Strategy to Optimize Resource Management of Storm Water

Attachment A
Establish Statewide Framework for Urban Pesticides Reduction

Proposed Urban Pesticides Amendments Work Team Report

August 4, 2017

DIVISION OF WATER QUALITY

STATE WATER RESOURCES CONTROL BOARD

Urban Pesticides Amendments Work Team Report

In March 2016, the State Water Resources Control Board (State Water Board) created a group of internal and external technical experts (work team) to prepare background materials to inform the development of Proposed Statewide Urban Pesticides Amendments (Amendments). The overall purpose and scope of the project is summarized in the Amendments Scoping document.

The work team was divided into three teams to provide information and develop materials for the three components of the Amendments: (1) municipal separate sewer system (MS4) permit requirements, (2) regulatory coordination, and (3) a monitoring program.

The work team concluded in April 2017. This report reflects the output of work teams, but does not constitute policy direction of the Water Boards or any other organization.

(1) Permit Requirements Work Team Summary

The permit requirements work team (permit team) was comprised of staff from the State Water Board, the San Francisco Bay Regional Water Quality Control Board, and representatives from the California Stormwater Quality Association (CASQA). The objective of the permit team was to develop recommended permit requirements and model language for permit writers to reference following adoption of the Amendments as they incorporate the new permit requirements into MS4 National Pollutant Discharge Elimination System (NPDES) permits.

The permit team provided expertise and perspective for minimum pesticides source control measures MS4 permittees should use to manage their controllable contributions to current and potential future exceedances of pesticide water quality objectives or pesticide-caused exceedances of narrative toxicity water quality objectives. The permit team recommends the following minimum measures:

- Limit and manage municipal use of pesticides by implementing Integrated Pest Management (IPM) programs, which should include an IPM policy with procedures and training.
- Influence the discharge of pesticides into MS4 drainage areas through education outreach programs targeted at residential and business pesticide users, those who hire pest control professionals; and pest control professionals themselves.
- Participate in the United States Environmental Protection Agency (U.S. EPA) and Department of Pesticide Regulations (DPR) regulatory processes by advocating for full consideration of potential urban water quality impacts of pesticides undergoing review or approval. This would include submitting comments, either individually or through a coordinated regional or statewide effort, on pending pesticide registration decisions and submitting any relevant information (such as monitoring data).
- Limit dry weather runoff, including excess irrigation water, to the maximum extent practicable.
- Conduct pesticide monitoring, with an option to comply through participation in a coordinated statewide urban pesticide monitoring program (see monitoring coordination framework).

According to U.S. EPA, a successful IPM program includes a four-tiered implementation approach: Identify pests and monitor progress, set action thresholds, prevent pests and control pests when needed. IPM may involve the use of pesticides, but only within the context of a more comprehensive ecosystem based approach that focuses on long-term pest prevention. IPM can often provide more

effective overall pest control and thus reduce the need to apply pesticides. California has developed a robust infrastructure for supporting and delivering IPM including the University of California Statewide Integrated Pest Management Program as well as certification programs for applicators and their customers.

(2) Regulatory Coordination Framework Work Team Summary

The regulatory coordination framework team (regulatory team) was comprised of staff from the State Water Board, the San Francisco Bay and Central Valley Regional Water Boards, U.S. EPA Region 9, DPR, and municipality representatives from CASQA. The objective of the regulatory team was to develop a draft framework for the Water Boards lead efforts to influence the U.S. EPA Office of Pesticide Programs (U.S. EPA OPP) and DPR to reduce and prevent pesticide pollution in urban receiving waters through use of their respective regulatory authorities.

The regulatory team discussed ways to craft the Amendments to capture the Urban Pesticides Project's founding assumption from the STORMS work plan that the most effective way to reduce urban pesticide-related impairments now and into the future is source control through coordination with state and federal pesticide regulators. The regulatory team discussed the differences in the legal mandates between U.S. EPA OPP and DPR implementing the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), DPR implementing the California Food and Agriculture Code and the California Code of Regulations and the Water Boards implementing the Clean Water Act and Porter Cologne. The regulatory team discussed how activities being implemented can be coordinated to protect water quality from the potential adverse effects of pesticides in the waters of California. Successful coordination in the past between water quality regulators, pesticide regulators, municipalities, and others through partnerships such as the Urban Pesticides Pollution Prevention Partnership led to significant improvements in pesticide use regulation for the protection of water quality, and the regulatory team discussed how to adapt the successes of these partnerships statewide to provide a more efficient, effective, and consistent approach to address and prevent pesticides-related water quality pollution. Lastly, the workgroup discussed the ongoing effort between the State Water Board and DPR to update their management agency agreement (MAA) to reflect current programs and characterize interactions that reflect the distinct mandates and authority of each agency, and how that overall framework for all pesticide water pollution issues will relate to the urban pesticide Amendments.

The regulatory team recommends that the regulatory coordination framework should capture the current working relationship between partners as well as formalize the responsibilities for each partner in recognition of their regulatory authority. The regulatory team reviewed the San Francisco Bay Regional Water Board's Diazinon and Pesticide-Related Toxicity in Bay Area Urban Creeks Total Maximum Daily Load (Urban Creeks TMDL) and determined it was appropriate to use as a foundation for future collaborative efforts. The team recommended using the permit language being developed for the

Central Valley Regional Water Board's recently adopted Water Quality Control Plan Amendment for the Control of Pyrethroid Pesticides Discharges as a starting point for a list of actions the Water Board should request U.S. EPA OPP and DPR to continue to improve their pesticide registration process and regulatory responses. In addition, the Amendments should recognize actions for the parties identified in the Urban Creeks TMDL, including the Water Boards, U.S. EPA OPP, DPR, County Agricultural Commissioners, California Department of Consumer Affairs, University of California Statewide Integrated Pest Management Program, Urban Runoff Management Agencies and private entities. The regulatory team supports the approach for municipalities to implement an IPM program as a first front to prevent and correct urban pesticide water quality impairments.

(3) Monitoring Coordination Work Team Summary

The monitoring coordination framework team (monitoring team) was comprised of staff from the State Water Board, the San Francisco Bay and Central Valley Regional Water Boards, DPR, and municipality representatives from the CASQA. The objective of the monitoring team was to discuss the foundations for creating a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions.

The framework is meant to coordinate pesticides and toxicity monitoring in urban areas conducted by three primary groups: 1) the Water Boards primarily through the Surface Water Ambient Monitoring Program and the Stream Pollution Trends Program, 2) DPR through the Surface Water Protection Program, and 3) MS4s through storm water permit monitoring and total maximum daily load monitoring. The monitoring team began by compiling and synchronizing monitoring questions to serve as the foundation of a proposed monitoring framework. The nine monitoring questions listed below were identified and used to guide a coordinated question-driven monitoring program.

Category	Monitoring Questions
Regulatory Actions and Compliance/Attainment: Technical aspects	Are pesticide (or degradate) concentrations or toxicity levels exceeding benchmarks, criteria, objectives, TMDL targets, or toxicity thresholds for the Water Board or DPR in urban receiving waters? If so, what are the frequency, magnitude, and spatial/temporal extent of these exceedances, and to what extent is urban runoff from MS4s contributing to the exceedances?
Regulatory Actions and Compliance/Attainment: Management Aspects	Are monitoring data quality, quantity, extent, and representability adequate to support regulatory decisions and enforcement actions of the Water Board and DPR, and to fulfill NPDES Permit requirements of MS4s?
Effectiveness of BMPs/Restrictions	Are management practices effective in reducing pesticide concentrations and loads in runoff?
Special Studies: Source-related	What are the sources and relative contributions of pesticides to urban runoff and urban receiving water pesticide or toxicity problems?
Special Studies: Other Studies	Do monitoring data support modeling results and non-traditional sampling tools and approaches?
Status and Trends: Chemical Data Status	What are the spatial/ temporal (i.e, seasonal) distributions and frequencies of pesticide detections in receiving water?
Status and Trends: Chemical Data Trends	What are the trends of pesticide levels in monitoring data over time?
Status and Trends: Toxicity Data Status	What are the spatial/ temporal (i.e, seasonal) distributions and magnitudes of toxicity effects in receiving water?
Status and Trends: Toxicity Data Trends	What are the toxicity trends in monitoring data over time?

In addition, the monitoring team developed a cost estimate of MS4 pesticides and toxicity monitoring to serve as a baseline for the design of the proposed statewide monitoring program, separating toxicity monitoring costs and pesticides chemistry costs. Monitoring requirements and associated costs details such as the analyte, the matrix, and the event type (typically wet or dry weather) were used to generate a final estimate of cost for existing monitoring in the form of a range to capture the price variability for laboratories across the state. With statewide coordination of existing MS4 pesticides and toxicity monitoring, there is potential to improve statewide monitoring without increased costs to MS4s.

With the necessary monitoring questions required of a statewide monitoring program identified and an estimated associated program budget, the monitoring team began to design a proposed statewide monitoring framework. Key design elements include:

(1) A Hybrid Monitoring Design including both targeted and probabilistic monitoring:

- Targeted monitoring should involve continuation of the DPR urban area monitoring program, with expansion as currently underway by DPR and with augmentation by MS4s;
- Probabilistic monitoring should involve collaboration by the Water Boards and MS4s to design a statistically-based program to capture the range of pesticide and toxicity conditions throughout the urban waters of the state.

(2) Centralized coordination functions collaboratively managed by DPR, MS4s, and the Water Boards, including:

- Methods/Standard Operating Procedures through a common Quality Assurance Project Plan;
- Design and implementation of a probabilistic design; and
- Data management, data analysis, reporting, information dissemination, and management decision-making.

Members of the monitoring team have committed to continued collaboration in the design of a statewide monitoring program beyond the scope of the Amendments.