APPENDIX 1A

Water Quality Compliance Approach

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DECEMBER 2017

CITY OF YUBA CITY

Yuba City Basin Storm Water Resource Plan Water Quality Compliance Approach

submitted to
STATE WATER RESOURCES CONTROL BOARD

prepared by
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1. Introduction

1.1 PURPOSE AND BACKGROUND

This report was developed pursuant to Grant Task 4.3 under the Project-Specific Scope of Work outlined in the Proposition 1 Storm Water Planning Grant Agreement Number D1612615 for the development of the Yuba City Basin Storm Water Resource Plan (SWRP). Grant Task 4.3 requires the City of Yuba City (City) to describe the approach to address water quality requirements, including consideration of the following:

4.3.1 Activities generating or contributing to polluted runoff or that impair beneficial use of storm water and dry weather runoff; and

4.3.2 Strategies in which the SWRP will be used to address pollutant runoff or sources, and how the SWRP will be consistent with and help to implement applicable regulatory permits, Total Maximum Daily Loads (TMDLs) and other relevant water quality requirements.

These grant provisions are based on requirements in the State Water Resources Control Board's (State Water Board's) Storm Water Resource Plan Guidelines (Guidelines) (SWRCB, 2015b)[1]. This report satisfies the grant requirements and provides the information that will be included in the SWRP to satisfy those elements of the Guidelines listed in **Table 1-1**.

Table 1-1. SWRP Guidelines Addressed in this Report.

SWRP Guidelines Plan Element	California Water Code Section
Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff. [also addresses grant task 4.3.1]	10562(d)(7)
Plan describes how it is consistent with and assists in compliance with total maximum daily load implementation plans and applicable national pollutant discharge elimination system permits. [also addresses grant task 4.3.2]	10562(b)(5)
Plan identifies applicable permits and describes how it meets all applicable waste discharge permit requirements. [also addresses grant task 4.3.2]	10562(b)(6)
Plan describes the water quality priorities within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments (a.k.a., the impaired waters list).	n/a

"n/a": This element is not mandatory, so there is no associated California Water Code reference.

[1] https://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/docs/prop1/swrp_finalguidelines_dec2015.pdf

1.2 PLANNING AREA BOUNDARY AND DESCRIPTION

The planning area is the Yuba City Basin (YCB) watershed, which encompasses approximately 106 square miles and is located in Sutter County (**Figure 1-1**). Key attributes of the watershed include the following:

- The watershed is bounded by the East Interceptor Canal to the north, Sutter Bypass to the west, and Feather River to the east.
- The YCB has 8 major subwatersheds, has relatively flat topography, and is surrounded by levees.
- The watershed is urbanized in the northeast corner, with the rest of the watershed comprised of rural and agricultural land uses.
- Stormwater runoff generally flows from the northeast to southwest, where it is pumped out of the YCB at several locations by California Department of Water Resource (DWR) facilities.

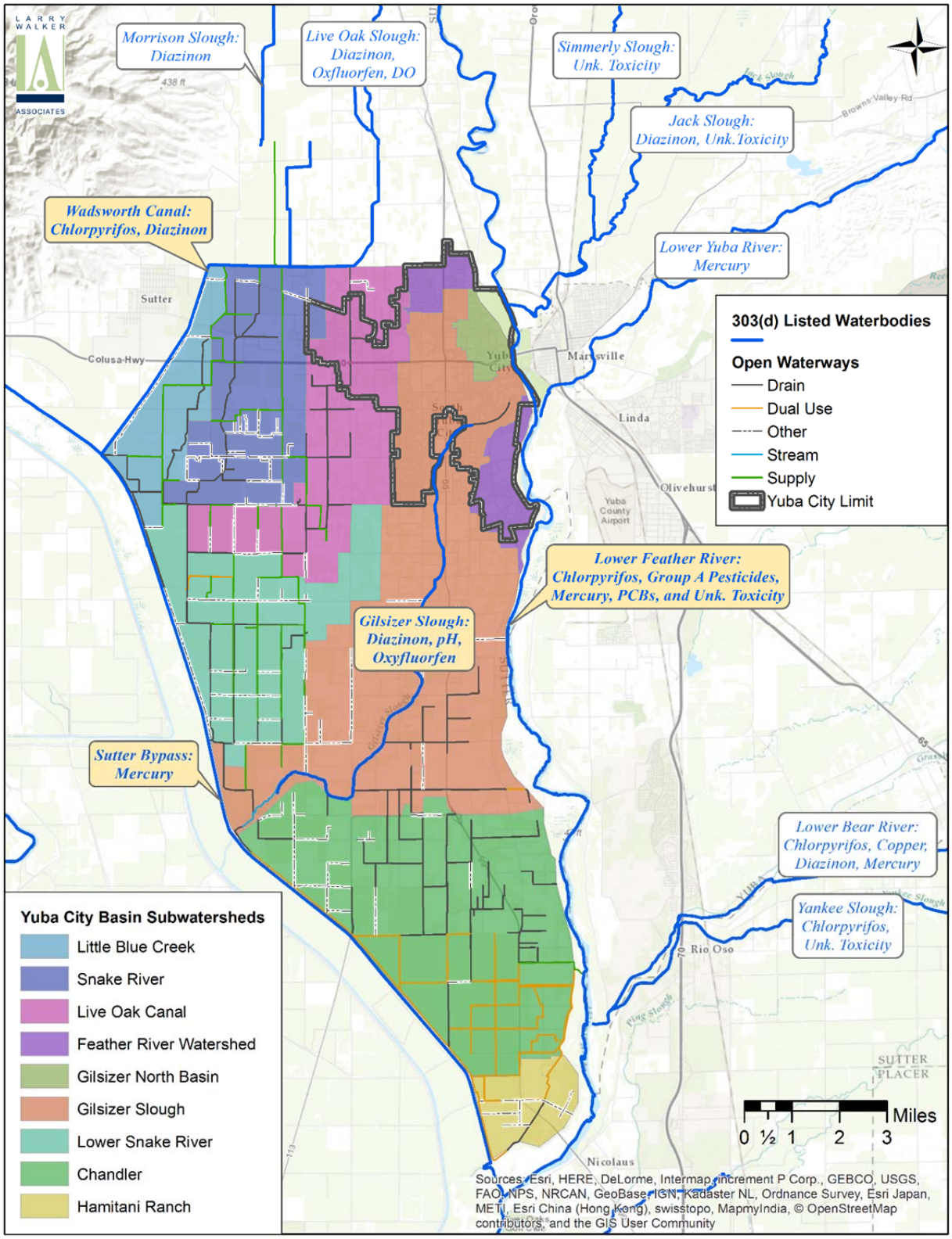

Figure 1-1. Yuba City Basin Planning Area Watershed and Subwatersheds

2. Water Quality Priorities in the YCB Watershed

2.1 WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

Under the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act, the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) have regulatory responsibility for protecting the quality of the State's surface water and groundwater. Each Regional Water Board is required to formulate, adopt, and support the implementation of/compliance with water quality control plans (Basin Plans), which establish beneficial uses and water quality objectives (WQOs) to protect those uses, and develop an implementation program to achieve the established WQOs.

The Basin Plan applicable to the YCB watershed is the Central Valley (Region 5) Regional Water Board's "Water Quality Control Plan for the Sacramento and San Joaquin River Basins" (CVRWQCB, 2016). Table II-1 of the Basin Plan lists the main waterbodies within the region as well as the associated beneficial uses, and Section III of the Basin Plan establishes the WQOs to protect the designated beneficial uses.

The main waterbodies located in the YCB watershed include the Sutter Bypass, the Lower Feather River, Gilsizer Slough and Wadsworth Canal. Beneficial uses for the Sutter Bypass and Lower Feather River are listed in Table II-1 of the Basin Plan and are presented in **Table 2-1**. Pursuant to the Tributary Rule (40 CFR 131.10(b)), the beneficial uses designated for the Sutter Bypass and the Lower Feather River generally apply to their tributaries so that beneficial uses for the Sutter Bypass also apply to Gilsizer Slough and Wadsworth Canal. The beneficial use definitions applicable to main waterbodies in the YCB watershed are provided in **Table 2-2**.

Table 2-1. Main Surface Water Bodies in the YCB Watershed and Associated Beneficial Uses.

SURFACE WATER BODIES	HYDRO UNIT NUMBER	MUN	AGRICULTURE		INDUSTRY			RECREATION			FRESHWATER HABITAT [1]		MIGRATION		SPAWNING		WILD	NAV
			AGR		PROC	IND	POW	REC-1		REC-2	WARM	COLD	MIGR		SPWN			
		MUNICIPAL AND DOMESTIC SUPPLY	IRRIGATION	STOCK WATERING	PROCESS	SERVICE SUPPLY	POWER	CONTACT	CANOEING AND RAFTING	OTHER NON-CONTACT	WARM	COLD	WARM	COLD [2]	WARM	COLD (2)	WILDLIFE HABITAT	NAVIGATION
SUTTER BYPASS	520.3		E					E			E			E		E	E	
LOWER FEATHER RIVER [3]	515.	E	E					E	E	E	E	E	E	E	E	E	E	

Footnotes to Table 2-1:

1 Resident does not include anadromous. Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.
2 Salmon and steelhead.
3 Fish Barrier Dam to Sacramento River.
"E" = Existing beneficial uses.

Table 2-2. Beneficial Use Definitions Applicable to Main Waterbodies in the YCB Watershed.

Beneficial Use	Definition
MUN	*Municipal and Domestic Supply*: Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR	*Agricultural Supply*: Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.
REC-1	*Water Contact Recreation*: Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
REC-2	*Non-contact Water Recreation:* Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
WARM	*Warm Freshwater Habitat*: Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
COLD	*Cold Freshwater Habitat*: Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
MIGR	*Migration of Aquatic Organisms*: Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
SPWN	*Spawning, Reproduction, and/or Early Development*: Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
WILD	*Wildlife Habitat*: Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

2.2 303(d) LIST OF IMPAIRED WATERBODIES

Waterbodies not meeting the designated Basin Plan WQOs and/or water quality standards are considered impaired and are placed on the CWA section 303(d) list, often times triggering the requirement to develop a TMDL in order to ensure the attainment of the WQO and, ultimately, the protection of the beneficial uses.

Table 2-3 Table 2-3. 303(d)-Listed Waterbody-Pollutant Combinations for the YCB Watershed identifies the 303(d)-listed waterbodies located in the YCB watershed and associated pollutants causing the impairments. The pollutant-waterbody combinations are also depicted on **Figure 1-1**. The 303(d) list indicates that the sources for the listed pollutants are unknown, with the exception of mercury in the Lower Feather River, to which the 303(d) list attaches the following comment: "All resource extraction sources are abandoned mines."

Table 2-3. 303(d)-Listed Waterbody-Pollutant Combinations for the YCB Watershed.

Waterbody	Pollutant
Gilsizer Slough	Diazinon, Oxyfluorfen, pH
Lower Feather River	Chlorpyrifos, Group A Pesticides, Mercury, PCBs, and Unknown Toxicity
Sutter Bypass	Mercury
Wadsworth Canal	Diazinon, Chlorpyrifos

2.3 TOTAL MAXIMUM DAILY LOADS

A TMDL is a water quality management plan for restoring impaired waters. It specifies the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet water quality standards for that particular pollutant. To ensure that water quality standards are met and beneficial uses are attained, allocations of the pollutant load to all identified sources are established for the pollutant(s) in question.

The following TMDLs are applicable to the YCB watershed:

- Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL;[2] and
- Central Valley Pyrethroid Pesticides TMDL.[3]

Additional details regarding TMDL implementation requirements where stormwater or urban runoff has been identified as a source are discussed below.

The YCB SWRP will enhance efforts to achieve pollutant reductions required by TMDLs by prioritizing those projects that have multiple benefits. For example, stormwater infiltration will not only provide groundwater recharge, but it will also reduce the volume of stormwater discharged to surface water, which reduces pollutant loads discharged to surface water. Monitoring data collected under TMDL implementation requirements will be used to evaluate constituent levels and assess attainment of wasteload allocations (WLAs) in urban discharges. Water quality improvements will be realized as discharges of stormwater and dry weather runoff to waterbodies are reduced through multi-benefit stormwater projects.

[2] https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2007-0034.pdf
[3] https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2017-0057_res.pdf

2.3.1 Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL

The TMDL for two organophosphorus insecticides, diazinon and chlorpyrifos, became effective on August 11, 2008. The May 2007 Final Staff Report (Staff Report) prepared by the Regional Water Board identified the primary sources as agricultural and urban applications. However, since most non-agricultural uses of diazinon and chlorpyrifos were phased out beginning in 2001, agricultural applications are the primary sources of these insecticides. After application, diazinon and chlorpyrifos can reach surface water during rainfall or irrigation events, when residual material can migrate with stormwater runoff or irrigation return water and enter the Sacramento or Feather Rivers or their tributaries (CVRWQCB, 2007).

The Staff Report identifies municipal wastewater treatment plants and municipal stormwater discharges as point sources with assigned WLAs, and agricultural operations as non-point sources with load allocations.

TMDL implementation requirements applicable to stormwater and dry weather runoff are specified in Attachment G of the Phase II Municipal Separate Storm Sewer System General Permit (Order No. 2013-0001 DWQ, NPDES General Permit No. CAS000004) (Phase II MS4 Permit) (SWRCB, 2013). Attachment G, "Region-Specific Requirements for Implementation of TMDLs," specifically identifies 18 Phase II MS4 responsible parties for TMDL implementation, including 2 located in the YCB watershed (the City and the County of Sutter). Implementation activities conducted by the City currently focus on education and outreach, pollution prevention and good housekeeping (City of Yuba City, 2017).

The Phase II MS4 Permit requires that Permittees who are assigned a WLA or who are identified as a responsible party in an approved TMDL must comply with monitoring requirements in Attachment G and to consult with the Regional Water Board within one year of the Permit effective date to determine the study design and a monitoring implementation schedule. In accordance with the Regional Water Board's June 2014 letter (CVRWQCB, 2014), the City is required to develop and implement a TMDL monitoring program. The City is in the process of preparing a TMDL Monitoring Plan and Quality Assurance Project Plan to fulfill the monitoring requirements specified in Attachment G.

Compliance with the Phase II MS4 Permit-related TMDL requirements is documented in Annual Reports.

2.3.2 Central Valley Pyrethroid Pesticides TMDL

This TMDL was adopted by the Regional Water Board on June 8, 2017 and is pending approval by the State Water Board, the Office of Administrative Law, and USEPA. The information in this section is excerpted from the Central Valley Water Board's June 2017 Final Staff Report (CVRWQCB, 2017).

The main sources of pyrethroid insecticides are agricultural and urban applications, with the mass applied split almost evenly between agricultural (49%) and non-agricultural (51%) uses. A portion of urban and agricultural pyrethroid applications can reach surface water during rainfall or irrigation events, when residual pyrethroids can migrate with stormwater runoff or irrigation return water, and enter streams, rivers, creeks and sloughs. In urban areas, pyrethroids are primarily used for structural pest control, which accounted for 92% of reported non-agricultural uses from 2002-2011. The agricultural uses of pyrethroids are diverse and include use on a wide variety of crops.

The proposed Basin Plan amendment includes total maximum daily loads for urban water bodies with pyrethroids impairments, requirements for addressing water bodies on the 303(d) list for pyrethroids in agricultural areas, and a conditional prohibition of discharge for pyrethroids to water bodies with designated or existing warm and cold freshwater habitat (WARM and COLD, respectively) beneficial uses throughout the basin. None of the waterbody segments with pyrethroid impairments listed in the Basin Plan amendment are located in the YCB watershed. However, implementation requirements under the conditional prohibition apply to municipal storm water discharges, municipal and domestic wastewater discharges, and agricultural discharges to the Lower Feather River (WARM and COLD), and the Sutter Bypass (WARM), as well as to their tributary streams.

According to the Final Staff Report, attainment of the proposed pyrethroid triggers in stormwater will likely require continued support through actions of the municipal dischargers working together with the Regional Water Board, and state, federal and local agencies responsible for registering pesticides and regulating pesticide use as part of an overall pesticide pollution prevention strategy. Where WLAs are established, compliance with the proposed WLAs can be attained by implementing BMPs to reduce pyrethroid pesticides in urban runoff. The specific BMPs include education and outreach activities and pollution prevention activities.

Under the proposed TMDL, specific monitoring and reporting requirements will be established in the monitoring and reporting programs associated with NPDES permits (including the Phase II MS4 Permit), WDRs, and conditional waivers of WDRs. Monitoring for pyrethroids will be incorporated within the TMDL Monitoring Plan for the Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL. Compliance with Phase II MS4 Permit-related TMDL implementation requirements will be documented in Annual Reports.

2.4 STATEWIDE TRASH AMENDMENTS

On April 7, 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan). Together, they are collectively referred to as "the Trash Amendments," which became effective on December 2, 2015. The objective of the Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in State waters, while focusing limited resources on high trash generating areas (SWRCB, 2015a).

The Trash Amendments require Phase II MS4 Permittees, after receiving the California Water Code Section 13383 letter from the State Water Board (issued June 1, 2017), to choose either "Track 1" or "Track 2" to comply with the narrative water quality objective for trash. The two options are summarized below:

- Track 1 – Install, operate, and maintain full capture systems in storm drains that capture runoff from one or more of the Priority Land Uses (PLUs) within the municipalities' jurisdiction. The monitoring requirements are fulfilled by the implementation/ demonstration of the full capture systems.
- Track 2 – Implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment controls to achieve full capture

system equivalency. Monitoring is required to demonstrate the effectiveness of the controls and compliance with full capture system equivalency.

The City submitted a response to the Section 13383 letter via the Storm Water Multiple Application and Report Tracking System (SMARTS) on September 1, 2017. The City conducted a preliminary planning level analysis to identify the extent of PLU areas within its Phase II jurisdiction and to determine a compliance option selection. For this analysis, the City examined its current land uses to determine which ones met the definition of PLU areas as defined in the Statewide Trash Provisions. The City then categorized individual parcels as PLUs by relating the current land use of the parcel with the PLU land use analysis and excluded parcels with land uses that did not fit the definition. As a result of the preliminary planning level analysis, the City selected Track 1 as its compliance option.

Projects prioritized and selected through the SWRP process are anticipated to incorporate, as appropriate, full capture systems approved for use by the State Water Board to fulfill requirements of the Trash Amendments. Examples of full capture systems currently on the State Water Board's approved list include bioretention, detention basins, and infiltration trenches or basins.[4] Accordingly, SWRP projects that incorporate these systems will support compliance with the Trash Amendments, while at the same time achieving stormwater runoff quantity and quality benefits.

2.5 STATEWIDE MERCURY PROVISIONS

On May 2, 2017, the State Water Board adopted Resolution 2017-0027, which approved "Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions" (Statewide Mercury Provisions).[5] This Resolution provides a consistent regulatory approach throughout the State by setting mercury limits to protect the beneficial uses associated with the consumption of fish by people and wildlife. Additionally, the State Water Board established three new beneficial use definitions for use by the State and Regional Water Boards in designating Tribal Traditional Culture (CUL), Tribal Subsistence Fishing (T-SUB), and Subsistence Fishing (SUB) beneficial uses to inland surface waters, enclosed bays, or estuaries in the State. The State Water Board approved one new narrative and four new numeric mercury objectives to apply to those inland surface waters, enclosed bays, and estuaries of the State that have any of the following beneficial use definitions: COMM, CUL, T-SUB, WILD, MAR, RARE, WARM, COLD, EST, or SAL, with the exception of waterbodies or waterbody segments with site-specific mercury objectives.

Pursuant to the implementation approach for the Statewide Mercury Provisions, the Phase II MS4 Permit will be revised in the future to include a combination of the following mercury pollution prevention and mercury control measures to reduce total mercury or methylmercury discharges:

- Thermometer exchange programs and fluorescent lamp recycling programs, or enhancement of household hazardous waste collection programs to better address mercury-containing waste products (potentially including thermometers and other gauges batteries, fluorescent and other lamps, switches, relays, sensors and thermostats).

[4] https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/trash_implementation/fcs_list_of_mbts_04aug17.pdf
[5] https://www.waterboards.ca.gov/water_issues/programs/mercury/docs/hg_prov_final.pdf

- Public education and outreach on disposal of household mercury-containing products and use of non-mercury containing alternatives.
- Education of auto dismantlers on how to remove, store, and dispose of mercury switches in autos.
- Survey of use, handling, and disposal of mercury-containing products used by the MS4 discharger agencies and development of a policy and time schedule for eliminating the use of mercury containing products by the discharger.

All of the aforementioned control measures are required, except, at the discretion of the Permitting Authority, additional measure(s) may be substituted for one or more measures if the substituted measure(s) would provide an equivalent level of control or prevent total mercury or methylmercury pollution.

In conjunction with the BMPs and control measures identified above, projects selected through the SWRP prioritization process will further contribute to mercury load reductions to surface water, thereby supporting compliance with the new mercury standards. SWRP projects that reduce the volume of stormwater runoff to surface water (e.g., through infiltration) also reduce the load of waterborne mercury and other pollutants that might otherwise reach surface water. Projects that filter sediment and other particulates from stormwater runoff (e.g., through infiltration, vegetated swales or detention basins) also reduce the pollutant load typically associated with sediment, including mercury.

3. Regulatory Framework

The Phase II MS4 Permit is the National Pollutant Discharge Elimination System (NPDES) General Permit that regulates small MS4 stormwater discharges in the YCB watershed. General Waste Discharge Requirements (WDRs) regulating discharges from irrigated agricultural lands are also described in this section. These regulatory mechanisms are designed to control the discharge of pollutants to surface water primarily through the implementation of Best Management Practices (BMPs). Each regulation is described in more detail below.

3.1 PHASE II MS4 PERMIT

The Phase II MS4 Permit regulates discharges of stormwater and dry weather runoff from small MS4s to waters of the U.S. (SWRCB, 2013). The City is required to comply with the Phase II MS4 Permit, including the applicable TMDL implementation requirements in Attachment G. Compliance with the Phase II MS4 Permit, including TMDL implementation requirements, is documented in Annual Reports submitted to the State Water Board. Specific TMDL implementation actions undertaken by the City are described in more detail in **Section 2** of this report.

The Phase II MS4 Permit recognizes the following:

> *Finding 1. Storm water is a resource and an asset and should not be treated as a waste product. Managing rainwater and storm water at the source is a more effective and sustainable alternative to augmenting water supply, preventing impacts from flooding, mitigating storm water pollution, creating green space, and enhancing fish and wildlife habitat. California encourages alternative, innovative, multi-objective solutions to help use and protect this valuable resource, while at the same time controlling pollution due to urban runoff.*

The Phase II MS4 Permit and TMDLs generally require Permittees and responsible parties to implement a series of BMPs in order to reduce pollutants from the MS4s to the maximum extent practicable (MEP). The MEP standard requires Permittees to apply BMPs that are effective in reducing or eliminating the discharge of pollutants to the waters of the U.S. The specific requirements are included within the NPDES Permit provisions.

As a part of the overall strategy for the municipal stormwater program, a series of BMPs are implemented in order to comply with the Discharge Prohibitions and Receiving Water Limitations, including source controls and/or treatment controls. Regulated projects (i.e., those that create and/or replace 5,000 square feet or more of impervious surface) must implement low impact development (LID) standards designed to reduce the volume of runoff, treat stormwater, and provide baseline hydromodification management.

The YCB SWRP will prioritize projects that will be consistent with LID and green infrastructure-type solutions, such as site design and stormwater treatment measures to achieve infiltration, evapotranspiration, harvesting/reuse and/or bioretention. SWRP projects that incorporate green infrastructure employ a variety of natural and constructed features that reduce the rate and volume of stormwater runoff to the MS4 or surface water, filter pollutants out of runoff, facilitate the infiltration of water into the ground and replenishment of local natural surface water systems, and/or allow for on-site storage of water for a beneficial use (SWRCB

2015b). As such, SWRP multi-benefit projects will support and assist with Phase II MS4 Permit compliance and attainment of TMDL WLAs.

3.2 IRRIGATED AGRICULTURE WASTE DISCHARGE REQUIREMENTS

Water discharges from agricultural operations in California include irrigation runoff, flows from tile drains, and stormwater runoff. These discharges can affect water quality by transporting pollutants, including pesticides, sediment, nutrients, salts (including selenium and boron), pathogens, and heavy metals, from cultivated fields into surface waters. Many surface water bodies are impaired by such pollutants as pesticides, nitrate and salts from agricultural sources. Nutrients and salts contained in such discharges that percolate down to groundwater can also impact groundwater quality.

To prevent agricultural discharges from impairing the waters that receive these discharges, the State Water Board's Irrigated Lands Regulatory Program (ILRP) regulates discharges from irrigated agricultural lands. This is done by issuing waste discharge requirements (WDRs) or conditional waivers of WDRs (Orders) to growers. The WDRs regulate waste discharges from irrigated lands that could affect ground and/or surface waters of the State. The WDRs allow for the formation of compliance groups or coalitions to promote economies of scale and reduce the potential administrative burden on State Water Board staff that would result from issuing individual WDRs to each grower.

The ILRP issued two WDRs that are applicable to the YCB watershed, as follows:

- Central Valley Regional Water Board Order No. R5-2014-0030-R1, amended by Order Nos. R5-2015-0115, R5-2016-0014, and R5-2016-0015 and entitled "Waste Discharge Requirements General Order for Growers within the Sacramento River Watershed that are Members of a Third-Party Group" (SWRCB, 2016):
    - The Sacramento Valley Water Quality Coalition (SVWQC) is the largest compliance group in the state, encompassing approximately 1.3 million acres of irrigated agricultural lands. There are 13 individual subwatershed compliance groups under the umbrella of the SVWQC, with third-party oversight of the SVWQC provided by the Northern California Water Association (NCWA). Local Farm Bureaus and Resource Conservation Districts also provide oversight and assistance to subwatershed groups.
- Central Valley Regional Water Board Order No. R5-2014-0032, amended by Order No. R5-2015-0115 and entitled "Waste Discharge Requirements General Order for Sacramento Valley Rice Growers" (SWRCB, 2015c):
    - Sacramento Valley Rice Growers (SVRG) formed a compliance group separate from SVWQC, driven by the unique agricultural practices required for rice cultivation. The California Rice Commission provides third-party oversight of the SVRG.

The WDRs specify numerous requirements for members (owners or operators that enroll irrigated acreage in the program) and third-party groups (entities that coordinate the actions of members), including surface water monitoring and reporting, submittal of farm evaluations, attendance at outreach events, preparation and implementation of sediment and erosion control plans and nitrogen management plans, and groundwater quality assessment and monitoring.

Where water quality objectives or triggers are exceeded in surface water or groundwater, WDRs may require development and implementation of a Surface Water Quality Management Plan or a Groundwater Quality Management Plan, respectively. Approved TMDLs in the Basin Plan that apply to water bodies within the third-party's geographic area and have allocations for irrigated agriculture are required to be implemented in accordance with the applicable Basin Plan provisions.

The YCB SWRP will be consistent with and support compliance with WDRs where prioritized multi-benefit projects direct stormwater runoff from agricultural lands to groundwater recharge. Benefits will be realized in groundwater quantity and quality through groundwater replenishment, particularly in groundwater basins with elevated concentrations of salts. Reducing the volume of runoff to surface water will reduce pollutant loads including pesticides, sediment, nutrients, salts, pathogens and heavy metals, contributing to surface water quality improvements and attainment of TMDL WLAs.

4. YCB SWRP Strategies to Address Water Quality Compliance

Urbanization has led to the modification and disruption of natural watershed processes. The increase in impervious surfaces increases runoff volume and velocity. As less precipitation is allowed to enter the root zone, increased runoff rates and volumes more effectively mobilize and transport pollutants to drainage networks like MS4s and eventually to receiving waters (McKee, 2003). Additionally, there is a strong relationship between urban watershed sediment yields and loading of contaminants to local waterbodies, such as mercury, heavy metals and pesticides/insecticides. Stormwater runoff from agricultural and rural areas also mobilizes and transports substances such as chemicals (e.g., fertilizers, insecticides, legacy pesticides, heavy metals), pathogenic bacteria, sediment, and many other constituents of concern that degrade surface water quality.

The YCB SWRP is designed to prioritize and select projects that achieve multiple benefits, including the following:

- Water quality improvements;
- Water supply augmentation through groundwater management and/or stormwater runoff capture and use;
- Flood management;
- Environmental benefits, such as habitat protection and improvement, increased urban green space, reestablishment of the natural hydrograph, and reduced greenhouse gas emissions;
- Community benefits, such as enhanced and/or created recreational and public use areas, community involvement and employment opportunities.

Among these, one of the more significant benefits is the mitigation of water quality impacts to surface water from stormwater runoff. The SWRP's objective of maximizing water quality serves as the nexus between the SWRP and those regulatory mechanisms described in Sections 2 and Section 3 of this report (i.e., the Phase II MS4 Permit, TMDLs, WDRs); SWRP projects that are consistent with and contribute to compliance with these regulatory mechanisms are given a higher priority ranking and therefore have a greater likelihood of being implemented.

Table 4-1 summarizes the pollutants of concern in the YCB watershed and potential strategies to address them through anticipated SWRP projects. In addition to the benefits listed in **Table 4-1**, potential SWRP strategies are designed to contribute toward compliance with applicable regulatory permits, TMDLs and WDRs.

Table 4-1. Pollutants of Concern in the YCB Watershed, Anticipated SWRP Strategies to Address Them, and Resulting Benefits.

Pollutants of Concern	Potential SWRP Strategies	Benefits
• Diazinon, Chlorpyrifos • Pyrethroid Pesticides • Group A Legacy Pesticides and PCBs • Oxyfluorfen (herbicide) • Mercury • Trash	• Infiltration / groundwater recharge • Biofiltration • Bioretention • Detention/retention basins • Hydromodification control • Green street projects • Grass filter strips, bioswales and/or other BMPs to improve water quality of runoff • Capture and use systems • Public outreach/education	• Groundwater replenishment • Reduced volume of stormwater to surface water • Reduced pollutant load to surface water and improvements to water quality • Flood management • Habitat protection and improvement • Community benefits

The YCB SWRP will identify, prioritize and select projects that reduce stormwater and dry weather runoff, reduce pollutants in stormwater discharges, increase infiltration/groundwater recharge, improve flood control, and protect water quality in receiving waters. These objectives will be accomplished by employing an array of appropriate non-structural, structural, regional and green infrastructure BMPs to reduce runoff volume, velocity, and erosion and sediment transport, maximize the use of green infrastructure for catchment, infiltration and treatment, and by conducting public outreach and education. Such BMPs have benefits across multiple pollutant categories (e.g., pesticides, trash, heavy metals). SWRP projects will therefore be consistent with and will contribute toward compliance with applicable regulatory mechanisms, including applicable permits, TMDLs, and WDRs.

5. Disclosure Statement

Funding for this project has been provided in full or in part through an agreement with the State Water Board, using funds from Proposition 1. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use. This work product is required by Task 4.3 of Agreement No. D1612615.

6. References

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