Annual Reporting for FY 2023-2024

Supplement for Tracking and Participating in Pesticide Regulatory Efforts

Bay Area Municipal Stormwater Collaborative Phase II Subcommittee

B A M S C

Bay Area Municipal Stormwater Collaborative

September 2024

Supplement for Tracking and Participating in Pesticide Regulatory Efforts
Annual Reporting for FY 2023-2024

INTRODUCTION

This report provides information on regionally implemented activities complying with portions of the Small Municipal Separate Storm Sewer System (MS4) Phase II Permit issued by the State Water Resources Control Board (Water Board). The Phase II Permit covers stormwater discharges from 24 municipalities and special districts (Permittees) in the North San Francisco Bay Area. This report covers pesticide toxicity regulatory modernization activities implemented through the California Stormwater Quality Association (CASQA) related to the following Phase II Permit provisions:

- E.7.a.(ii)(i) – Develop and convey messages specific to proper application of pesticides, herbicides, and fertilizers
- E.11.h. – Permittee Operations and Maintenance Activities (O&M)
- E.11.j. – Landscape Design and Maintenance
- E.15.a. / Attachment G – Implement Pesticide-Related Toxicity Control Program

Effecting regulatory modernization occurs at the State and Federal level. Recognizing that fact, the Permittees have taken an approach to modernizing pesticide regulations that involves cooperating through the California Stormwater Quality Association (CASQA), and/or the Urban Pesticide Pollution Prevention Project (UP3 Project). All of these entities have determined this cooperative approach is not only the most likely approach but is likely the only approach for local agencies to effect meaningful change in the State and Federal regulatory environments.

Activities and Accomplishments during FY 2023-2024

The actual work of tracking and participating in the ongoing regulatory efforts related to pesticides was accomplished through CASQA. CASQA conducted its activities on behalf of members and coordinated funding contributions and activities through its True Source Control Subcommittee (encompassing the former Pesticide Subcommittee, a group of stormwater quality agencies affected by pesticides or pesticides-related toxicity listings, TMDLs, or permit requirements, as well as others knowledgeable about pesticide-related stormwater issues). The CASQA 2024 Pesticide Annual Report and Effectiveness Assessment (Attachment 1) provides a comprehensive and detailed accounting of efforts to track and participate in relevant regulatory processes as well as accomplishments related to pesticides and stormwater quality.

Attachments

Attachment 1

2024 Pesticide Annual Report and Effectiveness Assessment
California Stormwater Quality Association
Final Report
September 2024

California Stormwater Quality Association®

Dedicated to the Advancement of Stormwater Quality Management, Science and Regulation

2024 Pesticide Annual Report and Effectiveness Assessment

Prepared by the California Stormwater Quality Association

August 2024

Preface

ADVANCING SUSTAINABLE STORMWATER MANAGEMENT

The California Stormwater Quality Association (CASQA) is a nonprofit corporation that advances sustainable stormwater management protective of California water resources. With well over 2,000 members, CASQA's membership is comprised of diverse range of stormwater quality management organizations and individuals, including cities, counties, special districts, federal agencies, state agencies, ports, universities and school districts, wastewater agencies, water suppliers, industries, and consulting firms throughout the state. Collectively, CASQA represents over 34 million people in California.

CASQA's *Vision for Sustainable Stormwater Management*[1] (Vision) defines the actions needed to manage stormwater as an essential component of the state's water resources, support human and ecological needs, protect water quality, and enhance and restore California's waterways. There are four guiding principles to achieve this Vision. Like the legs of a chair, each Principle is essential and all four must be in place to support the whole.

Principle #1: Program Implementation: Projects and programs that use stormwater as a resource, protect water quality and beneficial uses, and efficiently minimize pollution are critical for sustainable stormwater management. Stormwater capture and true source control (identifying and mitigating a pollutant at its source) are the primary drivers of these solutions, with effective BMPs providing an important supportive role.

Principle #2: Permits, Regulations, and Legislation: Permits, regulations, and legislation need to focus on effectiveness and desired outcomes to support sustainable stormwater management. Regulatory and legislative actions must align with and support the other components of the Vision – advancing stormwater capture, true source control, effective BMPs, increasing public education and awareness focused on stormwater as a resource, and securing funding to support these solutions.

Principle #3: Public Education: Public awareness, understanding, and support is essential to sustainable stormwater management. The key shift is viewing stormwater as a resource that must be protected and integrated into overall water resource management.

Principle #4: Funding: Significant financial investment is required to achieve sustainable stormwater management. Stormwater is the most underfunded portion of the water sector and substantial funding is needed to bring these solutions forward.

2024 PESTICIDE ANNUAL REPORT AND EFFECTIVENESS ASSESSMENT

This report, *2024 Pesticide Annual Report and Effectiveness Assessment,* advances Principle #1 by addressing pesticide pollution through source control solutions. CASQA has identified Current Use Pesticides as a Water Quality Priority, requiring solutions at a statewide scale. To advance true source control for pesticides, CASQA is actively engaged with state and federal regulators in an effort to develop an effective pesticide regulatory system, based primarily on existing statutes, that includes timely identification and mitigation of urban water quality impacts, and proactively prevents additional problems through the registration and registration review processes. This report describes CASQA's regulatory engagement activities from July 2023 through June 2024.

[1] https://www.casqa.org/wp-content/uploads/2022/10/final_-_vision_for_sustainable_stormwater_management_-_10-07-2020.pdf

Acknowledgements

This report was prepared by Stephanie Hughes and Tammy Qualls under the direction of CASQA.

Funding to support this work was provided from Alameda Countywide Clean Water Program, Contra Costa Clean Water Program, Fairfield-Suisun Urban Runoff Management Program, Marin Countywide Stormwater Pollution Prevention Program, Napa Countywide Stormwater Pollution Prevention Program, Sacramento Stormwater Quality Partnership, San Mateo Countywide Water Pollution Prevention Program, Santa Clara Valley Urban Runoff Pollution Prevention Program, Sonoma County Water Agency, and the Solano Stormwater Alliance.

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Abbreviations used in this Report

AB – Assembly Bill

BACWA – Bay Area Clean Water Agencies

CASQA – California Stormwater Quality Association

CWA – Clean Water Act

DPR – California Department of Pesticide Regulation

EAD – Exposure Assessment Document (DPR)

EPA – United States Environmental Protection Agency

ERA – Ecological Risk Assessment

ESA – Endangered Species Act

ID – Interim Decision (EPA)

IPM – Integrated Pest Management

MAA – Management Agency Agreement between DPR and the Water Boards

MS4 – Municipal Separate Storm Sewer System

NACWA – National Association of Clean Water Agencies

NPDES – National Pollutant Discharge Elimination System

OPP – U.S. EPA Office of Pesticide Programs

OW – U.S. EPA Office of Water

OWOW – CASQA's Our Water, Our World Program

PAH – Polycyclic aromatic hydrocarbon

PEAIP – Program Effectiveness Assessment and Improvement Plan

PID – Proposed Interim Decision (EPA)

PMAC – Pest Management Advisory Committee (DPR)

PPDC – EPA's Pesticide Program Dialogue Committee

RA – Risk Assessment

RCD – Risk Characterization Document (DPR)

RMD – Risk Management Directive (DPR)

SFBRWQCB – San Francisco Bay Regional Water Quality Control Board

SFEI – San Francisco Estuary Institute

SPM – Sustainable Pest Management Work Group (DPR)

STORMS – Strategy to Optimize Resource Management of Storm Water (a program of the State Water Board)

SWAMP – California Water Boards Surface Water Ambient Monitoring Program

TMDL – Total Maximum Daily Load (regulatory plan for solving a water pollution problem)

TSC – CASQA True Source Control Subcommittee

UP3 – Urban Pesticides Pollution Prevention Partnership

UPP – Urban Pesticide Provisions

USDA – United States Department of Agriculture

USGS – United States Geological Survey

Water Boards – California State Water Resources Control Board together with the California Regional Water Quality Control Boards

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Executive Summary

To address the problems caused by pesticides in California's urban waterways, CASQA collaborates with the California State Water Resources Control Board and the California Regional Water Quality Control Boards (Water Boards). By working with the Water Boards and other water quality organizations, CASQA addresses the impacts of pesticides efficiently and proactively through the statutory authority of the California Department of Pesticide Regulation (DPR) and EPA's Office of Pesticide Programs (OPP). This collaboration, initiated more than 20 years ago, has resulted in significant changes in pesticide regulation. A summary of CASQA's activities to address key management questions are described below, with more details and outcomes provided in Section 2.

Near term / Current problems – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

- CASQA shared its urban runoff expertise with pesticide regulators by preparing comment letters to EPA regarding chlorothalonil, 3-Iodo-2-propynyl butylcarbamate (IPBC), oxyfluorfen, and pesticide labeling. *(See Table 3)*
- In response to CASQA requests to mitigate the impacts of etofenprox use on urban impervious surfaces, EPA continued to incorporate label language restricting specific uses, including using CASQA's suggested pictogram and proposed labeling. *(See Table 3 and Appendix)*
- In response to CASQA requests to mitigate environmental risks in urban environments, EPA initiated significant mitigation measures for urban uses of ziram, including removing it as a material preservative in paint and reducing the maximum concentration in building materials. *(See Table 3 and Appendix)*
- In response to CASQA requests to mitigate environmental risks, EPA canceled registration of residential uses of oxyfluorfen, including all residential turf and ornamental products. *(See Table 3 and Appendix)*
- CASQA updated the Pesticide Watch List following the review of multiple recent surface water monitoring programs. The Watch List is shared with regulators and scientists to stimulate generation of surface water monitoring and aquatic toxicity data for the highest priority pesticides. *(See Table 2.)*

Long term / Prevent future problems – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

- DPR continues to demonstrate its commitment to addressing pesticide impacts on receiving waters through the creation of a Sustainable Pest Management (SPM) Roadmap that seeks to transition the state away from high-risk pesticides[2] to sustainable pest control practices.
- In 2014 the State Water Board established an urban pesticides reduction project (now titled the Statewide Urban Pesticides Provisions or UPP) as a top priority project under the comprehensive stormwater strategy, known as "Strategy to Optimize Resource Management of Storm Water" or STORMS.[3] The desired outcome for these provisions is to institutionalize the State's strategy of utilizing pesticide regulations as the most effective approach for preventing and addressing pesticide water quality problems. CASQA remains dedicated to supporting State Water Board staff.
- Although many improvements have been made by EPA OPP since the early 2000s, improvement in scientific evaluations supporting EPA OPP's regulatory efforts and better understanding of urban runoff

[2] The SPM Roadmap defines high-risk pesticides as "active ingredients that are highly hazardous and/or formulations or uses that pose a likelihood of, or are known to cause, significant or widespread human and/or ecological impacts from their use." https://www.cdpr.ca.gov/docs/sustainable_pest_management_roadmap/spm_roadmap.pdf

[3] http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/

management systems are still necessary to adequately protect urban surface waters from pesticide impairments.

- Victoria Kalkirtz, co-chair of CASQA's True Source Control (TSC) Subcommittee, continued to be a member of DPR's Pest Management Advisory Committee (PMAC).

In the coming year, CASQA plans to address near-term pesticide concerns and seek long-term regulatory change. Near-term and long-term tasks are identified in Section 3, Tables 5 and 6. Key topics include:

- Continued engagement with EPA regarding incorporating their Endangered Species Act (ESA) obligation in registrations and re-registrations, including recommending the use of pictograms in labels, and seeking opportunities in California for EPA's regional and vulnerable species pilot programs;
- Continued engagement with DPR regarding the SPM Roadmap specific to urban implementation programs and opportunities;
- Continued support of the UPPs by the State Water Board;
- Continued development of a coordinated monitoring program in partnership with the Water Boards, DPR, and EPA Region 9;
- Registration review-related activities at EPA for pyrethroids and fipronil;
- Initiating discussion of urban water quality concerns at the EPA Pesticide Program Dialogue Committee's (PPDC) future meetings;
- Continued review of DPR registration applications and proposed decisions for new products.

Section 1. Introduction

1.1 IMPORTANCE OF CASQA'S EFFORTS TO IMPROVE PESTICIDE REGULATION

For decades, the uses of certain pesticides in urban areas – even when applied in compliance with pesticide regulations – have adversely impacted urban water bodies. Currently used pesticides are the primary cause of toxicity in California surface waters, including urban water bodies.[4] Under the Clean Water Act (CWA), municipalities are held responsible for the quality of urban runoff discharges conveyed to receiving waters through municipal storm drainage systems. When pesticide-related water pollution occurs, local agencies may be held responsible for exceedances of standards in receiving waters, as well as costly monitoring and mitigation efforts. To date, some California municipalities[5] have incurred substantial costs to comply with pesticides-related Total Maximum Daily Loads (TMDLs) and additional permit requirements. In some cases (e.g., diazinon, chlorpyrifos), municipal compliance costs have continued for over a decade after virtually all urban use was terminated. Throughout California, more municipalities will be subject to similar requirements, as additional TMDLs and Basin Plan Amendments are adopted (Table 1). Meanwhile, local agencies have no authority to further control urban pesticide uses[6] in order to proactively prevent pesticide pollution and avoid these costs and liabilities.

Under federal and state statutes, EPA and DPR have the authority and responsibility to regulate pesticides and protect water bodies from adverse effects (including impacts from pesticides in urban runoff). For many years, neither agency recognized the need, nor possessed the institutional capacity, to exercise their authority to protect urban water quality. As a result, past registration actions allowed a number of pesticides (such as pyrethroids and fipronil) to be used legally in ways that resulted in widespread pollution in urban water bodies. This situation is depicted in Figure 1.

To change this situation, CASQA actively engages with state and federal regulators in an effort to develop an effective pesticide regulatory system, based primarily on existing statutes, that includes timely identification and mitigation of urban water quality impacts, and proactively prevents additional problems through the registration and registration review processes (Figure 2).

[4] See reports from the California Surface Water Ambient Monitoring Program Sediment Pollution Trends Program including Anderson, B.S., Hunt, J.W., Markewicz, D., Larsen, K., 2011. Toxicity in California Waters, Surface Water Ambient Monitoring Program. California Water Resources Control Board. Sacramento, CA.

[5] For example, Sacramento-area municipalities spent more than $75,000 in the 2008-2013 permit term on pyrethroid pesticide monitoring alone; Riverside-area municipalities spent $617,000 from 2007 to 2013 on pyrethroid pesticide chemical and toxicity monitoring.

[6] Local agencies in California have authority over their own use of pesticides but are pre-empted by state law from regulating pesticide use by consumers and businesses.

Table 1. California TMDLs, Statewide Water Quality Control Plans, and Basin Plan Amendments Addressing Currently Registered Pesticides and/or Toxicity in Urban Watersheds[7, 8, 9]

Water Board Region	Water Body	Pesticide	Status
Statewide	All MS4s/All Urban Waterways: Statewide Water Quality Control Plan amendments for urban pesticides reduction ["Urban Pesticides Amendments"] (Inland Surface Waters, Enclosed Bays & Estuaries, and Ocean)	All Pesticides/All pesticide-related toxicity	In preparation
	Sediment Quality Objectives (Enclosed Bays & Estuaries)	Sediment Toxicity[10]	Approved
	Toxicity Provisions (Inland Surface Waters and Enclosed Bays & Estuaries)	Toxicity[8]	Approved May 2023[11]
San Francisco Bay (Region 2)	All Bay Area Urban Creeks	All Pesticide-Related Toxicity	Approved
Central Coast (Region 3)	Santa Maria River Watershed	Pyrethroids, Toxicity	Approved
	Lower Salinas River Watershed	Pyrethroids, Toxicity	Approved
		Malathion, Chlorpyrifos, Diazinon[10]	Adopted by Central Coast Water Board, June 2022[13]
	San Lorenzo River Watershed (Santa Cruz)	Chlorpyrifos[12]	Approved
Los Angeles (Region 4)	Marina del Rey Harbor	Copper (Marine antifouling paint)[14]	Approved
	Oxnard Drain 3 (Ventura County)	Bifenthrin, Toxicity	EPA-Adopted Technical TMDL
	Calleguas Creek, its Tributaries and Mugu Lagoon	Water & Sediment Toxicity[8] Diazinon & Chlorpyrifos[10]	Approved
	McGrath Lake (Ventura County)	Sediment Toxicity[8]	Approved

[7] Excludes pesticides that are not currently registered in California, such as organochlorine pesticides.
[8] https://www.waterboards.ca.gov/water_issues/programs/tmdl/
[9] https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_final/apx_d_adopted_tmdls_list.pdf
[10] These TMDLs/Plan provisions can trigger toxicity testing stressor source identification studies, and additional follow up, even when toxicity is linked to current pesticides.
[11] https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/tx_ass_cntrl.html
[12] Use prohibited in urban areas (diazinon) or no meaningful use due to use limitations (chlorpyrifos).
[13] https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/salinas/oppesticides/
[14] Primarily addresses pesticides that are directly discharged and should not ordinarily appear in stormwater (marine antifouling paint).

Water Board Region	Water Body	Pesticide	Status
	Colorado Lagoon (Long Beach)	Sediment Toxicity[8]	Approved
	Dominguez Channel; Greater Los Angeles & Long Beach Harbor	Sediment Toxicity[8]	Approved
	Ballona Creek Estuary	Sediment Toxicity[8]	Approved
Central Valley (Region 5)	Sacramento River and San Joaquin River Basins	Pyrethroids	Approved
	Sacramento-San Joaquin River Delta Waterways	Diazinon & Chlorpyrifos[10]	Approved
	Sacramento & Feather Rivers	Diazinon & Chlorpyrifos[10]	Approved
	Sacramento County Urban Creeks	Diazinon & Chlorpyrifos[10]	Approved
	Lower San Joaquin River	Diazinon & Chlorpyrifos[10]	Approved
Lahontan (Region 6)	Pesticide Discharge Prohibition	All Pesticides	Approved
Santa Ana (Region 8)	Newport Bay	Copper (Marine antifouling paint)[12]	Adopted by Santa Ana Water Board[15]
	San Diego Creek, and Upper and Lower Newport Bay	Toxicity (Diazinon & Chlorpyrifos)[10]	EPA-Adopted Technical TMDL
San Diego (Region 9)	Shelter Island Yacht Basin (San Diego Bay)	Copper (Marine antifouling paint)[12]	Approved
	Chollas Creek	Diazinon[10]	Approved

[15] https://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/tmdl_metals.html

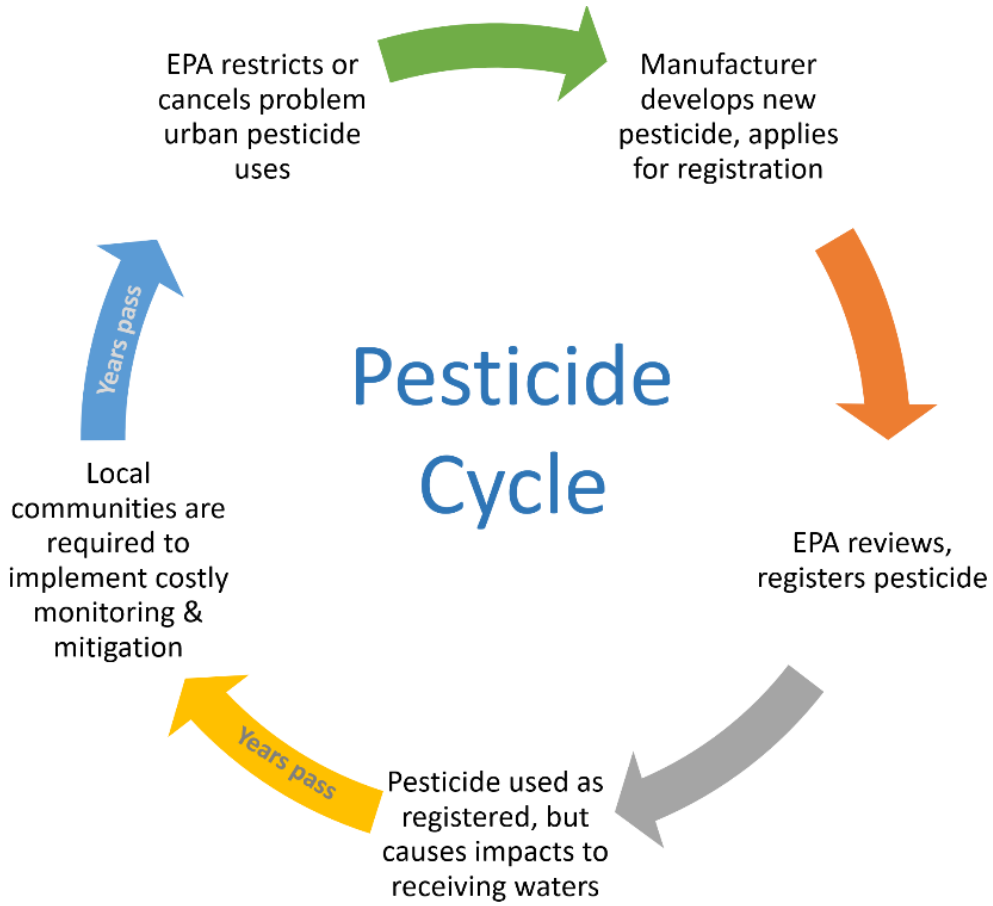


Figure 1. The Pesticide Regulatory System Can Lead to Harmful Outcomes to Surface Waters.

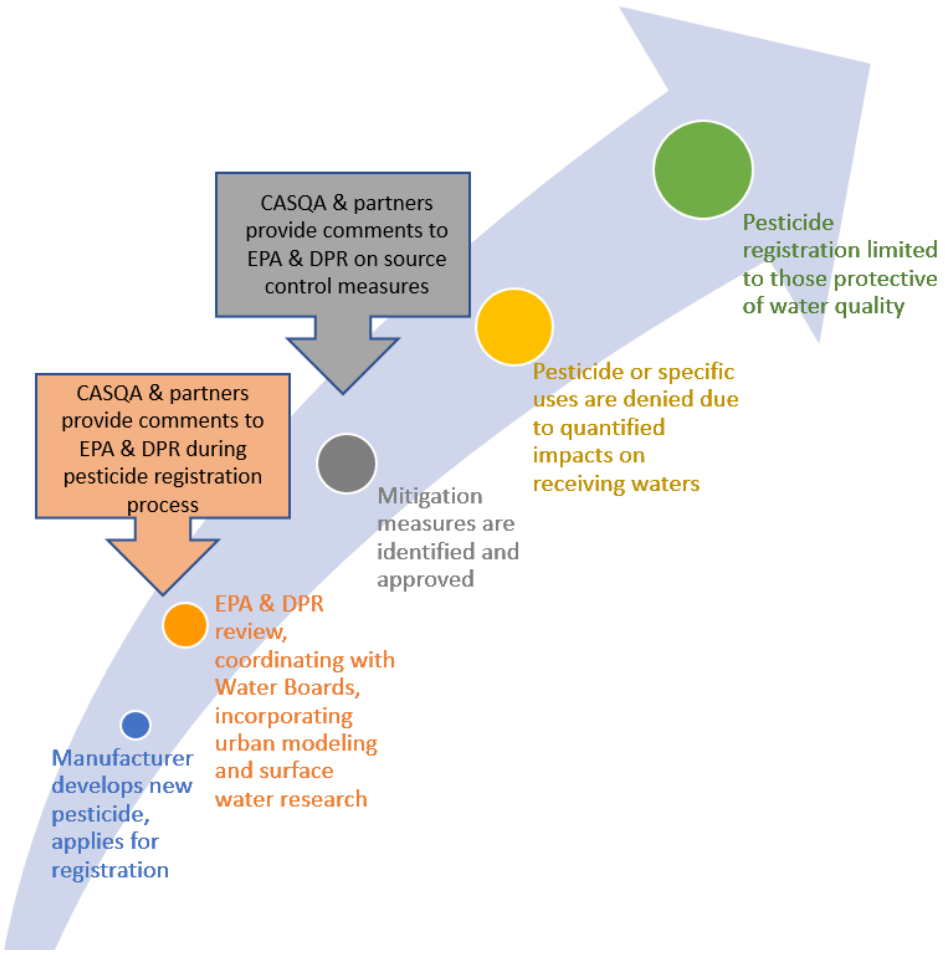


Figure 2. Via Proactive Use of the Pesticide Regulatory Structure, CASQA and Partners Seek to Restrict Pesticide Uses that have the Potential to Cause Urban Water Quality Problems.

1.2 CASQA'S GOALS AND APPLICATION TO PROGRAM EFFECTIVENESS ASSESSMENT

In October 2020, CASQA established the *Vision for Sustainable Stormwater Management*.[16] Within CASQA's Vision, Action 1.2 is to "Minimize Pollution Through True Source Control." Among the objectives described within Action 1.2, Objective 2 has the following scope:

> **Objective 2: Implement an Urban Pesticide Program**
>
> For decades now, the uses of certain pesticides in urban areas – even when applied in compliance with pesticide regulations – have adversely impacted urban water bodies. Currently used pesticides are the primary cause of toxicity in California surface waters, including urban water bodies. CASQA is actively engaged with state and federal regulators in an effort to develop an effective pesticide regulatory system, based primarily on existing statutes, that includes timely identification and mitigation of urban water quality impacts, and proactively prevents additional problems through the registration and registration review processes.
>
> Potential Collaborators: State Water Board, DTSC, EPA, DPR

The effectiveness of CASQA's efforts toward this scope can be expressed in relation to management questions established as part of Municipal Separate Storm Sewer Systems' (MS4s') program effectiveness assessments that are required in some MS4 permits. With respect to addressing urban pesticide impacts on water quality, the following two management questions are suggested for inclusion in MS4s' program effectiveness assessment:

> **Question 1: (Near term / Current problems)** – Are actions being taken by State and Federal pesticide regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?
>
> **Question 2: (Long term / Prevent future problems)** – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

This report is organized to answer these management questions and is intended to support annual permit compliance requirements for both Phase I and Phase II MS4s. It describes the year's status and progress, provides detail on stakeholder actions (by CASQA and others); and provides a roadmap / timeline showing the context of prior actions as well as anticipated end goal of these activities. This report may also be used as an element of future effectiveness assessment annual reporting.

[16] https://www.casqa.org/wp-content/uploads/2022/10/final_-_vision_for_sustainable_stormwater_management_-_10-07-2020.pdf

Section 2. Latest Results of CASQA Efforts

At any given time, there are dozens of pesticides with current or pending actions from the EPA or DPR. Addressing near term regulatory concerns is important because some pesticides may pose immediate threat to water quality that can lead to compliance liability for MS4s, and because some of the regulatory decisions made by EPA and DPR will last many years. For example, pesticide registration decisions are intended to be revisited on a fifteen-year cycle. To inform its engagement on near-term regulatory concerns, CASQA uses the Pesticide Watch List in the prioritization of near-term efforts (Section 2.1).

Meanwhile, CASQA and the Bay Area Clean Water Agencies (BACWA) continue to work on parallel efforts to effect long-term systemic changes in the regulatory process itself (see inset). By identifying inadequacies and inefficiencies in the pesticide regulatory process, and persistently working with EPA and DPR to improve the overall system of regulating pesticides, CASQA and BACWA are gradually achieving results (Section 2.2).

CASQA and BACWA Continue to Coordinate the Monitoring of EPA and DPR Pesticide Regulatory Actions

There has been a long history of collaboration between CASQA, BACWA, and the State Water Board, as all entities seek to track and respond to pesticide regulatory actions, with the goal of avoiding pesticide-related toxicity.

CASQA and BACWA regularly track pesticide regulatory activities by EPA, DPR and other agencies. In 2021, CASQA and BACWA combined resources to track stormwater and wastewater priorities into a single Action Plan, updated monthly.

Together, CASQA and BACWA accomplish tasks that are impractical for individual member agencies. Both CASQA and BACWA are committed to continued collaborations to streamline our proactive regulatory approach.

2.1 NEAR-TERM REGULATORY CONCERNS

CASQA seeks to ensure that the Water Boards and EPA's Office of Water (OW) work with DPR and EPA's OPP to manage problem pesticides that are creating near-term water quality impairments. These efforts address CASQA Vision Action 1.2 as well as Phase II MS4 Program Effectiveness Assessment and Improvement Plan (PEAIP) Management Question 1 regarding observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff.

Assessment Question 1: (Near term / Current problems) – Are actions being taken by State and Federal pesticide regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

Answer: As detailed below, at the State level, significant progress has been made by DPR in addressing near-term and current problems with pesticides in surface waters receiving urban runoff. DPR continues to implement improved registration processes and responses to observed water quality problems. DPR also continues to implement and evaluate mitigation measures for observed problems with pyrethroids and fipronil.

At the Federal level, less progress has been made in addressing near term problems. Some early actions were taken to address pyrethroid and fipronil problems at the urging of CASQA and DPR. However, EPA analyses do not show a clear understanding of key urban uses, and it is still unclear if upcoming risk management decisions for

pyrethroids, fipronil, and imidacloprid and other neonicotinoids will provide any additional protection of urban water bodies.

2.1.1 Updated Pesticide Watch List

A key tool for identifying near-term regulatory concerns is CASQA's Pesticide Watch List. CASQA reviews scientific literature, government reports, and monitoring studies as they are published. This information is used to prioritize pesticides based on the most up-to-date understanding of urban uses, pesticide characteristics, monitoring, and surface water quality toxicity (for pesticides and their degradates). CASQA uses these insights to update the list each year (Table 2), which serves as a management tool to help focus efforts on the most important pesticides from the perspective of MS4 agencies.[17]

This year, the investigation assessed most Watch List chemicals,[18] incorporating information from the following surface water monitoring programs:

- **DPR**: (1) Study 329. *Surface Water Monitoring for Pesticides in Urban Areas of Northern California (FY2020-2021*), Alvarado 2023 and (2) Study 320. *Ambient Surface Water and Mitigation Monitoring in Urban Areas in Southern California (FY2021-2022*), Budd 2023.
- **USGS** California Stream Quality Assessment: Sandstrom, M., Nowell, L., Mahler, B., Van Metre, P., *New-generation Pesticides Are Prevalent in California's Central Coast Streams*, Science of the Total Environment, 806, 2022.
- **SFEI**: Heberger, M., Sutton, R., Buzby, N., Sun, J., Lin, D., Mendez, M., Hladik, M., Orlando, J., Sanders, C., Furlong, E. *Current-Use Pesticides, Fragrance Ingredients, and Other Emerging Contaminants in San Francisco Bay Margin Sediment and Water.* SFEI Contribution No. 934. San Francisco Estuary Institute, Richmond, CA, 2020.
- **Delta Regional Monitoring Program (RMP):** Current Use Pesticides monitoring data (available from CEDEN).
- **MS4/NPDES monitoring**: the Bay Area Municipal Stormwater Collaborative and the Southern California Stormwater Monitoring Coalition.

The available data were compared to aquatic toxicity thresholds, represented by Aquatic Life Benchmarks established by EPA based on Ecological Risk Assessments (ERAs). For the DPR data sets, this comparison was performed by DPR and reported in the associated study reports. DPR's raw data were not reviewed for this investigation. Following the review of monitoring data, additional factors were checked, including section 303(d) impaired waters listings and pesticide product uses. Based on the review, the following Watch List updates were implemented:

Priority 1: The Priority 1 pesticides are well represented in the DPR Northern and Southern California urban monitoring programs, indicating that they are of potential concern for aquatic life impacts in urban receiving waters. While the 2023 CASQA Watch List identified 20 urban-use pyrethroid pesticides, most are not commonly included in water quality monitoring programs. Therefore, the Watch List was adjusted to individually specify the commonly monitored pyrethroids in the Priority 1 list, and moved the remaining pyrethroids to Priority 2, as "other pyrethroids" (with a footnote listing them individually).

[17] The first Watch List was published by the UP3 in 2005.

[18] Pesticides listed in the Watch List as groups were not included in the investigation, including the arsenic, chromium, copper, silver and zinc pesticides, as well as Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) pesticides, antimicrobials in paints/coatings, N-Bromosulfamates, Chlorinated isocyanurates, Halohydantoins, Hypochlorites, Mineral oil (aliphatic), and Phenoxy herbicides. These pesticides will be re-evaluated for the Watch List in future years.

Priority 2: The recent monitoring data support continued Priority 2 placement for listed pesticides for which data are available, with one exception. Four pesticides had been listed as Priority 2 due to dioxins impurities: 2,4-D, chlorothalonil, dacthal (DCPA), pentachlorophenol. While 2,4-D remains Priority 2, chlorothalonil and dacthal were moved from Priority 2 to Priority 4, due to the relative lack of detected monitoring data and uncertainties regarding the significance of dioxin toxicity from products for which the active ingredient is not detected. Further, the EPA re-registration documents for these pesticides have yet to acknowledge the dioxins contamination.[19] Pentachlorophenol was removed from the Watch List as it no longer has registered urban uses.

Priority 3: Roughly half of the Watch List Priority 3 pesticides are represented in the DPR, USGS, SFEI and/or Delta RMP monitoring data. DPR monitored for bensulide (Southern California) and trifluralin (Northern and Southern California) but were not detected. Diuron was frequently detected by DPR, USGS, SFEI and Delta RMP monitoring, and in substantial numbers of samples exceeded the Diuron aquatic life benchmarks. Simazine was frequently detected in DPR (Southern California), USGS, SFEI and Delta RMP monitoring.[20] The available recent monitoring data supported moving diuron to Priority 1 and simazine to Priority 2.

Table 2. Current Pesticide Watch List

Priority	Basis for Priority Assignment	Pesticides
1	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings	Diuron Fipronil Imidacloprid Malathion Pyrethroids with significant monitoring data: • Bifenthrin • Cyfluthrin • Cyhalothrin (lambda • Cypermethrin • Deltamethrin/Tralomethrin • Esfenvalerate/Fenvalerate • Permethrin
2	Monitoring data approaching benchmarks; modeling predicts benchmark exceedances; very high toxicity and broadcast application on impervious surfaces; urban 303(d) listing for pesticide, degradate, or contaminant that also has non-pesticide sources	2,4-D [21] Carbendazim (Thiophanate methyl)[22] Chlorantraniliprole Clothianidin (Neonic) Copper pesticides [+] Creosote (PAHs) Indoxacarb Pendimethalin PHMB [+]

[19] 2,4-D: Addendum to the Draft Ecological Risk Assessment for Registration Review, October 2022, EPA; Chlorothalonil Proposed Interim Registration Review Decision, September 2023, EPA; DCPA Occupational and Residential Exposure Assessment, May 2023, EPA.
[20] In addition, EPA has cancelled many simazine uses and banned it in some states (such as Hawai'i) due to Endangered Species Act findings (https://www.epa.gov/pesticides/epa-releases-final-biological-evaluations-glyphosate-atrazine-and-simazine).
[21] May have dioxins as contaminants; there are several bay and estuary 303(d) listings for dioxin compounds.
[22] Carbendazim is a registered pesticide, and also a degradate of thiophanate-methyl

Priority	Basis for Priority Assignment	Pesticides	
		Pyrethroids without monitoring data[23] Simazine Thiamethoxam (Neonic, degrades into Clothianidin) Zinc pesticides (including Ziram) +	
3	Pesticide contains a Clean Water Act Priority Pollutant; 303(d) listing for pesticide, degradate, or contaminant in watershed that is not exclusively urban	Arsenic pesticides Bensulide Chromium pesticides Dichlorvos (DDVP)	Naled Naphthenates Silver pesticides + Trifluralin
4	High or unknown toxicity (parent or degradate) and urban use pattern associated with water pollution; synergist for higher tier pesticide; on DPR priority list	Abamectin ADBAC pesticides[24] + Antimicrobials in paints/coatings Azoxystrobin Bacillus sphaericus + Bacillus thuringiensis + Bromacil N-Bromosulfamates Busan-77 + Carbaryl Chlorinated isocyanurates+ Chlorine + Chlorine dioxide + Chlorfenapyr Chlorothalonil [25] Chlorsulfuron Dacthal (DCPA) [26] DCOIT + DDAC + Dichlobenil Dithiopyr Halohydantoins + Hydramethylnon Hypochlorites + Imazapyr Isoxaben Mancozeb Methomyl Methoprene +	Methoxyfenozide Methyl anthranilate + Mineral bases, weak + Mineral oil (aliphatic) + MGK-264 Novaluron Oryzalin Oxadiazon Oxyfluorfen PCNB Peroxyacetic acid + Phenoxy herbicides[27] Piperonyl butoxide (PBO) Prodiamine Propiconazole Pyrethrins Pyriproxyfen + Sodium bromide + Sodium chlorite + Sodium percarbonate + Sodium tetraborate + Spinosad + / Spinetoram Sulfometuron-methyl Tebuconazole Terbuthylazine + Triclopyr Triclosan Trimethoxysilyl quats
5	Frequent questions from partners[28]	Glyphosate Metaldehyde	

[23] Allethrins, Cyphenothrin, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluothrin, Prallethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, and Tetramethrin. Etofenprox is included in SoCal analytes but has not been detected; there continue to be no Northern California monitoring data for etofenprox.
[24] Alkyl Dimethyl Benzyl Ammonium Chlorides (ADBAC) includes a family of 21 different quaternary ammonium pesticides.
[25] May have dioxins as contaminants; there are several bay and estuary 303(d) listings for dioxin compounds.
[26] May have dioxins as contaminants; there are several bay and estuary 303(d) listings for dioxin compounds.
[27] MCPA,2,4-DP, MCPP, and dicamba. 2,4-D is listed separately.
[28] Chlorpyrifos and Diazinon, while often asked about, have near zero or no urban uses, respectively.

Priority	Basis for Priority Assignment	Pesticides
Keep Watching	Urban pesticides that may threaten water quality depending on approved urban use patterns.	Acetamiprid (Neonic) Cyantraniliprole Dinotefuran (Neonic) Flupyradifurone (Neonic-like) Sulfoxaflor (Neonic-like)
None	Based on review of available data, no approved urban use or no tracking trigger as yet identified.	Most of the >1,000 existing pesticides
Unknown	Lack of information. No systematic screening has been completed for the complete suite of urban pesticides.	Unknown

2.1.2 Description of Near-Term Regulatory Processes

Immediate pesticide concerns may arise from regulatory processes undertaken at DPR or EPA's OPP. For example, when EPA receives an application to register a new pesticide, there may be two opportunities for public comment that are noticed in the Federal Register, as depicted in green in Figure 3. EPA's process usually takes almost a year while DPR typically evaluates new pesticides or major new uses of active ingredients within 120 days.

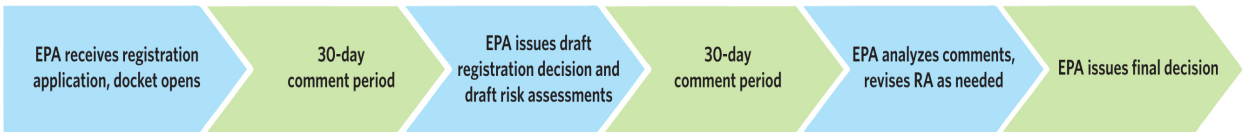


Figure 3. EPA's Registration Process for New Pesticides

Another regulatory process, "Registration Review," depicted in Figure 4, is meant to evaluate currently registered pesticides about every 15 years, to account for new data available since initial registration. In general, it takes EPA five to eight years to complete the entire process. In addition to this process, pesticides are evaluated with respect to ESA criteria. EPA regularly updates its schedule for approximately 50 pesticides that will begin the review process in a given year.[29]

Figure 4. EPA's Registration Review – Process to Review Registered Pesticides at a Minimum of Every 15 Years.

[29] See https://www.epa.gov/pesticide-reevaluation/registration-review-schedules for schedule information.

DPR also has an ongoing but informal review process (called continuous evaluation) that can address pesticide water quality impairments. If it needs to obtain data from manufacturers, DPR can initiate a formal action called "Reevaluation." These evaluations, mitigation measure development, and mitigation effectiveness evaluation have involved ongoing communication with CASQA and partners.

While EPA must consider water quality in all of its pesticide registration decisions, at DPR this step is not yet fully established as standard (most outdoor urban pesticide registration applications are routinely routed by DPR for surface water review, but a few – notably antimicrobial products used in storm drains – do not automatically receive this review). CASQA monitors registration applications, to identify those relevant to urban runoff, based on the Pesticide Watch List in Table 2 and use pattern/toxicity analysis for pesticides that have not previously been reviewed.

2.1.3 Key Near-Term Regulatory Activities and Progress

Table 3 presents a summary of recent CASQA and partner activities to address near-term regulatory concerns and the latest results; for additional insight regarding ongoing pesticide registrations, see the Appendix for Regulatory Participation Outcomes and Effectiveness Assessment Summary Tables. CASQA monitors the Federal Register and DPR's website for notices of regulatory actions related to new pesticide registrations and registration reviews. This includes monitoring EPA's dockets via the website regulations.gov. Since the Pesticide Watch List is not based on a comprehensive review of all pesticides, CASQA watches for additional pesticides that appear to have any of the following characteristics: proposed urban, outdoor uses with direct pathways for discharge to storm drains, high aquatic toxicity, or containing a priority pollutant. Participating in these regulatory processes can take many years to complete.

In addition, EPA's OPP strives to update their Aquatic Life Benchmarks table on an annual basis.[30] In August 2023, EPA's Office of Pesticide Programs, Environmental Fate and Effects Division updated its pesticides Aquatic Life Benchmarks table.[18] These updates included benchmarks for 23 newly registered pesticides (and their degradates) and 11 previously registered pesticides (and their degradates) undergoing registration review (including the Priority 2 pyrethroid, etofenprox).

At the state level, DPR was mandated by legislative action to assess non-agricultural outdoor neonicotinoids. On October 8, 2023, Governor Gavin Newsom signed Assembly Bill (AB) 363 (Chapter 520, Statutes of 2023). This act amended section 12838 of the Food and Agricultural Code and required DPR to evaluate potential impacts to pollinating insects, aquatic organisms, and human health from the use of neonicotinoid pesticides, including acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam, for non-agricultural use on non-production outdoor ornamental plants, trees, and turf. The law requires that DPR initiate a reevaluation of these neonicotinoid pesticide products by July 1, 2024. These draft assessments evaluate potential risks to pollinating insects, aquatic organisms, and human health that result from non-agricultural and residential uses of imidacloprid including those by professional handlers in landscape, residential, and recreational settings, use of home (consumer) products, potential post-application exposures, as well as risks from dietary and aggregate exposures. This reevaluation involves 42 registrants and 146 pesticide products currently registered in California. The documents were submitted for scientific peer review to DPR's partner agencies: EPA, and the California Office of Environmental Health Hazard Assessment. No comment period was provided. CASQA will review the documents once they are made public.

CASQA also continues to monitor DPR's efforts with respect to mitigating human health risk associated with fipronil. DPR's Human Health Assessment Branch published the Fipronil Risk Characterization Document in March 2023.[31] While this analysis is specific to human health, not ecotoxicity, it identified significant occupational exposures from the outdoor use of liquid fipronil concentrate on structures. When there are findings of that nature, the next step is to

[30] https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/aquatic-life-benchmarks-and-ecological-risk
[31] https://www.cdpr.ca.gov/docs/whs/active_ingredient/fipronil.htm

develop mitigation for such exposure. CASQA's concern is that the mitigation could include personal protective equipment or other actions that would not reduce ecological exposure. While communication with DPR regarding both mitigation alternatives and opportunities for public engagement are ongoing, the mitigation plan remains unknown.

Table 3. Latest Results of Efforts Communicating Near-Term Regulatory Concerns to EPA[32]

Regulatory Action or Concern	CASQA Letters	Partner Support	Outcomes and notes
Pesticides Label White Paper	✓	BACWA, NACWA, SFBRWQCB	***Pending.*** CASQA is recommending that EPA: • Harmonize pesticide labeling practices with those developed by the World Health Organization and United Nations, including standards for font and pictogram usage and sizing. • Simplify pesticide label language to better accommodate the reading level of adults in the United States. • Provide pesticide labels in multiple languages.
Etofenprox Interim Decision (ID)	✓	BACWA	***Continued Success!*** The ID continued to incorporate all the restrictions presented in the Proposed Interim Decision (December 2022). Under the proposed label language, etofenprox would only be allowed to be sprayed on impervious surfaces in limited circumstances (See Appendix). Further, EPA used CASQA's suggested pictogram, used CASQA's proposed minimum sizing for graphic, and included Spanish translation. EPA also included improved rain restriction language, water protection statements, explicit mention of outdoor/indoor use, and specifically defined the spot treatment size.
Ziram Amended Proposed Interim Decision (PID)	✓		***Success!*** The Amended PID indicated that the antimicrobial mitigation measures were continuing to move forward unchanged. This includes the deletion of ziram as a material preservative in paint as well as a reduction in the maximum concentration in building materials (from 9,825-29,500 ppm to 1680 ppm). (See Appendix)
Chlorothalonil PID	✓		***Pending.*** CASQA is supporting EPA's proposed label improvements for conventional uses of chlorothalonil while asking for additional mitigations for the antimicrobial uses of chlorothalonil, specifically uses that occur outdoors, with potential exposure to rain, such as paints, coatings, and wood treatments: • Revise the proposed label improvements labels to units that are more intelligible for urban users: ○ For application area to be stated in square feet instead of acreage;

[32] Color coding in this table is meant to reflect the Pesticide Watch List prioritization color coding in Table 2.

Regulatory Action or Concern	CASQA Letters	Partner Support	Outcomes and notes
			○ For liquid formulations to be stated fluid ounces instead of pounds for liquid formulations. • An increase in the rain delay warning on the chlorothalonil label to 48 hours instead of 24 hours. Since EPA is already implementing this change to a 48-hour delay on other pesticide labels, implementing this recommendation would also provide label consistency for pesticide users.
IPBC (3-Iodo-2-propynyl butylcarbamate) Draft Risk Assessment (RA)	✓	BACWA	***Pending.*** The Draft RA acknowledged several data gaps in the IPBC ecotoxicity dataset: • Chronic ecotoxicity endpoints for freshwater invertebrates • Ecotoxicity endpoints for aquatic vascular plants • Ecotoxicity endpoints for benthic species CASQA recommended that EPA require registrants to submit the missing ecotoxicity data as noted above for freshwater invertebrates, aquatic vascular plants, and benthic species, and reevaluate risk to aquatic life with this information included.
Oxyfluorfen Amended PID	✓		***Success!*** CASQA supported EPA's proposed mitigation, including the cancelation of residential uses, covering all residential turf and ornamental products. The expectation is that a cancelation will contribute to the reduction of oxyfluorfen present in urban runoff, thereby reducing ecological risks to aquatic invertebrates. EPA received many comments from pesticide registrants as well as the USDA which argued that there should not be a ban on residential uses of oxyfluorfen. EPA decision was consistent with CASQA's recommendation: *"The Agency has considered retaining residential application of oxyfluorfen by commercial applicators. However, it is not possible to preclude residential users from using products intended for professional applicators; therefore, residential uses will be removed from all products."*

2.2 LONG-TERM CHANGE IN THE PESTICIDES REGULATORY STRUCTURE

Since the mid-1990s, CASQA (and its predecessor organization the Stormwater Quality Task Force) has worked toward a future in which the pesticide regulatory structure at the state and federal level proactively restricts pesticide uses that have the potential to cause urban water quality problems. These efforts directly relate to Phase II MS4 PEAIP Management Question 2.

Assessment Question 2. (Long term / Prevent future problems) – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

Answer: Improvements in processes at EPA and especially at DPR have moved closer to that future. Many of these improvements are linked to the persistent work of CASQA and partners to educate regulators on how previous process deficiencies did not adequately address urban pesticide problems.

Overall, DPR has a system in place that is reasonably effective at addressing pesticide toxicity in urban water bodies, although improvement is needed to better coordinate this process with the requirements of the Clean Water Act and MS4 permits. DPR and the Water Board, along with CASQA and other stakeholders, are working diligently to strengthen this system and to institutionalize it. The goal is to embody this process in the State's UPPs and the Management Agency Agreement (MAA) between DPR and the State Water Board. In addition, DPR published an SPM Roadmap (*See Section 2.2.1*) which is expected to be implemented in coming years, incorporating urban pesticide uses.

At the Federal level, OPP has implemented some improvements in how it evaluates and responds to water quality problems associated with pesticides, but it does not yet do this reliably and does not have a system in place to ensure that this will happen consistently and adequately. Meanwhile, scientific studies are being conducted by USGS and EPA's Office of Research and Development to better understand the complexities of pollution in urban stormwater. In addition, another EPA branch, the Office of Chemical Safety and Pollution Prevention, tasked their Pesticide Programs staff with improving the integration of the EPA and the Services[33] implementation of the ESA.

[33] The U.S. Fish and Wildlife Service and the U.S. National Marine Fisheries Service (collectively referred to as the Services) are jointly responsible for administering the ESA. The National Marine Fisheries Service has jurisdiction for marine endangered species, while U.S. Fish and Wildlife Service has jurisdiction for freshwater and all other species.

2.2.1 Focus on DPR's Long Term Approach

In 2021, DPR formed a Sustainable Pest Management Work Group, the goal of which was "to develop a recommended roadmap with ambitious, measurable goals to practically achieve the state's vision to accelerate a system-wide transition to safer, more sustainable pest management."[34] A nine-member urban subgroup was formed to ensure that urban pesticides uses were effectively incorporated. The work group defined SPM as a "holistic, whole-system approach applicable in agricultural and other managed ecosystems and urban and rural communities that builds on the concept of integrated pest management (IPM) to include the wider context of environmental protection, economic vitality, and human health and social equity."

CASQA Asks DPR to Prioritize Urban Pesticides Based on Use

Prioritizing pesticides by groups of related products is especially important in the urban context where consumers consider products based on use ("What will take care of my ant problem?") versus active ingredient. The January 2023, the SPM Roadmap described science-based prioritizations based on use and/or pest versus individual pesticides. However, in September 2023, DPR released a draft 2024-2028 Strategic Plan in which the wording implied a siloed analysis focused on active ingredient, rather than on product uses or pest/location use. CASQA provided feedback to DPR asking that the language be updated to parallel the SPM Roadmap. CASQA is awaiting release of the final 2024-2028 Strategic Plan.

In January 2023, DPR released the final SPM roadmap. To achieve urban SPM, DPR has identified 4 leverage points in the system. CASQA will seek opportunities to support DPR's SPM within each of these points:[35]

1. Enhance data and information collection for urban pesticide use
2. Advance research and outreach on urban pest management issues
3. Make SPM the preferred choice for both licensed and unlicensed users
4. Refocus urban design, building codes, and regulations to enhance pest prevention

To reliably fund DPR's new focus, the State conducted a feasibility analysis to consider incremental increases of the mill assessment from the current $0.021 up to $0.0339 per dollar of pesticide sales. DPR's mill assessment is paid by a pesticide retailer or manufacturer when a pesticide is first sold into California and provides approximately 80 percent of the department's current funding. The mill assessment has not been increased since it was originally codified into state law in 2004. In the 2024-25 state budget, the Governor proposed an increase of the mill assessment over a three-year period, from the $0.021 to (1) $0.026 in 2024-25, (2) $0.027 in 2025-26 and (3) $0.0286 in 2026-27. The budget authorized DPR to further adjust the assessment to align revenues with expenses, not to exceed a new cap of $0.0339.[36]

2.2.2 Focus on California's Urban Pesticides Provisions (UPP)

In 2014 the State Water Board established an urban pesticides reduction project (now titled the Statewide Urban Pesticides Provisions or UPP) as a top priority project under the comprehensive stormwater strategy, known as "Strategy to Optimize Resource Management of Storm Water" or STORMS.[37] CASQA has been actively supporting the development of the Urban Pesticide Provisions since their inception.

[34] https://www.cdpr.ca.gov/docs/sustainable_pest_management_roadmap/
[35] https://www.cdpr.ca.gov/docs/sustainable_pest_management_roadmap/spm_executive_summary.pdf
[36] https://lao.ca.gov/reports/2024/4873/Department-of-Pesticide-030524.pdf
[37] http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/

	Our Water, Our World (OWOW) Supports Current and Anticipated Permit Requirements OWOW is a collaboration of municipalities and integrated pest management (IPM) experts to develop and distribute IPM information directly to consumers at point-of-purchase at garden centers and hardware stores, thereby reducing the purchases of harmful products. OWOW started as a pilot project in 1998, in just a handful of stores, initiated by the Central Contra Costa County Sanitation District, the City of Palo Alto Regional Water Quality Control Plant, and the Marin Countywide Stormwater Pollution Prevention Program. The program quickly grew and was administered by the former Bay Area Stormwater Management Agencies Association from 1999 – 2021. In January 2022, the program was transferred to CASQA, with the goal of providing statewide access to this important and successful outreach program. While several stormwater programs currently rely upon OWOW to meet existing permit requirements, statewide implementation is expected to grow, if incorporated into the UPPs. OWOW materials could also be crucial in supporting DPR's SPM urban educational outreach campaigns.

2.2.3 CASQA Participation in Federal and State Advisory Groups

As presented in Table 4, CASQA remains actively involved with various agencies and advisory groups that affect urban pesticide use and pest management.

Table 4. Participation in Federal and State Efforts to Support CASQA's Goals

Agency or Conference	Latest Outcomes
EPA's Pesticide Program Dialogue Committee (PPDC)	The 40-person committee, chaired by the Director of OPP, includes representatives from growers, industry, environmental, public health, farmworkers, as well as state/local/tribal government. The PPDC holds biannual public meetings. At the June 2024 meeting, key CASQA topics included: • A discussion of label reform, including digitization and standardization; • An update on the Endangered Species Act Workplan by the Deputy Assistant Administrator for Pesticide Programs for Office of Chemical Safety and Pollution Prevention. • A discussion of bilingual label updates, which will occur 2025-2030, with translations for the most hazardous and toxic pesticide products required first.
DPR's Pest Management Advisory Committee (PMAC)	Victoria Kalkirtz (co-chair of the TSC Subcommittee) participates on the PMAC. Participation on the PMAC has resulted in expanded focus by DPR on urban pest management and water quality issues and generated funding for urban IPM research and implementation programs. In February 2024, the following urban outdoor pesticide research proposals were assessed by PMAC: • Dr. Barbara Baer-Imhoof, UC Riverside "Empowering Disadvantaged and Underserved Communities: Sustainable Beekeeping and Gardening through Integrated Pest Management", $458,612 • Dr. Paul English, Public Health Institute "Redevelopment of the Pesticide Mapping Tool to Increase Pesticide Use Reporting Data Access and Utility for Integrated Pesticide Management Outreach, Public Health Awareness, and Environmental Protection" $365,537 • Mr. Yale Jeffery, City of Vista "Sustainable IPM Program in The City of Vista" $167,203

Section 3. CASQA's Approach Looking Ahead

At any given time, EPA and DPR may be in the process of evaluating and registering various pesticides for urban use. CASQA will continue to track and engage in EPA and DPR activities, with a focus on top priority active ingredients (as identified in the annual Pesticide Watch List) and sharing relevant urban runoff information and CASQA's water-quality specific expertise with pesticides regulators. Key documents to be reviewed will include risk assessments and risk management proposals with an eye toward ensuring that pesticide regulators have and consider accurate information on relevant factors in urban areas such as pesticide use patterns, urban pollutant transport mechanisms, and receiving water conditions. CASQA strives to ensure that pesticide regulators have access to relevant information such as monitoring data, water quality regulatory requirements, and urban runoff agency compliance liabilities and cost information. As necessary, CASQA will continue to recommend changes in an individual pesticide's allowable uses or use instructions, request consideration of impacts on water bodies receiving urban runoff, and/or ask that regulators fill critical data gaps by obtaining more data from manufacturers. As resources allow and circumstances warrant, CASQA will continue to collaborate with wastewater organizations (such as BACWA), other water quality stakeholders, and the Water Boards in commenting on EPA and DPR actions.

In the coming year, CASQA will continue to address near-term pesticide concerns and seek long-term regulatory change. Although changes at the federal level are important for fully achieving CASQA's goal of protecting water quality through the effective use of pesticide regulations, CASQA will also continue to focus efforts on solidifying progress at the state level. In the coming year, CASQA will continue engagement on specific regulatory actions for priority pesticides at the federal level, while continuing to support the State's development of the UPPs. The pesticide program's focus areas are the following:

(1) Continue collaboration with DPR to address near-term regulatory concerns, while seeking OPP and OW actions to reduce inconsistencies:

- Ensure DPR action on fipronil water pollution is completed, including effective professional user education about restrictions on its outdoor urban use.
- Ensure DPR enforces mitigation measures for pyrethroids and fipronil, and adopts additional measures as necessary.
- Ensure the state continues to conduct surveillance monitoring to evaluate pyrethroids and fipronil mitigation effectiveness and to evaluate occurrence of new threats like imidacloprid and other neonicotinoid insecticides.
- Continue to encourage EPA to complete scientific groundwork and to identify and implement pyrethroids, fipronil, malathion, and imidacloprid mitigation measures, recognizing that it is likely that necessary mitigation cannot readily be implemented entirely by DPR.

(2) Seek long-term changes in the pesticide regulatory structure:

- Continued engagement with EPA regarding incorporating their ESA obligation in registrations and re-registrations, including recommending the use of pictograms in labels, and seeking opportunities in California for EPA's future regional and vulnerable species pilot programs.
- Continued engagement with DPR regarding the SPM Roadmap specific to urban implementation programs and opportunities.
- Advocate for the importance and reprioritization of the statewide UPP to implement the restructuring of California's urban surface water pesticides monitoring to increase its effectiveness and improve coordination.
- Encourage and assist the Water Board to continue to implement its MAA with DPR to prevent and mitigate pesticide impairments through more effective pesticide regulation.

- Seek procedure changes such that DPR continues to refine its registration procedures to address remaining gaps in water quality protection.
- Seek increased transparency of DPR regulatory activities, including timely access to scientific evaluation reports that are the basis of registration decisions.

CASQA will continue to seek opportunities to coordinate on high priority regulatory actions, with the Water Boards and other water quality stakeholders, to take advantage of efficiencies, increase effectiveness, and ensure that the water quality community has a consistent message. Table 5 presents CASQA's activities anticipated for the coming year; CASQA will conduct these activities as priorities indicate and resources allow. Table 6 summarizes upcoming regulatory action items that are likely to proceed and may require CASQA attention in the coming year.

Table 5. CASQA Pesticide Activities

Activity		Purpose
Regulatory Tracking	Track Federal Register notices	Identify regulatory actions for high priority active ingredients that may require review.
	Track DPR notices of registration applications and decisions	Identify pesticides meriting surface water review that are not within DPR's automatic routing procedures, identify gaps or potential urban runoff-related problems with current DPR evaluation or registration plans other regulations, procedures, and policies.
	Track activities at the Water Boards	Identify opportunities for improvements in TMDLs, Basin Plan Amendments, and permits.
	Review regulatory actions, guidance documents, and work plans	Identify potential urban runoff-related problems with current EPA evaluation or registration plans, other regulations, procedures, and policies.
Regulatory Communications	Briefing phone calls, informal in-person meetings, teleconference meetings, and emails with EPA and DPR	Information sharing about immediate issues or ongoing efforts; educate EPA and DPR about issues confronting water quality community. Provide early communication on upcoming proceedings that help reduce the need for time-intensive letters.
	Convene formal meetings, write letters, and track responses to letters	Ensure current pesticide evaluation or registration process accurately addresses urban runoff and urban pesticide use and management contexts. Take advantage of opportunities to formally provide information and suggest more robust approaches that could be used in future regulatory processes. Request and maintain communication on mitigation actions addressing highest priority pesticides.
Advisory	Serve on EPA, DPR, and Water Board policy and scientific advisory committees	Provide information and identify data needs and collaboration opportunities toward development of constructive approaches for managing pesticides.
Educational	Presentations to and informal discussions with EPA, DPR, Water Board, CASQA members,	Educate EPA, DPR, Water Board, and CASQA members about the urban runoff-related shortcomings of existing pesticide regulatory process, educational efforts to support process improvements, and report on achievements. Encourage research and monitoring programs to address urban runoff data needs and priorities. Stimulate academic, government, or private development of analytical and toxicity identification methods to address anticipated urban runoff monitoring needs. Inform development of new pesticides by

Activity		Purpose
		manufacturers and selection of pesticides by professional users.
	Develop and deliver public testimony	Educate Water Board members about the problems with existing pesticide regulatory process, encourage change, and report on achievements.
Monitoring and Science	Update Pesticide Watch List based on new scientific and regulatory information	The Pesticide Watch List (Table 2) serves as a management tool to prioritize and track pesticides used outdoors in urban areas.
	Data analysis of DPR/SWAMP/USGS/MS4 monitoring, pesticide use data, and information from scientific literature	Summarize data to educate CASQA members and water quality community, Water Boards, DPR, and EPA.
Reporting	Prepare Monthly Action Plans	Coordinate CASQA's regulatory actions with partners
	Prepare Annual Report to describe the year's status and progress, provide detail on stakeholder actions, and the context of prior actions as well as anticipated end goal of these activities.	Provide CASQA's members with focused information on its efforts to prevent pesticide pollution in urban waterways. The document serves annual compliance submittal for both Phase I and Phase II MS4s. It may also be used as an element of PEAIPs and future effectiveness assessment annual reporting.

Table 6. Anticipated Upcoming Opportunities for Pesticides Regulatory Engagement

EPA Pesticide Registration Review (15-year cycle) (organized chronologically by anticipated next regulatory step) [38]			
Priority	**Topic**	**Item**	**Urban Runoff Concern**
Unknown	New Antimicrobials	various	Varied; many of these pesticides are showing up for the first time at the PID level; review is needed to screen these for water quality issues
1	Allethrins	Preliminary Work Plan	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings.
1	Malathion	PID	303(d), toxicity, monitoring data
2	2,4-D	PID	Pesticide with dioxins impurity
2	Dacthal (DCPA)	RA	303(d) listings (dacthal, dioxins); Contains CWA Priority Pollutants (dioxins)
4	Mancozeb	PID	Central Valley Water Board high relative risk

[38] RA = Risk Assessment; PID = Proposed Interim Decision

Priority	Topic	Item	Urban Runoff Concern
1	Allethrins	Preliminary Work Plan	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings.
1	Fipronil	PID	Monitoring data; Anticipated 303(d) listings
1	Imidacloprid	Re-release of PID (ESA process)	High toxicity, monitoring data, 303(d) listings
2	Clothianidin (neonic)	Re-release of PID (ESA process)	High toxicity, monitoring data, 303(d) listings
2	Thiamethoxam (neonic)	Re-release of PID (ESA process)	High toxicity, monitoring data, 303(d) listings
3	Dichlorvos (DDVP)	PID	Organophosphate insecticide
3	Naled	PID	Degrades to DDVP
4	Dicamba	PID	Toxicity, stormwater monitoring data
4	Isothiazolinones (includes DCOIT, BBIT, BIT, MIT, OIT)	RA	Antimicrobials. Uses include paints.
4	Peroxy Compounds (peroxyacetic acid)	PID (re-release)	Fountain chemical
4	Bacillus thuringiensis (Bt)	Draft RA	Used in pools, spas, and fountains.
4	Piperonyl butoxide (PBO)	PID	Pyrethroid synergist
4	Pyrethrins	PID	Related to pyrethroids, but less stable and less toxic
4	Tebuconazole	PID	Fungicide
4	MGK-264	PID	Re-release of PID after litigation. 303(d) listing
Keep Watching	Acetamiprid	PID	Neonicotinoid, toxicity
Keep Watching	Dinotefuran (neonic)	PID	Toxicity, mobility

Other EPA-related Items

- Quarterly updates to the ESA Workplan website:
  - https://www.epa.gov/endangered-species/epas-workplan-and-progress-toward-better-protections-endangered-species

- U.S. EPA "Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process" affects how the U.S. EPA uses cost and benefit analysis in setting pollution standards. Rule proposal was expected in 5/19.
- Proposed rule to eliminate some OPP Federal Register Notices (was anticipated September 2018 according to U.S. EPA semi-annual regulatory agenda)
- U.S. EPA Update to Guidelines for Deriving Aquatic Life Water Quality Criteria. Draft scoping document external peer review is next step. Seeking OPP engagement.

DPR New Pesticide Product Registration Decisions

New Product Applications (Active ingredient – product name)	Why tracking	Current Status
1R-Phenothrin - by MGK	Outdoor uses	Noted on EPA docket. Not yet in DPR Notice.
Tetraniliprole	Outdoor uses	Noted on EPA docket. Not yet in DPR Notice.
Momfluorothrin (and Phenothrin) - S-1563	New urban pyrethroid	2014: DPR confirmed that Surface Water would review.
Momfluorothrin (and Cypermethrin) - MGK Products	New urban pyrethroid	2014: DPR confirmed that Surface Water would review.
Alpha-cypermethrin - Fendona CS	New urban pyrethroid	2018: DPR confirmed that Surface Water would review.
Transfluthrin - Bayer Product	New urban pyrethroid. Indoor and outdoor uses	Noted on EPA docket. Not yet in DPR Notice.
Fipronil and Bifenthrin - Taurus Trio G	Landscaping product	2017: DPR confirmed that Surface Water would review.
Fipronil - Termidor HP II	Termite product	2018: DPR confirmed that Surface Water would review.
Fipronil - MGK Formula 3115	Outdoor yellow jacket product	2019: DPR confirmed that Surface Water would review. 7/9/21: Notice of Final Decision posted. Product limited to bait stations.
Indoxacarb - Doxem Precise	New aerated indoxacarb powder	2019: DPR confirmed that Surface Water would review.
Zinc, Thiabendazole and 2-pyridinethiol-1-oxide – Ultra-Fresh DW-30	Potential use in vehicle tires	DPR is asking the registrant of that product that should not have been approved for use in rubber to change the product label to again say "not for use in California" with regard to the use in rubber.
Fipronil – Imidacloprid: Fuse Foam by Control Solutions, Inc.	Indoor/outdoor fipronil-imidacloprid foam	BACWA/CASQA have been tracking this product since 2017. 7/2/2021: DPR issues notice to deny, noting several problems with the label. 5/27/2022: DPR confirmed that the label that they are reviewing is the same as the label available on the EPA website.

Other DPR-related Items

- Registration Application Surface Water Reviews – continue to follow up on communications requesting review of all storm drain products and outdoor antimicrobials
- ***DPR's Sustainable Pest Management Roadmap***
- ***CA DPR Fipronil Human Health Risk Assessment and Mitigation.*** DPR finalized the fipronil Risk Characterization Documents (RCD) in May 2023. The final exposure assessment document (EAD), response to comments from US EPA, Office of Environmental Health Hazard Assessment, and other documents are posted at the link above. DPR is evaluating exposure scenarios of concern identified in the RCD, as well as comments specific to the risk mitigation process, and will issue a risk management directive (RMD) if DPR determines that mitigation is required.
- ***CA DPR Non-Agricultural Outdoor Neonicotinoids.*** AB 363 requires that CA DPR re-evaluate pesticide products containing the neonicotinoid active ingredients acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam, intended for non-agricultural use on non-production, outdoor ornamental plants, trees, or turf. The re-evaluation must evaluate impacts to pollinating insects, aquatic organisms, and human health, taking into account relevant routes of exposure. The text of AB 363 has a detailed timeline for each part of the assessment and requires that DPR adopt all necessary control measures on or before July 1, 2029.

Water Boards

- ***State Water Board Urban Pesticides Provisions.***
- ***Consolidation and Reissuance of Statewide (NPDES) General Permits for Residual Aquatic Pesticide Discharges.*** The State Water Board intends to consolidate four existing pesticide general permits into a single statewide pesticide general permit to promote consistency in permit implementation. The existing 4 permits regulate the discharge of pesticides used for (1) aquatic weed and algae control, (2) vector control, (3) invasive animal species control, and (4) spray applications conducted by the California Department of Food and Agriculture. The **tentative timeline for reissuance is June 2025**. Public comment periods, release of draft permits, and adoption dates will be announced through the State Water Board's public noticing process.
- Pesticides 303(d) listings
- Pesticide TMDL implementation requirements for permittees

Other Statewide Items

- ***Draft Urban Stormwater Management Strategy* by the CA Dept. of Water Resources**. "The Update 2023 RMS updates reflect that climate change has driven water managers to develop and extend resource management for sustainability and resilience, and that social change has brought new focus to equity issues and community resilience." Pesticides are discussed in the draft Urban Stormwater Runoff Capture and Management RMS.
- ***California Department of Food & Agriculture Program EIR on invasive species*** control covering potential broadcast pesticide applications urban areas of multiple priority pesticides. **October 2021 update**: California's Court of Appeal has ruled that a statewide pesticide-spraying program violates the law by failing to study and minimize the threats from pesticides and to properly inform the public about the risks of spraying. The ruling noted that the department did not analyze or disclose the health and environmental harms of the more than 75 pesticides. The court decision also noted a lack of public notice. Furthermore, they did not evaluate local impacts or allow opportunity for affected communities to opt out. **June 2022 Update:** New ruling by Sacramento County Superior Court orders the state to halt spraying.

Appendix: Regulatory Participation Outcomes and Effectiveness Assessment Summary Tables

Ziram Regulatory Participation Outcome and Effectiveness Assessment Summary Table

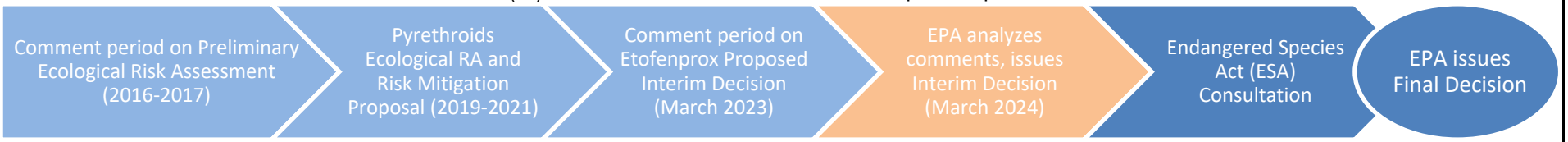
Pesticide: **Ziram** – EPA-HQ-OPP-2015-0568
Why we care: Fungicide/antimicrobial used in building products, including paint, caulks, and sealants. Highly toxic to aquatic life.
Actions taken: CASQA sent a comment letter to EPA on the Draft Ecological Risk Assessment (Draft RA) in 2021 and the Proposed Interim Registration Review Decision (PID) in 2022.
Status: EPA released the Amended PID on April 30, 2024 with a due date for comments set for July 1, 2024. The Amended PID does not include antimicrobial uses.

Next steps: EPA will issue an Interim Decision.
Recommendation: No action needed. The portion of the assessment that is of interest to CASQA (antimicrobials) is in the process of being finalized and there is no opportunity for comment at this point.

CASQA 5/19/2022 Comments to EPA	EPA Response (Ziram Amended Proposed Interim Registration Review Decision, Case Number 8001, March 2024)	Did EPA incorporate CASQA's comment?
CASQA Supports the Proposed Mitigation, Including Cancelation of All Ziram Paint Products To mitigate risks, EPA has proposed several significant mitigation measures, including the deletion of ziram as a material preservative in paint as well as a reduction in the maximum concentration in building materials (from 9,825-29,500 ppm to 1680 ppm). CASQA supports these proposed mitigations as they will reduce the potential threat to aquatic life in the surface waters that receive runoff from those watersheds.	"In the 2021 PID, mitigation measures for antimicrobial uses were proposed for public comment. Because no changes are being made to what was proposed in 2021 PID for antimicrobial uses, this amended PID focuses solely on conventional uses of ziram. EPA intends to issue a separate registration review decision for antimicrobial uses, which will post to the same public docket opened for this registration review case." (Amended PID, p. 4)	Yes. The amended PID was only amended with respect to the conventional uses (rather than antimicrobial), indicating that EPA is moving forward with cancelation of ziram uses in outdoor paints and reduction of ziram uses in other outdoor building materials.

Etofenprox Regulatory Participation Outcome and Effectiveness Assessment Summary Table

Pesticide: **Etofenprox** (EPA–HQ–OPP–2007–0804)
Use: Insecticide
Why we care: Priority pesticide due to toxicity, use, and monitoring data. 303(d) listings as well as adopted and pending TMDLs.
Actions taken: CASQA submitted a comment letter on the Preliminary Ecological Risk Assessment (July 2017), the Ecological Risk Mitigation (February 2020), and the Proposed Risk Mitigation (January 2021).
Status: EPA released the Interim Decision (ID) in March 2024. There is no comment period open at this time.



Next steps: ESA Consultation with public comment period.

CASQA 3/23/2023 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
CASQA SUPPORTS EPA'S PROPOSED MITIGATION MEASURES FOR ETOFENPROX Given the high degree of threat posed by the use of pyrethroids such as etofenprox in the urban environment, as thoroughly documented in the Draft ERA and PID, CASQA supports the inclusion of the following proposed mitigation measures as enumerated in the PID: 1. Reduction of area of application of etofenprox on and around structures. Under current permitted use, etofenprox can be used up to three feet up the side of an outdoor structure and up to three feet horizontally out from an outdoor structure, on impervious surfaces. Under the proposed mitigations in the PID, horizontal applications are limited to up to 1-inch from the structure, and vertical applications are limited to up to 2-feet above ground level: "Applications around potential exterior pest entry points into man-made structures such as doorways and windows, when limited to a band not to exceed one inch" and "Applications to vertical surfaces (such as the side of a man-made structure) directly above impervious surfaces (e.g., driveways, sidewalks, etc.), up to 2 feet above ground level" (PID, p.60) 2. Addition of clarification for which pesticides are used outdoors versus indoors. CASQA appreciates the proposed addition of language to the	EPA acknowledged CASQAs comments. "Writing on behalf of the CSQA (sic), Karen Cowan, Executive Director, noted that as documented in the PID, non-agricultural uses of etofenprox may result in surface water concentrations which are toxic to non-target organisms and represents a regulatory burden for CSQA municipal agency members. According to Ms. Cowan, the CSQA supports the mitigation measures proposed in the PID, which include: • reduction of area of application of etofenprox on and around structures; • additional clarification on which pesticides are used outdoors versus indoors; • addition of disposal statement; • addition of stewardship statement that includes a Spanish translation; and, • addition of buffer from water statement, water protection statements, and crack and crevice runoff statements." (Etofenprox: Response to Public	Yes. EPA continued to incorporate the proposed label mitigations that CASQA supported in its 2021 comment letter.

CASQA 3/23/2023 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
labels to clarify which products are "For outdoor use only" versus "For indoor use only" versus "For both indoor and outdoor use." (PID, p.58, 60) 3. Addition of disposal statement. CASQA agrees with the proposed disposal statement for etofenprox products: "Do not pour or dispose down the drain or sewer. Call your local solid waste agency for local disposal options." (PID, p.58) 4. Addition of stewardship statement that includes a Spanish translation. CASQA supports the addition of the following stewardship statement, including the pictogram and Spanish translation. (PID, p.59) Note to registrants: If adding stewardship statements on end-use consumer products, the followings language is required and placed in a prominent location: For products without drain treatment uses: "Do not allow to enter indoor or outdoor drains" "No permita la entrada a desagües internos o externos." For products with drain treatment uses: "Do not allow to enter indoor or outdoor drains unless labeled for drain treatments." "No permita la entrada a desagües internos o externos a menos que el etiquetado indique que está permitido el uso del producto para tratamiento de desagües." For products with and without drain treatment uses: "Follow proper disposal procedures on this label" "Siga las indicaciones del etiquetado para el desecho apropiado del producto." Graphic on the product package showing an image of a diagonal strikethrough over a drain. The pictogram must be legible (i.e. no smaller than 1.5 square centimeters or 0.25 square inches unless this size is greater than 10% of the size of the label). Use the following pictogram on product labels: 5. Addition of buffer from water statement, water protection statements, and crack and crevice runoff statements. CASQA supports the following proposed label mitigations. (PID, p.61) "Buffer from Water Statement: For soil or foliar applications, do not apply by ground within 25 feet of lakes, reservoirs, rivers, permanent	Comments on the Preliminary Interim Decision (May 10, 2023), p. 3)	

CASQA 3/23/2023 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
streams, marshes or natural ponds, estuaries and commercial fish farm ponds." and "Water Protection Statements: Do not apply the product into fish pools, ponds, streams, or lakes. Do not apply directly to sewers or storm drains, or to any area like a drain or gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur." "Do not allow the product to enter any drain during or after application." "Do not apply directly to impervious horizontal surfaces such as sidewalks, driveways, and patios except as a spot or crack-and-crevice treatment." "Do not apply or irrigate to the point of runoff." and "Crack and Crevice treatments • "Treat surfaces to ensure thorough coverage but avoid runoff." • "To treat insects harbored in voids and cracks-and-crevices, applications must be made in such a manner to limit dripping and avoid runoff onto untreated structural surfaces and plants." CASQA Recommendation: CASQA supports EPA's proposed label language mitigations for etofenprox		
CASQA SUGGESTS LABEL MITIGATION MEASURES (STORM EVENT RESTRICTION) FOR CONSISTENCY The PID includes the following rain-related statement mitigation: "Rain-Related Statements: Do not make applications during rain. Avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours)." "Rainfall within 24 hours after application may cause unintended runoff of pesticide application." (PID, p.61) Since the release of the etofenprox PID, EPA released the "Preliminary Analysis of the Effectiveness of a 48 Hour Rain Restriction to Reduce Pesticide Runoff ." EPA's analysis showed that a 48-hour prohibition of pesticide application when rain is forecasted can result in "a 10-40% decrease in 1-in-10 year daily average runoff-only estimated environmental concentrations (EECs) in the EPA standard farm pond. The rain restriction exhibits the largest impact for pesticides with a low organic carbon-normalized sorption coefficient (Koc) or a soil or foliar	"With respect to the recommendation from the CSQA (sic) to include label language to avoid applications when rainfall is expected and to extend the 24-hr restriction to 48 hrs, the agency has currently proposed language indicating that applications should not be made during rain and to avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours). The proposed label also indicates that "rainfall within 24 hours after application may cause unintended runoff of pesticide application." (Etofenprox: Response to Public Comments on the Preliminary Interim Decision, May 10, 2023, p.7) "The Agency has currently proposed language indicating that applications should not be made during rain and to avoid making applications when rainfall is expected before the product has sufficient time to dry	Partially. EPA is including label language in its proposed mitigation to indicate that applications should not be made during rain, and to avoid applications where product would have less than 4 hours to dry prior to rain. EPA also noted that they are in the process of evaluating whether a 48-hour rain delay would be appropriate in this case. (The time period on this evaluation is unknown.)

CASQA 3/23/2023 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
degradation half-life of 1 day, with a 30-40% decrease for the most mobile or least persistent pesticides modeled." (Rain-restriction Memo, p. 1-2) Changing the rain restriction timing can make a significant difference in runoff. CASQA requests that EPA change this restriction in the etofenprox label mitigations to make them consistent with other pesticide label requirements. CASQA Recommendation: CASQA suggests modifying the above label mitigations to require a 48-hour rain restriction instead of a 24-hour rain restriction.	(minimum 4 hours). The proposed label language also indicates that "rainfall within 24 hours after application may cause unintended runoff of pesticide application." The Agency considers a 48-hour rain restriction to be directionally correct as such a restriction can reduce pesticide runoff by providing more time for degradation of a pesticide before runoff events occur. However, the degree of reduction will vary based on the specific environmental conditions and how the application, rainfall, runoff potential, drift potential, and waterbody characteristics combine. The Agency is in the process of evaluating these factors to determine those chemicals/scenarios where such a restriction would be most effective." (ID, p.13)	

Oxyfluorfen Regulatory Participation Outcome and Effectiveness Assessment Summary Table

Pesticide: **Oxyfluorfen** (EPA–HQ–OPP–2014–0778)
Use: Herbicide
Why we care: Priority pesticide due to toxicity, use, and monitoring data. 303(d) listings (agricultural). Listed on DPR's monitoring priority list.
Actions taken: CASQA submitted a comment letter on Proposed Interim Decision (PID) in 2021 as well as a comment letter on Amended PID in 2024.
Status: EPA analyzing comments prior to issuing Interim Decision

Next steps: EPA to issue Interim Decision.

CASQA 10/6/2021 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
CASQA Supports the Proposed Mitigation, Including Cancelation of All Oxyfluorfen Residential Products: To mitigate risks to both aquatic organisms and human health, EPA has proposed a number of substantial mitigation measures, including addition of runoff advisory language to all labels to mitigate chronic risks to aquatic wildlife, and a proposed cancelation of all residential oxyfluorfen products, principally to protect human health in residential settings. CASQA supports the proposed mitigation, including the cancelation of residential uses, covering all residential turf and ornamental products, as we expect such a cancelation will contribute to the reduction of oxyfluorfen present in urban runoff, thereby reducing ecological risks to aquatic invertebrates.	"CASQA supports the cancellation of application at residential use sites as it will contribute to the reduction of pesticides in runoff in urban watersheds thereby reducing risks to aquatic invertebrates." (Amended PID, p.12) "The Agency has considered retaining residential application of oxyfluorfen by commercial applicators. However, it is not possible to preclude residential users from using products intended for professional applicators; therefore, residential uses will be removed from all products." (Amended PID, p. 13)	Yes. CASQA submitted a comment letter in May 2024 —very similar to its 2021 letter—to further reinforce its support of the residential ban.