran, Ph.D.

Pesticide Regulation for Water Quality Protection Annual BASMAA Participation Summary and Outcomes Assessment 2010

TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	1
1.0 Introduction	2
1.1 Scope of This Report.....	2
1.2 Report Organization	2
2.0 Background.....	4
2.1 Pesticides and Water Quality—A Regulatory Gap	4
2.2 U.S. EPA and DPR Pesticide Review Processes	5
3.0 Pesticide Regulatory Engagement Summary.....	9
3.1 BASMAA Participated through CASQA and UP3 Project	9
3.2 Engagement Prioritized Pesticides of Concern in the MRP	9
3.3 Engagement Summary for Fiscal Year 2010	10
4.0 Evaluation of 2010 Outcomes	19
4.1 Goals and Objectives for Pesticide Regulatory Engagement.....	19
4.2 Overview of Past Outcomes	19
4.3 FY 2010 Outcomes	20
Acronyms List.....	23

Tables

Table 1. Summary of U.S. EPA and DPR Pesticide Review Processes	7
Table 2. Pesticide Regulatory Process Participation in FY 2010	11
Table 3. FY 2010 Pesticide Regulatory Engagement Outcomes	21

EXECUTIVE SUMMARY

Section C.9.e. of the San Francisco Bay Area Municipal Regional Stormwater NPDES Permit (MRP) requires tracking and participating in pesticide-related California and Federal regulatory processes and reporting on these activities. This regional report is intended to document actions taken to comply with Section C.9.e.i. to fulfill the reporting requirement in Section C.9.e.ii. The time period covered by this report is July 1, 2009 through June 30, 2010 (fiscal year [FY] 2010).

During this time period, Bay Area Stormwater Management Agencies Association (BASMAA) members participated in pesticide regulatory activities through the California Stormwater Quality Association (CASQA). CASQA is supported by its statewide membership—including BASMAA agencies—which manage, staff, and fund consultant support for pesticide regulatory engagement. CASQA also relied on the Urban Pesticide Pollution Prevention Project (UP3 Project) for tracking California and Federal pesticide regulatory activities, identifying priorities for municipality engagement, and coordinating CASQA's regulatory engagement with the pesticide regulatory activities of California municipal wastewater treatment plants and the State Water Resources Control Board and Regional Water Quality Control Boards. All of these agencies relied on the UP3 Project to provide scientific information, regulatory analysis, and assistance in communicating with pesticide regulators.

The ultimate goals of CASQA's and BASMAA's pesticide regulatory engagement are to prevent surface water impairment and to prevent violations of stormwater NPDES permits (see Section 4.1). Major FY 2010 objectives were to end pyrethroid-related toxicity in California urban watersheds without transitioning to other harmful products and to encourage changes in California and Federal pesticide regulatory processes such that these processes effectively prevent future water quality and compliance problems.

CASQA's pesticide regulatory engagement prioritized the pesticides of concern listed in the MRP (see Section 3.2). Pyrethroid insecticides, which have been linked to widespread toxicity in creek waters and sediments, were the highest priority for pesticide regulatory involvement. CASQA wrote 6 letters, participated in 2 public workshops, and 6 regulatory process meetings to provide information and recommendations to pesticides regulators (see Section 3.3 and Table 2). CASQA also shared information with regulators and other stakeholders at four Urban Pesticides Committee meetings and through UP3 Project informal contacts with regulators (Table 2).

Although regulatory processes can take many years to reach outcomes, the results of pesticide regulatory engagement are starting to be evident, and show substantial progress toward the BASMAA, CASQA, and Water Board goals of preventing surface water impairment from pesticides, implementing the Diazinon and Pesticide-Related Toxicity in Bay Area Urban Creeks Water Quality Attainment Strategy and Total Maximum Daily Load, and preventing pesticide-related violations of stormwater NPDES permits (see Section 4 and Table 3). Nevertheless, much additional work will be needed to end pyrethroid-related toxicity in urban watersheds and to achieve the ultimate goal of ensuring that pesticides do not interfere with Clean Water Act compliance.

1.0 INTRODUCTION

1.1 Scope of This Report

The San Francisco Bay Area Municipal Regional Stormwater NPDES Permit includes the following provision for tracking and participating in pesticide-related regulatory processes and for reporting on these activities:

C. 9. e. Track and Participate in Relevant Regulatory Processes *(may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project)*

i. Task Description

- (1) The Permittees shall track USEPA pesticide evaluation and registration activities as they relate to surface water quality, and when necessary, encourage USEPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;*
- (2) The Permittees shall track California Department of Pesticide Regulation (DPR) pesticide evaluation activities as they relate to surface water quality, and when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;*
- (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and County Agricultural Commissioners in ensuring that pesticide applications comply with water quality standards; and*
- (4) As appropriate, the Permittees shall submit comment letters on USEPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.*

ii. Reporting – *In their Annual Reports, the Permittees who participate in a regional effort to comply with C.9.e. may reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected. All other Permittees shall list their specific participation efforts, information submitted, and how regulatory actions were affected.*

This regional report is intended to document actions taken to comply with Section C.9.e.i. to fulfill the reporting requirement in Section C.9.e.ii. The time period covered by this report is July 1, 2009 through June 30, 2010 (fiscal year [FY] 2010).

1.2 Report Organization

This report is organized as follows:

- Section 1 (this section) provides the scope and organization of the report.

Pesticide Regulation for Water Quality Protection – BASMAA Participation Summary and Outcomes Assessment

- Section 2 explains why BASMAA members have joined municipalities across California in participating in pesticide regulatory activities and summarizes the major California and Federal pesticide review processes.
- Section 3 summarizes FY 2010 pesticide regulatory engagement.
- Section 4 evaluates the outcomes of pesticide regulatory engagement to the extent that outcomes were known as of July 2010 (most pesticide regulatory processes of interest in FY 2010 are still underway).

2.0 BACKGROUND

2.1 Pesticides and Water Quality—A Regulatory Gap

Numerous scientific studies have demonstrated that use of some pesticides registered in accordance with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements can adversely affect aquatic species. Those impacts can, in turn, cause violations of water quality standards. As a result of discharges containing pesticides registered for use by the U.S. Environmental Protection Agency (U.S. EPA), many surface waters in California have been designated as “impaired” in accordance with Federal Clean Water Act §303(d). This finding means that the surface waters do not meet water quality standards. These listings demonstrate that current U.S. EPA and California Environmental Protection Agency (Cal-EPA) procedures for regulating pesticides are insufficient to ensure that pesticide use does not cause violations of the Federal Clean Water Act and California Porter-Cologne Water Quality Control Act.

Federal law provides U.S. EPA with the ability to protect surface water from pesticides. California law technically provides two parts of the California Environmental Protection Agency (Cal-EPA), the California Department of Pesticide Regulation (DPR) and California state water quality regulators, with the ability to protect surface water from pesticides. Except in extraordinary circumstances, California Water Boards defer pesticides regulation to DPR.

While the mandates of these pesticide and water quality laws differ slightly, the approaches to implementing these two groups of laws are very different and have important ramifications for pesticides and water quality. In general, pesticide regulatory programs are structured to respond slowly when water quality problems occur—and without financial penalties to pesticide manufacturers or users. In contrast, water quality programs are generally structured to react quickly when water quality problems occur—with immediate financial consequences, particularly for municipalities. Pesticide regulators and water quality regulators employ very different procedures to manage pesticides. While these differences sometimes seem arcane, they create regulatory gaps that leave states and municipalities responsible for solving water quality problems that could have been prevented at the time a pesticide was registered or re-registered.

Three groups of agencies that manage California’s water quality are working with pesticide regulators to address this regulatory gap: the State Water Resources Control Board and Regional Water Quality Control Boards (“Water Boards”), municipal wastewater treatment plants (also known as sewage treatment plants or publicly-owned treatment works [POTWs]), and urban runoff management agencies (including BASMAA members). This report refers to these three groups of agencies collectively as “California water quality agencies.”

Urban runoff management agencies—including BASMAA’s members—have conducted their portion of this effort through their statewide organization, the California Stormwater Quality Association (CASQA).

Why California Municipalities Are Working with Pesticide Regulators

California municipalities began regular engagement in pesticide regulatory processes because they had concluded that the most cost-effective approach to protecting surface water from pesticide-related toxicity is to prevent pesticide uses that have significant potential to cause water quality impairment or that cause violations of NPDES permits.

Preventing water quality problems at the source is well known to be more effective—and far less costly—than alternatives.

The recent scientific finding that pyrethroid insecticides are linked to widespread toxicity to sediment-dwelling organisms in California urban creeks¹ has increased the importance of active California municipality participation in California and Federal pesticide regulatory processes. Since California law precludes local regulation of pesticides, municipal urban runoff programs must rely on pesticide regulators to solve this problem.

Role of the Urban Pesticide Pollution Prevention Project (UP3 Project)

Because understanding and participating in regulatory activities is complex and time-intensive, CASQA, the Water Boards, and POTWs found that they needed scientific and regulatory support to participate in pesticide regulatory processes. The Urban Pesticide Pollution Prevention (UP3) Project was established in mid-2004 specifically to provide this much-needed support.

To maximize the effectiveness of their pesticide regulatory involvement and minimize cost, CASQA, the Water Boards, and POTWs have organized their pesticide regulatory involvement efforts jointly. Since its inception, the UP3 Project has taken on the role of coordinating the joint cooperative regulatory involvement effort.

The UP3 Project supports California water quality agency participation in pesticide regulatory actions by identifying and tracking pesticide regulatory processes of significant interest for water quality, analyzing pesticide regulatory documents to identify water quality protection gaps, and reviewing scientific studies to assemble the information needed to fill the identified gaps. The UP3 Project assists water quality agencies with communicating this information directly to regulators at U.S. EPA, and California Department of Pesticide Regulation (DPR) through letters, meetings, informal communications, and presentations.

To coordinate agency activities and facilitate dialog, the UP3 Project also manages the Urban Pesticides Committee (UPC), which serves as a center for information exchange, coordination, and collaboration among local, regional, and state agencies and other stakeholders seeking to end pesticide-related surface water toxicity problems.

The UP3 Project operates an announcement-only e-mail list for UPC members to keep them up to date on regulatory, scientific, and educational program developments.

The UP3 Project also maintains a web site (www.up3project.org) that provides documents and other resources to assist agencies with implementing programs to prevent pesticide-related water quality problems.

From its inception through 2010, UP3 Project has been funded by a State Water Resources Control Board grant administered by the San Francisco Estuary Partnership (SFEP). TDC Environmental has provided technical support for the project.

The UP3 Project is currently seeking funding to allow it to continue after the end of 2010.

2.2 U.S. EPA and DPR Pesticide Review Processes

California water quality agencies primarily engage with pesticide regulators within the existing regulatory processes established by U.S. EPA and DPR. Both U.S. EPA and

¹ The many scientific studies documenting this toxicity are summarized in TDC Environmental (2008). *Pesticides in Urban Surface Water: Annual Review of New Scientific Findings 2008*, prepared for the UP3 Project. April.

Pesticide Regulation for Water Quality Protection – BASMAA Participation Summary and Outcomes Assessment

DPR have processes to review pesticides prior to their first use and processes to respond to human health and environmental problems that occur after a pesticide is approved for use. Both agencies also have the responsibility to review all pesticides periodically. Table 1 (on the next two pages) provides a brief description of the various pesticide review processes conducted by U.S. EPA and DPR and identifies the public input opportunities associated with each process.

If a pesticide-related water quality problem (like the problems with diazinon, chlorpyrifos, and the pyrethroids) is documented in the environment, the DPR regulatory process offers the most immediate response mechanism. DPR's pesticide "reevaluation" process is structured to respond to environmental problems more rapidly than the "special review" process at U.S. EPA.

On the basis of the structure of the public involvement processes and the nature pesticide regulatory agency authorities, two pesticide regulatory processes have been the focus of regulatory engagement: U.S. EPA Pesticide Registration Review and California DPR pesticide reevaluation. While the focus is on engagement in formal regulatory processes, the participation has extended to less formal situations, to facilitate a sharing of scientific information and to increase mutual understanding of the regulatory context provided by California and Federal pesticide and water quality legal frameworks.

Table 1: Summary of U.S. EPA and DPR Pesticide Review Processes

Agency	Process	Description	Overview of Public Input Opportunities
U.S. EPA	Registration	New pesticides must be registered or exempted by U.S. EPA before they may be sold. New uses of existing pesticides must also be registered. During registration, U.S. EPA evaluates effects on humans and the environment (including surface water).	Other than making its registration workplan available, ² U.S. EPA has no public involvement process for pesticide registration.
	Registration review	All currently registered pesticides are planned for review on a 15-year cycle. ³ Each pesticide’s review process starts with a “docket opening,” which is an opportunity to submit scientific information and to comment on the registration review workplan. Subsequent steps are established by the workplan.	Public involvement opportunities after the docket opening depend on the workplan; these may include opportunities to review U.S. EPA-prepared risk assessments, to provide recommendations for risk reduction options, and to comment on U.S. EPA’s proposed registration review decision.
	Special review	U.S. EPA initiates special review when it discovers that the use of a registered pesticide may result in unreasonable adverse effects on humans or the environment. The special review process usually involves intensive review of a specific problem. During special review, U.S. EPA may review scientific information, re-evaluate the identified risk, and select risk reduction measures.	Processes vary. At a minimum, the public is offered the opportunity to comment on the decision proposed by U.S. EPA on the basis of its special review.

² Conventional pesticides - <http://www.epa.gov/opprd001/workplan/> ; Biopesticides - http://www.epa.gov/pesticides/biopesticides/regtools/biopesticides_2010_workplan.html ; Antimicrobial pesticides - <http://www.epa.gov/oppad001/>

³ Schedules are available on the Internet: http://www.epa.gov/opprrd1/registration_review/schedule.htm

Table 1: Summary of U.S. EPA and DPR Pesticide Review Processes (Continued)

Agency	Process	Description	Overview of Public Input Opportunities
DPR	Registration	California has a state requirement for pesticide registration. Like U.S. EPA, it evaluates effects on humans and the environment. Unlike U.S. EPA (which reviews products containing the same active ingredient as group) DPR registers each pesticide product individually. DPR determines whether to evaluate a pesticide product’s potential to cause surface water quality or wastewater discharge impacts on a case by case basis.	Other than making lists of products entering review available, DPR has no public involvement process for pesticide registration. By providing these lists to its interagency advisory committee (the Pesticide Registration and Evaluation Committee), DPR provides an opportunity for interagency consultation.
	Annual Registration Renewal	California law requires annual renewal of all pesticide registrations. This review is very brief; ordinarily, registrations are renewed if fees are paid and if registrants certify compliance with the requirement to disclose factual or scientific evidence of any adverse effect or risk of the pesticide to human health or the environment.	DPR issues a formal notice of the proposed annual renewal for all pesticides and provides a comment period. Because the notice does not include pesticide-specific information, the process serves as an annual opportunity for the public to provide DPR with information about adverse effects of pesticides.
	Reevaluation	If DPR finds that a significant adverse impact has occurred or is likely to occur from the use of a pesticide, it initiates a reevaluation. During reevaluation, DPR reviews existing data and may require development of additional data related to the impacts of the pesticide. DPR’s goal is to identify ways to reduce or eliminate confirmed problems.	DPR has no formal public involvement process for reevaluation; however, it has offered selected stakeholders opportunities to review various documents associated with the reevaluation of pyrethroid insecticides. DPR usually consults with its interagency advisory committee (the Pesticide Registration and Evaluation Committee) when approaching major reevaluation decisions.

3.0 PESTICIDE REGULATORY ENGAGEMENT SUMMARY

3.1 BASMAA Participated through CASQA and UP3 Project

Since 2005, urban runoff management agencies—including BASMAA’s members—have conducted their engagement in pesticide regulatory activities through their statewide organization, the California Stormwater Quality Association (CASQA). In keeping with this strategy, the BASMAA Monitoring/Pollutants of Concern (POC) Committee established that BASMAA’s FY 2010 pesticide regulatory involvement would be conducted via CASQA. In FY 2010, MRP Permittees participated in pesticide regulatory processes through CASQA.

CASQA has a Pesticides Subcommittee that manages its day-to-day involvement in pesticide regulatory activities. In fiscal year 2010, the subcommittee had two co-chairs: Jamison Crosby of the Contra Costa Clean Water Program (CCCWP) and Dave Tamayo of the Sacramento County Stormwater Quality Program. Ten teleconference meetings were held in FY 2010. Representatives of the Alameda Countywide Clean Water Program (ACCWP), the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), and the City of Palo Alto are also on the subcommittee roster. Both CCCWP and ACCWP actively participated in subcommittee meetings in FY 2010.

The CASQA Pesticides Subcommittee coordinates stormwater agency participation in pesticide regulatory activities. The subcommittee determines the actions to be taken by CASQA, provides direction to its representatives for participation in agency meetings, peer reviews draft correspondence, and shares information among members. As co-chair, Ms. Crosby has assumed a role in identifying financial resources necessary to support CASQA’s activities (which are obtained not only from CASQA but also through contributions from member agencies) and in managing committee-related contracts.

Ms. Crosby provides the linkage between CASQA and the BASMAA Monitoring/POC Committee.

3.2 Engagement Prioritized Pesticides of Concern in the MRP

U.S. EPA and DPR regulatory processes involve thousands of pesticides each year. Only a small fraction of these pesticides pose significant threats to the quality of urban runoff. CASQA has focused its participation in pesticide regulatory processes on pesticides identified by the UP3 Project as most likely to threaten urban surface water quality through urban runoff.⁴ Of these pesticides, the highest priorities are the same current-use pesticides listed as pesticides of concern in the MRP (pyrethroids, fipronil, carbamates, and organophosphorous pesticides).

On the basis of urban watershed monitoring data from across California and urban pesticide use estimates assembled by the UP3 Project, when further prioritization is necessary, CASQA has followed the UP3 Project recommendation to prioritize the pyrethroids (bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin) and fipronil.⁵ Among the pyrethroids, those most commonly linked to aquatic toxicity (bifenthrin, cyfluthrin [including beta-cyfluthrin], and cypermethrin) have been prioritized.

⁴ For the most recent list see TDC Environmental (2010). Pesticides in Urban Runoff, Wastewater, and Surface Water. Annual Review of new Scientific Findings 2010. Prepared for the UP3 Project. March.

⁵ TDC Environmental (2008). Pesticides of Interest for Urban Surface Water Quality. Urban Pesticides Use Trends Annual Report 2008. Prepared for the UP3 Project. July 30; Moran, K. D. (2007). “Urban Use of the Insecticide Fipronil—Water Quality Implications.” Memorandum prepared for the UP3 Project. June 18.

According to UP3 Project analysis, organophosphates (chlorpyrifos, diazinon, and malathion) and carbamates (carbaryl) are lower priorities than the pyrethroids and fipronil. Neither diazinon nor chlorpyrifos pose a continuing threat to urban watersheds now that U.S. EPA has prohibited almost all urban use.⁶ Similarly, urban watersheds are benefitting from significant reductions in use of both carbaryl and malathion, likely the consequence of U.S. EPA regulatory requirements.⁷

3.3 Engagement Summary for Fiscal Year 2010

CASQA and UP3 Project Conducted All Four Tasks Listed in MRP Section C.9.e.

CASQA encouraged USEPA and DPR to coordinate implementation of pesticide and water laws to accommodate water quality concerns as required under MRP sections C.9.e.i.(1) and (2) and submitted comment letters as required under C.9.e.1.(4). Table 2 (on the following pages) lists specific CASQA and BASMAA member actions, including meetings and correspondence.

In FY 2010, CASQA relied on the UP3 Project to complete the pesticide evaluation and registration activities tracking required under C.9.e.i.(1) and (2) and the assembly and submittal of information to DPR as required under C.9.e.i.(3). [UP3 Project regulatory tracking tables](#) for FY 2010 are available on the UP3 Project website together with other Urban Pesticides Committee (UPC) meeting materials. Due to the suspension of grant funding for part of the fiscal year, tracking tables were prepared four times during the fiscal year instead of bimonthly. UP3 Project submittal of information to DPR is included in Table 2.

During the UP3 Project's 2009 grant hiatus, UP3 Project regulatory tracking, communications with U.S. EPA and DPR, and one FY 2010 UPC meeting were partially funded by two Bay Area municipalities: the Cities of San Francisco and Palo Alto. (Other funding was provided by other CASQA members and by POTWs).

California Pyrethroid Reevaluation Was 2010 Priority

Responding to widespread toxicity in California surface waters linked to pyrethroid insecticides, in August 2006 DPR initiated regulatory action ("reevaluation") to identify mitigation measures to address the toxicity. DPR has offered California water quality agencies—including CASQA—opportunities to provide information at various junctures in the pyrethroid reevaluation. Participating in DPR's pyrethroid reevaluation was the top priority for CASQA in FY 2010. DPR has responded to California water quality agency engagement—the level of interagency information-sharing occurring in the pyrethroid reevaluation is unprecedented in the history of DPR reevaluations.

⁶ For this reason they were dropped from the UP3 List of pesticides of concern in urban runoff (see TDC Environmental (2010). Pesticides in Urban Runoff, Wastewater, and Surface Water. Annual Review of new Scientific Findings 2010. Prepared for the UP3 Project. March.)

⁷ TDC Environmental (2010). Pesticides in Urban Runoff, Wastewater, and Surface Water. Annual Urban Pesticide Use Data Report 2010. Prepared for the UP3 Project. June 28.

Table 2: Pesticide Regulatory Process Participation in FY 2010

Organization	Process	Action	Desired Outcome
U.S. EPA	Office of Pesticide Programs (OPP) and Office of Water (OW) Effects Assessment Methodology Reconciliation Project	<p><u>CASQA Letter – August 25, 2009</u> Thanked U.S. EPA for initiating project, requested project scope expansion to include differences in aquatic toxicity test species, asked that the U.S. EPA project team be expanded to include OW Office of Wastewater Management, and that the project be designed to consider both fresh and salt water.</p> <p><u>Oral testimony by representatives of CASQA, CCCWP, ACCWP, and SCVURPPP at U.S. EPA stakeholder meeting – January 22, 2010</u> Thanked U.S. EPA for conducting the project, explained the regulatory gap caused by inconsistent effects assessment methods between the two U.S. EPA Offices, provided examples of aquatic toxicity resulting from this gap, described costs to municipalities to respond to this toxicity, and requested that U.S. EPA expand the scope of the project to resolve the toxicity testing differences.</p>	<p>Expand project scope to examine approaches for coordinating OPP’s effects assessments with the OW-approved toxicity testing procedures.</p> <p>Educate U.S. EPA OPP environmental risk assessors.</p> <p>Draw attention to pesticide-related toxicity in urban watersheds and ask U.S. EPA to change its regulatory processes so that they identify and prevent this toxicity.</p>
	Advanced Notice of Proposed Rulemaking – Pesticide Inert Ingredients Disclosure	<p><u>CASQA letter – February 22, 2010</u> Supported U.S. EPA’s intention to require disclosure of pesticide inert ingredients. Urged U.S. EPA to develop this rule so as to capture the full range of such chemicals that may be harmful to human health or the environment, and to require public disclosure of their presence in any products that are available for use by “consumers” including both government agencies and the general public. Provided responses to specific questions raised by U.S. EPA describing how the regulation could best be designed to assist with water quality protection.</p> <p><u>San Francisco Department of the Environment letter – April 21, 2010</u> Echoed CASQA’s comments plus provided information based on City experience operating a municipal integrated pest management program.</p>	<p>Disclosure of pesticide inert ingredient identities to assist with efforts to prevent water pollution. Of interest because some “inert” (other) pesticide ingredients are water pollutants; others facilitate the transport of pesticides into urban runoff.</p>

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
U.S. EPA	Esfenvalerate Registration Review	<p><u>CASQA letter – February 16, 2010</u> Requested specific changes to Registration Review workplan, including an exposure assessment for urban uses of esfenvalerate including both water column and sediments as well as cumulative risks with other pyrethroids in urban watersheds. Supported proposed environmental risk assessment data request list. Recommended utilization of existing information from the scientific literature, from surface water monitoring programs, and from the DPR pyrethroid reevaluation.</p>	Changes to the registration review process to better identify and mitigate urban water quality impacts and adoption of these changes as part of U.S. EPA’s overall approach to the registration review process for all pesticides with urban use patterns.
	Deltamethrin Registration Review	<p><u>CASQA letter - June 1, 2010</u> Requested specific changes to Registration Review workplan, including an exposure assessment for urban uses of deltamethrin including both water column and sediments as well as cumulative risks with other pyrethroids in urban watersheds. Recommended utilization of existing information from surface water monitoring programs and from the DPR pyrethroid reevaluation.</p>	Changes to the registration review process to better identify and mitigate urban water quality impacts and adoption of these changes as part of U.S. EPA’s overall approach to the registration review process for all pesticides with urban use patterns.
	None	<p>The UP3 Project provided the following information to U.S. EPA:</p> <ul style="list-style-type: none"> • Information on fipronil to support concerns about its presence in urban runoff – December 2009 • Paper on urban runoff modeling approaches - January 2010 • Conceptual model for pyrethroids in urban runoff – March 2010 	Improve U.S. EPA’s scientific understanding of pesticides in urban runoff such that EPA has sufficient scientific information to structure regulatory processes to ensure that pesticide applications comply with water quality standards.

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
DPR	Pyrethroid Reevaluation	<p><u>CASQA/PWG Meeting – July 22, 2009</u> At DPR’s request, CASQA representatives, including Jamison Crosby of CCCWP, met directly with PWG to explain concerns with the slow pace of the pyrethroids reevaluation including the potential for high monitoring costs for municipalities due to pyrethroids and associated toxicity, and the ongoing threat of third-party lawsuits. CASQA asked for faster progress and for the next steps to be rooted in a conceptual model developed on the basis of the extensive existing scientific literature about pollutants in urban runoff. CASQA and PWG agreed that communications processes for to the pyrethroid reevaluation needed to be improved.</p>	<p>End pyrethroid-related toxicity in California urban watersheds without transitioning to other harmful products.</p>
		<p><u>CASQA/PWG Meeting – December 9, 2009</u> At DPR’s request, CASQA met with PWG to provide verbal comments to PWG on its draft conceptual model for pyrethroids in urban runoff and a draft list of scientific studies proposed to fill what PWG had identified as priority data gaps. Agreed with the general conceptual model with some minor modifications, but found the model was not structured in a manner that meets the needs for the next steps in the pyrethroid reevaluation. Recommended significant modifications to the list of scientific studies and an urban runoff literature review to eliminate perceived data gaps and provide a scientifically based focus for study designs and mitigation proposals.</p>	<p>Educate DPR about pesticide-related toxicity in urban watersheds. Ask DPR to change its regulatory processes so that it identifies and prevents such toxicity.</p>
		<p><u>PWG Controlled Urban Pyrethroid Applications and Monitoring Study – CASQA Letter July 10, 2009</u> Recommended against pursuing this study proposal because it would be time-consuming and would have a low probability of providing useful information. Detailed scientific comments supported these points.</p>	

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
DPR	Pyrethroid Reevaluation	<p><u>PWG Applicator Survey Proposal – Input to Sacramento County Letter to DPR, January 28, 2010</u></p> <p>Because DPR afforded an abbreviated review period for this PWG study proposal, CASQA did not have time to complete required internal peer review prior to submitting a letter. To provide a quicker alternative, Sacramento County volunteered to incorporate CASQA’s recommendations into a letter to DPR. Recommendations included focusing the survey on priority data gaps about professional structural pest control identified by the UP3 Project (differentiating outdoor, indoor, underground, and pre-construction termiticide applications and understanding the relative quantities applied on outdoor impervious and pervious surfaces); reducing the survey length and taking other actions to increase participation; and making other changes to increase the validity of survey results.</p>	See above
		<p><u>CASQA meeting with DPR & Water Boards – March 17, 2010</u></p> <p>Requested faster pace toward ending pyrethroid-related toxicity in urban watersheds. Explained concerns with the slow pace of the pyrethroids reevaluation including the potential for high monitoring costs for municipalities due to pyrethroids and associated toxicity, and the ongoing threat of third-party lawsuits. DPR announced its intent to initiate monthly stakeholder meetings, and requested participation of CASQA decision-makers. CASQA agreed. Obtained insight into practical aspects of various DPR regulatory options to address pyrethroid-related toxicity.</p>	

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
DPR	Pyrethroid Reevaluation	<p><u>DPR Pyrethroid Reevaluation Stakeholder Meetings (PRSM meetings) – Monthly starting in May 2010 (two in FY 2010)</u></p> <p>Initiated monthly meetings among DPR, CASQA, the Water Boards, POTWs, PWG, and professional pest control applicators to improve communications, to conduct joint fact finding, to identify priority data gaps requiring additional information to be generated by pyrethroid manufacturers, and to identify mitigation strategies to end pyrethroid-related toxicity in urban watersheds.</p> <p>In FY 2010 meetings, the stakeholder group came to agreement on a conceptual model for pyrethroids in urban runoff, shared information about the feasibility and environmental benefits of various pyrethroid mitigation strategies, and shared relevant scientific information with DPR and other stakeholders. CASQA and the UP3 Project provided the following information to DPR at FY 2010 meetings:</p> <ul style="list-style-type: none"> • A CASQA-UP3 Project alternative conceptual model for pyrethroids in urban runoff prepared with joint funding from the UP3 Project. • A UP3 Project compilation of bifenthrin monitoring data for urban runoff and urban watersheds across California. • A UP3 Project compilation of available pyrethroid environmental fate data to highlight data gaps and to show indications that bifenthrin’s slow environmental degradation is one of several reasons that it alone is the largest contributor to pyrethroid-related toxicity in urban watersheds. <p><u>Conceptual model for Pyrethroids in Urban Runoff</u></p> <p>CASQA and the UP3 Project jointly funded UP3 Project development of a conceptual model for pyrethroids in urban runoff that can be used to quantify the linkage between urban pyrethroid use patterns and pyrethroids in urban waterways. The UP3 Project provided the model to U.S. EPA and DPR, and shared it with these agencies other stakeholders via presentations at the following events:</p> <ul style="list-style-type: none"> • American Chemical Society Pyrethroids session – March 24,2010 • DPR PRSM meeting May 2010 	See above

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
DPR	Surface Water Regulatory Concept	<p><u>Teleconference meeting with DPR – November 18, 2009</u> Thanked DPR for pursuing regulatory concept. Supported adoption of surface water protection regulations. Learned about DPR’s approach to the regulations. Asked questions on areas of concern like the list of covered pesticides and the exemption for applicators participating in a “green or sustainable program.” Obtained feedback from DPR that will be used to inform the preparation of written comments.</p> <p><u>Oral testimony by a representatives of CASQA and CCCWP at DPR Workshop –February 11, 2010</u> Thanked DPR for pursuing regulatory concept. Supported adoption of surface water protection regulations. Requested DPR establish clear water quality protective standards and process for the exemption for applications under a "green or sustainable program.”</p>	Implement effective measures to prevent water pollution associated with professional urban pesticide use. Include in regulatory structure the ability to control pesticides most likely to threaten urban surface water quality through urban runoff, including pesticides that might be registered in the future.
	Pest Management Advisory Committee (PMAC)	<p><u>DPR PMAC meetings - Quarterly</u> DPR has one general external stakeholder advisory group, called the Pest Management Advisory Committee. A CASQA representative (Dave Tamayo of the Sacramento County Stormwater Quality Program) participates in most meetings and is formally an alternate member of the committee (the lead member in the seat is a POTW representative).</p>	Educate DPR and other urban pest management stakeholders.
	None	<p>The UP3 Project provided the following information to DPR:</p> <ul style="list-style-type: none"> Scientific information relevant to two new outdoor urban insecticides (indoxacarb and spinosad), their aquatic toxicity and potential water quality impacts – March 2010 	Improve DPR’s scientific understanding of pesticides in urban runoff such that EPA has sufficient scientific information to structure regulatory processes to ensure that pesticide applications comply with water quality standards.

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
UP3 Project	Urban Pesticides Committee (UPC) Meetings	<p><u>UPC meetings - Four meetings in FY 2010</u></p> <p>The UPC serves as a center for information exchange, coordination, and collaboration among local, regional, and state agencies and other stakeholders seeking to end pesticide-related surface water toxicity problems. Examples of information and insights shared by CASQA in 2010 include:</p> <ul style="list-style-type: none"> • Concerns about the slow pace of the pyrethroid reevaluation and need for an approach based on existing scientific literature relevant to urban runoff. • Summaries of meetings with pyrethroid manufacturers. • Concerns with the ongoing pyrethroid-related toxicity—the potential for high monitoring costs for municipalities due to pyrethroids and associated toxicity, and the ongoing threat of third-party lawsuits. • Perspectives on the National Pest Management Association’s Green Pro certification. • Updates on participation in California and Federal pesticide regulatory activities. 	Educating other stakeholders through informal interactions. Become informed about issues relevant to the development of regulatory and non-regulatory measures to prevent pesticide-related water pollution.

Table 2: Pesticide Regulatory Process Participation in FY 2010 (Continued)

Organization	Process	Action	Desired Outcome
County Agricultural Commissioners	None	<p>MRP Permittees had the following communications with County Agricultural Commissioners regarding pest management to improve water quality protection:</p> <ul style="list-style-type: none"> • Contra Costa County has been meeting regularly (bimonthly) with the Agricultural Commissioner’s office to cover all topics related to integrated pest management (IPM). Meetings were held on July 1, 2009; September 2, 2009; November 4, 2009; January 6, 2010; March 3, 2010 and May 5, 2010. Topics included discussions of the various IPM methods being used by the Flood Control and Water Conservation District (including weed abatement with manual labor, tractor mower, sheep grazing, and spot spraying of broadleaf weeds) and by County Departments (regarding the placement of sticky traps to monitor pest invasions, placement of door sweeps, sealing of cracks, and other physical deterrents [including the use of the “Rodentator”], while encouraging biological controls with the installation of owl boxes and raptor perches). • In June 2010, the City of Concord asked the Contra Costa County Agricultural Commissioner's office for advice in dealing with a sudden surge of bugs this summer in some city parks. The Agricultural Commissioner confirmed the bugs were leaf hoppers and since they do not bite or sting and their populations were predicted to drop sharply in a few weeks, no treatment was recommended. Concord city staff monitored the parks to confirm that the problem did indeed go away in a few weeks without the use of pesticides. 	Encourage Agricultural Commissioners to strengthen incorporation water quality protection into their implementation of local pesticide regulatory programs.

4.0 EVALUATION OF 2010 OUTCOMES

4.1 Goals and Objectives for Pesticide Regulatory Engagement

The goals of CASQA's and BASMAA's engagement in pesticide regulatory processes are:

1. To prevent surface water impairment.
2. To prevent violations of stormwater NPDES permits.

To achieve these goals, CASQA has three long-term objectives for its participation in pesticide regulatory processes:

- A. Improve design of pesticide water quality impact evaluations. Pesticide water quality impact evaluations conducted by U.S. EPA and DPR should be based on all available scientific information, assess the impacts of pesticides transported to surface water via all pathways (including urban runoff), fully address all urban use patterns, and incorporate evaluation endpoints consistent with Clean Water Act regulatory endpoints.
- B. Encourage pesticide regulators to address urban surface water quality in pesticide risk management decisions and to do so in a timely manner. Pesticide risk management decisions should address all significant surface water quality risks including those posed by urban pesticide use patterns, consider costs to water quality agencies, be implemented quickly when water quality problems occur, and prevent new environmental or health impacts from future pesticide market shifts.
- C. Seek meaningful public participation opportunities for water quality agencies. To achieve the above objectives, pesticide regulatory decisions relevant to water quality need to include public participation processes that make all relevant information available for water quality agency review and provide opportunity for water quality agencies to share information to ensure that decisions are based on accurate scientific and management information and include practical and effective risk management strategies.

Major FY 2010 objectives were:

- To end pyrethroid-related toxicity in California urban watersheds without transitioning to other harmful products.
- To encourage changes in pesticide regulatory processes such that these processes effectively prevent future water quality and compliance problems.

4.2 Overview of Past Outcomes

Regular interagency dialogue about pesticide-related water quality problems started with the formation of the Urban Pesticides Committee (UPC) in the mid-1990s. By the late 1990s, California water quality agencies recognized that while the information-exchange forum provided by the UPC is valuable, informal dialogue with pesticide manufacturers and pesticide regulators was not a sufficient means to achieve the changes needed to ensure long-term water quality protections from the impacts of urban pesticide use.

In 1999, California water quality agencies started to engage in pesticide regulatory processes on an ongoing basis. In 2003, the scope of the effort was increased in recognition of the water quality threat posed by the market shift to pyrethroid insecticides

in response to the phase out of most urban uses of diazinon and chlorpyrifos. Beginning in mid-2004, the effort was further strengthened due to State Water Board grant funding to the UP3 Project, which provided California water quality agencies with an ongoing base of scientific and regulatory support for their individual engagement with pesticide regulators.

Although the process was slow at first, by 2005 staff from both pesticide and water quality regulatory agencies had recognized the importance of pesticide-related water quality issues. By 2007, pesticide regulators had recognized and acknowledged that gaps in their regulatory processes—particularly gaps related to urban pesticide use—were connected to urban water quality problems from pesticides.

In 2006, pesticide regulatory agencies began to take specific steps to address pesticide-related urban surface water quality problems. At the Federal level, U.S. EPA changed allowable uses for several pesticides due to water quality problems. California DPR initiated the pyrethroid reevaluation in response to water quality problems and created the Urban Pest Management Workgroup to give it advice on development of management strategies specific to pesticide use in urban areas.

In 2007-2009, further changes continued, particularly at the Federal level. Federal regulators required a few initial measures to prevent washoff of pyrethroids into urban runoff. Federal regulators also initiated the Office of Pesticide Programs (OPP) and Office of Water (OW) Effects Assessment Methodology Reconciliation Project to address a regulatory gap highlighted in California water quality agency comments.

4.3 FY 2010 Outcomes

Table 3 (on the next two pages) summarizes the outcomes of CASQA's recent pesticide regulatory engagement. Outcomes since the last UP3 Project regulatory outcomes evaluation in December 2008⁸ are included in the table.

In FY 2010, encouraging progress continued. Federal pyrethroid Registration Review workplans acknowledged the need to address urban runoff. California regulators floated the idea of surface water protection regulations, including measures to protect urban runoff. DPR accelerated the pace of the pyrethroid reevaluation and solved a communication problem by initiating monthly stakeholder meetings.

While these specific outcomes reflect meaningful progress toward achieving the goals listed above, the goals of California water quality agency engagement in pesticide regulatory processes have not yet been fully achieved. The record shows that the engagement of California water quality agencies has significantly improved water quality protection since their initial engagement in the 1990s.

This evaluation is necessarily an interim evaluation. The types of processes that CASQA and other California water quality agencies have engaged in take years to complete—and the systemic changes desired will probably take many years to implement fully. Due to the complexity of pesticide regulatory processes, responses to comments may not be issued for more than one year after comments are submitted and outcomes often occur years after comments are made.

In evaluating regulatory outcomes, it is important to recognize that water quality is but one of many economic, social, and environmental factors that U.S. EPA and DPR consider when making regulatory decisions.

⁸ TDC Environmental (2009). Pesticides in Urban Runoff, Wastewater, and Surface Water. Annual Summary of Regulatory Activities to Protect Water Quality 2008. Prepared for the UP3 Project. December.

Table 3. FY 2010 Pesticide Regulatory Engagement Outcomes

Regulatory Process	Desired Outcome	Actual Outcome	Assessment of Relationship of Water Quality Agency Involvement to Outcome
<i>U.S. EPA Antimicrobials Data Rule</i>	Require manufacturers to provide all data necessary for a complete evaluation of urban runoff impacts when a pesticide is registered or is subject to registration review.	Unknown. Waiting for U.S. EPA to finalize the regulation.	To be determined
<i>U.S. EPA Office of Pesticide Programs (OPP) and Office of Water (OW) Effects Assessment Methodology Reconciliation Project</i>	<p>Expand project scope to examine approaches for coordinating OPP's effects assessments with the OW-approved toxicity testing procedures.</p> <p>Educate U.S. EPA OPP environmental risk assessors.</p> <p>Draw attention to pesticide-related toxicity in urban watersheds and ask U.S. EPA to change its regulatory processes so that they identify and prevent this toxicity.</p>	<p>Project-specific outcome unknown. Waiting for U.S. EPA to take next step in project.</p> <p>Education goals apparently achieved as evidenced by improved, more well-informed environmental risk assessment workplans for pyrethroids.</p>	<p>Project-specific relationship cannot yet be determined</p> <p><u>High</u> for education goals. Informal communications with U.S. EPA indicate a direct linkage between California communications and environmental risk assessment workplan improvements.</p>
<i>U.S. EPA Advanced Notice of Proposed Rulemaking – Pesticide Inert Ingredients Disclosure</i>	Disclosure of pesticide inert ingredient identities to assist with efforts to prevent water pollution.	Unknown. Waiting for U.S. EPA to issue the draft regulation.	To be determined
<i>U.S. EPA Esfenvalerate, Deltamethrin, and Cyphenothrin Registration Review</i>	Changes to these registration review processes to better identify and mitigate urban water quality impacts and adoption of these changes as part of U.S. EPA's overall approach to the registration review process for all pesticides with urban use patterns.	Unknown. Waiting for U.S. EPA to issue final workplans.	To be determined

Table 3. FY 2010 Pesticide Regulatory Engagement Outcomes (Continued)

Regulatory Process	Desired Outcome	Actual Outcome	Assessment of Relationship of Water Quality Agency Involvement to Outcome
<i>DPR Pyrethroid Reevaluation</i>	<p>End pyrethroid-related toxicity in California urban watersheds without transitioning to other harmful products.</p> <p>Educate DPR about pesticide-related toxicity in urban watersheds. Ask DPR to change its regulatory processes so that it identifies and prevents such toxicity.</p> <p><u>2010 priorities:</u> Implement mitigation measures quickly. Modify process to increase the pace toward a full solution.</p>	<p>As of July 2010, the reevaluation process had not generated significant new scientific information nor had substantial progress been made toward an end to pyrethroid-related toxicity.</p> <p>Initial mitigation is being implemented. At DPR's request, U.S. EPA asked all pyrethroid manufacturers to submit revised product labels implementing a set of water quality protection mitigation measures by June 2010.</p> <p>DPR restructured the reevaluation process to include monthly stakeholder meetings intended to increase the pace of the reevaluation toward ending pyrethroid-related toxicity.</p>	<p><u>High.</u> Without active involvement by CASQA and other California Water Quality Agencies, reevaluation would probably still be stalled.</p> <p>Label change process was initiated in response to joint CASQA/Water Board comments and was based on a list of potential early mitigation measures provided with the comments.</p>
<i>DPR Surface Water Regulatory Concept</i>	<p>Implement effective measures to prevent water pollution associated with professional urban pesticide use. Include in regulatory structure the ability to control pesticides most likely to threaten urban surface water quality through urban runoff, including pesticides that might be registered in the future.</p>	<p>Initial goal achieved—DPR has announced its intent to proceed with development of formal regulations.</p> <p>Detailed outcome is unknown. CASQA is currently preparing detailed comments and is waiting for DPR to issue first draft of formal regulation.</p>	<p><u>High.</u> It is unlikely that DPR would have included urban areas in these regulations without CASQA/Water Board engagement and UP3 Project scientific information linking professional pesticide applications to water pollution.</p>

Source: TDC Environmental evaluation of U.S. EPA and DPR regulatory documents and meetings.

Acronyms

- ACCWP** – Alameda Countywide Clean Water Program
- BASMAA** – Bay Area Stormwater Management Agencies Association
- Cal-EPA** – California Environmental Protection Agency
- CASQA** – California Stormwater Quality Association
- CCCWP** – Contra Costa Clean Water Program
- DPR** – California Department of Pesticide Regulation
- FIFRA** – Federal Insecticide, Fungicide, and Rodenticide Act
- FY** – Fiscal Year (July 1 through June 30)
- MRP** – Municipal Regional Permit (NPDES permit for urban runoff from Bay Area municipalities)
- NPDES permit** – National Pollutant Discharge Elimination System permit (permit for discharge of wastewater or urban runoff to surface waters)
- OPP** – U.S. EPA Office of Pesticide Programs
- OW** – U.S. EPA Office of Water
- PMAC** – DPR Pest Management Advisory Committee
- POTW** – Publicly-Owned Treatment Works (municipal wastewater treatment plant)
- PRSM** – Pyrethroid Reevaluation Stakeholder Meetings hosted by DPR
- PWG** – Pyrethroid Working Group (organization of pyrethroid insecticide manufacturers)
- SCVURPPP** – Santa Clara Valley Urban Runoff Pollution Prevention Program
- SFEP** – San Francisco Estuary Partnership
- TMDL** – Total Maximum Daily Load (regulatory plan for solving a water pollution problem)
- UP3 Project** – Urban Pesticides Pollution Prevention Project
- UPC** – Urban Pesticides Committee
- U.S. EPA** – United States Environmental Protection Agency