

**Santa Margarita River Watershed Management Area
2019-2020 Water Quality Improvement Plan
Annual Report
January 2021**

**APPENDIX 1
Crosswalk of Permit Requirements and
Annual Report References**

**APPENDIX 1 – CROSSWALK OF PERMIT REQUIREMENTS AND
ANNUAL REPORT REFERENCES**

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
Provision A						
A.4.a.(2)	If exceedance(s) of water quality standards persist in receiving waters notwithstanding implementation of this Order, the Copermittees must comply with the following procedures: (2) Upon a determination by either the Copermittees or the San Diego Water Board that discharges from the MS4 are causing or contributing to a new exceedance of an applicable water quality standard not addressed by the Water Quality Improvement Plan, the Copermittees must submit the following updates to the Water Quality Improvement Plan pursuant to Provision F.2.c or as part of the Water Quality Improvement Plan Annual Report required under Provision F.3.b, unless the San Diego Water Board directs an earlier submittal:	Section 3 Section 4.2			X	X
	(a) The water quality improvement strategies being implemented that are effective and will continue to be implemented,	Section 4.2	X			
	(b) Water quality improvement strategies (i.e. BMPs, retrofitting projects, stream and/or habitat rehabilitation projects, adjustments to jurisdictional runoff management programs, etc.) that will be implemented to reduce or eliminate any pollutants or conditions that are causing or contributing to the exceedance of water quality standards,	Section 4.2	X			
	(c) Updates to the schedule for implementation of the existing and additional water quality improvement strategies, and	Section 4.2				X
	(d) Updates to the monitoring and assessment program to track progress toward achieving compliance with Provisions A.1.a, A.1.c and A.2.a of this Order.	Section 4.2				X
Provision B						
B.3.c.(1)(a)(vii)	B.3.c – Prohibitions and Limitations Compliance Option (1) A Copermittee is eligible to be deemed in compliance with Provisions A.1.a, A.1.c, A.1.d, A.2.a, and A.3.b within a Watershed Management Area when the Water Quality Improvement Plan for a Watershed Management Area incorporates the following: (a) Numeric goals, water quality improvement strategies, and schedules developed pursuant to Provisions B.3.a and B.3.b that include the following: ...AND (vii) For each final numeric goal developed pursuant to Provisions B.3.a and B.3.c.(1)(a)(i)-(v), at least one annual milestone and date for its achievement must be included within each Water Quality Improvement Plan Annual Report reporting period until the final numeric goal is achieved.	N/A Unless Alternative Compliance Pathway is Selected				
B.3.c.(2)(c)	(2) Each Copermittee that voluntarily completes the requirements of Provision B.3.c.(1) is deemed in compliance with Provisions A.1.a, A.1.c, A.1.d, A.2.a, and A.3.b for the pollutants and conditions for which numeric goals are developed when the Water Quality Improvement Plan, incorporating the requirements of Provision B.3.c.(1), is accepted by the San Diego Water Board pursuant to Provision F.1.b or F.2.c. The Copermittee is deemed in compliance during the term of this Order as long as: ...AND (c) The Copermittee's assessments in the Water Quality Improvement Plan Annual Report submitted pursuant to Provision F.3.b.(3) support a conclusion that: 1) the Copermittee is in compliance with the annual milestones and dates for achievement developed pursuant to Provision B.3.c.(1)(a)(vii), OR 2) the Copermittee has provided acceptable rationale and recommends appropriate modifications to the interim numeric goals, and/or water quality improvement strategies, and/or schedules to improve the rate of progress toward achieving the final numeric goals developed pursuant to Provisions B.3.a and B.3.c.(1)(a)(i)-(vi); AND...	N/A Unless Alternative Compliance Pathway is Selected				
B.5.a.	a. The priority water quality conditions and potential water quality improvement strategies included in the Water Quality Improvement Plan pursuant to Provisions B.2.c and B.2.e may be re-evaluated by the Copermittees as needed during the term of this Order as part of the Water Quality Improvement Plan Annual Report . Re-evaluation and recommendations for modifications to the priority water quality conditions and potential water quality improvement strategies must be provided in the Report of Waste Discharge , and must consider the following: (1) Achieving the outcome of improved water quality in MS4 discharges and receiving waters through implementation of the water quality improvement strategies identified in the Water Quality Improvement Plan; (2) New information developed when the requirements of Provisions B.2.a-c have been re-evaluated; (3) Spatial and temporal accuracy of monitoring data collected to inform prioritization of water quality conditions and implementation strategies to address the highest priority water quality conditions; (4) Availability of new information and data from sources other than the jurisdictional runoff management programs within the Watershed Management Area that informs the effectiveness of the actions implemented by the Copermittees; (5) San Diego Water Board recommendations; and (6) Recommendations for modifications solicited through a public participation process.	Section 4.2			X	X

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
B.5.b.	b. The water quality improvement goals, strategies and schedules, included in the Water Quality Improvement Plan pursuant to Provisions B.3, must be reevaluated and adapted as new information becomes available to result in more effective and efficient measures to address the highest priority water quality conditions identified pursuant to Provision B.2.c. Re-evaluation of and modifications to the water quality improvement goals, strategies and schedules must be provided in the Water Quality Improvement Plan Annual Report , and must consider the following:	Section 4.2		X		X
	(1) Modifications to the priority water quality conditions based on Provision B.5.a;	Section 4.2				X
	(2) Progress toward achieving interim and final numeric goals in receiving waters and MS4 discharges for the highest priority water quality conditions in the Watershed Management Area;	Section 2				
	(3) Progress toward achieving outcomes according to established schedules;	Section 2				
	(4) New policies or regulations that may affect identified numeric goals;	Section 4.2				X
	(5) Measurable or demonstrable reductions of non-storm water discharges to and from each Copermittee's MS4;	Section 3.2			X	
	(6) Measurable or demonstrable reductions of pollutants in storm water discharges from each Copermittee's MS4 to the MEP;	Section 3.2			X	
	(7) New information developed when the requirements of Provisions B.2.b and B.2.d have been re-evaluated;	Section 4.2			X	X
	(8) Efficiency in implementing the Water Quality Improvement Plan;	Section 4.2	X			X
	(9) San Diego Water Board recommendations; and	Section 4.2				X
(10) Recommendations for modifications solicited through a public participation process.	Section 4.2				X	
B.5.c.	c. The water quality improvement monitoring and assessment program, included in the Water Quality Improvement Plan pursuant to Provision B.4, must be reevaluated and adapted when new information becomes available . Re-evaluation and recommendations for modifications to the monitoring and assessment program, pursuant to the requirements of Provision D, may be provided in the Water Quality Improvement Plan Annual Report , but must be provided in the Report of Waste Discharge.	Section 4.2			X	X
Provision D						
D.1.e.(2)(c)	Sediment Quality Monitoring (c) The Copermittees must incorporate a Sediment Monitoring Report as part of the Water Quality Improvement Plan Annual Report in accordance with the schedule contained in the Sediment Monitoring Plan, unless otherwise directed in writing by the San Diego Water Board Executive Officer. The Sediment Monitoring Report must contain the following information: (i) Analysis: An evaluation, interpretation and tabulation of the water and sediment monitoring data, including interpretations and conclusions as to whether applicable Receiving Water Limitations in this Order have been attained at each sample station; (ii) Sample Location Map: The locations, type, and number of samples must be identified and shown on a site map; and (iii) California Environmental Data Exchange Network: A statement certifying that the monitoring data and results have been uploaded into the California Environmental Data Exchange Network (CEDEN).	N/A			X	
D.2.b.(2)(b)(iv)	Dry Weather MS4 Outfall Discharge Monitoring (iv) Each Copermittee must document removal or re-prioritization of the highest priority persistent flow MS4 outfall monitoring stations identified under Provision D.2.b.(2)(a) in the Water Quality Improvement Plan Annual Report . Persistent flow MS4 outfall monitoring stations that have been removed must be replaced with the next highest prioritized major MS4 outfall in the Watershed Management Area within its jurisdiction, unless there are no remaining qualifying major MS4 outfalls within the Copermittee's jurisdiction in the Watershed Management Area.	Section 3.2			X	
D.4.b.(1)(a)(ii)	Non-Storm Water Dischargers Reduction Assessments (a) Each Copermittee must assess and report the progress of its illicit discharge detection and elimination program , required to be implemented pursuant to Provision E.2, toward effectively prohibiting non-storm water and illicit discharges into the MS4 within its jurisdiction as follows: (ii) Based on the data collected pursuant to Provisions D.2.b, the assessments required under Provision D.4.b.(1)(c) must be included in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) .	Section 3.2			X	

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
D.4.b.(1)(b)	(b) Based on the transitional dry weather MS4 outfall discharge field screening monitoring required pursuant to Provision D.2.a.(2), each Copermittee must assess and report the following: (i) Identify the known and suspected controllable sources (e.g. facilities, areas, land uses, pollutant generating activities) of transient and persistent flows within the Copermittee's jurisdiction in the Watershed Management Area; (ii) Identify sources of transient and persistent flows within the Copermittee's jurisdiction in the Watershed Management Area that have been reduced or eliminated; and (iii) Identify modifications to the field screening monitoring locations and frequencies for the MS4 outfalls in its inventory necessary to identify and eliminate sources of persistent flow non-storm water discharges pursuant to Provision D.2.b.	Section 3.2			X	X
D.4.b.(1)(c)	(c) Based on the dry weather MS4 outfall discharge field screening monitoring required pursuant to Provision D.2.b.(1), each Copermittee must assess and report the following: (i) The assessments required pursuant to Provision D.4.b.(1)(b); (ii) Based on the data collected and applicable NALs in the Water Quality Improvement Plan, rank the MS4 outfalls in the Copermittee's jurisdiction according to potential threat to receiving water quality, and produce a prioritized list of major MS4 outfalls for follow-up action to update the Water Quality Improvement Plan, with the goal of eliminating persistent flow non-storm water discharges and/or pollutant loads in order of the ranked priority list through targeted programmatic actions and source investigations; (iii) For the highest priority major MS4 outfalls with persistent flows that are in exceedance of NALs, identify the known and suspected sources within the Copermittee's jurisdiction in the Watershed Management Area that may cause or contribute to the NAL exceedances; (iv) Each Copermittee must analyze the data collected pursuant to Provision D.2.b, and utilize a model or other method, to calculate or estimate the non-storm water volumes and pollutant loads collectively discharged from all the major MS4s outfalls in its jurisdiction identified as having persistent dry weather flows during the monitoring year. These calculations or estimates must be updated annually. [a] Each Copermittee must calculate or estimate the annual non-storm water volumes and pollutant loads collectively discharged from the Copermittee's major MS4 outfalls to receiving waters within the Copermittee's jurisdiction, with an estimate of the percent contribution from each known source for each MS4 outfall; [b] Each Copermittee must annually identify and quantify (i.e. volume and pollutant loads) sources of non-storm water not subject to the Copermittee's legal authority that are discharged from the Copermittee's major MS4 outfalls to downstream receiving waters.	Section 3.2			X	X
	(v) Each Copermittee must review the data collected pursuant to Provision D.2.b and findings from the assessments required pursuant to Provision D.4.b.(1)(c)(i)-(iv) at least once during the term of this Order to: [a] Identify reductions and progress in achieving reductions in non-storm water and illicit discharges to the Copermittee's MS4 in the Watershed Management Area; [b] Assess the effectiveness of water quality improvement strategies being implemented by the Copermittees within the Watershed Management Area toward reducing or eliminating non-storm water and pollutant loads discharging from the MS4 to receiving waters within its jurisdiction, with an estimate, if possible, of the non-storm water volume and/or pollutant load reductions attributable to specific water quality strategies implemented by the Copermittee; and [c] Identify modifications necessary to increase the effectiveness of the water quality improvement strategies implemented by the Copermittee in the Watershed Management Area toward reducing or eliminating non-storm water and pollutant loads discharging from the MS4 to receiving waters within its jurisdiction. (vi) Identify data gaps in the monitoring data necessary to assess Provisions D.4.b.(1)(c)(i)-(v).	Section 3.2			X	X
D.4.b.(2)(a)	Storm Water Pollutant Discharge Reduction Assessments (a) The Copermittees must assess and report the progress of the water quality improvement strategies, required to be implemented pursuant to Provisions B and E, toward reducing pollutants in storm water discharges from the MS4s within the Watershed Management Area as follows: (ii) Based on the data collected pursuant to Provisions D.2.c, the assessments required under <u>Provision D.4.b.(2)(c)</u> must be included in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3).	Section 3.2			X	X

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
D.4.b.(2)(b)	(b) Based on the transitional wet weather MS4 outfall discharge monitoring required pursuant to Provision D.2.a.(3) the Copermittees must assess and report the following: (i) The Copermittees must analyze the monitoring data collected pursuant to Provision D.2.a.(3), and utilize a watershed model or other method, to calculate or estimate the following for each monitoring year: [a] The average storm water runoff coefficient for each land use type within the Watershed Management Area; [b] The volume of storm water and pollutant loads discharged from each of the Copermittee's monitored MS4 outfalls in its jurisdiction to receiving waters within the Watershed Management Area for each storm event with measurable rainfall greater than 0.1 inch; [c] The total flow volume and pollutant loadings discharged from the Copermittee's jurisdiction within the Watershed Management Area over the course of the wet season, extrapolated from the data produced from the monitored MS4 outfalls; and [d] The percent contribution of storm water volumes and pollutant loads discharged from each land use type within each hydrologic subarea with a major MS4 outfall to receiving waters or within each major MS4 outfall to receiving waters in the Copermittee's jurisdiction within the Watershed Management Area for each storm event with measurable rainfall greater than 0.1 inch.(ii) Identify modifications to the wet weather MS4 outfall discharge monitoring locations and frequencies necessary to identify pollutants in storm water discharges from the MS4s in the Watershed Management Area pursuant to Provision D.2.c.(1).	Section 3.2			X	X
D.4.b.(2)(c)	(c) Based on the wet weather MS4 outfall discharge monitoring required pursuant to Provision D.2.c the Copermittees must assess and report the following: (i) The assessments required pursuant to Provision D.4.b.(2)(b); (ii) Based on the data collected and applicable SALs in the Water Quality Improvement Plan, analyze and compare the monitoring data to the analyses and assumptions used to develop the Water Quality Improvement Plans, including strategies developed pursuant to Provision B.3, and evaluate whether those analyses and assumptions should be updated as a component of the adaptive management efforts pursuant to Provision B.5 for follow-up action to update the Water Quality Improvement Plan; (iii) The Copermittees must review the data collected pursuant to Provision D.2.c and findings from the assessments required pursuant to Provisions D.4.b.(2)(c)(i)-(ii) at least once during the term of this Order to: [a] Identify reductions or progress in achieving reductions in pollutant concentrations and/or pollutant loads from different land uses and/or drainage areas discharging from the Copermittees' MS4s in the Watershed Management Area; [b] Assess the effectiveness of water quality improvement strategies being implemented by the Copermittees within the Watershed Management Area toward reducing pollutants in storm water discharges from the MS4s to receiving waters within the Watershed Management Area to the MEP, with an estimate, if possible, of the pollutant load reductions attributable to specific water quality strategies implemented by the Copermittees; and [c] Identify modifications necessary to increase the effectiveness of the water quality improvement strategies implemented by the Copermittees in the Watershed Management Area toward reducing pollutants in storm water discharges from the MS4s to receiving waters in the Watershed Management Area to the MEP. (iv) Identify data gaps in the monitoring data necessary to assess Provisions D.4.b.(2)(c)(i)-(iii).	Section 3.2			X	X
D.4.b.(2)(d)	(d) The Copermittees must evaluate all the data collected pursuant to Provision D.2.c, and incorporate new outfall monitoring data into time series plots for each long-term monitoring constituent for the Watershed Management Area, and perform statistical trends analysis on the cumulative long-term wet weather MS4 outfall discharge water quality data set.	Section 3.2			X	
D.4.c.	Special Studies Assessments c. The Copermittees must annually evaluate the results and findings from the special studies developed and implemented pursuant to Provision D.3 , and assess their relevance to the Copermittees' efforts to characterize receiving water conditions, understand sources of pollutants and/or stressors, and control and reduce the discharges of pollutants from the MS4 outfalls to receiving waters in the Watershed Management Area. The Copermittees must report the results of the special studies assessments applicable to the Watershed Management Area, and identify any necessary modifications or updates to the Water Quality Improvement Plan based on the results in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3).	Section 3.3			X	X
D.4.d.	Integrated Assessment of Water Quality Improvement Plan d. As part of the iterative approach and adaptive management process required for the Water Quality Improvement Plan pursuant to Provision B.5, the Copermittees in each Watershed Management Area must integrate the data collected pursuant to Provisions D.1-D.3, the findings from the assessments required pursuant to Provisions D.4.a-c, and information collected during the implementation of the jurisdictional runoff management programs required pursuant to Provision E to assess the effectiveness of, and identify necessary modifications to, the Water Quality Improvement Plan as follows:	Section 4.2			X	X

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
D.4.d.(1)	(1) The Copermittees must re-evaluate the priority water quality conditions and numeric goals for the Watershed Management Area, as needed, during the term of this Order pursuant to Provision B.5.a. The re-evaluation and recommendations for modifications to the priority water quality conditions, and/or numeric goals and corresponding schedules may be provided in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) , but must at least be provided in the Report of Waste Discharge pursuant to Provision F.5.b. The priority water quality conditions and numeric goals for the Watershed Management Area must be reevaluated as follows: (a) Re-evaluate the receiving water conditions in the Watershed Management Area in accordance with Provision B.2.a; (b) Re-evaluate the impacts on receiving waters in the Watershed Management Area from MS4 discharges in accordance with Provision B.2.b; (c) Re-evaluate the identification of MS4 sources of pollutants and/or stressors in accordance with Provision B.2.d; (d) Identify beneficial uses of the receiving waters that are protected in accordance with Provision D.4.a; (e) Evaluate the progress toward achieving the interim and final numeric goals for protecting impacted beneficial uses in the receiving waters.	Section 4.2			X	X
D.4.d.(2)	(2) The Copermittees must re-evaluate the water quality improvement strategies for the Watershed Management Area during the term of this Order pursuant to Provision B.5.b. The re-evaluation and recommendations for modifications to the water quality improvement strategies and schedules may be provided in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) , but must at least be provided in the Report of Waste Discharge pursuant to Provision F.5.b. The water quality improvement strategies for the Watershed Management Area must be re-evaluated as follows: (a) Identify the non-storm water and storm water pollutant loads from the Copermittees' MS4 outfalls in the Watershed Management Area, calculated or estimated pursuant to Provisions D.4.b; (b) Identify the non-storm water and storm water pollutant load reductions, or other improvements to receiving water or water quality conditions, that are necessary to attain the interim and final numeric goals identified in the Water Quality Improvement Plan for protecting beneficial uses in the receiving waters; (c) Identify the non-storm water and storm water pollutant load reductions, or other improvements to the quality of MS4 discharges, that are necessary for the Copermittees to demonstrate that non-storm water and storm water discharges from their MS4s are not causing or contributing to exceedances of receiving water limitations; (d) Evaluate the progress of the water quality improvement strategies toward achieving the interim and final numeric goals identified in the Water Quality Improvement Plan for protecting beneficial uses in the receiving waters.	Section 4.2	X			X
D.4.d.(3)	(3) The Copermittees must re-evaluate and adapt the water quality monitoring and assessment program for the Watershed Management Area when new information becomes available to improve the monitoring and assessment program pursuant to Provision B.5.c. The re-evaluation and recommendations for modifications to the monitoring and assessment program may be provided in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) , but must at least be provided in the Report of Waste Discharge pursuant to Provision F.5.b. Modifications to the water quality monitoring and assessment program must be consistent with the requirements of Provision D.1-D.3. The re-evaluation of the water quality monitoring and assessment program for the Watershed Management Area must consider the data gaps identified by the assessments required pursuant to Provisions D.4.a-b, and results of the special studies implemented pursuant to Provision D.4.c.	Section 4.2			X	X
Provision E						
E.1.b.	b. With the first Water Quality Improvement Plan Annual Report required pursuant to Provision F.3.b.(3), each Copermittee must submit a statement certified by its Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative that the Copermittee has taken the necessary steps to obtain and maintain full legal authority within its jurisdiction to implement and enforce each of the requirements contained in this Order.	Certification Statement	X			
E.2.d.(4)	(4) Each Copermittee must submit a summary of the non-storm water discharges and illicit discharges and connections investigated and eliminated within its jurisdiction with each Water Quality Improvement Plan Annual Report required under Provision F.3.b.(3) of this Order.	N/A	X		X	
E.8.c.	c. Each Copermittee must submit a summary of the annual fiscal analysis with each Water Quality Improvement Plan Annual Report required pursuant to Provision F.3.b.(3) .	N/A	X			
Provision F						
F.1.b.(6)	(6) During implementation of the Water Quality Improvement Plan the Copermittees must correct any deficiencies in the Plan identified by the San Diego Water Board in the updates submitted with the Water Quality Improvement Plan Annual Report following a request by the Board to do so.	Section 4.2				X

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
F.2.a.(2)	(2) Each Copermittee must update its jurisdictional runoff management program document to incorporate the requirements of Provision E concurrent with the submittal of the Water Quality Improvement Plan. Each Copermittee must correct any deficiencies in the jurisdictional runoff management program document based on comments received from the San Diego Water Board in the updates submitted with the Water Quality Improvement Plan Annual Report;	N/A	X			X
F.2.a.(3)	(3) Each Copermittee must submit updates to its jurisdictional runoff management program, with the supporting rationale for the modifications, either in the Water Quality Improvement Plan Annual Report required pursuant to Provision F.3.b.(3), or as part of the Report of Waste Discharge required pursuant to Provision F.5.b.;	N/A	X			X
F.2.b.(1)	(1) Each Copermittee must update its BMP Design Manual to incorporate the requirements of Provisions E.3.a-d concurrent with the submittal of the Water Quality Improvement Plan. Each Copermittee must correct any deficiencies in the BMP Design Manual based on comments received from the San Diego Water Board in the updates submitted with the Water Quality Improvement Plan Annual Report;	N/A	X			
F.2.b.(2)	(2) Any future updates to the BMP Design Manual made after it update pursuant to Provision F.2.b.(1) is completed must be consistent with the requirements of Provisions E.3.a-d and must be submitted as part of the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) , or as part of the Report of Waste Discharge required pursuant to Provision F.5.b; and	N/A	X			
F.2.c.(1)(c)	(c) The Copermittees for each Watershed Management Area must submit 1) proposed updates to the Water Quality Improvement Plan and supporting rationale, and 2) recommendations received from the public and the Water Quality Improvement Consultation Panel and the rationale for the requested updates, either in the Water Quality Improvement Plan Annual Reports required pursuant to Provision F.3.b.(3) , or as part of the Report of Waste Discharge required pursuant to Provision F.5.b.	Section 4.2, 4.3				X
F.3.b.(3)(a-f)	(3) Water Quality Improvement Plan Annual Reports - The Copermittees for each Watershed Management Area must submit a Water Quality Improvement Plan Annual Report for each reporting period no later than January 31 of the following year. The annual reporting period consists of two different periods: 1) July 1 to June 30 of the following year for the jurisdictional runoff management programs, 2) October 1 to September 30 of the following year for the monitoring and assessment programs. The Water Quality Improvement Plan Annual Reports must be made available on the Regional Clearinghouse required pursuant to Provision F.4. Each Annual Report must include the following:	See below				
	(a) The receiving water and MS4 outfall discharge monitoring data collected pursuant to Provisions D.1 and D.2, summarized and presented in tabular and graphical form;	Section 3.1, 3.2			X	
	(b) The progress of the special studies required pursuant to Provision D.3, and the findings, interpretations and conclusions of a special study, or each phase of a special study, upon its completion;	Section 3.3			X	
	(c) The findings, interpretations and conclusions from the assessments required pursuant to Provision D.4;	Section 3			X	
	(d) The progress of implementing the Water Quality Improvement Plan, including, but not limited to, the following:	Section 2				
	(i) The progress toward achieving the interim and final numeric goals for the highest water quality priorities for the Watershed Management Area;	Section 2	X			X
	(ii) The water quality improvement strategies that were implemented and/or no longer implemented by each of the Copermittees during the reporting period and previous reporting periods;	Section 2	X			X
	(iii) The water quality improvement strategies planned for implementation during the next reporting period;	Section 2	X			X
	(iv) Proposed modifications to the water quality improvement strategies, the public comments received and the supporting rationale for the proposed modifications;	Section 4.2	X			X
	(v) Previous modifications or updates incorporated into the Water Quality Improvement Plan and/or each Copermittee's jurisdictional runoff management program document and implemented by the Copermittees in the Watershed Management Area; and	Section 4.2	X			X
(vi) Proposed modifications or updates to the Water Quality Improvement Plan and/or each Copermittee's jurisdictional runoff management program document;	Section 4.2	X			X	
(e) A completed Jurisdictional Runoff Management Program Annual Report Form (contained in Attachment D to this Order or a revised form accepted by the San Diego Water Board) for each Copermittee in the Watershed Management Area, certified by a Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative; and	N/A	X				

Permit Provision	Permit Language	WQIP AR Section	WQIP Appendix			
			Appendix 2 Jurisdictional Information	Appendix 3 Numeric Goals	Appendix 4 Monitoring	Appendix 5 Adaptive Management
	(f) Each Copermittee must provide any data or documentation utilized in developing the Water Quality Improvement Plan Annual Report upon request by the San Diego Water Board. Any Copermittee monitoring data utilized in developing the Water Quality Improvement Plan Annual Report must be uploaded to the California Environmental Data Exchange Network (CEDEN). Any Copermittee monitoring and assessment data utilized in developing the Water Quality Improvement Plan Annual Report must be available for access on the Regional Clearinghouse required pursuant to Provision F.4.	N/A			X	
Attachment E						
Attachment E	Specific Monitoring and Assessment Requirements for each TMDL. TMDL monitoring and assessment results must be submitted as part of Water Quality Improvement Plan Annual Reports required under Provision F.3.b.	Section 3.1			X	

**Santa Margarita River Watershed Management Area
2019-2020 Water Quality Improvement Plan
Annual Report
January 2021**

**APPENDIX 2
Jurisdictional Runoff Management Program
Information**

**APPENDIX 2 JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
INFORMATION**

TABLE OF CONTENTS

Section	Page
APPENDIX 2 – JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM INFORMATION	1
1 JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM INFORMATION	1
2 CITY OF MURRIETA	3
2.1 JRMP Annual Report	3
2.2 Strategies	4
2.3 Modifications to WQMP	13
2.4 Modifications to the JRMP	13
2.5 Correspondence Regarding Compliance During The COVID-19 Pandemic	13
3 CITY OF TEMECULA	14
3.1 JRMP Annual Report	14
3.2 Strategies	15
3.3 Modifications to WQMP	22
3.4 Modifications to the JRMP	22
3.5 Correspondence Regarding Compliance During The COVID-19 Pandemic	22
4 CITY OF WILDOMAR	23
4.1 JRMP Annual Report	23
4.2 Strategies	24
4.3 Modifications to WQMP	35
4.4 Modifications to the JRMP	35
4.5 Correspondence Regarding Compliance During The COVID-19 Pandemic	35
5 COUNTY OF RIVERSIDE	36
5.1 JRMP Annual Report	36
5.2 Strategies	37
5.3 Modifications to WQMP	48
5.4 Modifications to the JRMP	48
5.5 Correspondence Regarding Compliance During The COVID-19 Pandemic	48
6 RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	49
6.1 JRMP Annual Report	49
6.2 Strategies	50
6.3 Modifications to WQMP	62
6.4 Modifications to the JRMP	64

6.5	Correspondence Regarding Compliance During The COVID-19 Pandemic.....	64
7	COUNTY OF SAN DIEGO.....	65
7.1	JRMP Annual Report	65
7.2	Strategies	66
7.3	Modifications to BMP Design Manual.....	98
7.4	Modifications to the JRMP.....	98
7.5	Correspondence Regarding Compliance During The COVID-19 Pandemic.....	98

ATTACHMENT

2A	Public Education and Outreach Activities Report, 2019-2020 Annual Report	
----	--	--

LIST OF TABLES

Title	Page
Table A2-1. City of Murrieta, Illicit Discharge Detection and Elimination Program Strategies	4
Table A2-2. City of Murrieta, Development Planning Program Strategies	6
Table A2-3. City of Murrieta, Construction Management Program Strategies	7
Table A2-4. City of Murrieta, Existing Development Management Program Strategies	8
Table A2-5. City of Murrieta, Enforcement Response Plans Program Strategies	9
Table A2-6. City of Murrieta, Public Education and Participation Program Strategies	10
Table A2-7. City of Murrieta, Optional Jurisdictional Strategies	11
Table A2-8. City of Murrieta, Optional WMA Strategies.....	12
Table A2-9. City of Temecula, Illicit Discharge Detection and Elimination Program Strategies	15
Table A2-10. City of Temecula, Development Planning Program Strategies	16
Table A2-11. City of Temecula, Construction Management Program Strategies.....	17
Table A2-12. City of Temecula, Existing Development Management Program Strategies	18
Table A2-13. City of Temecula, Enforcement Response Plans Program Strategies.....	19
Table A2-14. City of Temecula, Public Education and Participation Program Strategies.....	20
Table A2-15. City of Temecula, Optional Jurisdictional Strategies	21
Table A2-16. City of Wildomar, Illicit Discharge Detection and Elimination Program Strategies	24
Table A2-17. City of Wildomar, Development Planning Program Strategies	26
Table A2-18. City of Wildomar, Construction Management Program Strategies	28
Table A2-19. City of Wildomar, Existing Development Management Program Strategies	29
Table A2-20. City of Wildomar, Enforcement Response Plans Program Strategies	31
Table A2-21. City of Wildomar, Public Education and Participation Program Strategies	32
Table A2-22. City of Wildomar, Optional Jurisdictional Strategies	33
Table A2-23. City of Wildomar, Optional WMA Strategies	34
Table A2-24. County of Riverside, Illicit Discharge Detection and Elimination Program Strategies	37
Table A2-25. County of Riverside, Development Planning Program Strategies	39
Table A2-26. County of Riverside, Construction Management Program Strategies	40
Table A2-27. County of Riverside, Existing Development Management Program Strategies	41
Table A2-28. County of Riverside, Enforcement Response Plans Program Strategies	42
Table A2-29. County of Riverside, Public Education and Participation Program Strategies	43
Table A2-30. County of Riverside, Optional Jurisdictional Strategies	44
Table A2-31. County of Riverside, Optional WMA Strategies	47
Table A2-32. Riverside County Flood Control and Water Conservation District, Illicit Discharge Detection and Elimination Program Strategies	50
Table A2-33. Riverside County Flood Control and Water Conservation District, Development Planning Program Strategies.....	52
Table A2-34. Riverside County Flood Control and Water Conservation District, Construction Management Program Strategies.....	54
Table A2-35. Riverside County Flood Control and Water Conservation District, Existing Development Management Program Strategies	55

LIST OF TABLES (CONTINUED)

Title	Page
Table A2-36. Riverside County Flood Control and Water Conservation District, Enforcement Response Plans Program Strategies.....	56
Table A2-37. Riverside County Flood Control and Water Conservation District, Public Education and Participation Program Strategies	57
Table A2-38. Riverside County Flood Control and Water Conservation District, Optional Jurisdictional Strategies.....	59
Table A2-39. Riverside County Flood Control and Water Conservation District, Optional WMA Strategies	60
Table A2-40. County of San Diego Strategy Highlights.....	66
Table A2-41. County of San Diego Jurisdictional Strategies.....	77
Table A2-42. County of San Diego Optional Jurisdictional Strategies.....	91
Table A2-43. County of San Diego, Optional WMA Strategies	97

APPENDIX 2 – JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM INFORMATION

1 JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM INFORMATION

The following sections present agency-specific information for the Santa Margarita River (SMR) Watershed Management Area (WMA), including:

- Jurisdictional Runoff Management Program (JRMP) Annual Reports – the completed JRMP Annual Report form (Attachment D to the Permit), fiscal analysis, and supporting information. Response to program audit letters are included here if the jurisdiction is providing with the annual report.
- Jurisdictional Strategies – tables present the actual and planned jurisdictional strategies utilized by the Copermittees in the SMR WMA to address the highest priority water quality condition (HPWQC) (i.e., eutrophication and nutrient loading). Information is provided about the following types of strategies:
 - Jurisdictional, or JRMP, strategies: strategies that individual jurisdictions have committed to implement within their jurisdictions. These strategies generally correspond to the JRMP requirements of the MS4 Permit (Provision E).
 - Jurisdictional, or JRMP, optional strategies: strategies that are not strictly required by the MS4 Permit but which jurisdictions identified to help meet WQIP goals. Optional JRMP strategies may be planned, meaning a jurisdiction has decided to implement them, or their implementation may be conditional on certain "triggers. " In the case of optional strategies that must be triggered, jurisdictions only plan to implement these strategies when certain conditions are met, and the strategy then becomes "triggered." Triggers vary by strategy and are detailed in the strategy tables.
 - Watershed, or WMA, strategies: strategies that apply across the WMA and involve multiple jurisdictions. In some cases these strategies also are conditional and are only implemented when triggered. When triggers apply, they are detailed in the individual strategy descriptions.

Some tables use the following symbols:

- = full strategy implementation
- ◐ = partial strategy implementation
- × = no strategy implementation
- NA = not applicable for the reporting period
- NT = strategy was not triggered for implementation

Modified strategies – Strategies that have been modified are designated using "track changes" showing additions (underlined) and removals (~~strikeouts~~) of text and an explanation is provided in the "Rationale for Modification to the Strategy" column. New strategies are added as appropriate and are **red**.

- Modifications to the WQMP/BMP Design Manual – The District incorporated the Water Quality Management Plan (WQMP) into their BMP Design Manual as an appendix. However, some jurisdictions continue to refer to their WQMP and BMP Design Manual as separate manuals. Any updates to any of these manuals are submitted within this section, as applicable. Future updates will be included in this section in future WQIP Annual Reports, when applicable.
- Modifications to the JRMP – Itemized in this section or may be provided as an attachment to the JRMP Annual Report.
- Correspondence regarding Compliance during the Covid-19 Pandemic – includes letters that were sent to the San Diego Water Board and letter responses from the San Diego Water Board, if received.

2 CITY OF MURRIETA

2.1 JRMP ANNUAL REPORT

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019/2020

I. COPERMITTEE INFORMATION	
Copermittee Name: CITY OF MURRIETA	
Copermittee Primary Contact Name: BOB MOEHLING	
Copermittee Primary Contact Information:	
Address: 1 TOWN SQUARE	
City: MURRIETA	County: RIVERSIDE
State: CA	Zip: 92562
Telephone: 951-461-6036	Fax: 951-461-6049
Email: BMOEHLING@MURRIETACA.GOV	
II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001? ** See attachment.	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Number of non-storm water discharges reported by the public	33
Number of non-storm water discharges detected by Copermittee staff or contractors	1
Number of non-storm water discharges investigated by the Copermittee	34
Number of sources of non-storm water discharges identified	34
Number of non-storm water discharges eliminated	31
Number of sources of illicit discharges or connections identified	0
Number of illicit discharges or connections eliminated	0
Number of enforcement actions issued	27
Number of escalated enforcement actions issued	2
V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001? ** See attachment.	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Number of proposed development projects in review	59
Number of Priority Development Projects in review	52
Number of Priority Development Projects approved	12
Number of approved Priority Development Projects exempt from any BMP requirements	0
Number of approved Priority Development Projects allowed alternative compliance	0
Number of Priority Development Projects granted occupancy	0
Number of completed Priority Development Projects in inventory	72
Number of high priority Priority Development Project structural BMP inspections	21
Number of Priority Development Project structural BMP violations	0

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

Number of enforcement actions issued	0
Number of escalated enforcement actions issued	0

FY 2019/2020

VI. CONSTRUCTION MANAGEMENT PROGRAM

Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Number of construction sites in inventory	32	
Number of active construction sites in inventory	32	
Number of inactive construction sites in inventory	0	
Number of construction sites closed/completed during reporting period	0	
Number of construction site inspections	105	
Number of construction site violations	384	
Number of enforcement actions issued	7	
Number of escalated enforcement actions issued	6	

VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM

Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001? ** See attachment.	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
--	---	-----------------------------

	Municipal	Commercial	Industrial	Residential
Number of facilities or areas in inventory	95	617	6	9
Number of existing development inspections	372	27	0	9
Number of follow-up inspections	0	0	0	0
Number of violations	0	0	0	0
Number of enforcement actions issued	0	0	0	0
Number of escalated enforcement actions issued	0	0	0	0

VIII. PUBLIC EDUCATION AND PARTICIPATION

Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

IX. FISCAL ANALYSIS

Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
---	---	-----------------------------

X. CERTIFICATION

I [Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bob Moehling

Signature

BOB MOEHLING

Print Name

951-461-6036

Telephone Number

12/17/20

Date

DIRECTOR OF PUBLIC WORKS / CITY ENGINEER

Title

BMOEHLING@MURRIETACA.GOV

Email

JRMP Annual Report – Attachment

IV. Illicit Discharge Detection and Elimination (IDDE) Program –

As an improvement to the existing IDDE program and to address the recent IDDE audit, the City is in the process of developing an updated IDDE implementation plan that includes a website update to consolidate and streamline the City's water quality page; additional training for code enforcement staff; develop the complaint and enforcement workflow; aggregate and print public education materials; and update the JRMP to document the IDDE / over-irrigation enforcement response plan. Please note, all inspections will be conducted in accordance with the City's COVID-19 implementation plan as outlined in the June 24, 2020 letter to the San Diego Water Board.

V. Development Planning Program –

The City has prescribed BMP requirements on development projects in accordance with the Regional MS4 Permit. The City has also increased development planning inspections through self-certification and direct inspection methods. To streamline and minimize time required for inspection activities, the City will be implementing cloud-based software to more effectively manage compliance activities. Please note, all inspections will be conducted in accordance with the City's COVID-19 implementation plan as outlined in the June 24, 2020 letter to the San Diego Water Board.

VII. Existing Development Management Program –

The City has increased commercial inspections and fulfilled requirements to the maximum extent possible with current resources. To streamline and minimize time required for inspection activities, the City will be implementing cloud-based software to more effectively manage compliance activities. As more resources become available, the City will increase inspections to fulfill the inspection requirements to the maximum extent possible. Please note, all inspections will be conducted in accordance with the City's COVID-19 implementation plan as outlined in the June 24, 2020 letter to the San Diego Water Board.

FISCAL ANALYSIS

- 1) The following table provides estimated expenditures for the preceding, current and next reporting period (FY 2018-19, FY 2019-20 and FY 2020-21, respectively). This table identifies the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities described in the City of Murrieta JRMP as required under Section H.2 of the 2010 SMR MS4 Permit.

Program Element	Fiscal Year 2018-2019 (Estimated Actual)		Fiscal Year 2019-2020 (Estimated Actual)		Fiscal Year 2020-2021 (Projected)	
	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures
Program Management		\$126,188		\$168,251		\$173,101
Annual Fee for MS4 NPDES Permit		\$58,373		\$66,351		\$66,351
Implementation Agreement Shared Cost		\$376,442		\$219,137		\$611,594
Construction Inspections		\$124,800		\$101,329		\$199,680
Development Planning		\$246,958		\$320,274		\$311,251
Industrial and Commercial Inspections		\$0		\$20,220		\$37,440
Illicit Connections & Illegal Discharges Program		\$7,143		\$7,143		\$19,623
Municipal Facilities and Activities		\$60,349		\$56,217		\$67,000
Public Education & Outreach		Included in IA Shared Cost		Included in IA Shared Cost		Included in IA Shared Cost
Monitoring Program		Included in IA Shared Cost		Included in IA Shared Cost		Included in IA Shared Cost
Retrofit Program		\$0		\$0		\$0

FISCAL ANALYSIS

Other (Audit, legal, contingency, office supplies, training & development, IT services, liability & property insurance charges)		\$13,845		\$4,820		\$13,700
Total		\$1,014,098		\$963,742		\$1,499,740

FISCAL ANALYSIS

2) A description of the source(s) of funds that are proposed to meet the necessary expenditures for the subsequent year.

Source of Funds	Capital Expenditures	Percent of Total Program Funding	Restrictions on Use (if applicable)
CSA 152		32% - \$480,000	
General Fund		68% - \$1,019,740	

3) Provide a narrative description of circumstances resulting in a 25 percent or greater annual change for any budget line item.

Implementation Agreement Shared Cost: Increases in cost for the NPDES Permit administration, public education and outreach, NPDES training programs, Water Quality Monitoring program and TMDL program.

Construction Inspections: Retirement of staff resulted in additional staff hired to complete inspections.

Development Planning: Retirement of staff resulted in additional transitional staff to meet development requirements.

Industrial / Commercial: Additional staff time allocated to complete required commercial / industrial inspections.

Illicit Connections & Illegal Discharges: Additional staff time anticipated to enforce over-irrigation incidents.

Other: Includes audit, contingency, maintenance supplies, training and development and liability and property insurance.

2.2 STRATEGIES

Table A2-1. City of Murrieta, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - City of Murrieta	FY19-20	Planned FY20-21	Actual/ Planned	Rationale for Modification to the Strategy	Comments
IDDE-1	Enhanced municipal training programs and curriculum targeting key field staff. Programs will focus on the water quality improvement plan, HPWQC, NNE requirements as related to illicit discharges and elimination of dry weather flows.	●	●	A		<ul style="list-style-type: none"> Due to COVID-19, key City field staff will attend enhanced municipal online training program in fall of 2020. The District has developed the training curriculum and will administer the training. City has selected cloud-based software to manage storm water compliance activities and data. Software training will begin in FY 20-21.
IDDE-3	Plot IDDE incidents in GIS to identify clusters where community outreach and workshops would be effective in eliminating dry weather flows. Data and Storm Water Compliance Management – use of CloudCompli software to manage all programs: construction, post construction BMP (WQMP), commercial, industrial, IDDE and municipal.	●	●	A	Improved storm water compliance management	<ul style="list-style-type: none"> City has selected cloud-based software to manage storm water compliance activities and data. Onboarding and implementation will begin in FY 20-21. This strategy will be used for IDDE and for other programs as well.
IDDE-4	Prepare draft IDDE implementation plan to update and improve the program.	●	●	A	Strategy in response to IDDE audit	<ul style="list-style-type: none"> In response to the 2018 IDDE audit, the City has prepared a draft IDDE implementation plan to improve the program. The program updates include updating the City's water quality website, improving coordination with City departments to receive, investigate and enforce IDDE incidents, training for enforcement staff, and review and refinement of IDDE enforcement response plan to include over-irrigation.

Table A2-1. City of Murrieta, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - City of Murrieta	FY19-20	Planned FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-5	Provide notification letter and public information to master HOA located tributary to NAL exceedance outfall	◐	●	A	Strategy in response to NAL exceedance	<ul style="list-style-type: none"> The letter will notify the master HOA of the exceedance and the potential sources for the exceedance. In addition to the letter, the City provided public education materials on over-irrigation, gardening and landscaping and pet waste.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-2. City of Murrieta, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - City of Murrieta	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-1	Smart irrigation conditions of approval Require Developer to design and install irrigation systems so runoff does not discharge into the street or storm drain system.	●	●	A	Clarification	<ul style="list-style-type: none"> Strategy is ongoing
DEV-2	BMP Design Manual Training	◐	◐	A		<ul style="list-style-type: none"> Due to COVID-19, previously scheduled BMP Design Manual Training is postponed until further notice.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-3. City of Murrieta, Construction Management Program Strategies

Number	Santa Margarita River Construction Management Program Strategies - City of Murrieta	FY19-20	Planned FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
CON-1	Provide inspection staff training related to construction storm water management	◐	●	A		<ul style="list-style-type: none"> Due to COVID-19, City staff will attend construction storm water management online training in fall of 2020. The District has developed the training and will administer the training.
CON-2	Provide informational letter to responsible parties prior to start of rainy season inspections to ensure BMPs are adequately implemented.	●	●	A	Added new strategy to reflect current program efforts	<ul style="list-style-type: none"> City inspector provided informational letter and additional education to contractors and other responsible parties on compliance areas that require attention.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-4. City of Murrieta, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies City of Murrieta	FY19-20	Planned FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-2	Increase inspection frequencies at facilities identified on Copermittee inventories to be sources of nutrients	X	X	NT		<ul style="list-style-type: none"> Implementation to start in FY 2022
ED-3	Enhance commercial / industrial / municipal inspections programs to focus on irrigation systems.	X	◐	P		<ul style="list-style-type: none"> Planning for focused irrigation system inspections for commercial / industrial / municipal will begin in FY 2021.
ED-4	Enhance residential inspections programs to focus on over-irrigation.	X	◐	P		<ul style="list-style-type: none"> Planning for focused residential irrigation inspections will begin in FY 2021.
ED-6	Enhanced municipal training programs and curriculum targeting inspections staff. Programs will focus on the water quality improvement plan, HPWQC, NNE requirements as related to the inspections programs and specific nutrient issues.	◐	●	A		<ul style="list-style-type: none"> City inspection staff will attend the online enhanced commercial and industrial training program in fall of 2020. The District has developed the training curriculum and will administer the training.
ED-7	Enhanced enforcement program targeting identified, problematic, sources of nutrients	X	X	NT		<ul style="list-style-type: none"> Implementation to start in FY 2022
ED-8	Coordination with EVMWD to distribute public education materials.	X	◐	A	Added strategy to provide public education to residents	<ul style="list-style-type: none"> EVMWD will be distributing public education materials on over-irrigation and reducing pollutants in the watershed to residents served by this water district.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-5. City of Murrieta, Enforcement Response Plans Program Strategies

Number	Santa Margarita River Enforcement Response Plans Program Strategies City of Murrieta	FY19-20	Planned FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ERP-1	Implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Enforcement Response Plan.	●	●	A		Escalating enforcement responses are implemented as deficiencies are identified.

Notes:

● - Fully implemented; ● - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-6. City of Murrieta, Public Education and Participation Program Strategies

Number	Santa Margarita River Public Education and Participation Program Strategies City of Murrieta	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-2	Enhanced outreach programs targeting homeowner's associations/residential communities.	X	X	NT		<ul style="list-style-type: none"> Implementation to start in FY 2023

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-7. City of Murrieta, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies City of Murrieta	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-1	Water District Coordination - Coordination with Water Districts to pinpoint problem sources of dry weather flows.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-2	Water District Coordination - Coordination with Water Districts on inspection and enforcement efforts.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-3	Establish semiannual meetings among Engineering and Community Services District to evaluate opportunities for improving water quality at MS4s, streets, parking lots, parks and other landscaped areas.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-4	Establish semiannual meetings to discuss potential ordinance changes.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-4	Establish semiannual meetings among CIP staff to identify opportunities to rehabilitate channels or habitats.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-8. City of Murrieta, Optional WMA Strategies

Number	Santa Margarita River Optional WMA Strategies City of Murrieta	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-6	Partner with Water Districts to implement incentive program.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-7	Regional inspector to inspect areas watershed-wide for anthropogenic sources of dry weather flows.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

2.3 MODIFICATIONS TO WQMP

Modifications to the WQMP were made during FY 2017-2018. The current WQMP went into effect on July 5th, 2018. No modifications to the WQMP were made during the reporting period. The current City of Murrieta WQMP is posted on the City's website.

2.4 MODIFICATIONS TO THE JRMP

No modifications to the City of Murrieta's JRMP have been made since the WQIP was approved. The City's current JRMP is posted on the City's website.

2.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The City of Murrieta sent a letter to the San Diego Water Board describing the impacts of the COVID-19 pandemic and associated public health orders on its stormwater program. The City's letter is provided in this section. No response was received from the San Diego Water Board.



CITY OF MURRIETA

June 24, 2020

Mr. David W. Gibson, Executive Officer
California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108

Attn: Laurie Walsh, PE Storm Water Management Unit

SUBJECT: Compliance with Water Board Requirements During COVID-19

Dear Mr. Gibson:

On March 20, 2020, the San Diego Water Board (Water Board) and the State Water Resources Control Board (State Board) provided a notice, "Compliance with Water Board Requirements during the Coronavirus 2019 (COVID-19) Emergency (COVID-19 Notice), detailing how MS4 permittees were to advise the Water Boards concerning potential non-compliance with the MS4 permit and other order requirements due to the COVID-19 public health emergency. In accordance with that notice, this letter provides the City's assessment regarding compliance with the above-referenced MS4 permit and related orders.

This letter responds to the following Water Board COVID-19 Notice requirement:

If there is a specific Water Board order or requirement that cannot be timely met because it would be inconsistent with current governmental directives or guidelines related to COVID-19, the entity responsible for compliance with the Water Board order or requirement must notify the applicable Water Board immediately. The notification shall be via electronic mail to the applicable Water Board using the appropriate email address identified below and shall include:

- *the specific Water Board order, regulation, permit or other requirement that cannot be timely met;*
- *the inconsistent COVID-19 directive or guideline;*
- *an explanation of why the responsible entity cannot timely meet the Water Board order or requirement; and*
- *any action that the entity will take in lieu of complying with the specific Water Board order or requirement*

The City is enrolled under the National Pollutant Discharge Elimination (NPDES) Permit and Waste Discharge Requirements for Discharges from Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, San Diego Regional Water Quality Control Board Order No. R9-2015-0010 as amended by Order Nos. R9-2013-0001 and R9-2015-0001 (MS4 Permit) and the Water



CITY OF MURRIETA

Quality Improvement Monitoring and Assessment Program for Eutrophic Conditions in the Santa Margarita River Estuary and Watershed, Investigative Order No. R9-2019-0007 (Investigative Order). The City has reviewed its requirements under the MS4 Permit and the Investigative Order and has evaluated its ability to comply with those requirements. Under current conditions, the City expects to comply with the requirements of the MS4 Permit and the Investigative Order except for the proposed modifications noted in this letter.

COVID-19 Restrictions:

The City has heeded the public health directives and guidance related to COVID-19. These directives present some challenges to comply with some water quality requirements. The City will strive to comply with the water quality requirements to the extent possible while also heeding the COVID-19 directives.

The directives and guidelines that affect compliance with the water quality requirements are:

- Centers for Disease Control and Prevention (CDC) Social Distancing Guidelines
- Riverside County Public Health Order, March 13 – Schools Closed to Avoid Potential COVID-19 Exposure
- Riverside County Public Health Order, March 18 – Closing All Schools from March 16, 2020 through April 30, 2020
- Governor’s March 19, 2020, Executive Order N-33-20 (Stay at Home Order);
- U.S. Department of Homeland Security’s “Identifying Critical Infrastructure During COVID-19” (CISA Critical Infrastructure)
- Riverside County Public Health Order, April 4 – Extends School Closure Order to June 19
- Governor’s Updated Industry Guidance
- City Vehicle Usage Guidelines

MS4 Permit Provisions Affected by Referenced COVID-19 Restrictions:

Provision E.3 – Development Planning

- **Specific Water Board Requirement that Cannot Be Timely Met:**

E.3.e.3.a, b and c: Verification through inspections, self-certifications, surveys, or other equally effective approaches and appropriate follow up measures (including re-inspections, enforcement, etc.) to ensure that BMPs on each Priority Development Project (PDP) are adequately maintained and continue to operate effectively to remove pollutants in storm water to the MEP. All high priority structural BMPs at Priority Development Project sites are to be inspected directly annually prior to each rainy season.



CITY OF MURRIETA

- **Explanation of why the responsible entity cannot timely meet the Water Board order or requirement:**

The City is required to directly inspect all high priority sites prior to each rainy season (October 1) and the remaining sites annually. Due to the referenced directives, many PDP sites may have experienced closures for several months and access to the BMPs has been limited, thereby limiting inspections conducted. At this time, inspections have resumed as the re-opening of PDP sites have begun. While inspections may resume, it is anticipated that the inspection process, including follow up and enforcement actions, may be delayed due to potential PDP site operational changes. As a result, the required inspections may not be completed within the timeframes required.

- **Any action that the entity will take in lieu of complying with specific Water Board order or requirement:**

The City has completed inspections of high priority PDP sites. The City will continue to inspect medium priority PDP sites. Self-certification letters have been sent to the low priority PDP sites. Inspections completed within the FY 19-20 annual reporting year will be documented within the FY 19-20 annual report. Inspections completed within FY 20-21 will be documented in the FY 20-21 annual report.

Provision E.5 – Existing Development

- **Specific Water Board Requirement(s) that Cannot Be Timely Met:**

E.5.b.1.c.ii. – Implementation of operation and maintenance activities for its MS4 and related structures (including but not limited to catch basins, storm drain inlets, detention basins, etc.) and verify the proper operation of all its municipal structural treatment controls designed to reduce pollutants. Operation and maintenance activities may include inspections, cleaning and proper disposal of materials removed from the cleaning of MS4 and related structures.

E.5.c.1.a.i., E.5.c.b. – Conduct inspections of inventoried existing developments. Existing developments must be inspected once every five years utilizing drive-by, onsite or visual inspections. Based on inspection findings, follow up actions, including education and outreach, re-inspection and enforcement actions must be taken.



CITY OF MURRIETA

- **Explanation of why the responsible entity cannot timely meet the Water Board order or requirement:**

E.5.b.1.c.ii. –The cleaning of catch basins and associated structures requires a two-person crew to safely set up the work area and effectively perform maintenance activities. Maintenance activities involve working closely together to operate maintenance equipment. Due to social distancing guidelines, crew members will not be able to work closely together to complete the maintenance tasks. Additionally, City maintenance staff is further limited by City guidance requiring that one employee occupy each vehicle at any given time. This further limits maintenance activities since vehicles are prioritized for higher priority essential City maintenance work.

E.5.c.1.a.i., E.5.c.b. – The City is required to inspect inventoried existing development once every five years and take any necessary follow up actions as necessary. Due to the referenced COVID-19 directives, many existing commercial and industrial sites have experienced closures. The City is now resuming inspection of sites previously closed. Although commercial and industrial sites are re-opening, it is anticipated that the inspection process, including follow up and enforcement actions, may be delayed due to potential commercial and industrial site operational changes. As a result, the required inspections may not be completed within the timeframes required.

- **Any action that the entity will take in lieu of complying with specific Water Board order or requirement:**

E.5.b.1.c.ii. – The City will resume maintenance activities once the social distancing guidelines have been lifted. All maintenance activity conducted will be reported in the annual reporting year in which the activity is completed.

E.5.c.1.a.i., E.5.c.b. – The City will continue to conduct commercial and industrial inspections. Inspections completed within the FY 19-20 annual reporting year will be documented in the FY 19-20 annual report. Inspections completed within the FY 20-21 annual reporting cycle will be documented in the FY 20-21 annual report.

Provision E.7 – Public Education and Participation

On April 8, 2020, the Riverside County Flood Control and Water Conservation District (District) submitted a letter detailing COVID-19 impacts on watershed-wide public education and public participation efforts implemented by the District on behalf of the Riverside County MS4 Copermittees.



CITY OF MURRIETA

On June 15, 2020, the San Diego Regional Board issued a letter to the District indicating that public education and public participation requirements of provision E.7 implemented by the District pertaining to in-person activities that are incompatible with Governor Newsom's Executive Order N-33-20 or Riverside County Public Health Officer are suspended.

Investigative Order Requirements Affected by COVID-19 Restrictions:

On April 8, 2020, the Marine Corps Installations West-Marine Corps Base Camp Pendleton (MCIWEST-MCB CPEN) submitted a letter notifying the Water Board of COVID-19 Public Health Emergency impacts to monitoring and assessment pursuant to the Investigative Order. The District submitted an email to the Water Board on behalf of the Riverside County MS4 Copermittees in support of the letter submitted by MCIWEST-MCB CPEN.

On May 11, 2020, the City received notification from the Water Board that the temporary modifications proposed in the April 8, 2020 letter has been approved.

Other Factors that Will Impact the City's Water Quality Program:

The COVID-19 public health emergency remains to be a fluid situation. The above proposed changes may need to be re-evaluated if new directives are issued or if staff changes related to COVID-19 affect the ability to meet water quality requirements.

Additionally, the COVID-19 public health emergency will have a significant impact on the City's economy and effectively, a significant impact on the City's operating budget. When it is determined how the City's operating budget is impacted, the City will re-evaluate its ability to meet the water quality requirements and update the Water Board accordingly.

The City remains committed to meeting the Water Board issued requirements to the extent possible, while also maintaining the safety of its City staff. The City appreciates the Water Board's consideration in the acceptance of the proposed referenced changes.

If you have any questions, please contact Ms. Mai Son at 951.461.6085 or email at mson@murrietaca.gov, or me at 951.461.6036 or email at bmoehling@murrietaca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. K. Moehling".

Robert K. Moehling, P.E.
Director of Public Works / City Engineer

3 CITY OF TEMECULA

3.1 JRMP ANNUAL REPORT

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019/2020

I. COPERMITTEE INFORMATION	
Copermittee Name: City of Temecula	
Copermittee Primary Contact Name: Patrick Thomas, Public Works Director	
Copermittee Primary Contact Information: Address: 41000 Main Street	
City: Temecula	County: Riverside
Telephone: 951-694-6444	Fax: 951-694-6475
State: Ca.	Zip: 92590
Email: Patrick.Thomas@TemeculaCA.gov	
II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Number of non-storm water discharges reported by the public	17
Number of non-storm water discharges detected by Copermittee staff or contractors	53
Number of non-storm water discharges investigated by the Copermittee	53
Number of sources of non-storm water discharges identified	30
Number of non-storm water discharges eliminated	30
Number of sources of illicit discharges or connections identified	30
Number of illicit discharges or connections eliminated	30
Number of enforcement actions issued	0
Number of escalated enforcement actions issued	0
V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Number of proposed development projects in review	767
Number of Priority Development Projects in review	14
Number of Priority Development Projects approved	5
Number of approved Priority Development Projects exempt from any BMP requirements	0
Number of approved Priority Development Projects allowed alternative compliance	1
Number of Priority Development Projects granted occupancy	0
Number of completed Priority Development Projects in inventory	155
Number of high priority Priority Development Project structural BMP inspections	9
Number of Priority Development Project structural BMP violations	7
Number of enforcement actions issued	0
Number of escalated enforcement actions issued	0

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019/2020

VI. CONSTRUCTION MANAGEMENT PROGRAM

Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Number of construction sites in inventory	94	
Number of active construction sites in inventory	94	
Number of inactive construction sites in inventory	0	
Number of construction sites closed/completed during reporting period	35	
Number of construction site inspections	332	
Number of construction site violations	44	
Number of enforcement actions issued	44	
Number of escalated enforcement actions issued	15	

VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM

Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>		
	Municipal	Commercial	Industrial	Residential
Number of facilities or areas in inventory	251	3667	93	129
Number of existing development inspections	251	528	13	97
Number of follow-up inspections	0	14	0	0
Number of violations	0	14	0	0
Number of enforcement actions issued	0	14	0	0
Number of escalated enforcement actions issued	0	0	0	0

VIII. PUBLIC EDUCATION AND PARTICIPATION

Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

IX. FISCAL ANALYSIS

Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
---	---	-----------------------------

X. CERTIFICATION

I [Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Patrick Thomas
Signature

PATRICK THOMAS
Print Name

951-694-6411
Telephone Number

01/28/2021
Date

DIRECTOR OF PUBLIC WORKS
Title

PATRICK.THOMAS@TEMECULACA.GOV
Email

FISCAL ANALYSIS

- 1) The following table provides estimated expenditures for the current reporting period, the preceding reporting period, and the next reporting period. This table identifies the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities described in the City of Temecula JRMP as required under Section H.2 of the 2010 SMR MS4 Permit.

Program Element	Fiscal Year 2020-2021		Fiscal Year 2019-2020		Fiscal Year 2018-2019	
	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures
Program Management		\$ 190,889		\$174,307		\$162,424
Annual Fee for MS4 NPDES Permit		\$40,800		\$35,837		\$35,795
Implementation Agreement Shared Cost		\$639,484		\$236,128		\$407,047
Construction Inspections		\$60,000		\$54,035		\$50,351
Development Planning		\$40,000		\$34,861		\$32,485
Industrial and Commercial Inspections		\$30,000		\$18,289		\$15,000
Illicit Connections & Illegal Discharges Program		\$10,000		\$0		\$0
Municipal Facilities and Activities		\$154,000		\$127,145		\$111,220
Public Education & Outreach		\$0		\$0		\$0
Monitoring Program		\$0		\$0		\$0
Retrofit Program		\$0		\$0		\$0
Other		\$10,000		\$10,000		\$10,000
Total		\$1,175,173		\$690,602		\$824,322

FISCAL ANALYSIS

2) A description of the source(s) of funds that are proposed to meet the necessary expenditures for the subsequent year.

Source of Funds	Capital Expenditures	Percent of Total Program Funding	Restrictions on Use (if applicable)
General Fund	\$690,602	93%	General Fund is used to fund other departments and divisions
WQMP Plan Check and Construction Inspection Fees	\$22,743	3%	Combination of fixed fees (based on project size) and fixed percentages (based on project engineers cost estimate).
ESC Plan Check and Construction Inspection Fees	\$28,760	4%	Fixed percentage based upon project's engineering cost estimate.
Citations	\$2,300	<1%	No legal restrictions

3) Provide a narrative description of circumstances resulting in a 25 percent or greater annual change for any budget line item.

The City's General Fund continues to fund the majority of the NPDES program. The WQMP, ESC, and citation categories maintained similar revenue due to a similar level of newly conditioned developments that were issued grading permits during this reporting period.

3.2 STRATEGIES

Table A2-9. City of Temecula, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-1	Update ordinances to reflect current illicit discharge and connections requirements and strategies to reduce non-stormwater discharges to the MS4 during dry and wet weather.	◐	●	A		<ul style="list-style-type: none"> Revised Ordinances have been Drafted Ordinances have been updated and approved by City Council
IDDE-2	Post signage adjacent to open channels providing information to report any observed illicit discharges. Signage will focus on sources of non-stormwater discharges such as illegal dumping and over-irrigation.	◐	◐	P		<ul style="list-style-type: none"> City has initiated planning and installation of the signs is expected to start in FY 21-22
IDDE-3	Responsible Compassion for the Homeless Program will be implemented to address homeless problems throughout the City, thereby reducing their impacts on water quality through trash, illegal dumping, and direct discharge of human waste.	●	●	A		<ul style="list-style-type: none"> Four full time City staff are assigned to Responsible Compassion for the Homeless Program

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-10. City of Temecula, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-1	Modified Low Impact Development requirements for new and redevelopment to specifically address nutrients during dry and wet weather through increased use of disconnected impervious surfaces, on-site retention of dry weather flows, and treatment of stormwater prior to discharge.	X	X	A		<ul style="list-style-type: none"> • City staff reviewed the LID standards in the BMP Design Manual and determined the existing language of the 2018 BMP Design Manual provides sufficient authority to address sources of nutrients. • City staff will ensure that the review process address these sources, but changes to the manual itself were not determined to be necessary
DEV-2	Amend BMP design manuals to address sources of HPWQCs and PWQCs on new and redevelopment projects (e.g., irrigation design standards, LID implementation) and conduct internal staff training on updated BMP design manual	X	X	P		<ul style="list-style-type: none"> • Implementation was not due to start in FY18-19 per WQIP • As noted in comments for DEV-1 above the City has determined changes to the BMP Design Manual to address sources of nutrients are not necessary at this time. Changes are not planned for FY19-20. • City staff that review WQMPs have been trained on how to ensure WQMP submittals propose BMPs to address sources of nutrients. • City staff compiled clarifying edits to the WQMP throughout FY19-20. An updated BMP manual is planned to be available online in FY20-21.

Notes:

- - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
- A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-11. City of Temecula, Construction Management Program Strategies

Number	Santa Margarita River Construction Management Program Strategies - City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
CON-1	Require implementation of BMPs that reduce the potential of HPWQC and PWQC loading, that are site specific and appropriate to the construction phase, year round.	●	●	A		<ul style="list-style-type: none"> Strategy is ongoing as part of the JRMP Construction Management Program
CON-2	Where former agricultural lands are issued grading permits for development/ redevelopment, the sites will be deemed high priority for BMP implementation and inspection in accordance with the City's JRMP.	●	●	A		<ul style="list-style-type: none"> Former agricultural lands are deemed high priority, regardless of other factors
CON-3	Impose legal authority to ensure inventoried construction projects are in compliance with all requirements.	●	●	A		<ul style="list-style-type: none"> Strategy is ongoing in accordance with the City's Enforcement Response Plan

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-12. City of Temecula, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-1	Enhanced municipal training programs and curriculum targeting inspections staff. Programs will focus on specific nutrient related activities that inspectors might encounter in the field such as non-stormwater flows and their sources (e.g., over-irrigation, illegal washing/dumping) and materials storage BMPs (e.g., coverage and containment) within existing development.	●	●	A		<ul style="list-style-type: none"> • Training is conducted on an annual basis • Due to COVID-19 restrictions, in-person trainings were limited in FY19-20. However, virtual trainings (via video conferencing) were provided throughout FY19-20
ED-2	Install weather based irrigation controllers in municipal parks and promote incentive programs elsewhere (as available) to address sources of over-watering and irrigation runoff within existing development.	●	●	A		<ul style="list-style-type: none"> • Weather based irrigation controllers were installed in municipal parks
ED-3	Weekly street sweeping in residential areas to reduce pollutant buildup (e.g., organic debris, trash, metals) on streets and curb/gutter areas, thereby reducing transport of pollutants to the storm drain system via non- stormwater and stormwater flows.	●	●	A		<ul style="list-style-type: none"> • All residential streets are swept the day following trash service day
ED-4	Modify City JRMP to include any Agricultural business operation as a high priority business inspection similar to industrial business. Report any Non-filing businesses to the Regional Board.	●	●	A		<ul style="list-style-type: none"> • Strategy was incorporated into the City Business inspection component

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-13. City of Temecula, Enforcement Response Plans Program Strategies

Number	Santa Margarita River Enforcement Response Plans Program Strategies City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
ERP-1	Implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Enforcement Response Plan.	●	●	A		<ul style="list-style-type: none"> The City enforces all applicable ordinances using approaches described in the Enforcement Response Plan

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-14. City of Temecula, Public Education and Participation Program Strategies

Number	Santa Margarita River Public Education and Participation Program Strategies City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-1	Enhanced outreach programs targeting homeowners associations to educate homeowners and HOAs about outdoor water usage, the effects of over-irrigation, and specific BMPs they can implement to reduce runoff from over-irrigation.	●	●	A		<ul style="list-style-type: none"> City updated its website and door hangers to address over-irrigation. This information is easily available to HOAs
PubEd-2	Enhanced outreach materials focused on sources of nutrients (e.g., door hangers, pamphlets, other media). Outreach materials will focus on non-stormwater discharges to the storm drain system (e.g., septic system maintenance, equestrian facility BMPs, outdoor water usage, the effects of over-irrigation, and specific BMPs they can implement to reduce runoff from over-irrigation).	●	●	A		<ul style="list-style-type: none"> Over-irrigation door hangers have been developed
PubEd-3	Notify agricultural business license holders within City Jurisdiction of requirement to enroll in the Regional Water Board Agricultural Order.	●	●	A		<ul style="list-style-type: none"> Strategy was incorporated into the City Business inspection component

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-15. City of Temecula, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies City of Temecula	FY18-19	FY19-20	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-1	Implement Parks Improvement Program that will provide landscaping, irrigation, and on- site drainage improvements that will reduce the potential for pollutant discharges (e.g., irrigation runoff, fertilizer) from municipal parks.	●	●	A		<ul style="list-style-type: none"> Rehabilitation and improvement projects included landscaping and irrigation system efficiency upgrades and on-site drainage improvements.
OPT-2	Flood control channel repair and rehabilitation to prevent erosion and the transport of sediment- bound pollutants.	X	●	A, NT		<ul style="list-style-type: none"> Strategy not triggered in FY19-20 Strategy implemented fully in FY19-20 via collaboration with community, local, and municipal agencies on the Meadow Creek Restoration Project. The City processed permits for and oversees the project. This project is ongoing in FY20-21
OPT-3	Implement dry weather infiltration, diversion to sanitary sewer, to eliminate non- stormwater discharges to the MS4.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY19-20

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

3.3 MODIFICATIONS TO WQMP

Modifications to the WQMP were made during FY 2017-2018 and the current WQMP went into effect on July 5th, 2018. The content of the WQMP has not been updated since FY18; however, edits were made to templates during FY19 and FY20 to make the document more user-friendly. Additional edits to the WQMP are planned to be made in FY20-21. The current City of Temecula WQMP is posted on the City's website.

3.4 MODIFICATIONS TO THE JRMP

The City's current JRMP, which was last updated when the WQIP was approved, is posted on the City's website. The City worked on updates to the JRMP in FY19-20 and plans to publish an updated version in FY20-21. Updates included language regarding over-irrigation prohibitions and references to HPWQCs.

3.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The City of Temecula sent a letter to the San Diego Water Board describing the impacts of the COVID-19 pandemic and associated public health orders on its stormwater program. The City's letter and the San Diego Water Board's response are provided in this section.

From: Stuart Kuhn
Sent: Monday, May 18, 2020 10:04 AM
To: sandiego@waterboards.ca.gov
Cc: Patrick Thomas; Ron Moreno; 'Laurie.Walsh@waterboards.ca.gov'
Subject: Initial Notification and Preliminary Assessment of Impact of COVID-19 Public Health Emergency on Compliance with San Diego Region NPDES MS4 Permit and Related Orders

Mr. David W. Gibson
Executive Officer
San Diego Regional Water Quality Control Board
2375 Northside Dr., Suite 100
San Diego, CA 92108-0002
Sent via electronic mail: SanDiego@waterboards.ca.gov

Re: Initial Notification and Preliminary Assessment of Impact of COVID-19 Public Health Emergency on Compliance with San Diego Region NPDES Municipal Separate Storm Sewer System (MS4) Permit and Related Orders

Dear Mr. Gibson:

On March 20, 2020, the San Diego Water Board and the State Water Resources Control Board provided a notice, Compliance with Water Board Requirements during the Coronavirus 2019 (COVID-19) Emergency (COVID-19 Notice), detailing how MS4 permittees were to advise the water boards concerning potential non-compliance with MS4 permit and other order requirements due to the COVID-19 public health emergency. In accordance with that notice, this letter provides the initial response of the City of Temecula (City) to this notice, and sets forth the City's preliminary assessment concerning compliance with the above-referenced MS4 permit and related orders.

This letter responds to the following COVID-19 Notice requirement:

"If there is a specific Water Board order or requirement that cannot be timely met because it would be inconsistent with current governmental directives or guidelines related to COVID-19, the entity responsible for compliance with the Water Board order or requirement must notify the applicable Water Board immediately. The notification shall be via electronic mail to the applicable Water Board using the appropriate email address identified below, and shall include:

- the specific Water Board order, regulation, permit, or other requirement that cannot be timely met,
- the inconsistent COVID-19 directive or guideline,
- an explanation of why the responsible entity cannot timely meet the Water Board order or requirement, and
- any action that the entity will take in lieu of complying with the specific Water Board order or requirement."

In recent weeks, in response to the COVID-19 crisis, the Governor and Riverside County have issued several public health orders and City operations have been modified in various ways in response to

those orders, and particularly in response to social distancing requirements. City personnel are continuing to evaluate how the COVID-19 emergency is affecting, and will affect, compliance with the MS4 Permit and other orders. This is a complex evaluation, requiring an assessment not only of City staff capabilities but also those of consultants, laboratories, and other entities. At this time, the City cannot provide the detailed analysis required by the State Board's notice for all affected compliance activities. However, we have identified several MS4 compliance actions that cannot be implemented as scheduled, and these actions are described in detail below. The City expects to provide more detailed information regarding the extent of COVID-19 impacts to MS4 compliance actions in the near future, once we have completed a more detailed analysis.

Status of Riverside County Public Health Orders Concerning COVID-19

In addition to the State of Emergency declared by the Governor on March 4, 2020, and the Governor's Executive Order N-33-20 issued on March 19, 2020, which imposed social distancing measures and directed all individuals in California to stay at their place of residence except as needed to maintain continuity of operations of critical infrastructure sectors, Riverside County health authorities have also issued a number of COVID-19 related orders. On March 8, 2020, the County of Riverside Public Health Officer, Dr. Cameron Kaiser, declared a local health emergency, citing the County's first locally acquired case of COVID-19. Since that time, more than a dozen public health orders have been issued by Dr. Kaiser, including cancellation of public events (March 12), closure of schools (March 13), cancellation of meetings of more than 10 individuals, closure of county buildings to the public (March 17), extending the period of closure for schools and colleges (March 18 and April 1). On April 4, Dr. Kaiser issued a further order with a prohibition on all gatherings, regardless of venue or size with very limited exceptions, a requirement that all persons including essential workers wear face coverings whenever they leave their home, and a commitment from law enforcement to enforce the order. Although Riverside County has begun the process of reopening certain businesses and facilities, this process is expected to proceed slowly and social distancing requirements remain in place. Riverside County COVID-19 Orders can be found at: <https://www.rivcoph.org/coronavirus>.

Notification of City Compliance Activities That Cannot Be Timely Met

As noted above, the City has identified the following activities required under the MS4 Permit, Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, which cannot be performed at this time due to the restrictions imposed by the COVID-19 orders referenced above. In accordance with the State Board's COVID-19 policy, we describe below the activities impacted, the respective inconsistent COVID-19 order, an explanation as to why the requirement cannot be timely met, and any planned in-lieu or alternative actions.

- Existing Development Inspections
- the specific Water Board order, regulation, permit, or other requirement that cannot be timely met,
 - o Provision II.E.5.c.(1)(a)(iv); Each Copermittee must annually perform onsite inspections of an equivalent of at least 20 percent of the commercial facilities and areas, industrial facilities, and municipal facilities in its inventoried existing development;
 - o City JRMP: Section 8.4.1: Annually complete a number of onsite inspections equal to 20 percent of the total number of inventoried facilities. If multiple onsite inspections are completed at a facility in a given year, including follow-up inspections or inspections in response to a hotline call, those inspections

may be counted toward the 20 percent requirement. Drive-by inspections, as defined in Section 8.4.3.2, are not counted toward the 20 percent requirement.

- the inconsistent COVID-19 directive or guideline,
 - o State of Emergency declared by the Governor on March 4, 2020;
 - o the Governor's Executive Order N-33-20 issued on March 19, 2020, which imposed social distancing measures and directed all individuals in California to stay at their place of residence except as needed to maintain continuity of operations of critical infrastructure sectors
 - o On March 8, 2020, the County of Riverside Public Health Officer, Dr. Cameron Kaiser, declared a local health emergency, citing the County's first locally acquired case of COVID-19. Since that time, more than a dozen public health orders have been issued by Dr. Kaiser, including cancellation of public events (March 12), closure of schools (March 13), cancellation of meetings of more than 10 individuals, closure of county buildings to the public (March 17), extending the period of closure for schools and colleges (March 18 and April 1). On April 4, Dr. Kaiser issued a further order with a prohibition on all gatherings, regardless of venue or size with very limited exceptions, a requirement that all persons including essential workers wear face coverings whenever they leave their home, and a commitment from law enforcement to enforce the order.
- an explanation of why the responsible entity cannot timely meet the Water Board order or requirement
 - o Many businesses within the City of Temecula have been closed due to the COVID-19 Pandemic.
 - o Businesses that remain open are subject to social distancing and reduced staffing levels.
 - o Onsite inspections cannot be conducted for closed businesses or open businesses when practicing social distancing.
- any action that the entity will take in lieu of complying with the specific Water Board order or requirement.
 - o The City proposes to complete the remainder of 2019/2020 existing development inspections using drive-by inspections.
 - o The City requests an extension of time from June 30th 2020 to September 30th 2020 to complete its 2019/2020 existing development inspections.
 - o The City will continue to fully implement its IDDE program and respond to all reports of stormwater violations.

This information is based on the City's current knowledge. As additional MS4 Permit compliance concerns come to the City's attention, we will update the Water Board.

Please contact me with any questions at 951-308-6387 or Stuart.Kuhn@TemeculaCa.gov.

Kind regards,

Stuart Kuhn

Associate Civil Engineer

City of Temecula

(951) 308-6387

Stuart.Kuhn@TemeculaCA.gov

41000 Main St, Temecula, CA 92590



Please note that email correspondence with the City of Temecula, along with attachments, may be subject to the California Public Records Act, and therefore may be subject to disclosure unless otherwise exempt.



San Diego Regional Water Quality Control Board

June 23, 2020

Stuart Kuhn
Associate Civil Engineer
City of Temecula
41000 Main Street
Temecula, CA 92590
Stuart.Kuhn@temeculaca.gov

Sent by Email Only

In reply refer to / attn:
214666:ERyan

Subject: Request for Compliance Relief due to COVID-19 Emergency, National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, Order No. R9-2013-0001, as Amended, NPDES No. CAS0109266 (Order)

Mr. Kuhn:

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) received your email dated May 18, 2020 regarding actual or potential noncompliance by the City of Temecula (City) with requirements of the Order that could occur during the COVID-19 emergency. Your email requests relief for the City from specific requirements of the Order set forth below that the City believes are inconsistent with the stay-at-home and social distancing restrictions imposed by the Governor's Executive Order N-33-20 or the Riverside County Public Health Officer's directives.

Existing Development Inspections Required under the Order

Existing development inspections for municipal, residential and commercial/industrial facilities are required under provision E.5.c.(1)(a)(iv) of the Order. The Order requires that the City inspect twenty percent of its existing inventoried municipal, residential, and commercial/industrial facilities during the annual July 1 through June 30 reporting period by June 30. The City reports that staff and resources for inspections are limited at this time due to inefficiencies resulting from governmental shelter-in-place and social distancing restrictions. The City also cites difficulties in reaching responsible parties at regulated businesses that are now closed or only open during limited hours as potentially leading to delays in conducting required on-site inspections. The City is requesting a 90-day extension of the June 30 compliance date for completing required inspections specified in section F.3.b(3) of the Order. The City is also proposing to complete the remainder of its Fiscal Year (FY) 2019/20 existing development inspection commitment using drive-by inspections in lieu of in-person

HENRY ABARBANEL, PH.D., CHAIR | DAVID GIBSON, EXECUTIVE OFFICER

inspections. In order to accomplish this, the City proposes to set aside the current provision of the Jurisdictional Runoff Management Plan (JRMP) which stipulates that drive-by inspections are not counted toward meeting the requirement to inspect twenty percent of existing development facilities under provision E.5.c.(1)(a)(iv) of the Order.

Determinations on the Compliance Exception Requests

The San Diego Water Board continues to closely monitor the COVID-19 situation with a focus on protection of public health, safety, and the environment and continuity of timely compliance by the regulated community with all Water Board orders and other requirements is among the highest priorities. The San Diego Water Board recognizes the challenges posed by COVID-19, values the safety of the regulated community and the public, and does not want to put anyone at risk for contracting COVID-19. The San Diego Water Board has evaluated the City's request in accordance with these principles and the recently issued State Water Resources Control Board (State Water Board) guidance regarding permit compliance obligations in light of COVID-19.

Under the current circumstances and based on the limited information provided by the City in the May 18, 2020 email, the San Diego Water Board has made the following determinations regarding the requests for compliance relief due to the COVID-19 emergency:

1. Existing Development Drive-by Inspections

The City's request to use drive-by inspections as a method of inspection instead of on-site inspections to meet annual inspection compliance obligations under provision E.5.c.(1)(a)(iv) of the Order is approved. Provision E.5.c.(1)(a)(i)[a] of the Order allows the City to implement drive-by inspections as an inspection method by municipal staff and contract staff. Pursuant to provision F.3.b(3) of the Order, the City is expected to report any instances where changes to methods or strategies identified in the City's JRMP are implemented in the 2019/20 Annual JRMP Report due January 31, 2021.

2. Extension of Compliance Date for Existing Development Inspections

The City's request for a 90-day extension to complete all existing development compliance inspections required by provision E.5.c.(1)(a)(iv) of the Order is approved. The compliance date in provision F.3.b.(3)(e) of the Order for the completion of the inspections is extended from June 30, 2020 to September 30, 2020. Failure to comply with the extended compliance date may subject the City to enforcement actions by the San Diego Water Board including imposition of administrative civil liability of up to \$10,000 per day per violation, referral to the State Attorney General for injunctive relief, or any other enforcement action authorized by law. Pursuant to provision F.3.b(3) of the Order, the City is expected to report all required inspection information in the 2019/20 Annual JRMP Report due January 31, 2021.

Except as otherwise stipulated in the San Diego Water Board determinations above, all the requirements of the Order remain in full force and effect. In the event circumstances change to allow for compliance with the Order, the City must notify the San Diego Water Board immediately of the change in circumstances and comply with the Order as soon as possible.

The San Diego Water Board appreciates your assistance and efforts to continue the important work to protect human health and the environment, while ensuring the safety of your employees and the community we seek to protect. Additional information is available at the State Water Board's website (https://www.waterboards.ca.gov/resources/covid-19_updates).

In the subject line of any response please include the reference number 214666:ERyan. If you have any questions or concerns, please contact Erica Ryan via email at Erica.Ryan@waterboards.ca.gov.

Respectfully,

David W. Gibson
Digitally signed by David W. Gibson
Date: 2020.06.23 12:00:52
07'00'
Water Board

David W. Gibson
Executive Officer

DWG:kd:db:lw:er

- cc: Erica Ryan, San Diego Water Board, Erica.Ryan@Waterboards.ca.gov
Laurie Walsh, San Diego Water Board, Laurie.Walsh@waterboards.ca.gov
Chiara Clemente, San Diego Water Board, Chiara.Clemente@waterboards.ca.gov
David Barker, San Diego Water Board, David.Barker@waterboards.ca.gov
Catherine Hagan, State Water Board, Catherine.Hagan@waterboards.ca.gov
Vincent Vu, State Water Board, Vincent.Vu@waterboards.ca.gov
David Boyers, State Water Board, David.Boyers@waterboards.ca.gov

Tech Staff Info & Use	
Order No.	R9-2013-0001, as amended (Regional MS4 Permit)
Party IDs	348478
WDID	9 33M1000302 - 488789
NPDES No.	CA0109266
Reg. Measure IDs	387335 (Regional MS4 Permit)
PIN	214666

4 CITY OF WILDOMAR

4.1 JRMP ANNUAL REPORT

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019-2020

I. COPERMITTEE INFORMATION	
Copermittee Name: <u>City of Wildomar</u>	
Copermittee Primary Contact Name: <u>Daniel A. York</u>	
Copermittee Primary Contact Information: Address: <u>23873 Clinton Keith Rd., Suite 201</u>	
City: <u>Wildomar</u>	County: <u>Riverside</u>
State: <u>CA</u>	Zip: <u>92595</u>
Telephone: <u>(951) 677-7751</u>	Fax: <u>(951) 698-1463</u>
Email: <u>dyork@cityofwildomar.org</u>	
II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Number of non-storm water discharges reported by the public	3
Number of non-storm water discharges detected by Copermittee staff or contractors*	20
Number of non-storm water discharges investigated by the Copermittee	22
Number of sources of non-storm water discharges identified	20
Number of non-storm water discharges eliminated	17
Number of sources of illicit discharges or connections identified	9
Number of illicit discharges or connections eliminated	5
Number of enforcement actions issued	13
Number of escalated enforcement actions issued	0
<i>*Includes discharges detected by Riverside County Flood Control (RCFC) in Wildomar</i>	
V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Number of proposed development projects in review	37
Number of Priority Development Projects in review	16
Number of Priority Development Projects approved	8
Number of approved Priority Development Projects exempt from any BMP requirements	0
Number of approved Priority Development Projects allowed alternative compliance	0
Number of Priority Development Projects granted occupancy	3
Number of completed Priority Development Projects in inventory	24
Number of high priority Priority Development Project structural BMP inspections	12
Number of Priority Development Project structural BMP violations	4
Number of enforcement actions issued	4
Number of escalated enforcement actions issued	0

FY 2019-2020

VI. CONSTRUCTION MANAGEMENT PROGRAM

Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Number of construction sites in inventory	16	
Number of active construction sites in inventory	6	
Number of inactive construction sites in inventory	2	
Number of construction sites closed/completed during reporting period	2	
Number of construction site inspections	85	
Number of construction site violations	41	
Number of enforcement actions issued	41	
Number of escalated enforcement actions issued	2	

VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM

Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>		
	Municipal	Commercial	Industrial	Residential
Number of facilities or areas in inventory	12	167	2	0
Number of existing development inspections	0	32	0	N/A
Number of follow-up inspections	N/A	2	N/A	N/A
Number of violations	N/A	7	N/A	N/A
Number of enforcement actions issued	N/A	7	N/A	N/A
Number of escalated enforcement actions issued	N/A	0	N/A	N/A

VIII. PUBLIC EDUCATION AND PARTICIPATION

Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

IX. FISCAL ANALYSIS

Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
---	---	-----------------------------

X. CERTIFICATION

I Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



1/27/2021

Signature

Date

DANIEL A. YORK

ASSISTANT CITY MANAGER

Print Name

Title

(951) 677-7751

dyork@cityofwildomar.org

Telephone Number

Email

JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM ANNUAL REPORT FORM

Additional Information for Annual Report Responses

1. City staff and City contractors are trained to identify and respond to stormwater pollution prevention deficiencies during the normal course of business to make sure deficiencies are brought to the appropriate party's attention and resolved, to the extent possible. Due to the dynamic nature of the work, the regular workload, and available resources, not all stormwater related incidents and coordination activities are separately tracked. Please see the information below for additional detail regarding this. As reported last year, the City evaluated and began developing its EDEN Permit software to track stormwater related data to improve the documentation of the various stormwater program related elements. However, the City's EDEN software is no longer supported and so the City is in the midst of the process to purchase new software. As a result, while improving tracking, documentation, and reporting are still goals, the actual implementation of enhanced NPDES tracking through the use of dedicated software will be delayed. The City will continue to track NPDES items as required and seek to make enhancements wherever possible.
2. **Section III:**
 - a. The City updated the JRMP in FY 17-18, as required by the MS4 Permit. However, during FY 18-19 the City received an over-irrigation audit from the Regional Board which identified the need to make other updates to the JRMP. The City completed the required updates, along with other updates, in January 2020 (FY 19-20) and an errata sheet identifying the specific updates made to the JRMP is included in the updated JRMP. The updated JRMP has been uploaded to the City's website and to the Regional Clearinghouse.
3. **Section IV:**
 - a. City staff and maintenance staff are trained to respond to calls, reports, or observed violations as necessary to resolve issues but some of these incidents are not separately tracked or documented and occur during the normal course of business.
 - b. City staff occasionally receive reports of discharges detected within a Riverside County Flood Control and Water Conservation District (RCFCWCD) MS4 facility. These reports come from RCFCWCD inspectors. RCFCWCD inspectors provide the City with a summary of the incident, including any follow-up investigation and public education provided. The City typically sends its own inspector to perform a follow-up inspection to verify that the discharge has been eliminated and/or to reinforce the public education already provided.
 - c. Enforcement Actions include Education/Information given to the party in violation. In some cases, staff did not have direct contact with the party in violation or the violation was the result of a maintenance issue (e.g. broken irrigation), traffic accident, or other similar accidental incident. In those cases, the incident was resolved but no specific "enforcement" action occurred.
4. **Section V:**
 - a. The number of proposed development projects in review includes commercial and residential projects that were in entitlement review, final engineering review, or which required a grading permit during the reporting period, as well as applicable Capital Improvement Projects that were in design/review. This number does not include preliminary application reviews (pre-entitlement), survey-only reviews (e.g. only a Final Map review for a priority development project), or projects that did not require grading permits.
 - b. The number of Priority Development Projects in review includes projects in entitlement review and in final engineering review. The number of Priority Development Projects approved includes projects approved through entitlement during the reporting period or projects approved through final engineering during the reporting period. This number does not include survey-only reviews (e.g. only a Final Map review for a priority development project).
 - c. The number of Priority Development Projects granted occupancy includes projects which have been granted partial occupancy (e.g. residential projects with occupancy for some lots, commercial projects with occupancy for some buildings) or those projects granted complete occupancy.
 - d. The number of Priority Development Projects in Inventory includes one (1) City owned and operated park with post-construction BMPs.

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

5. Section VI:

- a. The number of construction sites in the Inventory is current as of the date of the annual report, is not specific to the reporting period, and includes active, inactive, and completed projects. Some projects identified in the inventory may have begun construction after the reporting period.
- b. The City's Building and Public Works Inspectors are at construction sites routinely to monitor on-going construction activities and are trained regarding Construction BMP requirements. City staff also regularly communicate with developers or contractors by email regarding BMP deficiencies/corrections and send out reminders to the same regarding anticipated rain events. Inspectors may also verbally communicate with contractors regarding BMP deficiencies or corrections. These activities are not separately documented as formal inspections.
- c. Two escalated enforcement actions, both Stop Work Orders, were issued this reporting period. Both incidents were reported to the San Diego Regional Board as required by the MS4 Permit.

6. Section VII:

- a. Municipal:
 - i. The City owns/operates seven (7) facilities and five (5) vacant properties, for a total of twelve (12) facilities or areas. These include: four (4) parks, one (1) cemetery, one (1) fire station, one (1) property with baseball fields, and five (5) vacant properties.
 - ii. Inspections conducted at municipal facilities (parks and cemetery) are routine, weekly, site inspections. Maintenance staff are trained to identify and correct stormwater pollution deficiencies at City facilities.
 - iii. The City cleans its catch basins routinely and cleaned out its catch basins during the reporting period.
 - iv. The City may, from time to time, provide verbal notices to contractors/maintenance staff regarding stormwater pollution prevention practices or problems.
- b. Commercial:
 - i. The number of facilities reported is current as of the date of the annual report and is not specific to the reporting year. Therefore, the number of facilities currently in the inventory may be greater than the number of facilities that were in the inventory during the reporting year. The number of facilities excludes those commercial facilities which were at one time in the inventory but have closed. The inventory also includes mobile facilities that are required to be tracked. The number of facilities inspected is specific to the reporting year.
- c. Industrial:
 - i. The City is aware of two sites that have Industrial General Permit Coverage within the City's jurisdiction. One site is a public school district site (Lake Elsinore Unified School District Transportation Facility, WDID #8 331018062) and the second site is a public agency site (Riverside County Transportation Department – Bundy Canyon Borrow Site, WDID #9 331025489). The City has not historically inspected these sites because one is a public school facility and such facilities are not typically subject to City inspections (typically subject to State inspections) and the other site belongs to the County of Riverside, another copermitee subject to the MS4 Permit, who perform their own site inspections.
- d. Residential:
 - i. Stormwater pollution prevention deficiencies within existing residential developments may be identified by IC-ID identification and evaluation or other sources of information which may help identify areas with stormwater pollution violations so that they can be addressed and eliminated. In addition, City Outfall Monitoring inspections and field screening reports from RCFC can also help identify residential areas where additional attention may be needed to eliminate possible sources of pollutants. Similarly, monitoring results from outfall sampling can also help identify if there is a specific pollutant problem within certain areas and if any focused efforts are needed in those areas.

FISCAL ANALYSIS

The following table provides estimated expenditures for the current reporting period, the preceding reporting period, and the next reporting period. This table identifies the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities described in the City of Wildomar's JRMP as required under Section H.2 of the 2013 SMR MS4 Permit.

Program Element	Fiscal Year 2018-2019 (Actuals)		Fiscal Year 2019-2020 (Reporting Year - Actuals)		Fiscal Year 2020-2021 (Anticipated)	
	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures
Program Management		\$29,472.50		\$65,045.00		\$50,000.00
Annual Fee for MS4 NPDES Permit		\$14,230.00		\$14,230.00		\$14,230.00
Implementation Agreement Shared Cost		\$119,304.18		\$67,054.51		\$186,074.00
Construction Inspections		(2)		(2)		(2)
Development Planning		(2)		(2)		(2)
Industrial and Commercial Inspections		\$5,975.00		\$4,535.00		\$7,500.00
Illicit Connections & Illegal Discharges Program		(4)		(4)		(4)
Municipal Facilities and Activities		(5)		(5)		(5)
Public Education & Outreach		(1) and (1a)		(1) and (1a)		(1) and (1a)
Monitoring Program		(1)		(1)		(1)
Retrofit Program		(1)		(1)		(1)
Other (Lake Elsinore and Canyon Lake TMDL Task Force Costs, etc...)		\$23,510.00 (6)		\$33,893.19 (6)		\$30,945.00 (6)
Total	\$	\$192,491.68	\$	\$184,757.70	\$	\$288,749.00

FISCAL ANALYSIS

Notes:

1. These items are included in the "Implementation Agreement Shared Cost" between the City and the other Co-Permittees.
 - a. Public Education Note: The City also actively provides Public Education, however costs associated with City-specific efforts are not tracked separately and are included in the "Program Management" costs.
2. These items are included in the cost billed to the project developer and are not tracked separately.
3. Not used.
4. IC/ID program activity costs are not tracked separately and are included in the "Project Management" costs.
5. While the City does have expenditures related to Municipal Facility maintenance, the City does not have a separate line item for the maintenance costs specifically related to stormwater pollution prevention. Depending on the nature of the work being performed, the costs may be tracked to various different fund accounts (e.g. park maintenance, cemetery maintenance, stormwater management, etc...).
6. The City incurs code enforcement costs and legal fees for some stormwater compliance violations. Costs for code enforcement may have been incurred during the past two fiscal years or may be incurred in future fiscal years, in varying amounts, but the specific costs are not separately tracked. Other expenditures may also include other miscellaneous NPDES related fees, printing/reproduction fees, etc...

FISCAL ANALYSIS

7. A description of the source(s) of funds that are proposed to meet the necessary expenditures for the subsequent year.

Source of Funds	Capital Expenditures	Percent of Total Program Funding	Restrictions on Use (if applicable)
General Fund		81%	
Business Registration Fees			Can only be used on Commercial-Industrial Inspections for registered businesses.
Developer Deposits		Varies	Can only be used on the specific development project to which the review, inspection, or enforcement activities apply.
LLMD 89-1-C/CSA 152		19%	Maximum parcel assessment established at annexation into district. Must be used for fossil filter replacement and street sweeping within specified neighborhoods.

FISCAL ANALYSIS

8. Provide a narrative description of circumstances resulting in a 25 percent or greater annual change for any budget line item.

Program Element	Percent Change in Cost	Fiscal Years with Change	Description
Program Management	128% increase and 26% decrease	FY 18-19 (actuals) to FY 19-20 (actuals) and FY 19-20 (actuals) to FY 20-21 (budget)	Staff anticipated an increase in expenditures from FY 18-19 to FY 19-20. However, expenditures in FY 19-20 were greater than anticipated. New staff members were trained in the NPDES program and additional staff time was spent on focused efforts to update items in the program. Costs are expected to decrease (normalize) now that staff has been trained and focused efforts are mostly complete.
Implementation Agreement Shared Costs	44% decrease and 177% increase	FY 18-19 (actuals) to FY 19-20 (actuals) and FY 19-20 (actuals) to FY 20-21 (budget)	Implementation Agreement cost shares often include credits from previous fiscal years. Although previously not anticipated, there was a credit included in the cost sharing budget for FY 19-20. The City's cost share for FY 19-20 includes all credits/debits from the previous fiscal year. The City's cost share is expected to increase (normalize) in FY 19-20.
Commercial Inspections	61% increase	FY 19-20 (actuals) to FY 20-21 (budget)	Actual inspection expenditures in FY 19-20 were less than anticipated. A slightly decreased budget has been proposed for FY 20-21 but the budget still results in a 61% increase from FY 19-20 actuals.

4.2 STRATEGIES

Table A2-16. City of Wildomar, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-1	Assess IDDE incidents to identify clusters, if any, where targeted efforts may be effective in eliminating dry weather flows.	●	●	A/P		<ul style="list-style-type: none"> The City performed a visual geographic assessment of recorded IDDE incidents, in FY 19-20. IDDE incidents were plotted on a map but plotted incidents did not demonstrate any specific IDDE clusters. The only observable pattern was that the majority of incidents were residential-related. As reported last year, staff had previously observed over-irrigation from a specific community. The HOA Manager for that community offered to help educate their residents regarding over-irrigation. This year, the City prepared a specific letter regarding the Over-Irrigation prohibition and distributed it, along with a Public Education Fact Sheet, to the HOA Manager so that the information could be distributed to community residents. The City also sent the same letter and fact sheet to all other known HOAs throughout the City.
IDDE-2	Update ordinances to reflect current illicit discharge and connections requirements and strategies.	●	●	A		<ul style="list-style-type: none"> An Ordinance Amendment was completed in September 2019 to ensure that the City's Municipal Code prohibited over-irrigation runoff. While no specific additional updates are planned at this time, the City will continue to update its ordinances, where necessary and appropriate, to ensure compliance with the MS4 Permit.

Table A2-16. City of Wildomar, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-3	Utilize service request forms to improve external reporting of IDDE incidents, to help staff more efficiently identify and respond to IDDE incidents. Develop an internal procedure to improve tracking of and response to IDDE incidents observed by staff directly.	◐	●	A/P		<ul style="list-style-type: none"> • IDDE reporting options, including the ability to report irrigation runoff, were added to the service request forms on the City's website in September 2019, to improve external reporting. • Staff had preliminary conversations regarding enhanced and improved procedures for internal identification, reporting, and tracking of IDDE incidents by Copermittee staff. The City will continue to pursue this in FY 20-21.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-17. City of Wildomar, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-1	Smart Irrigation Development Standards	●	●	A		<ul style="list-style-type: none"> City Council has adopted the WATER EFFICIENT/CONSERVATION LANDSCAPE STANDARDS MANUAL. The manual states that "Landscaped areas shall be provided with a smart irrigation controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions."
DEV-2	Revised post-construction guidelines to eliminate potential dry weather discharges from new and redevelopment				Combined with DEV-3 to form one strategy	
DEV-3	Amend BMP design manuals to address sources of HPWQCs and PWQCs on new and redevelopment projects (e.g., irrigation design standards , LID implementation), including eliminating prohibited dry weather discharges (e.g., irrigation design standards, site design standards) , and conduct internal staff training on updated BMP design manual	X	X	A	Updated description to clarify strategy	<ul style="list-style-type: none"> The 2018 Wildomar WQMP is based on the 2018 Santa Margarita Region WQMP and has been in effect since July 1, 2018. The 2018 WQMP requires projects to eliminate non-exempt non-stormwater discharges, which addresses dry weather HPWQCs and PWQCs, so no additional changes to the WQMP were needed.

Table A2-17. City of Wildomar, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-4	Require new commercial/industrial development projects to submit a summary of the business' operations and best management practices for storm water pollution prevention. Require new development projects with CC&Rs to address stormwater pollution prevention practices in their CC&Rs.	●	●	A/P		<ul style="list-style-type: none"> The City's standard Conditions of Approval (COAs) require new commercial developments to submit documentation regarding business practices and applicable BMPs. In FY 19-20, the City revised and clarified the language in the COA. Through the development review process, the City required new developments with CC&Rs to include specific language addressing stormwater pollution prevention requirements and practices. To standardize these requirements, the City also began drafting a new standard Condition of Approval for private development projects to require all future projects with CC&Rs to specifically address stormwater pollution prevention in the CC&Rs.
DEV-5	Require Delineation of Jurisdictional Areas on Development Plans and Require Enhanced Sediment Control BMPs to be Shown Adjacent to Jurisdictional Areas on Development Plans	●	●	A		<ul style="list-style-type: none"> The City previously updated its review checklists to include this strategy as a required item to be shown on grading plans. Plan reviewers are made aware of the specific requirements and the updated checklist is made available to development engineers on the City's website.
DEV-6	Provide Street Sweeping Services for New City Streets	●	●	A		<ul style="list-style-type: none"> The City typically requires all new development projects constructing public improvements to annex into the CFD for maintenance. CFD maintenance typically includes street sweeping for newly constructed public streets.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-18. City of Wildomar, Construction Management Program Strategies

Number	Santa Margarita River Construction Management Program Strategies - City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
CON-1	Implement, or require the implementation of, enhanced construction BMPs on specific projects.	●	●	A		<ul style="list-style-type: none"> The City previously updated its review checklists to include this strategy as a required item to be shown on grading plans. Plan reviewers are made aware of the specific requirements and the updated checklist is made available to development engineers on the City's website.
CON-2	Provide enhanced focus on specific items during construction inspections.	●	●	A		<ul style="list-style-type: none"> The City previously modified its NPDES Construction Activity Inspection Form to identify enhanced BMP requirements for landscape material stockpiles.
CON-3	Require Delineation of Jurisdictional Areas on Project Sites and Require Enhanced Sediment Control BMPs Adjacent to Jurisdictional Areas	●	●	A		<ul style="list-style-type: none"> The City previously modified its Grading Job Card to require an initial Pre-Grading NPDES inspection, prior to any grading activities. The Pre-Grading NPDES Inspection includes, as applicable to each project, verification of the following NPDES-related items: Jurisdictional Areas Delineated, BMPs, and SWPPP. The City updated its standard NPDES Construction Activity Inspection Form to include verification that jurisdictional areas delineation remains and is maintained during construction.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-19. City of Wildomar, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-1	Enhanced municipal training programs and curriculum targeting key field staff. Programs will focus on the water quality improvement plan, HPWQCs, NNE requirements as related to illicit discharges and elimination of dry weather flows.	●	●	A		<ul style="list-style-type: none"> The City participates in the SMR Copermitttee Training modules that are coordinated by Riverside County Flood Control and are conducted on behalf of all of the SMR Copermitttees. Training includes information regarding the WQIP and HPWQC.
ED-2	Evaluate feasibility of utilizing weather sensors in existing publicly maintained landscape areas and where feasible, install new weather based irrigation controllers in those areas.	●	●	A/P		<ul style="list-style-type: none"> The City was unable to proceed with installation of smart irrigation controllers at a park site due to budget constraints during FY 19-20. However, irrigation at City parks is regularly adjusted based on the season and weather, to minimize potential waste and runoff. Some other publicly maintained landscape areas currently have weather sensors installed and in operation. Staff will plan to evaluate all of the publicly maintained landscaped areas to determine the feasibility of installing weather based irrigation controllers where none currently exist.
ED-3	Address failed septic systems that are discharging effluent to the ground surface.	●	●	A		<ul style="list-style-type: none"> The City responds to reports of discharging effluent and also contracts with the County Department of Environmental Health for permitting of failing or overflowing septic systems.

Table A2-19. City of Wildomar, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-4	Report potential Agricultural Permit Non-Filers to the San Diego Water Board.	●	●	A		<ul style="list-style-type: none"> The City did not make note of any Agricultural operations that appear to require coverage under the San Diego Water Board's Agricultural Order. If the City is made aware of an Agricultural non-filer, the City will notify the San Diego Water Board.
ED-5	Clean out catch basins.	●	●	A		<ul style="list-style-type: none"> Catch basin clean-out was performed during the reporting fiscal year.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-20. City of Wildomar, Enforcement Response Plans Program Strategies

Number	Santa Margarita River Enforcement Response Plans Program Strategies City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ERP-1	Implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Enforcement Response Plan.	●	●	A		<ul style="list-style-type: none"> The City implements the Enforcement Response Plan as described in the JRMP.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-21. City of Wildomar, Public Education and Participation Program Strategies

Number	Santa Margarita River Public Education and Participation Program Strategies City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-1	Enhanced outreach programs targeting nurseries.	●	●	A		<ul style="list-style-type: none"> The City identifies nurseries operating within its jurisdiction through the Business Registration Process. Nurseries are provided with BMP Handouts and Educational Materials, upon approval of their business registration. Nurseries are also added to the commercial inspection list to receive inspections.
PubEd-2	Enhanced outreach programs targeting animal facilities.	●	●	A		<ul style="list-style-type: none"> The City identifies locations with livestock/equestrian operations within its jurisdiction through the Business Registration Process. Property owners are provided with BMP Handouts and Educational Materials, upon approval of their business registration, targeting animal care. If the business operations incorporate the livestock, inspections may also be required.
PubEd-3	Public Education for businesses and residents.	●	●	A		<ul style="list-style-type: none"> The City provides Irrigation Runoff BMP Handouts to home-based business registration applicants whose business address is located within the City of Wildomar (i.e. residents), regardless of the nature of their business activities. The City continues to provide BMP Handouts to businesses based on their business activities, and as required in the JRMP.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-22. City of Wildomar, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies City of Wildomar	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-1	Coordination with Water Districts to pinpoint and address problem sources of dry weather flows; potential implementation actions could include rebate/incentive programs, irrigation retrofits, or other programs as appropriate and effective.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020.
OPT-2	Consider and Prioritize, where possible, Multi-Benefit Master Drainage Plan Projects that have both Flood Control and Channel or Habitat Rehabilitation Benefits.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020.
OPT-3	Enhancements and/or adjustments to street sweeping practices, frequencies, and routes, as determined by jurisdiction.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-23. City of Wildomar, Optional WMA Strategies

The City of Wildomar will implement Optional WMA Strategies through cooperative agreements with the Santa Margarita River Copermittees. The Optional WMA Strategies that will be implemented are identified in the Riverside County Flood Control and Water Conservation District (RCFCWCD) WQIP Strategy Table. Please refer to the RCFCWCD WQIP "Optional WMA Strategies" in Table A2-39 for details.

Notes:

- - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
- A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

4.3 MODIFICATIONS TO WQMP

Modifications to the WQMP were made during FY 2017-2018. The current WQMP went into effect on July 5th, 2018. No modifications to the WQMP were made during the reporting period. The current City of Wildomar WQMP is posted on the City's website.

4.4 MODIFICATIONS TO THE JRMP

Modifications to the JRMP were made during FY 2019-2020. The City updated the JRMP in response to the over-irrigation audit received from the Regional Board. An updated JRMP, which also includes a summary of changes, is available online:

[https://www.cityofwildomar.org/UserFiles/Servers/Server_9894739/File/City Services/Public Works/City of Wildomar JRMP \(updated Jan2020\).pdf](https://www.cityofwildomar.org/UserFiles/Servers/Server_9894739/File/City%20Services/Public%20Works/City%20of%20Wildomar%20JRMP%20(updated%20Jan2020).pdf).

4.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The City of Wildomar did not request any regulatory relief from the San Diego Water Board related to compliance with the Municipal Permit during the COVID-19 pandemic.

5 COUNTY OF RIVERSIDE

5.1 JRMP ANNUAL REPORT

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019-2020

I. COPERMITTEE INFORMATION	
Copermittee Name: Riverside County	
Copermittee Primary Contact Name: Scott Bruckner	
Copermittee Primary Contact Information: Address: 4080 Lemon St	
City: Riverside	County: Riverside
State: CA	Zip: 92501
Telephone: 951-955-9760	Fax: 951-955-0049
Email: sbruckner@rivco.org	
II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
County-wide Data as Follows:	
Number of non-storm water discharges reported by the public	65
Number of non-storm water discharges detected by Copermittee staff or contractors	25
Number of non-storm water discharges investigated by the Copermittee	64
Number of sources of non-storm water discharges identified	51
Number of non-storm water discharges eliminated	30
Number of sources of illicit discharges or connections identified	1
Number of illicit discharges or connections eliminated	0
Number of enforcement actions issued	65
Number of escalated enforcement actions issued	1
V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Number of proposed development projects in review	46
Number of Priority Development Projects in review	63
Number of Priority Development Projects approved	18
Number of approved Priority Development Projects exempt from any BMP requirements	0
Number of approved Priority Development Projects allowed alternative compliance	0
Number of Priority Development Projects granted occupancy	1
Number of completed Priority Development Projects in inventory	0
Number of high priority Priority Development Project structural BMP inspections	0
Number of Priority Development Project structural BMP violations	0
Number of enforcement actions issued	0
Number of escalated enforcement actions issued	0

FY 2019-2020

VI. CONSTRUCTION MANAGEMENT PROGRAM					
Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Number of construction sites in inventory	269				
Number of active construction sites in inventory	204				
Number of inactive construction sites in inventory	0				
Number of construction sites closed/completed during reporting period	124				
Number of construction site inspections	156				
Number of construction site violations	0				
Number of enforcement actions issued	0				
Number of escalated enforcement actions issued	0				
VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM					
Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
	Municipal	Commercial	Industrial	Residential	
Number of facilities or areas in inventory	1975	124	24	269	
Number of existing development inspections	1975	80	16	156	
Number of follow-up inspections	216	4	2	69	
Number of violations	N/A	0	0	0	
Number of enforcement actions issued	N/A	0	0	0	
Number of escalated enforcement actions issued	N/A	0	0	0	
VIII. PUBLIC EDUCATION AND PARTICIPATION					
Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
IX. FISCAL ANALYSIS					
Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

FISCAL ANALYSIS

The following table provides estimated expenditures for the current reporting period, the preceding reporting period, and the next reporting period. This table identifies the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities described in the Riverside County JRMP as required under Section H.2 of the 2010 SMR MS4 Permit.

Program Element	Source	Fiscal Year 2018-2019 Actuals	Fiscal Year 2019-2020 Actuals	Fiscal Year 2020-2021 Budget
Program Mgmt/Admin*	General Fund & Gas Tax	\$470,700	\$652,512	\$680,678
Annual Fee for MS4 NPDES Permit*	General Fund	\$56,921	\$56,921	\$56,921
Implementation Agreement (IA) Shared Cost	General Fund	\$232,010	\$137,883	\$300,000
Construction Inspections*	Deposit-Based Fees	\$175,000	\$175,000	\$175,000
Development Planning*	Deposit- Based Fees	\$175,000	\$175,000	\$175,000
Industrial and Commercial Inspections*	Business License Fees	\$175,000	\$175,000	\$175,000
Illicit Connections & Illegal Discharges Program	Various Dept Operational Budgets	N/A	N/A	N/A
Municipal Facilities and Activities*	General Fund & Gas Tax	\$1,415,290	\$1,027,273	\$1,078,637
Public Education & Outreach	IA Shared Costs	N/A	N/A	N/A
Monitoring Program	IA Shared Costs	N/A	N/A	N/A
Retrofit Program	General Fund	\$10,000	\$10,000	\$10,000
MS4 Mapping*	Gas Tax	\$231,779	\$286,622	\$290,000
Street Sweeping (CSA152)*	Parcel Fee	\$3,706,026	\$3,670,226	\$3,700,000
Roadside Litter Removal Program*	Gas Tax	\$257,426	\$110,538	\$111,000
Asphalt Overlay/Sealing**	Gas Tax	\$7,523,775	\$8,034,748	\$8,035,000
	Total	\$14,467,648	\$14,511,723	\$14,787,236

*County-wide program costs

**Not part of the overall NPDES Program; however, considered a significant County-wide NPDES-related activity

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

X. CERTIFICATION

I [Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Pania Odenbaugh

Signature

1/20/21

Date

Pania Odenbaugh

Print Name

DEPUTY COUNTY EXECUTIVE OFFICER

Title

951-955-1110

Telephone Number

RODENBAUGH@RIVCO.ORG

Email

5.2 STRATEGIES

Table A2-24. County of Riverside, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-1	Utilize municipal personnel and contractors to identify and report Illicit Connections and Discharges (with emphasis on over-irrigation).	●	●	A		<ul style="list-style-type: none"> County has mapped MS4 facilities and is monitoring high priority areas for IC/ID's. County is on training subcommittee to look at focused training for field staff/contractors.
IDDE-2	Develop a reporting mechanism for incidental observations of IC/ID by County staff field personnel.	●	●	A		<ul style="list-style-type: none"> Per the JRMP County has a reporting process that includes providing forms and educational material to field staff. County is on training subcommittee to provide training on any identified areas requiring improvement.
IDDE-3	Develop a procedure to map IC/ID cases in GIS to assist in ongoing identification of IC/ID target areas.	●	●	A		<ul style="list-style-type: none"> Field forms have been distributed to field staff. They are forwarded for GIS mapping with an emphasis on nutrient sources. Nutrient loading is the highest priority. The process includes submittal of forms to NPDES coordinator for follow up.
IDDE-4	Conduct IC/ID - IDDE focused training for County Department field staff.	●	●	A/P		<ul style="list-style-type: none"> County is on training subcommittee to identify and develop focused training for field staff. County has identified staff to attend training to ensure they train their employees.

Table A2-24. County of Riverside, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-5	Respond, educate and require mitigation on septic system failures where observed. Coordinate investigations with Environmental Health (County Regulatory Agency for Septic Systems). Focus on elimination of nutrient loading from phosphorus sources and bacteria loading to MS4 from septic failure. Educate property owners on proper septic maintenance and the importance of eliminating discharges to the MS4.	●	●	A/P		<ul style="list-style-type: none"> A process is in place to respond to septic problems through code enforcement and environmental health. Education in the form of an updated brochure is being planned.
IDDE-6	Implement practices and procedures to address accidental spills (with emphasis on identifying Nutrient and other PWQP sources) with the potential to enter the storm drain system. Implement employee spill notification/reporting focused training County-wide.	●	●	A/P		<ul style="list-style-type: none"> County has a process in place for accidental spills. Focused training is being planned for employees county-wide. County identified appropriate staff to attend training to ensure they train their employees.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-25. County of Riverside, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-1	Update BMP Design Manual procedures to specify storm water requirements applicable to development and redevelopment projects, identify and design appropriate BMPs, establish maintenance criteria, and establish alternative compliance options. Specific consideration to BMP implementation will be given to reducing/eliminating Nutrient and other PWQP loading to the MS4 and receiving waters.	●	●	A/P		<ul style="list-style-type: none"> The BMP manual has been updated and approved by the San Diego Water Board. Alternative compliance options are in development.
DEV-2	Conduct training on the updated BMP Manual.	●	●	A/P		<ul style="list-style-type: none"> Training on updated BMP manual has been completed and is ongoing.
DEV-3	Prepare drought tolerant Guidelines and Standards for new development and BMP retrofits (e.g. water smart irrigation controllers, turf replacement programs, residential landscape evaluation program).	●	●	P		<ul style="list-style-type: none"> Executive office is reviewing ordinance currently.
DEV-4	Develop a NPDES DATA FORM for Design Teams to identify project-related NPDES data to facilitate: identification of HPWQC and PWQP sources, analyze HPWQC and PWQP source reduction in CEQA/NEPA document, and design of post-construction BMPs to address HPWQC and PWQPs loading reduction and hydromodification.	●	●	A		<ul style="list-style-type: none"> County's NPDES memo has been updated to identify activities in high priority areas and high nutrient land uses.
DEV-5	Update County codes, ordinances, and landscape design standards consistent with the permit, including but not limited to prohibition of over irrigation; and the updated BMP Manual.	●	●	A/P		<ul style="list-style-type: none"> Executive office has revised ordinance 754.3 to address overwatering. BMP manual has been updated and approved.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-26. County of Riverside, Construction Management Program Strategies

Number	Santa Margarita River Construction Management Program Strategies – County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
CON-1	Require implementation of enhanced BMPs that reduce the potential of HPWQC and PWQP loading, and that are specific to the grading phase, year round.	●	●	A/P		<ul style="list-style-type: none"> County updated the NPDES memo to include identification of high priority areas and high nutrient land uses. Developing enhanced BMP training and procedures.
CON-2	Make updates to County ordinances related to construction; reference to existing grading ordinance and requirement to implement enhanced BMPs to mitigate erosion and dry weather flows to MS4 and receiving waters in the SMR.	●	●	P		<ul style="list-style-type: none"> Currently evaluating processes and developing enhanced BMP training.
CON-3	Ensure grading activities are classified as HIGH priority if land is surrounded by or was previously used for agricultural operations.	●	●	P		<ul style="list-style-type: none"> Currently evaluating processes. County updated NPDES memo to include identification of high priority areas, high nutrient land uses, and agricultural areas.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-27. County of Riverside, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-1	Enhance the Business Registration Program by educating owners on Nutrient and other PWQP source reduction.	●	●	P		<ul style="list-style-type: none"> Currently developing language or brochure for acknowledgment at time of business registration.
ED-2	Implement a prioritized schedule of operation and maintenance activities for the storm water conveyance system draining Nutrient and PWQP source land uses (e.g. Residential and Agricultural).	●	●	P		<ul style="list-style-type: none"> County analyzed GIS mapping to develop prioritized schedule to increase amount of maintenance in high priority areas.
ED-3	Require implementation of BMPs to address application, storage, and disposal of pesticides, herbicides, and fertilizers on commercial, industrial, agricultural (e.g., large commercial nurseries), residential, and municipal properties. Includes education, verifying permits and certifications.	●	●	A		<ul style="list-style-type: none"> County currently requires proper storage and implementation of BMP's, and educates all types of property and business owners.
ED-4	Conduct inspections of inventoried existing development (including residential and agricultural land uses) to ensure BMPs are being implemented to reduce the potential of HPWQC and PWQP loading.	●	●	A/P		<ul style="list-style-type: none"> County currently conducts regular inspections of development and ensure BMP's are implemented. County is developing training of staff on high priority BMP requirements.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-28. County of Riverside, Enforcement Response Plans Program Strategies

Number	Santa Margarita River Enforcement Response Plans Program Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ERP-1	Enforce escalating legal authority established for all inventoried existing development, including residential and agricultural, to conserve water and eliminate dry weather flows. Verbal warnings shall be tracked along with written escalating enforcement.	●	●	A/P		<ul style="list-style-type: none"> County currently conducts regular inspections of development and ensure BMP's are implemented.
ERP-2	Impose legal authority to ensure all development and redevelopment projects (with emphasis on residential, park and agricultural projects) are in compliance with all post construction requirements specifically as they pertain to erosion and dry weather flow prohibitions.	●	●	A		<ul style="list-style-type: none"> County's process is in place for compliance with the WQMP requirements for new and re-development projects.
ERP-3	Implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Enforcement Response Plan. Escalating enforcement strategies will initially start with education and verbal warnings and escalate to cease and desist orders to taking legal actions as necessary. All enforcement actions shall be tracked in a database.	●	●	A		<ul style="list-style-type: none"> We currently enforce our ordinances and permits for IDDE. Enforcement actions are tracked. The enforcement response plan is followed per the JRMP.
ERP-4	Report suspected agriculture operation "non-filers" to the San Diego Water Board promptly. Maintain database of reported "non-filers".	●	●	P		<ul style="list-style-type: none"> County will keep a database of non-filers if found, and report new agriculture operations we find. County Executive Office has begun meeting with agricultural representatives to discuss compliance.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-29. County of Riverside, Public Education and Participation Program Strategies

Note: a summary of County-wide education and outreach activities is included as Attachment 2A.

Number	Santa Margarita River Public Education and Participation Program Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-1	Implement pet waste management outreach in County Parks for resident pet owners.	●	●	P		<ul style="list-style-type: none"> County Parks has installed pet waste stations at Lake Skinner. Will proceed with plan for other parks. Pet waste brochures have been in place for education.
PubEd-2	Implement a public education and participation program to promote and encourage development of programs, management practices and behaviors that reduce the discharge of HPWQC and other PWQPs (specifically for Residential and Agricultural land uses).	●	●	P		<ul style="list-style-type: none"> The County is working with Copermittees on training subcommittee on this task.
PubEd-3	Stock public County counters at Riverside County offices with Pollution Prevention Public Education brochures. Brochures should highlight the importance of proper fertilizer use/application and over irrigation. Other brochures should include emphasis on proper septic maintenance and other good practices to prevent nutrient and other PWQP loading to the MS4 and receiving waters, Provide brochures to other agencies for their public counters as well (e.g., School Administration Buildings).	●	●	A/P		<ul style="list-style-type: none"> The County stocks counters with many different stormwater brochures. Development of new brochures including overwatering is in progress.
PubEd-4	Facilitate public reporting, through outreach and public education, of Illicit Connections and Illicit Discharges, including over-irrigation.	●	●	P		<ul style="list-style-type: none"> This is a county wide effort that is being developed. County is working to improve website to facility identification of IC/ID and over irrigation reporting.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-30. County of Riverside, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-1	<p>Construct and manage the Integrated Mitigated Mitigation Project. This project will result in the creation of over 1,500 linear feet of new intermittent channel and seasonal wetlands. The 75-acre site is located south of Scott Road and west of Briggs road in the County of Riverside. The project will preserve, restore and enhance the existing un-named creek (which is tributary to Warm Springs Creek), ephemeral drainages, and associated wetland habitats. This project provided the required 2.3 acres mitigation for 3 capital projects, but is planned to have approximately 71.6 acres of surplus mitigation in the form of Habitat Enhancement, Created Habitat, Preserved Habitat or Restored Habitat for this un-named creek. In total the project is planned to install approximately 2,800 plants, including Oak trees, Sycamore riparian, Southern Willow Scrub, existing channel, and wetland species. Storm water run-on containing Nutrients and other PWQPs would be treated through infiltration and biofiltration.</p>	●	●	P	Clarification	<ul style="list-style-type: none"> This project began construction in November 2020.
OPT-2	<p>Promote Incentive Partnership Programs: Live Turf Replacement & Outdoor Water Efficiency. Promote Incentive Programs with Water Agencies for BMP Retrofits.</p>	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Table A2-30. County of Riverside, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-3	Implement a program for on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-4	Implement a Partnering Program with Sewering Agencies (note: County of Riverside does not provide sewer system services) to identify where sewer and storm water infrastructure are in close proximity and subsequently, confirm the absence of flow at nearby major outfall during dry weather for high risk areas.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-5	Implement a program for on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-6	Provide outreach presentations to elementary, middle, and high school students.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-7	Hold external land development workshops targeting the development community (developers and their engineers).	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-8	Implement outreach program for land owners of equestrian/livestock, and other agricultural operations.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Table A2-30. County of Riverside, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-9	Develop inspection data tracking through GIS applications.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-10	Promote/Partner incentive programs for BMP retrofits (e.g. water smart irrigation controllers, turf replacements programs, residential landscape evaluation program).	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-11	Implement a turf replacement program in County Parks.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-12	Collaborate with partner agencies and groups to promote non-County sponsored incentive programs for BMP retrofits, for example, smart controllers, soil sensors, turf replacement, etc.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
OPT-13	Outreach to large mobile landscaping service providers/vendors.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-31. County of Riverside, Optional WMA Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies County of Riverside	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
WMA-1	Coordinate with Integrated Regional Water Management (IRWM) regional water quality managers to identify and apply for grants related to water quality improvement projects (retrofits, stream rehabilitation, or other projects).	◐	◐	P		<ul style="list-style-type: none"> County is looking at opportunities to apply.
WMA-2	Participate in Santa Margarita River Watershed Nutrient Initiative - Stakeholder Group to exchange information on successes on strategies. Implement or refine existing strategies to utilize other jurisdiction's strategical successes.	●	●	NT		<ul style="list-style-type: none"> Participated in quarterly meeting of SMRNIG. Meetings during FY2020: 10/2/2019 and 3/12/2020.
WMA-3	Partner/Implement Sustainable Landscapes Program with Water Agencies and Special Districts (e.g., Valley-Wide Recreation and Park Districts) to encourage landscape retrofits.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020
WMA-4	Contingent on San Diego Water Board approval of an implementable process, facilitate alternative compliance projects, for new development that are focused on restoring or creating beneficial uses.	◐	◐	P		<ul style="list-style-type: none"> This effort is in development, we are waiting on WRCOG for further development of the model.
WMA-5	Implement a program for on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	X	X	NT		<ul style="list-style-type: none"> Strategy not triggered in FY 2020

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

5.3 MODIFICATIONS TO WQMP

Modifications to the WQMP were made during FY 2017-2018. The current WQMP went into effect on July 5th, 2018. No modifications to the WQMP were made during the reporting period. The current County of Riverside WQMP is posted on the County's website.

5.4 MODIFICATIONS TO THE JRMP

No modifications to the County of Riverside's JRMP have been made since the WQIP was approved. The County's current JRMP is posted in the County's website.

5.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The County of Riverside did not request any regulatory relief from the San Diego Water Board related to compliance with the Municipal Permit during the COVID-19 pandemic.

**6 RIVERSIDE COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT**

6.1 JRMP ANNUAL REPORT

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM**

FY 2019-2020

I. COPERMITTEE INFORMATION	
Copermittee Name: <u>Riverside County Flood Control and Water Conservation District</u>	
Copermittee Primary Contact Name: <u>Matt Yeager</u>	
Copermittee Primary Contact Information: Address: <u>1995 Market Street</u>	
City: <u>Riverside</u>	County: <u>Riverside</u>
State: <u>CA</u>	Zip: <u>92501</u>
Telephone: <u>(951) 955-0843</u>	Fax: <u>(951) 780-9965</u>
Email: <u>MYeager@RIVCO.org</u>	
II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Number of non-storm water discharges reported by the public	4
Number of non-storm water discharges detected by Copermittee staff or contractors	100
Number of non-storm water discharges investigated by the Copermittee	104
Number of sources of non-storm water discharges identified	75
Number of non-storm water discharges eliminated	11
Number of sources of illicit discharges or connections identified	75
Number of illicit discharges or connections eliminated	11
Number of enforcement actions issued	10
Number of escalated enforcement actions issued	0
V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Number of proposed development projects in review	N/A
Number of Priority Development Projects in review	N/A
Number of Priority Development Projects approved	N/A
Number of approved Priority Development Projects exempt from any BMP requirements	N/A
Number of approved Priority Development Projects allowed alternative compliance	N/A
Number of Priority Development Projects granted occupancy	N/A
Number of completed Priority Development Projects in inventory	N/A
Number of high Priority Development Project structural BMP inspections	N/A
Number of Priority Development Project structural BMP violations	N/A
Number of enforcement actions issued	N/A
Number of escalated enforcement actions issued	N/A

FY 2019-2020

VI. CONSTRUCTION MANAGEMENT PROGRAM					
Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Number of construction sites in inventory				0	
Number of active construction sites in inventory				0	
Number of inactive construction sites in inventory				0	
Number of construction sites closed/completed during reporting period				0	
Number of construction site inspections				N/A	
Number of construction site violations				N/A	
Number of enforcement actions issued				N/A	
Number of escalated enforcement actions issued				N/A	
VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM					
Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
	Municipal	Commercial	Industrial	Residential	
Number of facilities or areas in inventory	156	N/A	N/A	N/A	
Number of existing development inspections	154	N/A	N/A	N/A	
Number of follow-up inspections	0	N/A	N/A	N/A	
Number of violations	0	N/A	N/A	N/A	
Number of enforcement actions issued	N/A	N/A	N/A	N/A	
Number of escalated enforcement actions issued	N/A	N/A	N/A	N/A	
VIII. PUBLIC EDUCATION AND PARTICIPATION					
Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
IX. FISCAL ANALYSIS					
Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

X. CERTIFICATION

I [Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Matt Yeager

Digitally signed by Matt Yeager
 DN: cn=Matt Yeager, o=Riverside County Flood Control and Water
 Conservation District, ou=Watershed Protection Division,
 email=myeager@rivco.org, c=US
 Date: 2021.01.27 14:59:51 -0800

Signature

MATT YEAGER

Print Name

(951) 955-0843

Telephone Number

JANUARY 25, 2021

Date

SENIOR FLOOD CONTROL PLANNER

Title

MYEAGER@RIVCO.ORG

Email

FISCAL ANALYSIS

- 1) The following table provides estimated expenditures for the current reporting period, the preceding reporting period, and the next reporting period. This table identifies the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities described in the Riverside County Flood Control and Water Conservation District JRMP as required under Section H.2 of the 2010 SMR MS4 Permit.

Program Element	Fiscal Year 2018-2019		Fiscal Year 2019-2020		Fiscal Year 2020-2021	
	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures	Capital Expenditures	O&M/Admin Expenditures
Program Management¹	N/A	\$1,070,900	N/A	\$1,059,534	N/A	\$1,382,078
Annual Permit Fee	N/A	N/A	N/A	N/A	N/A	N/A
Implementation Agreement Shared Cost	N/A	N/A	N/A	N/A	N/A	N/A
Private Construction Inspections	N/A	N/A	N/A	N/A	N/A	N/A
Private Development Planning	N/A	N/A	N/A	N/A	N/A	N/A
Industrial and Commercial Inspections	N/A	N/A	N/A	N/A	N/A	N/A
Illicit Connections & Illegal Discharges Program²	N/A	Included in Program Mgmt.	N/A	Included in Program Mgmt.	N/A	Included in Program Mgmt.
Municipal Facilities and Activities²	N/A	Included in Program Mgmt.	N/A	Included in Program Mgmt.	N/A	Included in Program Mgmt.
Public Education & Outreach³	N/A	\$66,580	N/A	\$36,057	N/A	\$55,000
Monitoring Program	N/A	\$623,150	N/A	\$789,000	N/A	\$816,000
Retrofit Program	N/A	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A	N/A	N/A
Total	\$0	\$1,760,630	\$0	\$1,884,591	\$0	\$2,088,078

¹ Program Management includes all costs not directly listed in the Program Elements. Costs includes staffing, administration and overhead, consultant services and regional programs associated with program development.

² The District does not have individual costs associated with this program element. This cost is included in Program Management.

³ Costs for this element are not tracked separately from the District-Implemented Regional Programs and as such, shown costs are inclusive of costs incurred for implementing the regional element.

FISCAL ANALYSIS

2) A description of the source(s) of funds that are proposed to meet the necessary expenditures for the subsequent year.

Source of Funds	FY 2020-2021 Revenues	Percent of Total Program Funding	Restrictions on Use (if applicable)
Santa Margarita Watershed Benefit Assessment Fund (Projected Revenue)	\$530,000	26%	District NPDES compliance cost, excess funds used to fund regional NPDES activities
Santa Margarita Watershed Co-Permittee Implementation Agreement (Estimated Contributions)	\$1,525,114	74%	Fund Regional NPDES Compliance Programs
Total	2,055,114	100%	

3) Provide a narrative description of circumstances resulting in a 25 percent or greater annual change for any budget line item.

Program Element	Percent Budget Item Change	FYs with Change	Description
Program Management	30%	FY20-21	Additional technical consultants
Public Education and Outreach	53%	FY20-21	Additional social media consultants

6.2 STRATEGIES

Table A2-32. Riverside County Flood Control and Water Conservation District, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-1	Promote a public reporting mechanism for incidental observations of IC/IDs.	●	●	A		<ul style="list-style-type: none"> The District operated a County-wide 1-800 hotline number and two web links to facilitate public reporting of ICIDs. An ICID web link was operated to specifically report ICIDs, while a non-ICID web link was operated to specifically report clogged storm drains, damaged facilities, and illegal disposal of bulk items. However, the non-ICID web link can also be used to report ICIDs if the end-user is already using it to report non-ICID issues. Therefore, in total, the District operated three reporting mechanisms to facilitate public reporting of ICIDs.
IDDE-2	Train municipal field staff to identify and report ICIDs.	●	●	A		<ul style="list-style-type: none"> ICIDs have historically entered District facilities through the Copermittees' MS4 networks, transportation corridors, and cross-lot drainage that extend beyond the District's jurisdiction and legal control. The District continued providing formal annual training to the permittees, field crews, and field contractors and introduced remote distance training as a result of COVID19 social distancing mandates. The District's senior ICID inspector, who is tasked with responding to every ICID complaint submitted to the District, also attends this training.

Table A2-32. Riverside County Flood Control and Water Conservation District, Illicit Discharge Detection and Elimination Program Strategies

Number	Santa Margarita River Illicit Discharge Detection and Elimination Program Strategies - Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
IDDE-3	Implement a District right-of-way inspection program to identify and report Illicit Connections and Discharges.	X	X	P		<ul style="list-style-type: none"> WPD received inter-departmental agreement to begin training O&M staff on inspections and documentation under the MS4 Outfall field screening program using ESRI's Survey 123 mobile application. As this will likely increase additional data and follow-up investigations, additional program structuring may be required. Training preparation is anticipated for the upcoming 2020-2021 monitoring year.
IDDE-4	Develop response procedures for homeless issue complaints to prevent or reduce trash and debris from entering receiving waters.	●	●	A		<ul style="list-style-type: none"> These procedures were developed and incorporated into Section 29 of the Safety and Operations Manual. The procedures are complete and implementation is ongoing.
IDDE-5	Identify areas with excessive water use	◐	◐	P		<ul style="list-style-type: none"> This was initially done as part of the WQIP development. The District is developing contacts with EMWD and RCWD to update the info and conduct a reevaluation.
IDDE-6	Assessment of Permitted flows	◐	◐	P		<ul style="list-style-type: none"> This study was initially scheduled to be completed by 2023. The District initiated discussions with water suppliers of the IRWM group.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-33. Riverside County Flood Control and Water Conservation District, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-1	Implement Updated BMP Design Manual.	●	●	A		<ul style="list-style-type: none"> The District reviews its WQMP for conformance with the BMP Design Manual on as as-needed basis. The District reviews all of its capital improvement projects to determine if these projects meet PDP applicability criteria. Typically, the District's dams, levees, channels, storm drains, and basins have not required WQMPs. Previously, the District led the development of the BMP Design Manual and will continue coordinating any updates with the Copermitees.
DEV-2	Update the BMP specifications (Soil mix, plant types, configuration) in the BMP Design Manual to enhance retention of nutrients.	●	●	P		<ul style="list-style-type: none"> The District continues assessing its onsite LID facilities to improve removal of nutrients based on previous evaluations of soil media, plant palettes, system configurations, and ease of maintenance. During this reporting period, the District continued to monitor its BMPs, sampling two storm events during the 19/20 wet season with additional storms being monitored to assess BMP hydrological properties. Further, Michael Baker Int. submitted their data review of the District's LID program in late July of 2020. The assessment suggests that revising BMP configurations may enhance their effectiveness at removing nutrients. The District will continue monitoring its BMPs throughout the coming years. The results are anticipated to determine further potential revisions to the BMP Design Manual.

Table A2-33. Riverside County Flood Control and Water Conservation District, Development Planning Program Strategies

Number	Santa Margarita River Development Planning Program Strategies - Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
DEV-3	Update the BMP Design Manual with landscape design and maintenance guidance	◐	●	P		<ul style="list-style-type: none"> Previously, the SMC Clean Project evaluated existing maintenance guidance for LID BMPs in which the District participated in its review. The District anticipates using this information to continue updating its BMP Design Manual as needed. The District also prepared educational materials and conducted outreach to landscape maintenance businesses to emphasize prevention of non-stormwater discharges, and encouraged these businesses to reduce the use of nutrients and pesticides.
DEV-4	Train staff on Updated BMP Design Manual.	◐	●	P		<ul style="list-style-type: none"> The District revised the training materials to include minimizing nutrient discharges.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-34. Riverside County Flood Control and Water Conservation District, Construction Management Program Strategies

Number	Santa Margarita River Construction Management Program Strategies – Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
CON-1	Train staff on implementation of BMPs that reduce the potential of HPWQC and PWQP loading, and are site specific and seasonally appropriate to the construction phase, year round.	●	●	A		<ul style="list-style-type: none"> During this reporting period, the District conducted a comprehensive review and update to the construction training program and tailored the modules to specific watershed issues. The District implemented the new training program in fall 2019 and spring 2020 and noted any opportunities for improvement. In the SMR region, the construction training module has been tailored to present BMP implementation techniques that may assist with reducing or eliminating HPWQC and PWQC loading.
CON-2	Require preparation and implementation of SWPPPs	●	●	A		<ul style="list-style-type: none"> The District continued requiring the preparation, review, and implementation of SWPPPs for its projects requiring Construction General Permit coverage per contract specifications. The District requires draft SWPPP documents to be prepared using the CASQA templates. Non-CGP projects are required to prepare and implement a Pollution Prevention Plan that addresses stormwater and non-stormwater discharges. The District requires all projects to implement minimum construction BMPs

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-35. Riverside County Flood Control and Water Conservation District, Existing Development Management Program Strategies

Number	Santa Margarita River Existing Development Management Program Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ED-1	Inspect and maintain flood control facilities.	●	●	A		<ul style="list-style-type: none"> The District inspected and maintained its facilities. Where applicable, maintenance consisted of removing debris and sediment, repairing eroded slopes, maintaining vegetated areas, and ensuring the structural integrity of its inlets and outfalls, energy dissipaters, channel linings, and washouts.
ED-2	Inspect District outfalls and coordinate abatement activities with affected jurisdictions.	●	●	A		<ul style="list-style-type: none"> The District completed dry-weather field surveys at all of the major outfalls listed on its field screening inventory as per the MAP of the MS4 Permit. During these surveys, the District initiated source investigations of non-permitted discharges on behalf of the Copermittees and notified the respective Copermittees for follow-up as needed. The District also assisted the Copermittees by reporting flows discharging from their respective outfalls. This collaboration allowed the Copermittees to conduct follow-up investigations in a timely manner.
ED-3	Provide funding for Riverside County Fire Department HAZMAT Response Program.	●	●	A		<ul style="list-style-type: none"> The District continued providing funding to the Riverside County Fire Department for watershed-wide hazardous-material incident response and clean-up services.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-36. Riverside County Flood Control and Water Conservation District, Enforcement Response Plans Program Strategies

Number	Santa Margarita River Enforcement Response Plans Program Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
ERP-1	Require the implementation of the ERP to ensure proper use of BMPs to prevent or reduce the discharge of pollutants into MS4 networks.	●	●	A		<ul style="list-style-type: none"> During this reporting period's annual training for existing development, the District and Copermittees were presented with inspection and investigation scenarios that provided general guidance when implementing the ERP.
ERP-2	Require the implementation of the ERP to ensure that private construction activities comply with the Construction General Permit and Copermittees' Stormwater Ordinances.	●	●	A		<ul style="list-style-type: none"> During this reporting period's annual training for construction activities, the District and Copermittees were presented with inspection scenarios that provided general guidance when implementing the ERP.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-37. Riverside County Flood Control and Water Conservation District, Public Education and Participation Program Strategies

Number	Santa Margarita River Public Education and Participation Program Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-1	Collaborate with watershed partners to develop consistent messaging to targeted audiences, such as commercial residents to conserve water and reduce dry weather flows.	●	●	A		<ul style="list-style-type: none"> The District and Copermittees continued implementing the five-year Strategic Plan program in a consistent and uniform approach. Key products included the development of overwatering door hangers and a dedicated overwatering webpage.
PubEd-2	Develop and provide outreach material to mobile landscape service providers that focuses on runoff and nutrient reduction.	●	●	A		<ul style="list-style-type: none"> The District developed and distributed an educational fact sheet for landscape service providers. The fact sheet encourages minimizing irrigation runoff and proper use, containment, and disposal of fertilizers and pesticides throughout existing development.
PubEd-3	Provide outreach presentations to elementary, middle, and high school students to ensure that environmental protection is addressed early-on during the academic process.	●	●	A		<ul style="list-style-type: none"> In the SMR region, 3 presentations were provided to 305 elementary and middle school students. On a county-wide basis, 51 presentations were provided to 2,840 students. These numbers reflect reduced access to school as COVID19-related restrictions resulted in closures throughout all local school districts.
PubEd-4	Enhanced Jurisdictional: Coordinate/develop outreach materials in support of Copermittee enhanced inspection, outreach & enforcement programs	◐	◐	P		<ul style="list-style-type: none"> The District anticipates that it will begin coordinating the development and distribution of informational brochures during the next reporting period for nurseries, vineyards, and horse ranches focusing on BMPs that reduce nutrients in runoff.

Table A2-37. Riverside County Flood Control and Water Conservation District, Public Education and Participation Program Strategies

Number	Santa Margarita River Public Education and Participation Program Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
PubEd-5	Enhanced Jurisdictional: Develop a webpage to ensure Copermittees and the general public have access to the latest NPDES information.	●	●	A		<ul style="list-style-type: none"> The District mapped new enhancements to its new website intended to encourage environmental stewardship throughout the county. The District anticipates that these enhancements will be ready for public use during the next reporting period.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-38. Riverside County Flood Control and Water Conservation District, Optional Jurisdictional Strategies

Number	Santa Margarita River Optional Jurisdictional Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
OPT-1	Perform infiltration- testing at District basins and outfalls to collect data to assess the feasibility of regional recharge facilities or individual infiltration BMPs.	X	◐	NT		<ul style="list-style-type: none"> The District conducted infiltration tests at basins within its jurisdiction between 2016 and November 2018. Currently, infiltration assessments of select outfalls are being considered based on information collected as part of the dry weather outfall field screening program. Outfalls with flowing or ponded conditions may in fact provide infiltration opportunities.
OPT-2	Partner with community groups to engage the public in promoting educational programs and community cleanups.	●	●	A		<ul style="list-style-type: none"> The District continued partnering with the County Fire Department to provide easily accessible HHW collection centers for residents and businesses. However, some HHW collection centers were temporarily closed during this reporting period due to state and county orders issued during the COVID-19 pandemic. The District notified the Regional Board regarding these closures in April 2020.
OPT-3	Evaluate the suitability of regional basins.	◐	◐	NT		<ul style="list-style-type: none"> This strategy was not triggered during this reporting period. The District is planning on installing a regional detention basin in the City of Wildomar. The design phase is moving forward and water quality features are being assessed for incorporation into the plans. It is anticipated that this basin will demonstrate whether or not regional basins are suitable BMPs in the SMR region.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

Table A2-39. Riverside County Flood Control and Water Conservation District, Optional WMA Strategies

Number	Santa Margarita River Optional WMA Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
WMA-1	Partner with Water District(s) on pilot projects to abate dry weather flows.	●	●	P		<ul style="list-style-type: none"> The District previously initiated discussions with water suppliers of the IRWM group to identify opportunities which could potentially support this strategy.
WMA-2	Coordinate incentive programs for reducing outdoor water use with Water Districts.	●	●	P		<ul style="list-style-type: none"> The District previously initiated discussions with water suppliers of the IRWM group to identify opportunities which could potentially support incentives and rebates. The District will continue seeking grants supporting water conservation efforts as they become available.
WMA-3	Update WMAA.	X	X	NT		<ul style="list-style-type: none"> This strategy was not triggered during this reporting period.
WMA-4	Update Water Quality Equivalency Calculations as part of the Alternative Compliance program.	X	X	NT		<ul style="list-style-type: none"> Updates to the WQE Guidance Document were completed in May 2018 and accepted by the SDRWQCB in March 2019. No further updates have occurred.
WMA-5	Submit Grant Applications to support the development and/or implementation of the WMAA and Alternative Compliance Program.	X	X	NT		<ul style="list-style-type: none"> This strategy was not triggered during this reporting period.
WMA-6	Develop a Stormwater Resources Plan.	●	●	A		<ul style="list-style-type: none"> The District finalized the Stormwater Resources Plan (SWRP) that identifies, prioritizes, and selects projects for funding consideration. The SWRP was forwarded to the IRWM group and the State for review and approval.

Table A2-39. Riverside County Flood Control and Water Conservation District, Optional WMA Strategies

Number	Santa Margarita River Optional WMA Strategies Riverside County Flood Control and Water Conservation District	FY19-20	FY20-21	Actual / Planned	Rationale for Modification to the Strategy	Comments
WMA-7	Coordinate with the SMR Nutrient Initiative Group to share watershed-related information.	●	●	A		<ul style="list-style-type: none"> During this reporting period, the District participated with the SMRNIG group in various Technical and Stakeholder Advisory Group meetings. The District continued providing and facilitating the compilation of data, as needed, in support of the SCCWRP technical team. Regular meetings occurred on 10/2/2019 and 3/12/2020.
WMA-8	Coordinate with the SMR IRWM group to share watershed-related information.	◐	◐	P		<ul style="list-style-type: none"> The District is a partner in the IRWM group and attends IRWM meetings. The main item for the District during this reporting period was discussion and submittal of the SWRP for inclusion in the IRWM plan. IRWM meetings have not been scheduled since March 2020 due to the COVID-19 pandemic.
WMA-9	Coordinate with the Consultation committee to provide updates and share watershed-related information.	◐	●	A		<ul style="list-style-type: none"> Following the acceptance of the WQIP in January 2019, the Consultation Committee agreed to meet on an as-needed basis. The meetings will resume during the next reporting period to support updates such as incorporating the requirements of the SMR Estuary Investigative Order into the WQIP. When COVID19-related restrictions are lifted, the District expects to resume discussions with water suppliers of the IRWM group to identify opportunities which could potentially support additional measures to further address watershed concerns.

Notes:

● - Fully implemented; ◐ - Partially Implemented, X – Not Implemented
A – Actual (active implementation), P – Planned (planning stage), NT-Not Triggered

6.3 MODIFICATIONS TO WQMP

The District has made a few minor edits to the WQMP document and added an updated map of the hydromodification exempt reaches. The revisions are provided as errata redlines below. The current WQMP is posted online at <http://content.rcflood.org/NPDES/SMRWMA.aspx>.

Redline Errata: WQMP Pages 97 – 98:

3.6.1. Projects Subject to Hydromodification Performance Standards

PDPs are subject to hydromodification performance standards unless exempted by the [Insert Jurisdiction]. Exemptions may be granted under each of the following conditions:

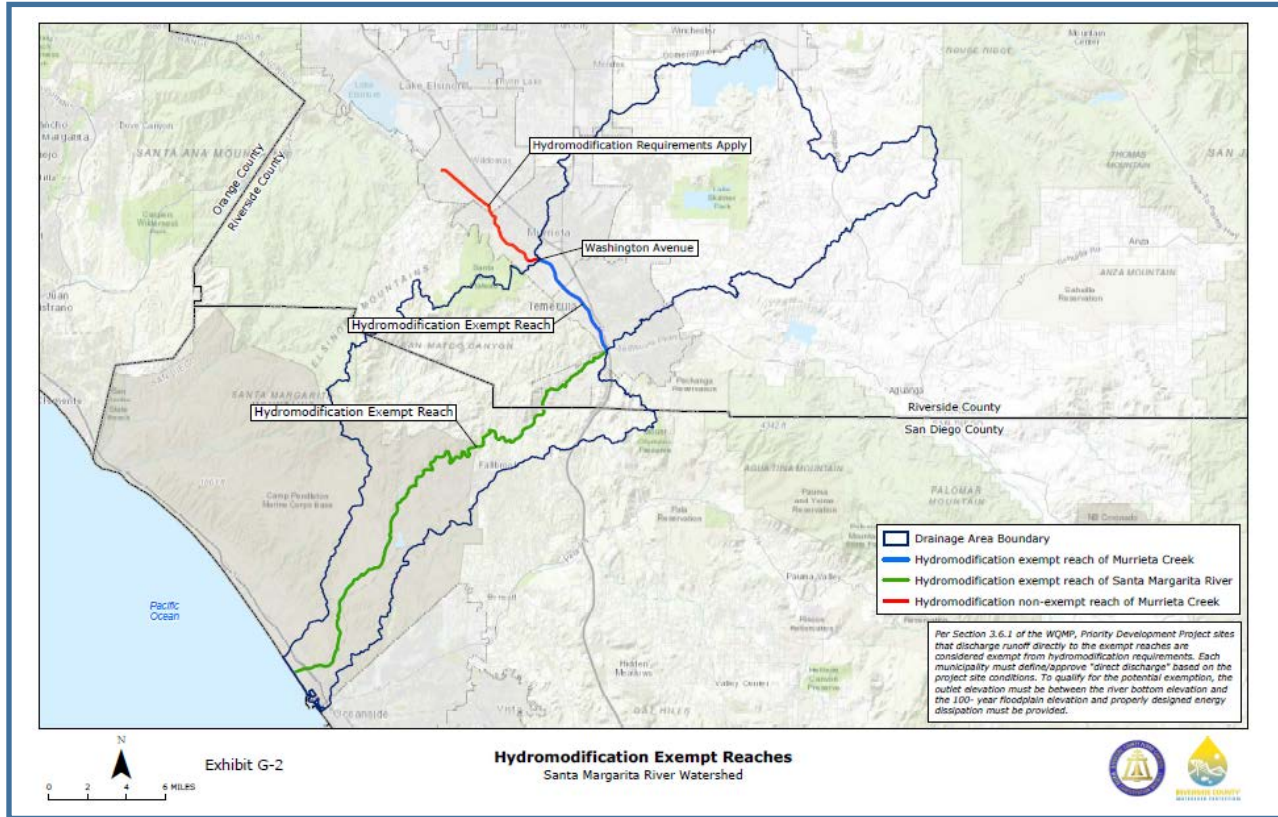
- If the project is not classified as PDP per Section 1.1; OR
- If the PDP discharges to an existing underground storm drain discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean; OR
- If the PDP discharges to a conveyance channel whose bed and bank are concrete lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean; OR
- If the PDP discharges runoff directly to an exempt stream/river reach ~~or an exempt reservoir~~ as identified in an approved WMAA. The WQIP and the WMAA were accepted by the Water Board; as of November 27, 2018 the following exemptions are in effect:
 - Santa Margarita River
 - Upstream Limit: At Origin, i.e. Confluence with Temecula Creek and Murrieta Creek
 - Downstream Limit: Outfall to Pacific Ocean
 - Murrieta Creek
 - Upstream Limit: ~~850 feet upstream of Hawthorn Street~~ Washington Avenue
 - Downstream Limit: Confluence with Santa Margarita River ~~(the WMAA is not currently approved so no such exemptions are currently available).~~

Each municipality must define/approve "direct discharge" based on the project site conditions. To qualify for the potential exemption, the outlet elevation must be between the river bottom elevation and the 100- year floodplain elevation and properly designed energy dissipation must be provided (from Section 4.5 of the 2018 SMR Watershed Management Area Analysis).

It should be noted that all PDPs are subject to the LID and water quality treatment requirements even if they are not subject to Hydromodification Performance Standards.

In addition, the User should note that properly designed energy dissipation systems are required for all project outfalls to unlined channels.

REVISED EXHIBIT G-2



----- End of WQMP redline errata

6.4 MODIFICATIONS TO THE JRMP

In FY 2019-2020, the Riverside Flood Control and Water Conservation District completed a variety of administrative updates, listed below, to its JRMP.

- Replaced "JRMP" with "Plan" to differentiate between the program (JRMP) and its implementation document (Plan).
- Replaced "SMR" with "Regional" to denote the current MS4 Permit. Deleted references to the 2010 MS4 Permit where appropriate.
- Replaced "Department" with "Division" consistent with the District's organizational nomenclature.
- Removed "JRMP" from "WQIP/JRMP Annual Report." The JRMP reporting forms are now an appendix to the WQIP Annual Report.
- Used "District Right-of-Way and Easement" to denote the extent of the District's jurisdiction.
- Added or corrected references to specific permit provisions.
- Updated website addresses and telephone numbers.
- Provided specific appendix locations (e.g., Appendix B.4 rather than Appendix B).
- Identified non-jurisdictional areas as those including federal, state and tribal lands.
- Replaced "District Development Review Section" with "County Planning Department."
- Removed redundant references to "SMR."

Additional details to changes made are available upon request. The current JRMP is posted online at <http://content.rcflood.org/NPDES/SMRWMA.aspx>.

6.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The Riverside Flood Control and Water Conservation District sent a letter to the San Diego Water Board describing the impacts of the COVID-19 pandemic and associated public health orders on its stormwater program. The District's letter and the San Diego Water Board's response are provided in this section.



RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

April 8, 2020

Sent via electronic mail:
SanDiego@waterboards.ca.gov

Mr. David W. Gibson
Executive Officer
San Diego Regional Water Quality Control Board
2375 Northside Dr., Suite 100
San Diego, CA 92108-0002

Dear Mr. Gibson:

Re: Initial Notification and Preliminary Assessment of Impact of COVID-19 Public Health Emergency on Compliance with San Diego Region NPDES Municipal Separate Storm Sewer System (MS4) Permit and Related Orders

On March 20, 2020, the San Diego Water Board (Water Board) and the State Water Resources Control Board (State Board) provided a notice, *Compliance with Water Board Requirements during the Coronavirus 2019 (COVID-19) Emergency* (COVID-19 Notice), detailing how MS4 permittees were to advise the Water Boards concerning potential non-compliance with the MS4 permit and other order requirements due to the COVID-19 public health emergency. In accordance with that notice, this letter provides the initial response of the Riverside County Flood Control and Water Conservation District (District) to this notice and sets forth the District's preliminary assessment concerning compliance with the above-referenced MS4 permit and related orders.

This letter responds to the following COVID-19 Notice requirement:

"If there is a specific Water Board order or requirement that cannot be timely met because it would be inconsistent with current governmental directives or guidelines related to COVID-19, the entity responsible for compliance with the Water Board order or requirement must notify the applicable Water Board immediately. The notification shall be via electronic mail to the applicable Water Board using the appropriate email address identified below, and shall include:

- the specific Water Board order, regulation, permit, or other requirement that cannot be timely met;
- the inconsistent COVID-19 directive or guideline,
- an explanation of why the responsible entity cannot timely meet the Water Board order or requirement, and
- any action that the entity will take in lieu of complying with the specific Water Board order or requirement."

April 8, 2020

Mr. David W. Gibson

-2-

Re: Initial Notification and Preliminary
Assessment of Impact of COVID-19
Public Health Emergency on
Compliance with San Diego
Region NPDES Municipal Separate
Storm Sewer System (MS4) Permit
and Related Orders

In recent weeks, in response to the COVID-19 crisis, the Governor and Riverside County have issued several public health orders, and District operations have been modified in various ways in response to those orders, particularly in response to social distancing requirements. District personnel are continuing to evaluate how the COVID-19 emergency is affecting, and will affect, compliance with the MS4 Permit and other orders. This is a complex evaluation, requiring an assessment not only of District staff capabilities but also those of the Co-permittees, consultants, laboratories and other entities. At this time, the District cannot provide the detailed analysis required by the State Board's notice for all affected compliance activities. However, we have identified several MS4 compliance actions that cannot be implemented as scheduled, and these actions are described in detail below. The District expects to provide more detailed information regarding the extent of COVID-19 impacts to MS4 compliance actions in the near future once we have completed a more detailed analysis.

Status of Riverside County Public Health Orders Concerning COVID-19

In addition to the State of Emergency declared by the Governor on March 4, 2020 and the Governor's Executive Order N-33-20 issued on March 19, 2020, which imposed social distancing measures and directed all individuals in California to stay at their place of residence except as needed to maintain continuity of operations of critical infrastructure sectors, Riverside County health authorities have also issued a number of COVID-19 related orders. On March 8, 2020, the County of Riverside Public Health Officer, Dr. Cameron Kaiser, declared a local health emergency, citing the County's first locally acquired case of COVID-19. Since that time, more than a dozen public health orders have been issued by Dr. Kaiser, including cancellation of public events (March 12), closure of schools (March 13), cancellation of meetings of more than 10 individuals, closure of County buildings to the public (March 17), and extending the period of closure for schools and colleges (March 18 and April 1). On April 4, Dr. Kaiser issued a further order with a prohibition on all gatherings regardless of venue or size with very limited exceptions, a requirement that all persons including essential workers wear face coverings whenever they leave their home, and a commitment from law enforcement to enforce the order. Public safety requirements continue to evolve, and health and safety restrictions are expected to become more stringent for an extended period of 2020. Riverside County COVID-19 Orders can be found at: <https://www.rivcoph.org/coronavirus>.

Notification of District Compliance Activities That Cannot Be Timely Met

As noted above, the District has identified several activities required under the MS4 Permit, Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, that cannot be performed at this time due to the restrictions imposed by the COVID-19 orders referenced above. In accordance with the State Board's COVID-19 Notice, we describe below the activities impacted and the respective inconsistent COVID-19 order, provide an explanation as to why the requirement cannot be timely met and note planned in-lieu or alternative actions.

Mr. David W. Gibson

-3-

April 8, 2020

Re: Initial Notification and Preliminary Assessment of Impact of COVID-19 Public Health Emergency on Compliance with San Diego Region NPDES Municipal Separate Storm Sewer System (MS4) Permit and Related Orders

- **HHW and ABOP Events: Public Education and Participation Program (Provision II.E.7.a.(2); District JRMP Section 11.0)**
 - In compliance with this requirement, the District provides significant funding annually to the Riverside County Department of Waste Resources (RCDWR) to help enable RCDWR to both promote and provide facilities and events for the safe disposal of household hazardous wastes.
 - To comply the social distancing requirements in the County's public health orders and Executive Order N-33-20, RCDWR has been required to cancel all community cleanup events, hazardous waste collection events, community outreach classes, education center visits, resource garden visits and speaking engagements through April 30, 2020. Considering the recent extension of school closures to June 29. It is anticipated additional activities scheduled through June 2020 may also be canceled.
 - We expect that these RCDWR activities will resume as soon as COVID-19 restrictions are lifted. However, information regarding the safe disposal of household hazardous waste continues to be available on the RCDWR website.

- **Household Hazardous Waste (HHW) (District JRMP Section 4.2.1.1: HHW Collection and Anti-freeze, Batteries, Oil and Latex Paint (ABOP) Collection Programs)**
 - The District supports the HHW and ABOP collection programs to help prevent illegal dumping and discharges. These programs include mobile HHW collection events at sites in the Santa Margarita Region scheduled periodically on weekends. One permanent ABOP collection site is located at the County Maintenance Yard in the city of Murrieta.
 - For the reasons stated above, programs provided through RCDWR, including HHW and ABOP collection services as described in the District Jurisdictional Runoff Management Program (JRMP), must be canceled through April 30, 2020.
 - We expect that these RCDWR activities will resume as soon as COVID-19 restrictions are lifted. However, for the time being, information regarding the safe disposal of household hazardous waste continues to be available on the RCDWR website.

- **School Presentations: Public Education and Participation Program (Provision II.E.7.a.(3); District JRMP Section 11.2.2)**
 - Pursuant to this provision and as described in the District's JRMP document, the District administers a program of water pollution-themed elementary school classroom presentations. The most recent activity under this program, a presentation to 300 students at E. Hale Curran Elementary School in the city of Murrieta, was conducted on March 11, 2020.
 - All in-person school presentations have been suspended due to the Countywide closure of all schools following the County's public health orders of March 13, March 18 and April 4.

Mr. David W. Gibson

-4-

April 8, 2020

Re: Initial Notification and Preliminary Assessment of Impact of COVID-19 Public Health Emergency on Compliance with San Diego Region NPDES Municipal Separate Storm Sewer System (MS4) Permit and Related Orders

The District is currently evaluating the conversion of its classroom materials and instruction to a digital format for future use. This will require coordination with school districts that are conducting online educational programs for their students.

- **District and Co-permittee Staff Training (Provision II.E.7.a.(3); District JRMP: Section 11.3, Table 11-2, and Section 12.0)**
 - On behalf of the Co-permittees, the District develops training materials and provides a training program for District and Co-permittee staff, which includes in-person group training events. In addition, training modules have been developed to support online training for several training topic areas.
 - In compliance with the prohibition on meetings of any size, all in-person training events have been suspended. In-person training classes that were scheduled for April 2020 will be rescheduled for May or June 2020 provided that COVID-19 orders allow them.
 - The District is currently working with the training contractors to develop additional online training modules so that online training options will be available to the Co-permittees for all required training topic areas.

This information is based on the District's current knowledge. As additional MS4 Permit compliance concerns come to the District's attention, we will update the Water Board.

Additional Areas of Potential Compliance Concern for the Co-permittees

As you know, the District is Principal Co-permittee for the Santa Margarita River Watershed Management Area and performs many MS4 Permit compliance functions for the Co-permittees pursuant to an Implementation Agreement. However, certain permit compliance functions remain the responsibility of the Co-permittees. Based on preliminary discussions with Co-permittees and the District's initial evaluation of areas of compliance concern, we have outlined for the Water Board's information several Co-permittee program areas that may be impacted by the requirement to comply with COVID-19 orders. **We want to stress that this evaluation is preliminary and is likely subject to change. We expect that the Co-permittees will update the Water Board with additional information on the impact of COVID-19 orders on their compliance actions.**

- **Field Inspection Requirements**
 - The MS4 Permit requires the Co-permittees to conduct inspections for construction sites (Provision II.E.4.d), existing development (industrial/commercial sites, residential areas, and municipal facilities and areas: Provision II.E.5.c), structural BMPs (Provision II.E.3.e), and non-emergency IC/ID inspections or investigations (Provision II.E.2.d). We understand that the ability to conduct such non-emergency inspections may be impacted by social distancing requirements or other staff restrictions such as requirements to work from home. We understand that emergency water quality IC/ID inspections will in any event continue to be undertaken by the Co-permittees.

April 8, 2020

Mr. David W. Gibson

-5-

Re: Initial Notification and Preliminary
Assessment of Impact of COVID-19
Public Health Emergency on
Compliance with San Diego
Region NPDES Municipal Separate
Storm Sewer System (MS4) Permit
and Related Orders

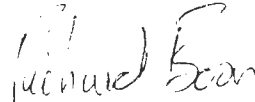
• **Public Education and Participation (Provision II.E.7)**

- Public messaging opportunities may be reduced due to closure of public facilities and the prohibition on gatherings;
- Local events with public outreach opportunities will likely be canceled or suspended;
- HHW/ABOP events hosted by the Co-permittees will likely be canceled or suspended;
- Cleanup events may be canceled or suspended.

As noted above, we anticipate that the Co-permittees will provide more detailed information to the Water Board concerning impacts on their individual MS4 permit compliance efforts as that information becomes available and is further evaluated by them.

Please contact me with any questions at 951.955.1273 or rboon@rivco.org.

Very truly yours,



RICHARD J. BOON

Chief of Watershed Protection Division

c: Laurie Walsh, P.E.
Santa Margarita Watershed MS4 Co-permittees

RB:rlp



San Diego Regional Water Quality Control Board

June 16, 2020

Sent by Email Only

Richard Boone
Chief of Watershed Protection Division
Riverside County Flood Control and
Water Conservation District
1995 Market Street
Riverside, CA 92501
rboon@rivco.org

In reply refer to/ attn:
252906:ERyan

Subject: Request for Compliance Relief due to COVID-19 Emergency, National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, Order No. R9-2013-0001, as Amended, NPDES No. CAS0109266 (Order)

Mr. Boone:

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) received your letter dated April 8, 2020, from the Riverside County Flood Control and Water Conservation District (District) regarding actual or potential noncompliance with requirements of the Order that could occur during the COVID-19 emergency. The District's letter requests relief from specific requirements set forth below that the District believes are inconsistent with the stay-at-home and social distancing restrictions imposed by Governor Newsom's Executive Order No. N-33-20 or the Riverside County Public Health Officer's directives.

- 1. Public Education and Outreach for Household Hazardous Waste (HHW) and Anti-freeze, Batteries, Oil and Latex Paint (ABOP) Collection and Disposal.** Provision E.7.a.(2) requires that the District implement educational activities, public information activities, and other appropriate outreach activities to facilitate the proper management and disposal of used oil and toxic materials which includes HHW and ABOP materials. The District reports that due to the governmental social distancing restrictions, public outreach and education activities scheduled through the County of Riverside for HHW and ABOP collection services have been suspended. The District's letter indicates that these activities will resume when the governmental

HENRY ABARBANEL, PH.D., CHAIR | DAVID GIBSON, EXECUTIVE OFFICER

2375 Northside Drive, Suite 100, San Diego, California 92108-2700 | www.waterboards.ca.gov/sandiego

social distancing restrictions are lifted. Alternative methods of disseminating information on the safe disposal of HHW through the District's web site are continuing.

2. Public Education and Outreach for Schools.

Public education and outreach activities for school-aged children are required under provision E.7.a (3) of the Order. The District reports that in light of the ongoing governmental social distancing restrictions and school closures, public outreach and education activities scheduled for schools have been suspended. The District is currently evaluating on-line conversion of its educational materials and activities for future use in educational outreach activities at schools.

3. Education and Outreach for District and Copermittee Staff Training on Various Topics.

Training for agency staff on various topics pertaining to the prevention of pollutants from entering the MS4 is required under provision E.7.a (3) of the Order. The District develops training materials and conducts training sessions for District staff and the Riverside County Copermittees' staff. In light of governmental social distancing restrictions, all in-person training and education activities have been suspended. The District intends to eventually reschedule these training sessions as allowed by governmental restrictions. The District reports that they are working with contractors to develop on-line training options on all required training topics.

4. General Notification and Preliminary Request for Compliance Relief on Behalf of Other Copermittees.

The District's April 8, 2020 letter also comments on behalf of the other Copermittees in Riverside County, that these Copermittees may have difficulty meeting certain requirements of the Order where compliance activities are impacted by the governmental stay-at-home and social distancing restrictions. The requirements include public education and outreach requirements in provision E.7.a.(2) and (3) of the Order; and the June 30, 2020 deadline to complete field inspections to comply with the requirements of provisions E.2.d (illicit connection/ Illicit detection (IC/ID) inspections or investigations), E.3.e (structural BMP verifications), E.4.d (construction sites), and E.5.c (inventoried existing development sites) of the Order.

Determinations on the Notifications of Suspension of Activities

The San Diego Water Board continues to closely monitor the COVID-19 situation with a focus on protection of public health, safety, and the environment and continuity of timely compliance by the regulated community with all Water Board orders and other requirements is among the highest priorities. The San Diego Water Board recognizes the challenges posed by COVID-19, values the safety of the regulated community and the public, and does not want to put anyone at risk for contracting COVID-19.

The San Diego Water Board has evaluated the District's requests in accordance with these principles and the recently issued State Water Resources Control Board (State Water Board) guidance regarding permit compliance obligations in light of COVID-19. Under the current circumstances and based on the preliminary information provided by

the District in the April 8, 2020 letter, the San Diego Water Board has made the following determinations regarding the requests for compliance relief due to the COVID-19 emergency:

- 1. Public Education and Public Participation.** Public education and public participation requirements of provision E.7 of the Order pertaining to in-person activities by the District that are incompatible with current directives of Governor Newsom's Executive Order N-33-20 or the Riverside County Public Health Officer related to COVID-19 are suspended. This suspension of public education and outreach requirements in provision E.7 of the Order for incompatible in-person activities is effective immediately and is only in effect until the District is notified by the San Diego Water Board to resume all public education and participation activities in accordance with the requirements of the Order. The District is expected to continue to make available and disseminate public education messages via its website, e-mail, social media, and other remote means, as appropriate under the requirements of provision E.7 of the Order and compatible with governmental directives related to COVID-19.
- 2. General Notification and Request for Relief on Behalf of Other Copermittees.** The District's letter addresses several concerns on behalf of the other Riverside County Copermittees pertaining to field inspection, public education, and public participation requirements of the Order. The preliminary blanket request for compliance relief pertaining to these requirements submitted on behalf of the other Riverside County Copermittees is denied.

In accordance with the State Water Board Guidance, *Compliance with Water Board Requirements During the Coronavirus 2019 (COVID-19) Emergency*, each Copermittee must notify the San Diego Water Board separately if a specific requirement(s) of the Order cannot be timely met. As stated in the State Water Board's guidance, the specific entity responsible for compliance must notify the San Diego Water Board if timely compliance with a specific Water Board order or requirement would not be consistent with current governmental directives and guidelines related to COVID-19. The notification must include the following:

- The specific Water Board order, regulation, permit, or other requirement that cannot be timely met;
- The inconsistent COVID-19 directive or guideline;
- An explanation of why the responsible entity cannot timely meet the Water Board Order or requirement; and
- Any action that the entity will take in lieu of complying with the specific Water Board Order or requirement.

Except as otherwise stipulated in the San Diego Water Board determinations above, all the requirements of the Order remain in full force and effect. In the event that circumstances change to allow for compliance with the Order, the District must notify

the San Diego Water Board immediately of the change in circumstances and comply with the Order as soon as possible.

The San Diego Water Board appreciates your assistance and efforts to continue the important work to protect human health and the environment, while ensuring the safety of your employees and the community we seek to protect. Additional information is available at the State Water Board's website (https://www.waterboards.ca.gov/resources/covid-19_updates).

In the subject line of any response please include the reference number 252906:ERyan. If you have any questions or concerns, please feel free to reach out to Erica Ryan at Erica.Ryan@waterboards.ca.gov.

Respectfully,

David W. Gibson
Digitally signed by David W. Gibson
Date: 2020.06.16 12:54:58 -07'00'
David W. Gibson
Executive Officer

DWG:kd:db;lw;er

cc: Erica Ryan, San Diego Water Board, Erica.Ryan@waterboards.ca.gov
Laurie Walsh, San Diego Water Board, Laurie.Walsh@waterboards.ca.gov
Chiara Clemente, San Diego Water Board, Chiara.Clemente@waterboards.ca.gov
David Barker, San Diego Water Board, David.Barker@waterboards.ca.gov
Catherine Hagan, State Water Board, Catherine.Hagan@waterboards.ca.gov
Vincent Vu, State Water Board, Vincent.Vu@waterboards.ca.gov
David Boyers, State Water Board, David.Boyers@waterboards.ca.gov

Tech Staff Info & Use	
Order No.	R9-2013-0001, as amended
Party ID	539698
WDID	9 33M1000301 – 488788
NPDES No.	CA0109266
Reg. Measure ID	387335 (Regional MS4 Permit)
Place ID (PIN)	CW-252906

7 COUNTY OF SAN DIEGO

7.1 JRMP ANNUAL REPORT

ATTACHMENT D
JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM

This page left intentionally blank

JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM - DRAFT
 FY 2019-2020

I. COPERMITTEE INFORMATION	
I.A Copermittee Name: <u>County of San Diego (PIN 255223)</u>	
I.B Copermittee Primary Contact Name: <u>Todd Snyder</u>	
I.C Copermittee Primary Contact Information: Address: <u>5510 Overland Avenue, Suite 410</u> City: <u>San Diego</u> County: <u>San Diego</u> State: <u>California</u> Zip: <u>92123</u> Telephone: <u>(858) 694-3672</u> Fax: <u>(858) 495-5623</u> Email: <u>Todd.Snyder@sdcounty.ca.gov</u>	
II. LEGAL AUTHORITY	
II.A Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
II.B A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATE	
III.A Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
III.B If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM	
IV.A Has the Copermittee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
IV.B.1 Number of non-storm water discharges reported by the public	290
IV.B.2 Number of non-storm water discharges detected by Copermittee staff or contractors	113
IV.B.3 Number of non-storm water discharges investigated by the Copermittee	403
IV.B.4 Number of sources of non-storm water discharges identified	133
IV.B.5 Number of non-storm water discharges eliminated	105
IV.B.6 Number of sources of illicit discharges or connections identified	106
IV.B.7 Number of illicit discharges or connections eliminated	94
IV.B.8 Number of enforcement actions issued	99
IV.B.9 Number of escalated enforcement actions issued	4
V. DEVELOPMENT PLANNING PROGRAM	
V.A Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
V.B Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
V.C If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES <input type="checkbox"/> NO <input type="checkbox"/>
V.D.1 Number of proposed development projects in review	1,071
V.D.2 Number of Priority Development Projects in review	80
V.D.3 Number of Priority Development Projects approved	60
V.D.4 Number of approved Priority Development Projects exempt from any BMP requirements	0
V.D.5 Number of approved Priority Development Projects allowed alternative compliance	0
V.D.6 Number of Priority Development Projects granted occupancy	26
V.E.1 Number of completed Priority Development Projects in inventory	444
V.E.2 Number of high priority Priority Development Project structural BMP inspections	2,696
V.E.3 Number of Priority Development Project structural BMP violations	314
V.E.4 Number of enforcement actions issued	282
V.E.5 Number of escalated enforcement actions issued	0

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM - DRAFT**

FY 2019-2020

VI. CONSTRUCTION MANAGEMENT PROGRAM				
VI. A Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
VI.B.1 Number of construction sites in inventory			3,626	
VI.B.2 Number of active construction sites in inventory			3,543	
VI.B.3 Number of inactive construction sites in inventory			0	
VI.B.4 Number of construction sites closed/completed during reporting period			1,651	
VI.B.5 Number of construction site inspections			22,470	
VI.B.6 Number of construction site violations			241	
VI.B.7 Number of enforcement actions issued			317	
VI.B.8 Number of escalated enforcement actions issued			162	
VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM				
VII.A Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
VII.B.1 Number of facilities or areas in inventory	Municipal	Commercial	Industrial	Residential
	a. 252	b. 1,862	c. 202	d. 110
VII.B.2 Number of existing development inspections	a. 1,988	b. 931	c. 175	d. 865
VII.B.3 Number of follow-up inspections	a. 1	b. 176	c. 35	d. 352
VII.B.4 Number of violations	a. 0	b. 618	c. 99	d. 725
VII.B.5 Number of enforcement actions issued	a. 0	b. 203	c. 40	d. 343
VII.B.6 Number of escalated enforcement actions issued	a. 0	b. 0	c. 2	d. 57
VIII. PUBLIC EDUCATION AND PARTICIPATION				
VIII.A Has the Copermittee implemented a public education program component that complies with Order No. R9-2013-0001?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
VIII.B Has the Copermittee implemented a public participation program component that complies with Order No. R9-2013-0001?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
IX. FISCAL ANALYSIS				
Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>

X. CERTIFICATION

I [Principal Executive Officer Ranking Elected Official Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sarah
Aghassi
Digitally signed by Sarah Aghassi
Date: 2021.01.15 14:51:14 -08'00'

Signature

Sarah E. Aghassi

Print Name

(619) 531-5451

Telephone Number

January 15, 2021

Date

Land Use and Environment Group
Deputy Chief Administrative Officer

Title

Sarah.Aghassi@sdcounty.ca.gov

Email

ATTACHMENT D.1

**JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
ANNUAL REPORT FORM BY WATERSHED**

This page left intentionally blank

Attachment D.1

IRMP ANNUAL REPORT ATTACHMENT D.1 by WATERSHED		Santa Margarita	San Luis Rey	Cajalmar	San Dieguito	Fenasquitos	San Diego River	San Diego Bay	Tijuana River	Jurisdiction Totals	
Fiscal Year 2019-2020		HU 902.00	HU 903.00	HU 904.00	HU 905.00	HA 906.00 & 906.20	HU 907.00	HA 908.00, 909.00 & 910.00	HU 911.00		
IV. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM											
IV.B.1	Number of non-storm water discharges reported by the public	14	64	40	23	1	64	77	7	290	
IV.B.2	Number of non-storm water discharges detected by Department staff or contractors	16	15	10	20	0	34	18	0	113	
IV.B.3	Number of non-storm water discharges investigated by the Department	30	79	50	43	1	98	95	7	403	
IV.B.4	Number of sources of non-storm water discharges identified	13	27	16	17	1	30	28	1	133	
IV.B.5	Number of non-storm water discharges eliminated	10	23	8	14	0	25	25	0	105	
IV.B.6	Number of sources of illicit discharges or connections identified	12	20	10	16	1	23	24	0	106	
IV.B.7	Number of illicit discharges or connections eliminated	9	20	8	14	0	21	22	0	94	
IV.B.8	Number of enforcement actions issued	7	24	14	13	1	25	15	0	99	
IV.B.9	Number of escalated enforcement actions issued	0	0	2	0	0	1	1	0	4	
V. DEVELOPMENT PLANNING PROGRAM											
V.D.1	Number of proposed development projects in review ¹	38	194	133	179	0	217	244	67	1071	
V.D.2	Number of Priority Development Projects in review	1	16	8	7	0	18	17	13	80	
V.D.3	Number of Priority Development Projects approved	0	15	7	6	0	12	10	10	60	
V.D.4	Number of approved Priority Development Projects exempt from any BMP requirements	0	0	0	0	0	0	0	0	0	
V.D.5	Number of approved Priority Development Projects allowed alternative compliance	0	0	0	0	0	0	0	0	0	
V.D.6	Number of Priority Development Projects granted occupancy	0	10	3	7	0	3	2	1	26	
V.E.1	Number of completed Priority Development Projects in inventory	10	69	63	105	0	83	95	19	444	
V.E.2	Number of High Priority Development Project structural BMP inspections	53	302	208	394	0	796	805	138	2696	
V.E.3	Number of Priority Development Project structural BMP violations	5	67	9	162	0	20	24	27	314	
V.E.4	Number of enforcement actions issued	5	35	9	168	0	17	22	26	282	
V.E.5	Number of escalated enforcement actions issued	0	0	0	0	0	0	0	0	0	
VI. CONSTRUCTION MANAGEMENT PROGRAM											
VI.B.1	Number of construction sites in inventory ¹	102	950	668	650	4	470	690	93	3626	
VI.B.2	Number of active construction sites in inventory ¹	98	938	652	634	4	453	675	90	3543	
VI.B.3	Number of inactive construction sites in inventory	0	0	0	0	0	0	0	0	0	
VI.B.4	Number of construction sites closed/completed during reporting period	38	514	338	287	2	176	263	33	1651	
VI.B.5	Number of construction site inspections ²	430	6336	4558	3518	11	2658	3912	1048	22470	
VI.B.6	Number of construction site violations	6	85	17	25	0	45	59	4	241	
VI.B.7	Number of enforcement actions issued	8	105	37	41	6	44	65	11	317	
VI.B.8	Number of escalated enforcement actions issued	2	50	16	21	0	22	47	4	162	
VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM											
VII.B.1	Number of facilities or areas in inventory	a. Municipal	8	23	26	32	5	58	77	23	252
		b. Commercial	175	303	200	219	3	488	444	30	1862
		c. Industrial	15	13	8	43	0	71	48	4	202
		d. Residential	12	11	11	22	1	15	21	17	110
VII.B.2	Number of existing development inspections	a. Municipal	69	214	209	306	22	620	402	157	1988
		b. Commercial	131	147	68	126	0	278	159	22	931
		c. Industrial	20	11	11	27	0	69	33	4	175
		d. Residential	19	204	107	277	0	155	101	2	865
VII.B.3	Number of follow-up inspections	a. Municipal	0	0	0	0	0	0	1	1	
		b. Commercial	32	31	18	18	0	44	31	2	176
		c. Industrial	5	1	2	2	0	19	6	0	35
		d. Residential	1	85	42	138	0	47	39	0	352
VII.B.4	Number of violations	a. Municipal	0	0	0	0	0	0	0	0	
		b. Commercial	127	88	67	72	0	149	102	13	618
		c. Industrial	8	2	5	7	0	52	25	0	99
		d. Residential	5	183	103	257	0	93	84	0	725
VII.B.5	Number of enforcement actions issued	a. Municipal	0	0	0	0	0	0	0	0	
		b. Commercial	42	32	20	22	0	47	37	3	203
		c. Industrial	5	1	2	3	0	22	7	0	40
		d. Residential	1	85	48	128	0	40	42	0	343
VII.B.6	Number of escalated enforcement actions issued	a. Municipal	0	0	0	0	0	0	0	0	
		b. Commercial	0	0	0	0	0	0	0	0	
		c. Industrial	0	0	0	0	0	2	0	0	2
		d. Residential	0	10	10	24	0	3	10	0	57

Notes:
 HU - hydrologic unit
 HA - hydrologic area
 1. Subtracted "1" from Jurisdictional Totals since one facility was counted for two watersheds
 2. Subtracted "1" from Jurisdictional Totals since one facility was counted for two watersheds and had 1 inspection in the fiscal year

ATTACHMENT D.2

**JURISDICTIONAL RUNOFF MANAGEMENT
PROGRAM ANNUAL REPORT FISCAL ANALYSIS**

This page left intentionally blank

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

FISCAL ANALYSIS COMPONENT 1

1.1. Introduction 1

1.2. Fiscal Analysis Methods 1

1.3. Fiscal Analysis Results 1

1.3.1 Expenditures 2

1.3.2 Funding Source 12

1.4. Conclusions and Recommendations 12

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20 2

Table 1.2 – Estimated Watershed Expenditures for FY 2019-20 9

Table 1.3 – Estimated Regional Expenditures for FY 2019-20 10

Table 1.4 – Total Estimated County Expenditures for FY 2019-20 11

Table 1.5 – Legal Restrictions on the Use of Program Funding 12

FISCAL ANALYSIS COMPONENT

1.1. Introduction

This section presents an estimated annual budget for the County's runoff management programs for FY 2019-20.

1.2. Fiscal Analysis Methods

This section continues to utilize the methodologies and standards established in *Fiscal Analysis Method* submitted by the Copermittees in January 2009.

1.3. Fiscal Analysis Results

As shown the County estimated its total FY 2019-20 expenditures at \$56,580,333. This fiscal analysis addresses each of the County's Runoff Management Program elements (jurisdictional, watershed, and regional activities) for the current reporting period (FY 2019-20). Expenditures are described by department and major program area. They represent an estimate of the expenditures that the County incurred in meeting its compliance obligations for FY 2019-20. They should not be interpreted as either budgeted or actual expenditures. Because stormwater program expenditures are distributed throughout a considerable number of County programs, a single consolidated "budget" does not exist for the program as a whole. As such, these figures should be considered best estimates of stormwater-related expenditures.

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

1.3.1 Expenditures

1.3.1.1. Jurisdictional

Table 1.1 presents the County’s estimated jurisdictional expenditures for FY 2019-20.

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
1	ADMINISTRATION	\$10,827,700	These costs correspond to the DPW WPP development, administrative oversight, and assessment of the County’s stormwater programs. The WPP is responsible for the development of new and augmented County stormwater programs, regulatory reporting, and program assessment. Some administrative costs are associated with other specific functions shown below, but are included here because they could not be separated out.
2	DEVELOPMENT PLANNING	\$2,393,183	
A	Land Use Planning	<u>\$0</u>	Expenditures not reported for FY 2019-20; included in other elements.
B	Environmental Review	<u>\$0</u>	Expenditures not reported for FY 2019-20; included in other elements.
C	Development Project Approval and Verification	\$2,393,183	
C1	Public Projects (CIP)	<u>\$1,980,366</u>	
	Administration	\$133,829	Costs include: preparing and reviewing plans and specifications for stormwater BMPs, and SWPPP/WPCP review.
	Project Planning and Engineering	\$1,661,416	
	Compliance Inspection and Enforcement	\$84,988	
	BMP Implementation	\$100,132	

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
C2	Private Projects	\$412,817	
	Permitting and Licensing	\$412,817	Reported costs are total costs which include staff time for in-house reviews and consultant fees for outsourced project SWQMP reviews.
3	CONSTRUCTION	\$6,506,974	
A	Public Projects (CIP)	\$4,271,026	Costs include: BMP compliance inspections during construction, and implementation of construction phase BMPs.
	Compliance Inspection and Enforcement	\$2,289,392	
	BMP Implementation	\$1,981,634	
B	Private Projects	<u>\$2,235,948</u>	
	Compliance Inspection and Enforcement	\$2,235,948	
4	MUNICIPAL	\$20,719,759	
A	Administration	<u>\$166,359</u>	Expenditures associated with the administrative oversight of the stormwater programs, regulatory reporting, and program assessment of municipal facilities by the Watershed Protection Program.
B	Streets, Roads, and Highways Element	<u>\$4,900,391</u>	
	Administration	\$445,490	Funded road operations activities include: culvert inspections and cleaning; culvert waste disposal costs, street sweeping, installation and maintenance of BMPs and road structures, and the placement of additional controls.
	Maintenance Inspections	\$4,347,983	
	BMP Implementation	\$106,918	

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
	Other	\$0	
C	MS4 Element	<u>\$2,914,689</u>	
	Administration	\$999,689	Costs include district operations by DPW Flood Control and the Watershed Protection Program.
	Maintenance Inspections	\$1,680,000	
	BMP Implementation	\$120,000	
	Other	\$115,000	
D	Solid Waste Facilities Element	<u>\$420,641</u>	
	Administration	\$15,382	Costs include Regional Board stormwater permit fees, consultant costs associated with stormwater upgrade and repair projects, and office staff time.
	Maintenance Inspections	\$11,110	Costs include staff time to perform site inspections.
	BMP Implementation	\$28,745	Costs include stormwater consultant site inspections, sampling/testing and BMP materials.
	Other (construction)	\$365,404	Drainage improvement projects and BMP site maintenance projects.
E	Wastewater Facilities Element	<u>\$9,066,100</u>	
	Administration	\$10,000	This includes costs associated with JRMP report, the sanitary sewer system and facilities including: pump stations, sewage treatment plants and Spring Valley Operations facility. Also includes the cost of BMP design, acquisition, maintenance and monitoring, for wastewater Capital Improvement Projects, and Major maintenance projects, and at various wastewater facilities.
	Maintenance Inspections	\$50,000	
	BMP Implementation	\$6,100	
	Other	\$9,000,000	

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
F	Road Stations Element	<u>\$610,784</u>	
	Administration	\$55,526	This includes DPW road station operations related to Permit compliance. These figures were determined as 10% of the total costs reported by the DPW Roads Division for road-related expenditures (see Streets, Roads, and Highways above).
	Maintenance Inspections	\$460,864	
	BMP Implementation	\$94,394	
	Other	\$0	
G	Fleet Maintenance Element	<u>\$9,026</u>	
	Administration	\$1,362	This includes costs associated with operation of the County's fleet maintenance and fueling facilities.
	Maintenance Inspections	\$7,465	
	BMP Implementation	\$198	
	Other	\$0	
H	Municipal Airfields Element	<u>\$719,109</u>	
	Administration	\$0	These costs involve site inspections, annual reporting, and maintenance of BMPs at airports, including oversight of tenant operations. The BMP implementation item includes Palomar asphalt cap repairs.
	Maintenance Inspections	\$70,109	
	Compliance Inspection and Enforcement	\$7,000	
	BMP Implementation	\$611,000	
	Other (sampling and analysis)	\$31,000	
I	Parks & Recreational Facilities Element	<u>\$1,634,306</u>	
	Administration	\$293,267	Costs include pollution prevention homeless programs, inspection and maintenance tracking, FMP3 updates

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
	BMP Implementation	\$1,230,002	
	Compliance Inspection and Enforcement	\$111,037	
	Other	\$0	
J	Office Buildings & Other Municipal Facilities Element	<u>\$210,832</u>	
	Administration	\$0	DGS conducts a variety of storm water activities including: inspections and clean-up of County-owned, occupied, and leased facilities and vacant lands; maintenance and signage of storm drain inlet inserts and trash dumpsters; placement of inlet filters; maintenance of coverage and containment improvements for on-site supplies and materials; parking lot sweeping and controlled parking lot power washing; and application of erosion and sediment control measures. These costs are exclusive of fleet maintenance and fueling operations.
	Maintenance Inspections	\$115,467	
	BMP Implementation	\$95,364	
	Other	\$0	
	Management of Pesticides, Herbicides, & Fertilizers	<u>\$67,523</u>	The Department of Agriculture, Weights and Measures' Integrated Pest Control Program (IPC) performs weed management on roadsides, in airports, flood control channels, sewage treatment plants and inactive landfills; and also structural pest control on property owned and operated by the County. The expenditures reported here reflect IPC's stormwater-related activities, including maintenance of vehicles and work areas that may be used for pesticide treatments; vegetation management at landfills to prevent erosion; and annual administrative activities for this report.
	Administration	\$981	
	Maintenance Inspections	\$66,542	
	BMP Implementation	\$0	
	Other	\$0	
5	INDUSTRIAL and COMMERCIAL	\$1,740,413	
	Administration	\$411,973	DPW and AWM conduct inspections of a variety of businesses in the unincorporated County, provide regulatory oversight of mobile businesses, and conduct follow-up and enforcement of stormwater violations.
	Compliance Inspection and Enforcement	\$999,018	

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

Jurisdictional Worksheet Component			Explanation/Notes
	Educational Outreach	\$329,422	
	Other expenditures	\$0	
6	RESIDENTIAL	\$1,673,222	
	Administration	\$245,060	Includes complaint investigations for residential sources in the unincorporated County, and follow-up and enforcement of stormwater violations. DPW also operates a regional hotline.
	Compliance Inspection and Enforcement	\$1,068,516	
	Educational Outreach	\$359,646	Several County departments coordinate and provide outreach to the residential sector and schoolchildren in support of Permit Section D.5 requirements. Costs reported here correspond to DPW only. Funded activities include developing pollution prevention content and providing direct outreach to various target audiences within the general residential and school children target audiences.
7	IDDE	\$1,157,987	
		\$1,157,987	Costs include conducting monitoring programs, assessing scientific data, and providing technical and scientific support to IDEE investigations. These costs are exclusive of the regional monitoring program which is addressed separately under regional costs.
8	EDUCATION	\$0	Education costs are included in other sections as applicable.
9	PUBLIC PARTICIPATION	\$1,053,885	
10	SPECIAL INVESTIGATIONS	\$0	Expenditures not reported for FY 2019-20.

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

Table 1.1 – Estimated Jurisdictional Expenditures for FY 2019-20

	Jurisdictional Worksheet Component		Explanation/Notes	
11	NON-EMERGENCY FIREFIGHTING	\$0	Expenditures not reported for FY 2019-20.	

\$46,073,122

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

1.3.1.2 Watershed

Table 1.2 presents the County’s estimated watershed expenditures for FY 2019-20.

Table 1.2 – Estimated Watershed Expenditures for FY 2019-20

	Santa Margarita WMA	San Luis Rey WMA	Carlsbad WMA	San Dieguito WMA	Peñasquitos WMA	San Diego River WMA	San Diego Bay WMA	Tijuana WMA
Administration	\$160,619	\$229,249	\$151,584	\$146,209	\$65,168	\$361,101	\$155,589	\$230,631
Cost Share Contribution	\$0	\$213,710	\$112,318	\$308,713	\$13,288	\$239,485	\$121,534	\$47,037
Watershed Activities	\$1,200,386	\$1,516,482	\$246,646	\$1,266,651	\$70,363	\$2,702,881	\$22,395	\$100,761
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Estimated Watershed Costs	\$1,361,005	\$1,959,442	\$510,548	\$1,721,574	\$148,819	\$3,303,467	\$299,518	\$378,429

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

1.3.1.3 Regional

Table 1.3 presents the County’s estimated regional expenditures for FY 2019-20. This includes only those expenditures associated with the Copermittees’ adopted Regional Budget and Work Plan. Other costs associated with regional participation (meeting attendance, etc.) are included within the jurisdictional expenditures presented above.

Table 1.3 – Estimated Regional Expenditures for FY 2019-20

Regional Programs	County Costs
Administration	\$0
Cost Share Contribution	\$824,410
Regional Activities	\$0
Other	\$0
Total Estimated Regional Costs	\$824,410

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

1.3.1.4 Total Expenditures

Table 1.4 presents the County’s total estimated expenditures for FY 2019-20 (jurisdictional, watershed, and regional).

Table 1.4 – Total Estimated County Expenditures for FY 2019-20

Component / Sub-component	Estimated Expenditures
Jurisdictional	
Administration	\$10,827,700
Development Planning	\$2,393,183
Construction	\$6,506,974
Municipal	\$20,719,759
Industrial And Commercial	\$1,740,413
Residential	\$1,673,222
IDDE	\$1,157,987
Education	\$0
Public Participation	\$1,053,885
Special Investigations	\$0
Non-emergency Firefighting	\$0
<i>Jurisdictional Total</i>	\$46,073,122
Watershed	
Santa Margarita WMA	\$1,361,005
San Luis Rey WMA	\$1,959,442
Carlsbad WMA	\$510,548
San Dieguito WMA	\$1,721,574
Peñasquitos WMA	\$148,819
San Diego River WMA	\$3,303,467
San Diego Bay WMA	\$299,518
Tijuana WMA	\$378,429
<i>Watershed Total</i>	\$9,682,801
Regional	\$824,410

Total Estimated County Costs

\$56,580,333

**Transitional Jurisdictional Runoff Management Plan
Annual Report Fiscal Year 2019-2020**

1.3.2 Funding Source

Table 1.5 shows the major sources of funding for the County’s urban runoff management programs in FY 2019-20, and describes the legal restrictions applicable to the use of each.

Table 1.5 – Legal Restrictions on the Use of Program Funding

Funding Source	Legal Restrictions
General Fund	There are no restrictions on the use of general fund for County water quality programs and activities except that they must be used only for the purposes for which they are budgeted and allocated by the County Board of Supervisors.
Flood Control District Fees	Revenue generated from these fees must be expended for activities related to flood and storm management.
Developer Deposits / Permit Fees	Deposits / fees may be used only to fund activities related to the work for which the permits are issued.
Gas Tax	Gas Tax is collected by the state and allocated to local government for transportation-related work including maintenance of existing transportation systems and construction of new transportation facilities. These funds may not be used for other purposes.
Sanitary District Fees	Sanitary District Fees are used for work related to the maintenance of sewer lines, pump stations, force mains, and several treatment plants that serve the unincorporated areas. They may be used only for such maintenance-related purposes within the respective sewer district for which they are collected.
Other Funding Sources	Other funding sources collectively account for a relatively small portion of ongoing expenditures. However, all funding for the County’s stormwater compliance programs is expended within applicable legal restrictions and limitations.

1.4. Conclusions and Recommendations

The figures presented here are an estimate of the expenditures that the County incurred to meet its compliance obligations for FY 2019-20. For the reasons explained above, they should be considered only best estimates of stormwater-related expenditures.

7.2 STRATEGIES

The County of San Diego’s strategies include jurisdictional (JRMP), optional jurisdictional, and optional WMA strategies (Tables A2-41, A2-42, and A2-43, respectively). Jurisdictional strategies are implemented in accordance with JRMP requirements in Permit Provisions E.2 through E.7. Optional jurisdictional and optional WMA strategies are additional strategies implemented in accordance with Permit Provisions B.3.b(1)(a)(i)-(vi). Some optional strategies are implemented only when certain trigger criteria have been met. Those criteria and whether they have been triggered are noted where applicable in the tables of optional jurisdictional and WMA strategies below. Optional WMA strategies are distinct from optional jurisdictional strategies in that WMA strategies may be implemented by multiple agencies. Table A2-40 contains strategy highlights for strategies implemented in the SMR WMA to provide more detail on the County’s efforts to meet Permit requirements and to reduce nutrients and other pollutants in runoff.

Table A2-40. County of San Diego Strategy Highlights




Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>Collaboration with Water Districts in Lower SMR Subwatershed. There are three water districts in the Lower SMR Subwatershed. They include Camp Pendleton, Fallbrook Public Utility, and Rainbow Water District. Water districts serving more than 3,000 acre-feet of water per year are required to report water loss rates to the State Department of Water Resources annually. The gallons lost to the watershed per day due to permitted flows, leaks, breaks, and overflows can be assumed to be either moving through the watershed as surface or subsurface flows. However, water district service areas cross watershed and jurisdictional boundaries, therefore volumes lost to any particular watershed or jurisdiction are challenging to estimate. The County recommends the Regional Water Board coordinate with the water districts to review the reporting requirements under General Order 2014-0194-DWQ to explore the viability of reporting detailed data losses in each MS4 by watershed.</p>	<ul style="list-style-type: none"> Reducing non-stormwater discharges from potable sources 	2	X					X	
 <p>Development of a Green Streets Master Plan. The County is developing a Green Streets Master Plan to identify multi-benefit opportunities within unincorporated village and adjacent semi-rural residential areas to support progress on achieving water quality. The plan is currently in the early stages of development and is estimated to be completed during the first half of 2022. Key components of the Master Plan include:</p> <ul style="list-style-type: none"> Identification of candidate sites within the County Right-of-way Assessment of best-suited BMP site designs utilizing our Green Infrastructure Guidelines and design criteria Assessment of benefits provided by candidate sites Development of a project prioritization approach Develop an Estimate of Capital and Operation and Maintenance costs (30-year lifecycle) Present prioritized project recommendations and layout the broader vision for green streets in unincorporated County 	<ul style="list-style-type: none"> Will treat wet weather flows for nutrients and other pollutants 	Opt-8	X	X	X	X	X		
 <p>Inspection + Compliance Success: Illegal Discharge Elimination. Non-stormwater discharges from a farm in the Lower SMR Subwatershed were investigated in August 2019 by County staff. Multiple WPO violations, such as uncovered material storage, vehicle maintenance performed over bare ground, lack of spill kits, and trash and human feces discharged to creek bed, were discussed with the manager of the farm. Corrective actions were implemented by the farm.</p>	<ul style="list-style-type: none"> Addressing agriculture, gardening, and landscaping nutrient sources 	2, 63	X	X	X	X			X

Table A2-40. County of San Diego Strategy Highlights


Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>Stormwater Training Video. Since FY 2014-2015, the Department of Human Resources assigns all new regular County employees the "Preventing Stormwater Pollution" video training at time of hire. In FY 2019-2020, 1,424 new employees completed the training.</p>	<ul style="list-style-type: none"> Educating all staff on preventing stormwater pollution 	3	X	X	X	X	X	X	X
 <p>Homeless Outreach Team. The County established the Homeless Outreach Team (HOT) to provide assistance and support to people experiencing homelessness. County departments and NGOs partner to offer services to unhoused individuals, remove trash associated with encampments, and remove bio-hazardous materials.</p>	<ul style="list-style-type: none"> Addressing human sources of bacteria and trash 	7	X	X	X	X	X		X
 <p>Homeless Encampment Area Cleanups. The County conducts many cleanups of focus areas to address discharges from homeless encampments. Within the SMR WMA, 0.855 tons of solid waste, 0.058 tons of universal waste, and 11 gallons of hazardous waste were collected.</p>	<ul style="list-style-type: none"> Collected 0.855 tons of solid waste, 0.058 tons of universal waste, and 11 gallons of hazardous waste 	7, 55	X		X	X			X
 <p>Septic System Maintenance Support. The County prepared a fact sheet on preventative septic system maintenance that was sent to 189 septic system professionals and septic tank pumpers. These fact sheets are designed to be shared with homeowners financially impacted by COVID-19 that may be experiencing septic system problems.</p>	<ul style="list-style-type: none"> Assisting septic system owners with maintenance activities 	9, 11	X	X				X	X
 <p>Fire Authority Facility Pollution Prevention Plans (F3Ps). County staff engaged with 16 fire stations in their jurisdiction to provide education on stormwater BMPs and collect information to prepare F3Ps. Final, facility specific, F3Ps were distributed to the stations and include guidelines for self-inspections as well as BMP implementation and maintenance.</p>	<ul style="list-style-type: none"> Preparing pollution prevention plans for all fire stations 	15	X	X	X	X	X	X	X

Table A2-40. County of San Diego Strategy Highlights

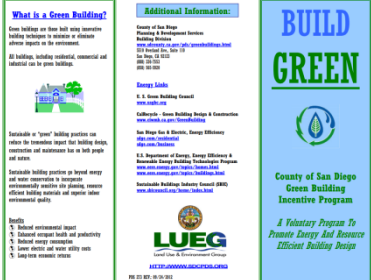




Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
	<p>Green Building Incentive. This program encourages green development by offering reduced plan check time and permit fees. Conservation measures include building with recycled content, straw bale construction, greywater systems, and energy use below California Energy Commission standards.</p>	<p>22</p>	<p>X</p>	<p>X</p>			<p>X</p>	<p>X</p>	
	<p>Green Building Code. The County has adopted the California Green Building Standards Code, the purpose of which is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative or even positive environmental impact. It encourages sustainable construction practices through planning/design, energy efficiency, water efficiency/conservation, material conservation/resource efficiency, and environmental quality.</p>	<p>22</p>	<p>X</p>	<p>X</p>			<p>X</p>	<p>X</p>	
	<p>San Diego County Fair Outreach. County staff provided information on how to properly handle, store and dispose of solid waste, food grease and oil, liquid waste, and sanitary waste to 126 food and exhibit vendors. Staff also conducted inspections to verify water connections for potable and wastewater at the Fairgrounds. An issue at one hose connection was identified and corrected immediately.</p>	<p>32, 38</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>
	<p>December Nights Event Outreach. County staff provided outreach and education on how to properly handle, store and dispose of solid waste, food grease and oil, liquid waste, and sanitary waste to 135 food vendors. Staff also conducted inspections to verify wastewater, garbage, and refuse are properly disposed.</p>	<p>32, 38</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>
	<p>Poo Points Program. The CASQA award-winning Poo Points program is a youth-driven outreach effort aimed at promoting proper management of pet waste by large property owners in the unincorporated areas of the County of San Diego. During fiscal year 2019-2020, 2 Poo Points presentations were conducted that reached 47 youth and 29 adults.</p>	<p>33; 50</p>	<p>X</p>	<p>X</p>		<p>X</p>			

Table A2-40. County of San Diego Strategy Highlights






Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>You know what to “Doo”... for Clean Feet, a Clean Yard, and Clean Water.</p> <p>More than 70% of rural San Diego County dog owners are doing the right thing by scooping poop at least once a week and placing it in a trash can.</p> <p>Responsible pet waste management keeps yards (and feet) clean, and also protects the quality of our region's creeks, lakes, and beaches.</p>	<p>Pet Waste Outreach. During fiscal year 2019-2020, The County partnered with I Love A Clean San Diego to attend 37 community events. During the community events, 129 pet waste surveys were completed and 124 participants filled out commitments to pick-up their pet waste at least weekly. Additionally, Pet Waste outreach and education material was received by 15 businesses with 300 English pet waste flyers and 150 Spanish pet waste flyers delivered during the fiscal year.</p>	<p>33; 50</p>	<p>X</p>	<p>X</p>					
	<p>Pesticide Container Recycling Events. The County partnered with EDCO Waste Disposal to host two free pesticide container recycling events, which provided commercial pesticide users opportunities to legally recycle their used pesticide containers. More than 2,500 pounds of containers were recycled and were later repurposed by the Agricultural Container Recycling Council into many useful products.</p>	<p>36</p>	<p>X</p>	<p>X</p>	<p>X</p>		<p>X</p>	<p>X</p>	<p>X</p>
	<p>Promoting Water Conservations and Rain Capture: Rain Barrels. The County held three rain barrel distribution events in FY 2019-2020: Fallbrook (October 2019), Ramona (February 2020), and Spring Valley (February 2020). A total of 510 rain barrels were distributed to unincorporated residents.</p>	<p>45; Opt-2</p>	<p>X</p>					<p>X</p>	
 <p>Reducing Nutrient Runoff How Nurseries Can Help Keep The Rainbow Creek Watershed Clean</p> <p>The County's Green Nurseries Program has been designed to help you, the commercial grower, reduce nutrient runoff to our watersheds. This program provides you with the information you need to understand the importance of reducing nutrient runoff and the steps you can take to do so.</p> <p>IRRIGATION MANAGEMENT 1. IRR1: Increase the efficiency of your irrigation to prevent runoff. IRR2: Improve the uniformity and efficiency of your system. IRR3: Monitor your system to make sure you are not over-irrigating, and properly maintain your system.</p> <p>WEED MANAGEMENT 2. WEED1: Prevent herbicides from entering streams. WEED2: Determine the type of fertilizer needed if any based on existing nitrogen levels and conditions. If you need, properly store herbicides, fertilizers, and prevent spills at all times.</p> <p>EROSION & SEDIMENT MANAGEMENT 3. ERO1: Prevent erosion & reduce runoff from leaving your property. ERO2: Improve soil infiltration & water holding capacity. Keep sediment & debris from entering water bodies.</p>	<p>Rainbow Creek Flyers for Commercial Nurseries. The County designed Rainbow Creek Nutrient Reduction and Management Plan (NRMP) flyers to convey Best Management Practice (BMP) information to growers in the Rainbow Valley. Four main categories of BMPs were highlighted (Irrigation Management, Erosion and Runoff Management, Nutrient Management, and Training and Record Keeping) to help nurseries reduce nutrient contributions to Rainbow Creek. The flyers were also translated into Spanish</p>	<p>47</p>	<p>X</p>			<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>
 <p>EROSION AND SEDIMENT BMPs</p> <p>Did you know that water in the storm drain system flows directly to our rivers, creeks, bays, and oceans - along with pollutants it carries?</p> <p>Best Management Practices (BMPs) help prevent erosion and sediment from leaving the area. It is important that erosion and sediment control BMPs are properly installed and maintained in order to function effectively.</p> <p>Sediment is the most common pollutant in our watersheds and comes from eroded soil. BMPs must be implemented whenever construction activities disturb or expose soil to prevent erosion and control sediment from leaving the area. It is important that erosion and sediment control BMPs are properly installed and maintained in order to function effectively.</p> <p>Below are some examples of BMPs that help prevent sediment from leaving a construction site:</p>	<p>Erosion and Sediment BMPs Flyer. This flyer was designed to help County residents prevent erosion and sediment transport from their properties during construction activities that disturb or expose soil. The flyer was also translated into Spanish.</p>	<p>47</p>					<p>X</p>		

Table A2-40. County of San Diego Strategy Highlights



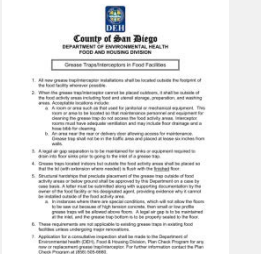
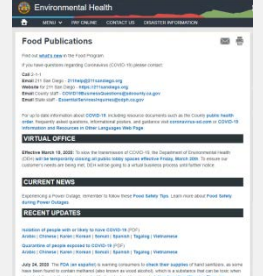

Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>Do I Need A Construction Permit? Flyer. This flyer was developed to help County residents identify some of the more common permits required for construction activities within the County of San Diego as well as the appropriate contact agencies and resources.</p>	<ul style="list-style-type: none"> Educating construction facilities on permit requirements 	47			X	X	X	X	
 <p>Zero Waste Symposium Attendance. County staff attended the Zero Waste Symposium in February 2020. Attendance enables staff to remain current on legislative updates, policies, and trends in limiting waste through composting and food donation. Presentations cover topics such as bans of single-use products, zero waste at large venues, recycling in California, and defining recycling markets.</p>	<ul style="list-style-type: none"> Learning additional ways to reduce trash 	47	X	X	X	X	X	X	X
 <p>Grease Traps/Interceptors in Food Facilities Handout. The County developed a handout to educate food service establishments on preventing prohibited discharges of food grease and oils for food establishments. The handout is distributed to applicants applying for a new food establishment or remodeling of an existing food establishment.</p>	<ul style="list-style-type: none"> Educating food service establishments on best management practices 	47	X	X	X	X	X	X	X
 <p>Food Publication Website. The County's Food Publication Website has many resources for residents and food service establishments. Publications cover such topics as guidance on responding to a sewage backup, information on grease trap/interceptor maintenance, and irrigation guidance for community gardens.</p>	<ul style="list-style-type: none"> Educating members of the public on wastewater management 	47	X	X	X	X	X	X	X
 <p>Special Events Flyer Distribution. The County issues a Special Events Flyer on BMPs to new event organizers inquiring and applying for a Community Events Permit (CEP), when issuing a CEP and to other County Departments when they get involved in the CEP process.</p>	<ul style="list-style-type: none"> Educating Special Events organizers on best management practices 	47	X	X	X	X	X	X	X

Table A2-40. County of San Diego Strategy Highlights

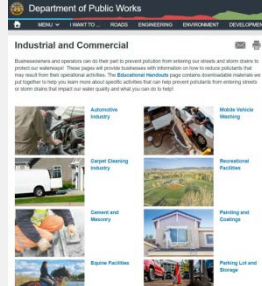
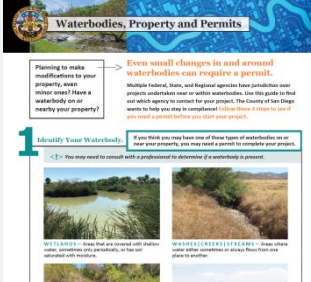
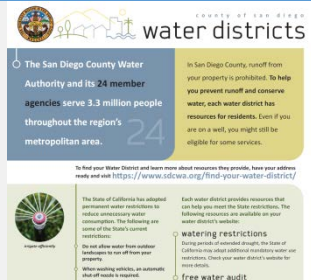


Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
	<p>Revamping the DPW-WPP Industrial, Commercial, and Residential web pages. In FY 2019-2020, the County streamlined their webpage content to make materials, which include flyers and informational guides, more accessible to residents. The new layout contains more visual cues and options to enable easier navigation.</p>	<ul style="list-style-type: none"> Educating business owners on water quality protection 	47	X	X	X	X	X	X
	<p>Waterbodies, Properties and Permits Flyer. This flyer was developed to help County residents contact federal, state, and regional agencies that have jurisdiction over projects near or within waterbodies. The flyer was also translated into Spanish.</p>	<ul style="list-style-type: none"> Educating residents on water quality protection 	47	X				X	
	<p>Water Districts and Restrictions Flyer. A flyer was created to help County residents prevent runoff and conserve water by guiding them to resources water agencies provide in the County's jurisdiction. This flyer was also translated into Spanish.</p>	<ul style="list-style-type: none"> Educating residents on water quality protection 	47	X				X	
 <p>Training Video: Inspecting Your Business Employees for Stormwater Awareness (E</p>	<p>Inspect Your Business and Train Your Employees Training Videos. The County created a video in English and Spanish to help industrial and commercial facilities meet their annual stormwater training requirement. The video included an inspection checklist that facilities can use to inspect their business as well as a checklist to train their employees. These videos were posted to the County's DPW-WPP website.</p>	<ul style="list-style-type: none"> Educating business owners on water quality protection 	47	X	X	X	X	X	X
	<p>Watershed Flyer Development. Nine Watershed Specific Flyers were developed that highlight the unique characteristics of each of the watersheds that the County of San Diego has an active presence in through inspections, sampling, complaint investigations, etc. The flyers include a map of the watershed with landmarks for orientation on the first page, and on the second page there is a focus on how residents can help reduce the top priority pollutants in their respective watersheds.</p>	<ul style="list-style-type: none"> Educating residents on water quality protection 	47	X	X	X	X	X	X

Table A2-40. County of San Diego Strategy Highlights







Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>Commercial Food Waste Prevention and Source Reduction Guide. The County's commercial food waste prevention and source reduction guide and checklist continued to be distributed in FY 2019-2020. This guide focuses on increasing the amount of food recovered for consumption and waste diversion. Staff also present this information to schools and businesses.</p>	<ul style="list-style-type: none"> Addressing human sources of bacteria, trash, and nutrients 	47, 48		X	X	X	X		X
 <p>Water Wise Farming. A collaboration between UCCE and County staff created an informational sign "Water Wise Farming", which was displayed for two weeks at the Carlsbad Flower Fields in March 2020. The display provides demonstrations of BMPs for water quality and run-off, as well as self-assessment materials. An estimated 6,000 growers and members of the public viewed the display.</p>	<ul style="list-style-type: none"> Educating agricultural growers and members of the public 	47, 54	X	X	X		X	X	X
 <p>"Down To Earth" Programming. The County created 24-minute video featuring home gardening tips, which focused on educating viewers on water conservation. A total of 211 airings on local programming occurred during FY 2019-2020.</p>	<ul style="list-style-type: none"> Educating members of the public on water conservation 	47, 54		X			X	X	X
 <p>Master Gardener Website. During the COVID-19 pandemic, the Master Gardeners developed a new feature for the website that addressed public need for information and activities while following the COVID-19 Stay-at-Home directive. This feature received 4,800 visits on the home page and a total of 12,870 visits to the individual sections.</p>	<ul style="list-style-type: none"> Educating members of the public on best management practices 	47, 56, 57	X	X			X	X	
 <p>Stormwater Community Outreach. The County conducts stormwater outreach events throughout its jurisdiction, which include school outreach on recycling and webinars for small residential agriculture. Within Santa Margarita River watershed, 16,559 people attended the events where outreach was being offered in FY 2019-2020.</p>	<ul style="list-style-type: none"> Educating 16,559 members of the public on stormwater pollution prevention 	48			X	X			X
 <p>Solana Center Compost and Manure Outreach. The County partners with the Solana Center for Environmental Innovation to educate residents on composting and gardening. In FY 2019-2020 14 composting workshops were attended by 338 residents; 45 school presentations reached 5,970 students; 1 Master Composter Course had 35 weekly attendees; 10 community events reached 3,775 residents; 2 landscaper-focused one-day courses reached 36 landscapers, 5 manure management workshops reached 66 horse owners; 3 manure</p>	<ul style="list-style-type: none"> Educating members of the public, school children, landscapers, and livestock owners 	49, 56		X	X	X	X		X

Table A2-40. County of San Diego Strategy Highlights

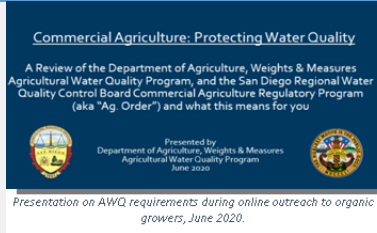
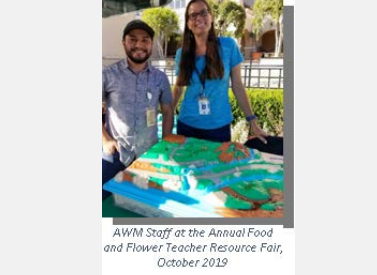



Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
 <p>management community events reached 2,000 horse and livestock owners, and e-Blasts were sent to 105,742 people.</p>									
 <p>Water Quality Workshops for Commercial Agriculture Facilities. Three workshops were hosted by the County in FY 2019-2020. Two in-person outreach events were for new and prospective industrial hemp growers. The third event was an online webinar for organic growers. In total, more than 70 stakeholders attended these workshops.</p>	<ul style="list-style-type: none"> Educating agricultural growers on water quality 	54, 56	X	X	X		X	X	X
 <p>Annual Food and Flower Teacher Resource Fair. County staff attended the Annual Food and Flower Teacher Resource Fair where they discussed environmentally friendly agricultural practices and provided resources to incorporate agriculture in school curriculum to local teachers. The County booth featured an interactive model depicting best management practices employed by agricultural operations to prevent pollution to local streams and waterways.</p>	<ul style="list-style-type: none"> Educating local teachers on best management practices 	54, 56	X	X	X		X	X	X
 <p>Annual Farm and Nursery Expo. County staff hosted a booth at the annual San Diego County's Farm Bureau's Annual Farm and Nursery Expo. Staff shared information and resources regarding pollution prevention with growers in attendance.</p>	<ul style="list-style-type: none"> Educating agricultural growers on pollution prevention 	54, 56	X	X	X		X	X	X
 <p>Master Gardener Events. Master Gardeners participated in 79 events around the County with County support. At the events individuals provided information about least-toxic pest management methods, reducing runoff, and other related issues. An estimated 6,000 individuals were reached.</p>	<ul style="list-style-type: none"> Educating members of the public on best management practices 	54, 56, 57	X	X			X	X	

Table A2-40. County of San Diego Strategy Highlights

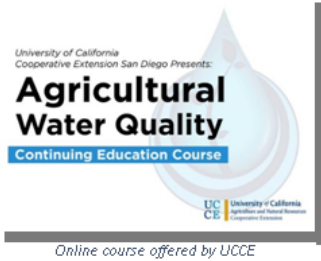
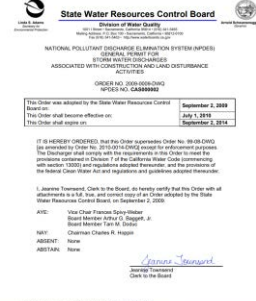
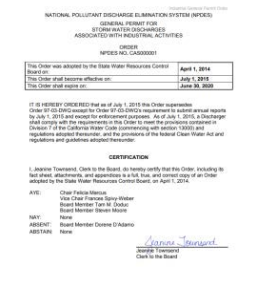
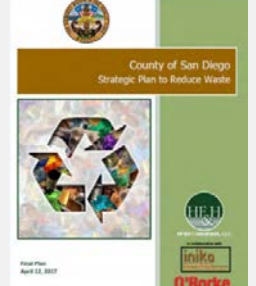
Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
	<p>Agricultural Water Quality Workshops. The County and University of California Cooperative Extension (UCCE) held three workshops in FY 2019-2020 to address the requirements of the General Orders for commercial agriculture water quality and waste discharge. A total of 115 local growers attended the workshop. UCCE, sponsored by the County, also offered an online Agricultural Water Quality Continuing Education Course, which was completed by 140 participants.</p>	<ul style="list-style-type: none"> Educating agricultural growers on water quality 	54, 56, 68	X	X	X	X	X	X
	<p>Identifying State Permit Non-Compliance: CGP Referrals. The Construction General Permit (CGP) is a permit administered and enforced by the State of California. However, the County of San Diego collaborates with the State and San Diego Regional Water Board by referring CGP permit "non-filers" when they are discovered. The County's approach to referring non-filers ensures that the businesses are educated about State permit requirements and also promotes compliance with the County's WPO. In FY 2019-2020, a total of 11 CGP non-filers were reported County-wide.</p>	<ul style="list-style-type: none"> Identifying construction facilities not compliant with State Permit 	60	X	X	X	X	X	X
	<p>Identifying State Permit Non-Compliance: IGP Referrals. The Industrial General Permit (IGP) is a permit administered and enforced by the State of California. However, the County of San Diego collaborates with the State and San Diego Regional Water Board by referring IGP permit "non-filers" when they are discovered. The County's approach to referring non-filers ensures that the businesses are educated about State permit requirements and also promotes compliance with the County's WPO. In FY 2019-2020, a total of 17 IGP non-filers were reported County-wide.</p>	<ul style="list-style-type: none"> Identifying industrial facilities not compliant with State Permit 	61	X	X	X	X	X	X
	<p>Strategic Plan to Reduce Waste. County staff continued to make progress on the implementation of the Strategic Plan to Reduce Waste in FY 2019-2020. Work began on an Internal Operations Waste Diversion Phased Implementation Plan, which will provide information on enhanced Environmentally Preferable Purchase Program practices, baseline waste generation data, guidance for incorporating source reduction and recycling practices, and a recycling training plan.</p>	<ul style="list-style-type: none"> Addressing human sources of trash 	62	X	X	X	X	X	X

Table A2-40. County of San Diego Strategy Highlights






	Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/ Wildlife
	<p>Waste Reduction Assistance. The County continues to offer waste reduction assistance to commercial businesses and multifamily complexes in order to reduce instances of trash ending up in waterbodies. Efforts included direct telephone outreach to 918 non-compliant accounts, 809 site visits, 40 educational presentations to community groups, and 26,843 bi-annual recycling notices. In addition, County staff completed 378 and 157 inspections at commercial and multifamily facilities respectively; and implemented 544 and 341 recycling programs at commercial and multifamily facilities respectively. In total, 3,403 recycling containers were distributed.</p>	<ul style="list-style-type: none"> Addressing human sources of trash 	62		X	X	X	X		X
	<p>Human Bacteria (HF183) Source Abatement Actions. The County worked closely with Caltrans to identify possible human bacteria (HF183) sources at a major outfall within the Rainbow Creek Subwatershed. Source investigations led to the discovery of human feces in the channel across the I-15 that drains to the outfall and appeared to be attributed to the area being used as a roadside restroom by motorists and truck drivers. The County coordinated with Caltrans to assist with abatement of the source. Caltrans cleaned the storm drain leading to the outfall and removed brush in the area to deter motorists from stopping in the area. The County initiated a special study in response to HF183 detections at the outfall which included continuous flow monitoring with a camera at the outfall, additional source investigations, geochemistry analysis and weekly HF183 sampling. HF183 was not detected in samples after completion of abatement activities.</p>	<ul style="list-style-type: none"> Identifying and eliminating source of HF183 to reduce human sources of bacteria 	63		X	X			X	
	<p>Discovering and Referring of Agricultural Order Non-filers. Agricultural Orders (Ag. Order) are permits administered and enforced by the State of California. However, the County collaborates with the State and San Diego Regional Water Board by referring Ag. Order "non-filers" when they are discovered. The County's approach to referring non-filers ensures that the businesses are educated about State permit requirements and also promotes compliance with the County's WPO. In FY 2019-2020, a total of 32 Ag. Order non-filers were reported County-wide.</p>	<ul style="list-style-type: none"> Identifying agricultural facilities not compliant with State Permits 	63		X	X	X	X	X	X
	<p>RV Dump Station Inspections and Outreach. The County visited commercial dump stations in its jurisdiction to perform WPO compliance inspections and evaluate dump station conditions. It was found that private dump stations are moderately- to very well-kept and that RV users generally use them properly. Additionally, outreach materials (a flyer and an outside sign) were developed to provide dump station BMP reminders and links to additional WPP RV resources, including a map of commercial RV dump stations within the County.</p>	<ul style="list-style-type: none"> Educating RV owners on dump practices 	63		X	X				
	<p>Rainbow Valley Water Quality Project. The County has designed a water quality project in Rainbow Valley that includes full capture trash devices.</p>	<ul style="list-style-type: none"> Reducing trash in Rainbow Valley 	Opt-9				X			

Table A2-40. County of San Diego Strategy Highlights

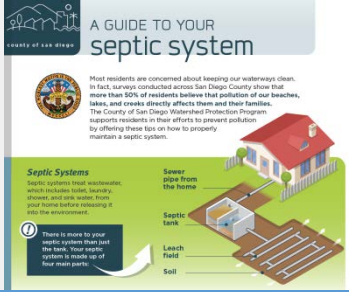

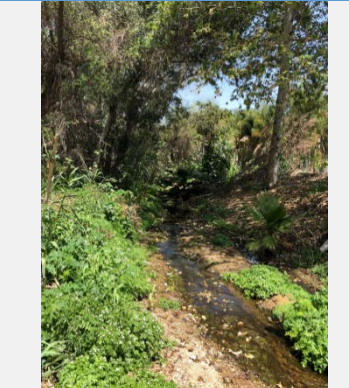
Strategy Highlight	Water Quality Benefits	Strategy Number	Bacteria	Nutrients	Metals	Trash	Sediment	Flow	Habitat/Wildlife
	<p>Septic System Outreach. The County developed both a flyer and a training video to communicate proper septic system maintenance guidelines. These materials are part of the County's approach to reaching septic system users, which will also include a rebate program in the future.</p>	<ul style="list-style-type: none"> Educating septic system owners on maintenance activities 	<p>Opt-3</p>	<p>X</p>	<p>X</p>			<p>X</p>	
	<p>Fallbrook Burn Site Maintenance. Debris from the Fallbrook Burn Site, which ceased operation in 1959, was becoming exposed by erosion. Repair and remediation of the drainage area was conducted to eliminate further erosion and the chance for the debris to enter local waterways.</p>	<ul style="list-style-type: none"> Maintaining burn site to reduce sediment discharge and erosion 	<p>N/A</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>		<p>X</p>
	<p>Rainbow Creek Water Quality Improvement Project. This project has completed the 30% design and is scheduled to go to the County Board of Supervisors in 2021. Survey and geotechnical work (potholing) has been completed. An initial JD determination was completed and will support the environmental review that will occur in FY 20-21. Once the environmental review begins, the County will engage with resource agencies to start discussions regarding required permits. Tribal Consultation will be completed in FY 20-21. Project design will be completed in FY 20-21 and work will begin on utility relocation and acquisition of easements. Total project cost (soft costs and construction costs) are \$11.4 M. Additional project details are provided in Section 2.3.3.1.2.</p>	<ul style="list-style-type: none"> Treat flows from approximately 324.6 acres 	<p>Opt-8, Opt-9</p>	<p>X</p>	<p>X</p>	<p>X</p>			<p>X</p>

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
Illicit Discharge, Detection, and Elimination (IDDE) Program						
1	Maintain storm water conveyance system map to facilitate IDDE program.	Fully	Continued to maintain and enhance stormwater conveyance map to facilitate the County's Illicit Discharge Detection and Elimination (IDDE) program. Enhancements included utilizing improved GIS data to refine outfall drainage areas. Additional outfall drainage areas mapped this year.	N	N/A	Y
2	Identify and report Illicit Connections and Illegal Discharges (ICID). Includes coordination with upstream entities and monitoring outfalls for discharges from potential ICIDs.	Fully	<p>The County and its contractors continue to work to identify and address ICIDs, including the use of CCTV to identify potential discharges. All referrals from monitoring and contractors in the field with potential ICIDs are investigated. Annual IDDE investigations are conducted at all Highest Priority Persistently Flowing (HPPF) major MS4 outfalls identified in the WQIPs in an effort to identify and eliminate sources of dry weather flows in these priority drainage areas. If /when sources are identified, staff immediately conduct outreach to the responsible party when possible, or refer to the appropriate group for follow-up. The County also collects continuous flow measurements at these outfalls during the dry season, and receives real-time alarms when dry weather flows exceed the 95th percentile of mean flow. This effort assists in rapidly identifying and eliminating illicit discharges in priority drainage areas.</p> <p>The County of San Diego also adjusted some of its standard IDDE investigation and follow-up procedures to protect the health and safety of people who live and work in the County and of County employees. County staff generally limited in person interactions with responsible parties and adhered to the San Diego County Public Health Order requirements when in person interaction was necessary. While the approaches used were somewhat different than those used before the COVID-19 pandemic, the County of San Diego was still able to identify and respond to illicit discharges in compliance with the MS4 Permit, as discussed in more detail in the County's letter to the Regional Board dated March 27, 2020.</p>	Y	Editorial.	Y
3	Updated focused training for County field staff.	Fully	Updated and provided General Awareness Training, Administrator Training, and Implementers Training for County staff. Staff involved in the construction and industrial inspections receive additional training specific to their duties.	N	N/A	Y
4	Collect effluent on the ground (EOG), sanitary sewer overflow (SSO) data.	Fully	The County responded to 76 EOG complaints related to septic systems or sewer laterals and 26 were valid. The County also responded to 7 SSO events; responses may include a combination of removing obstructions, cleaning & CCTV of sewer line, adding to root abatement program, making point repairs, Smart Cover monitoring, performing a hydraulic assessment of sewer line, or removing and replacing downstream defective pipe.	N	N/A	Y
6	Facilitate public reporting by operating a bilingual hotline and online reporting tool.	Fully	Continued to operate a hotline and an online reporting tool to facilitate public reporting. The County also updated its website to highlight public reporting capabilities.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
7	Collaborate with multiple County departments to address homelessness through cleanups, outreach, and other services.	Fully	<p>The County's Cleanup and Sanitation Program (CSP) supports and expands on County DPW's core road and drainage maintenance work by providing specialized removal and sanitization of waste and biohazardous waste associated with homeless encampments located on County maintained road right-of-way and drainages, flood control facilities, and other DPW maintained property including County airports. CSP staff coordinate with the County Health and Human Services Agency and the Sheriff's Homeless Assistance Resource Team to provide resources to affected individuals whenever possible. For interjurisdictional issues, CSP works with other County agencies including the DPR and PDS as well as outside transit agencies such as the Metropolitan Transit Services and the California Department of Transportation and other municipalities in the region. The activities of the CSP positively contribute to the County's public and environmental health.</p> <p>In FY 19-20, CSP removed 0.855 tons of solid waste, 0.058 tons of universal waste, and 11 gallons of hazardous waste.</p> <p>Additionally, County DPR established the Homeless Outreach Team to address homelessness in County parks, specifically by implementing proactive patrols to curb homeless encampments in sensitive habitats and watersheds.</p>	N	N/A	Y
9	Implement practices and procedures to address septic system failures.	Fully	A septic system training video was produced by the County and its contractors that provides the public with information on how a septic system functions, what causes septic system failures and ways to identify failures, BMPs of a septic system, and why maintaining a properly functioning septic system is important to our region's water quality. The video was uploaded to DPW's Facebook page in June 2020. Also developed an outreach flyer with most of the septic system training video objectives and graphics. Suspected septic discharges are reported to County DEH during business hours and the Hazardous Incident Response Team complaint line after hours. Collaboration between code enforcement divisions takes place at biweekly compliance meetings.	N	N/A	Y
10	Provide and coordinate emergency response services to sanitary sewer overflows to minimize public health and environmental impact.	Fully	DEH provides emergency response, public notification, and coordination with responsible sewer agencies.	N	N/A	Y
11	Implement practices and procedures to prevent infiltration of seepage from sanitary sewers.	Fully	Wastewater agencies follow the Sewer System Management Plans to conduct routine maintenance and mitigate vulnerabilities. The County does not own and/or operate any wastewater collection systems in the Santa Margarita River WMA, but coordinates with wastewater agencies in the WMA as applicable.	N	N/A	Y
14	Develop and implement a strategy for investigating and addressing ICIDs.	Fully	Continued to improve procedures for investigating and addressing ICIDs.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
Development Planning						
15	Require implementation of source control and Low Impact Development (LID) BMPs for all development projects.	Fully	The County BMP Design Manual requires all projects regardless of size and location to implement Source Control and Site Design BMPs. These requirements are in the Watershed Protection Ordinance and County's BMP Design Manual. Resources are available related to source control and Low Impact Development BMPs on the County WPP website under Development Resources. This year, development of new fact sheets for site design and source control BMPs were initiated and expected to be finalized in FY 20-21. This includes a new tool to support the use of significant site design BMPs for reducing design capture volume for Priority Development Projects.	N	N/A	Y
16	Priority Development Projects (PDP): In addition to requirement for all development projects, implement or require implementation of onsite structural BMPs to control pollutants and manage hydromodification for PDPs.	Fully	The County BMP Design Manual requires all projects regardless of size and location to implement Source Control and Site Design BMPs. These requirements are in the Watershed Protection Ordinance and County's BMP Design Manual. Resources are available related to source control and LID BMPs on the County WPP website under Development Resources.	N	N/A	Y
17	Update BMP Design Manual procedures to specify stormwater requirements applicable to development and redevelopment projects, identify and design appropriate BMPs, establish maintenance criteria, and establish where implemented alternative compliance options can be cited.	Fully	The County BMP Design Manual requires all projects regardless of size and location to implement Source Control and Site Design BMPs. These requirements are in the Watershed Protection Ordinance and County's BMP Design Manual. Resources are available related to source control and LID BMPs on the County WPP website under Development Resources.	N	N/A	Y
18	Conduct internal (staff) training on the updated BMP Design Manual.	Fully	Training was conducted through bi-weekly "Think Tank" meetings with development reviewers and inspectors. Staff received the Development Resources Newsletter where the release of the 2019 County BMP Design Manual was announced. The BMP Design Manual guides the implementation of private and public development projects under the MS4 Permit. Staff training was provided on sizing methods and calculations for Significant Site Design BMPs.	N	N/A	Y
19	Hold external land development <u>workshops outreach</u> targeting the development community <u>and other interested audiences.</u>	Fully	Stakeholders in the land development community received the Development Resources Newsletter where the release of the 2019 County BMP Design Manual was announced. An external workshop for North County Engineers group was conducted on May 14, 2020 for the development community on sizing methods and calculations for Significant Site Design BMPs. The County continues to lead efforts for the Regional Land Development Workgroup, including presentations that have been made on tools for the County BMP Design Manual and inspection program.	Y	Editorial to reflect implementation efforts	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
20	Implement a program that ensures all structural and Low Impact Development (LID) BMPs are designed, constructed and maintained on Priority Development and Redevelopment Projects for public and private projects.	Fully	<p>Structural and LID BMPs were designed and constructed per the BMP DM. Structural BMPs were tracked for maintenance through inspections and self-verification letters. The LID BMPs that are installed as a result of implementation of the BMP DM are proposed to be inspected. Resources are available related to Source Control, Site Design and Structural BMPs on the County Watershed Protection Program website located under Development Resources. There is a web page dedicated to maintenance of BMPs for property owners.</p> <p>This year, a Self-Verification Determination (SVD) portal was introduced for property owners and HOAs in order to give them an online option report on their required maintenance responsibilities. The SVD portal provides the BMP location, as well as where photos and other maintenance documentation can be uploaded from a smartphone or desktop computer. In addition, the County finalized Green Street Design drawings to be utilized for PDP Exempt projects.</p> <p>The County continued efforts to streamline the public project acceptance process to ensure timely incorporation into the BMP inventory.</p>	Y	Editorial to reflect implementation efforts	Y
21	Impose legal authority to ensure all development and redevelopment projects are in compliance with all post construction requirements.	Fully	The WPO was updated in Fiscal Year 2016 to include modifications necessary as the result of the updated permit and the inclusion of applicant implemented offsite alternative compliance.	N	N/A	Y
22	Update County codes, ordinances, and stormwater design standards consistent with the permit and the updated BMP Manual.	Fully	<p>The WPO was updated in FY 15-16 to include modifications necessary as the result of the updated permit and the inclusion of applicant implement offsite alternative compliance. WPO update became effective on February 26, 2016.</p> <p>This year, updates were made to the County's Landscape Ordinance to incorporate vegetated structural BMPs, vegetated Source Control and Site Design requirements associated with Priority Development Plans into different areas of permitted Landscape and Irrigation Plans, such as 1) denoting location, type, and size of vegetated structural BMPs, or any other vegetated BMPs, that will be installed on the property to meet stormwater requirements; 2) making vegetated Structural BMPs and vegetated Source Control and Site Design BMPs part of the Special Landscape Area; and 3) requiring Structural BMPs and other vegetated Source Control and Site Design BMPs to be shown on a sign that is placed in developments with Model Homes.</p>	N	N/A	Y
Construction Management						
23	Maintain, update and prioritize a watershed-based inventory of all projects issued local permits that allow soil disturbing activities.	Fully	Projects that are issued local permits that allow soil disturbance activities are part of the inventory that is watershed-based.	N	N/A	Y
24	Require implementation of BMPs that are site specific, seasonally appropriate and appropriate to the construction phase, year-round.	Fully	Every project requires implementation of site-specific construction BMPs, seasonally appropriate and appropriate to the construction phase.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
25	Impose legal authority to ensure inventoried construction projects are in compliance with all requirements.	Fully	The WPO is the current legal authority to ensure inventoried construction projects are in compliance with all requirements. No new updates were necessary during the reporting period.	N	N/A	Y
26	Make updates to County ordinances related to construction; reference to existing grading ordinance.	Fully	County ordinances are updated with subsequent Construction General Permit updates; the WPO will be updated as necessary as a result of future Grading Ordinance updates.	N	N/A	Y
27	Provide internal staff training related to construction storm water management.	Fully	The County conducts construction stormwater training annually and it targets construction inspectors in Development of Public Works-Private Development Construction Inspection, Planning Development Services Group-Building, and Capital Improvement Projects Inspectors in Department of Public Works, Department of General Services, and Department of Parks and Recreation.	N	N/A	Y
Existing Development						
28	Maintain and update a watershed-based inventory of existing development (i.e. commercial, industrial, municipal and residential areas) through a consolidated database.	Fully	This year the County continued its efforts to cross-reference records of existing development and expanded its inventory by adding new facilities. An enhanced prioritization analysis was performed to more effectively manage the inventory. The new approach will be tested and implemented in FY20-21.	N	N/A	Y
31	Maintain and promote an Equestrian BMP Handbook.	Fully	An Equestrian BMP Handbook was developed and implemented in FY 14-15. The Handbook was revised in FY 17-18 to encompass additional BMPs and were released in FY 18-19. The Handbook is available on the County's updated website.	N	N/A	Y
32	Designate minimum BMPs for existing development (commercial, industrial, municipal, and residential) that are specific to the facility, area types and pollutant generating activities, as appropriate.	Fully	The JRMP and WPO establish minimum BMPs for all land use types. Inspections ensure minimum BMPs are implemented in areas of existing development. Materials were updated in English and Spanish for specific industrial, commercial, and municipal activities. This year the County developed 9 watershed specific flyers that include a map of the watershed with landmarks for orientation on the first page, and on the second page there is a focus on how residents can help reduce the top priority pollutants in their respective watersheds. An Erosion and Sediment BMP flyer was designed in English and Spanish to help County residents prevent erosion and sediment from their properties during construction activities that disturb or expose soil. The Rainbow Creek Flyers for commercial nurseries were developed in English and Spanish using community based social marketing principles to convey BMP information in four main categories (Irrigation Management, Erosion and Runoff Management, Nutrient Management, and Training and Record Keeping) to help nurseries reduce nutrient contributions to Rainbow Creek.	N	N/A	Y
33	Implement pet waste management and outreach in County parks.	Fully	Dispensers with pet waste disposal bags are installed and maintained in many County parks.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

	Jurisdictional Runoff Management Program (JRMP) Strategies	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
34	Implement a schedule of operation and maintenance activities for the stormwater conveyance system and related structures.	Fully	County Roads and Flood Control Departments maintain a schedule for operation and maintenance activities for the stormwater conveyance system and culverts. Maintenance is referred to appropriate departments as needed. This year, Roads maintained 17,737 inlets and 2,005 linear MS4, and 676 new stencils. Flood Control Maintenance Crews inspected 2,082 Storm Drain Inlets (100%), 42.3 Miles of Linear MS4 Storm Drains (75%), and 10.33 Miles of Open Channels (230%). Maintenance was performed by DPR on stormwater conveyance systems and culverts with the DPR inventory.	N	N/A	Y
35	Implement a schedule of operation and maintenance for County paved and unpaved roads.	Fully	County Roads has 3,736.05 curb miles of streets, roads, and highways that are swept based on the sweeping management schedule or as needed to prevent sediment and debris from entering the MS4. A total of 1,842.84 centerline miles of paved streets, roads, and highways are in the County Roads Maintenance system, 16,231.43 miles are swept annually. In FY19-20, High Priority Roads are 176.51 curb miles and swept twice a month or as needed for a total of 5,314.88 curb miles swept and removed 1,205.74 cubic yards (CY) of sediment, trash, and debris; Medium Priority roads are 96.38 curb miles and swept once a month or as needed of 1,654.84 curb miles and removed 610 CY of sediment, trash, and debris; Low Priority Roads are 3,463.16 curb miles and swept annually or as needed of 9,261.71 curb miles and removed 9,261 CY of sediment, trash, and debris. In FY19-20, DPW removed over 22,000 CY from County streets, roads, and highway. Maintenance was performed by DPR on roads and parking areas with the DPR inventory. Maintenance is referred to appropriate departments as needed.	N	N/A	Y
36	Require implementation of BMPs to address application, storage, and disposal of pesticides, herbicides, and fertilizers on commercial, industrial, and municipal properties. Includes education, permits, and certifications.	Fully	The County initiated the development of outreach material for golf courses, cemeteries, and wineries. Thirty-five interviews were conducted comprising of (6) golf courses, (15) wineries, (6) cemeteries, and (6) pest control businesses. Interview questions were focused on BMPs and the outreach and education materials that would best fit each business's needs. The results will be used to develop and design future outreach and education for these business industries. The County's Agriculture, Weights, and Measure's (AWM) Pesticide Regulation Program (PRP) conducted inspections, investigations, outreach and enforcement, including: - Monitored 168 field pesticide applications ensuring the pesticides were applied and stored in compliance with pesticide laws and regulations. - Conducted 160 headquarter inspections at agricultural facilities, ensuring pesticides are properly stored, labeled, and that measures to address spills and disposal are in place. - Conducted 60 inspections at agricultural facilities to ensure hazardous materials including pesticides, herbicides and fertilizers are stored properly.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
			<ul style="list-style-type: none"> - Monitored 149 pesticide applications to golf courses, landscapes, and agricultural commodities, in addition to 139 pesticide applications around structures. These included 62 pyrethroid applications. Pyrethroids are a class of pesticide known to be particularly harmful to water bodies because they strongly bind to sediment and other natural materials, which limits bioavailability to non-target organisms. - Issued 201 restricted material permits for the use of certain pesticides classified as restricted materials due to being hazardous to people, animals, or the environment. PRP monitored their use by conducting 64 pre-site visits to ensure the pesticide can be applied safely at the site, reviewing 1039 notices of intent before each application, and by conducting inspections when these pesticides are applied to ensure the safety of the public and the environment. - Implemented 18 outreach presentations to 939 individuals on topics such as safe and effective use of pesticides, compliance with laws and regulations, licensing, and requirements specific to pyrethroids. - Investigated 62 complaints from the public regarding potential misuse of pesticides. <p>In addition, PRP received an "effective" rating on its 2019 annual evaluation by the California Department of Pesticide Regulation.</p>			
38	Conduct inspections of inventoried existing development to ensure compliance.	Fully	<p>Inspections were conducted in municipal, industrial, commercial and residential areas.</p> <p>The County's AWM Program conducted 32 agricultural property initial inspections in FY 19-20, which is 57% of the 56 inventoried facilities. An initial inspection is a visit to a facility that is not for the purpose of following up on a previous violation, or related to a complaint. A total of 64 initial inspections were conducted (some facilities receive more than one initial inspection based on their threat to water quality) 45 were compliant = 70% compliance rate.</p>	N	N/A	Y
39	Promote and encourage implementation of designated BMPs in residential areas. Conduct focused residential inspections based on strategic assessments.	Fully	Staff successfully identified and eliminated prohibited flows from a number of sources through a comprehensive inspection and public outreach program in residential neighborhoods known to have persistent dry weather flows. There were increased efforts to inspect thousands of residential areas and to educate unincorporated residents about ways to reduce outdoor water use as appropriate, and implemented escalating enforcement when necessary. Additional neighborhoods were added to the inventory.	N	N/A	Y
40	Develop and implement a residential inspection tracking program via mobile platform to increase inspection efficiency.	Fully	A mobile tracking application was developed in FY14-15 and continued to be used during the reporting period. The application allows inspectors to quickly access parcel GIS data to assist with routine inspections.	N	N/A	Y
42	Enforce legal authority established for all inventoried existing development to achieve compliance.	Fully	Watershed Protection Ordinance (WPO) provides legal authority and is cited during inspections. See JRMP for details. Staff implemented escalated enforcement procedures and issued Administrative Citation Warnings as needed to encourage compliance.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
43	Update county ordinance related to existing development; reference to existing guidance documents.	Fully	Watershed Protection Ordinance was updated in FY15-16, see JRMP for additional details. Updates to the WPO will be made as needed.	N	N/A	Y
45	Collaborate with partner agencies and groups to promote incentive programs for BMP retrofits, including rain barrels, smart controllers, soil sensors, turf replacement, etc.	Fully	The County continued to work with regional partner agencies to promote incentive programs for BMP retrofits, including rain barrels, smart controllers, soil sensors, turf replacement, etc. Efforts continued on the development of an independent incentive program to further promote BMP implementation on private property. Additionally, the County hosted three rain barrel distribution events, including one within the Santa Margarita River WMA at the Mission Resource Conservation District. Over 500 50-gallon rain barrels were sold to unincorporated residents.	N	N/A	Y
46	Identify candidate areas of existing development for stream, channel, and/or habitat rehabilitation projects and facilitate implementation of such projects.	Fully	The County began efforts on a draft pay-for-performance contract for stream restoration. This innovative contracting solution is being explored for its potential to deliver highly impactful projects like stream restoration on private property. Work will continue on the development of a Request For Proposals which is planned for release in FY20-21.	N	N/A	Y
63	Enhanced non-stormwater flow investigations.	Fully	The County continued with its efforts to identify sources of non-stormwater flow. In addition to the residential inspections program, which seeks to identify irrigation runoff during the early morning hours, the County also did extensive outreach and enforcement during normal business hours and followed up on every identified source to ensure it was resolved.	N	N/A	Y
65	Determine approximate volume of permitted flows entering the MS4.	Fully	There are numerous water districts operating in the County of San Diego's jurisdiction. Water districts serving more than 3,000 acre-feet of water per year are required to report water loss rates to the State Department of Water Resources annually. The gallons lost to the watershed per day due to permitted flows, leaks, breaks, and overflows can be assumed to be either moving through the watershed as surface or subsurface flows. However, water district service areas cross watershed and jurisdictional boundaries, therefore volumes lost to any particular watershed or jurisdiction are challenging to estimate. The County recommends the Water Board coordinate with the water districts to review the reporting requirements under General Order 2014-0194-DWQ to explore the viability of reporting detailed data discharges and losses to each MS4 by watershed.	N	N/A	Y
72	Annually review commercial agricultural facilities in the Rainbow Creek watershed that may discharge pollutants to the County MS4 and add any newly identified facilities to the inventory.	Fully	During FY19-20, 4 additional agricultural facilities were identified by staff and added to the County Agricultural Water Quality (AWQ) inventory in the Rainbow Creek subwatershed.	Y	New: strategy added to describe current efforts more accurately	Y
73	Focus investigative efforts on identifying significant sources of nutrients within the Rainbow Creek subwatershed.	Fully	When AWM AWQ receives reports from DPW's Watershed Protection Program showing samples that exceeded nutrient standards, follow-up inspections are conducted at adjacent agricultural facilities where stormwater runoff has the potential to enter the County MS4. AWM AWQ makes these inspections a priority and coordinates efforts with DPW, if necessary and prudent, in identifying any agricultural facilities that may have contributed to these exceedances. In FY19-20, no agricultural facilities were positively identified as being contributors to any reported nutrient standard exceedance.	Y	New: strategy added to describe current efforts more accurately	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
74	Conduct additional inspections at agricultural facilities in response to elevated nutrient monitoring results to try and identify and eliminate pollutant sources within corresponding drainage areas.	Fully	When AWM AWQ receives reports from DPW's Watershed Protection Program showing samples that exceeded nutrient standards, follow-up inspections are conducted at adjacent agricultural facilities where stormwater runoff has the potential to enter the County MS4. AWM AWQ makes these inspections a priority and coordinates efforts with DPW, if necessary and prudent, in identifying any agricultural facilities that may have contributed to these exceedances. In FY19-20, no agricultural facilities were positively identified as being contributors to any reported nutrient standard exceedance.	Y	New: strategy added to describe current efforts more accurately	Y
75	Increase regulatory presence and achieve higher inspection frequency depending on level of compliance throughout the year in the MS4 unincorporated area by adding staff hours (i.e., 0.5 full-time supervisor to have a dedicated supervisor over the Agricultural Water Quality Program and 2 full-time inspectors).	Fully	In FY19-20, AWM added a full-time dedicated AWQ Supervisor (100% increase from FY18-19) and 3 full-time inspectors (200% increase from FY18-19).	Y	New: strategy added to describe current efforts more accurately	N (strategy completed)
76	Increase inspection frequency up to four inspections per High Threat to Water Quality existing commercial agricultural facility and depending on the facility's compliance history.	Partially	Implemented in the Rainbow Creek subwatershed, where 44 initial inspections were conducted for inventory of 36 facilities (some can have multiple initial inspections), 29 were compliant = 66% compliance rate for initial inspections. Seventeen re-inspections were conducted (some facilities needed more than 1), 10 were compliant = 59% compliance rate for re-inspections. Re-inspections on the remaining businesses not yet brought into compliance have been delayed by the COVID-19 pandemic. Overall, 61 inspections (initial + follow up) were conducted and 39 were compliant (64% compliance rate).	Y	New: strategy added to describe current efforts more accurately	Y
Public Education and Participation						
47	Develop, improve and distribute outreach and education materials.	Fully	This year watershed specific flyers were developed that highlight the unique characteristics of each of the watersheds that the County of San Diego has an active presence in through inspections, sampling, complaint investigations, etc. The flyers include a map of the watershed with landmarks for orientation on the first page, and on the second page there is a focus on how residents can help reduce the top priority pollutants in their respective watersheds. The Erosion and Sediment BMP flyer was developed to help County residents identify some of the more common permits required for construction activities within the County of San Diego as well as the appropriate contact agencies and resources. The "Waterbodies, Property and Permits" flyer was developed to help County residents contact federal, state, and regional agencies that have jurisdiction over projects that are near or within waterbodies. The County received input from the Army Corp of Engineers, US and California Fish & Wildlife, and Regional Water Quality Control Board to develop this flyer that was also translated into Spanish. The Water Agency flyer was created to help County residents prevent runoff and conserve water by guiding them to resources that the different County water agencies provide. The County received input from the San Diego County Water Authority to develop this flyer and it was also translated into Spanish. The Watershed Protection Program in collaboration with County Department of Agriculture, Weights, and Measures (AWM) designed the Rainbow Creek Nutrient Reduction and Management Plan flyers to complement the overview flyer. The flyer development used community based social marketing principles to convey BMP information in four main categories (Irrigation Management, Erosion and Runoff Management, Nutrient Management, and Training and Record Keeping) to	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

	Jurisdictional Runoff Management Program (JRMP) Strategies	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
			<p>help nurseries reduce nutrient contributions to Rainbow Creek. These flyers were translated into Spanish as well. Folders containing the following outreach and education materials were prepared and distributed to each of the 98 agricultural facilities that received initial inspections in FY 19-20: Agriculture Order flyer, AWQ flyer, Sample Storm Water Pollution Prevention Plan (SWPPP) fillable document, AWQ Program Summary Sheet, Violation FAQ sheet, Spanish and English Stormwater Training packets, National Resources Conservation Service (NRCS) program information, Mission Resource Conservation District (MRCD) program information, State Water Efficiency and Enhancement Program (SWEEP) information, and the University of California Cooperative Extension (UCCE) program information. Nutrient Runoff Management Plan (NRMP) flyers in English and Spanish were also distributed to the agricultural facilities located in the Rainbow Creek subwatershed. These materials were also distributed at complaint and follow up inspections as needed.</p> <p>The County created an "Inspect Your Business and Train Your Employees" training video in English and Spanish this year to help industrial and commercial facilities meet their annual Watershed Protection Ordinance training requirement. These videos focus on two of our industrial and commercial flyers that we developed using community based social marketing principles, an inspection checklist that facilities may use to inspect their businesses, and a checklist to train their employees. These videos are available to the public on the County's Watershed Protection Program website.</p> <p>County AWM's Agricultural Water Quality (AWQ) Division updated its public-facing website extensively to ensure it is a valuable resource for outreach and education materials, including program information, FAQs, BMPs, WQIPs, WPO, and training materials. The website is manually checked by staff monthly to ensure all links are still viable and that provided information is up to date and accurate. A presentation regarding AWQ program requirements and the Agriculture Order requirements was developed and will be shared with commercial agricultural operations and posted on AWM's website during FY 20-21.</p>			
48	Provide presentations to elementary, middle, and high school students.	Partially	Efforts continued on providing thousands of elementary, middle, and high school age students with on-site educational programs that promote water quality awareness and pollution prevention practices. Due to the COVID-19 pandemic, the school presentations transitioned to virtual presentations later in the school year.	N	N/A	Y
49	Outreach to mobile landscaping service providers.	Fully	County AWM presented on pesticide use laws and regulations at three continuing education events for licensed pesticide applicators, including maintenance gardener pest control businesses (i.e., "mobile landscaping service providers") to a total of 363 attendees. This pilot program will no longer be implemented due to a lack of state funding and currently future funding is not anticipated.	N	N/A	N

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
54	Collaborate with watershed partners to develop consistent messaging to targeted audiences to conserve water and reduce dry weather flows.	Fully	<p>During FY19-20, the County reached out to all water districts with overlapping jurisdiction to offer to provide the addresses of residences where over-irrigation was observed by County field staff. County staff send monthly reports to multiple water districts summarizing over-irrigation investigation findings.</p> <p>E-mail listserv bulletins were sent out to subscribers on a monthly basis. Bulletin topics range from seasonal topics (i.e. rainy season BMPs, dry season BMPs), County COVID-19 updates, and upcoming water quality improvement events (i.e. cleanup events, rain barrel sales events, virtual workshops). A total of 39 bulletins were sent out to subscribers. Staff also used social media to try to reach an even broader audience, posting important messages about watershed events and pollution prevention throughout the year on Facebook and Twitter.</p> <p>The Regional Copermittee Education and Outreach Workgroup launched a 5-year Stormwater Behavior Change Marketing Campaign using community based social marketing principles to drive stormwater-friendly behavior changes in targeted audiences throughout San Diego County. During the initial year, an audit of all existing education and outreach materials developed in the past was conducted to determine strategies or messaging that worked. Copermittees continue to work on developing an engagement strategy, targeted audiences, media strategy, including social media, and metrics to measure and adaptively manage the campaign through Years 2-4, which will be public facing. The Workgroup also sponsored multiple public volunteer-based trash cleanup events through I Love A Clean San Diego, including Coastal Cleanup Day, Creek to Bay Cleanup, and multiple Watershed Warrior cleanups. Totals for trash removed during these events in FY19-20 are listed in Jurisdictional Strategy #55.</p>	N	N/A	Y
55	Sponsor trash collection events	Fully	<p>The County facilitated and sponsored several additional clean-up events to remove trash and debris from waterways, including: Creek to Bay Cleanup, Coastal Cleanup Day and Watershed Warrior local community events. Staff and I Love A Clean San Diego (ILACSD) coordinated trash cleanup events in conjunction with high school and middle school outreach. Due to the COVID-19 pandemic, the cleanup events were adjusted to become virtual events around participant's neighborhoods. The ILACSD trash cleanup events sponsored by the County in FY19-20 coordinated over 9,000 community volunteers resulting in the removal of 163,815.35 lbs of trash and recyclables throughout the region. The breakdown of trash and recyclables removed per event is as follows:</p> <ul style="list-style-type: none"> • Creek to Bay Cleanup – 7,038.74 lbs trash; 1,605.61 lbs recyclables (909 volunteers) • Watershed Warrior cleanups – 9,148 lbs trash; 1,023 lbs recyclables (1,136 volunteers) • Coastal Cleanup Day – 145,000 lbs trash and recyclables (>7,000 volunteers) 	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
56	Educational Workshops on Integrated Pest Management, manure management.	Fully	Due to COVID-19, University of California Cooperative Extension (UCCE) modified Healthy Gardens Healthy Homes in-person workshops to online formats. UCCE also cancelled and or postponed all in-person Master Gardener events. To continue service to community, Master Gardeners implemented two new outreach activities. The Master Gardener Hotline (858-822-6910) was staffed remotely to continue to address non-commercial home horticulture and pest management questions and concerns. In addition, Master Gardeners headed by Master Gardener Communications Committee, developed a new feature on the Master Gardener website called "Let's Grow Together San Diego-Stay-at-Home Gardening Resources," to address the public's need for information and activities (https://www.mastergardenersd.org/). This feature is a 'one-stop-shop' for home horticulture and pest management information and activities and includes sections such as Ask a Master Gardener (MG Hotline), UC IPM Pest Notes, Youth Activities, Reminiscence Gardening, Online Workshops, Videos, Healthy Garden Healthy Home activities, Adult Coloring book activities, Beginning Vegetable Gardening instruction. This new web feature was promoted during this reporting period. Outreach on manure management was provided by The Solana Center for Environmental Innovations (Solana Center) through virtual workshops. The Solana Center continued the manure management pilot program for the Livestock and Land at San Diego Country Estates.	N	N/A	Y
57	Partner with Water Conservation Garden Programs to provide education opportunities on water use and practices for gardening.	Fully	This year saw many challenges with hosting crowds and workshop gatherings. The County and the Water Conservation Garden worked together to rapidly develop online workshop content that could continue to promote the important messages on water use practices and gardening, especially preventing over-watering.	N	N/A	Y
58	Conduct effectiveness surveys on education and outreach programs.	Fully	Continued to evaluate the effectiveness of school presentation programs to elementary, middle school, and high school audiences through administering pre- and post- survey assessments. The results of the surveys indicated that the school presentations are effective at increasing knowledge and reaching a large and diverse group of students. In March 2020, schools throughout the County closed due to the COVID-19 pandemic, resulting in fewer presentations being given during the 2019-2020 school year. Due to the COVID-19 pandemic, the school presentations transitioned from on-site to virtual presentations later in the school year.	N	N/A	Y
62	Implement a public education and participation program to promote best management practices and behaviors that reduce the discharge of pollutants in storm water.	Fully	The County completes numerous education and public participation programs for diverse target audiences. In FY 19-20, the County with Action Research, started discussion on developing a new project to create a public participation and education webpage and will be completed in FY 20-21.	N	N/A	Y
64	Update County websites with enhanced irrigation runoff prohibition and reporting.	Fully	The County completed a major overhaul of its website to content and graphics on its residential and industrial/commercial pollutant generating activity (PGA) topic pages.	N	N/A	Y
67	Notify agricultural businesses within the County unincorporated area of the requirement to enroll under the Agricultural Order.	Fully	The Department of Agriculture, Weights, and Measures (AWM) AWQ continued to notify agricultural businesses within the County unincorporated area of the requirement to enroll under the Agricultural Order. Prior to inspections, staff identified businesses that were not enrolled and provided	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
			one-on-one outreach and relevant educational materials at the time of the inspection. A total of 32 businesses were identified as non-filers and subsequently referred to the Regional Water Quality Control Board.			
68	Develop enhanced education and outreach activities and materials in collaboration with University of California Cooperative Extension (UCCE).	Fully	The Department of AWM supported the University of California Cooperative Extension (UCCE) in providing several outreach activities and materials on the subject of stormwater pollution prevention in agricultural water use. Between August and December 2019, UCCE held three Agricultural Water Quality workshops addressing the requirements of the General Orders for commercial agriculture's water quality and waste discharge. These events were attended by a total of 115 local growers. UCCE also offered an online Agricultural Water Quality Continuing Education Course covering similar material as the in-person workshops. This course was completed by 140 participants. UCCE hosted the annual "Water Wise Farming" informational display at the Carlsbad Flower Fields. For two weeks in March 2020, this display provided demonstrations of best management practices for water quality and runoff, as well as self-assessment materials. Though this display was closed prematurely due to the COVID-19 Pandemic, it was still able to reach approximately 6,000 growers and members of the public in that time. In January 2020, UCCE shared the publication "Field Irrigation Water Management in a Nutshell" on its website. This free publication issued by UC Agriculture and Natural Resources contains technical information regarding effective irrigation management and was downloaded by approximately 250 interested persons.	N	N/A	Y
70	Enhance education outreach materials and activities focused on Rainbow Creek Nutrient Reduction Management Plan goals within the Rainbow Creek subwatershed.in coordination with University of California Cooperative Extension Office.	Fully	Rainbow Creek Nutrient Reduction and Management Plan flyers were provided during initial inspections of all 36 inventoried agricultural facilities in the Rainbow Creek subwatershed. AWM collaborated with UCCE Office on several education outreach materials and activities which benefited growers throughout the San Diego region, including those in the Rainbow Creek subwatershed.	Y	New: strategy added to describe current efforts more accurately	Y
71	Provide BMP outreach documents in English and Spanish at every inspected agricultural facility in the Rainbow Creek subwatershed.	Fully	Best Management Practice outreach material in English and Spanish were provided during initial inspections of all 36 inventoried agricultural facilities in the Rainbow Creek subwatershed, and as needed during follow up and complaint inspections.	Y	New: strategy added to describe current efforts more accurately	Y
Enforcement Response Plan (ERP)						
59	Implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Enforcement Response Plan (ERP).	Fully	County continues to implement the ERP as described in the JRMP.	N	N/A	Y

Table A2-41. County of San Diego Jurisdictional Strategies

Jurisdictional Runoff Management Program (JRMP) Strategies		Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
60	Notify the SDWB by email (Nonfilers_R9@waterboards.ca.gov) within five (5) calendar days of issuing escalated enforcement to a construction site that poses a significant threat to water quality as a result of violations or other noncompliance.	Fully	County continues to notify the Regional Board of construction escalated enforcement that poses a significant threat to water quality.	N	N/A	Y
61	Notify the SDWB by email (Nonfilers_R9@waterboards.ca.gov) any persons required to obtain coverage under the statewide Industrial General Permit and Construction General Permit and failing to do so, within five (5) calendar days from the time the Copermittee become aware of the circumstances.	Fully	County continues to notify the Regional Board of any Industrial General Permit and Construction General Permit non-filers.	N	N/A	Y
69	Notify the SDWB of potential non-filers of the Agricultural Order.	Fully	County staff notifies the RWQCB by e-mail when potential non-filers of the Agricultural Order are identified. A total of 32 referrals were made to RWQCB in FY19-20.	N	N/A	Y

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)	
Provision B.3.b.(1)(b)(i) - BMPs, incentives, or programs that may be implemented that are in addition to requirements of Provision B.3.b.(1)(a)										
1	Implement Sustainable Landscapes Program to encourage landscape retrofits.	FY 2016-17; Continuous until grant funding and incentives are depleted	Implementation of this strategy may be triggered if (1) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (2) all of the necessary resources have been secured. Continue implementation when the funding and incentives items are secured.	Staff resources, Grant funding, Incentive items, Partnerships.	N	No	The Sustainable Landscapes Program grant funding was exhausted at the end of FY17-18. The County continued to promote incentive programs for BMP retrofits, including rain barrels, smart controllers, soil sensors, turf replacement, via other agencies, such as San Diego County Water Authority.	N	N/A	N
2	Implement an incentive program for BMP Retrofits (Public-Private Partnerships - a County sponsored program to offer incentives for rain barrel installation, downspout disconnects from the stormwater system, etc.)	FY 2015-16 Continuous, as resources allow	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) pilot program success; and (4) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Incentive items, Partnerships.	N	Partially	The County collaborated with the San Diego County Water Authority and Metropolitan Water District of Southern California to provide rebate opportunities at County-sponsored outreach events and rain barrel sales events. The County hosted three rain barrel distribution events, including one within the Santa Margarita River WMA at the Mission Resource Conservation District. Over 500 50-gallon rain barrels were sold to unincorporated residents. Continued promoting incentive programs related to landscapes/outdoor irrigation, including: smart timers, soil moisture sensors, irrigation / sprinkler head retrofits, turf replacement and rain barrel incentives. Planning and development of County incentive program continues.	N	N/A	Y

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
3 Implement a program that provides rebates or incentives for pumping septic systems, with a focus in high-risk areas adjacent to waterways (within 600 feet).	Once triggered, Pilot program 1 -2 years, as needed thereafter	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) pilot program success; and (4) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Partnerships, Incentive items.	N	Partially	The County prepared a fact sheet on preventative septic system maintenance that was sent to 189 septic system professionals and septic tank pumpers. The fact sheets were designed to be shared with homeowners financially impacted by COVID-19 that may be experiencing septic system problems. The County also developed both a flyer and a training video to communicate proper septic system maintenance guidelines. These materials are part of the County's approach to reaching septic system users, which will also include a rebate program in the coming years.	Y	Editorial to remove reference to focus on high risk areas as the County plans to implement Countywide in FY 20-21.	Y
5 Implement a program for on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	Once triggered, 2-3 years	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) septic systems have been determined to be a pollutant sources to the MS4; and (4) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Partnerships.	Y	Fully	Under the Local Area Management Plan (LAMP) for onsite wastewater treatment systems the treatment systems with supplemental treatment are required to be permitted annually. The annual operating permit will define the monitoring and maintenance requirements as specified by the manufacturer and/or qualified professional who designed the system.	Y	New: strategy added to describe current efforts more accurately	Y
6 Divert persistent dry weather flows from storm drains to sewer.	Once triggered, 3-6 years per project	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) permission is granted from sewer agency; and (4) ground water or permitted discharges have been ruled out; and (5) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Engineering design, Environmental review, Permits, Ongoing funding for operation/ maintenance.	N	No	N/A	N	N/A	N

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)	
Provision B.3.b.(1)(b)(ii) – Incentives or programs that may be implemented to encourage or implement projects to retrofit areas of existing development										
8	Implement Green Street Retrofit Program.	Once triggered, 3-7 years per project; ongoing operation & maintenance thereafter	Implementation of this strategy may be triggered on a project-by-project basis if (1) a specified interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) pilot program success; and (4) all of the necessary resources have been secured.	Each green street retrofit project is preliminary estimated to cost an average of \$5,500,000 per linear mile of retrofit for construction. Resources include: Staff resources, Grant funding or alternative source, Contractor funding, Engineering or landscaping design, Permits, Environmental review, Right of way acquisition, Ongoing funding for operation/maintenance.	Y	Partially	The following design and implementation of Green Street Retrofit occurred within the Santa Margarita River WMA: 1) Initiation of the Rainbow Creek Water Quality Improvement Project (see additional details in Optional Strategy #9); 2) Finalization of the Green Street design drawings; 3) The County is developing a Green Streets Master Plan to identify multi-benefit opportunities within unincorporated village and adjacent semi-rural residential areas to support progress on achieving water quality. The plan is currently in the early stages of development and is estimated to be completed during the first half of 2022. Key components of the Master Plan include: <ul style="list-style-type: none"> o Identification of candidate sites within the County Right-of-way o Assessment of best-suited BMP site designs utilizing our Green Infrastructure Guidelines and design criteria o Assessment of benefits provided by candidate sites o Development of a project prioritization approach o Develop an Estimate of Capital and Operation and Maintenance costs (30-year lifecycle) o Present prioritized project recommendations and layout the broader vision for green streets in unincorporated County 4) County-wide, there are currently 14 DPW capital improvement in design phases that are utilizing the PDP exemption pathway.	N	N/A	Y

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
9 Construct Treatment Control BMPs (retrofit projects)	Once triggered, 4-7 years per project; ongoing operation & maintenance thereafter	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Engineering or landscaping design, Permits, Environmental review, Ongoing funding for operation/ maintenance.	Y	Partially	The Rainbow Creek Water Quality Improvement Project BMPs will treat runoff from 324.6 acres. This project has completed the 30% design and is scheduled to go to the Board in 2021. Survey and geotechnical work (potholing) have been completed. An initial JD determination was completed and will support the environmental review that will occur in FY 20/21. Once the environmental review is started then we will engage with the resource agencies to start discussions required permits. Tribal Consultation will be completed in FY 20/21 and long for this project as the North County tribes have expressed interest in this location. Project design will be completed in FY 20/21 and work will begin on utility relocation and acquisition of easements. Total project cost (soft costs and construction costs) is \$11.4M. Lastly, work on developing a BMP effectiveness monitoring plan will be completed in FY 20/21. See additional project details in Section 2.3.3.1.2 of this annual report. The County has also designed a water quality project in Rainbow valley that includes full capture trash devices.	Y	New: strategy added to describe current efforts more accurately	Y
Provision B.3.b.(1)(b)(iii) - Incentives or programs that may be implemented to encourage or implement projects that will rehabilitate the conditions of channels or habitats									
11 Flood Control Channel Rehabilitation Projects (e.g., removal of impervious lining in flood control channel and replacement with earthen or vegetated surface)	Once triggered, 4-7 years per project; ongoing operation & maintenance thereafter	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (4) engineering design, monitoring, and outreach plans are approved; and (5) all of the necessary resources have been secured.	Project costs vary by size and complexity. Resources include: Staff resources, Grant funding or alternative source, Contractor funding, Partnerships, Engineering design, Permits, Environmental review, Right of way acquisition (if needed), Ongoing funding for operation/ maintenance.	N	No	N/A	N	N/A	N

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
12 Implement a program to remove invasive non-native plants (i.e. Arundo) from upstream areas rivers or tributaries.	Once triggered, 1-2 years per project	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) community support and partnerships established; and (4) it has been determined that invasive plants have been found to have an impact on water quality; and (5) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Partnerships.	N	Partially	Flood Control crews remove invasive non-native plants from storm drain channels during routine maintenance. The County's Department of Parks & Recreation (DPR) prioritizes invasive non-native plant species control or removal using an Integrated Pest Management approach and the least disruptive measures for native species within County-owned/managed preserves and parks. In FY19-20, DPR controlled or removed over 320 acres of invasive plant species within the County's Multiple Species Conservation Program area. Through the Landscape Ordinance, Grading Ordinance, and stormwater compliance the County ensures that non-invasive and native- fire resistant plants are to be design as part of the landscape plan or that the mix within the hydroseed are in compliance.	Y	New: strategy added to describe current efforts more accurately	Y
13 Habitat Restoration and rehabilitation projects in County Parks	Once triggered, 4-7 years per project; ongoing operation & maintenance thereafter	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the County of San Diego through adaptive management that implementation is necessary; and (3) all of the necessary resources have been secured.	Staff resources, Grant funding or alternative source, Contractor funding, Partnerships, Restoration / Rehabilitation Designs Approved, Environmental Permits issued, CEQA / NEPA Environmental review, Ongoing funding for maintenance and monitoring.	N	Partially	The County actively pursues grants for the restoration and rehabilitation of County-owned/managed preserves and parks. In FY19-20, County DPR continued restoration and rehabilitation efforts within County parks by planting 4,029 native or drought tolerant trees and shrubs.	Y	New: strategy added to describe current efforts more accurately	Y

Table A2-42. County of San Diego Optional Jurisdictional Strategies

Optional Jurisdictional Runoff Management Program (JRMP) Strategies	Implementation Timeframe	Triggers	Resources	Triggered? (Y/N)	Implemented in FY19-20? (No/Partially/Fully)	Comments on Implementation	Proposed Modifications? (Y/N)	Modification Type & Rationale (if none, N/A)	Planned Implementation into next FY? (Y/N)
Structural BMPs Identified in WQIPs									
27	Turf replacement in Rainbow Park	N/A	N/A	N/A	Fully	DPR performed regular maintenance on the project site to ensure longevity of the improvements including spot cleaning artificial turf as needed, keeping the field perimeter free of weeds, and annually grooming the field with a turf grooming machine to straighten the turf blades and redistribute the infill granules.	N	N/A	Y

Table A2-43. County of San Diego, Optional WMA Strategies

Number	Optional WMA Strategies	Implementation Timeframe	Triggered During Reporting Period?	Rationale for Modification to the Strategy	Comments
WMA-1	Incentive programs to reduce non-stormwater and stormwater runoff (e.g., drought tolerant landscaping, rain barrel program, turf replacement).	Implemented starting in the following fiscal year after triggered.	No	N/A	The County continued to work with regional partner agencies to promote incentive programs. Work also continued on development of an independent incentive program to further promote BMP implementation on private property. Additionally, the County hosted three rain barrel distribution events, including one within the Santa Margarita River WMA at the Mission Resource Conservation District. Over 500 50-gallon rain barrels were sold to unincorporated residents.
WMA-2	In-stream strategies, including watercourse rehabilitation to provide natural uptake of nutrients, increase shading, or modify physical factors to reduce algal growth.	Allow 2-5 years for design, permit, and construction once triggered.	No	N/A	This year, the County began work on a draft pay-for-performance contract for stream restoration. This innovative contracting solution is being explored for its potential to deliver highly impactful projects like stream restoration on private property. Work will continue on the development of an RFP which is planned for release in FY20-21.
WMA-3	Coordinate with Integrated Regional Water Management (IRWM) regional water managers to plan for and implement water quality improvement projects (retrofits, stream rehabilitation, or other projects) that will address nutrients and/or dry weather flows.	As triggered.	No, but coordination did occur; see comments.	N/A	The San Diego IRWM Program is administered by the San Diego Regional Water Management Group (RWGM), consisting of the San Diego County Water Authority, the City of San Diego, and the County of San Diego. The group meets bi-weekly to manage the daily operations of the program, as well as develop and initiate IRWM Plan implementation activities. The San Diego RWGM also provides presentations to various stakeholder groups including water supply agencies, environmental organizations, and other agencies regarding the IRWM Program locally, and throughout the state.
WMA-4	Participate in Santa Margarita River Watershed Nutrient Initiative - Stakeholder Group as a collaborative effort to reduce nutrients and dry weather flows.	Ongoing	N/A (no trigger)	N/A	The County of San Diego participated in SMRNIG meetings along with the other SMR WMA Copermittees and continued sharing monitoring data in support of assessing eutrophic conditions in the estuary. The SMRNIG met on October 2, 2019 and March 12, 2020.

7.3 MODIFICATIONS TO BMP DESIGN MANUAL

During FY19-20, the County of San Diego BMP Design Manual was updated on Page 1-12 to remove the exclusion for PDP Category (f) "New of redevelopment projects that result in the disturbance of one or more acres of land and are expected to generated pollutants post construction". The category now includes language that defines projects that are disturbing one or more acres of land as presumed to generate pollutants post-construction unless the applicant presents a design that satisfies the County that pollutants in stormwater discharges will not exceed pre-construction background levels. The County of San Diego BMP Design Manual is available online at https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP_Design_Manual.html.

7.4 MODIFICATIONS TO THE JRMP

The County JRMP was updated to include modifications to the AWM Agricultural Water Quality Program included as described in the FY 18-19 WQIP ARs. Minor modifications were also made to reflect the use of consultants to complete inspections, the role of drive-by inspections, and the use of surveys for educational outreach. The County's 2019 JRMP is available at: https://www.sandiegocounty.gov/content/dam/sdc/dpw/WATERSHED_PROTECTION_PROGRAM/watershedpdf/JRMP.pdf.

7.5 CORRESPONDENCE REGARDING COMPLIANCE DURING THE COVID-19 PANDEMIC

The County of San Diego sent a letter to the San Diego Water Board describing the impacts of the COVID-19 pandemic and the associated San Diego Public Health Order on its stormwater program. The County's letter and the San Diego Water Board's response are provided in this section.



County of San Diego

BRIAN ALBRIGHT
DIRECTOR

DEPARTMENT OF PUBLIC WORKS
5510 OVERLAND AVENUE, SUITE 410
SAN DIEGO, CA 92123-1237
(858) 694-2212
www.sdcountry.ca.gov/dpw/

March 27, 2020

Mr. David W. Gibson, Executive Officer
California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700

Dear Mr. Gibson:

The County of San Diego (County) received Laurie Walsh's e-mail from March 20, 2020, regarding the State and Regional Water Boards' official statement on compliance with Water Board requirements during efforts to respond to the COVID-19 public health emergency. We appreciate the Water Boards' consideration of impacts caused by COVID-19 on permittees' ability to comply with the Municipal Stormwater Permit (Permit) and other Water Board directives. This letter describes COVID-19 related impacts experienced by the County to date and requests some limited regulatory relief. Thankfully, as of this writing, County staff responsible for stormwater compliance functions have not been directly affected by the virus or reassigned to perform other critical emergency duties, but most staff began working remotely starting March 18, 2020. As you know, the COVID-19 pandemic is highly dynamic and daily adjustments will be necessary as the situation evolves. The County is committed to communicating openly and transparently with the Water Board as new impacts emerge over the coming weeks and months.

Public Education and Outreach

Current directives from the County Public Health Officer prohibit gatherings of any kind. As a result, beginning in mid-March 2020, the County began to cancel all in-person community, industry, and school outreach events as well as community cleanups. While we will continue to disseminate public outreach messages where possible via websites, e-mail, social media, and other remote means, the Public Health Officer's directives significantly affect our ability to comply with Permit provisions E.7.a.3 and E.7.b.3. We are exploring ways to partner with other County departments, permittees, and regional stakeholders to make additional stormwater educational materials and videos available through existing on-line platforms that reach the target audiences referenced in the above Permit sections.

Mr. Gibson
March 27, 2020

Water Quality Monitoring

Although the County and its consultants continue to carry out required water quality monitoring, the COVID-19 emergency has impacted the means and cost of compliance. For example, water quality sampling that was previously conducted by two-person teams traveling in a single vehicle has now transitioned to two staff traveling in two separate vehicles. Having two staff in the field together is often necessary to ensure safety during sampling activities or to comply with required monitoring protocol (i.e., clean hands/dirty hands techniques for HF 183 sampling). To date, water quality laboratories that the County utilizes to support Permit compliance remain open for business. However, this could change at a moment's notice as the COVID-19 emergency evolves.

Compliance Inspection, Correction of Violations, and Escalated Enforcement

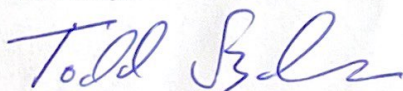
The County continues to conduct stormwater compliance inspections and respond to public complaints as required by the Permit. Some inspection processes remain virtually unchanged, such as those related to construction sites, other than incorporating measures to ensure adherence to social distancing guidelines. Other inspection processes have been modified to account for the special circumstances presented by the COVID-19 emergency. For example, as allowed in Permit section E.5.c.(1)(a), the County and its consultants are emphasizing drive-by inspections of industrial and commercial businesses, residential areas, and Structural BMPs where possible. Where in-person, on-site inspections are required, they are being performed only when appropriate social distancing can be assured.

Permit section E.6.c.(2) requires permittees to provide the Water Board with rationale when a return to compliance is not possible within 30 calendar days. Given the profound economic and health impacts faced by local businesses and community members during the COVID-19 emergency, it may become more common that return-to-compliance will require more than 30 calendar days. Every situation is unique, but we ask the Water Board to consider COVID-19 impacts as a reasonable rationale under this Permit requirement.

Permit section E.6.d. details the Water Board's expectations for carrying out escalated enforcement procedures to address Permit violations and other instances of non-compliance among the businesses and community members we regulate. During these very difficult times for our community, we ask you to consider temporarily suspending or amending the Permit's escalated enforcement provisions. Notably, the U.S EPA recently announced an [Enforcement Discretion Policy for COVID-19](#) which appears to support this approach. While the County intends to continue to ensure compliance wherever possible, we feel it is appropriate under the current circumstances to suspend punitive enforcement for all but the most egregious violations, such as those with the potential to significantly endanger human or environmental health.

Thank you for your consideration. The County remains committed to protecting water quality during this public health crisis and we will seek creative ways to comply with the Permit whenever possible. I can be reached at (619) 955-0403 or todd.snyder@sdcounty.ca.gov for questions.

Sincerely,



TODD SNYDER, Manager
Watershed Protection Program

San Diego Regional Water Quality Control Board

May 12, 2020

Sent by Email Only

Todd Snyder
Watershed Protection Program
County of San Diego
5510 Overland Avenue, Suite 410
San Diego, CA 92123
todd.snyder@sdcounty.ca.gov

In reply refer to/attn:
255223:HYu

Subject: Request for Compliance Relief due to COVID-19 Emergency, National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, Order No. R9-2013-0001, as Amended, NDPEs No. CAS0109266 (Order)

Mr. Snyder:

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) received a letter dated March 27, 2020, from the County of San Diego (County) regarding compliance with requirements of the Order during the COVID-19 emergency, including the obligation to comply with the County Public Health Officer's directives. The County's letter addresses actual or potential noncompliance with requirements of the Order that could occur as a result of COVID-19 and requests relief from specific requirements as follows:

1. **Public Education.** The public education program implemented within the County's jurisdiction must include pollutant control education and training measures for target audiences determined and prioritized by the County based on high risk behaviors and pollutants of concern as required by provision E.7.a.(3) of the Order. The County reports that these requirements cannot be timely met due to the cancelation of all in-person community, industry, and school outreach events in response to the COVID-19 emergency and the County Public Health Officer's directives.
2. **Public Participation.** The public participation program implemented within the County's jurisdiction must include opportunities for members of the public to participate in programs and/or activities that can result in the prevention or elimination of the discharge of pollutants into and from the MS4 as required under provision E.7.b.(3) of the Order. The County reports that current directives from the County Public Health Officer prohibit gatherings of any kind and all in-person

community, industry, and school outreach events, as well as community cleanups, have been canceled.

3. **Water Quality Monitoring.** The County reports that social distancing restrictions imposed to limit the spread of COVID-19 have impacted the means and cost of compliance with water quality monitoring required under provision II.D of the Order. The County cited an example of this where water quality sampling that was previously conducted by two-person teams traveling in a single vehicle has now transitioned to two staff traveling in separate vehicles. The County continues to conduct monitoring since the laboratories remain open and available to produce timely sample results and consultants continue to provide services. However, the County maintains that the availability of laboratory services relied upon for water quality monitoring could be subject to interruption as the COVID-19 emergency evolves and lead to noncompliance with monitoring requirements.
4. **Existing Development Inspections.** Inspections of inventoried existing development sites are required under provision E.5.c. of the Order to ensure compliance with applicable local ordinances and permits, and the requirements of the Order. The County reports it is continuing to conduct storm water compliance inspections and respond to public complaints as required by provision E.5.c.(1)(a) of the Order. The County is using drive-by inspections of industrial and commercial businesses, residential areas, and structural BMPs where possible and conducting in-person on-site inspections only when necessary and when social distancing can be assured. Relief from the requirements described in provision E.5.c of the Order is requested for inspection sites where conformance with current governmental social distancing directives and guidelines related to COVID-19 cannot be assured.
5. **Correction to Violations.** Provision E.6.c.(1) of the Order provides that the County must enforce its legal authority to hold dischargers to its MS4 accountable for correcting any violation(s) in a timely manner with the goal of correcting the violation(s) within 30 calendar days. Provision E.6.c.(2) of the Order requires the County to provide the San Diego Water Board with written supporting rationale when a return to compliance for a discharger is not possible within 30 calendar days. The County reports that it may become more common that a return-to-compliance will require more than 30-days and asks the San Diego Water Board to consider COVID-19 impacts as a reasonable supporting rationale under provision E.6.c.(2) of the Order.
6. **Escalated Enforcement.** Provision E.6.d.(1) of the Order requires that the County include escalated enforcement in any enforcement scenario where a violation or other non-compliance is determined to cause or contribute to the highest priority water quality conditions identified in the Water Quality Improvement Plan. Provisions E.6.d.(1) and (3) require the County to carry out escalated enforcement procedures to address violations and other instances of non-compliance by dischargers to its MS4. The County intends to continue to ensure compliance where possible but requests temporary suspension or amendment of the escalated enforcement

requirements of provision E.6.d. for all but the most egregious violations during the COVID-19 emergency.

Determinations on the Compliance Date Extension Requests

The San Diego Water Board continues to closely monitor the COVID-19 situation with a focus on protection of public health, safety, and the environment and continuity of timely compliance by the regulated community with all Water Board orders and other requirements is among the highest priorities. The San Diego Water Board recognizes the challenges posed by COVID-19, values the safety of the regulated community and the public, and does not want to put anyone at risk for contracting COVID-19. The San Diego Water Board has evaluated the County's requests in accordance with these principles and the recently issued State Water Resources Control Board (State Water Board) guidance regarding permit compliance obligations in light of COVID-19.

Under the current circumstances and based on the limited information provided by the County in the March 27, 2020 letter, the San Diego Water Board has made the following determinations regarding the requests for compliance relief due to the COVID-19 emergency:

1. **Public Education and Public Participation.** Public education and public participation requirements of provision E.7 of the Order pertaining to in-person activities that are incompatible with current directives of Governor Newsom's Executive Order N-33-20 or the County Public Health Officer related to COVID-19 are suspended. This suspension of public education and outreach requirements in provision E.7 for incompatible in-person activities is effective immediately and is only in effect until the County is notified by the San Diego Water Board to resume all public education and participation activities in accordance with the requirements of the Order. The County is expected to continue to disseminate public education messages via websites, e-mail, social media, and other remote means, as appropriate under the requirements of provision E.7 of the Order and compatible with governmental directives related to COVID-19.
2. **Water Quality Monitoring.** Relief from specific water quality monitoring requirements in provision II.D of the Order was not requested by the County. The County must continue water quality monitoring in accordance with the specified due dates required in provision II.D of the Order. Failure to comply with the specified monitoring requirements and due dates of the Order may subject the County to enforcement actions by the San Diego Water Board including imposition of administrative civil liability of up to \$10,000 per day per violation, referral to the State Attorney General for injunctive relief, or any other enforcement action authorized by law. The County may renew the request for relief from water quality monitoring requirements if circumstances change regarding the availability of key staff and contractors or the ability of laboratories to timely analyze samples and provide results.
3. **Existing Development Inspections.** Requirements to conduct in-person on-site inspections of inventoried existing development sites described in provision E.5.c of

the Order are suspended for sites where the inspections cannot be conducted in conformance with current governmental social distancing directives and guidelines related to COVID-19. This suspension is effective immediately and is only in effect until the County is notified by the San Diego Water Board to resume all in-person on-site inspections activities in accordance with the requirements of the Order. The County shall continue to conduct inspections of such sites using drive-by inspection methods to verify best management practices (BMP) implementation where possible and feasible.

4. **Correction to Violations.** The San Diego Water Board will consider circumstances, including the COVID-19 emergency, in determining whether an enforcement response by the County taking more than 30 days to compel compliance is appropriate under the requirements of provision E.6.c.(2) of the Order. The County shall record detailed supporting rationale identifying how COVID-19 was the cause of the delay in enforcement, and the decisions and actions taken in response, including best efforts and steps taken to compel compliance at the earliest opportunity. The County is expected to document and maintain records of the enforcement determinations on a case-by case basis in the applicable electronic database or tabular system used to track violations and corrective actions as required under provision E.6.c.(2) of the Order. The County is also expected to report any instances of enforcement discretion, exercised in response to COVID-19 under provision E.6.c of the Order, in the 2019/2020 Annual Jurisdictional Runoff Management Report due January 31, 2021.
5. **Escalated Enforcement.** The San Diego Water Board denies the County's request for temporary suspension or amendment of the escalated enforcement requirements in provision E.6.d. of the Order to limit its applicability to only the most egregious violations. The Order already provides flexibility for the County to exercise enforcement discretion. For example, provision E.6.d.(2) of the Order allows the County to provide rationale documenting circumstances; this could include citing circumstances such as specifically how COVID-19 was the cause of the noncompliance or an underlying factor in a decision to not escalate enforcement. As required under provision E.6.d.(2) of the Order, the County is expected to document and maintain records of its determinations not to escalate enforcement actions on a case-by-case basis in the applicable electronic database or tabular system used to track violations. The County is also expected to report any instances of enforcement discretion, exercised under provision E.6.d of the Order, in the 2019/2020 Annual Jurisdictional Runoff Management Report due January 31, 2021.

Except as otherwise stipulated in the San Diego Water Board determinations above, all the requirements of the Order remain in full force and effect. In the event that circumstances change that allow for the County to resume required activities in compliance with the Order prior to notification by the San Diego Water Board that the suspension of requirements cited above is terminated, then the County must notify the Board immediately of the change in circumstances and comply with the Order as soon as possible.

The San Diego Water Board appreciates your assistance and efforts to continue the important work to protect human health and the environment, while ensuring the safety of your employees and the community we seek to protect. Additional information is available at the State Water Board's website (https://www.waterboards.ca.gov/resources/covid-19_updates).

In the subject line of any response please include the reference number 255223:HYu. If you have any questions or concerns, please feel free to reach out to Helen Yu at Helen.Yu@waterboards.ca.gov.

Respectfully,

David W. Gibson
Digitally signed by
David W. Gibson
Date: 2020.05.12
16:15:38 -07'00'

David W. Gibson
Executive Officer

- cc: Helen Yu, San Diego Water Board, Helen.Yu@waterboards.ca.gov
Laurie Walsh, San Diego Water Board, Laurie.Walsh@waterboards.ca.gov
Chiara Clemente, San Diego Water Board, Chiara.Clemente@waterboards.ca.gov
David Barker, San Diego Water Board, David.Barker@waterboards.ca.gov
Catherine Hagan, State Water Board, Catherine.Hagan@waterboards.ca.gov
Vincent Vu, State Water Board, Vincent.Vu@waterboards.ca.gov
David Boyers, State Water Board, David.Boyers@waterboards.ca.gov

Tech Staff Info & Use	
Order No.	R9-2013-0001, as amended
Party ID	39607
WDID	9 37M1000319 - 488806
NPDES No.	CA0109266
Reg. Measure ID	387335 (Regional MS4 Permit)
Place ID (PIN)	255223

**Santa Margarita River Watershed Management Area
2019-2020 Water Quality Improvement Plan
Annual Report
January 2021**

**APPENDIX 3
Water Quality Improvement Plan Numeric Goals**

APPENDIX 3 WATER QUALITY IMPROVEMENT PLAN NUMERIC GOALS

The numeric goals for the Santa Margarita River (SMR) Watershed Management Area (WMA) are designed to address the eutrophication highest priority water quality condition (HPWQC), which includes two components: eutrophication impacts (elevated algal biomass) and nutrient loading to waterbodies with an adopted Total Maximum Daily Load (TMDL) or listed as impaired. The nutrient loading component includes dry weather nutrient loading from both the Middle and Lower SMR Subwatersheds to address the TMDL alternative for the SMR Estuary, and dry and wet weather nutrient loading to Rainbow Creek to address the Rainbow Creek Nutrient TMDL.

In the Middle SMR Subwatershed, goals that address both eutrophication in Warm Springs and Redhawk Channel and nutrient loading to the SMR Estuary have been identified. Goals were also developed for the Lower SMR Subwatershed to address eutrophic conditions in the SMR Estuary. The County of San Diego also developed goals to address nutrient loading in the Rainbow Creek subarea.

The interim and final numeric goals for the SMR WMA and the pathways that may be used to demonstrate compliance are provided in **Table A3-1** through **Table A3-3**. These tables show the goals outlined in the Water Quality Improvement Plan (WQIP), and incorporate changes proposed in previous WQIP annual reports that have been accepted per Permit Provision F.2.c.(1)(c). Since each compliance pathway provides an independent option to demonstrate progress and ultimately compliance, any one of the compliance pathways may be used for assessment purposes. These tables, along with additional details regarding these pathways, can be found in Section 4 of the WQIP. Some updates to these tables have been proposed in the WQIP Update (**Attachment 5B to Appendix 5**) and are not reflected herein. Updates will be applied to this appendix for future annual reports after they have been accepted.

Table A3-1. Pathways to Achieve Interim and Final Numeric Goals – Eutrophication Impacts and Nutrient Loading, Middle Santa Margarita River Subwatershed Agencies

Pathway	Interim Goal (2023)	Interim Goal (2028)	Interim Goal (2033)	Interim Goal (2038) ⁶	Metric
1 ¹ OR	10% reduction in dry weather ² loadings in receiving waters: TN 993 lb/yr TP 99 lb/yr	30% reduction in dry weather loadings in receiving waters: TN 2,980 lb/yr TP 300 lb/yr	50% reduction in dry weather loadings in receiving waters: TN 4,970 lb/yr TP 495 lb/yr	76% reduction in dry weather loadings in receiving waters: TN 7,550 lb/yr TP 752 lb/yr	Assessment of loadings in the Santa Margarita River (receiving water) at the base of the Middle SMR Subwatershed
2 OR	Numeric interim and final goals to be determined based on outcome of TMDL Alternative for the Santa Margarita River Estuary				Assessment of receiving water conditions in the Santa Margarita River Estuary
3 OR	10% reduction in non-stormwater flows within agency control ³	30% reduction in non-stormwater flows within agency control ³	50% reduction in non-stormwater flows within agency control ³	100% reduction in non-stormwater flows within agency control ³	Assessment of load reductions from implementation actions (based on outfall monitoring or other assessment metrics)
4 ^{4,5} OR	10% reduction in dry weather loadings from Copermittees. As a Total: TN 993 lb/yr TP 99 lb/yr OR by jurisdiction: City of Wildomar: TN 79, TP 8 City of Murrieta: TN 224, TP 22 City of Temecula: TN 395, TP 39 Riverside County: TN 286, TP 28	30% reduction in dry weather loadings from Copermittees: As a Total: TN 2,980 lb/yr TP 300 lb/yr OR by jurisdiction: City of Wildomar: TN 237, TP 24 City of Murrieta: TN 673, TP 67 City of Temecula: TN 1,186, TP 118 Riverside County: TN 858, TP 85	50% reduction in dry weather loadings from Copermittees: As a Total: TN 4,970 lb/yr TP 495 lb/yr OR by jurisdiction: City of Wildomar: TN 396, TP 39 City of Murrieta: TN 1,122, TP 112 City of Temecula: TN 1,977, TP 197 Riverside County: TN 1,430, TP 142	76% reduction in dry weather loadings from Copermittees: As a Total: TN 7,550 lb/yr TP 752 lb/yr OR by jurisdiction: City of Wildomar: TN 601, TP 60 City of Murrieta: TN 1,705, TP 170 City of Temecula: TN 3,005, TP 300 Riverside County: TN 2,174, TP 217	Assessment of load reductions from implementation actions (based on outfall monitoring or other assessment metrics)
5 OR	Assess progress toward achieving final goal (using other pathways).			Where final goals have not been met, demonstrate that exceedances of targets are due to source(s) of nutrients outside of the control of the Copermittees and the City of Menifee.	Source investigations
6	The Copermittees and the City of Menifee develop and implement the jurisdictional strategies as described in the accepted Water Quality Improvement Plan.	The Copermittees and the City of Menifee assess progress towards goals, implement the JRMP or enhanced JRMP strategies as triggered using an iterative approach as described in the accepted Water Quality Improvement Plan.	The Copermittees and the City of Menifee assess progress towards goals, implement the JRMP, enhanced JRMP strategies, or optional jurisdictional strategies, as triggered using an iterative approach as described in the accepted Water Quality Improvement Plan.	The Copermittees and the City of Menifee assess progress towards goals, implement the JRMP, enhanced JRMP strategies, optional jurisdictional strategies, or optional WMA strategies, as triggered through an iterative approach as described in the accepted Water Quality Improvement Plan.	Implementation of JRMP, enhanced JRMP strategies, optional jurisdictional strategies, or optional WMA strategies, as triggered through an iterative, adaptive management approach.

1. Load reductions at the base of the Middle SMR Subwatershed will be measured against the baseline loads for Riverside County. Source: Tetra Tech. SMR Estuary MS4 Nutrient Loads for WY 2008. Memorandum to Jo Ann Weber, Kyle Cook, Kyle Gallup, and Stuart McKibbin, January 6, 2017. Baseline loads are 60,796 lb/yr for Total Nitrogen and 6,004 lb/yr for Total Phosphorus.

2. Dry weather conditions are defined as those that occur on non-storm days, with storm days being defined as all days with measured precipitation greater than 0.1 inch and the 72 hours following the measured precipitation, and include both summer and winter dry periods.

3. Within agency control means, consistent with the scope of the Permit, that conditions are within the regulatory authority of the Copermittee or the City of Menifee and can feasibly be addressed or treated at the point of entry, within, or at the outlets from the MS4. This requires the availability of feasible options for treating the condition. Flows/conditions determined to be uncontrollable would not be included in the calculations related to this goal.

4. Load reductions for the Riverside County Copermittees will be measured based on the baseline loads presented in the Tetra Tech memorandum: 9,933 lb/yr for Total Nitrogen and 990 lb/yr for Total Phosphorus. Jurisdictional load reductions for the jurisdictions provided in the Tetra Tech memo are shown in the table.

5. As described in Section 1, Menifee is participating in the development and implementation of this WQIP as required by the Regional Water Board Designation Letter dated October 26, 2015. Based on Menifee's land area in the Santa Margarita watershed, for the purpose of WQIP development and implementation, Menifee is determined by the San Diego Water Board to be a less than significant contributor of nitrogen, phosphorus and other pollutants within the Santa Margarita River Watershed Management Area. There are currently no numeric nutrient load goals for Menifee since no nutrient load values for the small portion of Menifee within the Santa Margarita watershed were included in the Tetra Tech study or any other currently published study, and any nutrient loading from within the City of Menifee to the Santa Margarita River Watershed is considered to be less than significant. Until the Santa Margarita Estuary TMDL stakeholders and the San Diego Water Board determine the final load allocation regarding Menifee, if such an allocation is needed, Menifee will implement appropriate LIP strategies to address the HPWQC in the WMA and meet the WQIP goals and schedules. Furthermore, while Menifee has limited MS4 conveyance structures in the SMR WMA, there are currently no MS4 outfalls located within the portion of Menifee in the Santa Margarita watershed. Therefore, achievement of goals will be demonstrated through pathways other than pathway 4.

6. The final goals and schedules are preliminary and will be updated through the adaptive management process when the TMDL Alternative becomes effective.

Table A3-2. Pathways to Achieve Interim and Final Numeric Goals – Eutrophication Impacts and Nutrient Loading, Lower Santa Margarita River Subwatershed – County of San Diego

Goal ¹	Baseline	FY 2018-2023	1 st Permit Term (FY 2023)	2 nd Permit Term (FY 2028)	3 rd Permit Term (FY 2033)	4 th Permit Term (FY 2038)
Effectively eliminate anthropogenic dry weather discharges from MS4 outfalls to the receiving water OR	To be established during 2019-2020 using dry weather ² flow measurements ³	Complete turf replacement in Rainbow Park.	Reduce the baseline aggregate flow volume by 25%.	Reduce the baseline aggregate flow volume by 50%.	Reduce the baseline aggregate flow volume by 75%.	Reduce the baseline aggregate flow volume by 100%.
Comply with the TMDL Alternative	Demonstrate that the Santa Margarita River Estuary targets have been attained. Primary and secondary numeric targets for algal biomass are proposed. If monitoring data confirm that the SMR Estuary is meeting the primary target of algal biomass of 57 g d-wt/m ² , this result indicates that the beneficial uses are protected. If monitoring data confirm that the SMR Estuary is meeting an algal biomass between 57 and 70 g d-wt/m ² , the Sediment Quality Objective (SQO) tool for benthic community structure will be used to assess whether beneficial uses are protected. The watershed load reduction goal to meet the numeric targets is 76%. OR					
	Demonstrate that the discharger is attaining the nutrient load reduction goal of 76%. OR					
	Demonstrate that the discharger is attaining the load allocations defined in the TMDL Alternative for the SMR Estuary. OR					
	Demonstrate that exceedances of the targets are due to non-controllable sources. OR					
	Demonstrate that management actions to attain allocations are being implemented through mechanisms defined in each applicable Order. ⁴					

1. These goals are placeholders and may be updated on the basis of the final implementation requirements for the Santa Margarita River Estuary TMDL Alternative.

2. Dry weather conditions are defined as those that occur on non-storm days, with storm days being defined as all days with measured precipitation greater than 0.1 inch and the 72 hours following the measured precipitation, and include both summer and winter dry periods.

3. The WQIP originally proposed setting the baseline during 2016-2017. Because the WQIP was not accepted until late 2018, the County of San Diego now plans to establish the baseline in 2019-2020 based on data collected under the accepted WQIP.

4. Mechanisms for implementing management actions include, but are not limited to, Phase I MS4 Water Quality Improvement Plans, Agricultural Discharger Water Quality Restoration Program Plans, Phase II MS4 permit program elements, and Caltrans compliance units, cooperative implementation grants and cooperative implementation agreements.

Table A3-3. Pathways to Achieve Final Numeric Goals – Nutrients in Rainbow Creek – County of San Diego

Compliance Pathway		Numeric Goal (December 31, 2021)
Implement Accepted Water Quality Improvement Plan OR		Implementation of a Water Quality Improvement Plan that incorporates the required BMPs includes an analysis utilizing a watershed model or other watershed analytical tool to demonstrate that the implementation of the required BMPs achieves compliance; the results of the analysis are accepted by the Regional Water Board as part of the Water Quality Improvement Plan; the responsible Copermitees continue to implement the required BMPs and the responsible Copermitees continue to perform the specific monitoring and assessments to demonstrate compliance.
Receiving Water Meet Receiving Water Limitations OR	Nitrate (as N) Total Nitrogen Total Phosphorus	10 mg/L 1.0 mg/L 0.1 mg/L
MS4 Discharges Meet Final Effluent Limitations expressed as concentrations in the storm drain discharge OR	Nitrate (as N) Total Nitrogen Total Phosphorus	10 mg/L 2.0 mg/L 0.1 mg/L
No Direct or Indirect Storm Drain Discharges to Receiving Water OR	Discharges	A 100% reduction in anthropogenic discharges from storm drain outfalls to Rainbow Creek.
Final Effluent Limitations Expressed as Annual Allowable Loads ¹	Total Nitrogen	Commercial Nurseries Parks Residential Areas Urban Areas 116 kg per year (kg/yr) 3 kg/yr 149 kg/yr 27 kg/yr
	Total Phosphorus	Commercial Nurseries Parks Residential Areas Urban Areas 3 kg/yr 0.10 kg/yr 12 kg/yr 6 kg/yr

1. Changes to the land-use based final effluent limitations were proposed in the 2018-2019 WQIP Annual Report. However, those changes have since been reversed after discussions with the San Diego Water Board. They are instead proposed to be incorporated into the final effluent limitations presented in Compliance Pathway 1; see the WQIP Update (**Appendix 5, Attachment 5B**) for details.

**Santa Margarita River Watershed Management Area
2019-2020 Water Quality Improvement Plan
Annual Report
January 2021**

**APPENDIX 4
Monitoring and Assessment**

APPENDIX 4 MONITORING AND ASSESSMENT RESULTS

TABLE OF CONTENTS

Section	Page
APPENDIX 4	MONITORING AND ASSESSMENT RESULTS.....4-1
4.1	Annual Report Review Letters4-2
4.2	Volume and Load Assessment Changes for the 2019-2020 and 2020-2021 WQIP Annual Reports.....4-4
4.3	Precipitation.....4-4
4.4	Receiving Water Monitoring.....4-5
4.4.1	Long-Term Receiving Water Monitoring4-8
4.4.2	Stream Bioassessment Monitoring4-24
4.4.3	Total Maximum Daily Load Monitoring.....4-34
4.4.4	Hydromodification Monitoring at the Long-Term Receiving Water Station.....4-37
4.4.5	Receiving Water Monitoring Assessments4-40
4.5	MS4 Outfall Monitoring.....4-40
4.5.1	Dry Weather Field Screening and Outfall Prioritization4-41
4.5.2	Highest Priority Dry Weather MS4 Outfall Discharge Monitoring4-48
4.5.3	Dry Weather MS4 Outfall Monitoring Data Assessments4-59
4.5.4	Illicit Discharge Detection and Elimination Program Data and Assessment4-68
4.5.5	Wet Weather MS4 Outfall Monitoring.....4-78
4.5.6	Wet Weather MS4 Outfall Monitoring Data Assessments.....4-83
4.6	Special Studies.....4-93
4.6.1	Dry Weather MS4 Monitoring – Rainbow Creek Nutrient TMDL.....4-93
4.6.2	Rainbow Creek HF183 Monitoring.....4-96
4.6.3	County of San Diego HF183 Follow-up Monitoring at MS4-SMG-0954-98
4.6.4	Rainbow Creek Wet Weather Pre-BMP Monitoring.....4-99
4.6.5	Dry Weather MS4 Outfall Flow Source Assessment Study.....4-103
4.6.6	Dry Weather Low-Flow Monitoring Equipment Testing and Uncertainty Estimation4-104
4.6.7	Post-Fire Stormwater Monitoring Study – 2019 Tenaja Fire.....4-104
4.6.8	Santa Margarita River Nutrient Initiative Group.....4-107
4.6.9	Participation in SMC California LID Evaluation and Analysis Network (SMC CLEAN) Project4-108
4.7	Additional Special Study Results and Assessments4-109
4.7.1	Participation in the Southern California Stormwater Monitoring Coalition's California LID Evaluation and Analysis Network (SMC CLEAN) Project4-109
4.8	California Environmental Data Exchange Network Data Upload and Retrieval ...4-120

LIST OF FIGURES

Title	Page
Figure A4-1. Rainfall Amounts for Fiscal Year 2019-2020 and Three Previous Years at County Rain Gauge Stations	4-5
Figure A4-2. Long-Term Receiving Water Stations in the SMR WMA	4-7
Figure A4-3. Trend Plot for Nutrients for Wet Weather Results at SMR-MLS-2	4-18
Figure A4-4. Trend Plot for Total Coliform for Dry Weather Results at SMR-MLS-2	4-23
Figure A4-5. 2020 SMC Regional Monitoring Program Bioassessment Monitoring Locations	4-27
Figure A4-6. Rainbow Creek Nutrient TMDL Compliance Monitoring Locations.....	4-35
Figure A4-7. Hydromodification Monitoring Reach Locations at SMR-MLS-2.....	4-38
Figure A4-8. Dry Weather Field Screening Flow Observations at Major MS4 Outfall Stations ...	4-44
Figure A4-9. Flow Rate Estimations Based on Visual Observations at Major MS4 Outfalls	4-45
Figure A4-10. Dry Weather Flow Determinations for Major MS4 Outfalls.....	4-47
Figure A4-11. 2019-2020 Highest Priority Outfall Discharge Monitoring Locations	4-52
Figure A4-12. Field Screening and IDDE Investigation Flow Chart (Page 1)	4-62
Figure A4-13. Known and Suspected Flow Sources Recorded During Field Screening and additional IDDE Investigations	4-70
Figure A4-14. Priority Major MS4 Outfalls and Drainage Areas within the SMR WMA (Fallbrook)	4-77
Figure A4-15. 2019-2020 Wet Weather MS4 Outfall Monitoring Locations and Drainage Areas.....	4-80
Figure A4-16. Rainbow Creek Watershed Dry Weather MS4 Outfall Monitoring Locations	4-94
Figure A4-17. Event Rainfall Murrieta Creek at Tenaja Road	4-106
Figure A4-18. Photographs of the LID BMP Testing and Demonstration Facility	4-110
Figure A4-19. Planter Box – Before and After	4-113
Figure A4-20. Nutrient Reduction Potential	4-115
Figure A4-21. Nutrient Reduction – Planter Box Pre-and-Post Raised Outlet	4-117
Figure A4-22. Nutrient Reduction – Bioretention Basin Pre-and-post Retrofit.....	4-118
Figure A4-23. CASQA 2019 Award – Outstanding Stormwater BMP Implementation Project..	4-119
Figure A4-24. Bioretention Basin – Before and After	4-119

LIST OF TABLES

Title	Page
Table A4-1. HPWQCs and PWQCs	4-1
Table A4-2. Monitoring Program Percent Completeness for Sample Collection	4-3
Table A4-3. Long-Term Receiving Water Stations in the Santa Margarita River WMA.....	4-6
Table A4-4. 2019-2020 Rainfall and Runoff Statistics for Long-Term Monitoring Storm Events	4-9
Table A4-5. 2019-2020 Wet Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Long-Term Receiving Water Station SMR-MLS-2.....	4-11
Table A4-6. 2019-2020 Wet Weather Receiving Water Monitoring Results for Middle SMR Subwatershed Long-Term Receiving Water Station 902USM828	4-14
Table A4-7. Wet Weather Receiving Water Trend Results for SMR-MLS-2	4-18
Table A4-8. 2019-2020 Long-Term Dry Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Station SMR-MLS-2	4-20
Table A4-9. Long-Term Dry Weather Receiving Water Trend Results for SMR-MLS-2	4-23
Table A4-10. 2020 NPDES Bioassessment Monitoring Location	4-25
Table A4-11. 2020 SMC Bioassessment Monitoring Locations.....	4-25
Table A4-12. 2020 CSCI, CRAM, and Algal IBI Scores for Bioassessment Monitoring at SMR-MLS-2.....	4-26
Table A4-13. 2020 CSCI, CRAM, and Algal IBI Scores for SMC Bioassessment Monitoring.....	4-31
Table A4-14. 2020 SMC Regional Monitoring Program Chemistry Results	4-32
Table A4-15. Rainbow Creek Nutrient TMDL Monitoring Trend Analysis Results.....	4-37
Table A4-16. Hydromodification Monitoring Summary	4-39
Table A4-17. Number of Major MS4 Outfalls for Monitoring per Copermittee	4-41
Table A4-18. Number of Visual Observations Conducted During the 2019-2020 Monitoring Year at Major MS4 Outfalls	4-42
Table A4-19. Dry Weather Field Screening Trash Assessments	4-43
Table A4-20. 2019-2020 Dry Weather Flow Determinations for Major MS4 Outfalls.....	4-46
Table A4-21. Highest Priority Outfalls during the 2019-2020 Monitoring Year.....	4-50
Table A4-22. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – Riverside County Copermittees	4-55
Table A4-23. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – County of San Diego	4-57
Table A4-24. Dry Weather MS4 Outfall Monitoring Assessments	4-59
Table A4-25. 2018-2019 Annual Non-stormwater Flow Estimates for Highest Priority Outfalls	4-67
Table A4-26. Known and Suspected Sources of Persistent and Transient Flows in the SMR WMA.....	4-70
Table A4-27. Highest Priority Persistent Outfall Source Elimination	4-72
Table A4-28. Mean Flow Rates (gallons/day) at Priority Outfalls in the Santa Margarita WMA (2020)	4-76
Table A4-29. Wet Weather MS4 Outfall Monitoring Stations	4-78
Table A4-30. 2019-2020 Rainfall Statistics for Wet Weather MS4 Outfall Monitoring Events	4-79
Table A4-31. 2019-2020 Wet Weather MS4 Outfall Monitoring Analytical Results	4-81
Table A4-32. Wet Weather MS4 Outfall Monitoring Assessments.....	4-83

LIST OF TABLES (CONTINUED)

Title	Page
Table A4-33. 2019-2020 Wet Weather MS4 Outfall Discharge Pollutant Loads for Monitored Event.....	4-86
Table A4-34. 2019-2020 Annual Wet Weather MS4 Outfall Discharge Pollutant Loads.....	4-89
Table A4-35. Statistically Significant Trends for Wet Weather Storm Drain Outfall Discharges	4-93
Table A4-36. Sample Results at Rainbow Creek MS4 Locations for Total Phosphorus and Total Nitrogen	4-95
Table A4-37. Pre-BMP Monitoring Locations in the Rainbow Creek Watershed.....	4-100
Table A4-38. Rainbow Creek BMP Pre-Monitoring Results – Composite Samples.....	4-101
Table A4-39. Rainbow Creek BMP Pre-Monitoring Locations – Grab Samples	4-102
Table A4-40. Pollutant Loads for Monitored Event at MS4-SMG-087.....	4-103
Table A4-41. Comparison of post-fire water quality results with reference data	4-107
Table A4-42. Comparison of post-fire water quality results with historical data	4-107
Table A4-43. LID Sampled Storm Events	4-111
Table A4-44. LID Monitored Storm Events.....	4-111
Table A4-45. Analytical Constituents (2019 – 2020 Wet Season)	4-112
Table A4-46. Project Names for CEDEN Data Retrieval	4-120

LIST OF ATTACHMENTS

Provided Separately

Attachment 4A – 2019-2020 NPDES LTRW Station Monitoring Data

Attachment 4A-1 LTRW Station Hydrographs and Flow Data

Attachment 4A-2 LTRW Station Load Tables

Attachment 4A-3 LTRW Station Trends (SMR-MLS-2 only)

Attachment 4A-4 LTRW Station Hydromodification Data (SMR-MLS-2 only)

Attachment 4A-5 LTRW Station QA/QC Reports

Attachment 4B – Bioassessment Monitoring Data

Attachment 4B-1 Riverside County Copermittees Bioassessment Report

o Appendix A – Field and Laboratory Data Sheets

o Appendix B – Detailed Data Tables

▪ B-1.0 Taxonomic Listing of Benthic Macroinvertebrates

▪ B-2.0 Ranked Abundance of Benthic Macroinvertebrates

▪ B-3.0 Selected Benthic Macroinvertebrates Biological Metrics

▪ B-4.0 Summary of Physical Habitat Characteristics

▪ B-5.0 Chemistry Results

▪ B-6.0 Index of Biotic Integrity Scores

▪ B-7.0 Predictive Multi-Metric Scores

▪ B-8.0 California Stream Condition Index Results

▪ B-9.0 Taxonomic Listing of Soft Algae Collected

▪ B-10.0 Taxonomic Listing of Diatoms Collected

▪ B-11.0 Individual Metric Scores

o Appendix C - QA/QC Report

Attachment 4B-2 San Diego County Bioassessment Data

o NPDES and SMC Data

▪ Taxonomic Listing of Benthic Macroinvertebrates

▪ Ranked Abundance of Benthic Macroinvertebrates

▪ CSCI Metrics

▪ CSCI Scores

▪ Physical Habitat Quality Data

▪ Water Chemistry Data (SMC)

▪ Taxonomic Listing of Diatoms and Soft Algae and Algal IBIs

Attachment 4C – Rainbow Creek Nutrient TMDL Monitoring Report

Attachment 4D – Dry Weather Field Screening Data

Attachment 4E – Dry Weather MS4 Outfall Assessment

Attachment 4F – Wet Weather MS4 Outfall Data

Attachment 4F-1 Flow Data

Attachment 4F-2 Wet Weather MS4 Outfall QA/QC Report

Attachment 4G –Wet Weather MS4 Outfall Historical Loads

Attachment 4H – Wet Weather MS4 Outfall Trend and Time-Series Plots

Attachment 4I – Special Studies

- Dry Weather MS4 Monitoring in the Rainbow Creek Watershed
- Rainbow Creek HF183 Monitoring
- Rainbow Creek Wet Weather Pre-BMP Monitoring
- HF183 Follow-up Monitoring at MS4-SMG-095
- Dry Weather MS4 Outfall Flow Source Assessment Study
- Dry Weather Low-flow Monitoring Equipment Testing and Uncertainty Estimation
- Post-fire Stormwater Monitoring Study – 2019 Tenaja Fire
- Wilson Creek LTRW Station Technical Memorandum

Attachment 4J – CEDEN Data Submittals and Receipts

Attachment 4K – Monitoring Program GIS Files

APPENDIX 4 MONITORING AND ASSESSMENT RESULTS

This appendix provides the monitoring and assessment results for the 2019-2020 reporting year for the Santa Margarita River (SMR) Watershed Management Area (WMA or Watershed). Whereas **Section 3** of the Annual Report focuses on monitoring results and implications regarding the highest priority water quality conditions (HPWQCs) identified in the [Water Quality Improvement Plan \(WQIP\)](#) for the WMA (i.e., eutrophication and nutrient loading), this appendix presents all of the receiving water and municipal separate storm sewer system (MS4) outfall monitoring data collected during 2019-2020, including monitoring and assessment results for priority water quality conditions (PWQCs). The HPWQCs and PWQCs for the watershed and their geographic extents are listed in **Table A4-1**. Throughout the results presentation, results related to HPWQC and PWQC constituents are noted as a general reference. The specific geographic area of the PWQC is not evaluated in terms of the results.

Table A4-1. HPWQCs and PWQCs

Beneficial Use Category	Water Quality Condition	Wet	Dry	Geographic Area
Highest Priority Water Quality Conditions				
Aquatic Life: Eutrophication	Eutrophication Impacts (elevated algal biomass)		✓	SMR Estuary, ¹ Warm Springs, Redhawk Channel ²
	Nutrient loading to waterbodies with an adopted TMDL or listed as impaired	✓		Rainbow Creek
			✓	All Middle and Lower SMR subareas, except Fallbrook Creek and Sandia Creek ¹
Priority Water Quality Conditions				
Aquatic Life: Toxicity	Observed toxicity		✓	Temecula Creek and Redhawk Channel
		✓		Murrieta Creek and Long Canyon
Aquatic Life: Physical Habitat	Lowered physical habitat scores (CRAM) or evidence of hydromodification/erosional impacts	✓		Warm Springs, Murrieta Creek and Long Canyon
Aquatic Life Use/ Recreation – Nuisance Conditions	Trash	✓	✓	All Middle SMR subareas, Fallbrook Creek
Recreation	Indicator bacteria concentrations		✓	Temecula Creek and Redhawk Channel and De Luz Creek
		✓		Upper Murrieta Creek, Warm Springs, Murrieta Creek and Long Canyon, Santa Gertrudis Creek, Temecula Creek and Redhawk Channel

Table A4-1. HPWQCs and PWQCs

Beneficial Use Category	Water Quality Condition	Wet	Dry	Geographic Area
Municipal Supply	Constituents of potential concern for drinking water supplies (iron, manganese)		✓	Murrieta Creek and Long Canyon, Temecula Creek and Redhawk Channel, Upper Santa Margarita River, Rainbow Creek, Lower Santa Margarita River, Fallbrook Creek, De Luz Creek
		✓		All Middle SMR subareas, Rainbow Creek
Agriculture Supply	Constituents of potential concern for agriculture supply: TDS	✓		Rainbow Creek
			✓	Santa Gertrudis Creek, Murrieta Creek and Long Canyon, Temecula Creek and Redhawk Channel, Rainbow Creek, Lower Santa Margarita River, Fallbrook Creek

TMDL – total maximum daily load, CRAM – California Rapid Assessment Method, TDS – total dissolved solids

¹ MS4 discharges within the following subareas may reach the Estuary during dry weather and contribute to this HPWQC: Upper Murrieta Creek and Tributaries, Warm Springs, Santa Gertrudis, Murrieta Creek and Long Canyon, Temecula Creek and Redhawk Channel, Upper Santa Margarita River, Lower Santa Margarita River, Rainbow Creek, and De Luz Creek

² Other areas may be added as result of TMDL Alternative development during adaptive management process.

This appendix also presents watershed results for Regional monitoring programs for which participation is required, as applicable, by the [MS4 Permit](#)¹ (Permit) (San Diego Regional Water Quality Control Board [San Diego Water Board], 2013). For the 2019-2020 monitoring year, this included the Southern California Stormwater Monitoring Coalition (SMC) Regional Monitoring Program. Other Regional monitoring participation requirements of the Permit have been met during earlier monitoring years of the Permit term.

4.1 Annual Report Review Letters

The SMR WMA Copermittees² received comment letters from the San Diego Water Board on July 19, 2019, regarding their review of the 2017-2018 Annual Report³ and on September 10, 2020, regarding their review of the 2018-2019 Annual Report.⁴ The letters request responses to several items, as well as other information and Adaptive Management General Topics, by January 31, 2021 (i.e., with this WQIP Annual Report). A complete list of comments and responses for items due with this WQIP Annual Report can be found in **Appendix 5** and **Attachment 5A**. A monitoring completeness check regarding sample collection is provided in **Table A4-2** to demonstrate monitoring location numbers and frequencies were met, in response to Item 6.b in the 2019 letter. Quality Assurance (QA)/Quality

¹ Order No. R9-2013-0001, as amended by Order Nos. R9-2015-001 and R9-2015-0100. The Permit expired on June 27, 2018; the terms of the Permit are automatically extended until the new permit is issued.

² The Copermittees in the SMR WMA include the Counties of Riverside and San Diego, the Riverside County Flood Control and Water Conservation District (District), and the Cities of Murrieta, Temecula, and Wildomar.

³ *Annual Report Review for Year 2017-2018: Santa Margarita River Watershed Management Area Water Quality Improvement Plan (WQIP)*.

⁴ *2018-2019 Annual Report Review: Santa Margarita River Watershed Management Area Water Quality Improvement Plan (WQIP)*.

Control (QC) reports that further address Item 6.b are provided by monitoring element in attachments to this Appendix.

Table A4-2. Monitoring Program Percent Completeness for Sample Collection

Program		Total Samples Predicted/ Required Visits	Total Visits or Samples Collected	Percent Required	Percent Completeness ⁷
Receiving Water Monitoring	Dry	3	3	90%	100%
	QA ⁴	1	2	90%	200%
	Wet	9 ⁶	11 ⁶	90%	100%
	QA ⁴	2	2	90%	100%
Regional Monitoring - Bioassessment	Samples	4	4	90%	100%
	QA	1	2	90%	200%
Rainbow Creek TMDL	Flow Observations	132	132	100%	100%
	Samples ¹	97	97	90%	100%
Rainbow Creek MS4 ²	MS4 Outfall Inspections	252	252	100%	100%
	Samples ¹	47	47	90%	100%
Rainbow Creek Program ⁵	Field Blanks	6	6	90%	100%
	Field Duplicates	12	12	90%	100%
Field Screening (FS) and MS4 Outfall Monitoring	FS - City of Murrieta	52	71	100%	>100%
	FS - City of Temecula	191	204	100%	>100%
	FS - City of Wildomar	21	25	100%	>100%
	FS - County of Riverside	13	25	100%	>100%
	FS - District	144	174	100%	>100%
	FS - County of San Diego	23	28	100%	>100%
	Wet Weather Samples	6	6	90%	100%
	Wet Data QA ⁴	2	2	90%	100%
	HPPF Samples ^{1,3}	22	22	90%	100%
	Dry Data QA ⁴	*	1	90%	*

¹ Samples are collected when flow is present. Samples required are based on number of visits when flow is present.

² Rainbow Creek MS4 monitoring is not required by the Permit but provides data for MS4 compliance pathways.

³ 60 visits to 30 sites were completed and 22 visits were sampled. 18 sites visited by Riverside County were not sampled because they were ponded, had trickle flow insufficient for sampling, or were dry. Samples were not taken during ponded or dry conditions pursuant to Permit Provision D.2.(b)(2)(e).

⁴ QA sample accounts for one duplicate and one field blank. QA requirements are generally developed programmatically.

⁵ The Rainbow Creek TMDL and MS4 samples are combined for QA purposes. The monitoring requirement stated in the QAPP is 1/24 samples for field blanks and 1/12 samples for field duplicates.

⁶ Five storm mobilizations were made to Wilson Creek Long-Term Receiving Water (LTRW) Station. No samples were collected due to lack of flow at the monitoring station.

⁷ Completeness based upon required monitoring frequencies and includes visited not sampled (VNS) results. This assessment does not consider results of QA/QC data process. QA/QC reports are provided in Appendix 4 attachments.

*QA requirements are determined and met programmatically by the County of San Diego. QA samples were collected in other WMAs to meet overall County of San Diego dry weather monitoring program field QA/QC targets.

4.2 Volume and Load Assessment Changes for the 2019-2020 and 2020-2021 WQIP Annual Reports

The Copermittees in the region requested regulatory relief from performing some of the Permit-required assessments for the 2019-2020 monitoring year, including the non-stormwater discharge reduction assessment required by Provision D.4.b.(1)(c)(iv) and stormwater discharge reduction assessment given in D.4.b.(2)(c). Deferral of the obligation to complete these assessments was requested until after the planned reissuance of the Permit, based on the Copermittees' on-going efforts to address the San Diego Water Board's comment in the 2017-2018 WQIP Annual Report Review letter identifying "inconsistencies with the use of the Land Use Factor (C) in the calculation of pollutant loadings." In an email dated August 19, 2020, the San Diego Water Board granted relief by requiring that the Copermittees only calculate pollutant loads at the outfall level rather than using outfall data to extrapolate to the watershed scale in the 2019-2020 and 2020-2021 WQIP Annual Reports. The San Diego Water Board will continue to work with the Copermittees to reevaluate the method by which pollutant loads are calculated and assessed. In addition, the San Diego Board included a new assessment request: "for outfalls that have been monitored for two or more years, tables and figures showing changes in pollutant loads over time from the outfall should also be prepared and reported." The reduced assessments are described in **Section 4.5.3** (dry weather) and **Section 4.5.6** (wet weather). A compilation of pollutant load data for outfalls monitored during the 2019-2020 monitoring year, which have two or more years of data, is provided in **Attachment 4E** for dry weather and **Attachment 4G** for wet weather.

4.3 Precipitation

Annual rainfall totals at five County of San Diego and Riverside County precipitation gauges within the SMR WMA are shown in **Figure A4-1** for 2019-2020 and the prior three years. Annual rainfall totals were similar to 2018-2019 totals, and both the 2019-2020 and 2018-2019 totals were much higher than those from the 2017-2018 monitoring year, where totals ranged from 3.14 to 6.16 inches. Rainfall amounts can influence monitoring results in various ways including effects on outdoor water usage and interactions with groundwater, as well as pollutant loading and antecedent dry weather periods.

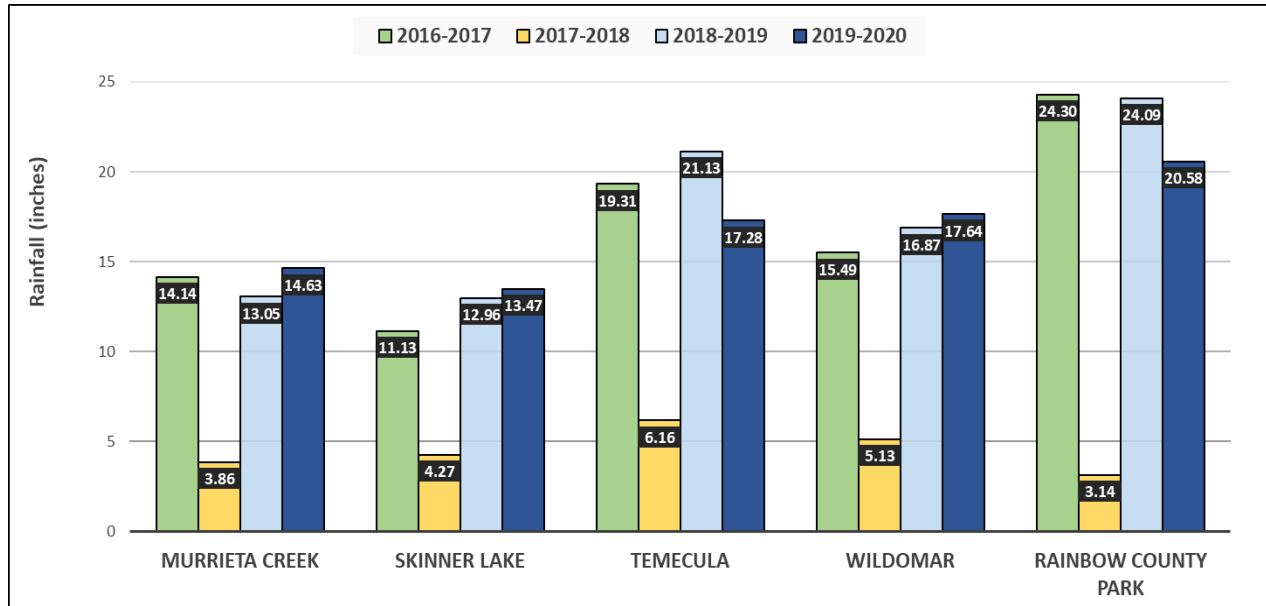


Figure A4-1. Rainfall Amounts for Fiscal Year 2019-2020 and Three Previous Years at County Rain Gauge Stations

4.4 Receiving Water Monitoring

In accordance with the WQIP Monitoring and Assessment Program (MAP), water quality monitoring at the long-term receiving water (LTRW) stations in the WMA was initiated during the 2019-2020 monitoring year (October 1, 2019 to September 30, 2020). The LTRW station in the WMA are summarized in **Table A4-3** and are shown in **Figure A4-2**. The Lower SMR Subwatershed is represented by SMR-MLS-2, the Middle SMR Subwatershed by 902USM828, and the Upper SMR Subwatershed by 902WLC650. In accordance with the schedule provided in Section 5.3.1 of the WQIP, LTRW station monitoring during the 2019-2020 monitoring year was conducted during wet weather at all three LTRW stations and during dry weather at the LTRW station representing the Lower SMR Subwatershed. Dry weather monitoring at the LTRW station representing the Middle and Upper SMR Subwatersheds is scheduled to be conducted during the 2020-2021 monitoring year.

During the 2019-2020 monitoring year, bioassessment monitoring in receiving waters continued following the study design of the SMC Regional Monitoring Program in accordance with [Bioassessment Survey of the Stormwater Monitoring Coalition Workplan for Years 2015 through 2019](#) (SMC Workplan) (Southern California Coastal Water Research Project [SCCWRP], 2015).⁵ Monitoring in Rainbow Creek and tributaries was conducted in the Rainbow Creek Watershed in compliance with the [Rainbow Creek Nutrient Total Maximum Daily Load \(TMDL\)](#)⁶ and provisions of Permit Attachment E.3.

⁵ The next five-year study design was still under development in 2020; therefore, as an interim measure the Copermitees continued to participate in the regional monitoring under the existing study design.

⁶ Total Maximum Daily Loads for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed, San Diego County. Resolution No. R9-2005-0036. Approved February 9, 2005.

Table A4-3. Long-Term Receiving Water Stations in the Santa Margarita River WMA

Station Identifier	Dates Monitored	Latitude	Longitude
Lower SMR Subwatershed			
SMR-MLS-2 (902.21)	Dry: 9/25/2019, 2/5/2020, 6/9/2020	33.398142	-117.26273
	Wet: 11/22/2019, 2/9/2020, 3/9/2020		
902USM828 ¹ (902.22)	Wet: 11/20/2019, 12/4/2019, 3/10/2020	33.47403	-117.14233
Upper SMR Subwatershed			
902WLC650 (902.81)	Wet ² : 11/21/2019, 11/29/2019, 12/5/2019, 3/10/2020, 4/8/2020	33.48736	-116.91659

¹ Site 902USM828 is representative of the Middle SMR Subwatershed.

² Long-term Monitoring at 902WLC650 results were visited not sampled (VNS) due to lack of flow.

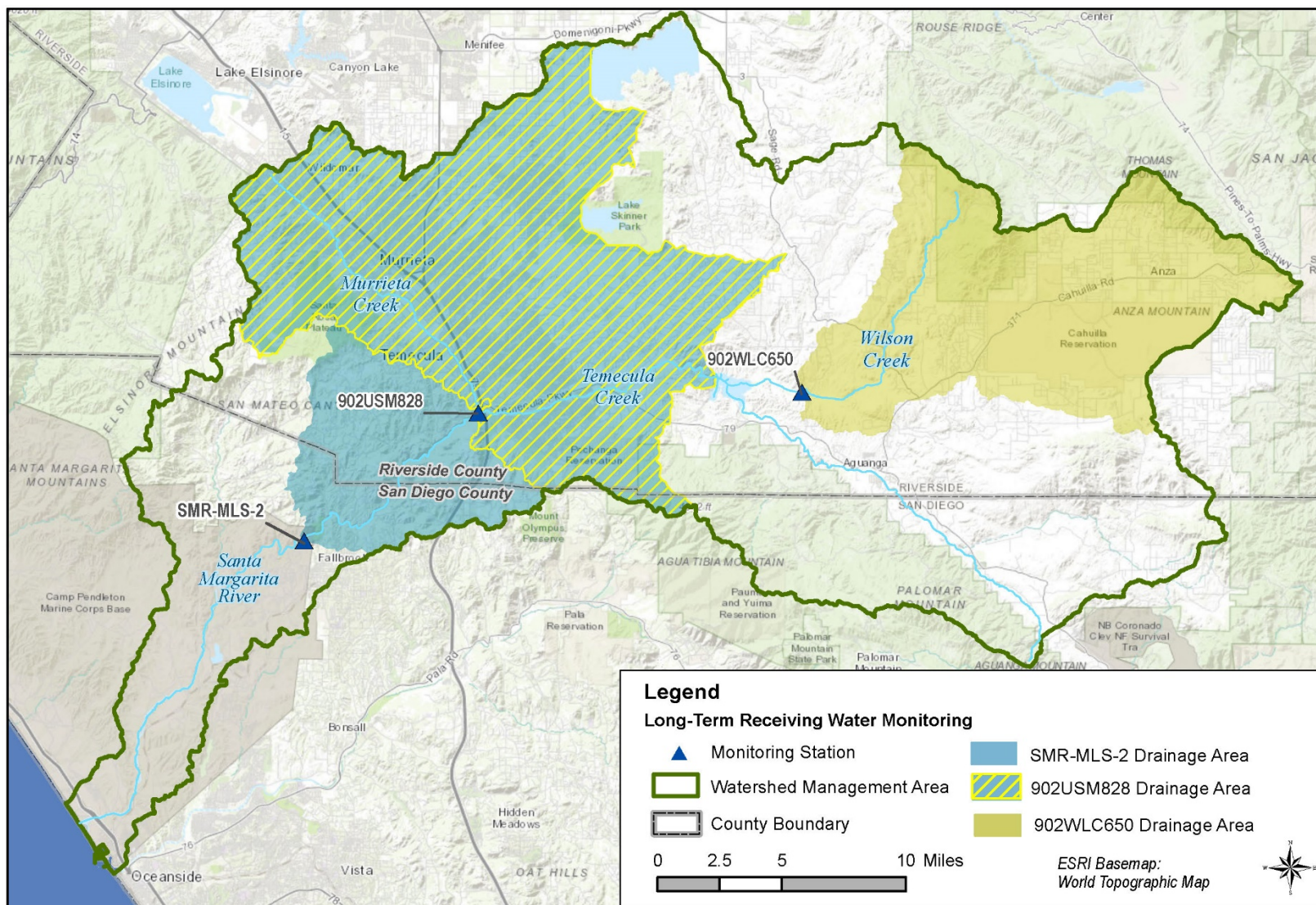


Figure A4-2. Long-Term Receiving Water Stations in the SMR WMA

4.4.1 Long-Term Receiving Water Monitoring

Five monitored storms did not produce flow at the Wilson Creek (902WLC650) LTRW station in the Upper SMR Subwatershed. The details of these monitoring attempts are documented in a technical memorandum (Alta|NV5, 2020) provided in **Attachment 4I** to this appendix. The memorandum also presents the results of a recent simulation modeling effort for Wilson Creek that was conducted after the 2019-2020 monitoring year in order to develop site-specific mobilization criteria to maximize the ability for the Riverside County Flood Control and Water Conservation District (District) to conduct future sampling when wet weather flows occur at the Wilson Creek LTRW station.

During each monitoring event, field observations are recorded and composite samples (for chemistry and toxicity) and grab samples (for bacteria) are collected and analyzed as described in Section 2.5 of the WQIP MAP. Grab samples may also be collected for toxicity and hardness if composite samples are not collected.⁷ Water quality monitoring results are compared to water quality objectives (WQOs) from the Water Quality Control Plan for the San Diego Region (Basin Plan) (San Diego Water Board, 2016) and the California Toxics Rule (CTR). The Statewide Bacteria Provisions, incorporated into Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (California State Water Resources Control Board [State Water Board] and California Environmental Protection Agency, 2019) were used for bacteria WQOs. Toxicity data are analyzed using the Test of Significant Toxicity (TST) (United States Environmental Protection Agency [USEPA], 2010) and given a Pass or Fail assessment. In accordance with Permit Provision D.1.(c)(4)(f), a Toxicity Identification Evaluation (TIE) or Toxicity Reduction Evaluation (TRE) may be required if significant toxicity is repeatedly observed in a sample and the cause has not been previously investigated.

Trend analysis of long-term monitoring data was also conducted where historical data are available at LTRW stations. Provision D.4.a.(2)(d) of the Permit requires the identification of short and/or long-term improvements or degradation of critical beneficial uses. The SMR-MLS-2 has historical data to conduct trend analysis along with data collected this monitoring year. Data were tested for normality to determine the appropriate statistical method for trend evaluation. Data with normal distribution were assessed using linear regression and data with lognormal distribution were log-transformed and assessed with linear regression. The nonparametric Mann-Kendall test for linear trends was used to evaluate data that did not follow normal or lognormal distributions. Statistical significance was based on a 95% confidence level (e.g., a 5% probability of obtaining a test statistic, or a p-value of less than 0.05). To account for differences in reporting limits in historical data, constituent concentrations below reporting limits were standardized to a value close to zero to avoid falsely identifying trends based on changing reporting limits. Trends were not analyzed for constituents with greater than 50% non-detect (ND) results.

Methodology is described in greater detail in the WQIP MAP. Additional information (historical data, hydrographs and flow data, load tables, trends, and a QA/QC report) is provided in **Attachment 4A**.

⁷ The Permit and MAP allow for analysis of toxicity from a grab sample.

4.4.1.1 LTRW station Wet Weather Results

SMR-MLS-2 was monitored on November 22, 2019; February 9, 2020; and March 9, 2020 and 908USM828 was monitored on November 30, 2019; December 4, 2019; and March 10, 2020. The rainfall statistics for each event, based on a regional rain gauge proximate to the station, are presented in **Table A4-4**. Hydrographs and flow data are provided in **Attachment 4A-2**, load tables are provided in **Attachment 4A-3**, and trends are provided in **Attachment 4A-4**. 902WLC650 was visited not sampled (VNS) due to lack of flow on November 21, 2019; November 29, 2019; December 5, 2019; March 10, 2020; and April 8, 2020.

Table A4-4. 2019-2020 Rainfall and Runoff Statistics for Long-Term Monitoring Storm Events

Site	Date	Total Rain (in)	Duration (hours)	Intensity (in/hour)	Antecedent Dry Days	Event Volume (cf)	Peak Flow (cfs)
SMR-MLS-2 (902.21) ¹	11/20/2019-11/22/2019	1.01	23.1	0.04	54	8,517,688	74.9
	2/9/2020-2/11/2020	0.17	35.1	0.00	19	4,113,652	27.7
	3/10/2020-3/11/2020	1.79	38.45	0.05	16	76,885,811	1303.2
902USM828 (902.22) ²	11/19/2019-11/20/2019	0.85	20.25	0.04	178	2,223,261	45.8
	12/4/2019	1.27	15.5	0.08	5	21,653,910	1,200
	3/9/2020-3/10/2020	1.47	25.5	0.06	16	55,215,450	1,040
902WLC650 (902.81) ²	11/20-11/21/2019	0.85	8.25	0.10	178	0.0	0.0
	11/27-11/29/2019	2.30	51.75	0.04	6	0.0	0.0
	12/4-12/5/2019	1.28	15.5	0.08	5	0.0	0.0
	3/10-3/11/2020	1.47	25.5	0.06	16	0.0	0.0
	4/6-4/10/2020	5.34	112.25	0.05	13	0.0	0.0

in – inches cf – cubic feet cfs – cubic feet per second

¹ Rainfall data from OneRain Station at Fallbrook.

² Rainfall data from Temecula NWS 217.

Wet weather volume estimates at SMR-MLS-2 were affected by changing environmental conditions throughout the wet season. Large storm events reshaped the channel multiple times between November 2019 and April 2020. SMR-MLS-2 was also vandalized on April 7, 2020 which disrupted flow measurements during the largest storm of the year. However, this storm event was not one of the three monitored events for SMR-MLS-2. During the period following the vandalism and prior to repair, SMR-MLS-2 did not record accurate flow or rain measurements. Weston Solutions, Inc. (WESTON) data were supplemented with data from a regional rain gauge in the area (San Diego County OneRain rain gauge at Fallbrook [27019]) as well as flow data from United States Geological Survey stream gauges. Additional details are provided in **Attachment 4A**.

The constituent list for long-term monitoring is tailored towards issues in the watershed and includes the following in accordance with Provision D.1.d.(3)(f):

- constituents contributing to the HPWQC,
- constituents on the 2014/2016 Clean Water Act Section 303(d) List,
- constituents for implementation plans or load reduction plans where the Copermitees are listed as responsible parties under a TMDL,
- applicable stormwater action level (SAL) constituents, and
- constituents listed in Table D-3 of the Permit.

As shown in **Table A4-5**, exceedances related to HPWQCs at SMR-MLS-2 included total nitrogen for all three events and total phosphorus for one event. Exceedances related to PWQCs included both events for *E. coli*, two of the three events for total iron, and one of the three events for total manganese. Concentrations of dissolved iron and manganese (i.e., the bioavailable portion) were much lower than the total concentrations. Concentrations for other PWQCs were below WQOs, where available. Other constituents with exceedances at SMR-MLS-2 included one event each for turbidity and total aluminum.

Exceedances related to HPWQCs at 902USM828 (**Table A4-6**) included total nitrogen and total phosphorus for all three events. Exceedances related to PWQCs included all three events for *E. coli*, total iron, and total manganese. Concentrations of dissolved iron and manganese (i.e., the bioavailable portion) were much lower than the total concentrations, and dissolved manganese concentrations were below the detection limit during the second and third events. Concentrations for other PWQCs were below WQOs, where available. The only other exceedance at 902USM828 was turbidity (laboratory results) for all three events.

At both LTRW stations, no toxicity was observed and results for organophosphorus pesticides were below detection limits. Results for synthetic pyrethroids were below detection limits, estimated at a concentration above the detection limit but below the reporting limit, or detected at low concentrations.

Table A4-5. 2019-2020 Wet Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Long-Term Receiving Water Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2 (902.21)		
				W1	W2	W3
				11/21/2019- 11/22/2019	2/10/2020- 2/11/2020	3/10/2020- 3/11/2020
Physical Chemistry						
Dissolved Oxygen	mg/L	<6.0 (a)	Basin Plan	9.29	10.62	9.54
pH	pH Units	6.5-8.5	Basin Plan	8.17	8.14	7.80
Specific Conductivity	µS/cm	NA		822	991	258
Temperature	Celsius	NA		13.4	16.6	16.6
Turbidity	NTU/FNU	20	Basin Plan	4.76	0.49	128
Fecal Indicator Bacteria						
<i>E. coli</i> ²	MPN/100 mL	320 (b)	Bacteria Provisions	410	NS	3,500
Enterococcus ²	MPN/100 mL	NA		1,300	<2	20,000
Fecal Coliform ²	MPN/100 mL	NA		400	2	3,500
Total Coliform ²	MPN/100 mL	NA		3,000	9	43,000
Nutrients						
Ammonia as N	mg/L	(c)	USEPA Water Quality Criteria (Freshwater)	<0.012	0.019J	0.050J
Nitrate as N	mg/L	10 (d)	Basin Plan	2.2	1.9	0.91
Nitrite as N	mg/L	1 (d)	Basin Plan	0.027J	0.023J	0.056J
Total Kjeldahl Nitrogen	mg/L	NA		0.5	0.2	1.3
Total Nitrogen (calc) ¹	mg/L	1	Basin Plan	2.727	2.123	2.266
Orthophosphate as P	mg/L	NA		0.024	0.0054	0.18
Total Phosphorus ¹	mg/L	0.1	Basin Plan	0.068	<0.012	0.43
General Chemistry						
Dissolved Organic Carbon	mg/L	NA		4.9	3.3	7.0
Total Organic Carbon	mg/L	NA		5.2	3.6	5.9
Sulfate	mg/L	250 (a)	Basin Plan	200	110	54
Surfactants (MBAS)	mg/L	0.5	Basin Plan	0.067	0.030J	0.031J
Total Dissolved Solids ²	mg/L	750 (a)	Basin Plan	660	750	180
Total Suspended Solids	mg/L	NA		16	2	210
Total Hardness	mg/L	NA		321	379	127
Total Metals						
Aluminum	µg/L	1,000 (d)	Basin Plan	510	19	8,900
Arsenic	µg/L	10 (d)	Basin Plan	1.6	1.0	2.7
Cadmium	µg/L	5 (d)	Basin Plan	<0.041	<0.041	0.08J
Chromium	µg/L	50 (d)	Basin Plan	0.6	0.099J	8.5
Copper	µg/L	1,000 (d)	Basin Plan	2.2	0.91	12
Iron ²	µg/L	300 (d)	Basin Plan	620	63	10,000
Lead	µg/L	NA		0.5	<0.031	2.6
Manganese ²	µg/L	50 (d)	Basin Plan	43	28	260
Mercury	µg/L	2 (d)	Basin Plan	<0.017	<0.017	<0.017
Nickel	µg/L	100 (d)	Basin Plan	1	0.56J	4.5
Selenium	µg/L	5	40 CFR 131.38	0.77	0.86	0.37J
Silver	µg/L	100 (d)	Basin Plan	<0.062	<0.062	<0.062
Thallium	µg/L	2 (d)	Basin Plan	<0.014	<0.014	0.08J

Table A4-5. 2019-2020 Wet Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Long-Term Receiving Water Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2 (902.21)		
				W1	W2	W3
				11/21/2019- 11/22/2019	2/10/2020- 2/11/2020	3/10/2020- 3/11/2020
Zinc	µg/L	5,000 (d)	Basin Plan	3.9J	<0.94	38
Dissolved Metals						
Aluminum	µg/L	NA		8.7	3J	52
Arsenic	µg/L	340	40 CFR 131.38	1.3	1.1	1.5
Cadmium	µg/L	(e)	40 CFR 131.38	<0.041	0.08J	<0.041
Chromium	µg/L	(e)	40 CFR 131.38	<0.035	0.08J	0.32
Copper	µg/L	(e)	40 CFR 131.38	1.3	0.78	3.4
Iron ²	µg/L	NA		16	26	68
Lead	µg/L	(e)	40 CFR 131.38	<0.031	<0.031	0.069J
Manganese ²	µg/L	NA		0.87	23	0.91
Mercury	µg/L	NA		<0.017	<0.017	<0.017
Nickel	µg/L	(e)	40 CFR 131.38	0.72J	0.57J	1.7
Selenium	µg/L	NA		0.71	0.87	0.3J
Silver	µg/L	(e)	40 CFR 131.38	<0.062	<0.062	<0.062
Thallium	µg/L	NA		<0.014	<0.014	<0.014
Zinc	µg/L	(e)	40 CFR 131.38	2.0J	1.5J	2.5J
Organophosphorus Pesticides						
Azinphos Methyl	µg/L	NA		<0.0055	<0.0055	<0.055
Bolstar	µg/L	NA		<0.0046	<0.0046	<0.046
Chlorpyrifos	µg/L	NA		<0.0069	<0.0069	<0.069
Coumaphos	µg/L	NA		<0.0051	<0.0051	<0.051
Demeton-o	µg/L	NA		<0.010	<0.010	<0.10
Demeton-s	µg/L	NA		<0.010	<0.010	<0.10
Diazinon	µg/L	NA		<0.0052	<0.0052	<0.052
Dichlorvos	µg/L	NA		<0.0029	<0.0029	<0.029
Dimethoate	µg/L	NA		<0.0062	<0.0062	<0.062
Disulfoton	µg/L	NA		<0.010	<0.010	<0.10
Ethoprop	µg/L	NA		<0.0067	<0.0067	<0.067
Ethyl Parathion	µg/L	NA		<0.0054	<0.0054	<0.054
Fensulfothion	µg/L	NA		<0.0029	<0.0029	<0.029
Fenthion	µg/L	NA		<0.0038	<0.0038	<0.038
Malathion	µg/L	NA		<0.0076	<0.0076	<0.076
Merphos	µg/L	NA		<0.0058	<0.0058	<0.058
Methyl Parathion	µg/L	NA		<0.0063	<0.0063	<0.063
Mevinphos	µg/L	NA		<0.0042	<0.0042	<0.042
Naled	µg/L	NA		<0.0076	<0.0076	<0.076
Phorate	µg/L	NA		<0.0030	<0.0030	<0.030
Ronnel (Fenchlorphos)	µg/L	NA		<0.0041	<0.0041	<0.041
Stirophos (Tetrachlorvinphos)	µg/L	NA		<0.0031	<0.0031	<0.031
Tokuthion (Prothiofos)	µg/L	NA		<0.0078	<0.0078	<0.078
Trichloronate	µg/L	NA		<0.0067	<0.0067	<0.067

Table A4-5. 2019-2020 Wet Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Long-Term Receiving Water Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2 (902.21)		
				W1	W2	W3
				11/21/2019- 11/22/2019	2/10/2020- 2/11/2020	3/10/2020- 3/11/2020
Synthetic Pyrethroids						
Allethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Bifenthrin	µg/L	NA		0.00441	<0.0005	0.01500
Cyfluthrin	µg/L	NA		<0.0005	<0.0005	0.00116J
Cyhalothrin, Total Lambda	µg/L	NA		<0.0005	<0.0005	<0.0005
Cypermethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Danitol (Fenpropathrin)	µg/L	NA		<0.0003	<0.0003	0.00121J
Deltamethrin/Tralomethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Esfenvalerate	µg/L	NA		<0.0005	<0.0005	<0.0005
Fenvalerate	µg/L	NA		<0.0005	<0.0005	<0.0005
Fluvalinate	µg/L	NA		0.00137J	<0.0005	<0.0005
Permethrin	µg/L	NA		<0.002	<0.002	<0.002
Prallethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Resmethrin	µg/L	NA		<0.005	<0.005	<0.005
Toxicity						
<i>Ceriodaphnia</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Ceriodaphnia</i> 7-day reproduction ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Selenastrum</i> 96-hr ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day biomass ²	TST	Pass/Fail		Pass	Pass	Pass

< - Results are less than the method detection limit.

¹ Constituent is a HPWQC for dry weather.

² Constituent is a PWQC for dry weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

(a) Water quality objectives are based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective on or before May 17, 2016) and may vary by hydrologic area.

(b) Water quality objective for *E. coli* is based on Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California - Bacteria Provisions and Water Quality Standards Variance Policy (February 4, 2019).

(c) Water quality objective for Ammonia as N is the criterion maximum concentration (CMC) and criterion continuous concentration (CCC) based on pH and water temperature when applicable as described in the U.S. EPA, 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater, EPA-822-R-13-001, April 2013.

(d) Water quality objective is based on the MUN beneficial use as described in the Basin Plan, 1994 (with amendments effective on or before May 17, 2016).

(e) Water quality objective for dissolved metal fractions is based on total hardness and is calculated as described by 40 CFR Part 131.38 (May 18, 2000). The Criterion Maximum Concentration (CMC) was used.

J - Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

NA - No criterion or published value was available or applicable to the matrix or program.

NS - Not sampled; sampling error.

Shaded results did not meet water quality objectives.

Table A4-6. 2019-2020 Wet Weather Receiving Water Monitoring Results for Middle SMR Subwatershed Long-Term Receiving Water Station 902USM828

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	902USM828		
				W1	W2	W3
				11/20/2019- 11/21/2020	12/04/2019- 12/05/2019	03/10/2020- 03/11/2020
Physical Chemistry						
Dissolved Oxygen (Field)	mg/L	<6.0 (a)	Basin Plan	9.36	9.91	9.6
pH (Field)	pH Units	6.5-8.5	Basin Plan	7.72	7.06	7.06
Salinity (Field)	ppt	NA		0.83	0.22	0.13
Specific Conductance (Field)	µs/cm	NA		1,625	457	267
Specific Conductance (Lab)	µmhos/cm	NA		700	310	310
Water Temperature (Field)	Celsius	NA		15.6	12.9	13.9
Turbidity (Field)	NTU	20	Basin Plan	2.98	37.27	114.6
Turbidity (Lab)	NTU	20	Basin Plan	22	110	83
Fecal Indicator Bacteria						
<i>E. coli</i> ²	MPN/100 mL	320 (b)	Bacteria Provisions	200	9,200	≥1,600
Enterococcus ²	MPN/100 mL	NA		200	3,500	≥1,600
Fecal Coliform ²	MPN/100 mL	NA		200	9,200	≥1,600
Total Coliform ²	MPN/100 mL	NA		1,400	≥16,000	≥1,600
Nutrients						
Ammonia as N	mg/L	(c)	USEPA Water Quality Criteria (Freshwater)	0.064J	2	0.052J
Ammonia as N (Unionized)	mg/L	0.025	Basin Plan	<0.0000046	0.0052	<0.0000046
Nitrate as N	mg/L	10 (d)	Basin Plan	0.4	0.37	0.35
Nitrite as N	mg/L	1 (d)	Basin Plan	0.011	0.02	0.02
Total Kjeldahl Nitrogen	mg/L	NA		1.1	2.5	0.79
Total Nitrogen ¹	mg/L	1	Basin Plan	1.5	2.9	1.2
Dissolved Phosphorus	mg/L	NA		0.28	0.39	0.27
Orthophosphate	mg/L	NA		0.18	0.27	0.2
Total Phosphate	mg/L	NA		1.2	3.5	1.3
Total Phosphorus ¹	mg/L	0.1	Basin Plan	0.38	1.2	0.44
General Chemistry						
Dissolved Organic Carbon	mg/L	NA		8.2H	7.4H	6.9H
Total Organic Carbon	mg/L	NA		10	7.9	7.2
Sulfate	mg/L	250 (a)	Basin Plan	90	37	32
Surfactants (MBAS)	mg/L	0.5	Basin Plan	0.08J	<0.03	0.03J
Total Dissolved Solids ²	mg/L	750 (a)	Basin Plan	450	210	210
Total Suspended Solids	mg/L	NA		32	150	1200
Total Hardness	mg/L	NA		190	86	81
Total Metals						
Arsenic	µg/L	10 (d)	Basin Plan	2.4	1.8	2.4
Cadmium	µg/L	5 (d)	Basin Plan	<0.12	0.15J	0.16J
Chromium	µg/L	50 (d)	Basin Plan	3.5	11	30
Copper	µg/L	1,000 (d)	Basin Plan	6.9	10	11
Iron ²	µg/L	300 (d)	Basin Plan	1,600	8,500	4,700
Lead	µg/L	NA	40 CFR 131.38	0.9	2	1.7

Table A4-6. 2019-2020 Wet Weather Receiving Water Monitoring Results for Middle SMR Subwatershed Long-Term Receiving Water Station 902USM828

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	902USM828		
				W1	W2	W3
				11/20/2019- 11/21/2020	12/04/2019- 12/05/2019	03/10/2020- 03/11/2020
Manganese ²	µg/L	50 (d)	Basin Plan	320	180	100
Mercury	µg/L	2 (d)	Basin Plan	<0.099	<0.099	<0.099
Nickel	µg/L	100 (d)	Basin Plan	3.3	4.9	28
Selenium	µg/L	5	40 CFR 131.38	1.3	0.6	0.8
Silver	µg/L	100 (d)	Basin Plan	<0.12	<0.12	<0.12
Thallium	µg/L	2 (d)	Basin Plan	<0.5	<0.5	<0.5
Zinc	µg/L	5,000 (d)	Basin Plan	18	34	29
Dissolved Metals						
Arsenic	µg/L	340	40 CFR 131.38	1.8	1.1	1.3
Cadmium	µg/L	(e)	40 CFR 131.38	<0.12	<0.12	<0.12
Chromium	µg/L	(e)		0.5	0.6	1.5
Copper	µg/L	(e)	40 CFR 131.38	3.2	3.3	3.3
Iron ²	µg/L	NA		31	29	20
Lead	µg/L	(e)	40 CFR 131.38	<0.2	<0.2	<0.2
Manganese ²	µg/L	NA		11	<5	<5
Mercury	µg/L	NA		<0.099	<0.099	<0.099
Nickel	µg/L	(e)	40 CFR 131.38	2.3	1.2	16
Selenium	µg/L	NA		1.1	0.5	0.6
Silver	µg/L	(e)	40 CFR 131.38	<0.12	<0.12	<0.12
Thallium	µg/L	NA		<0.5	<0.5	<0.5
Zinc	µg/L	(e)	40 CFR 131.38	4.4	2.9	2.4
Organophosphorus Pesticides						
Aspon	µg/L			<0.05	<0.05	<0.05
Atrazine	µg/L			<0.05	<0.05	<0.05
Azinphos-ethyl	µg/L			<0.05	<0.05	<0.05
Azinphos-methyl	µg/L			<0.05	<0.05	<0.05
Bolstar	µg/L			<0.05	<0.05	<0.05
Carbophenothion	µg/L			<0.05	<0.05	<0.05
Chlorfenvinphos	µg/L			<0.05	<0.05	<0.05
Chlorpyrifos	µg/L			<0.05	<0.05	<0.05
Chlorpyrifos Methyl	µg/L			<0.05	<0.05	<0.05
Coumaphos	µg/L			<0.05	<0.05	<0.05
Crotoxyphos	µg/L			<0.05	<0.05	<0.05
Demeton-s	µg/L			<0.05	<0.05	<0.05
Diazinon	µg/L			<0.05	<0.05	<0.05
Dichlofenthion	µg/L			<0.05	<0.05	<0.05
Dichlorvos	µg/L			<0.05	<0.05	<0.05
Dichrotophos	µg/L			<0.05	<0.05	<0.05
Dimethoate	µg/L			<0.05	<0.05	<0.05

Table A4-6. 2019-2020 Wet Weather Receiving Water Monitoring Results for Middle SMR Subwatershed Long-Term Receiving Water Station 902USM828

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	902USM828		
				W1	W2	W3
				11/20/2019- 11/21/2020	12/04/2019- 12/05/2019	03/10/2020- 03/11/2020
Dioxathion	µg/L			<0.05	<0.05	<0.05
Disulfoton	µg/L			<0.05	<0.05	<0.05
EPN	µg/L			<0.05	<0.05	<0.05
Ethion	µg/L			<0.05	<0.05	<0.05
Ethoprop	µg/L			<0.05	<0.05	<0.05
Ethyl Parathion	µg/L			<0.05	<0.05	<0.05
Famphur	µg/L			<0.05	<0.05	<0.05
Fenitrothion	µg/L			<0.05	<0.05	<0.05
Fensulfothion	µg/L			<0.05	<0.05	<0.05
Fenthion	µg/L			<0.05	<0.05	<0.05
Fonophos	µg/L			<0.05	<0.05	<0.05
Leptophos	µg/L			<0.05	<0.05	<0.05
Malathion	µg/L			<0.05	<0.05	<0.05
Merphos	µg/L			<0.05	<0.05	<0.05
Methyl Parathion	µg/L			<0.05	<0.05	<0.05
Mevinphos	µg/L			<0.05	<0.05	<0.05
Monocrotophos	µg/L			<0.05	<0.05	<0.05
Naled	µg/L			<0.05	<0.05	<0.05
Phorate	µg/L			<0.05	<0.05	<0.05
Phosmet	µg/L			<0.05	<0.05	<0.05
Phosphamidon	µg/L			<0.05	<0.05	<0.05
Ronnel	µg/L			<0.05	<0.05	<0.05
Simazine	µg/L			<0.05	<0.05	<0.05
Stirofos	µg/L			<0.05	<0.05	<0.05
Sulfotepp	µg/L			<0.05	<0.05	<0.05
TEPP	µg/L			<0.05	<0.05	<0.05
Terbufos	µg/L			<0.05	<0.05	<0.05
Thionazin	µg/L			<0.05	<0.05	<0.05
Tokuthion	µg/L			<0.05	<0.05	<0.05
Trichlorfon	µg/L			<0.05	<0.05	<0.05
Trichloronate	µg/L			<0.05	<0.05	<0.05
Pyrethroids						
Bifenthrin	µg/L			<0.0079	AE	0.0100
Cyfluthrin	µg/L			<0.0083	AE	<0.0042
Cypermethrin	µg/L			<0.0066	AE	<0.0033
Deltamethrin/Tralomethrin	µg/L			<0.019	AE	<0.0096
Fenpropathrin (Danitol)	µg/L			<0.020	AE	<0.010
Fenvalerate/Esfenvalerate	µg/L			<0.0098	AE	<0.0049
L-Cyhalothrin	µg/L			<0.012	AE	<0.006
Permethrin	µg/L			<0.050	AE	<0.025

Table A4-6. 2019-2020 Wet Weather Receiving Water Monitoring Results for Middle SMR Subwatershed Long-Term Receiving Water Station 902USM828

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	902USM828		
				W1	W2	W3
				11/20/2019-11/21/2020	12/04/2019-12/05/2019	03/10/2020-03/11/2020
Toxicity						
<i>Ceriodaphnia</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Ceriodaphnia</i> 7-day reproduction ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Selenastrum</i> 96-hr ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day biomass ²	TST	Pass/Fail		Pass	Pass	Pass

< – Results are less than the method detection limit.

¹ Constituent is a HPWQC for dry weather.

² Constituent is a PWQC for dry weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

(a) Water quality objective are based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective on or before May 17, 2016) and may vary by hydrologic area.

(b) Water quality objective for *E. coli* is based on Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California - Bacteria Provisions and Water Quality Standards Variance Policy (February 4, 2019).

(c) Water quality objective is the criterion maximum concentration (CMC) and criterion continuous concentration (CCC) based on pH and water temperature when applicable as described in the U.S. EPA, 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater, EPA-822-R-13-001, April 2013.

(d) Water quality objective is based on the MUN beneficial use as described in the Basin Plan, 1994 (with amendments effective on or before May 17, 2016).

(e) Water quality objective for dissolved metal fractions is based on total hardness and is calculated as described by 40 CFR Part 131.38 (May 18, 2000). The Criterion Maximum Concentration (CMC) was used.

H – Sample received and or/analyzed past the recommended holding time.

J – Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

AE – Analysis error. Analysis not completed by contracted laboratory due to procedural or technical issue.

Shaded results did not meet water quality objectives.

LTRW Station Wet Weather Trend Results

Wet weather trends at SMR-MLS-2 were assessed using the seven monitoring years of available long-term monitoring data. Statistically significant ($p < 0.05$) trends are summarized in **Table A4-7** for SMR-MLS-2. The 2019-2020 monitoring year was the first year of wet weather monitoring at 902USM828; therefore, trends cannot be evaluated until additional data are collected during future permit terms.

As shown in **Table A4-7**, statistically significant decreasing trends for nutrients (a HPWQC) were identified, and no statistically significant trends were identified for PWQCs. Trend plots for nutrients (ammonia as N and total nitrogen) are shown in **Figure A4-3**, where the x-axis shows the sample date (year) and the y-axis shows measured values. Sen's Slope estimates, as well as a trend line (green line), are shown on the scatterplots for constituents with less than 15 percent (%) non-detect results. A negative Sen's Slope indicates a decreasing trend and a positive Sen's Slope indicates an increasing trend. Scatterplots for all of the statistically significant dry weather trends listed in **Table A4-7** are provided in **Appendix 4A-4**.

Table A4-7. Wet Weather Receiving Water Trend Results for SMR-MLS-2

Station	Increasing	Decreasing
SMR-MLS-2 (902.21)	None	Ammonia as N, Total Nitrogen, Total Cadmium

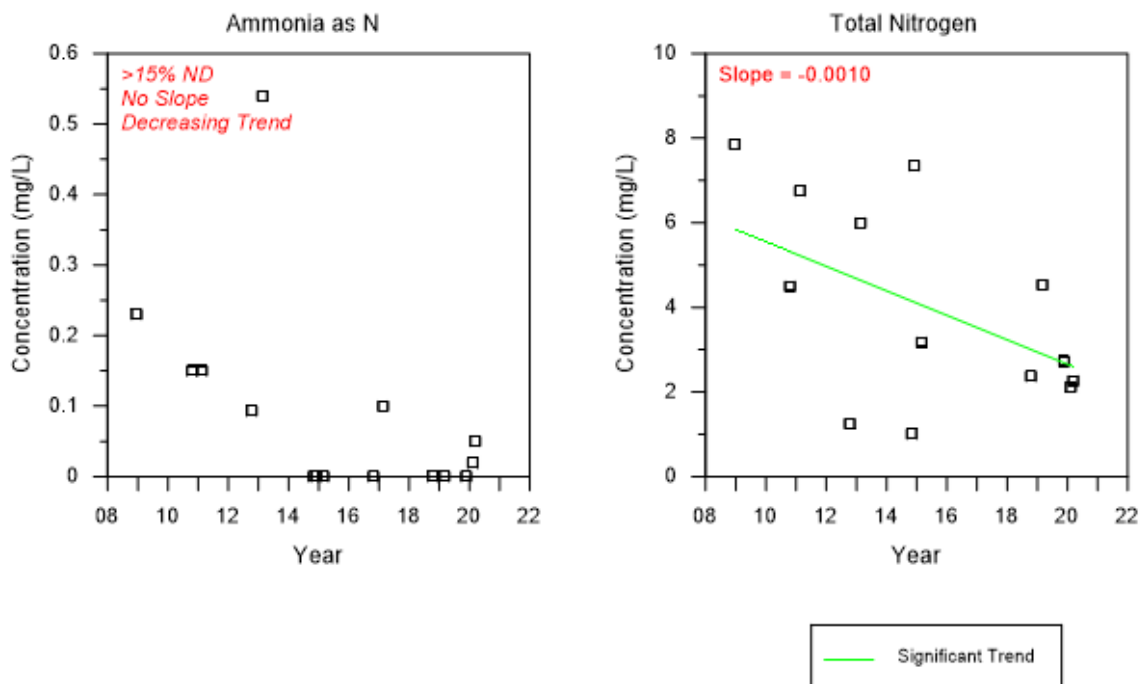


Figure A4-3. Trend Plot for Nutrients for Wet Weather Results at SMR-MLS-2

LTRW Station Wet Weather Trash Assessment Results

Field observations of trash (a PWQC for portions of the WMA) were conducted at sampled stations. At 908USM828, field records indicated that no trash was present during the three monitored events. At SMR-MLS, a trash assessment was conducted using the following categorization:

1. Optimal (no visible trash at first glance, or less than 10 pieces),
2. Suboptimal (10-50 pieces after close inspection),
3. Marginal (51-100 pieces at first glance and evidence of infrequent use),
4. Submarginal (101-400 pieces and evidence of frequent use), and
5. Poor (significantly impacted site with more than 400 pieces of trash observed due to constriction point or dumping).

Three site assessments were conducted, and all three assessments were rated as Optimal. No potential human or aquatic health threats were documented.

4.4.1.2 LTRW Station Dry Weather Results

In accordance with the schedule outlined in the WQIP, the County of San Diego conducted monitoring during dry weather at their LTRW station, SMR-MLS-2, on September 24-25, 2019; February 5-6, 2020; and June 9-10, 2020. Riverside County will conduct dry weather monitoring at their LTRW stations, 902USM828 (Middle SMR Subwatershed) and 902WLC650 (Upper SMR Subwatershed), during the 2020-2021 monitoring year.

The constituent list for long-term monitoring is tailored towards issues in the watershed and includes the following in accordance with Provision D.1.c.(3)(f):

- constituents contributing to the HPWQC,
- constituents on the 2014/2016 Clean Water Act Section 303(d) List,
- constituents for implementation plans or load reduction plans where the Copermittees are listed as responsible parties under a TMDL,
- applicable non-stormwater action level (NAL) constituents, and
- constituents listed in Table D-3 of the Permit.

As shown in **Table A4-8**, concentrations of total nitrogen (a HPWQC) during all events and total dissolved solid (TDS) (a PWQC) during one event were above WQOs. All other constituent concentrations, including those for other PWQCs, were below WQOs, where available, except turbidity for one event. Results for organophosphorus pesticides and synthetic pyrethroids were below detection limits or estimated at a concentration above the detection limit but below the reporting limit. No toxicity was observed.

Table A4-8. 2019-2020 Long-Term Dry Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2		
				D1	D2	D3
				9/24/2019- 9/25/2019	2/5/2020- 2/6/2020	6/9/2020- 6/10/2020
Physical Chemistry						
Dissolved Oxygen	mg/L	<6.0 (a)	Basin Plan	9.31	11.68	10.17
pH	pH Units	6.5-8.5	Basin Plan	7.82	7.81	8.10
Specific Conductivity	µS/cm	NA		1,012	1,034	1,384
Temperature	Celsius	NA		22.4	8.93	18.04
Turbidity	NTU/FNU	20	Basin Plan	107.9	1.8	3.9
Fecal Indicator Bacteria						
<i>E. coli</i> ²	MPN/100 mL	320 (b)	Bacteria Provisions	20	75	75
Enterococcus ²	MPN/100 mL	NA		170	<2	20
Fecal Coliform ²	MPN/100 mL	NA		110	70	70
Total Coliform ²	MPN/100 mL	NA		800	110	500
Nutrients						
Ammonia as N	mg/L	(c)	USEPA Water Quality Criteria (Freshwater)	<0.048	0.035J	0.12
Nitrate as N	mg/L	10 (d)	Basin Plan	0.67	2.0	2.1
Nitrite as N	mg/L	1 (d)	Basin Plan	<0.010	0.017J	<0.042
Total Kjeldahl Nitrogen	mg/L	NA		0.37	0.2	0.32
Total Nitrogen (calc) ¹	mg/L	1	Basin Plan	1.04	2.217	2.42
Orthophosphate as P	mg/L	NA		0.01	0.0082	0.011
Total Phosphorus ¹	mg/L	0.1	Basin Plan	<0.012	0.013J	<0.012
General Chemistry						
Dissolved Organic Carbon	mg/L	NA		12	2.7	4.2
Total Organic Carbon	mg/L	NA		13	2.6	3.6
Sulfate	mg/L	250 (a)	Basin Plan	190	210	240
Surfactants (MBAS)	mg/L	0.5	Basin Plan	<0.019	0.045J	0.037J
Total Dissolved Solids ²	mg/L	750 (a)	Basin Plan	640	750	890
Total Suspended Solids	mg/L	NA		3	1	4
Total Hardness	mg/L	NA		329	378	448
Total Metals						
Aluminum	µg/L	1,000 (d)	Basin Plan	80	8.9	19
Arsenic	µg/L	10 (d)	Basin Plan	1.2	1.5	1.6
Cadmium	µg/L	5 (d)	Basin Plan	<0.041	<0.041	<0.041
Chromium	µg/L	50 (d)	Basin Plan	0.16J	0.29	0.11J
Chromium III	µg/L	NA		0.15	0.13	<0.035
Chromium VI	µg/L	NA		0.019J	0.16	0.023
Copper	µg/L	1,000 (d)	Basin Plan	1.2	0.87	1.1
Iron ²	µg/L	300 (d)	Basin Plan	190	58	35
Lead	µg/L	NA		0.19J	<0.031	<0.031
Manganese ²	µg/L	50 (d)	Basin Plan	32	24	11
Mercury	µg/L	2 (d)	Basin Plan	<0.017	<0.017	0.017J
Nickel	µg/L	100 (d)	Basin Plan	0.67J	0.57J	0.85

Table A4-8. 2019-2020 Long-Term Dry Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2		
				D1	D2	D3
				9/24/2019- 9/25/2019	2/5/2020- 2/6/2020	6/9/2020- 6/10/2020
Selenium	µg/L	5	40 CFR 131.38	0.64	1.2	0.99
Silver	µg/L	100 (d)	Basin Plan	<0.062	<0.062	<0.062
Thallium	µg/L	2 (d)	Basin Plan	<0.014	<0.014	<0.014
Zinc	µg/L	5,000 (d)	Basin Plan	3.2J	1.1J	<0.94
Dissolved Metals						
Aluminum	µg/L	NA		4.2J	3.1J	10
Arsenic	µg/L	150	40 CFR 131.38	1.2	1.4	1.6
Cadmium	µg/L	(e)	40 CFR 131.38	0.05J	0.07J	<0.041
Chromium	µg/L	(e)	40 CFR 131.38	0.14J	0.25	0.09J
Chromium III	µg/L	(e)	40 CFR 131.38	<0.040	AE	<0.043
Chromium VI	µg/L	11	40 CFR 131.38	0.01J	AE	0.02
Copper	µg/L	(e)	40 CFR 131.38	1.0	0.83	0.99
Iron ²	µg/L	NA		18	24	15
Lead	µg/L	(e)	40 CFR 131.38	0.06J	<0.031	<0.031
Manganese ²	µg/L	NA		2.4	15	7.8
Mercury	µg/L	NA		<0.017	<0.017	0.019J
Nickel	µg/L	(e)	40 CFR 131.38	0.72J	0.62J	0.8
Selenium	µg/L	NA		0.61	1.1	0.94
Silver	µg/L	(e)	40 CFR 131.38	<0.062	<0.062	<0.062
Thallium	µg/L	NA		0.02J	<0.014	<0.014
Zinc	µg/L	(e)	40 CFR 131.38	1.6J	2.2J	0.96J
Organophosphorus Pesticides						
Azinphos Methyl	µg/L	NA		<0.0055	<0.0055	<0.0055
Bolstar	µg/L	NA		<0.0046	<0.0046	<0.0046
Chlorpyrifos	µg/L	NA		<0.0069	<0.0069	<0.0069
Coumaphos	µg/L	NA		<0.0051	<0.0051	<0.0051
Demeton-o	µg/L	NA		<0.010	<0.010	<0.010
Demeton-s	µg/L	NA		<0.010	<0.010	<0.010
Diazinon	µg/L	NA		<0.0052	<0.0052	<0.0052
Dichlorvos	µg/L	NA		<0.0029	<0.0029	<0.0029
Dimethoate	µg/L	NA		0.0080J	<0.0062	<0.0062
Disulfoton	µg/L	NA		<0.010	<0.010	<0.010
Ethoprop	µg/L	NA		<0.0067	<0.0067	<0.0067
Ethyl Parathion	µg/L	NA		<0.0054	<0.0054	<0.0054
Fensulfothion	µg/L	NA		<0.0029	<0.0029	<0.0029
Fenthion	µg/L	NA		<0.0038	<0.0038	<0.0038
Malathion	µg/L	NA		<0.0076	<0.0076	<0.0076
Merphos	µg/L	NA		<0.0058	<0.0058	<0.0058
Methyl Parathion	µg/L	NA		<0.0063	<0.0063	<0.0063
Mevinphos	µg/L	NA		<0.0042	<0.0042	<0.0042

Table A4-8. 2019-2020 Long-Term Dry Weather Receiving Water Monitoring Results for Lower SMR Subwatershed Station SMR-MLS-2

Analyte	Units	Water Quality Objective (WQO)	Objective Reference	SMR-MLS-2		
				D1	D2	D3
				9/24/2019- 9/25/2019	2/5/2020- 2/6/2020	6/9/2020- 6/10/2020
Naled	µg/L	NA		<0.0076	<0.0076	<0.0076
Phorate	µg/L	NA		<0.0030	<0.0030	<0.0030
Ronnel (Fenclorophos)	µg/L	NA		<0.0041	<0.0041	<0.0041
Stirophos (Tetrachlorvinphos)	µg/L	NA		<0.0031	<0.0031	<0.0031
Tokuthion (Prothiofos)	µg/L	NA		<0.0078	<0.0078	<0.0078
Trichloronate	µg/L	NA		<0.0067	<0.0067	<0.0067
Synthetic Pyrethroids						
Allethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Bifenthrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Cyfluthrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Cyhalothrin, Total Lambda	µg/L	NA		<0.0005	<0.0005	<0.0005
Cypermethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Danitol (Fenpropathrin)	µg/L	NA		<0.0003	<0.0003	<0.0003
Deltamethrin/Tralomethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Esfenvalerate	µg/L	NA		<0.0005	<0.0005	<0.0005
Fenvalerate	µg/L	NA		<0.0005	<0.0005	<0.0005
Fluvalinate	µg/L	NA		<0.0005	<0.0005	<0.0005
Permethrin	µg/L	NA		<0.002	<0.002	<0.002
Prallethrin	µg/L	NA		<0.0005	<0.0005	<0.0005
Resmethrin	µg/L	NA		<0.005	<0.005	<0.005
Toxicity						
<i>Ceriodaphnia</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Ceriodaphnia</i> 7-day reproduction ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Selenastrum</i> 96-hr ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day survival ²	TST	Pass/Fail		Pass	Pass	Pass
<i>Pimephales</i> 7-day biomass ²	TST	Pass/Fail		Pass	Pass	Pass

< - Results are less than the method detection limit.

¹ Constituent is a HPWQC for dry weather.

² Constituent is a PWQC for dry weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

(a) Water quality objective are based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective on or before May 17, 2016) and may vary by hydrologic area.

(b) Water quality objective for *E. coli* is based on Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California - Bacteria Provisions and Water Quality Standards Variance Policy (February 4, 2019).

(c) Water quality objective for Ammonia as N is the criterion maximum concentration (CMC) and criterion continuous concentration (CCC) based on pH and water temperature when applicable as described in the U.S. EPA, 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater, EPA-822-R-13-001, April 2013.

(d) Water quality objective is based on the MUN beneficial use as described in the Basin Plan, 1994 (with amendments effective on or before May 17, 2016).

(e) Water quality objective for dissolved metal fractions is based on total hardness and is calculated as described by 40 CFR Part 131.38 (May 18, 2000). The Criterion Continuous Concentration (CCC) was applied to dry weather results with the exception of Silver for which the Criterion Maximum Concentration (CMC) was applied as there is no CCC.

AE – Analysis error. Analysis not completed by contracted laboratory due to procedural or technical issue.

J - Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

NA - No criterion or published value was available or applicable to the matrix or program.

Shaded results did not meet water quality objectives.

LTRW Station Dry Weather Trend Results

Dry weather trends at SMR-MLS-2 were assessed using the six monitoring years of available long-term monitoring data. Significant ($p < 0.05$) dry weather trends are summarized in **Table A4-9**. The only increasing trend was pH; however, pH values were within the range specified by the Basin Plan. No statistically significant dry weather trends were observed for HPWQCs, and the only trend related to a PWQC was a decreasing trend for total coliform. A trend plot for total coliform in dry weather at SMR-MLS-2 is shown in **Figure A4-4**, where the x-axis shows the sample date (year) and the y-axis shows measured values. A negative Sen's Slope indicates a decreasing trend and a positive Sen's Slope indicates an increasing trend. Scatterplots for all the statistically significant dry weather trends listed in **Table A4-9** are provided in **Appendix 4A-4**. Dry weather trends were evaluated using the methodology summarized in **Section 4.4.1.1**.

Table A4-9. Long-Term Dry Weather Receiving Water Trend Results for SMR-MLS-2

Station	Increasing	Decreasing
SMR-MLS-2 (902.21)	pH	Total Coliform, Dissolved Nickel, Total Nickel

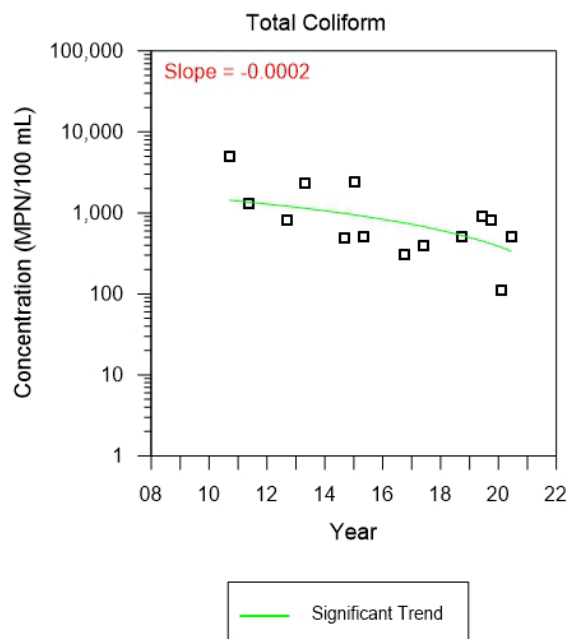


Figure A4-4. Trend Plot for Total Coliform for Dry Weather Results at SMR-MLS-2

LTRW Station Dry Weather Trash Assessment Results

Field observations of trash (a PWQC for portions of the WMA) were conducted at SMR-MLS-2. Two of the three assessments were rated as Optimal and one assessment was rated as Suboptimal. No

potential human health threats were documented. One potential aquatic health threat was documented due to the presence of more than 50 pieces of litter, dominated by plastics.

4.4.2 Stream Bioassessment Monitoring

Stream bioassessment was conducted in the Lower SMR Subwatershed⁸ during one dry weather event at the LTRW station (**Table A4-10**) and at four SMC Regional Monitoring Program bioassessment stations (**Table A4-11**). Monitoring included water quality, benthic macroinvertebrates (BMI), benthic algae, and physical habitat data collection following the Surface Water Ambient Monitoring Program (SWAMP) *Standard Operating Procedures for the Collection of Field Data for Bioassessments of California Wadeable Streams: Benthic Macroinvertebrates, Algae, and Physical Habitat* (Ode et al., 2016). Physical habitat quality of the monitoring sites was quantified using the California Rapid Assessment Method (CRAM) for riverine wetlands (Collins et al., 2012). Reach-wide algal cover was quantified as part of the SWAMP physical habitat assessment. Laboratory analyses included BMI taxonomy, benthic algae taxonomy, periphyton (ash-free dry mass [AFDM] and chlorophyll-a), and water chemistry analysis. Sediment chemistry and toxicity testing could be performed only for the Sandia Creek condition site due to insufficient availability of fine-grained depositional material at the other three 2020 SMC sites. Bioassessment monitoring at LTRW station SMR-MLS-2 was conducted in accordance with the long-term monitoring requirements of the Permit. In addition to the methods listed above, SMC Regional Monitoring Program bioassessment data were collected in accordance with the SMC Workplan (SCCWRP, 2015).

Stream bioassessment surveys were conducted from May to June 2020 in accordance with the sample index period of the 2015 SMC Program, given as March through July. Water quality parameters (i.e., water temperature, specific conductivity, pH, turbidity, and DO) were measured in situ as part of the physical habitat quality assessment at each station. Stream flow velocity was also measured with a portable flow meter or was visually estimated when the water was too shallow for use of the flow meter. Grab samples were collected and analyzed for conventional constituents, nutrients, and algal biomass. Survey generated data include all BMI and algal taxonomic (upon completion of algal taxonomy) results and calculated metrics. Two summary indices were also used to assess the overall biotic integrity of each monitoring reach, including the California Stream Condition Index (CSCI) and algal Index of Biotic Integrity (IBI).

The CSCI (Mazor et al., 2016) uses BMI taxonomic data to calculate a single index score related to the biological health of a given sample reach. The CSCI combines a predictive multi-metric index (pMMI) with a predictive observed to expected (O/E) ratio index, which incorporates local watershed geology and climate factors. This index is the primary BMI community quality index used throughout California. CSCI scores indicate benthic communities that are very likely altered (scores of 0.00 to 0.62), likely altered (0.63 to 0.78), possibly altered (0.79 to 0.91), or likely intact (at least 0.92). A CSCI value of 0.79 can be used as a threshold for detection of degradation, because 90% of reference sites score higher than this value (Mazor et al., 2016). Achieving a value greater than or equal to (\geq) 90% of reference site scores (≥ 0.79) is the proposed biological objective for the San Diego Region.

⁸ Bioassessment monitoring at the Middle and Upper SMR Subwatershed LTRW stations will be conducted during the 2020-2021 monitoring year.

The IBI (Fetscher et al., 2014) is an algal community assessment that includes the calculation of three separate IBIs based on different aspects of the algae community. These include the S2 IBI for soft algae, the D18 for diatoms, and the H20 which is a combination of diatoms and soft algae. The algal IBIs have a scoring range of 0-100, with a score above 57 representing a higher quality, less disturbed algal community which is closer to reference conditions.

CRAM assessments provide a numerical summary score of the physical habitat quality for each station. Scores range from 25 to 100 (none of the attributes can score a "0"), with higher scores generally indicating a higher quality physical habitat. The CRAM assessment has yet to be calibrated region-wide; thresholds for CRAM ratings were established for purposes of assessment within this report: scores of less than 50 are considered low (poor quality physical habitat), scores of 50-75 are considered moderate (fair condition) and scores of greater than 75 are considered high (good condition).

Benthic algae were collected at each site in accordance with Ode et al. (2016) for taxonomic identification, and biomass samples were collected for benthic AFDM and chlorophyll-a analysis.

Table A4-10. 2020 NPDES Bioassessment Monitoring Location

Site Location, Program	Site Type	Date Sampled	Latitude	Longitude
San Diego County, LTRW Station				
SMR-MLS-2 – Santa Margarita River (902.21)	Condition	6/11/2020	33.398142	-117.26273

Table A4-11. 2020 SMC Bioassessment Monitoring Locations

Site Location, Program	Site Type	Date Sampled	Latitude	Longitude
San Diego County, SMC				
902M20301 – Santa Margarita River at Gavilan (902.21)	Condition	6/24/2020	33.42523	-117.20386
902WE0888 – De Luz Creek (902.21)	Trend	6/3/2020	33.45432	-117.30237
Riverside County, SMC				
902M18917 – Sandia Creek Condition (902.22)	Condition	5/29/2020	33.49208	-117.24535
SMC01097 – Sandia Creek Trend (902.22)	Trend	5/29/2020	33.48724	-117.25558

4.4.2.1 Long-Term Receiving Water Station Bioassessment

At the SMR-MLS-2 LTRW station (**Figure A4-5**), the CSCI score indicated that the BMI community is *Likely Intact* (**Table A4-12**). The BMI community did not have a dominant taxon, but the most abundant taxa were the mayflies *Fallceon* sp., *Baetis adonis* and *Tricorythodes* sp. (24%, 17%, and 9% of the community, respectively). Several species present indicated good water quality, including the mayflies *Drunella doddsii* and *Ephemerella* sp., and the caddisflies *Micrasema* sp. and *Glossosoma* sp. (**Attachment 4B-2**). Physical habitat quality as measured by the CRAM score was in the high category (81). Clinger and intolerant taxa are an indicator of community completeness because their abundance tends to decrease in impaired waterbodies. The observed percentage of clinger taxa was above the predicted percentage, while the observed percentage of intolerant taxa was far below the predicted percentage. The algae community had IBI scores of 20 (soft algae), 46 (diatoms), and 38 (combined overall) (**Table A4-12**). All three scores were below the statistical boundary between reference and non-reference conditions.

Table A4-12. 2020 CSCI, CRAM, and Algal IBI Scores for Bioassessment Monitoring at SMR-MLS-2

Station Code	Stream Name	Habitat	BMI	Algae
		CRAM Score	CSCI Score	Algal IBI
SMR-MLS-2	Santa Margarita River	81 High	0.98 Likely Intact	S2: 20 D18: 46 H20: 38

BMI – benthic macroinvertebrate; CRAM – California Rapid Assessment Method; CSCI – California Stream Condition Index; IBI – Index of Biotic Integrity

CSCI scores indicate benthic communities that are very likely altered (scores of 0.00 to 0.62), likely altered (0.63 to 0.78), possibly altered (0.79 to 0.91), or likely intact (at least 0.92).

CRAM score is 25-100; <50 = low, 50-75 = moderate, >75 = high.

S2 = soft algae and cyanobacteria; D18 = diatoms; H20 = combined. IBI Score of 57 is the statistical boundary between reference and non-reference condition.

Water chemistry results for the most recent dry weather monitoring event prior to bioassessment at SMR-MLS-2 indicated that concentrations of total nitrogen (a HPWQC) and TDS (a PWQC) were above WQOs (**Table A4-11**). All other constituent concentrations were below WQOs, where available, although conductivity (specific conductance) was elevated. High specific conductance may have an effect on BMI. Specific conductance is a measurement of the ability of water to conduct electricity via dissolved ions (i.e., Na+, Ca+2, SO4-2, etc.) (State Water Board Fact Sheet-3.1.3.0(EC)V2e) (2004). As such, specific conductance is related to TDS content. Although the effect of elevated TDS on BMI is variable among different taxa and not well understood, a number of studies have demonstrated a correlation between changes in conductivity/TDS with both altered BMI (Minshall and Minshall, 1978) and algal communities (Leland and Porter, 2000). Results from the first SMC five-year report suggest that elevated TDS is the most common stressor to biological condition in the entire region, affecting 76% of stream miles in Southern California (Mazor, 2015). The same study found phosphorus and nitrogen were the 2nd and 3rd-most common stressors identified in our region to be associated with poor biological condition.

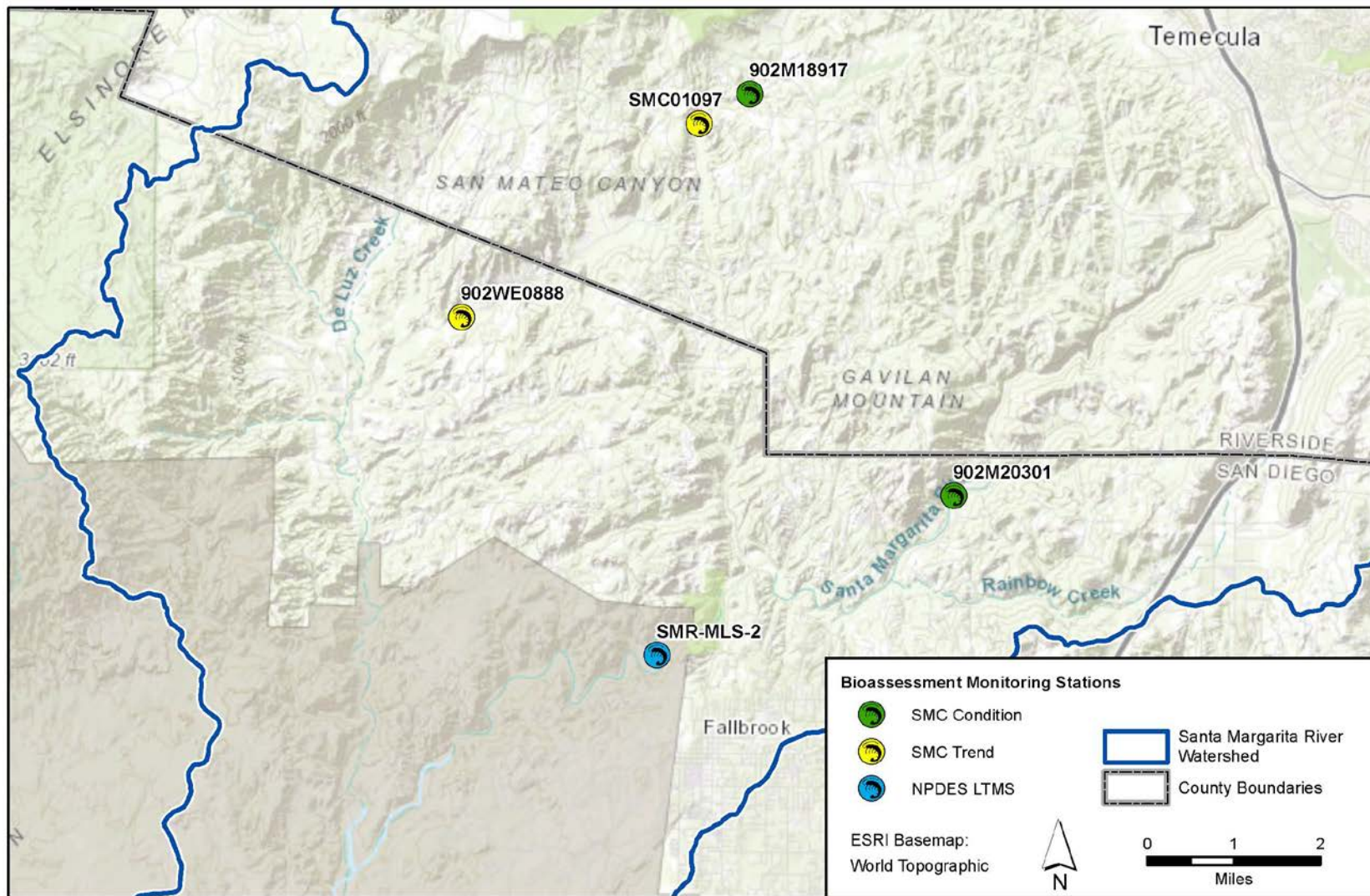


Figure A4-5. 2020 SMC Regional Monitoring Program Bioassessment Monitoring Locations

4.4.2.2 SMC Regional Monitoring Program Participation

SMC monitoring activities for the 2019-2020 monitoring year were conducted based on an extension of the 2015-2019 SMC Workplan. The 2015-2019 SMC Regional Monitoring Program was designed to answer key management questions about the impacts of stressors of interest on stream conditions. The study design includes both probabilistic (randomly-selected) and trend sites. Methodology is detailed in the SMC Workplan (SCCWRP, 2015). The next five-year study design was still under development in 2020; therefore, as an interim measure the Copermittees continued to participate in the regional monitoring under the existing study design.

The SMR WMA is grouped with the San Luis Rey River WMA in the Northern San Diego stratum of the SMC Program study area. The four SMC sites within the SMR WMA included two condition and two trend sites (**Figure A4-5**). All sites were located within the Lower SMR Subwatershed; two in the County of San Diego and two in Riverside County. The bioassessment report for the Riverside Copermittees is provided as **Attachment 4B-1**, and bioassessment data for the County of San Diego are provided as **Attachment 4B-2**.⁹ Results are summarized below, and detailed results for the entire program will be available in the final report developed by the SMC Workgroup. The final report produced under the 2015-2019 Workplan is anticipated in the spring of 2021 (SCCWRP, 2015).

SMC bioassessment monitoring data are presented in **Table A4-13** for the CSCI, CRAM physical habitat scores, and algal IBI scores. Chemistry data collected for physical and general chemistry, periphyton (AFDM and chlorophyll-a), and nutrients are presented in **Table A4-14**. Chemistry results are compared to WQOs from the Basin Plan. However, for nutrients, these objectives are problematic because they do not consider site specific factors (i.e., the assimilative capacity of the waterbody). A Nutrient Numeric Endpoint framework is currently in development as an alternative regulatory approach advocated by State Water Board staff and USEPA Region 9. The purpose of the framework is to address the cause of potential impairments rather than focusing on controlling nutrient concentrations in and of themselves, in order to protect beneficial uses from biostimulatory substances.

4.4.2.2.1 Santa Margarita River at Gavilan

At the Santa Margarita River at Gavilan condition site (902M20301), the CSCI score indicated that the BMI community is *Possibly Altered* (**Table A4-13**). The BMI community did not have a dominant taxon, but the most abundant taxa were the mayflies *Fallceon* sp. and *Baetis* sp. (15% and 10% of the community, respectively), the caddisflies *Hydropsyche* sp. and *Hydroptila* sp. (12% and 9% of the community, respectively), and the true flu *Rheotanytarsus* sp. (8% of the community). An indicator of good water quality included the caddisfly *Tinodes* sp. (**Attachment 4B-2**). Clinger and intolerant taxa are an indicator of community completeness because their abundance tends to decrease in impaired waterbodies. The observed percentage of clinger taxa was above the predicted percentage, which may imply a somewhat healthy BMI community, although the observed percentage of intolerant taxa was far below the predicted percentage. Physical habitat quality as measured by the CRAM score was in the high category (84). The algae community had IBI scores of 22 (soft algae), 58 (diatoms), and 45 (combined overall) (**Table A4-13**). The diatom score was above the statistical boundary between

⁹ Includes the Taxonomic Listing of Benthic Macroinvertebrates, Ranked Abundance of Benthic Macroinvertebrates, CSCI Metrics, CSCI Scores, Physical Habitat Quality Data, Water Chemistry Data, and Taxonomic Listing of Soft Algae and Algal IBIs.

reference and non-reference conditions and the soft algae and combined scores were below the threshold.

Water chemistry results indicated that all analyte concentrations were below WQOs, where applicable (**Table A4-14**). Due to insufficient availability of fine-grained depositional material, sediment chemistry and toxicity were not analyzed.

4.4.2.2.2 *De Luz Creek*

At the De Luz Creek trend site (902WE0888), the CSCI score indicated that the benthic community is *Likely Intact* (**Table A4-13**). The BMI community did not have a dominant taxon, but the most abundant taxa were the true fly *Simulium* sp. (17% of the community), the snail *Physa* sp. (14% of the community), the mayflies *Baetis* sp. and *Baetis adonis* (13% and 11% of the community, respectively), and the caddisfly *Ochrotrichia* sp. (11% of the community). Indicators of good water quality included the presence of the fishfly *Neohermes* sp., caddisfly *Micrasema* sp., and the stone fly family Perlodidae (**Attachment 4B-2**). Clinger and intolerant taxa are an indicator of community completeness because their abundance tends to decrease in impaired waterbodies. The observed percentage of clinger taxa was above the predicted percentage, which may imply a somewhat healthy BMI community, although the observed percentage of intolerant taxa was far below the predicted percentage. Physical habitat quality as measured by the CRAM score was moderate (63). The algae community had IBI scores of 13 (soft algae), 74 (diatoms), and 51 (combined overall) (**Table A4-13**). The diatom score was above the statistical boundary between reference and non-reference conditions and the soft algae and combined scores were below the threshold.

Water chemistry results indicated that concentrations of sulfate and total nitrogen (a HPWQC) were above their respective numeric WQOs. All other parameters met WQOs, where applicable (**Table A4-14**). Due to insufficient availability of fine-grained depositional material, sediment chemistry and toxicity were not analyzed.

Using the six monitoring years of available dry weather monitoring data at 902WE0888, a trend analysis was conducted to determine if conditions are improving or declining in terms of the monitored constituents. Data were tested for normality in order to determine the appropriate trend methodology. Data with normal distribution were assessed using linear regression and data with lognormal distribution were log-transformed and assessed with linear regression. The nonparametric Mann-Kendall test for linear trends was used to evaluate data that did not follow normal or lognormal distributions. Statistical significance was based on a 95% confidence level (e.g., a 5% probability of obtaining a test statistic, or a p-value of less than 0.05). The only statistically significant trend identified was a decreasing trend for total suspended solids (TSS).

4.4.2.2.3 *Sandia Creek Condition Site*

At the Sandia Creek condition site (902M18917), the CSCI score indicated that the BMI community is *Likely Intact* (**Table A4-13**). The BMI community was dominated by the mayfly *Baetis* sp. (55% of the community), followed by the true fly *Simulium* sp. (17%), the mayfly *Fallceon* sp. (4%), and the true fly *Eukiefferiella* sp. (4%). Several highly sensitive BMI taxa were collected, including the alderfly *Neohermes* sp., caddisfly *Micrasema* sp. and the stonefly *Isoperla denningi*. CRAM results indicated high physical habitat quality (89) (**Table A4-13**). Clinger and intolerant taxa are an indicator of community completeness because their abundance tends to decrease in impaired waterbodies. The

observed percentage of clinger taxa was above the predicted percentage (1.0), while the observed percentage of intolerant taxa was far below the predicted percentage (0.27). The diversity of taxa observed exceeded the taxa expected with an O/E score of 1.30. The algae community had IBI scores of 30 (soft algae), 60 (diatoms), and 56 (combined overall) (**Table A4-13**). The diatom score was above the statistical boundary between reference and non-reference conditions and the soft algae and combined scores were below the threshold.

Water chemistry results indicated chloride, sulfate, and total nitrogen were above numeric WQOs. The remaining analyte concentrations were below WQOs, where applicable, although specific conductivity was elevated at 1,925 micro Siemens per centimeter ($\mu\text{S}/\text{cm}$) (**Table A4-14**).

At the Sandia Creek condition site, fine grained depositional material was encountered in sufficient volume for sediment chemistry and toxicity analysis. Analysis for sediment samples included grain size, % solids, total organic carbon (TOC), and pyrethroids. Grain size results indicated that the sample was composed predominately of silt (74%), with 17% clay, and 9% sand, and with TOC percentage of 0.56. None of the nine pyrethroids were detected. The toxicity assay results demonstrated no significant effect to *Hyaella azteca* survival or growth.

4.4.2.2.4 Sandia Creek Trend Site

At the Sandia Creek trend site (SMC01097), the CSCI score indicated that the BMI community is *Likely Intact* (**Table A4-13**). The BMI community was distributed among several dominant species, the largest of which was the mayfly *Baetis* sp. (23% of the community), followed by the mayfly *Fallceon* sp. (10%), the true fly *Simulium* sp. (9%), and the mite *Atractides* sp. (9%). Low representation of non-insect taxa and a high diversity of predators and beetle taxa were signals of a high-quality BMI community. Highly sensitive BMI taxa collected included the stonefly *Malenka* sp. and the caddisfly *Agapetos* sp., as well as the sensitive species present at the condition site. CRAM results indicated moderate physical habitat quality (78) (**Table A4-13**). Clinger and intolerant taxa are an indicator of community completeness because their abundance tends to decrease in impaired waterbodies. The observed percentage of clinger taxa was near the predicted percentage (0.81), while the observed percentage of intolerant taxa was far below the predicted percentage (0.24). The diversity of taxa observed exceeded the taxa expected with an O/E score of 1.16. The algae community had IBI scores of 40 (soft algae), 46 (diatoms), and 49 (combined overall) (**Table A4-13**). All three scores were below the statistical boundary between reference and non-reference conditions.

Water chemistry results indicated that chloride, sulfate, and total nitrogen concentrations were above numeric WQOs. The remaining analyte concentrations were below WQOs, where applicable, although specific conductivity was elevated at 1,834 $\mu\text{S}/\text{cm}$ (**Table A4-14**). Due to insufficient availability of fine-grained depositional material, sediment chemistry and toxicity were not analyzed.

Using the six monitoring years of available dry weather monitoring data at SMC01097, BMI metrics were compared to determine whether conditions are improving or declining in terms of the monitored constituents. CSCI scores were consistently high, representative of reference conditions, ranging from a minimum of 0.90 in 2017 to a maximum of 1.07 in the current year. The Shannon-Weiner Diversity Index ranged from a minimum of 2.22 in 2019, to 3.10 in 2015; the current year score of 2.90 is the median value. Total nitrogen was highest during the current monitoring year with a value of 6.6 milligrams per Liter (mg/L), compared to the minimum value of 3.6 mg/L in 2015. Total phosphorous

was not detected in 2016 and 2017, and was observed at a maximum of 0.11 mg/L in 2018; the current year is a median value for the monitoring period (0.05 mg/L). The Algae IBI score ranged from a minimum of 24 (H20) in 2019 to a maximum of 64 (H20) in 2018; the current year is a median value for the monitoring period (49 Combined H20).

Table A4-13. 2020 CSCI, CRAM, and Algal IBI Scores for SMC Bioassessment Monitoring

Station Code	Stream Name	Habitat	BMI	Algae
		CRAM Score	CSCI Score	Algal IBI
902M20301	Santa Margarita River at Gavilan - Condition	84 High	0.83 Possibly Altered	S2: 22 D18: 58 H20: 45
902WE0888	De Luz Creek - Trend	63 Moderate	0.92 Likely Intact	S2: 13 D18: 74 H20: 51
902M18917	Sandia Creek - Condition	89 High	1.08 Likely Intact	S2: 30 D18: 60 H20: 56
SMC01097	Sandia Creek - Trend	78 Moderate	1.07 Likely Intact	S2: 40 D18: 46 H20: 49

BMI – benthic macroinvertebrate; CRAM – California Rapid Assessment Method; CSCI – California Stream Condition Index; IBI – Index of Biotic Integrity

CSCI scores indicate benthic communities that are very likely altered (scores of 0.00 to 0.62), likely altered (0.63 to 0.78), possibly altered (0.79 to 0.91), or likely intact (at least 0.92).

CRAM score is 25-100; <50 = low, 50-75 = moderate, >75 = high.

S2 = soft algae and cyanobacteria; D18 = diatoms; H20 = combined. IBI Score of 57 is the statistical boundary between reference and non-reference condition.

Table A4-14. 2020 SMC Regional Monitoring Program Chemistry Results

Analyte	Units	Water Quality Objective	Objective Reference	Santa Margarita River at Gavilan - Condition	De Luz Creek - Trend	Sandia Creek - Condition	Sandia Creek - Trend
				902.22	902.21	902.22	902.22
				902M20301	902WE0888	902M18917	SMC01097
				6/24/2020	6/3/2020	5/29/2020	5/29/2020
Physical Chemistry							
Alkalinity (Field)	mg/L	NA		144	216	NR	NR
Alkalinity (Lab)	mg/L	NA		150	220	230	210
Dissolved Oxygen	mg/L	6.0 (a)	Basin Plan	9.34	9.73	9.01	9.10
pH	pH units	6.5-9.0	Basin Plan	8.03	7.57	8.39	8.14
Salinity	ppt	NA		0.48	0.84	0.98	0.90
Specific Conductivity	µS/cm	NA		974	1,494	1,925	1,834
Turbidity	NTU	20	Basin Plan	2.01	0.25	2.0	1.7
Water Temperature	Celsius	NA		24.8	19.6	17.6	18.5
Periphyton							
Ash-Free Dry Weight	g/m ²	NA		28.5	44	22	27.9
Chlorophyll a	mg/m ²	NA		129	29.2	101	85.2
General Chemistry							
Chloride	mg/L	250 (a)	Basin Plan	120	210	290	270
Sulfate	mg/L	250 (a)	Basin Plan	170	280	360	350
Total Hardness as CaCO ₃	mg/L	NA		296	631	730	670
Total Suspended Solids	mg/L	NA		5	<1	3	3

Table A4-14. 2020 SMC Regional Monitoring Program Chemistry Results

Analyte	Units	Water Quality Objective	Objective Reference	Santa Margarita River at Gavilan - Condition	De Luz Creek - Trend	Sandia Creek - Condition	Sandia Creek - Trend
				902.22	902.21	902.22	902.22
				902M20301	902WE0888	902M18917	SMC01097
				6/24/2020	6/3/2020	5/29/2020	5/29/2020
Nutrients							
Ammonia as N	mg/L	(b)	USEPA Freshwater Criteria	0.013J	<0.012	<0.044	<0.044
Nitrate + Nitrite as N	mg/L	10 (c)	Basin Plan	0.65	5.8	5.8	6.6
Nitrate as N	mg/L	10 (c)	Basin Plan	0.65	5.8	5.8	6.6
Nitrite as N	mg/L	1 (c)	Basin Plan	<0.042	<0.042	0.0095J	0.014
Orthophosphate as P	mg/L	NA		0.0064	0.0067	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L	NA		0.34	<0.018	0.18	<0.093
Total Nitrogen	mg/L	1	Basin Plan	0.99	5.8	6.0	6.6
Total Phosphorus	mg/L	0.1	Basin Plan	0.027	<0.012	0.05	0.05

< - Results less than the method detection limit.

NA indicates no criteria or published value was available or applicable to the matrix or program.

NR - Not required

(a) Water Quality Objective is based on the San Diego Regional Water Quality Control Plan by watershed for the San Diego Region (Basin Plan), 1994 (with amendments effective on or before May 17, 2016) and may vary by hydrologic area.

(b) Water Quality Objective is based on the criterion continuous concentration (CCC) using water temperature and pH as described in the U.S. EPA, 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater, EPA-822-R-13-001, April 2013.

(c) Water Quality Objective is based on the MUN beneficial as described in the Basin Plan, 1994 (with amendments effective on or before May 17, 2016).

J - Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

Shaded results did not meet water quality objectives.

4.4.3 Total Maximum Daily Load Monitoring

The Rainbow Creek Nutrient TMDL (San Diego Water Board, 2005) became effective in February 2006. Compliance with the TMDL may be demonstrated via one of five compliance pathways identified in Attachment E.3 of the Permit, including meeting final receiving water limitations (RWLs). During 2019-2020, monitoring in compliance with the Rainbow Creek Nutrient TMDL was conducted at the locations shown in **Figure A4-6**. Eleven locations are in the receiving water, while HST01 is an MS4 outfall and HST02 is a location that flows to the HST01 outfall. Methodology is described in the *Sampling and Analysis Plan for Rainbow Creek Nutrient Reduction TMDL Implementation Water Quality Monitoring* (County of San Diego Department of Public Works Watershed Protection Program, 2010) and the *Quality Assurance Project Plan, Rainbow Creek Watershed TMDL and MS4 Water Quality Monitoring Program* (WESTON, 2020a). Detailed results are provided in the 2019-2020 Rainbow Creek Nutrient TMDL Monitoring Report (WESTON, 2020b) provided as **Attachment 4C**.

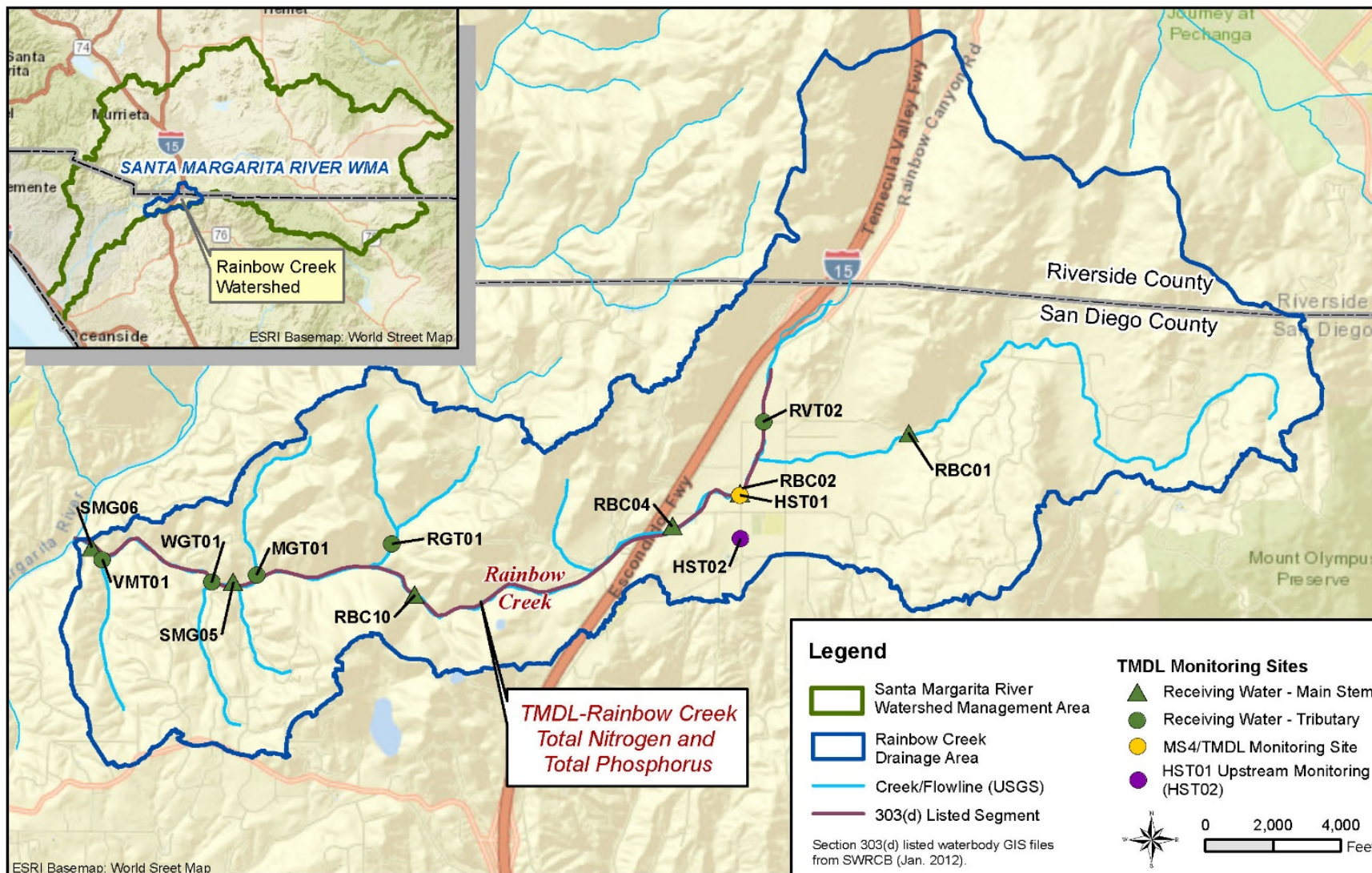


Figure A4-6. Rainbow Creek Nutrient TMDL Compliance Monitoring Locations

Concentrations of total nitrogen were above the RWL of 1 mg/L in all but two of the 107 samples collected as part of the Rainbow Creek TMDL Monitoring Program in the 2019-2020 monitoring year. Ninety-three of the 107 samples collected during 2019-2020 were above the total phosphorus RWL of 0.1 mg/L. The highest mean concentration of total nitrogen on the main stem of Rainbow Creek was measured at RBC02 (at Huffstatler Road), followed by RBC04 (at Old Highway 395). The highest total phosphorus mean concentrations on the main stem were found at RBC10 (at MWD Crossing), followed by RBC04 (at Old Highway 395). The lowest mean concentrations for total nitrogen and total phosphorus on the main stem were measured at RBC01 (Jubilee Way) and SMG06 (at Stage Coach Lane). These results may indicate that nutrients were added to the system downstream of RBC01 (Jubilee Way) and upstream of RBC02 (at Huffstatler Road).

In tributaries to Rainbow Creek, the highest mean concentrations of total nitrogen and total phosphorus were observed at RVT02 (Chica Tributary). This tributary enters Rainbow Creek downstream of RBC01 (Jubilee Way) and just upstream of RBC02 (at Huffstatler Road).

Statistically significant increasing trends in total nitrogen concentrations were evident at four of the six monitoring locations along the main stem of Rainbow Creek as shown in **Table A4-15**. A significant trend was not detected for total nitrogen at RBC01 (Jubilee Way) or SMG06 (at Stage Coach Lane). Of the five tributary monitoring locations, four of the sites were determined to have significant decreasing trends for total nitrogen and one site, RVT02 (Chica Tributary) was found to have a significant increasing trend in total nitrogen. Data collected at other TMDL stations, HST01 (outfall) and HST02 (location upstream of HST01 outfall) indicated increasing trends for total nitrogen.

For total phosphorus concentrations, four of the main stem locations had statistically significant decreasing trends. A significant trend was not identified for RBC01 (Jubilee Way) nor RBC10 (at MWD Crossing). Among the tributary locations, only one significant trend for total phosphorus concentrations was identified, a decreasing trend at Chica Tributary (RVT02). Significant increasing trends in total phosphorus were identified at stations HST01 and HST02.

Table A4-15. Rainbow Creek Nutrient TMDL Monitoring Trend Analysis Results

Site ID	Description	Statistically Significant Trends	
		Total Nitrogen	Total Phosphorus
Main Stem			
RBC01	Rainbow Creek at Jubilee Way	No Trend Identified	
RBC02	Rainbow Creek at Huffstatler Road	▲	▼
RBC04	Rainbow Creek at Old Highway 395	▲	▼
RBC10	Rainbow Creek at MWD Crossing	▲	No Trend Identified
SMG05	Rainbow Creek at Willow Glen Road	▲	▼
SMG06	Rainbow Creek at Stage Coach Lane	No Trend Identified	▼
Tributary			
RVT02	Chica Tributary at 1 st Street	▲	▼
RGT01	Rainbow Glen Tributary to Rainbow Creek	▼	No Trend Identified
MGT01	Margarita Glen Tributary to Rainbow Creek	▼	No Trend Identified
WGT01	Willow Glen Tributary at Willow Glen Road	▼	No Trend Identified
VMT01	Via Milpas Tributary to Rainbow Creek	▼	No Trend Identified
Other TMDL Compliance Monitoring Locations			
HST01	Brow Ditch to Rainbow Creek at Huffstatler Road	▲	▲
HST02	Brow Ditch to Rainbow Creek at Huffstatler Road	▲	▲

▲ indicates an increasing trend (potential declining water quality)
▼ indicates a decreasing trend (potential improving water quality)

4.4.4 Hydromodification Monitoring at the Long-Term Receiving Water Station

During the 2019-2020 monitoring year, hydromodification monitoring was conducted at SMR-MLS-2 in accordance with the WQIP MAP schedule and Provision D.1.c.(6) of the Permit.¹⁰ The LTRW station is shown in **Figure A4-2** in **Section 4.4.1**. The hydromodification assessment Reach locations are shown in **Figure A4-7**. There are no major storm drain outfalls located near the hydromodification assessment domain of analysis. Reach 1 was located in proximity to the SMR-MLS-2 station and Reach 2 was approximately 600 feet (ft) upstream of Reach 1. Reach 3 was approximately 1,150 ft downstream of Reach 1 and coincided with the dry weather receiving water bioassessment monitoring site. Channel accessibility and safety concerns were factors in the placement of the monitored reaches.

¹⁰ Hydromodification monitoring at the Middle and Upper SMR Subwatershed LTRW stations will be conducted during the 2020-2021 monitoring year.

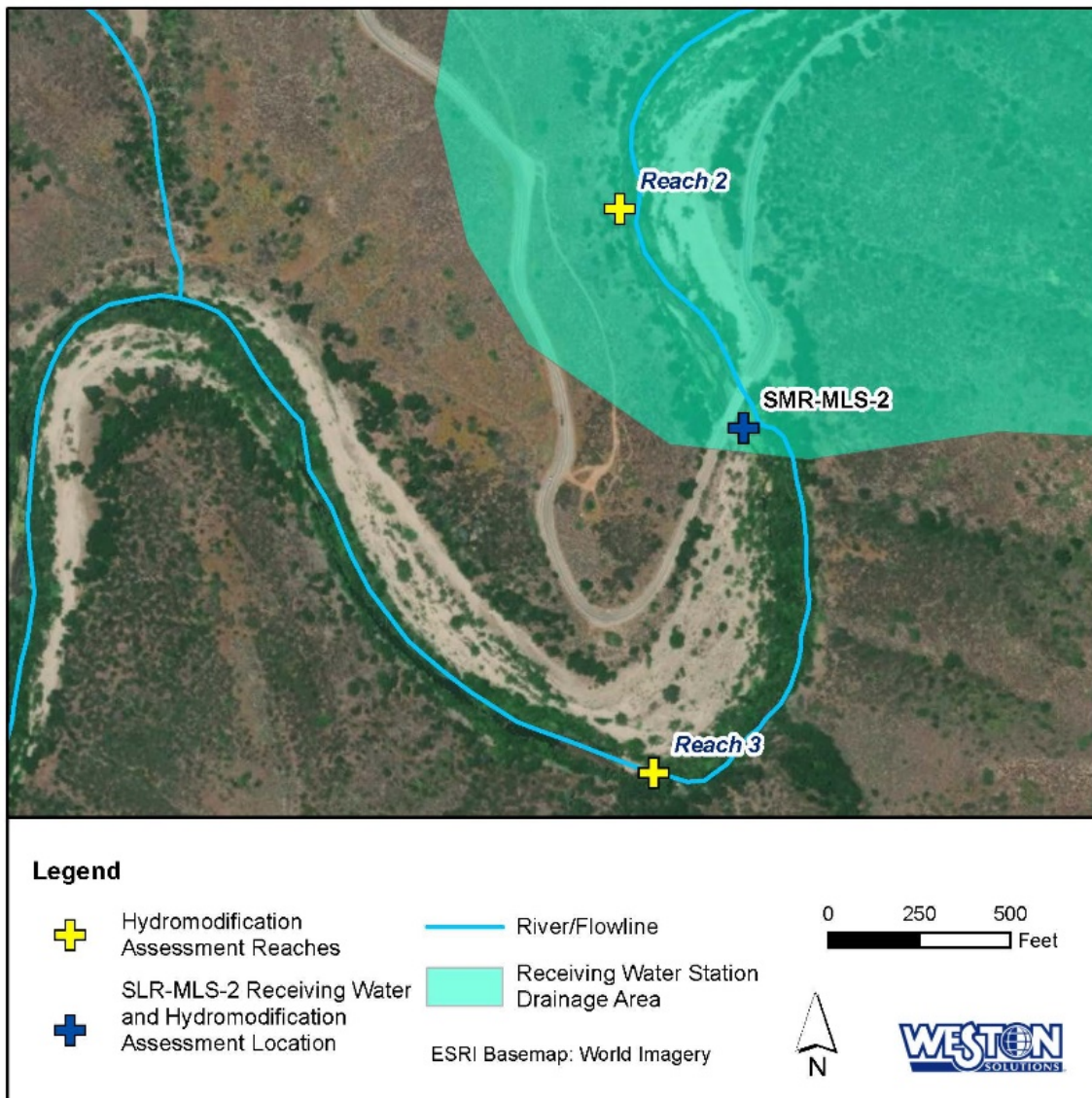


Figure A4-7. Hydromodification Monitoring Reach Locations at SMR-MLS-2

The SCCWRP channel assessment tool was employed to perform a rapid assessment of the relative susceptibility of the monitored reaches to effects of hydromodification. The field screening tool uses a series of decision trees, checklists, and tables with calculations to arrive at determinations of vertical and lateral susceptibility. The results of this process for SMR-MLS-2 are presented in **Table A4-16**. The screening tool data and photographs are provided in **Attachment 4A-5**. The geomorphic assessment results indicated that these reaches were all were in labile bed states and had very high vertical susceptibilities (i.e., susceptibility of channel to deepening). The very high vertical susceptibility results from the SCCWRP channel assessment tool were driven by a combination of sand dominated bed material, which has little resistant substrate, and by lack of effective grade control. All reaches were determined to have a labile bed with no grade control, causing the highest vertical susceptibility scores of Very High to be assigned. Reach 1 was located downstream of the De Luz Road overpass and is experiencing active formation of a chute cutoff; the channel bifurcates and has

split a significant portion of flow onto a historical floodplain. The Valley Width Index (VWI) causes a lateral susceptibility rating of High to be assigned to Reach 1. Reach 2 was bound on the right bank by a protrusion of bedrock and directly attached to the hillslope, and the left bank was confined by a moderately well-consolidated bank with an armoring vegetative layer. The resistant bedrock bank and moderately resistant left bank caused Reach 2 to be assessed as having a medium lateral susceptibility. Reach 3 was bound on the left bank by a protrusion of bedrock but had greater lateral susceptibility on the right bank with the ability to migrate laterally onto the current floodplain which indicates High lateral susceptibility. The geomorphic results indicate a moderate to high potential for changes to the lateral form or bank composition of the channel. Physical habitat quality results were assessed using CRAM (Collins et al, 2012) and are presented in **Section 4.4.2.1**.

The SCCWRP channel assessment tool does not evaluate current conditions in terms of attribution to historic land-use practices. It should be noted that this tool assesses proximity to geomorphic thresholds delineated using field data from small watersheds in Southern California. The tool focuses on small watersheds because the majority of larger streams in the region have been substantially altered in form and/or flow (Bledsoe et al., 2010). The receiving water channel near SMR-MLS-2 is a high gradient reach that receives almost all of the flow from the Santa Margarita River Watershed, with a drainage area of more than 163,200 acres to SMR-MLS-2. The SCCWRP channel assessment tool may need to be revised or a new tool may need to be developed to better assess large developed watersheds in order to make management decisions.

Based on the WQIP MAP schedule, the District, on behalf of the Riverside Copermittees, will complete long-term receiving water hydromodification monitoring during the 2020-2021 monitoring year.

Table A4-16. Hydromodification Monitoring Summary

Location	Description	Latitude	Longitude	d50 (mm)	% Sand	Incision/Braiding Risk	Vertical Susceptibility	Lateral Susceptibility
SMR-MLS-2 Reach 1	SMR-MLS-2 receiving water monitoring station	33.39782	-117.26267	2	64	>50	Very High	High
SMR-MLS-2 Reach 2	Approximately 600 feet upstream of SMR-MLS-2	33.39948	-117.26377	2	92	>50	Very High	Medium
SMR-MLS-2 Reach 3	Approximately 1150 feet downstream of SMR-MLS-2	33.39522	-117.26350	2	82	>50	Very High	High

4.4.5 Receiving Water Monitoring Assessments

Receiving water monitoring was conducted in the SMR WMA during 2018-2019. Long-term receiving water monitoring requirements for wet weather were completed at two of the three LTRW stations, providing long-term receiving water data for the Lower SMR Subwatershed and Middle SMR Subwatershed during three events. Five mobilizations were conducted for wet weather monitoring at the LTRW station in the Upper SMR Subwatershed, but there was no surface flows observed and water quality samples could not be collected. Dry weather monitoring requirements were completed for the Lower SMR Subwatershed LTRW station. Dry weather monitoring for the Middle and Upper SMR Subwatersheds is to be performed during the 2020-2021 monitoring year in accordance with the schedule in the WQIP. Other programs providing receiving water data include participation in the SMC Regional Monitoring Program and TMDL monitoring in compliance with the Rainbow Creek Nutrient TMDL. Receiving water results collected under these programs were summarized in **Sections 4.4.1 through 4.4.4** and in the documents attached to this Appendix.

The receiving water assessments required by Permit Provision D.4.a were addressed in the Regional Monitoring and Assessment Report (RMAR), which was submitted to the San Diego Water Board in December 2017 with the Report of Waste Discharge (ROWD) in accordance with Provision D.4.a.(1)(b). However, assessments that are reliant on receiving water data collected under an accepted WQIP and MAP were not addressed in the RMAR because the WQIP was in development at the time, and long-term receiving water monitoring data had not yet been collected under the accepted WQIP MAP. Collection of long-term receiving water monitoring data is now underway, with a portion completed during the 2019-2020 monitoring year. The required assessments will be conducted once the complete set of long-term receiving water data have been collected at the LTRW stations pursuant to the schedule of the WQIP MAP. The Riverside County Copermittees are proactively addressing a data gap for the Upper SMR Subwatershed. The Wilson Creek LTRW station is intended to provide receiving water data for this subwatershed. Five attempts were made during the 2019-2020 monitoring year to monitor this station during wet weather, and none of these storms produced surface flows. As a result, the District initiated a modeling study to identify mobilization criteria specific to this LTRW station. A technical memorandum has been prepared and is provided in **Attachment 4I**. The Riverside County Copermittees will make additional attempts to monitor the Wilson Creek LTRW station in the 2020-2021 monitoring year.

4.5 MS4 Outfall Monitoring

As part of the WQIP process, the Copermittees have developed a program to monitor discharges from MS4 outfalls during dry and wet weather that meets the requirements of Provisions D.2.b and D.2.c of the Permit. The purpose of MS4 outfall monitoring is to evaluate the potential impacts from MS4 outfall discharges on the beneficial uses of a waterbody during dry and wet weather conditions. Under dry conditions, the program is also used to assess the ability of jurisdictional and watershed programs to effectively eliminate non-stormwater discharges to receiving waters. The data generated are used to identify persistently flowing outfalls, pollutants in discharges, guide pollutant source identification and non-stormwater discharge elimination efforts, and track progress toward achieving numeric goals set forth in the WQIP.

During the 2013-2014 monitoring year, an inventory of major MS4 outfalls discharging directly to a receiving water was developed by the County of San Diego in accordance with Provision D.2.a.(1) of the Permit, and refinements have been made since that time. The Riverside County Copermittees began

developing their major MS4 outfall inventory specific to the Permit requirements during the 2016-2017 monitoring year, following their enrollment under the Permit. Therefore, the 2019-2020 monitoring year was the fourth year of MS4 outfall monitoring for the Riverside County Copermittees and the seventh for the County of San Diego.

During 2019-2020, one outfall was added to the inventories for the City of Murrieta, County of Riverside, County of San Diego and eight outfalls were added to the District's inventory. No major outfalls have been identified in the Upper SMR Subwatershed within either Riverside or San Diego County.

The number of major outfalls monitored by monitoring program element and Copermittee is provided in **Table A4-17**. In accordance with Provision D.2.b.(1) of the Permit, Copermittees with fewer than 125 major MS4 outfalls in their inventory, which includes each of the Copermittees in the SMR WMA, must conduct field screening at 80% of these major outfalls twice per monitoring year (October 1st through September 30th). The number of major outfalls monitored per year is subject to change based on new information, updates to outfall inventories, changes in transient or persistent flow classifications, and/or changes or updates to the PWQCs.

Table A4-17. Number of Major MS4 Outfalls for Monitoring per Copermittee

Copermittee	Field Screening (Provision D.2.b(1))*	Dry Weather Monitoring (Provision D.2.b(2))	Wet Weather Monitoring (Provision D.2.c)
City of Murrieta	32	5	1
City of Temecula	119	5	1
City of Wildomar	13	5	1
County of Riverside	8	5	1
County of San Diego	14	5	1
District	90	5	1

*Includes all major outfalls in inventory. Some may be inaccessible.

Program descriptions, monitoring results, and assessments for MS4 outfall monitoring conducted during 2019-2020 are presented in the following subsections. Methodology is described in greater detail in the WQIP MAP.

4.5.1 Dry Weather Field Screening and Outfall Prioritization

Dry weather field screening is visual monitoring of major MS4 outfalls as outlined in Table D-5 of the Permit. Field screening is conducted to identify non-stormwater and illicit discharges, determine which discharges are transient and which are persistent, and prioritize those discharges that will be investigated and eliminated. This program is designed to assess the effectiveness of jurisdictional programs to effectively prohibit non-stormwater discharges. Each Copermittee performs field screening of a certain number of major MS4 outfalls on an annual basis (e.g., typically an effort equivalent to visiting at least 80% of their outfall inventory twice per year) to maintain an up-to-date

inventory of persistently flowing outfalls and to initiate follow-up investigations that identify and mitigate the source(s). The data collected during field screening are one of the sources of information for the Copermittees' Illicit Discharge Detection and Elimination (IDDE) Program (see **Section 4.5.4**). Highest priority persistent flow monitoring in Riverside County was conducted during separate visits to outfalls providing additional field screening results at the highest priority outfalls. The County of San Diego conducts additional visits to outfalls for other projects, which provides supplemental flow observations and are shown in a separate column (**Table A4-18**). Dry weather field screening records are provided as **Attachment 4D**. California Environmental Data Exchange Network (CEDEN) data submittals can be found in **Attachment 4J**.

The number of major MS4 outfall stations included in dry weather field screening and the total number of visual observations conducted by each Copermittee in the WMA during 2019-2020 are shown in **Table A4-18**. Some source investigations were conducted as separate follow-up visits and are included in the source investigations column. Other investigations were performed during routine visits and are included in the routine visits column and the source investigations column will list "NA."

Table A4-18. Number of Visual Observations Conducted During the 2019-2020 Monitoring Year at Major MS4 Outfalls

Copermittee	Number of Major MS4 Outfalls or Proxy Locations Visited	Number of Routine Visits ¹	Number of Source Investigations ²	Number of Additional Visits for Other Projects
City of Murrieta	32	71	0 ³	-
City of Temecula	102	204	0 ³	-
City of Wildomar	11	25	10	-
County of Riverside	8	25	0	-
County of San Diego	14	28	4 ⁴ (24 locations)	175
District	90	174	113 ⁵	-

1 - Copermittees with < 125 major outfalls in WMA; at least 80% of major outfalls must be screened twice per year. Includes additional field screening (visual observations) recorded during separate high priority persistent flow monitoring visits.

2 – Visual Observations of sources are also recorded during routine visits and persistent flow monitoring events, which are not included in these counts. These counts do not include visits for other IDDE program activities.

3 – In lieu of upstream investigations at high priority outfalls, the City of Murrieta and City of Temecula sent notification letters with public education pamphlets to residential HOAs and commercial POAs to compel these HOAs and POAs to take the lead with eliminating dry weather flows throughout the communities they serve.

4 – 5 upstream source investigations were initiated. HST01 was dry during IDDE visit, so no further upstream activities were conducted. Therefore, 4 source investigations were completed.

5 – Additional Visits to District Outfalls 1025, 1032, 1037, 1060, 1061 in response to NAL exceedances on May 12-14, 2020.

Copermittees recorded numerous visual observations regarding outfall and flow characteristics including the following:

- Flow conditions (flowing [including trickle flow, where applicable], ponded, or dry);
- Whether or not the flow reached the receiving water;
- Whether or not there was a non-stormwater flow source;

- Potential non-stormwater sources;
- Whether the flow source was eliminated;
- Evidence of obvious illegal connection and illicit discharge (IC/ID);
- Whether trash was present and relative amount;
- Whether there was evidence of illegal dumping.

The complete set of visual observations recorded during dry weather field screening visits is provided in **Attachment 4D**. CEDEN data submittals can be found in **Attachment 4J**. The field screening trash assessment results are summarized in **Table A4-21**. There was no trash (a PWQC in portions of the WMA) present during 46% of the visits.

Table A4-19. Dry Weather Field Screening Trash Assessments

Copermittee	HSA No.	No Trash Present	Trash Present
Upper SMR Subwatershed			
<i>No major outfalls identified</i>			
Middle SMR Subwatershed			
City of Murrieta	902.31	0	8
	902.32	6	19
	902.33	4	24
Subtotal		10	51
City of Temecula	902.32	50	25
	902.42	32	13
	902.51	26	14
	902.52	9	3
Subtotal		117	55
City of Wildomar	902.31	1	2
	902.32	12	6
Subtotal		13	8
County of Riverside	902.33	4	9
	902.41	0	4
	902.51	1	4
Subtotal		5	17
District	902.31	25	13
	902.32	14	12
	902.33	11	10
	902.41	2	8
	902.42	10	17
	902.51	8	28
	902.52	1	4

Table A4-19. Dry Weather Field Screening Trash Assessments

Copermittee	HSA No.	No Trash Present	Trash Present
Subtotal		71	92
Lower SMR Subwatershed			
County of San Diego	902.13	4	27
	902.22	2	0
	902.23	7	18
Subtotal		13	45
Grand Total		229	268

A summary of the flow conditions (i.e., flowing, trickle flow, ponded, or dry) at the major MS4 outfall stations during the 2019-2020 field visits is shown in **Figure A4-8**, where the stacked bars represent the number of observations in each flow category by Copermittee. The category of trickle flow used by the Riverside Copermittees identifies low flow that cannot be directly measured and is estimated to be < 0.01 cfs or < 0.001 cfs depending on field conditions. Given that outfalls are visited more than once, the number of observations is greater than the number of MS4 outfalls monitored.

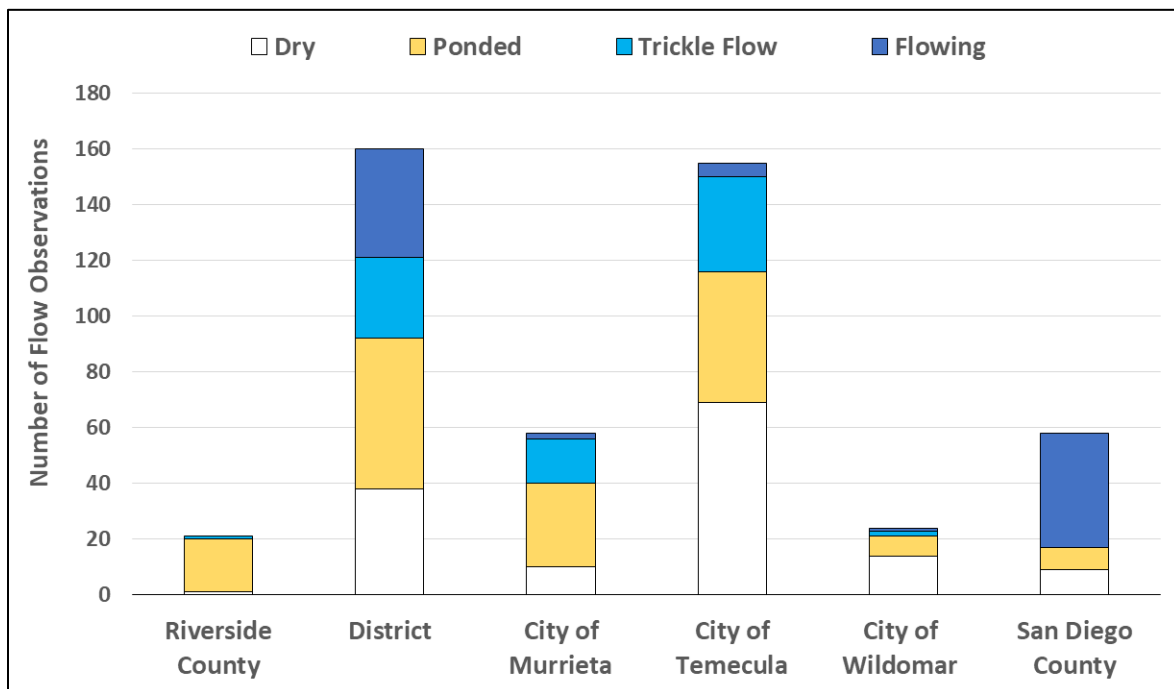


Figure A4-8. Dry Weather Field Screening Flow Observations at Major MS4 Outfall Stations

During dry weather field screening, Copermittees measured or estimated flow rates at stations where flow was present, as required by Table D.5 of the Permit. Sixty-four % of observations (306 of 476) indicated no flow (dry or pooled/pounded conditions). Some flow observations were noted as a trickle, and not all of these flows were measurable. Of the observations where flows could be estimated, 58% (95 observations) had estimated flows less than one gallon per minute (gpm¹¹). A summary of flow estimations is presented in **Figure A4-9**.

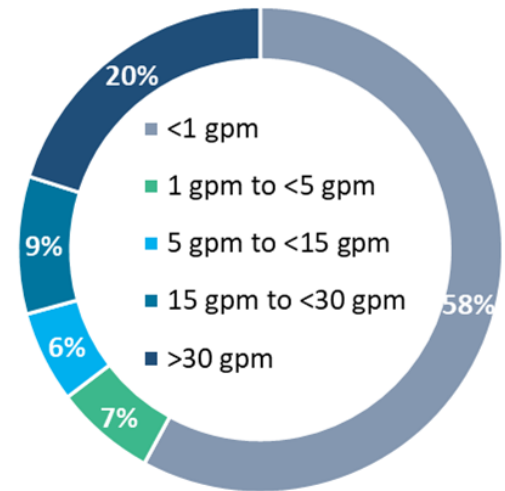


Figure A4-9. Flow Rate Estimations Based on Visual Observations at Major MS4 Outfalls

Where an illicit discharge is observed during dry weather field screening, follow-up investigations are performed to locate the source and eliminate the discharge. When flow sources are known based on historical data, this information is listed on the field sheet and the upstream area is briefly checked for additional sources. In cases

where discharges are observed, but no obvious illicit discharge was identified as the source, appropriate documentation is recorded, and the locations are prioritized for follow-up.

Based on these field screening visits and available historical data, the Copermittees determined the flow status of each major MS4 outfall as persistent, transient, dry, or undetermined at the completion of the monitoring year. As defined in the Permit, flow status for a given outfall is dry if no flowing or standing water is observed at the outfall over the three most recent visits, and persistent flow is defined as presence of flowing or standing water for the three most recent visits. Otherwise, the outfall status is classified as transient. Outfalls with unknown flow status are inaccessible. The number of MS4 outfalls in each category is shown in **Table A4-20**. Flow determinations are shown in **Figure A4-10**.

¹¹ In the field, flow is generally measured in cubic feet per second (cfs). One cfs = 449 gallons per minute (gpm).

Table A4-20. 2019-2020 Dry Weather Flow Determinations for Major MS4 Outfalls

Copermittee	HSA	Persistent	Transient	Dry/ No-Flow	Undetermined	Grand Total
Upper SMR Subwatershed						
<i>No major outfalls identified</i>						
Middle SMR Subwatershed						
City of Murrieta	902.31	2	0	0	0	2
	902.32	6	5	3	0	14
	902.33	6	8	2	0	16
SUB-TOTAL		14	13	5	0	32
City of Temecula	902.32	27	18	19	2	66
	902.42	16	2	6	0	24
	902.51	10	9	2	0	21
	902.52	1	3	4	0	8
SUB-TOTAL		54	32	31	2	119
City of Wildomar	902.31	0	1	3	1	5
	902.32	3	3	2	0	8
SUB-TOTAL		3	4	5	1	13
County of Riverside	902.33	3	1	0	0	4
	902.41	2	0	0	0	2
	902.51	1	0	1	0	2
SUB-TOTAL		6	1	1	0	8
District	902.31	6	6	8	0	20
	902.32	9	4	1	0	14
	902.33	8	6	0	0	14
	902.34	1	0	0	0	1
	902.41	2	1	1	0	4
	902.42	11	3	1	0	15
	902.51	16	2	1	0	19
	902.52	3	0	0	0	3
SUB-TOTAL		56	22	12	0	90
Lower SMR Subwatershed						
County of San Diego	902.13	1	5	2	0	8
	902.22	4	1	0	0	5
	902.23	0	0	1	0	1
SUB-TOTAL		5	6	3	0	14
GRAND TOTAL		138	78	57	3	276

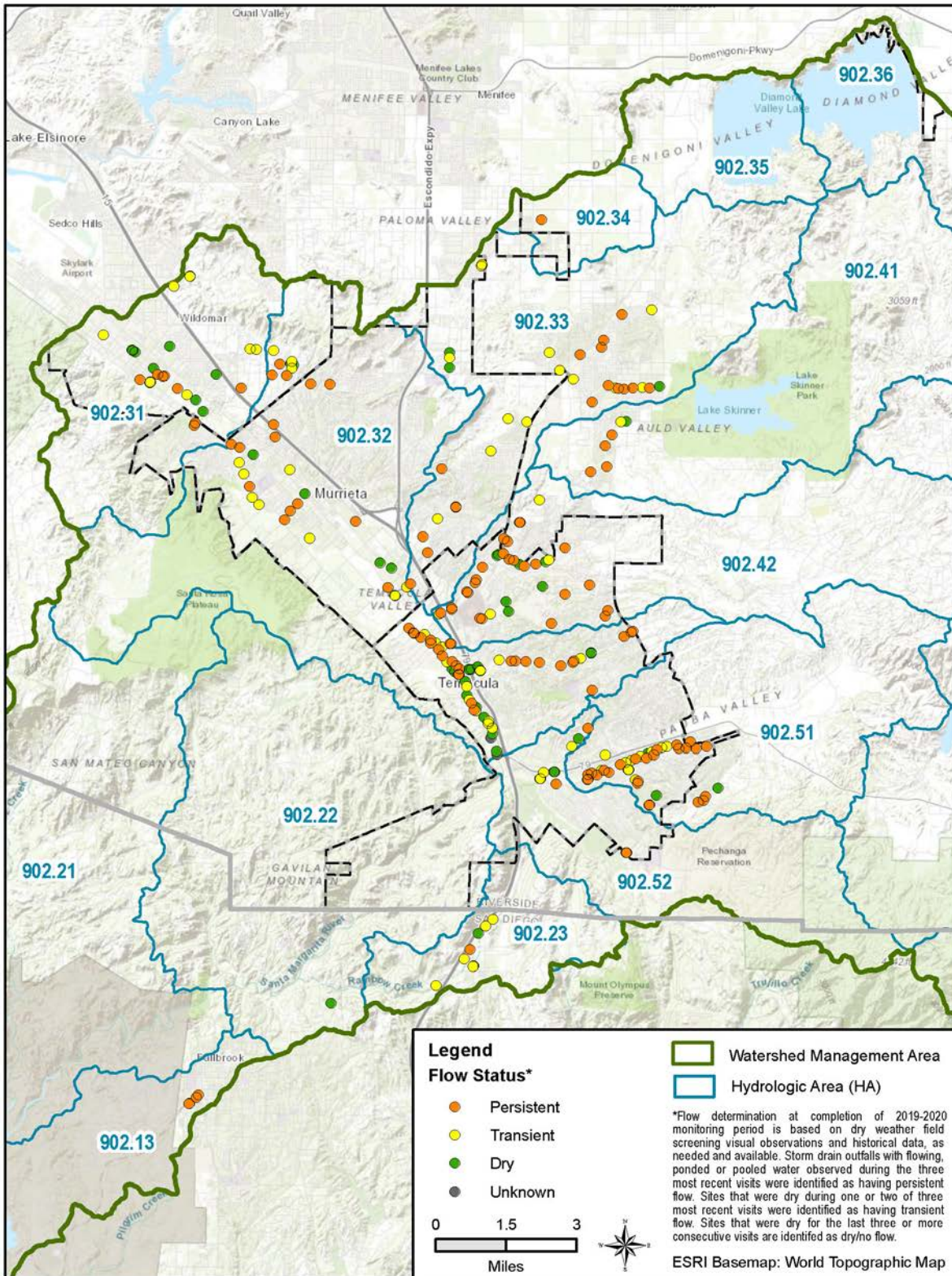


Figure A4-10. Dry Weather Flow Determinations for Major MS4 Outfalls

Copermittees prioritize persistently flowing MS4 outfalls based on their potential to contribute to the HPWQC (i.e., nutrients), and other pertinent factors such as safety conditions and site accessibility. In cases where less than five persistently flowing outfalls were identified, the next highest priority transient outfall was selected. Thirty highest priority MS4 outfall discharge monitoring stations (five for each Copermittee) were identified in the WQIP. Since the submittal of the WQIP, the Riverside Copermittees and the County of San Diego have adjusted their selection of highest priority outfalls, and changes are documented in **Appendix 5** of the 2018-2019 WQIP Annual Report and in this 2019-2020 WQIP Annual Report. The list of prioritized outfalls is maintained and updated as program implementation develops and additional monitoring occurs.

4.5.2 Highest Priority Dry Weather MS4 Outfall Discharge Monitoring

The purpose of the highest priority dry weather MS4 outfall discharge monitoring is to evaluate the potential contribution from MS4 outfall discharges to receiving water quality during dry weather conditions and to assess the ability of programs to effectively eliminate non-stormwater discharges to waterbodies or waterways. The 2019-2020 monitoring year was the second year of this sampling under the WQIP MAP, although the County of San Diego began conducting analytical monitoring during the 2017-2018 monitoring year. Sampling was conducted at the highest priority outfalls identified for each jurisdiction in the WMA (**Table A4-21, Figure A4-11**) between May 7 and August 31, 2020. Of the 30 outfalls visited for highest priority persistent flow discharge monitoring, 23 were dry, ponded, or there was insufficient flow to sample during one or both monitoring events. Of the 60 outfall events (30 outfalls monitored twice), 41 resulted in a VNS result due to lack of measurable flow,¹² as follows: 29 outfall events were ponded, 7 had trickle flow too low to sample, and 5 were dry. **Table A4-21** provides the sampling event dates for each outfall, the number of events that were VNS, and the number of events where a sample was collected. In-situ measurements were taken for pH, temperature, conductivity, dissolved oxygen, and turbidity. Grab samples were collected and analyzed for constituents contributing to the HPWQC, 2014/2016 303(d) List impairments, TMDLs, NALs, and those listed in Table D-7 of the Permit. Grab samples were also collected from receiving waters to which the sampled outfalls were discharging (County of San Diego) or a historical dry weather average from the LTRW station was used (Riverside Copermittees). These samples were analyzed for total hardness, a measurement needed to compare concentrations of metals to hardness-dependent NALs. Visual observations were also recorded.

Analytical results are provided in **Table A4-22** for the Riverside County Copermittees and **Table A4-23** for the County of San Diego. Results are compared to NALs as provided in the Permit. In accordance with Table C-4 of the Permit, indicator bacteria concentrations are compared to instantaneous maximum value (IM) NALs. The remaining constituent concentrations, including general and physical chemical constituents, nutrients, and total and dissolved metals, are compared to Maximum Daily Action Level (MDAL) NALs. NALs for total nitrogen (1.0 mg/L) and total phosphorus (0.1 mg/L) are the same concentrations as the numeric targets given in the Rainbow Creek Nutrient TMDL. Result summaries note where exceedances involve HPWQC or PWQC constituents identified in the WMA. However, the outfall may not discharge to the particular geographic area for which the HPWQC or PWQC has been identified. Laboratory and field data will be uploaded to CEDEN, and data submittals are provided in **Attachment 4J**.

¹² Per Provision D.2.b.(2)(e), samples are collected when there is measurable flow.

Highest priority outfalls were a specific focus for IDDE investigations during the 2019-2020 monitoring year. The results from these investigations are presented in **Section 4.5.4.2**.

Table A4-21. Highest Priority Outfalls during the 2019-2020 Monitoring Year

Copermittee	HSA	Outfall	Latitude (NAD83)	Longitude (NAD83)	Dates Monitored		Events VNS ¹	Events Sampled
City of Murrieta	902.33	902MS44030	33.533058	-117.176415	5/14/2020	8/27/2020	2 Poned	0
	902.33	902MS44038	33.556767	-117.159943	5/12/2020	8/27/2020	2 Poned	0
	902.33	902MS44039	33.556694	-117.159965	5/12/2020	8/27/2020	2 Poned	0
	902.32	902MS44062	33.552029	-117.196884	5/12/2020	8/26/2020	2 Poned	0
	902.32	902MS44063	33.552029	-117.196884	5/12/2020	8/26/2020	1 Trickle	1
District	902.32	902MS41060	33.59446	-117.21375	5/12/2020	8/26/2020	0	2
	902.42	902MS41025	33.5241	-117.1651	5/13/2020	8/27/2020	0	2
	902.42	902MS41032	33.5521	-117.1361	5/12/2020	8/27/2020	0	2
	902.41	902MS41037	33.568	-117.1104	5/14/2020	8/27/2020	0	2
	902.32	902MS41061	33.5943	-117.2066	5/12/2020	8/26/2020	0	2
Riverside County	902.41	902MS42207	33.576133	-117.105133	5/14/2020	8/31/2020	2 Poned	0
	902.33	902MS42211	33.593917	-117.100483	5/14/2020	8/31/2020	2 Poned	0
	902.33	902MS42235	33.606533	-117.10695	5/12/2020	8/31/2020	2 Poned	0
	902.33	902MS42236	33.606533	-117.10695	5/12/2020	8/31/2020	2 Poned	0
	902.51	902MS42245	33.466433	-117.069717	5/13/2020	8/27/2020	2 Poned	0
City of Temecula	902.32	902MS43038	33.509566	-117.115947	5/13/2020	8/27/2020	1 Trickle	1
	902.42	902MS43120	33.530492	-117.155168	5/13/2020	8/27/2020	2 Trickle	0
	902.52	902MS43082	33.471773	-117.122115	5/13/2020	8/27/2020	1 Poned, 1 Trickle	0
	902.42	902MS43119	33.525695	-117.161120	5/13/2020	8/27/2020	2 Trickle	0
	902.42	902MS43123	33.533461	-117.152525	5/13/2020	8/27/2020	2 Poned	0

Table A4-21. Highest Priority Outfalls during the 2019-2020 Monitoring Year

Copermittee	HSA	Outfall	Latitude (NAD83)	Longitude (NAD83)	Dates Monitored		Events VNS ¹	Events Sampled
City of Wildomar	902.32	902MS45012	33.597012	-117.228161	5/12/2020	8/26/2020	1 Poned, 1 Dry	0
	902.32	902MS45015	33.600562	-117.225093	5/13/2020	8/26/2020	2 Poned	0
	902.32	902MS45019	33.601411	-117.22081	5/13/2020	8/26/2020	1 Poned, 1 Dry	0
	902.31	902MS45024	33.605061	-117.233763	5/12/2020	8/26/2020	2 Dry	0
	902.32	902MS45026	33.597109	-117.222806	5/12/2020	8/26/2020	2 Poned	0
County of San Diego	902.23	HST01	33.41506	-117.15202	5/7/2020	7/13/2020	0 ²	2
	902.13	MS4-SMG-015	33.37476	-117.25261	5/7/2020	7/13/2020	0	2
	902.13	MS4-SMG-021	33.37477	-117.25259	5/7/2020	7/13/2020	0	2
	902.23	MS4-SMG-063	33.40928	-117.16562	5/7/2020	7/13/2020	0 ²	2
	902.13	MS4-SMG-062	33.3738439	-117.253496	5/7/2020	7/13/2020	0 ²	2

¹ Poned and trickle flow conditions are not required to be sampled per Permit Provision D.2.b.(2)(e), which specifies that sampling is required when measurable flow is present.

² One event each at these outfalls was poned but sampling was conducted.

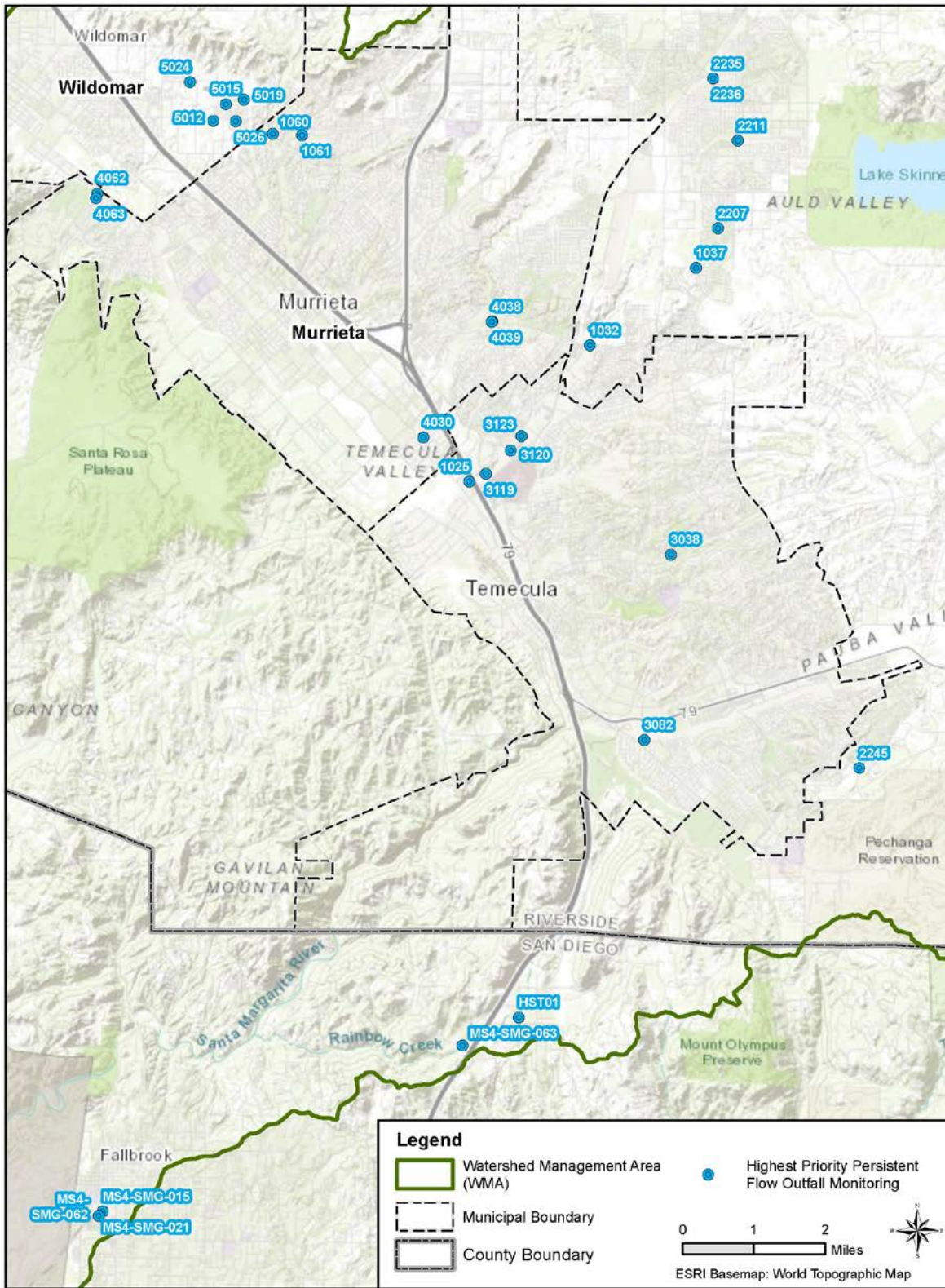


Figure A4-11. 2019-2020 Highest Priority Outfall Discharge Monitoring Locations

4.5.2.1 City of Murrieta

Of the five highest priority outfalls monitored by the City of Murrieta, four were ponded and one had trickle flow during the first event and four were ponded and one was flowing during the second event. Ponded and trickle flow conditions were not sampled per Permit Provision D.2.b.(2)(e). Site 902MS44063 was sampled only once due to trickle flow conditions that were not measurable during the first event (**Table A4-21**).

Existing NALs related to HPWQCs include total nitrogen and total phosphorus. The total phosphorous concentration (0.68 mg/L) was measured above the NAL (0.1 mg/L) during the single event at 902MS44063.

NALs related to PWQCs include fecal indicator bacteria (*Enterococcus* and fecal coliform), total iron, and total manganese. Bacteriological results indicated that the concentration of *Enterococcus* (1,100 most probable number per 100 milliliters [MPN/100 mL]) was above the IM (61 MPN/100 mL). Total manganese (120 micrograms per Liter [$\mu\text{g/L}$]) was also above the NAL (50 $\mu\text{g/L}$) for the single event at 902MS44063 (**Table A4-22**).

The remaining constituents that were analyzed were below NALs, where available.

4.5.2.2 Riverside County Flood Control District

The highest priority outfalls monitored by the District had flowing water which permitted sampling during all events (**Table A4-21**).

Existing NALs related to HPWQCs include total nitrogen and total phosphorus. All concentrations of total nitrogen (1.6 to 21 mg/L) and total phosphorus (0.11 to 0.65 mg/L) were measured above the NALs (1 and 0.1 mg/L, respectively).

NALs related to PWQCs include fecal indicator bacteria (*Enterococcus* and fecal coliform), total iron, and total manganese. Bacteriological results indicated that concentrations of *Enterococcus* (200 to 17,000 MPN/100 mL) were above IM (61 MPN/100 mL) during both events at all sites. Fecal coliform concentrations (450 to 24,000 MPN/100 mL) were also above the IM (400 MPN/100 mL) during all events except the second event at 902MS41060. Total iron (3,000 $\mu\text{g/L}$) was measured above the NAL (300 $\mu\text{g/L}$) during one event at 902MS41025. Total manganese (58 to 1,200 $\mu\text{g/L}$) was above the NAL (50 $\mu\text{g/L}$) during both events at 902MS41032, the first event at 902MS41025, and the second event at 902MS41037 and 902MS41060 (**Table A4-22**).

The only other constituent in exceedance of NALs was turbidity (Lab) during one event at 902MS41025 (result of 28 Nephelometric Turbidity Units [NTUs]).

4.5.2.3 County of Riverside

None of the five sites for the County of Riverside were sampled due to ponded conditions (per Permit Provision D.2.b.(2)(e)) during both events (**Table A4-21**).

4.5.2.4 City of Temecula

Only one of the five sites for the City of Temecula was sampled due to dry or ponded conditions (per Permit Provision D.2.b.(2)(e)) during most visits (**Table A4-21**). Most sites had trickle flows which

were not measurable, whereas 902MS43123 had ponded conditions for both events and 902MS43082 was ponded for one event. 902MS43038 was sampled during one event.

Existing NALs related to HPWQCs include total nitrogen and total phosphorus. The total nitrogen (2.7 mg/L) and total phosphorus concentrations (0.36 mg/L) were measured above the NAL (1.0 mg/L and 0.1 mg/L, respectively) for the single event at 902MS43038.

NALs related to PWQCs include fecal indicator bacteria (*Enterococcus* and fecal coliform), total iron, and total manganese. Bacteriological results indicated that *Enterococcus* (9,400 MPN/100 mL) and fecal coliform (35,000 MPN/100 mL) were above the IMs (61 and 400 MPN/100 mL, respectively) during the single event at 902MS43038. The total iron concentration (780 µg/L) was also measured above the NAL (300 µg/L). The other constituents related to PWQCs were measured below the NALs (**Table A4-22**).

The only other constituent in exceedance of NALs was turbidity (Field) (43.3 NTU), which was measured above the NAL (20 NTU) for the single event at 902MS43038. The laboratory-measured turbidity for 902MS43038 was below the NAL (8.4 NTU).

4.5.2.5 City of Wildomar

None of the five sites for the City of Wildomar was sampled due to dry or ponded conditions (per Permit Provision D.2.b.(2)(e)) during both events (**Table A4-21**).

4.5.2.6 County of San Diego

All sites were sampled by the County of San Diego during both events. One event each at outfalls HST01, MS4-SMG-063, and MS4-SMG-062 was ponded but sampling was conducted (**Table A4-21**).

Existing NALs related to HPWQCs include total nitrogen and total phosphorus. Concentrations of total nitrogen (1.24 to 35.7 mg/L) and total phosphorus (0.12 to 0.55 mg/L) were measured above the NALs (1 and 0.1 mg/L, respectively) during both events at all five locations, except total phosphorus during the first event at MS4-SMG-063.

NALs related to PWQCs include fecal indicator bacteria (*Enterococcus* and fecal coliform), total iron, and total manganese. Bacteriological results indicated that concentrations of *Enterococcus* (130 to 23,000 MPN/100 mL) were above the IM (61 MPN/100 mL) during both events at all sites. Fecal coliform concentrations (500 to 1,700 MPN/100 mL) were measured above the IM (400 MPN/100 mL) during both events at MS4-SMG-015, and the first event at both MS4-SMG-021 and MS4-SMG-062. Total iron (630 to 1,500 µg/L) was measured above the NAL (300 µg/L) during the second event at MS4-SMG-062 and MS4-SMG-063. Total manganese (52 to 230 µg/L) was measured above the NAL (50 µg/L) during all events except the first at MS4-SMG-062 and MS4-SMG-063, and the second at MS4-SMG-021 (**Table A4-23**).

Other constituents not meeting a NAL were DO during one event at MS4-SMG-062 (a result of 3.83 mg/L, which is below the NAL of 5.0 mg/L, indicating impairment) and pH (8.83 – 8.88 pH units, above the NAL of 6.5-8.5 pH units) during the first event at MS4-SMG-062 and MS4-SMG-063. The remaining analyzed constituents were below NALs, where available.

Table A4-22. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – Riverside County Copermittees

Analyte	Unit	Maximum Daily Action Level (MDAL)	902MS41025 (902.42)		902MS41032 (902.42)		902MS41037 (902.41)		902MS41060 (902.32)		902MS41061 (902.32)		902MS43038 (902.31)	902MS44063 (902.32)
			5/13/2020	8/27/2020	5/12/2020	8/27/2020	5/14/2020	8/27/2020	5/14/2020	8/26/2020	5/12/2020	8/26/2020	8/27/2020	8/26/2020
Physical Chemistry														
Dissolved Oxygen (Field) ¹	mg/L	5	8.10	7.63	8.36	7.30	7.10	6.60	7.23	7.02	7.64	6.64	7.06	6.86
Specific Conductance (Field)	µS/cm		3,850	1,159	1,320	1,460	1,570	1,580	1,510	1,590	1,385	1,760	996	1,640
Specific Conductance (Lab)	umhos/cm		3,700	1,100	1,300	1,400	1,600	1,500	1,500	1,500	1,300	1,700	950	1,600
Water Temperature (Field)	Deg C		18.46	22.88	19.17	23.58	17.5	22.59	17.49	25.12	19.17	24.25	24.33	22.99
Turbidity (Field)	NTU	20	7.12	2.9	2.8	2.5	0.0	4.8	0.3	4.0	2.3	1.1	43.3	3.6
Turbidity (Lab)	NTU	20	28	0.9	0.74	1.3	0.93	1.5	0.34	3.5	1.4	0.47	8.4	1.4
pH (Field)	Units	6.5-8.5	7.32	8.06	7.91	8.13	6.97	7.16	7.65	8.12	7.14	7.85	6.67	7.44
General Chemistry														
Dissolved Organic Carbon	mg/L		10H	6.1H	4.2H	4.3H	5.9H	8.3H	3.3H	5.7H	3.7H	4.9H	6.9H	8.7H
MBAS	mg/L	0.5	0.04J	0.04J	0.04J	0.03J	0.03J	0.04J	0.03J	0.09	<0.03	0.06J	0.03J	0.06J
Sulfate	mg/L		270	210	160	170	230	260	220	250	240	290	190	210
Total Dissolved Solids ²	mg/L		2,400	670	840	910	990	980	950	1,000	890	1,100	580	970
Total Hardness	mg/L		570	290	440	510	490	450	510	500	450	560	240	350
Total Suspended Solids	mg/L		130	2	3	2	3	2	<2	19	6	2	22	9
Nutrients														
Ammonia as N	mg/L		0.14	<0.04	0.27	0.04J	<0.044	0.06J	<0.044	0.09J	<0.044	0.10	0.20	0.07J
Ammonia as N (Unionized)	mg/L		0.0052	<0.0000046	0.0032	<0.0000046	<0.0000046	<0.0000046	<0.0000046	<0.0000046	<0.0000046	0.0051	0.00032	<0.0000046
Nitrate as N	mg/L		9.1	0.8	0.89	0.87	3.6	2.3	1.3	0.94	1.4	1.6	0.67	0.18J
Nitrite as N	mg/L		0.037	0.022	0.07	0.0028J	0.013	0.012	0.0037J	0.012	0.033	0.011	0.031	0.0025J
Total Kjeldahl Nitrogen	mg/L		12	0.8	1.3	1.2	1.3	1.5	0.37	0.8	0.68	0.5	2.0	0.6
Total Nitrogen ¹	mg/L	1.0	21	1.6	2.3	2.1	4.9	3.8	1.7	1.8	2.1	2.1	2.7	0.6
Total Phosphorus ¹	mg/L	0.1	0.65	0.40	0.19	0.23	0.32	0.52	0.11	0.14	0.16	0.23	0.36	0.68
Total Phosphate	mg/L		2.0	1.2	0.57	0.70	0.97	1.6	0.32	0.42	0.47	0.68	1.1	2.0
Dissolved Phosphorus	mg/L		0.28	0.38	0.16	0.22	0.32	0.44	0.11	0.08	0.14	0.098	0.25	0.61
Orthophosphate as P	mg/L		0.19	0.33	0.13	0.17	0.11	0.38	<0.05	0.051	0.09	0.19	0.22	0.58
Total Metals														
Aluminum	µg/L		1,900	32J	<33	37J	<33	110	<33	58J	<33	<16	640	130
Cadmium	µg/L		0.12J	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium	µg/L		8.3	0.5	0.6	0.6	0.8	1	<0.4	1	0.5	0.4J	1.8	0.9
Chromium III	µg/L		5	<1	<1	0.6J	<1	0.85J	<1	<0.4	<1	<1	1.8	0.9J
Chromium VI	µg/L		3.3	0.130J	0.160J	0.092J	0.420J	0.150J	0.082J	1.2	<0.021	0.058J	0.260J	0.045J
Copper	µg/L		80	12	6.9	7.8	9.2	17	7.3	9.1	9.2	8.6	10	7.7
Iron ²	µg/L	300	3,000	39J	80	64	46J	170	48J	94	52	35J	780	200
Lead	µg/L		1.5	<0.2	<0.2	<0.2	<0.2	0.2J	<0.2	<0.2	<0.2	<0.2	0.4J	<0.2
Manganese ²	µg/L	50	1,200	12	250	60	40	58	31	59	18	<25	31	120
Nickel	µg/L		7.0	3.3	3.4	4.3	4.3	4.6	3.1	3.8	3.3	4.3	3.2	4.1
Selenium	µg/L		4.7	2.2	3.0	3.7	3.1	3.8	2.2	2.6	2.9	3.6	2.2	2.9
Silver	µg/L		<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Zinc	µg/L		86	8.1	3.2	2.6	5.4	10	2.3	3.7	5.3	6.9	18	13
Dissolved Metals														
Aluminum	µg/L		<16	<34	<16	<34	<16	<34	<16	<34	<16	<34	<34	<34
Cadmium	µg/L	(a)(b)	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12

Table A4-22. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – Riverside County Copermittees

Analyte	Unit	Maximum Daily Action Level (MDAL)	902MS41025 (902.42)		902MS41032 (902.42)		902MS41037 (902.41)		902MS41060 (902.32)		902MS41061 (902.32)		902MS43038 (902.31)	902MS44063 (902.32)
			5/13/2020	8/27/2020	5/12/2020	8/27/2020	5/14/2020	8/27/2020	5/14/2020	8/26/2020	5/12/2020	8/26/2020	8/27/2020	8/26/2020
Chromium	µg/L		4.4	0.7	0.4J	0.5	0.9	0.9	<0.4	1.9	<0.4	0.7	1.1	0.8
Trivalent Chromium	µg/L		1.3	0.7J	<1	0.5J	<1	0.9J	<1	0.4J	<1	0.7	1.1	0.8
Chromium VI	µg/L	16	3.1	0.14J	0.12J	0.068J	0.42J	0.14J	0.069J	1.5	<0.021	0.056J	0.29J	0.042J
Copper	µg/L	(a)	26	9.7	5.7	6.3	8.4	11	7.4	10	7.6	9.0	6.2	8.4
Iron ²	µg/L		<3.1	14J	<3.1	<6.4	12J	27J	6.3J	<6.4	<3.1	8.3J	12J	21J
Lead	µg/L	(a)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Manganese ²	µg/L		<5	<5	<5	<5	19	20	21	<5	<5	8J	<5	63
Nickel	µg/L	(a)(b)	4.6	3.5	3.2	4.5	4.1	4.9	3.3	4.4	3.3	5.5	2.7	4.7
Selenium	µg/L		3.1	1.9	2.8	3.3	3.2	3.2	2.6	3.0	2.9	3.7	2.0	3.2
Silver	µg/L	(a)	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Zinc	µg/L	(a)	4.8	6.0	1.7	1.4	4.1	4.7	2.0	1.2	4.6	4.5	2.7	4.1
Organophosphorus Pesticides														
Chlorpyrifos	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fecal Indicator Bacteria														
<i>E. coli</i> ²	MPN/100 mL		3,300	24,000	1,700	1,700	4,900	2,700	3,300	<180	7,000	450	35,000	200
Enterococcus ²	MPN/100 mL	61 (c)	4,900	4,900	2,300	680	7,000	7,900	1,300	780	17,000	200	9,400	1,100
Fecal Coliform ²	MPN/100 mL	400 (c)	3,300	24,000	1,700	1,700	4,900	2,700	3,300	<180	7,000	450	35,000	200
Total Coliform ²	MPN/100 mL		92,000	35,000	24,000	13,000	160,000	22,000	17,000	930	≥160,000	1,700	92,000	4,900

< - Results are less than the reporting limit.

¹ Constituent is a HPWQC for dry weather.

² Constituent is a PWQC for dry weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

H - Sample filtered/preserved or analyzed outside of holding time.

J - Results are greater than the method detection limit but below the reporting limit. Reported result is estimated.

(a) Water quality objective for dissolved metal fractions is based on total hardness and is calculated as described by 40 CFR Part 131.38 (May 18, 2000). The Criterion Continuous Concentration (CCC) was applied to dry weather results with the exception of Silver for which the Criterion Maximum Concentration (CMC) was applied as there is no CCC.

(b) If calculated CCC values exceeded the Maximum Contaminant Levels (MCLs) as given in the basin plan, concentrations were compared to the MCLs. No MCLs were exceeded for these constituents.

(c) Instantaneous Maximum for storm drain outfall discharges to inland surface waters with REC-1 beneficial use (Table C-4 of Permit).

Shaded results greater than Maximum Daily Action Level or the Instantaneous Maximum.

Table A4-23. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – County of San Diego

Analyte	Unit	Maximum Daily Action Level (MDAL)	HST01 (902.23)		MS4-SMG-015 (902.21)		MS4-SMG-021 (902.21)		MS4-SMG-062 (902.21)		MS4-SMG-063 (902.21)	
			5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020
Physical Chemistry												
Dissolved Oxygen ¹	mg/L	5	7.39	6.09	8.57	7.4	8.47	7.41	8.27	3.83	9.05	6.07
Specific Conductivity	µS/cm		2,179	1,458	1,827	1,856	1,826	1,891	1,481	1,293	1,044	1,312
Temperature	Celsius		20.5	21.8	22.4	24.7	21.9	25.6	22.0	24.8	19.8	22.5
Turbidity	NTU	20	1.53	0.56	0.18	1.41	11.5	0.73	0.43	9.84	0.08	6.05
pH	pH unit	6.5-8.5	7.7	7.83	8.38	7.89	8.31	8.02	8.88	7.90	8.83	7.67
General Chemistry												
MBAS	mg/L	0.5	0.063	0.078	0.044J	0.20	0.05	0.14	0.049J	0.11	0.081	0.21
Sulfate	mg/L		490	290	380	400	370	390	270	230	190	290
Total Dissolved Solids ²	mg/L		1,100	930	1,300	1,300	1,300	1,300	1,000	800	730	920
Total Hardness	mg/L		807	413	657	636	671	643	453	357	293	391
Total Suspended Solids	mg/L		22	9	1	3	4	1	2	45	<1	200
Nutrients												
Ammonia as N	mg/L		<0.10	0.07J	0.06J	0.04J	0.07J	0.03J	0.02J	0.13	0.04J	0.10
Nitrate as N	mg/L		35.4	0.10	6.20	4.47	6.34	6.11	6.34	0.23	18.9	10.40
Nitrite as N	mg/L		0.3	0.04J	0.06	0.05	0.04J	0.03J	0.02J	<0.05	<0.05	0.11
Total Kjeldahl Nitrogen	mg/L		<0.5	1.1	<0.5	0.4J	0.4J	<0.5	0.6	1.1	<0.5	2.5
Total Nitrogen ¹	mg/L	1.0	35.7	1.24	6.26	4.92	6.78	6.14	6.96	1.33	18.9	13.0
Total Phosphorus ¹	mg/L	0.1	0.31	0.50	0.13	0.12	0.14	0.22	0.28	0.55	0.08	0.34
Orthophosphate as P	mg/L		0.29	0.42	0.08	0.12	0.07	0.2	0.23	0.36	0.07	0.2
Total Metals												
Aluminum	µg/L		210	150	14	22	22	17	62	240	31	920
Cadmium	µg/L		0.044J	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.06J	0.35	0.63
Chromium	µg/L		0.29	0.26	0.15J	0.12J	0.17J	0.2	0.26	0.49	0.2	1.4
Chromium III	µg/L		0.26	0.26	0.092	<0.20	0.087	<0.20	0.12	0.48	0.11	1.2
Chromium VI	µg/L		0.028	<0.02	0.055	0.015J	0.087	0.066	0.13	0.0096J	0.092	0.18
Copper	µg/L		2.6	5.0	1.9	1.5	2.8	2.2	3.9	11	3.1	27
Iron ²	µg/L	300	260	180	71	46	82	35	120	630	54	1,500
Lead	µg/L		0.18J	0.14J	0.12J	0.09J	0.13J	0.09J	0.15J	0.8	0.2	3.4
Manganese ²	µg/L	50	71	120	58	52	56	33	5.9	230	3	110
Nickel	µg/L		1.4	1.9	0.77J	0.82	1.2	1.2	1.0	2.7	0.85	5.3
Selenium	µg/L		0.35J	0.53	0.65	0.58	0.55	0.55	0.68	1.0	1.0	1.5
Silver	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc	µg/L		12	8.8	12	5.8	69	6.5	38	32	31	260
Dissolved Metals												
Aluminum	µg/L		3.5J	9.7	4.1J	4.3J	5.6	4.3J	7.8	14	6.5	5.5
Cadmium	µg/L	(a)(b)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.042J	<0.1	0.39	0.33
Chromium	µg/L		0.075J	0.1J	0.078J	0.09J	0.12J	0.13J	0.2	0.26	0.11J	0.34
Chromium III	µg/L	(a)(b)	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	0.25	<0.22	<0.22
Chromium VI	µg/L	16	0.032	<0.02	0.058	0.019J	0.14	0.069	0.22	0.0099J	0.089	0.19
Copper	µg/L	(a)	2.1	4.7	1.6	1.3	2.3	1.8	3.4	11	2.6	21
Iron ²	µg/L		5.3J	14J	27	11J	27	9.5J	14J	80	14J	47

Table A4-23. 2019-2020 Dry Weather MS4 Outfall Discharge Monitoring Analytical Results for Highest Priority Outfalls – County of San Diego

Analyte	Unit	Maximum Daily Action Level (MDAL)	HST01 (902.23)		MS4-SMG-015 (902.21)		MS4-SMG-021 (902.21)		MS4-SMG-062 (902.21)		MS4-SMG-063 (902.21)	
			5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020	5/7/2020	7/13/2020
Lead	µg/L	(a)	0.034J	<0.2	0.052J	<0.2	0.051J	0.04J	0.06J	0.14J	0.097J	0.10J
Manganese ²	µg/L		16	84	46	34	45	12	1.8	170	1.8	7.1
Nickel	µg/L	(a)(b)	1.3	1.8	0.71J	0.82	1.2	1.1	0.94	3.2	0.68J	4.4
Selenium	µg/L		0.37J	0.5	0.62	0.55	0.55	0.55	0.64	0.9	1	1.5
Silver	µg/L	(a)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc	µg/L	(a)	7.9	7.8	11	5	70	5.3	33	18	27	160
Organophosphorus Pesticides												
Chlorpyrifos	µg/L		<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.050	<0.010	<0.050
Fecal Indicator Bacteria												
<i>E. coli</i> ²	MPN/100 mL		63	100	420	100	373	200	512	410	565	2,990
Enterococcus ²	MPN/100 mL	61 (c)	500	400	210	130	500	17,000	500	2,400	500	23,000
Fecal Coliform ²	MPN/100 mL	400 (c)	220	300	500	1,700	800	270	1,700	260	300	330
Total Coliform ²	MPN/100 mL		2,300	2,200	1,700	23,000	5,000	50,000	3,000	1,700	2,300	8,000

< - Results are less than the reporting limit.

¹ Constituent is a HPWQC for dry weather.

² Constituent is a PWQC for dry weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

J - Results are greater than the method detection limit but below the reporting limit. Reported result is estimated.

NR - Not required.

(a) Water quality objective for dissolved metal fractions is based on total hardness and is calculated as described by 40 CFR Part 131.38 (May 18, 2000). The Criterion Continuous Concentration (CCC) was applied to dry weather results with the exception of Silver for which the Criterion Maximum Concentration (CMC) was applied as there is no CCC.

(b) If calculated CCC values exceeded the Maximum Contaminant Levels (MCLs) as given in the basin plan, concentrations were compared to the MCLs. No MCLs were exceeded for these constituents.

(c) Instantaneous Maximum for storm drain outfall discharges to inland surface waters with REC-1 beneficial use (Table C-4 of Permit).

Shaded results greater than Maximum Daily Action Level or the Instantaneous Maximum.

4.5.3 Dry Weather MS4 Outfall Monitoring Data Assessments

Table A4-24 summarizes the dry weather MS4 outfall monitoring data assessments required by Permit provision D.4.b.(1)(c)(i-vi). The information necessary to demonstrate compliance with each Provision is outlined in the following discussion. In instances where compliance has been demonstrated in previous sections of this Annual Report, those sections are referenced.

As stated in **Section 4.2**, the Copermittees in the region requested regulatory relief from performing some of the Permit-required assessments for the 2019-2020 monitoring year. In an email dated August 19, 2020, the San Diego Water Board provided approval for the Copermittees to "assess the data as required pursuant to provision D.4.b.(1)(c)(iv) and D.4.b.(2)(c) by evaluating the pollutant loads from each outfall, i.e., only calculating the pollutant loads at the outfall level and not using the outfall data to extend the load calculation at the watershed scale." Therefore, the dry weather assessment requirements of D.4.b.(1)(c)(iv) are fulfilled in this Annual Report through estimation of volumes and loads for the highest priority outfalls. In addition, the Copermittees are providing Microsoft (MS) Excel tables and pivot charts of the pollutant loads over time for their current set of highest priority outfalls (monitored during the 2019-2020 year) with two or more years of monitoring data (**Attachment 4E**).

Table A4-24. Dry Weather MS4 Outfall Monitoring Assessments

Assessment	Components	Provision(s)	Section
WQIP Annual Report			
Identify known and suspected controllable sources.	Identify known and suspected controllable sources (e.g., facilities, areas, land uses, pollutant generating activities) of transient and persistent flows.	D.4.b.(1)(b)(i)	4.5.4.1
Identify sources that have been reduced or eliminated.	Identify sources of transient and persistent flows that have been reduced or eliminated.	D.4.b.(1)(b)(ii)	4.5.4.3
Identify necessary modifications to monitoring locations and frequencies.	Identify necessary modifications to monitoring locations and frequencies necessary to identify and eliminate sources of persistent flows.	D.4.b.(1)(b)(iii)	4.5.3.1
Rank and prioritize non-stormwater discharges.	Rank persistently flowing outfalls according to potential threat to receiving water quality.	D.4.b.(1)(c)(ii)	Appendix 5 4.5.3.1
	Produce/update prioritized list of outfalls.		
Identify sources contributing to NAL exceedances.	Identify known and suspected sources that may cause or contribute to exceedances.	D.4.b.(1)(c)(iii)	4.5.4.1 Table A4-28

Table A4-24. Dry Weather MS4 Outfall Monitoring Assessments

Assessment	Components	Provision(s)	Section
Estimate volumes and loads of non-stormwater discharges.*	Analyze data collected as part of the Permit-required dry weather outfall monitoring. Use a model or other method to calculate and estimate collective persistent non-stormwater discharge volumes and pollutant loads. Specific calculations/estimates include: <ul style="list-style-type: none"> Annual non-stormwater volumes and loads discharged from the Copermittee's major MS4 outfalls to receiving waters within its jurisdiction, with an estimate of the percent contribution from each known source for each MS4 outfall. Annual identification and quantification (by volume and pollutant load) of sources of discharged non-stormwater not subject to the Copermittee's legal authority. 	D.4.b.(1)(c)(iv)	4.5.3.4.2 Attachment 4E
Identify data gaps.	Identify data gaps in the monitoring data necessary to fulfill assessment requirements.	D.4.b.(1)(c)(vi)	4.5.3.6
Once during Permit Term			
Evaluate progress in achieving non-stormwater volume and load reductions.	Identify reductions and progress in achieving reductions.	D.4.b.(1)(c)(v)	N/A
	Assess the effectiveness of WQIP improvement strategies, with estimates of volume and load reductions attributed to specific strategies when possible.		N/A
	Identify modifications necessary to increase the effectiveness of WQIP strategies.		N/A

* An email from the San Diego Water Board dated August 19, 2020 granted the Copermittees regulatory relief related to this assessment. See **Section 4.2** for additional detail.

4.5.3.1 Provision D.4.b.(1)(b) – Identify Known and Suspected Controllable Sources, Sources that have been Reduced or Eliminated, and Necessary Modifications to Monitoring Locations and Frequencies

The dry weather field screening monitoring assessments that were first required by Provision D.4.b.(1)(b)(i-iii) during the long-term monitoring period are required to be continued by Provision D.4.b.(1)(c)(i). The assessments related to (i) and (ii) are described in **Section 4.5.4** below. To comply with (iii), the data collected under the dry weather field screening monitoring program (**Section 4.5.1**) were assessed.

The Copermittees are conducting field screening at a frequency greater than that required by the Permit and will continue adapting their frequencies and locations for 2020-2021. The County of San Diego conducts additional visits to their outfalls to record flow observations. The District incorporated a targeted approach which comprised of screening 100% of its major outfall inventory in spring, 82% of outfalls known to be "accessible" and "not dry" (i.e., flowing, trickle flow, or ponded) in early summer, and then conducting 10 additional screenings at highest priority persistent flow (HPPF) stations in early to late summer. For District outfalls that are observed to have excessive vegetation or other conditions that impede access, that require maintenance, or have conditions of structural concern, the conditions are photographed and documented in a tracking spreadsheet, and the information is provided to the

District's Operations and Maintenance Division. The field screening and IDDE investigation process is shown in **Figure A4-12**.

As needed, the outfall concerns are discussed during meetings regarding the District's Maintenance Environmental Authorization Requests where maintenance activities and requests for maintenance are reviewed for consideration of environmental regulatory requirements, restrictions, and/or permitting. These meetings are also used to prioritize maintenance activities and schedules based on needs such as routine clean-ups, increased flood protection, and facility structural repairs. Schedules are typically aligned by service area, as well as immediate needs vs. long-term needs. Outfalls or other conditions requiring maintenance are logged by the District's Operations and Maintenance Division and placed in the maintenance queue and prioritized along with all the other maintenance requests. Response time to address outfall maintenance may vary based on pre-scheduled District maintenance activities, emergency activities, environmental restrictions or permissions, development project priorities, and available resources. The Copermittees have similar processes within their jurisdictions for identifying, documenting, and addressing maintenance needs.

Accessible major outfalls with persistent flows will continue to be a key component of field screening efforts to identify sources in dry weather. The Copermittees will continue adapting their field screening frequencies and locations for 2020-2021, as needed, and utilize the data as part of the prioritization process for selection of highest priority outfalls with persistent flows to be sampled in dry weather pursuant to the provisions discussed below.

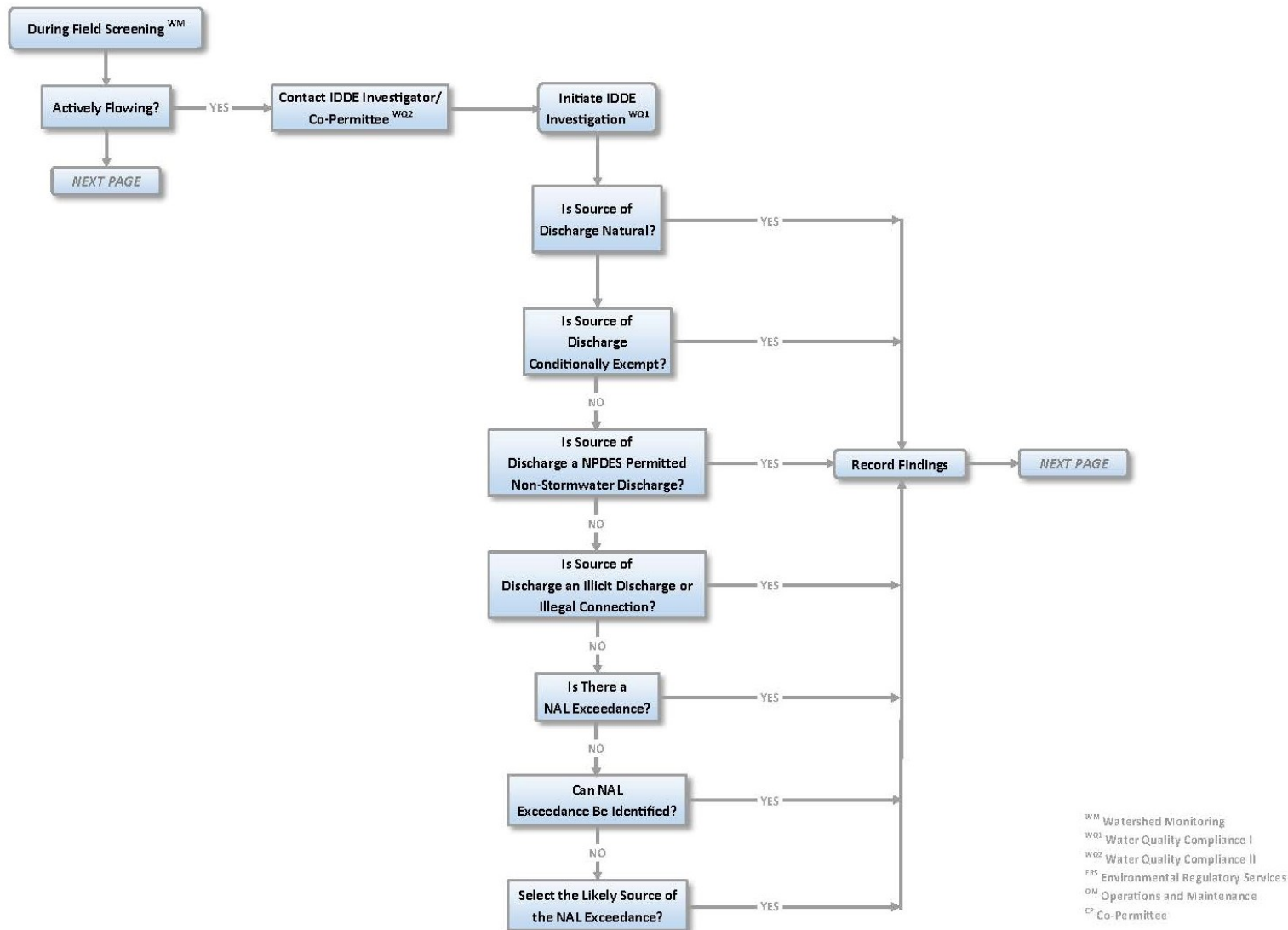


Figure A4-12. Field Screening and IDDE Investigation Flow Chart (Page 1)

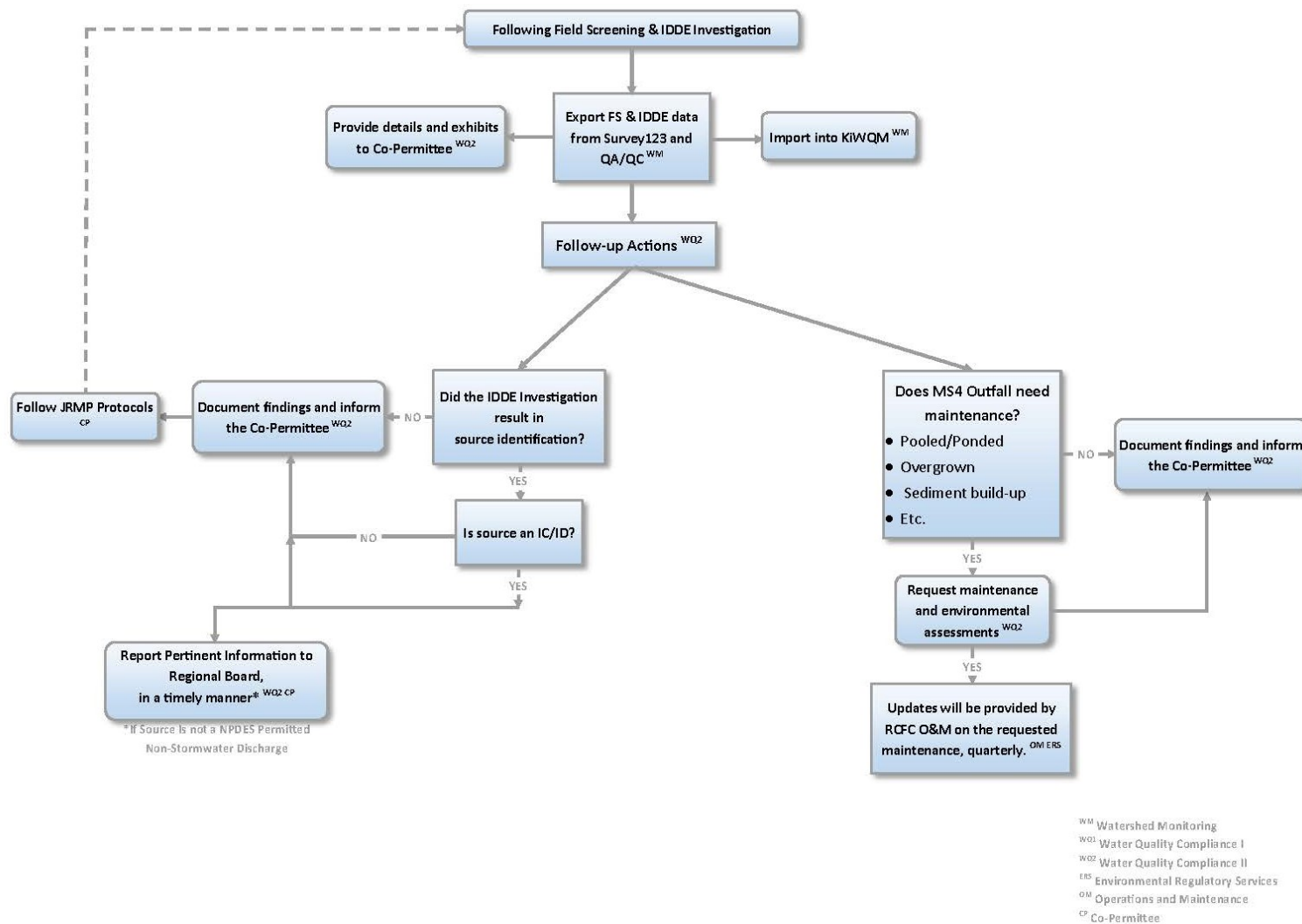


Figure A4-12. Field Screening and IDDE Investigation Flow Chart (Page 2)

4.5.3.2 Provision D.4.b.(1)(c)(ii) – Rank and Prioritize Non-stormwater Discharges

In addition to continuing the assessments required by Provision D.4.b.(1)(b)(i-iii), analytical monitoring of dry weather MS4 outfall discharge samples and the associated assessments outlined in Provision D.4.b.(1)(c)(ii-v) are required.

Provision D.4.b.(1)(c)(ii) requires the prioritization of major MS4 outfalls within each Copermittee's jurisdiction based on the dry weather MS4 outfall monitoring data. These data were presented in **Section 4.5.1**, and the analytical data collected at the highest priority dry weather MS4 outfalls for each jurisdiction during the 2019-2020 monitoring year are presented in **Table A4-22** and **Table A4-23** in **Section 4.5.2**. Highest priority outfalls will continue to be monitored until one of the following conditions outlined in Provision D.2.b.(2)(b)(ii) have been met:

- No flowing or standing water observed over the three most recent consecutive visits.
- Source has been identified as category of non-stormwater discharge that does not require a National Pollutant Discharge Elimination System (NPDES) Permit and does not have to be addressed as an illicit discharge.
- No exceedances of NALs
- Identified as a non-stormwater discharge authorized by a separate NPDES permit.

When an outfall fulfills one of these criteria or the threat to water quality has been reduced (per Provision D.2.b.(2)(b)(iii)), it will be replaced with the next highest priority outfall based on the Copermittee's list for the WMA.

The Riverside Copermittees evaluated their 2018-2019 Dry Weather Outfall Monitoring Station data using finalized outfall field screening observations and criteria (i.e., persistence, NAL exceedances, flow rate, changes in flow determination, outfall accessibility, land use type and upstream drainage area) during the outfall reprioritization process. This process was outlined in Section 5.1.2.1.6 of Appendix 5 of the 2018-2019 WQIP Annual Report. Once all data were analyzed, the District presented its findings to each respective Copermittee and provided station change recommendations, as needed. When station changes were confirmed, they were added to the 2019-2020 Dry Weather Outfall Monitoring station lists, sampling schedules, and added to all the 2019-2020 software programs and applications that the District uses under the Compliance Monitoring Program.

During repeated outfall inspections, District outfall 1010 was observed to have ponded or trickle flow conditions, which are not sampleable and therefore do not provide data for comparability to the NALs. District staff discussed several monitoring station options and determined based on the criteria mentioned above that 1010 would be replaced by 1060 due to measurable flow documented during the last nine field screening events. On December 3, 2019, District staff confirmed the necessary station change.

Temecula outfall 3062, which District staff determined to be unsafe to access for dry weather monitoring, would be replaced with outfall 3119. Additionally, Temecula outfall 3082, which had recently changed its flow pattern from persistent to transient, would be replaced with 3120, the next highest priority outfall. On December 10, 2019, City of Temecula staff confirmed the station changes.

Murrieta outfall 4033 was determined to be unsafe for staff to access and was replaced with outfall 4038, a persistently flowing outfall that is fully accessible. On December 19, 2019, City of Murrieta staff confirmed the station change.

Riverside County and Wildomar stations remained unchanged for the 2019-2020 monitoring year. Monitored outfalls with updated flow determinations are shown in **Table A4-20** and **Figure A4-10** in **Section 4.5.1**.

The County of San Diego also reviews and reprioritizes major MS4 outfalls on an annual basis using field screening, IDDE follow-up, and analytical data from previous years. The County of San Diego's detailed process for prioritization is outlined in Section 5.1.2.1.6 of Appendix 5 of the 2018-2019 WQIP Annual Report. During the prioritization process of the 2019-2020 monitoring year, the County deprioritized site MS4-SMG-024 since it was determined that the site conveyed a blue line stream (see **Section 4.5.4.4** for details). MS4-SMG-024 was replaced with MS4-SMG-063 for the 2019-2020 monitoring year. The County has made some minor updates to their prioritization process (see **Section 5.2.4.1** in **Appendix 5**).

4.5.3.3 Provision D.4.b.(2)(c)(iii) – Identify Sources Contributing to NAL Exceedances

This Provision requires further investigation into sources causing persistent flows and NAL exceedances at the highest priority outfalls. The highest priority outfalls are listed for each jurisdiction in **Table A4-21**, and the analytical results collected during this reporting period at these outfalls are presented in **Table A4-22** and **Table A4-23**.

These highest priority outfalls were a specific focus for IDDE investigations during the 2019-2020 monitoring year. The results from these investigations are presented in **Section 4.5.4**.

4.5.3.4 Provision D.4.b.(2)(c)(iv) – Estimate Volumes and Loads of Non-stormwater Discharges - as revised for 2019-2020 and 2020-2021 Monitoring Years

The Copermittees are required to calculate or estimate the non-stormwater volumes and pollutant loads discharged from their highest priority outfalls monitored during the 2019-2020 monitoring year. In addition, the Copermittees have provided an attachment with compiled historical loads and the 2019-2020 data in tables and graphs (**Attachment 4E**) in response to the San Diego Water Board's request from their email dated August 19, 2020: "for outfalls that have been monitored for two or more years, tables and figures showing changes in pollutant loads over time from the outfall should also be prepared and reported."

4.5.3.4.1 Discharge Volumes from Persistently Flowing Major MS4 Outfalls

For each highest priority outfall monitored during the 2019-2020 monitoring year, the non-stormwater discharge was modeled by multiplying the total number of dry weather days for the month by an instantaneous flow rate for the outfall for that month. The number of dry weather days (i.e., greater than 72 hours since rain event of 0.1 inches or more) for each calendar month was determined using rainfall data from both County of San Diego and County of Riverside rainfall gauges near the jurisdictions. Flow measurements were determined as follows:

- For months with field visits, the instantaneous flow measurement recorded for that visit was applied to the month.

- If there were multiple field visits within a given month, flow measurements were averaged and applied to the month (averages included instantaneous flow measurements and zero flow for dry/tidal/ponded conditions).
- For months where no outfall-specific data was available, the average of all instantaneous flow measurements for the outfall was applied to that month.
- Where available, continuous flow monitoring data were used instead of instantaneous flow measurements.

The annual non-stormwater discharge for each highest priority outfall represents the sum of cumulative monthly flows. These non-stormwater discharge volumes should be considered rough estimates that are based on limited field observations and measurements. When feasible, instantaneous flow measurements are based on the area-velocity method, which applies measured flow depth, width, and velocity. Velocity is often measured using a float. Although multiple velocity measurements may be collected to overcome inherent variability and a roughness factor may be applied to address friction, the float method represents a rough estimation tool for velocity. Where site conditions limit accurate collection of area-velocity field measurements, non-stormwater discharge may be estimated either using a volumetric flow rate method (e.g., filling a container of known volume in a measured interval of time), or best professional judgement based on field observations.

The County of San Diego collected continuous flow monitoring data from May to mid-September 2020 at four highest priority MS4 outfalls. At these outfalls, available continuous flow data were substituted for instantaneous flow measurements for the months when these data were available. The continuous flow datasets were adjusted to exclude wet weather days and the following 72-hours, then cumulative monthly discharges were calculated for the months of May to September 2020 using the average daily flow rate for the month multiplied by the dry weather days for that month. For months with no outfall-specific flow data, an average of the daily discharge values using the continuous flow dataset was applied to the days of that month.

Table A4-25 presents the estimated annual non-stormwater volume for major MS4 outfalls with persistent flow and highest priority outfalls with transient flow, by Copermittee.

Table A4-25. 2018-2019 Annual Non-stormwater Flow Estimates for Highest Priority Outfalls

Copermittee	Outfall ID*	2019-2020 Dry Weather Determination	Number of Samples	Number of Samples with Measurable Flow	Total Non-stormwater Discharge (gallons)
County of San Diego	HST01	Transient	2	1	4,258,312
	MS4-SMG-015	Persistent	2	2	15,250,839
	MS4-SMG-021	Persistent	2	2	6,528,571
	MS4-SMG-062	Persistent	2	1	534,554
	MS4-SMG-063	Transient	2	1	260,267
Riverside County Flood Control District	1025	Persistent	2	2	51,698,812
	1032	Persistent	2	2	50,143,654
	1037	Persistent	2	2	36,338,349
	1060	Persistent	2	2	12,682,968
	1061	Persistent	2	2	3,986,278
City of Murrieta	4063	Persistent	1	1	10,688,502
City of Temecula	3038	Persistent	1	1	7,800,378

MG = million gallons.

* Highest priority outfalls not shown in table were VNS and therefore have no volumes to report. County of Riverside and City of Wildomar's highest priority outfalls did not have measurable flow and therefore were not sampled.

4.5.3.4.2 Pollutant Loads for Highest Priority Outfalls

Pollutant loads were calculated for each monitored highest priority outfall as the product of the outfall-specific annual discharge volume and the concentration of the sample for each monitored constituent. When both monitored events yielded samples, the mean concentration of the two results was used. Pollutant loads are not calculated for stations that were ponded and not sampled during both field screening events. The volume would be considered zero, and there is no concentration data. The pollutant load estimates are presented in **Attachment 4E**.

4.5.3.5 Provision D.4.b.(2)(c)(v) – Evaluate Progress Achieving Non-stormwater Volume and Load Reductions

This Provision requires the Copermittees to review the data collected under the MS4 outfall dry weather monitoring program. The purpose of this review is to identify pollutant reduction progress, assess water quality improvement strategy effectiveness, and identify modifications necessary to increase effectiveness. This assessment is required once during the Permit term and was provided in the RMAR for most of the watersheds in the San Diego Region, which had accepted WQIPs in place several years before the SMR WMA. Strategies have been implemented in the SMR WMA for less than two years under the accepted WQIP, and additional implementation and data collection are anticipated during upcoming reporting periods for a comprehensive and meaningful effectiveness assessment. Assessments required once during the Permit term will be conducted again after MS4 outfall discharge monitoring data is collected under the next Permit.

4.5.3.6 Provision D.4.b.(2)(c)(vi) – Identify Data Gaps

This provision requires the Copermittees to identify gaps in the monitoring data necessary to assess the previous provisions. No gaps were identified in the highest priority outfall monitoring data during the reporting year. Many of the highest priority outfalls sites visited were dry, ponded, or otherwise lacked measurable flow which prevented sampling. These results are representative of the dry conditions at the outfalls listed in the inventory.

4.5.4 Illicit Discharge Detection and Elimination Program Data and Assessment

Highest priority outfalls are typically a specific focus of IDDE investigations related to the monitoring program. Since March 2020, COVID significantly impacted the Riverside Copermittees' usual procedures for field follow-up investigations, education, and enforcement in response to persistent flows at high priority outfalls. Prior to the COVID pandemic, the typical procedure for upstream investigations based on outfall monitoring consisted of having District staff track flows upstream to the District's jurisdictional boundary with the neighboring Copermittee's jurisdictional boundary. The District would then hand off the investigation to the Copermittee, who would complete the investigation within its jurisdiction, along with any follow-up action as needed to address the identification and elimination of sources of flow and pollutants.

Beginning with the start of the COVID pandemic in March 2020, however, Riverside Copermittees' ability to do these field investigations was severely limited. Nonetheless, the District and Riverside Copermittees pulled together their limited resources to identify high-priority sources of dry-weather flows or NAL exceedances. District staff began tracking the path of these flows not only within the District's jurisdiction but very often into Copermittee jurisdictions. When possible, the District began identifying locations of potential sources (residential neighborhoods for the most part) and in many cases was able to leave educational material for property owners or talk directly to responsible parties in the field. The District also provided source location information (e.g., Google maps, latitude and longitude coordinates, addresses, photographs, etc.) to the appropriate Copermittee, which in turn, at that point, could follow up with responsible parties about the prohibited discharges, usually by mail. In cases where discharges were not linked to a specific residence but were traced to a particular development or community, Copermittees typically reached out to the applicable POA or HOA, respectively, to educate them on discharge prevention and work with them to address the discharges, which typically ended up consisting of irrigation runoff.

The County of San Diego also adjusted some of its standard IDDE investigation and follow-up procedures to protect the health and safety of people who live and work in the County and of County employees. County staff generally limited in person interactions with responsible parties and adhered to the San Diego County Public Health Order requirements when in person interaction was necessary. While the approaches used were somewhat different than those used before the COVID-19 pandemic, the County of San Diego was still able to identify and respond to illicit discharges in compliance with the MS4 Permit, as discussed in more detail in the County's letter to the Regional Board dated March 27, 2020.

In addition to field screenings, outfall monitoring source tracking, and investigations, the IDDE programs also included the following components, to the extent that COVID-related restrictions and associated safety precautions allowed, to prevent, identify, and eliminate IC/IDs:

- Educating commercial retail businesses such as hardware/home improvement stores, garden centers, and nurseries about outdoor water conservation and over-irrigation runoff, and Best Management Practices (BMP) for proper disposal of common household hazardous wastes.
- Operating a public complaint phone hotline and website and addressing each complaint by investigating those that pose immediate threats to the beneficial uses of the area's receiving waters, or by entering lower priority complaints into a database to identify and prioritize areas of repeated but minor violations that can be addressed as staff become available.
- Prior to COVID, the Copermittees had the means to conduct inspections at industrial and commercial sites, municipal facilities, construction projects, and residential areas in a timely manner. With the onset of COVID, the Riverside Copermittees had to limit their inspections and submitted letters to the Regional Board requesting a temporary suspension to these inspection components until local and state authorities withdrew COVID-related restrictions. The County of San Diego continued inspections but adapted its existing development inspection approach to limit in person interaction and follow social distancing and other public health protection procedures, as described in the County of San Diego's letter to the Regional Board regarding COVID impacts on its program.
- Maintaining the MS4 and sewer system, which provide opportunities to identify unpermitted connections to the MS4, cross connections, and other potential sources of IC/IDs.
- Enhanced source investigation studies, such as continuous flow monitoring and isotope studies (County of San Diego).

The IDDE components listed above are described in more detail in **Section 2** of the Annual Report and in the jurisdictional strategy tables in **Appendix 2**. The Copermittees' Jurisdictional Runoff Management Program (JRMP) Annual Report forms, also included in **Appendix 2**, list the total numbers of IC/IDs identified and eliminated through all IDDE program activities during the monitoring year. More detail about source investigation and elimination specifically related to the dry weather MS4 outfall monitoring component of the IDDE program is presented below.

4.5.4.1 Dry Weather MS4 Outfall Source Identification Results

Known and suspected sources identified during monitoring are presented in **Table A4-26**. In cases where flow was observed at the outfall, but the source was not directly observed or otherwise definitively identified, Copermittees may have identified the sources as "suspected" rather than "known." Suspected sources may require additional investigation to identify them more specifically before they can be reduced or eliminated. The counts shown in these tables are for investigations associated with dry weather monitoring activities and do not include identification of sources during inspections and audits.

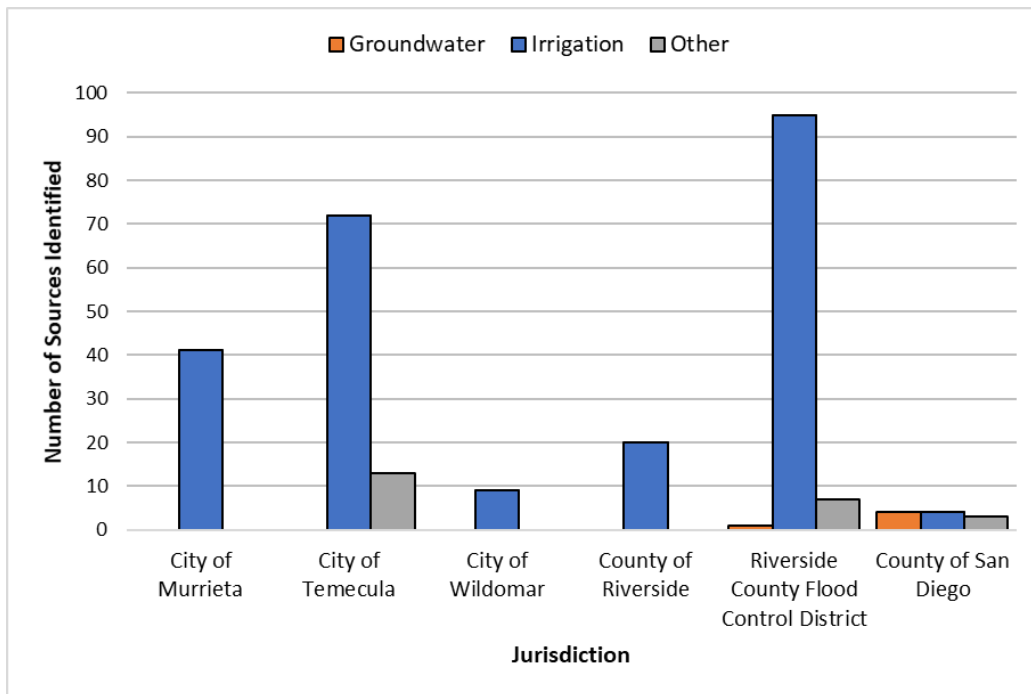
Irrigation runoff was the most commonly identified known or suspected source within the SMR WMA. Copermittees worked with residents, Home Owners Associations (HOAs) and water districts to address irrigation runoff through water conservation programs, consisting of outreach and enforcement, typically through drought ordinances or other prohibitions of wasting water, where necessary. The Copermittees also identified known or suspected sources that typically are not within their ability to control, usually groundwater infiltration into the MS4 or a permitted discharge, which are also included in **Table A4-26** and **Figure A4-13**.

Suspected groundwater infiltration into the MS4 was identified at multiple outfalls within the SMR WMA. Some Copermittees have begun to perform additional testing to help determine whether groundwater is a source of flow at certain outfalls. The additional tests typically included ion and/or isotope analyses, where results were plotted against known sources such as groundwater and potable water.

Table A4-26. Known and Suspected Sources of Persistent and Transient Flows in the SMR WMA

Copermittee	Known Sources			Suspected Sources			
	Irrigation Runoff	Ground-water	Other	Irrigation Runoff	Ground-water	Water District	Other
Middle SMR Subwatershed							
City of Murrieta	-	-	-	41	-	-	-
City of Temecula	-	-	-	72	-	1	13
City of Wildomar	9	-	-	-	-	-	-
County of Riverside	-	-	-	20	-	-	-
District	95	1	7	-	-	-	-
Lower SMR Subwatershed							
County of San Diego	-	-	-	4	4	-	3

Results limited to major MS4 outfalls and may represent a combination of controllable and uncontrollable sources. More than one source may be identified at a site.



Other sources include residential car wash water and maintenance power washing.

Figure A4-13. Known and Suspected Flow Sources Recorded During Field Screening and Follow-up Source Investigations

4.5.4.2 Source Identification for Highest Priority Outfalls

The highest priority outfalls identified by each Copermittee through their outfall prioritization process were a focus for IDDE investigations during 2019-2020. More than one source may contribute flow to a single outfall. Details about source investigations and associated source elimination activities at the highest priority outfalls are provided in **Table A4-27**.

4.5.4.3 Additional Source Investigation Activities

The County of San Diego has installed flow meters at four outfalls and two upstream locations in the SMR WMA to assist in source identification. The flow meters measure continuous flow at these locations, which allows the County of San Diego to target source investigation and elimination activities at particular times when flow rates tend to be higher. For example, irrigation systems are typically turned on at night or in the early morning and can be identified by recurring higher flow rates during this time.

The County of San Diego is also investigating potential sources of human bacteria since human sources of bacteria are the highest priority to address from a public health perspective. The County of San Diego is conducting long-term monitoring as well as a wastewater collection system assessment to identify areas of concern and prioritize areas for preventative maintenance.

Table A4-27. Highest Priority Persistent Outfall Source Elimination

Jurisdiction	Highest Priority Site ID	Source Investigation Performed?	Type	Runoff Source(s)	Actions Taken or Planned
City of Murrieta	4030	No (ponded)	N/A	N/A	N/A
City of Murrieta	4038	No (ponded)	N/A	N/A	N/A
City of Murrieta	4039	No (ponded)	N/A	N/A	N/A
City of Murrieta	4062	No (ponded)	N/A	N/A	N/A
City of Murrieta	4063	No, located within private community	Unknown	Unidentified	City will send notification letter to the HOA located within the area tributary to the outfall and provide public education materials on landscape and gardening, over-irrigation and pet waste. The City will also be reaching out to Rancho California Water District to inquire about any sanitary sewer lines and potential water main flushings in the area.
City of Temecula	3038	No	Unknown	Unidentified	In lieu of upstream investigations at high priority outfalls, the City of Temecula sent notification letters with public education pamphlets to residential HOAs and commercial POAs to compel these HOAs and POAs to take the lead with eliminating dry weather flows throughout the communities they serve.
City of Temecula	3082	No	Unknown	Unidentified	In lieu of upstream investigations at high priority outfalls, the City of Temecula sent notification letters with public education pamphlets to residential HOAs and commercial POAs to compel these HOAs and POAs to take the lead with eliminating dry weather flows throughout the communities they serve.
City of Temecula	3119	No	Unknown	Unidentified	In lieu of upstream investigations at high priority outfalls, the City of Temecula sent notification letters with public education pamphlets to residential HOAs and commercial POAs to compel these HOAs and POAs to take the lead with eliminating dry weather flows throughout the communities they serve.
City of Temecula	3120	No	Unknown	Unidentified	In lieu of upstream investigations at high priority outfalls, the City of Temecula sent notification letters with public education pamphlets to residential HOAs and commercial POAs to compel these HOAs and POAs to take the lead with eliminating dry weather flows throughout the communities they serve.
City of Temecula	3123	No (ponded)	N/A	N/A	N/A
City of Wildomar	5012	Yes	Unknown	Unidentified	N/A
City of Wildomar	5015	Yes	Unpermitted Discharge	Irrigation	Outreach and educational materials were given.
City of Wildomar	5019	Yes	Unpermitted Discharge	Irrigation	Outreach and educational materials were given.
City of Wildomar	5024	No (dry)	N/A	N/A	N/A
City of Wildomar	5026	Yes	Unpermitted Discharge	Irrigation	Outreach and educational materials were given.
County of Riverside	2207	No (dry or ponded)	N/A	N/A	N/A
County of Riverside	2211	No (dry or ponded)	N/A	N/A	N/A
County of Riverside	2235	No (dry or ponded)	N/A	N/A	N/A
County of Riverside	2236	No (dry or ponded)	N/A	N/A	N/A
County of Riverside	2245	No (dry or ponded)	N/A	N/A	N/A

Table A4-27. Highest Priority Persistent Outfall Source Elimination

Jurisdiction	Highest Priority Site ID	Source Investigation Performed?	Type	Runoff Source(s)	Actions Taken or Planned
Riverside County Flood Control District	1060	Yes	Unpermitted Discharge	Suspected Irrigation Runoff (Possibly Multiple Property Owners)	The District's IC/ID Officer conducted follow-up field investigation at the outfall station and the proximate tributary area in accordance with the District's JRMP IC/ID protocol. Per the investigation there was evidence of backyard drainage of water coming from residential homes. Public education door hangers and pamphlets with reference to dry weather discharge prohibition were left on the front door of the multiple residential homes.
Riverside County Flood Control District	1025	Yes	Unpermitted Discharge	Suspected Irrigation Runoff (Possibly Multiple Property Owners)	The District's IC/ID Officer conducted follow-up field investigation at the outfall station and the proximate tributary area in accordance with the District's JRMP IC/ID protocol. Per the investigation there was evidence of backyard drainage of water coming from a residential home, as well as overwatering of grass along a business park. Public education door hangers and pamphlets with reference to dry weather discharge prohibition were left for communication to the property owners.
Riverside County Flood Control District	1032	Yes	Unpermitted Discharge	Suspected Irrigation Runoff (Possibly Multiple Property Owners)	The District's IC/ID Officer conducted follow-up field investigation at the outfall station and the proximate tributary area in accordance with the District's JRMP IC/ID protocol. Per the investigation there was evidence of backyard drainage of water coming from residential homes. Public education door hangers and pamphlets with reference to dry weather discharge prohibition were left on the front door of the multiple residential homes. The IC/ID officer then referred the complaint addresses to the Copermittee with jurisdiction over these discharges for possible future enforcement.
Riverside County Flood Control District	1037	Yes	Unpermitted Discharge	Suspected Irrigation Runoff	The District's IC/ID Officer conducted follow-up field investigation at the outfall station and the proximate tributary area in accordance with the District's JRMP IC/ID protocol. Per the investigation there was evidence of overwatering of front lawns from residential homes. Public education door hangers and pamphlets with reference to dry weather discharge prohibition were left on the front door of the multiple residential homes. The IC/ID officer then referred the complaint addresses to the Copermittee with jurisdiction over these discharges for possible future enforcement.
Riverside County Flood Control District	1061	Yes	Unpermitted Discharge	Suspected Irrigation Runoff	The District's IC/ID Officer conducted follow-up field investigation at the outfall station and the proximate tributary area in accordance with the District's JRMP IC/ID protocol. Based on field observations it was determined to be caused by overwatering of front lawn and backyard drainage of water from residential homes, and the connectivity to the proximate storm drain was verified. For this reason the IC/ID Officer approached the property and placed a public education door hanger and pamphlet, with reference to dry weather discharge prohibition, on the front door of the residence. The IC/ID officer then referred the complaint address to the Copermittee with jurisdiction over this discharge for possible future enforcement.
County of San Diego	HST01	No (dry or ponded)	N/A		N/A
County of San Diego	MS4-SMG-015	Yes	Unpermitted Discharge	Suspected Irrigation Runoff, Rising Groundwater	No dry weather discharges observed during the IDDE investigation, flow appears to be mostly groundwater infiltration into the MS4. Source investigation efforts are ongoing
County of San Diego	MS4-SMG-021	Yes	Unpermitted Discharge	Suspected Irrigation Runoff, , Rising Groundwater	No dry weather discharges observed during the IDDE investigation, flow appears to be mostly groundwater infiltration into the MS4. Source investigation efforts are ongoing
County of San Diego	MS4-SMG-062	Yes	Unpermitted Discharge	Suspected Irrigation Runoff, Rising Groundwater	Increased inspections during early morning hours to identify sources.
County of San Diego	MS4-SMG-063	Yes	Unpermitted Discharge	Rising Groundwater	Flow source appears to be from a French drain designed to redirect groundwater from the roadway. Source investigation efforts are ongoing.

4.5.4.4 Continuous Flow Monitoring Conducted by County of San Diego

According to Provision D.2.b of the San Diego Region NPDES Permit, each Copermitee must perform dry weather MS4 outfall monitoring to identify non-storm water and illicit discharges within its jurisdiction pursuant to Provision E.2.c, and prioritize the dry weather MS4 discharges that will be investigated and eliminated pursuant to Provision E.2.d. In an effort to identify, measure, and reduce sources of non-stormwater flows in the SMR WMA, as required in Provision D.2.b and Provision E.2.c of the Permit, the County of San Diego (County) has implemented a continuous flow monitoring program at select highest priority persistently flowing MS4 outfalls.

During the dry season (May through September) in 2015, 2016, 2017, and 2018, continuous flow monitoring was conducted at one County MS4 outfall, HST01. In 2019, due to minimal dry weather flows observed during the previous four years at HST01, flow monitoring was discontinued at this site. However, four new MS4 outfall locations were added to the continuous flow monitoring program (MS4-SMG-062, MS4-SMG-015, MS4-SMG-021, and MS4-SMG-024) in the SMR WMA for the 2019 dry season. It was determined through a GIS analysis and field investigations that site MS4-SMG-024 conveyed a blue line creek, along with flows from the three sites upstream (062, 015, and 021). In 2020, site MS4-SMG-024 was given a lower priority status and replaced with MS4-SMG-063 on the County's list of highest priority dry weather outfalls. In order to measure continuous dry weather flow rates at these select outfalls, water level loggers were installed at each outfall to record flow, conductivity, and temperature at five-minute intervals. Since the loggers need to be completely submerged in water to function properly, monitoring the low flow levels at these outfalls required installation of custom v-notch weirs. The weirs hold back the flows and direct flow through the v-notch. Flow rates are then calculated from the measurement of water level in the v-notch using equations specific for the individual control structure.

In 2019, four sites were monitored for continuous flow during the dry season: MS4-SMG-062, MS4-SMG-015, MS4-SMG-021, and MS4-SMG-024. All four of these MS4 outfalls belong to the same MS4 system, with MS4-SMG-024 being the most downstream location that conveys flows from the other three sites, along with a few other sections of MS4 not captured by the other outfalls (**Figure A4-14**). At the most downstream location (MS4-SMG-024), the MS4 outfall discharges directly to Fallbrook Creek, which eventually discharges to O'Neill Lake. Further upstream of MS4-SMG-024, the drainage area splits into two large MS4 segments that discharge to sites MS4-SMG-015 and MS4-SMG-021. There is a blue line creek (Fallbrook Creek) that is conveyed by the MS4 system between these two segments and the downstream discharge point at MS4-SMG-024, so it is possible that some portion of the flow at these three locations are natural in origin. Site MS4-SMG-062 drains a smaller segment on the west side of the larger MS4-SMG-024 drainage and discharges directly to this same blue line creek (**Figure A4-14**).

With the exception of MS4-SMG-024, these sites were monitored for a second consecutive dry season in 2020. All three of the MS4 outfalls monitored in both 2019 and 2020 experienced an increase in mean dry weather flow rates (**Table A4-28**). MS4-SMG-015 had a mean daily flow rate of 50,892 GPD in 2019 and 54,019 GPD in 2020 (6% increase). MS4-SMG-021 had a mean daily flow rate of 20,708 in 2019 and 22,097 in 2020 (7% increase). An upstream MS4 pipe was monitored at this site in 2020 (MS4-SMG-021A) in order to assess the contribution of dry weather flows from the upper portion of the drainage area. This upstream site had a mean daily flow rate of 16,111 GPD, which is 73% of the total flow at the downstream outfall. MS4-SMG-021A monitors flow in the main stem of

the MS4 that drains to the downstream outfall and there are no known inputs from County storm drains between the two sites, which indicates potential flow sources (27% of total flow) are either private pipes, illegal connections, or groundwater infiltration between these two sites. The source of this flow will continue to be investigated. MS4-SMG-062 had a mean daily flow rate of 284 GPD in 2019 and 810 GPD in 2020 (185% increase). An upstream MS4 pipe was also monitored at this site in 2020 (MS4-SMG-062D) in order to quantify the dry weather flows from a portion of drainage area that was identified as a main source of flow during Illicit Discharge Detection and Elimination (IDDE) investigations. This upstream pipe conveys flows from a residential neighborhood and a private MS4 pipe. The mean daily flow rate at this upstream pipe was 887 GPD in 2020, which is slightly more than the total flow at the downstream outfall MS4-SMG-062, indicating that this portion of the drainage area contributes most of the flow at the outfall. The source of flow at the upstream site and the private connection is still under investigation and will be the focus of future inspections.

In 2020, one new site was added to the County's list of monitored sites (MS4-SMG-063). Prior to the dry season, MS4-SMG-063 was identified as a potential candidate site to assess progress towards reducing and eliminating anthropogenic dry weather flows for compliance with the County's dry weather goals in the SMR WQIP. However, since the outfall drains to Rainbow Creek and is subject to other regulatory requirements under the Rainbow Creek Nutrient TMDL, this site will not be used to evaluate progress towards dry weather flow reductions. The County has identified at least one outfall (MS4-SMG-093) that has the potential to discharge to the Santa Margarita River during dry weather and can be used to assess progress toward dry weather flow reductions. This outfall will be monitored during the 2021 dry season to establish a baseline flow rate. The final dry weather goal is to eliminate anthropogenic dry weather flows from MS4 outfalls (by 100%) by the end of FY 2038, and the first interim goal is to reduce dry weather flows from MS4 outfalls by 25% by the end of FY 2023 from the baseline year. Baseline dry weather flow rates will be established in 2021.

In order to further address the origins of non-stormwater flows from the MS4, during the 2018 dry season, the County initiated a source ID water quality sampling program focused on the hydrogen and oxygen stable isotope composition, along with geochemistry and analysis. Four major MS4 outfalls in the SMR WMA were added to this sampling program in 2019, three of which are currently HPPF outfalls (MS4-SMG-015, MS4-SMG-021, and MS4-SMG-062), while one was deprioritized from the continuous flow program and the HPPF list (MS4-SMG-024). Samples of the discharge were collected at the outfalls and, for comparison, water samples were also collected at potential source locations including tap water, groundwater, reclaimed water, and other accessible potential source waters. The goal of the stable isotope analysis is to quantify the percentage of imported water (tap water) in the non-stormwater MS4 discharge samples. According to the results from the stable isotope analysis, MS4-SMG-015, MS4-SMG-021, and MS4-SMG-024 are all between 58-62% tap water, while MS4-SMG-062 is 78% tap water; the results of the geochemistry and indicator analyses suggest that the remainder of flow at these sites is attributable to groundwater. The results of this study allow the County to focus efforts on addressing sources of anthropogenic dry weather flow through IDDE investigations, and residential, commercial, and industrial inspections. The results of the Dry Weather Flow Source Investigation 2018 – 2019 Monitoring Years Final Report (Wood Environment and Infrastructure, 2020) are included in **Attachment 4I** of this appendix.

Table A4-28. Mean Flow Rates (gallons/day) at Priority Outfalls in the Santa Margarita WMA (2020)

Site ID	Mean Flow (gallons/day)		% Difference	Notes/Comments
	2019	2020	2019-2020	
MS4-SMG-015	50,892	54,019	6%	
MS4-SMG-021	20,708	22,097	7%	
MS4-SMG-021A	-	16,111	-	73% of total flow at downstream location
MS4-SMG-062	284	810	185%	
MS4-SMG-062D	-	887	-	109% of total flow at downstream location
MS4-SMG-024	93,808	-	-	
MS4-SMG-063	-	909	-	

Santa Margarita River Watershed - Major Outfalls - Fallbrook

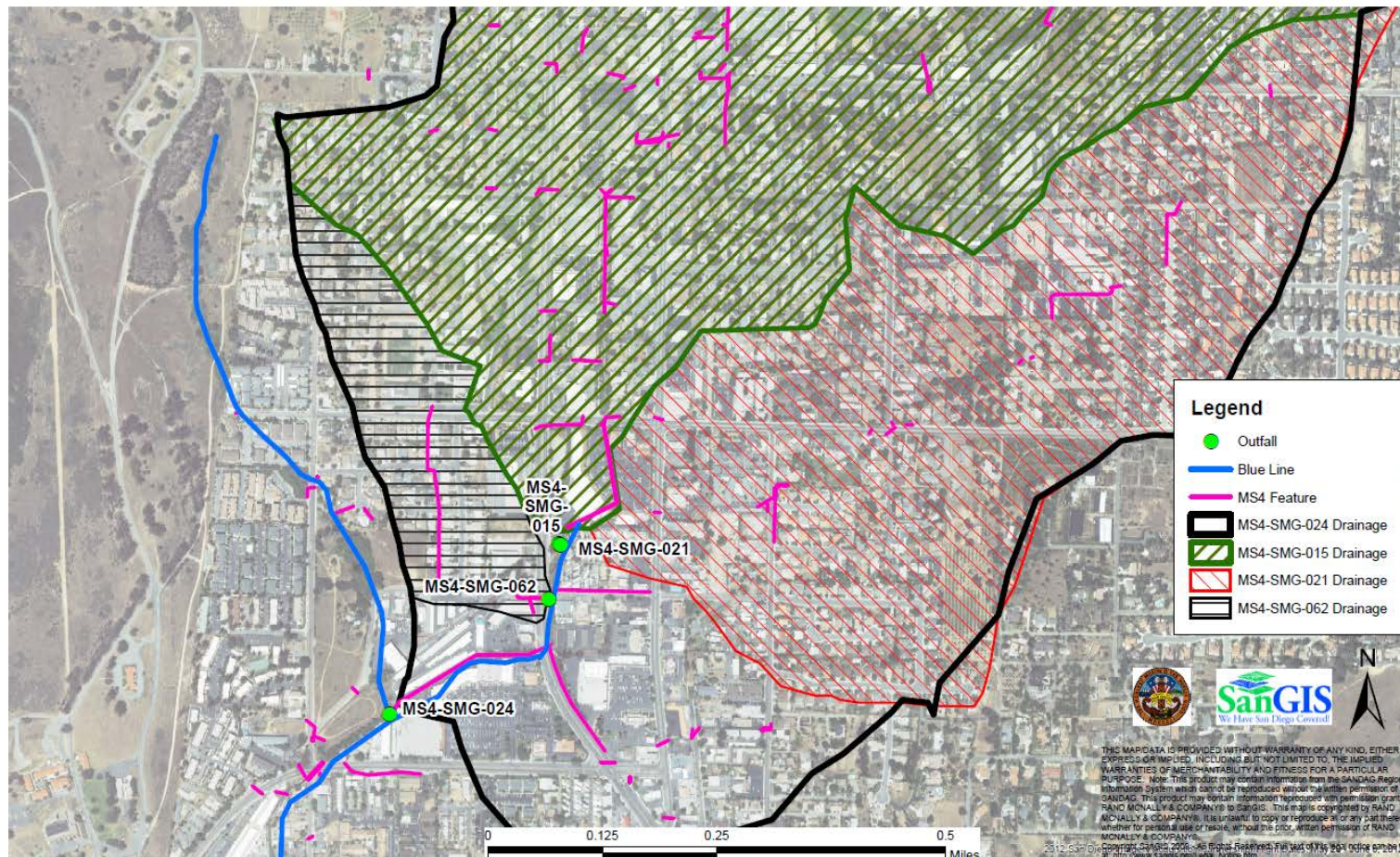


Figure A4-14. Priority Major MS4 Outfalls and Drainage Areas within the SMR WMA (Fallbrook)

4.5.5 Wet Weather MS4 Outfall Monitoring

Wet weather MS4 outfall monitoring was conducted at six outfalls in the WMA. Stations representative of stormwater discharges from Residential, Commercial, Industrial, and typical Mixed-use land uses were selected from the inventory of major MS4 outfalls, and at least one station was selected for each Copermittee within the WMA. The wet weather MS4 outfall monitoring stations for the WMA are presented in **Table A4-29** and are shown with corresponding drainage areas in **Figure A4-15**. The drainage area for HST01 was updated in the 2018-2019 reporting year based on refined drainage area delineations for the Rainbow Creek Watershed. This outfall includes agricultural land use.

This was the second year of wet weather MS4 outfall monitoring under the accepted WQIP, and the fourth year of monitoring at these six locations. The Copermittees began long-term wet weather monitoring at these locations during the 2016-2017 monitoring year. While the County of San Diego began long-term monitoring in the 2013-2014 monitoring year, they adjusted the monitoring locations to be in the Rainbow Creek Watershed during the 2016-2017 monitoring year. This was done in part to provide additional wet weather nutrient concentrations and loading data to engineers developing structural best management practice (BMP) designs for the Rainbow Creek Watershed.

Table A4-29. Wet Weather MS4 Outfall Monitoring Stations

MS4 Outfall Name	Site Description	Jurisdiction	HSA Name/No.	Latitude	Longitude
Lower SMR Subwatershed					
HST01 ¹	Brow Ditch to Rainbow Creek @ Huffstatler Road	County of San Diego	Vallecitos/902.23	33.41422	-117.15197
Middle SMR Subwatershed					
902MS45031	Outlet to NW side of Wildomar Channel @ Gruwell Street	City of Wildomar	Wildomar/902.31	33.6037	-117.2787
902MS44034 ²	RCP Outlet to Warm Springs Creek d/s of M.H.S. Road	City of Murrieta	French/902.33	33.5475	-117.1719
902MS41033	Outlet to W side of Tusalota Creek south of M.H.S. Road	District	Gertrudis/902.42	33.5521	-117.1364
902MS43015	Outlet to Murrieta Creek @ Diaz Road behind Rancho California Water District pump station	City of Temecula	Murrieta/902.32	33.5165	-117.1723
902MS42240	Outlet to Temecula Creek @ South of Breeze Way Place and Summit View	County of Riverside	Pauba/902.51	33.4866	-117.0636
Upper SMR Subwatershed					
<i>There are no major outfalls identified in the Upper SMR Subwatershed.</i>					

¹ Previously also identified as SMR-MS4-091. HST01 station name is used for consistency with TMDL and MS4 outfall monitoring in the Rainbow Creek Watershed.

² Previously 902MS4034.

Monitoring at the wet weather MS4 outfall monitoring locations was conducted between November 19, 2019 and March 11, 2020. The rainfall statistics for the monitored event at each outfall, based on nearby County station rain gauges, are presented in **Table A4-30**. Wet weather MS4 outfall flow data are presented in **Attachment 4F-1**, and a QA/QC report is provided as **Attachment 4F-2**.

Monitoring was conducted in accordance with the WQIP MAP. Grab samples were collected and analyzed for pH, temperature, conductivity, dissolved oxygen, turbidity, hardness, and indicator bacteria. Composite samples were collected and analyzed for constituents contributing to the HPWQC, 2014/2016 303(d) List impairments, and constituents with SALs. A receiving water sample was collected and analyzed for hardness, where feasible. Observational and hydrologic data were also recorded.

Table A4-30. 2019-2020 Rainfall Statistics for Wet Weather MS4 Outfall Monitoring Events

Date	Outfall Name	Total Rain (inches)	Duration (hours)	Intensity (inches/hour)	Antecedent Dry Days	Event Volume (cf)	Peak Flow (cfs)
Middle SMR Subwatershed							
3/9-10/2020	902MS45031	1.41	27.3	0.05	16	19,205	2.94
12/4/2019	902MS41033	1.27	15.5	0.08	5	128,027	4.58
3/9-10/2020	902MS44034	1.39	25.0	0.06	16	75,508	8.29
11/19-20/2019	902MS43015	0.86	20.5	0.04	178	77,222	5.75
12/4/2019	902MS42240	1.27	15.5	0.08	5	6,292	0.42
Lower SMR Subwatershed							
2/9-10/2020	HST01	0.12	7	0.02	19	45,994	8.19

cf – cubic feet; cfs – cubic feet per second

Analytical results for samples collected at the six wet weather MS4 outfall monitoring locations are summarized in **Table A4-31**. Nutrient concentrations at HST01 are compared to final effluent limitations from the Rainbow Creek Nutrient TMDL. Results for the remaining required constituents, including general and physical chemical constituents, nutrients, and total and dissolved metals, are compared to SALs as provided in the Permit.

Nutrient results were below the applicable SALs except at HST01, where nitrate as N, nitrite + nitrite as N, and total phosphorus results exceeded the SALs and/or the final effluent limitations from the Rainbow Creek Nutrient TMDL. There are no existing SALs (Table C-5 of the Permit) that relate to PWQCs. No other constituent concentrations were above the corresponding SALs. Laboratory and field data collected for wet weather MS4 outfall monitoring will be uploaded to CEDEN, and data submittals are provided in **Attachment 4K**.

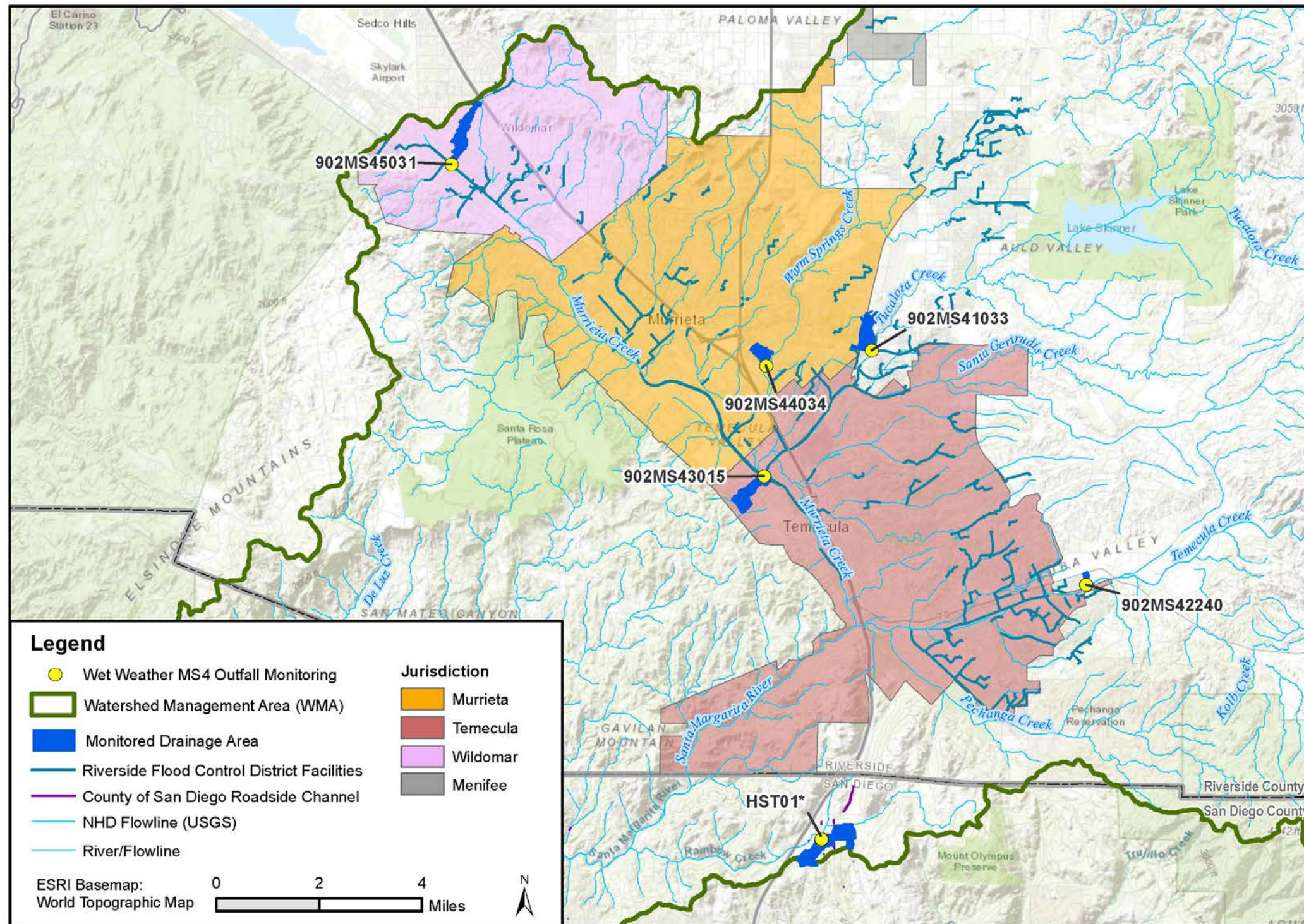


Figure A4-15. 2019-2020 Wet Weather MS4 Outfall Monitoring Locations and Drainage Areas

Table A4-31. 2019-2020 Wet Weather MS4 Outfall Monitoring Analytical Results

Analyte	Units	Final Effluent Limitations ¹	SAL ²	902MS45031 (902.31)	902MS41033 (902.42)	902MS44034 (902.33)	902MS43015 (902.32)	902MS42240 (902.51)	HST01* (902.23)
				03/10/2020- 03/11/2020	12/4/2019	03/10/2020- 03/11/2020	11/20/2019	12/4/2019	2/9/2020
Physical Chemistry									
Dissolved Oxygen (Field)	mg/L			9.68	10.33	9.84	9.81	10.34	8.66
pH (Field)	pH units			7.49	7.37	7.37	7.78	8.1	8.18
Specific Conductance (Field)	µS/cm			33	907	126	939	175	1071
Specific Conductance (Lab)	µmhos/cm			47	330	200	180	400	NR
Water Temperature (Field)	Celsius			13.9	12.9	14	13.1	12.4	14.12
Turbidity (Field)	NTU		126	23.51	17.89	19.93	122.9	13.2	53.6
Turbidity (Lab)	NTU		126	67	19	8.9	72	18	NS
Fecal Indicator Bacteria									
<i>E. coli</i> ⁴	MPN/100 mL			780	5,400	7,900	35,000	14,000	5,200
<i>Enterococcus</i> ⁴	MPN/100 mL			680	1,700	35,000	4,900	17,000	5,400
Fecal Coliform ⁴	MPN/100 mL			780	5,400	7,900	35,000	14,000	3,500
Total Coliform ⁴	MPN/100 mL			24,000	≥16,000	92,000	54,000	54,000	160,000
General Chemistry									
Dissolved Organic Carbon	mg/L			5.4H	8.3H	7.1H	16H	8.9H	24
Total Organic Carbon	mg/L			NR	NR	NR	NR	NR	27
Surfactants (MBAS)	mg/L			NR	NR	NR	NR	NR	0.17
Sulfate	mg/L			1.7	37	23	16	47	240
Total Dissolved Solids ⁴	mg/L			50	200	120	140	240	780
Total Suspended Solids	mg/L			NS	NS	NS	NS	NS	100
Total Hardness	mg/L			18	86	51	48	91	301
Nutrients									
Ammonia as N	mg/L			0.27	0.29	0.12	0.63	0.55	0.66
Ammonia as N (Unionized)	mg/L			0.0022	0.0024	0.00031	0.016	0.014	NS
Nitrate as N ³	mg/L	10		0.49	0.4	0.55	0.62	1.2	22
Nitrate + Nitrite as N	mg/L		2.6	0.52	0.429	0.584	0.642	1.271	22.35
Nitrite as N	mg/L			0.03	0.029	0.034	0.022	0.071	0.35
Total Kjeldahl Nitrogen	mg/L			0.83	1.2	0.98	2.4	2.1	3.8
Total Nitrogen ³	mg/L	1		1.4	1.6	1.6	3	3.4	26.15
Total Phosphorus ³	mg/L	0.1	1.46	0.34	0.41	0.38	0.55	0.85	1.3
Dissolved Phosphorus	mg/L			0.18	0.37	0.27	0.38	0.82	NS
Orthophosphate as P	mg/L			0.12	0.26	0.19	0.23	0.26	0.99
Total Phosphate	mg/L			1	1.2	1.2	1.7	2.5	NS
Total Metals									
Aluminum	µg/L			3,000	1,200	710	4,000	830	1,800
Cadmium	µg/L		3	0.13J	<0.12	<0.12	0.18J	<0.12	0.19
Copper	µg/L		127	9.6	12	5.7	19	8	24
Iron ⁴	µg/L			3,100	1,600	980	5,400	1,100	2,000
Lead	µg/L		250	2.7	1	0.5	3.7	0.6	1.8
Manganese ⁴	µg/L			71	34	55	77	26	150
Selenium	µg/L			<0.3	0.4J	0.3J	0.4J	0.8	0.43
Silver	µg/L			<0.12	<0.12	<0.12	<0.12	<0.12	<0.2
Zinc	µg/L		976	40	61	18	120	15	91

Table A4-31. 2019-2020 Wet Weather MS4 Outfall Monitoring Analytical Results

Analyte	Units	Final Effluent Limitations ¹	SAL ²	902MS45031 (902.31)	902MS41033 (902.42)	902MS44034 (902.33)	902MS43015 (902.32)	902MS42240 (902.51)	HST01* (902.23)
				03/10/2020- 03/11/2020	12/4/2019	03/10/2020- 03/11/2020	11/20/2019	12/4/2019	2/9/2020
Dissolved Metals									
Aluminum	µg/L			37J	<33	16J	<33	<33	46
Cadmium	µg/L			<0.12	<0.12	<0.12	<0.12	<0.12	0.18
Copper	µg/L			3.6	7.1	3.7	5.4	5	18
Iron	µg/L			28	22	67	67	19J	78
Lead	µg/L			<0.2	<0.2	<0.2	0.3J	<0.2	0.14J
Manganese	µg/L			<5	<5	19	10	<5	88
Selenium	µg/L			<0.3	0.4J	0.3J	0.3J	0.7	0.38J
Silver	µg/L			<0.12	<0.12	<0.12	<0.12	<0.12	<0.2
Zinc	µg/L			6.6	27	7	40	4.4	58
Organophosphorus Pesticides									
Chlorpyrifos	µg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.10
Diazinon	µg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.10

< - Results are less than the method detection limit.

* Previously SMR-MS4-091. Renamed for consistency with TMDL and MS4 outfall monitoring in the Rainbow Creek Watershed.

H – Sample received and/or analyzed after recommended holding time.

J – Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

NR – Not required

Hydrologic subarea is shown in parenthesis following monitoring station name.

¹ Final Effluent Limitations from Table 3.2. San Diego Regional Water Quality Control Board Order No. R9-2013-0001, Attachment E. Only applies to HST01.

² Storm Water Action Levels for Discharges from MS4s to Receiving Waters, Table C-5. San Diego Regional Water Quality Control Board Order No. R9-2013-0001.

³ Constituent is a HPWQC for wet weather in the Rainbow Creek subarea.

⁴ Constituent is a PWQC for wet weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

Shaded results did not meet the Final Effluent Limitation (nutrients at HST01) or Stormwater Action Level.

4.5.6 Wet Weather MS4 Outfall Monitoring Data Assessments

Provision D.4.b.(2)(c) of the Permit requires the wet weather MS4 outfall monitoring data assessments summarized in **Table A4-32**. The information necessary to demonstrate compliance with each Provision is outlined below. In instances where compliance has been demonstrated in previous sections of this Annual Report, those sections are referenced.

As stated in **Section 4.2**, the Copermittees in the region requested regulatory relief from performing some of the Permit-required assessments for the 2019-2020 monitoring year, which includes the stormwater assessments required by Provision D.4.b.(2)(c), including Provision D.4.b.(2)(b) which is incorporated by reference. In an email dated August 19, 2020, the San Diego Water Board provided approval for the Copermittees to "assess the data as required pursuant to provision D.4.b.(1)(c)(iv) and D.4.b.(2)(c) by evaluating the pollutant loads from each outfall, i.e., only calculating the pollutant loads at the outfall level and not using the outfall data to extend the load calculation at the watershed scale." Therefore, the wet weather assessment requirements of D.4.b.(2)(c) are fulfilled in this Annual Report through estimation of volumes and loads for the wet weather monitored outfalls only. In addition, the Copermittees are providing Microsoft (MS) Excel tables and pivot charts of the pollutant loads over time for the six outfalls monitored during the 2019-2020 year that have two or more years of monitoring data (**Attachment 4G**).

Table A4-32. Wet Weather MS4 Outfall Monitoring Assessments

Assessment	Components	Provision(s)	Section
WQIP Annual Report			
Estimate loads and volumes.*	Calculate or estimate the average stormwater runoff coefficient for each land use type.	D.4.b.(2).(b)(i)(a)	Attachment 4G
	Calculate or estimate the volume of stormwater and pollutant loads discharged from each monitored MS4 outfall for each qualifying storm event.	D.4.b.(2).(b)(i)(b)	4.5.6.1
	Calculate or estimate the total volume and pollutant load discharged from the Copermittee's jurisdiction over the course of the wet season.	D.4.b.(2).(b)(i)(c)	4.5.6.1
	Calculate or estimate the percent contribution of stormwater volumes and pollutant loads discharged from each land use type within each hydrologic subarea with a major MS4 outfall or each major MS4 outfall for each qualifying storm event.	D.4.b.(2).(b)(i)(d)	4.5.6.1 Attachment 4G
	Identify necessary modifications to monitoring locations and frequencies necessary to identify pollutants in stormwater discharges.	D.4.b.(2).(b)(ii)	4.5.6.1
Evaluate WQIP analysis.	Using data and applicable SALs, evaluate and compare data collected to the analyses and assumptions used to develop the WQIP.	D.4.b.(2).(c)(ii)	4.5.6.2
	Evaluate whether analyses and assumptions should be updated as a component of the adaptive management efforts.	D.4.b.(2).(c)(ii)	4.5.6.2
Identify data gaps.	Identify data gaps in the monitoring data necessary to fulfill assessment requirements.	D.4.b.(2).(c)(iv)	4.5.6.4

Table A4-32. Wet Weather MS4 Outfall Monitoring Assessments

Assessment	Components	Provision(s)	Section
Evaluate trends.	Evaluate data collected pursuant to D.2.c, incorporate new data into time-series plots for each long-term monitoring constituent and perform statistical trends analysis on cumulative long-term wet weather data set.	D.4.b.(2)(d)	4.5.6.5
Once during Permit Term			
Evaluate progress in achieving stormwater pollutant reductions.	Identify reductions and progress in achieving reductions from different land uses and/or drainage areas.	D.4.b.(2).(c)(iii)	N/A
	Assess the effectiveness of WQIP improvement strategies, with estimates of volume and load reductions attributed to specific strategies when possible.		N/A
	Identify modifications necessary to increase the effectiveness of WQIP strategies.		N/A

* An email from the San Diego Water Board dated August 19, 2020 granted the Copermittees regulatory relief related to this assessment. See **Section 4.2** for additional detail.

N/A – Not Applicable. Evaluation will be conducted in a future report.

4.5.6.1 Provision D.4.b.(2)(b) – Estimate Loads and Volumes – requirements as revised for 2019-2020 and 2020-2021 Reporting Years

Based on the regulatory relief provided, the Copermittees were required to calculate stormwater volumes and pollutant loads at the outfall level only for outfalls monitored during the 2019-2020 year. Event and annual loads are provided for the six monitored outfalls in **Table A4-33** and **Table A4-34**, respectively. Event loads were calculated using measured concentrations and flow rates (used to calculate the stormwater volume) during the monitored storm event for each outfall. Annual loads were calculated based on estimated annual volume (using rainfall for all wet weather days and the average runoff coefficient calculated from the monitored events at the outfall) multiplied by the concentration measured during the monitored event. In addition, the Copermittees have provided an attachment with compiled historical loads and the 2019-2020 data in tables and graphs (**Attachment 4G**) in response to the San Diego Water Board's request "for outfalls that have been monitored for two or more years, tables and figures showing changes in pollutant loads over time from the outfall should also be prepared and reported."

The evaluation of monitoring frequency included a review of the monitoring data to determine how well the data from the single storm event monitored at each outfall represented the wet weather conditions on an annual basis. The total qualifying rainfall characterizing storms greater than 0.1 inch for July 2019 to June 2020 was 14.31 inches, 17.35 inches, and 16.69 inches at the Murrieta, Wildomar, and Temecula rain gauges, respectively. The County of San Diego Alert station rain gauge had a total qualifying rainfall of 20.37 inches. These rainfall totals are similar to the previous monitoring year but more than triple the rainfall that occurred in the 2017-2018 transitional monitoring year.

Rainfall intensity as well as storm size is considered when evaluating forecasted storm events for monitoring, if possible. It has been found that a target rainfall intensity of at least 0.05 inch/hour shows a good precipitation response and higher measured Runoff "C" compared to lower intensity storm

events. In general, capturing larger events has been less feasible in recent years due to the patterns of rainfall in the region; however, the 2019-2020 monitoring year produced several large rainfall events and five of the six outfalls were monitored during events greater than 0.5 inches.

Table A4-33. 2019-2020 Wet Weather MS4 Outfall Discharge Pollutant Loads for Monitored Event

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Tributary Drainage Area	acres	106.1	107.4	54.3	106.2	5.5	215.3
Event Date	-	03/10/2020- 03/11/2020	12/4/2019	03/10/2020- 03/11/2020	11/20/2019	12/4/2019	2/9/2020
Event Measured Rainfall	inches	1.41	1.27	1.39	0.86	1.27	0.12*
Measured Outfall Runoff "C"	-	0.035	0.258	0.276	0.234	0.245	0.490
Event Volume	cf	19,205	128,027	75,508	77,222	6,292	45,994
Bacteriological							
<i>E. coli</i> ²	MPN	4.24E+09	1.96E+11	1.69E+11	7.65E+11	2.49E+10	6.77E+10
<i>Enterococcus</i> ²	MPN	3.70E+09	6.16E+10	7.48E+11	1.07E+11	3.03E+10	7.03E+10
Fecal Coliform ²	MPN	4.24E+09	1.96E+11	1.69E+11	7.65E+11	2.49E+10	4.56E+10
Total Coliform ²	MPN	1.31E+11	5.80E+11	1.97E+12	1.18E+12	9.62E+10	2.08E+12
General Chemistry							
Total Organic Carbon	lbs	NR	NR	NR	NR	NR	77.53
Dissolved Organic Carbon	lbs	6.47	66.34	33.47	77.13	3.50	68.91
Sulfate	lbs	2.04	295.72	108.42	77.13	18.46	689.11
Surfactants (MBAS)	lbs	NR	NR	NR	NR	NR	0.49
Total Hardness	lbs	21.58	687.34	240.40	231.40	35.74	864.26
Total Dissolved Solids ²	lbs	59.95	1,598.47	565.65	674.91	94.26	2,239.61
Total Suspended Solids	lbs	NR	NR	NR	NR	NR	287.13
Nutrients							
Total Nitrogen ¹	lbs	1.68	12.79	7.54	14.46	1.34	75.08
Ammonia as N	lbs	0.32	2.32	0.57	3.04	0.22	1.90
Ammonia as N (Unionized)	lbs	0.003	0.019	0.001	0.08	0.005	NR
Nitrate as N ¹	lbs	0.59	3.20	2.59	2.99	0.47	63.17
Nitrite as N	lbs	0.036	0.23	0.16	0.11	0.03	1.00

Table A4-33. 2019-2020 Wet Weather MS4 Outfall Discharge Pollutant Loads for Monitored Event

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Nitrate/Nitrite as N	lbs	0.62	3.43	2.75	3.09	0.50	64.17
Total Kjeldahl Nitrogen	lbs	1.00	9.59	4.62	11.57	0.82	10.91
Total Phosphate	lbs	1.20	9.59	5.66	8.20	0.98	NR
Total Phosphorus ¹	lbs	0.41	3.28	1.79	2.65	0.33	3.73
Dissolved Phosphorus	lbs	0.22	2.96	1.27	1.83	0.32	NR
Orthophosphate	lbs	0.14	2.08	0.90	1.11	0.10	2.84
Total Metals							
Aluminum	lbs	3.5968	9.5908	3.3468	19.2830	0.3260	5.16834
Cadmium	lbs	0.000156	0.0005	0.0003	0.0009	0.00002	0.00055
Copper	lbs	0.0115	0.0959	0.0269	0.0916	0.0031	0.06891
Iron ²	lbs	3.7167	12.7878	4.6195	26.0321	0.4320	5.74260
Lead	lbs	0.0032	0.0080	0.0024	0.0178	0.0002	0.00517
Manganese ²	lbs	0.0851	0.2717	0.2593	0.3712	0.0102	0.43069
Selenium	lbs	0.0002	0.0032	0.0014	0.0019	0.0003	0.00123
Silver	lbs	0.000072	0.0005	0.0003	0.0003	0.00002	0.00029
Zinc	lbs	0.0480	0.4875	0.0848	0.5785	0.0059	0.26129
Dissolved Metals							
Aluminum	lbs	0.0444	0.1319	0.0754	0.0795	0.0065	0.13208
Cadmium	lbs	0.000072	0.0005	0.0003	0.0003	0.0000	0.00052
Copper	lbs	0.0043	0.0567	0.0174	0.0260	0.0020	0.05168
Iron ²	lbs	0.0336	0.1758	0.3158	0.3230	0.0075	0.22396
Lead	lbs	0.000120	0.0008	0.0005	0.0014	0.0000	0.00040
Manganese ²	lbs	0.0030	0.0200	0.0896	0.0482	0.0010	0.25267
Selenium	lbs	0.000180	0.0032	0.0014	0.0014	0.0003	0.00109

Table A4-33. 2019-2020 Wet Weather MS4 Outfall Discharge Pollutant Loads for Monitored Event

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Silver	lbs	0.000072	0.0005	0.0003	0.0003	0.00002	0.00029
Zinc	lbs	0.0079	0.2158	0.0330	0.1928	0.0017	0.16654
Pesticides							
Chlorpyrifos	lbs	0.000030	0.00020	0.0001	0.0001	0.0000	0.00014
Diazinon	lbs	0.000030	0.00020	0.0001	0.0001	0.0000	0.00014

NR – not required; these constituents are not required for WQIP monitoring.

Where chemistry results were less than the reporting limit (RL), for load calculations purposes half the RL value was used for this constituent,

¹ Constituent is a HPWQC for wet weather in the Rainbow Creek subarea.

² Constituent is a PWQC for wet weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

*At HST01, rainfall data from an on-site gauge was available. Monitoring of the 0.12 inch rainfall event on 2/9/20 began at approximately 13:00 and flow rose and fell after a period of rain. At approximately 16:50, more than 1.5 hours after any significant rainfall, flow unexpectedly surged and filled the channel. Field scientists monitoring the site investigated the source of the unexpected flow and determined that a nursery upstream had opened a berm and released ponded stormwater.

Table A4-34. 2019-2020 Annual Wet Weather MS4 Outfall Discharge Pollutant Loads

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Area	acres	106.1	107.4	54.3	106.2	5.5	215.3
Precipitation Station (Rain Gage)	-	246 Wildomar	217 Temecula	128 Murrieta	217 Temecula	217 Temecula	27092 Rainbow County Park
2019-2020 Qualifying Measured Rainfall (≥0.1")	inches	17.35	16.69	14.31	16.69	16.69	20.37
Measured Outfall Runoff "C"	-	0.035	0.258	0.276	0.234	0.245	0.490
Runoff "C" (2016-2020)	-	0.024	0.215	0.316	0.461	0.711	0.399
2019-2020 Annual Volume	cf	161,347	1,401,361	891,549	2,995,810	238,737	6,350,327
Bacteriological							
<i>E. coli</i> ²	MPN	3.56E+10	2.14E+12	1.99E+12	2.97E+13	9.46E+11	9.35E+12
<i>Enterococcus</i> ²	MPN	3.11E+10	6.75E+11	8.84E+12	4.16E+12	1.15E+12	9.71E+12
Fecal Coliform ²	MPN	3.56E+10	2.14E+12	1.99E+12	2.97E+13	9.46E+11	6.29E+12
Total Coliform ²	MPN	1.10E+12	6.35E+12	2.32E+13	4.58E+13	3.65E+12	2.88E+14
General Chemistry							
Total Organic Carbon	lbs	NR	NR	NR	NR	NR	10,703.70
Dissolved Organic Carbon	lbs	54.39	726.11	395.16	2,992.32	132.64	9,514.40
Sulfate	lbs	17.12	3,236.87	1,280.11	2,992.32	700.47	95,144.03
Surfactants (MBAS)	lbs	NR	NR	NR	NR	NR	67.39
Total Hardness	lbs	181.30	7,523.55	2,838.51	8,976.97	1,356.23	119,326.47
Total Dissolved Solids ²	lbs	503.62	17,496.62	6,678.84	26,182.82	3,576.88	309,218.09
Total Suspended Solids	lbs	NR	NR	NR	NR	NR	39,643.34
Nutrients							
Total Nitrogen ¹	lbs	lbs	14.10	139.97	89.05	561.06	50.67
Ammonia as N	lbs	lbs	2.72	25.37	6.68	117.82	8.20

Table A4-34. 2019-2020 Annual Wet Weather MS4 Outfall Discharge Pollutant Loads

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Ammonia as N (Unionized)	lbs	0.02	0.21	0.02	2.99	0.21	NR
Nitrate as N ¹	lbs	4.94	34.99	30.61	115.95	17.88	8,721.54
Nitrite as N ¹	lbs	0.30	2.54	1.89	4.11	1.06	138.75
Nitrate/Nitrite as N	lbs	5.24	37.53	32.50	120.07	18.94	8,860.29
Total Kjeldahl Nitrogen	lbs	8.36	104.98	54.54	448.85	31.30	1,506.45
Total Phosphate	lbs	10.07	104.98	66.79	317.93	37.26	NR
Total Phosphorus ¹	lbs	3.42	35.87	21.15	102.86	12.67	515.36
Dissolved Phosphorus	lbs	1.81	32.37	15.03	71.07	12.22	NR
Orthophosphate	lbs	1.21	22.75	10.57	43.01	3.87	392.47
Total Metals							
Aluminum	lbs	68.8023	123.8832	20.8317	152.1466	15.4485	4644.04651
Cadmium	lbs	0.0028	0.0057	0.0031	0.0408	0.0013	0.18576
Copper	lbs	0.1474	2.3824	0.5729	2.0920	0.2328	15.62088
Iron ²	lbs	76.1739	133.4127	17.1862	171.1649	18.4112	6754.97675
Lead	lbs	0.0590	0.1429	0.0208	0.2174	0.0127	5.48842
Manganese ²	lbs	1.7201	4.8600	3.3331	4.6187	0.5714	232.20233
Selenium	lbs	0.0012	0.0572	0.0417	0.1087	0.0254	0.34619
Silver	lbs	0.0005	0.0057	0.0031	0.0163	0.0013	NA
Zinc	lbs	1.7201	15.2472	0.9895	10.3242	0.3809	88.65907
Dissolved Metals							
Aluminum	lbs	0.3727	1.4435	0.8905	3.0858	0.2459	18.23594
Cadmium	lbs	0.0006	0.0052	0.0033	0.0112	0.0009	0.07136
Copper	lbs	0.0363	0.6211	0.2059	1.0099	0.0745	7.13580
Iron ²	lbs	0.2820	1.9246	3.7290	12.5303	0.2832	30.92181

Table A4-34. 2019-2020 Annual Wet Weather MS4 Outfall Discharge Pollutant Loads

Analyte	Units	902MS45031	902MS41033	902MS44034	902MS43015	902MS442240	HST01
		Wildomar Outfall	District Outfall	Murrieta Outfall	Temecula Outfall	Riverside County Outfall	San Diego County Outfall
		902.31	902.42	902.33	902.32	902.51	902.23
Lead	lbs	0.0010	0.0087	0.0056	0.0561	0.0015	0.05550
Manganese ²	lbs	0.0252	0.2187	1.0575	1.8702	0.0373	34.88614
Selenium	lbs	0.0015	0.0350	0.0167	0.0561	0.0104	0.15064
Silver	lbs	0.0006	0.0052	0.0033	0.0112	0.0009	0.03964
Zinc	lbs	0.0665	2.3620	0.3896	7.4808	0.0656	22.99314
Pesticides							
Chlorpyrifos	lbs	0.0003	0.0022	0.0014	0.0047	0.0004	0.01982
Diazinon	lbs	0.0003	0.0022	0.0014	0.0047	0.0004	0.01982

NR – not required; these constituents are not required for WQIP monitoring.

Where chemistry results were less than the reporting limit (RL), for load calculations purposes half the RL value was used for this constituent,

¹ Constituent is a HPWQC for wet weather in the Rainbow Creek subarea.

² Constituent is a PWQC for wet weather. Note that all PWQCs do not apply to all subareas in the WMA; constituents noted here are PWQCs in at least one subarea in the WMA.

* At 902MS43015, the Runoff "C" value was excluded for the 2018-2019 dataset due to abnormal flow data; 2016-2020 value based on the average of 2016-2017, 2017-2018 and 2019-2020 years.

4.5.6.2 Provision D.4.b.(2)(c)[ii] – Evaluate WQIP Analysis

Provision D.4.b.(2)(c)(ii) requires the Copermittees to evaluate and compare data collected during the monitoring year to the analyses and assumptions used to develop the WQIP and evaluate whether adaptive management is necessary for updates. The analytical results for samples collected at the six wet weather MS4 outfall monitoring locations are summarized in **Table A4-31** in **Section 4.5.5**. Nutrients are a wet weather HPWQC in the Rainbow Creek Watershed. Results indicated that total nitrogen was above the final effluent limitation given in the Rainbow Creek Nutrient TMDL (the Permit does not include a SAL for total nitrogen), and total phosphorus was above the SAL at HST01. HST01 is located in the Rainbow Creek Watershed, which is subject to the Nutrient TMDL. Because concentrations of nitrogen and phosphorus in wet weather discharge from this outfall were above the applicable numeric thresholds, continued monitoring of this outfall is consistent with the intention of the WQIP. Nutrient concentrations at other outfalls were below applicable numeric thresholds. An adaptive management update is not necessary at this time.

4.5.6.3 Provision D.4.b.(2)(c)[iii] – Evaluate Progress Achieving Stormwater Pollutant Reductions

This Provision requires the Copermittees to review the data collected under the wet weather MS4 outfall monitoring program in order to identify pollutant reduction progress, assess water quality improvement strategy effectiveness, and identify modifications necessary to increase effectiveness. This assessment is required once during the Permit term and was provided in the RMAR for most of the watersheds in the San Diego Region, which had accepted WQIPs several years before the SMR Watershed. Because strategies have been implemented in this WMA for less than two years under the accepted WQIP, modifications that may increase effectiveness have not yet been identified. Assessments required once during the Permit term will be conducted again after MS4 outfall discharge monitoring data are collected under the next Permit, or earlier if sufficient data are available to conduct these assessments.

4.5.6.4 Provision D.4.b.(2)(c)[iv] – Identify Data Gaps

This provision requires the Copermittees to identify data gaps in the monitoring data necessary to fulfill assessment requirements. No gaps have been identified in the wet weather MS4 outfall monitoring data.

4.5.6.5 Provision D.4.b.(2)(d) – Evaluate Trends

This provision requires creation of time-series plots for long-term monitoring data collected under Provision D.2.c and a trend analysis of this cumulative long-term wet weather MS4 outfall discharge monitoring data set. Time-series plots for long-term monitoring constituents were prepared and a Mann-Kendall statistical trend analysis was performed on the cumulative dataset from the four years of monitoring. A summary of these trends is shown in **Table A4-35**. Trends do not indicate exceedances of SALs. Statistically significant trends related to nutrients include increasing trends for nitrate as N, nitrate+nitrite as N, and total nitrogen at HST01 (County of San Diego), and increasing trends for ammonia as N (unionized), and dissolved phosphorus at Wildomar Outfall 5031. All time series plots and trend data are provided in **Attachment 4H**.

Table A4-35. Statistically Significant Trends for Wet Weather Storm Drain Outfall Discharges

Station	Increasing	Decreasing
HST01 (902.23)	Nitrate as N, Nitrate+Nitrite as N, Total Nitrogen, pH (Field), Specific Conductance (Field)	Dissolved Iron
902MS45031 (902.31)	<i>E. coli</i> , Fecal Coliform, Dissolved Organic Carbon, Ammonia as N (Unionized), Dissolved Phosphorus, Total Copper, Total Iron, Turbidity (Field), Turbidity (Lab)	None

4.6 Special Studies

Special studies conducted in the SMR WMA during the 2019-2020 monitoring year are summarized in the following sections, with details provided in **Attachment 4I**.

4.6.1 Dry Weather MS4 Monitoring – Rainbow Creek Nutrient TMDL

Progress toward compliance with the Rainbow Creek Nutrient TMDL may be demonstrated in several ways, as outlined in Attachment E.3 of the Permit. One of the pathways is to show that there is "no direct or indirect discharge from the Responsible Copermittee's MS4 to the receiving water". To this end, the County of San Diego conducts dry weather monitoring at MS4 outfalls in the Rainbow Creek Watershed to determine whether there are direct or indirect dry weather discharges from the County's MS4 to Rainbow Creek. If discharges are found and sampled for analysis of nutrients, the data collected also address the compliance pathway to determine if there are "no exceedances of the final effluent limitations at the Responsible Copermittee's MS4 outfalls." This monitoring is not required by the Permit or the TMDL.

Monitored outfalls are shown in **Figure A4-16**. Monitoring was conducted during dry weather (i.e., not within 72 hours of a rain event totaling 0.1 inch or greater). When flow was observed, flow rates were measured or estimated and a grab sample was collected and analyzed for ammonia, nitrate as N, nitrite as N, total Kjeldahl nitrogen (TKN), orthophosphate as P, and total phosphate as P. Total nitrogen concentrations were calculated by adding the concentrations of TKN, nitrate as N, and nitrite as N.

During 2019-2020, 16 of the 21 monitored outfalls were ponded or flowing during at least one site visit. Flow rates were generally low; 83% of sampled flowing sites were calculated as < 0.1 cfs. Nutrient concentrations were above TMDL effluent limitations for total nitrogen in 35 of 47 samples and for total phosphorus in 39 of 47 samples. **Table A4-36** provides the 2019-2020 sample results for total phosphorus and total nitrogen, as well as the flow rates associated with those samples.

The County will continue monthly monitoring at all MS4 outfalls with a potential to discharge into Rainbow Creek during dry weather and to observe and address potential sources of any flowing or standing water.

Additional information can be found in the associated report, *2019-2020 County of San Diego Storm Drain Outfall Monitoring at Rainbow Creek* (WESTON, 2020c) provided in **Attachment 4I**.

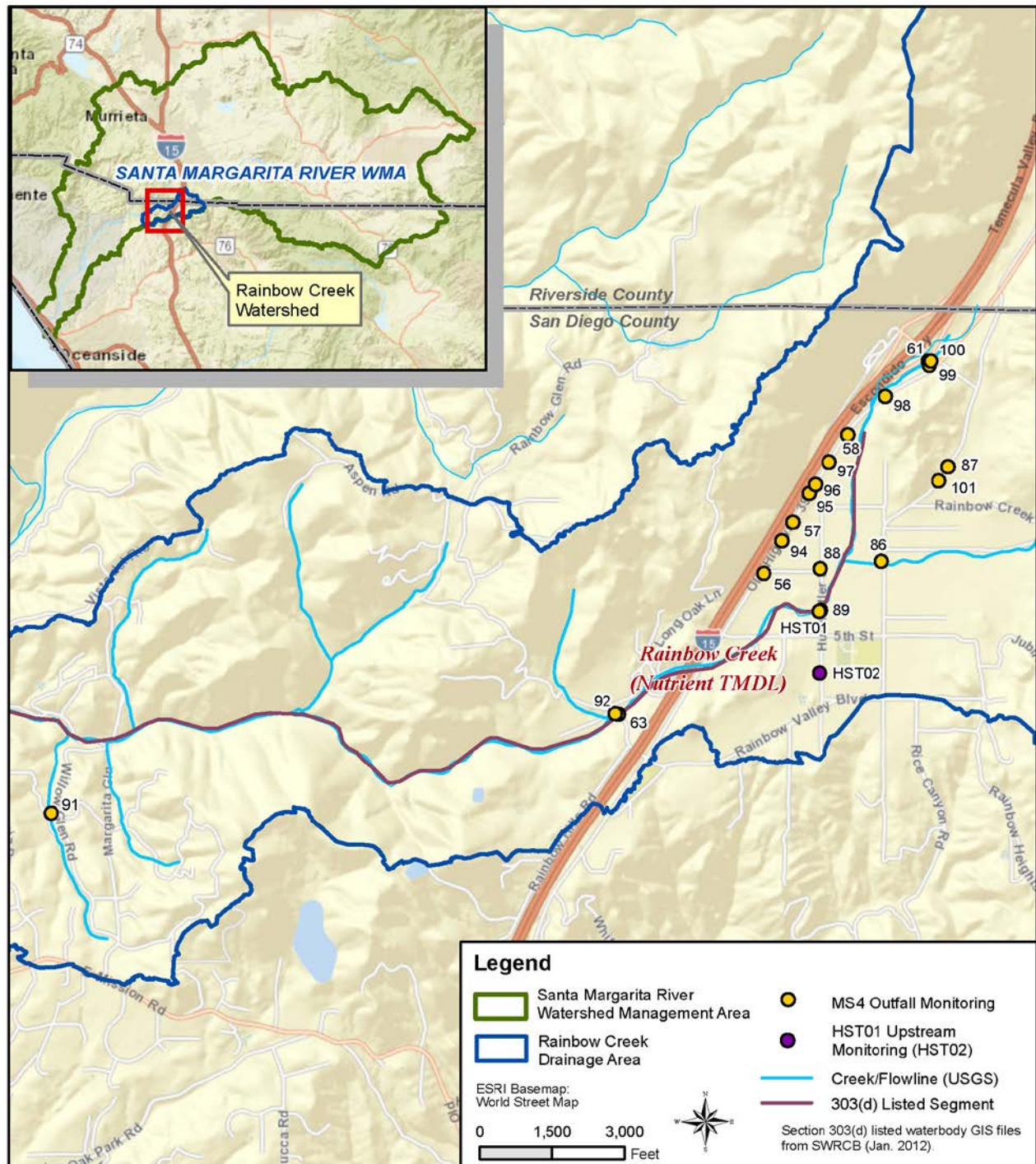


Figure A4-16. Rainbow Creek Watershed Dry Weather MS4 Outfall Monitoring Locations

Table A4-36. Sample Results at Rainbow Creek MS4 Locations for Total Phosphorus and Total Nitrogen

Site ID	Sample Date	Flow (cfs)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)
HST01	12/3/2019	0.0021	0.83	27.2
	1/24/2020	0.01664	0.45	16.26
	3/30/2020	0.07885	0.48	22.96
	4/16/2020	1.00	0.56	25.63
	5/13/2020	0.0087	0.53	29.04
	6/9/2020	0.03	0.35	43.63
HST02	12/3/2019	0.00294	2.89	20.27
	1/24/2020	0.004992	0.45	32.52
	3/30/2020	0.0495	0.43	28.51
	4/16/2020	1.5	0.46	29.84
MS4-SMG-056	4/16/2020	0.0415	0.29	3.76
MS4-SMG-057	1/24/2020	0.005205	0.13	0.32
	2/19/2020	0.00208	0.1	0.03
	3/30/2020	0.0466875	0.2	0.8
	4/16/2020	0.533333333	0.02	0.96
	5/13/2020	0.0537425	0.05	0.31
	6/9/2020	0.0049358	0.12	0.01
	7/15/2020	0.0013936	0.31	0.33
	8/11/2020	0.002278	0.07	0.02
MS4-SMG-058	3/30/2020	0.06993	0.19	0.5
	4/16/2020	0.576	0.04	1.45
	5/13/2020	0.012	0.14	0.93
MS4-SMG-063	3/30/2020	<0.001*	0.2	14.909
	4/16/2020	0.016	0.28	19.6
	5/13/2020	<0.001*	0.14	18.2
	6/9/2020	0.00055454	0.14	20.109
	7/15/2020	0.00017573	0.12	21.14
MS4-SMG-086	4/16/2020	0.166	0.66	19.08
MS4-SMG-087	4/16/2020	0.625	0.34	9.197
	5/13/2020	0.0664	0.35	7.69
MS4-SMG-089	12/3/2019	0.001575	0.84	123.21
	1/24/2020	0.00112802	0.18	82.84
	3/30/2020	0.0075	0.35	80.52
	4/16/2020	0.3	0.24	72.05

Table A4-36. Sample Results at Rainbow Creek MS4 Locations for Total Phosphorus and Total Nitrogen

Site ID	Sample Date	Flow (cfs)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)
MS4-SMG-095	10/21/2019	0.00008201	0.72	21.25
	4/16/2020	0.05714286	0.04	2.88
	6/9/2020	0.0006	0.36	29.05
	7/15/2020	0.00011	0.18	29.66
	8/11/2020	<0.001*	0.11	30.04
MS4-SMG-096	4/16/2020	0.02	0.05	0.74
MS4-SMG-097	4/16/2020	0.13833333	0.38	2.25
MS4-SMG-098	3/30/2020	0.0038	0.15	4.6
	4/16/2020	0.02	0.29	5.8
MS4-SMG-099	3/30/2020	0.00603	0.16	19.9
	4/16/2020	0.02666667	0.05	16.11
MS4-SMG-101	4/16/2020	0.016	0.45	6.76

Shaded results did not meet Nutrient TMDL effluent limitations.

*Trickle flow, too low to measure

cfs- cubic feet per second; mg/L- milligrams per liter

4.6.2 Rainbow Creek HF183 Monitoring

The County of San Diego conducted a study in the Rainbow Creek Watershed in support of the Nutrient TMDL to determine if human-associated fecal marker (HF183) was present in MS4 outfall non-stormwater discharge and/or receiving water dry weather flows. Additional study questions sought to understand spatial and temporal distribution of HF183, as well as relationships (if any) with parameters such as nutrient levels, flow, land uses, and fecal indicator bacteria.

Monthly sampling events were conducted over the course of the monitoring period (June 2019 through June 2020) at the same locations monitored under the Rainbow Creek TMDL and MS4 Monitoring Program (see **Figure A4-6** for TMDL locations and **Figure A4-16** for MS4 locations). Samples were collected during flowing and ponded conditions for analysis of HF183 and during flowing conditions for indicator bacteria. The study addressed the following questions:

- 1. Is the human-associated fecal marker HF183 present in MS4 outfall and/or receiving water dry weather flows in the Rainbow Creek Watershed?*

Study results indicate that HF183 is present only intermittently in dry weather receiving water and MS4 outfall flows in the Rainbow Creek Watershed. Overall, HF183 results were above the detection level in only 9% of samples collected in the receiving waters and 9% percent of samples collected in the MS4 outfall features.

2. *If HF183 is present in the watershed, the following sub-questions will be addressed:*

a. *What is the spatial pattern of HF183?*

All 10 of the HF183 detections at receiving water sites occurred in main stem locations. The furthest upstream receiving water detection occurred at RBC02 (one detection). Detections also occurred at RBC04 (five detections), RBC10 (one detection), SMG05 (one detection) and SMG06 (two detections). Detections of HF183 at MS4 sites did not follow a discernable spatial pattern. A total of seven samples were detected at seven different locations.

b. *What is the magnitude and the rate of occurrence of HF183?*

The rate of occurrence of HF183 detections in analyzed samples was approximately 9% percent at both receiving water and MS4 locations. The highest percentage of detections of HF183 above the detection limit in receiving water samples was observed at RBC04 (38%). No MS4 monitoring location had more than one detection throughout the study.

In terms of the magnitude, the highest magnitude in receiving water samples was detected at RBC02 (1,633 copies/100 mL) in October 2019 followed by detections of 991 and 886 copies/100 mL at RBC04 in December 2019 and June 2019, respectively. For MS4 monitoring locations, the sample collected at HST01 in April 2020 was the highest concentration detected in the study (69,281 copies/100 mL) by an order of magnitude. This level of detection indicates the presence of a fresh source of HF183. There were no other detections at HST01. Other elevated HF183 detections in MS4 samples included those collected at MS4-SMG-095 in July 2019 (6,368 copies/100 mL), MS4-SMG-101 in April 2020 (2,757 copies/100 mL), and the samples collected in March 2020 at MS4-SMG-097 (1,626 copies/100 mL) and MS4-SMG-099 (1,942 copies/100 mL). None of the MS4 stations had more than one detection of HF183 during the monitoring period

c. *Under what flow conditions is HF183 observed?*

Months with greater precipitation generally had higher flow conditions observed. The three months with the highest precipitation totals were December, March, and April. These were also the months with the most HF183 detections. In addition to having the highest number of detections, these months also had three of the four highest percentage of detections relative to the number of samples taken.

d. *Is there a correlation between the HF183 marker and land use?*

There were no detections of HF183 upstream of Rainbow Valley at RBC01. The furthest upstream detection was at RBC02 (1 detection, detection rate of 8%), which is located downstream of intensive agricultural land uses. There were no detections of HF183 in the tributary monitoring locations that drain primarily open space, vacant/undeveloped land. and spaced rural residential areas.

The MS4 locations primarily drain areas with intensive agriculture or transportation and open space land uses. Each of the seven detections of HF183 at MS4 locations was at a different monitoring location, including those that drain open space and sections of I-15 and those that drain from agricultural land uses.

- e. Is there a correlation between HF183 spatial patterns and known septic tank locations?*

The County recently conducted a Rainbow Creek watershed parcel evaluation for MS4 drainage areas. The number of septic systems located within each of the MS4 drainage areas was estimated. The limited amount of data from this study does not provide enough evidence to determine a relationship between HF183 and the number of septic systems in each drainage area. HF183 detections were found in samples from locations from drainage areas with and without parcels assumed to have septic systems. Each detection was also identified at a different MS4 outfall location.

Additional information can be found in the associated report, *2019-2020 Rainbow Creek HF183 Monitoring Draft Report* (WESTON, 2020d) provided in **Attachment 4I**.

4.6.3 County of San Diego HF183 Follow-up Monitoring at MS4-SMG-095

MS4-SMG-095 is sampled monthly by the County of San Diego as part of the Rainbow Creek HF183 Monitoring Program (**Section 4.6.1**). The sample collected in July 2019 indicated the presence of HF183. The County initiated a follow-up study to conduct weekly sampling at the outfall in August and September 2019. Of the eight samples collected, only one contained quantifiable levels of HF183. Results for this study were reported in the 2018-2019 WQIP Annual Report (WESTON and D-Max Engineering, 2020).

As a result of a high HF183 result in July 2019, in October 2019, the County initiated an MS4-SMG-095 follow-up study that included source investigations, continuous dry weather flow monitoring, weekly sampling for four weeks at the outfall, analysis of samples for HF183 and minerals, and mineral analysis of municipal water supply samples from the nearby Rainbow County Park. Data from groundwater monitoring in the watershed were also evaluated to determine if the chemical composition of the dry weather flows at the outfall were similar to the groundwater or to the municipal water supply. The study addressed the following questions:

- 1. Under what flow conditions is human-associated fecal marker HF183 observed at the MS4-SMG-095 outfall?*

There were no detections of HF183 in samples from the outfall during the study; however, detections during previous studies indicate that HF183 is intermittently detected at this outfall but is not persistently present. Site observations indicated a potential source of HF183 may be human defecation along the southbound side of the I-15 freeway. The County coordinated with Caltrans to address this potential source and reduce potential for recurrence.

- 2. What are the patterns in the timing of flow at the outfall?*

The highest average flow (excluding a large flow event on October 14, 2019) was observed on Wednesday and Thursday mornings, and Tuesday evenings. The large discharge on October 14 indicates that intermittent discharges may be occurring and may be the transport mechanism for the intermittent detections of HF183.

- 3. How does the chemical composition of dry weather flow at the outfall compare to possible sources including local treated water or groundwater?*

4. *How much does each water source influence the chemical composition of dry weather flows?*

Several approaches were used to answer these two study questions. Geochemical analysis of dry weather samples and comparison with the municipal water supply as well as nearby groundwater indicate that groundwater is likely contributing to dry weather flows in the outfall. However, influence from the municipal water supply could not be ruled out.

During source investigation efforts, County staff and consultants identified human feces in the channel across the I-15, within the drainage area of MS4-SMG-095. The County worked closely with Caltrans to abate the source and conduct maintenance to the surrounding area to prevent future human fecal contamination at the outfall. Following abatement activities, no further positive hits for HF183 have been identified.

Additional detail can be found in the associated report, *HF183 Follow-up Sampling at MS4-SMG-095* (WESTON, 2020e) provided in **Attachment 4I**.

4.6.4 Rainbow Creek Wet Weather Pre-BMP Monitoring

Several structural BMP retrofits are planned for the Rainbow Creek Watershed within the Lower SMR Subwatershed to facilitate progress toward compliance with the Rainbow Creek Nutrient TMDL. To collect water quality data prior to BMP installation, wet weather monitoring was conducted by the County of San Diego during two monitoring events in February and March 2020 at outfalls and upstream locations in the watershed. Monitoring locations are summarized in **Table A4-37**. Time-weighted composite samples were collected using autosamplers at MS4-SMG-088 and MS4-SMG-087 in February 2020. During the second event in March 2020, grab samples were collected at locations just upstream of six outfalls, the two previously monitored outfalls and HST01. HST01 was also monitored as part of the wet weather MS4 outfall monitoring program during February 2020 in accordance with the methods of the WQIP MAP, and those results are presented separately in **Section 4.5.5**.

Table A4-37. Pre-BMP Monitoring Locations in the Rainbow Creek Watershed

MS4 Outfall	Site Description	Latitude	Longitude	Sample Type	Sample Date
MS4-SMG-087	Channel @ 2826 Rainbow Valley Blvd.	33.42356	-117.14336	Composite	2/22/20
MS4-SMG-088	Channel @ Huffstatler St. & 2nd St.	33.41563	-117.15205	Composite	2/9/20
HST01-US	Channel @ west side of Huffstatler St., just downstream of HST02	33.411832	-117.151988	Grab	3/10/20
MS4-SMG-089 - US	Channel @ North side of 5th St., just west of Rainbow Valley Blvd.	33.414025	-117.147834	Grab	3/10/20
MS4-SMG-101- US	Channel @ west side of Rainbow Valley Blvd., across from intersection of Mt. Olympus Rd.	33.427503	-117.141880	Grab	3/12/20
MS4-SMG-087- US	Channel @ east side of Rainbow Valley Blvd., @ intersection of Mt. Olympus Rd.	33.427442	-117.1417	Grab	3/10/20
MS4-SMG-086- US	Channel @ west side of Rainbow Valley Blvd., 115' south of Chica Rd. intersection	33.420021	-117.147793	Grab	3/10/20
MS4-SMG-088- US	Channel @ west side of Huffstatler St., 575' North of 2nd St.	33.419258	-117.15205	Grab	3/12/20

Composite and grab samples were analyzed for field measurements, total suspended solids, and nutrients. Results are summarized in **Table A4-38** for composite samples and **Table A4-39** for grab samples. Results are compared to SALs as provided in the Permit. Of the constituents monitored, there are applicable SALs for turbidity, nitrate + nitrite as N, and total phosphorus. Nitrate as N, total nitrogen, and total phosphorus concentrations are also compared to final effluent limitations from the Rainbow Creek Nutrient TMDL.

In the composite samples, total nitrogen and total phosphorus exceeded the TMDL final effluent limitations in samples from both outfalls and nitrate + nitrite as N exceeded the SAL in the sample from MS4-SMG-087.

In the grab samples, TMDL final effluent limitations were exceeded for nitrate as N at HST01-US; for total nitrogen at HST01-US, MS4-SMG-086-US, MS4-SMG-088-US, and MS4-SMG-089-US; and for total phosphorus at all five locations. SALs exceeded for grab samples included turbidity at HST01-US and MS4-SMG-065-US; nitrate + nitrite as N for HST01-US, MS4-SMG-065-US, and MS4-SMG-089-US; and total phosphorus for HST01-US and MS4-SMG-089-US.

Pollutant loads for the composite sampling event at MS4-SMG-087 on February 22, 2020 are provided in **Table A4-40**. Total rainfall measured on site during this monitored event was 0.49 inches during 5.08 hours (average intensity of 0.10 inches/hr). The hydrograph for MS4-SMG-087 is provided in **Attachment 4I**. MS4-SMG-088 composite sampling was conducted during the February 9, 2020 event of 0.12 inches of rain over 7 hours (0.02 inches/hr). The runoff produced during this smaller event was not of sufficient depth to submerge the area-velocity sensor used to monitor level and calculate flow at MS4-SMG-088. Therefore, flow data were not able to be collected. As a result, the sampling methodology was changed to a time-weighted composite sample, with an aliquot collected every five minutes.

Laboratory and field data will be uploaded to CEDEN, and data submittals and hydrographs are provided in **Attachment 4I**.

Table A4-38. Rainbow Creek BMP Pre-Monitoring Results – Composite Samples

Analyte	Units	Final Effluent Limitation ¹	SAL ²	MS4-SMG-087	MS4-SMG-088
				2/22/2020	2/9/2020
Physical Chemistry					
Dissolved Oxygen	mg/L			9.98	10.21
Salinity	PPT			0.22	0.06
Specific Conductivity	µS/cm			454	127
Temperature	Celsius			14.8	10.39
Turbidity	NTU		126	51.8	39.4
pH	None			7.76	7.16
General Chemistry					
Total Suspended Solids	mg/L			95	37
Nutrients					
Ammonia as N	mg/L			0.17	0.12
Nitrate + Nitrite as N	mg/L		2.6	8.035	0.934
Nitrate as N	mg/L	10		8.0	0.88
Nitrite as N	mg/L			0.035J	0.054J
Orthophosphate as P	mg/L			1.1	0.41
Total Kjeldahl Nitrogen	mg/L			1.9	1.5
Total Nitrogen	mg/L	1		9.94	2.43
Total Phosphorus	mg/L	0.1	1.46	1.4	0.47

J - Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

¹ Final Effluent Limitations from Table 3.2. San Diego Regional Water Quality Control Board Order No. R9-2013-0001, Attachment E.

² Storm Water Action Levels for Discharges from MS4s to Receiving Waters, Table C-5. San Diego Regional Water Quality Control Board Order No. R9-2013-0001.

Shaded results did not meet Final Effluent Limitations.

Table A4-39. Rainbow Creek BMP Pre-Monitoring Locations – Grab Samples

Analyte	Units	Final Effluent Limitation ¹	SAL ²	HST01-US	MS4-SMG-086-US	MS4-SMG-087-US	MS4-SMG-088-US	MS4-SMG-089-US	MS4-SMG-101-US
				3/10/2020	3/10/2020	3/10/2020	3/12/2020	3/10/2020	3/12/2020
Physical Chemistry									
Dissolved Oxygen	mg/L			9.22	8.33	8.81	9.12	8.65	9.28
Salinity	PPT			0.4	0.14	0.05	0.25	0.61	0.01
Specific Conductivity	µS/cm			806	304	108	405.6	1,210	22.1
Temperature	Celsius			15.4	19.56	19.38	14.6	17.4	14.7
Turbidity	NTU		126	211.6	128.6	15.8	48.03	21	76.52
pH	None			7.62	8.03	10.35	6.93	7.71	7.65
General Chemistry									
Total Suspended Solids	mg/L			208	124	16.6	47.5	15.4	98.5
Nutrients									
Ammonia as N	mg/L			<0.10	<0.10	0.19	0.07J	0.44	<0.10
Nitrate + Nitrite as N	mg/L		2.6	11.21	3.94	0.119	1.44	7.55	0.22
Nitrate as N	mg/L	10		11.1	3.85	0.11	1.44	7.47	0.22
Nitrite as N	mg/L			0.11	0.09	0.009J	<0.05	0.08	<0.05
Orthophosphate as P	mg/L			1.44	0.41	0.05	0.13	1.59	0.04J
Total Kjeldahl Nitrogen	mg/L			3.5	2	0.6	1.3	4.1	0.7
Total Nitrogen	mg/L	1		14.71	5.94	0.719	2.74	11.65	0.92
Total Phosphorus	mg/L	0.1	1.46	2.22	0.56	0.26	0.38	2.20	0.24

< - Results are less than the reporting limit.

¹ Final Effluent Limitations from Table 3.2. San Diego Regional Water Quality Control Board Order No. R9-2013-0001, Attachment E.

² Storm Water Action Levels for Discharges from MS4s to Receiving Waters, Table C-5. San Diego Regional Water Quality Control Board Order No. R9-2013-0001.

J - Analyte was detected at a concentration below the reporting limit and above the method detection limit. Reported value is estimated.

Shaded results did not meet Final Effluent Limitations and/or Stormwater Action Levels.

Table A4-40. Pollutant Loads for Monitored Event at MS4-SMG-087

Analyte	Units	MS4-SMG-087
Rainfall	in	0.49
Event Volume	cf	5,129
Total Suspended Solids	lbs	30.42
Total Nitrogen	lbs	3.18
Ammonia as N	lbs	0.05
Nitrate as N	lbs	2.56
Nitrite as N	lbs	0.01
Nitrate/Nitrite as N	lbs	2.57
Total Kjeldahl Nitrogen	lbs	0.61
Total Phosphorus	lbs	0.45
Orthophosphate	lbs	0.35

in – inches; cf – cubic feet; lbs - pounds

4.6.5 Dry Weather MS4 Outfall Flow Source Assessment Study

The County of San Diego Flow Source Assessment Study 2018-2019 Report describes the results of two years of non-stormwater MS4 outfall flow source investigations conducted by the County in the Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, and San Diego River watersheds. The investigations were conducted during the dry seasons (May through September) focusing on MS4 outfall locations with persistent non-stormwater flows that were prioritized for dry weather flow and pollutant load reduction efforts. The Flow Source Assessment Study employed data collected at 89 outfall locations and selected upstream sites that included continuous flow measurements, geochemistry, analysis for stable isotopes of water, and a suite of source indicators including fluoride, nitrate, boron, methylene blue active substances and TDS. These data were then compiled and analyzed using a tiered multiple lines of evidence approach to evaluate potential flow sources such as residential irrigation runoff, agricultural runoff, groundwater infiltration, and others.

The findings showed dry weather flow sources ranging from nearly all imported water to all local groundwater, with flows at most sites comprised of a mixture of sources. Of the 48 main MS4 sites investigated (i.e., not including the upstream special study sites), 16 had flows of "mainly tap water," pointing to irrigation runoff; three sites had mainly local water indicating groundwater infiltration. However, at most sites, dry weather flows were composed of a mix of imported "tap" water and local "groundwater;" three sites showed strong to moderate influence of reclaimed water.

Of the 89 sites monitored during both years, 35 sites had some lines of evidence for both years allowing some comparison. Of those, the majority (20) did not change flow source designation, while seven showed an increased groundwater influence and six showed a shift toward imported (tap) water. Two sites that were influenced by reclaimed water in 2018 showed a decreased presence of reclaimed water in 2019.

In 2020, County of San Diego continued flow data collection at most outfall locations monitored in 2018 and 2019. However, due to the COVID-19 social distancing-related restrictions, isotope, geochemistry, and indicator analysis was not conducted.

Additional detail can be found in the reports (Wood Environment and Infrastructure, 2020) provided in **Attachment 4I**.

4.6.6 Dry Weather Low-Flow Monitoring Equipment Testing and Uncertainty Estimation

The purpose of this study was to assess the accuracy and reliability of water level sensors used during the County of San Diego Dry Weather Continuous Flow Monitoring Program by testing the sensors in the field and in laboratory. Several types of water level sensors used in the program since 2015 were set upstream of 90-degree v-notch weirs previously used by the County for continuous flow monitoring. The study was conducted at three County MS4 outfall sites and one controlled laboratory setting. Data accuracy was assessed by comparing sensor data with manual measurements of water level and flow and calculating the root mean square error (RMSE) and mean absolute error (MAE). Overall, average RMSE and MAE results from this study exceeded manufacturers' specified uncertainty for all tested sensors under field and laboratory conditions. This was with the exception of the Meter Hydros sensors. This is a good result considering that, in 2018, the County started using Meter water level sensors exclusively throughout the entire program to minimize uncertainty in comparing results across sites and monitoring seasons.

A copy of the report describing the methods in results of the study in greater detail is provided in **Attachment 4I**.

4.6.7 Post-Fire Stormwater Monitoring Study – 2019 Tenaja Fire

The Tenaja Fire burned approximately 2,001 acres in the SMR WMA during September 2019. The District undertook the implementation of a post-fire water quality monitoring study downstream of burned catchments of the Tenaja Fire. A sampling design was developed to assess the potential water quality impacts of the 2019 Tenaja Fire based on the guidance included in the SMC Post-Fire Water Quality Monitoring Plan¹³ with a focus on the HPWQCs. The study is focused on characterizing the contaminant flux from post-fire runoff over the 2019-2020 and 2020-2021 wet weather seasons. The goal of this study is to assess contaminant concentration and flux by sampling stormwater runoff from the terminal end of burned catchments and comparing the data to reference sites, and to assess the effects of the Tenaja Fire on the hydrologic response, sediment loads, and contribution of pollutant loads (metals, nutrients, and organic contaminants) from post-fire runoff. The data are being used to assess the potential post-fire water quality impacts, with a focus on the HPWQCs identified by the WQIP, observed at the WQIP's most proximate long-term receiving water monitoring station. The preliminary results of this monitoring special study are summarized in the interim report provided in **Attachment 4I** and are summarized below. Following the additional sampling data planned to be

¹³ Post-Fire Water Quality Monitoring Plan prepared by the Southern California Coastal Water Research Project (SCCWRP) and SMC titled "Effects of Post-fire Runoff on Surface Water Quality: Development of a Southern California Regional Monitoring Program with Management Questions and Implementation Recommendations" (SCCWRP, 2009). The Post-Fire Water Quality Monitoring Plan can be found at the following link:

http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/598_SoCalRegionalFireMonitoringPlan.pdf

collected during the 2020-2021 wet weather season, a final report will be provided in the subsequent 2020-2021 WQIP Annual Report.

The Tenaja Fire began on September 4, 2019, northeast from the intersection of Tenaja Road and Clinton Keith Road, in La Cresta. The Tenaja Fire burned approximately 2,001 acres (8.1 km²) in the Santa Rosa Plateau, including parts of the Copper Canyon neighborhood in Murrieta. The main waterbody downstream of the burn area is Murrieta Creek. The post-fire monitoring study included two monitoring locations, one on Cole Creek at the terminal end of burned catchment before it discharges to Murrieta Creek and the second at the historical receiving water station at Lower Murrieta Creek (902LMC778) to assess the potential post-fire water quality impacts in the downstream receiving waters. The Cole Creek location was chosen to evaluate runoff potentially discharging downstream to Murrieta Creek and the Murrieta Creek location was chosen to evaluate runoff potentially discharging downstream to WQIP monitoring stations.

Wet weather monitoring was conducted during two storm events in the 2019-2020 monitoring season.

Based on the sampling design, the first monitoring event targeted the first storm event of the 2019-2020 monitoring season and the second monitoring event targeted the third storm event meeting the mobilization criteria. The mobilization was based on the District's criteria described in the CMP and adapted to consider the USGS rainfall rate thresholds for post-burn areas.

The first wet weather monitoring event was conducted on November 29, 2019 and was the 'first flush' from the burned catchments of the 2019 Tenaja Fire, and the second wet weather monitoring event was conducted on March 11, 2020 (see **Figure A4-17**).

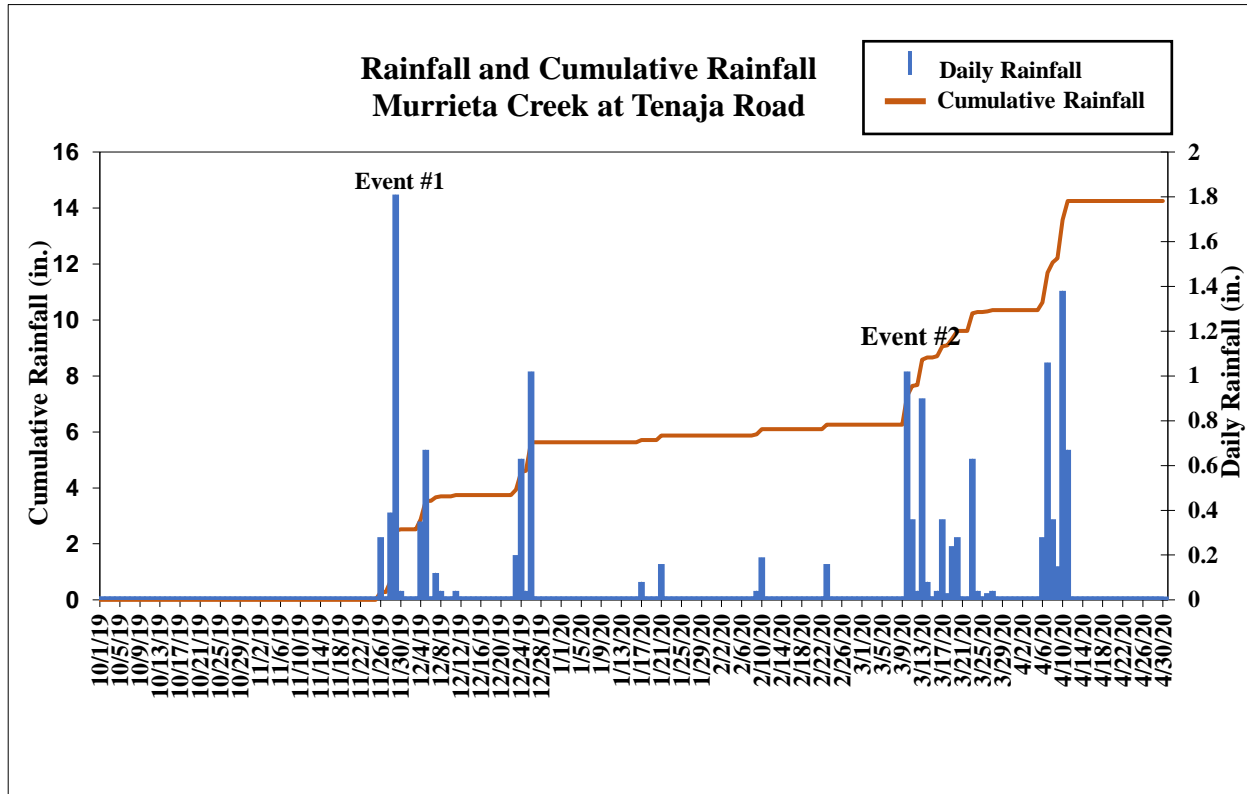


Figure A4-17. Event Rainfall Murrieta Creek at Tenaja Road

Flux estimates were calculated to compare the data from burned catchments and downstream sites of different sizes. Contaminant flux was calculated as the ratio of the mass loading in kilograms (kg) and the contributing catchment area in square kilometers (km²) for each storm monitoring event. A summary of the preliminary results for total nitrogen and total phosphorus are provided below.

Assessment of post-fire contaminant and flux

- Mean total phosphorus and total nitrogen flux (kg/km²) during the 'first flush' event in November 2019 were between 102- and 285-fold higher from the Cole Creek burned catchment compared to the downstream receiving waters.
- Mean total phosphorus and total nitrogen flux (kg/km²) during the second wet weather event in March 2020 were between 3- and 5-fold higher from the Cole Creek burned catchment compared to the downstream receiving waters.
- The preliminary data indicate that the contaminant flux from the burned catchments were significantly lower during the second wet weather event in March 2020 compared to the 'first flush' event in November 2019, indicating the attenuation of contaminant concentrations and loads was observed as the 2019-2020 winter storm season progressed.

Comparison of post-fire water quality results with reference data

- Nutrient concentrations from the Cole Creek burned catchment were higher compared to unburned natural areas, based on the comparison to the historical data from the Cole Creek (902COL188) and Adobe Creek (902ADB848) reference stations (see **Table A4-41**).

Table A4-41. Comparison of post-fire water quality results with reference data

Parameter	Units	Cole Creek Event #1 (11/28-29/2019)	Cole Creek Event #2 (3/11/2020)	Cole Creek Historical Average (2001-2011)	Adobe Creek Historical Average (2014-2017)
Total Nitrogen	mg/L	77.0	2.30	1.98	0.90
Total Phosphorus	mg/L	9.2	0.67	0.30	0.27

mg/L – milligrams per Liter

- Nutrient concentrations from the Murrieta Creek station (902LMC778) during two storm events in the 2019-2020 monitoring season following the Tenaja Fire were similar to historical averages from the Murrieta Creek station (902LMC778) (see **Table A4-42**).

Table A4-42. Comparison of post-fire water quality results with historical data

Parameter	Units	Murrieta Creek Event #1 (11/28-29/2019)	Murrieta Creek Event #2 (3/11/2020)	Murrieta Creek Historical Average (1996-2017)
Total Nitrogen	mg/L	2.4	1.40	1.69
Total Phosphorus	mg/L	0.8	0.63	0.59

mg/L – milligrams per Liter

Influence on the WQIP HPWQC

- Mean total phosphorus and total nitrogen flux (kg/km^2) during the 'first flush' event in November 2019 were between 102- and 285-fold higher from the Cole Creek burned catchment compared to the downstream receiving waters.
- The preliminary data indicates that the contaminant flux from the 'first flush' event in November 2019 following the September 2019 Tenaja Fire was a source of nutrients discharging downstream to Murrieta Creek. However, the preliminary data indicates that the contaminant flux from the burned catchments were significantly lower during the second wet monitored weather event in March 2020, indicating the attenuation of contaminant concentrations and loads was observed as the 2019-2020 winter storm season progressed.

4.6.8 Santa Margarita River Nutrient Initiative Group

In addition to the special studies listed above, several ongoing projects are continuing to support the development of alternative approaches for establishing biostimulatory targets in the SMR Estuary and River. During the 2019-2020 year, no work was planned for this special study, rather monitoring is scheduled for WQIP year 3 (2020-2021) as described in the schedule of the WQIP MAP. Future monitoring is intended to coincide with a dry weather monitoring event at the long-term receiving water stations.

As described in the WQIP, the [SMRNIG](#) is piloting alternative approaches to establish biostimulatory targets based on recent science. This work includes developing targets in three phases: Phases I and II developed targets for the SMR Estuary and began work on the lower SMR Mainstem, and Phase III is developing targets for the Upper and Lower SMR Mainstem. In addition, Phase III includes evaluation of the impact of climate change scenarios on biological conditions in the SMR Estuary and River, an evaluation of possible restoration actions that could improve the level of biointegrity, and an estimation of nutrient load and wasteload allocations expected to achieve the biostimulatory targets in the river. As part of Phase III the stakeholders and the technical team are working to update the SMR watershed models and develop a receiving water model for the SMR Mainstem. Two Hydrologic Simulation Program-FORTRAN (HSPF)* models have been developed incrementally over a number of years and with a variety of project elements. These HSPF watershed loading models cover the areas upstream (currently being finalized) and downstream (completed in 2018) of the confluence of Murrieta and Temecula Creeks. The Upper SMR Watershed Loading model was updated during the reporting period with more recent and complete hydrology and land use data, improved data for releases from Diamond Valley Lake, Lake Skinner, and Vail Lake, and improved representation of groundwater/surface water interactions in the Middle SMR Subwatershed using results from a groundwater model. A Calibration report for the Upper Watershed Loading Model was released for review by stakeholders in October 2020. The Upper and Lower Watershed Loading models will provide hydrology and water quality inputs to a receiving water model being developed for the Upper and Lower SMR Mainstem using the USEPA's Water Quality Analysis Simulation Program (WASP). The results of the WASP model are expected to support development of response targets for reaches of the SMR Mainstem (analogous to the targets developed for the SMR Estuary), and the Watershed Loading Models will support development of nutrient loading limitations expected to be protective of the targets. The combined receiving water quality and watershed loading models will also be used to simulate conditions under selected climate change scenarios, for undeveloped watershed conditions, and possibly to evaluate effectiveness of various management/implementation scenarios, depending on availability of funds for model runs.

During WQIP implementation, Copermittees will continue to support the study effort under the SMRNIG by including in-kind monitoring of additional parameters at the long-term receiving water stations during a dry weather monitoring event as relevant to the Nutrient Numeric Endpoint framework, an alternative regulatory approach advocated by State Water Board staff and USEPA Region 9. This will consist of collection of additional samples from the long-term receiving water stations to be analyzed for ammonium, orthophosphate, total dissolved nitrogen, total dissolved phosphorus, particulate organic carbon, particulate organic nitrogen, particulate phosphorus, phytoplankton chlorophyll-a, algal carbon-nitrogen content, and algal phosphorus content. The Copermittees will continue to support future phases of the Nutrient Numeric Endpoint development efforts.

4.6.9 Participation in SMC California LID Evaluation and Analysis Network (SMC CLEAN) Project

The SMC has taken a lead role in gathering and evaluating available Low Impact Development (LID) BMP data. The SMC's California LID Evaluation and Analysis Network ([CLEAN](#)) project is designed to develop an understanding of the effectiveness of LID BMPs in Southern California. The District, on behalf of the Copermittees, collaborates with the SMC CLEAN project and supports its mission by providing quantification of LID BMP performance and serving as a participating agency for LID

monitoring information. The efforts of the SMC CLEAN Project are described in detail in **Section 4.7.1**. The District, on behalf of the Copermittees, has been collaborating with the SMC CLEAN project in support of its mission by providing quantification of LID BMP performance and serving as a participating agency for LID monitoring information. The efforts of the SMC CLEAN Project are described in detail in **Section 4.7.1**.

4.7 Additional Special Study Results and Assessments

Special studies are conducted to "address pollutant and/or stressor data gaps and/or develop information necessary to more effectively address the pollutants and/or stressors that cause or contribute to highest priority water quality conditions identified in the Water Quality Improvement Plan (San Diego Water Board, 2013)." Provision D.4.c of the Permit requires an annual evaluation of special studies results to assess their relevance to the Copermittees' characterization of receiving water conditions, understand sources of pollutants and/or stressors, and control and reduce the discharges of pollutants from MS4 outfalls to receiving waters. This Provision also requires the Copermittees to identify modifications and/or updates to the WQIP that are necessary based on special study results. As this was the first full WQIP monitoring year there are no modifications or updates to the WQIP that are necessary at this time based on special study results to date.

Special studies conducted during the 2019-2020 monitoring year are summarized in the sections above, and the results of these studies are being used to better understand potential sources contributing the HPWQCs. Assessment of special study results provides direction for additional investigation and is informing evaluation of progress to goals and adaptive management.

4.7.1 Participation in the Southern California Stormwater Monitoring Coalition's California LID Evaluation and Analysis Network (SMC CLEAN) Project

The District, on behalf of the Copermittees, collaborates with the SMC CLEAN project (**Section 4.6.9**) and support its mission by providing quantification of LID BMP performance and serving as a participating agency for LID monitoring information. The District coordinated with the Santa Ana Watershed Project Authority on a Proposition 84 grant to construct a LID Testing and Demonstration Facility at the District's 15-acre headquarters in Riverside, California. The LID Testing and Demonstration Facility (**Figure A4-18**) monitors and evaluates LID BMPs with respect to Southern California's semi-arid environment. In accordance with the District's LID Monitoring Plan and QAPP, the facility collects volume and pollutant data to gauge BMP performance and effectiveness. Findings from the District's LID BMP facility will support the development of technical guidance regarding LID BMP design, implementation, and maintenance for systems within semi-arid environments for the foreseeable future. As sufficient data become available, the results from the District's monitoring program and those of other partner agencies will be used to establish more effective water quality treatments that will help in crediting flow reductions to developments that implement BMPs.

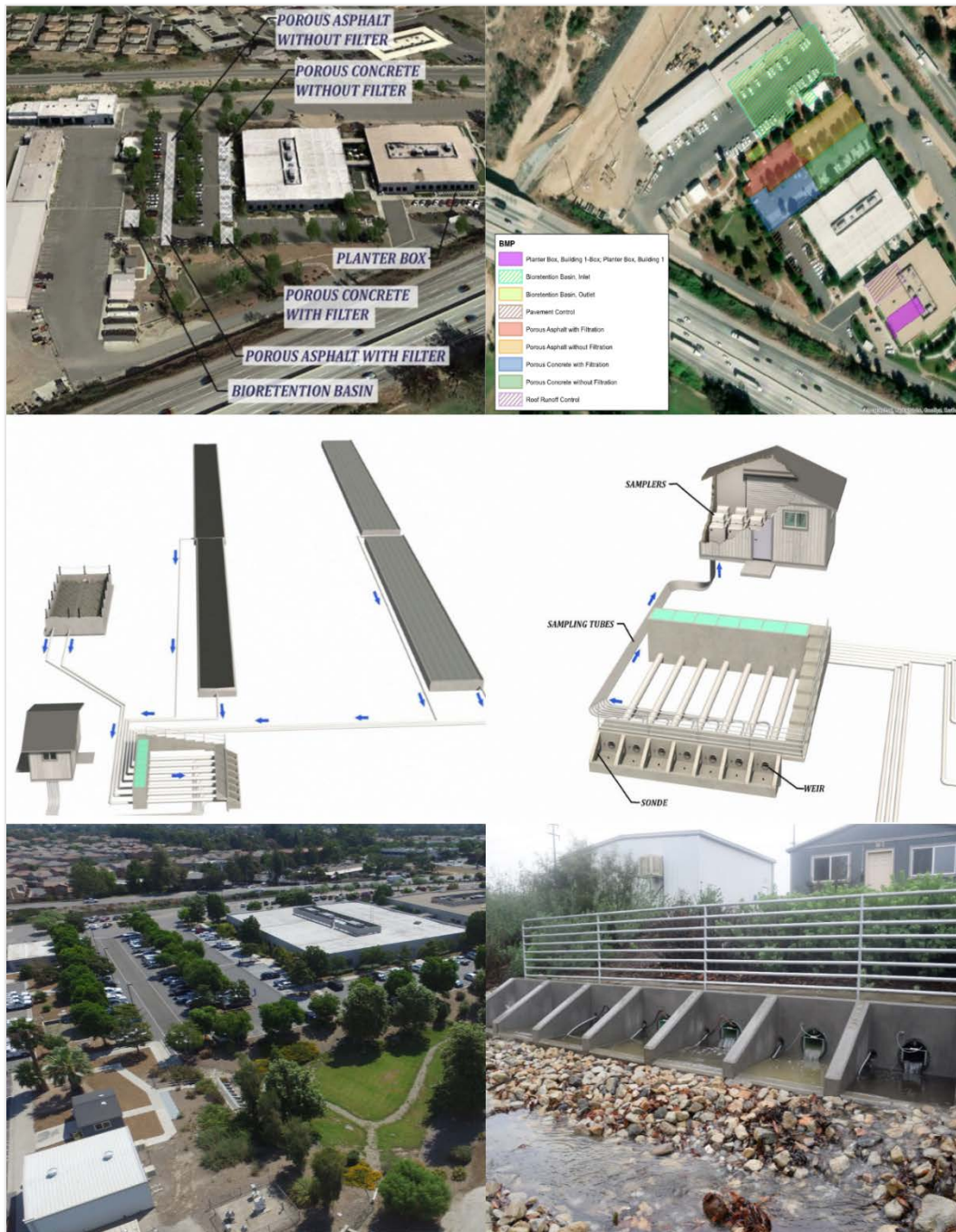


Figure A4-18. Photographs of the LID BMP Testing and Demonstration Facility

In accordance with SMC CLEAN's short-term goal, the District collects flow data and influent and effluent samples from its monitored BMP sites. The 2019-2020 wet season saw a total of two sampled events. The date of the sampled event, stations monitored, and the total rainfall depth of the events are shown in **Table A4-43**.

Table A4-43. LID Sampled Storm Events

Date	Stations Sampled	Rainfall Depth
12/04/2019	606 & 608	0.83"
03/10/2020	606 & 608	0.84"

606 – Bioretention Basin Influent; 608 – Bioretention Basin Effluent

The District also monitored an additional nine storm events in an effort to focus on the hydraulic properties of its monitored BMPs. The date of the storm events, stations monitored, and the total rainfall depth of the storms are shown per **Table A4-44**. Flow data for both the sampled storm events and the monitored storm events are still in review and are not presented in this report. The District plans on continuing its efforts in the evaluation of flow data and the volume reduction potential of its monitored BMPs.

Table A4-44. LID Monitored Storm Events

Date	Stations Monitored	Rainfall Depth
12/23/2019	606 & 608	0.57"
3/12/2020	606 & 608	1.42"
3/13/2020	606 & 608	0.12"
03/16–17/2020	606 & 608	0.16"
03/18–19/2020	606 & 608	0.20"
03/22–23/2020	606 & 608	0.87"
04/06–07/2020	606 & 608	1.06"
04/07–08/2020	606 & 608	0.51"
04/09–10/2020	606 & 608	1.02"

606 – Bioretention Basin Influent; 608 – Bioretention Basin Effluent

Influent and effluent samples are collected, composited, and processed to determine pollutant concentrations and results are assessed by the District. Analytes that were tested for in the 2019-2020 wet season are shown per **Table A4-45**. The District plans in continuing its efforts in the evaluation of its analyte concentrations and the pollutant removal effectiveness between the monitored BMPs.

Table A4-45. Analytical Constituents (2019 – 2020 Wet Season)

Category	Analyte(s)
Cations	Hardness as CaCO3
Cations	Calcium
Cations	Magnesium
Anions	Nitrate
Solids	Total Dissolved Solids
Solids	Total Suspended Solids
Aggregate Organic Compounds	Organic Carbon (Total)
Aggregate Organic Compounds	Organic Carbon (Dissolved)
Aggregate Organic Compounds	Oil & Grease
Nutrients	Nitrite
Nutrients	Ammonia
Nutrients	Total Kjeldahl Nitrogen
Nutrients	Total Nitrogen
Nutrients	Inorganic Nitrogen
Nutrients	Ortho Phosphorus
Nutrients	Phosphorus (Total)
Nutrients	Phosphorus (Dissolved)
Metals and Metalloids	Cadmium (Total)
Metals and Metalloids	Chromium (Total)
Metals and Metalloids	Copper (Total)
Metals and Metalloids	Iron (Total)
Metals and Metalloids	Lead (Total)
Metals and Metalloids	Manganese (Total)
Metals and Metalloids	Nickel (Total)
Metals and Metalloids	Zinc (Total)
Metals and Metalloids	Cadmium (Dissolved)
Metals and Metalloids	Chromium (Dissolved)
Metals and Metalloids	Copper (Dissolved)
Metals and Metalloids	Iron (Dissolved)
Metals and Metalloids	Lead (Dissolved)
Metals and Metalloids	Manganese (Dissolved)
Metals and Metalloids	Nickel (Dissolved)
Metals and Metalloids	Zinc (Dissolved)
Multiple Tube Fermentation - Multiple Dilution - SM 9221 B, E, F series	<i>E. coli</i>
Multiple Tube Fermentation - Multiple Dilution - SM 9221 B, E, F series	Total Coliform
Multiple Tube Fermentation - Multiple Dilution - SM 9221 B, E, F series	Fecal Coliform

In 2017, after a total of five years since the implementation of the LID Testing and Demonstration Facility, the District reviewed the data collected to determine if conclusions can be made regarding performance and design. Based on the trends in the data and in line with SMC CLEAN's long-term goal of LID design, construction, and maintenance, the District revitalized several of its systems to improve volume reduction and pollutant removal performance. Improvements were based on scientific studies and guidance from leading authorities on Green Infrastructure.

Starting in the 2017-2018 wet season, the District equipped its planter box with a raised outlet aiming to improve the system's pollutant removal effectiveness. Recommendation for this improvement was based on a scientific report¹⁴ describing nitrogen removal in a saturated anaerobic zone. As detailed in the report, the saturated anaerobic zone, created by the raised outlet, allows for denitrification processes to happen more efficiently. The denitrification process converts nitrate to gaseous forms of nitrogen, which removes it from the water completely. Both the original configuration and the raised outlet configuration are shown per **Figure A4-19**. The District plans a possible upgrade to this BMP in the near future; planned improvements may consist of an upgraded impermeable barrier and/or improved vegetation and soil mix. The District also expects to continue its review of the BMP's performance and evaluating the resulting data.



Figure A4-19. Planter Box – Before and After

In addition, the District rebuilt its Bioretention Basin before the start of the 2018-2019 wet season. The District developed a new soil mix comprised of silica sand, coconut pith, topsoil, and biochar, based on a report prepared for Kitsap County Public Works¹⁵ that showed high pollutant removal. With guidance from technical memoranda¹⁶ and the Central Coast Water Board¹⁷, the District replaced the old vegetation with new plant species designed to achieve LID goals. The plants: *Carex pansa*, *Carex praegracilis*, and *Juncus patens*; were selected for denitrifying bacteria contained within their roots and their ability to withstand long periods of inundation. Moreover, a new grade design to the soil media was also implemented. The original design, a shallow valley, developed short-circuiting problems, which drastically reduced travel distance and contact time for treatment within the soil media. The soil media was graded with an inverted V layout allowing water to pond along the sides of

¹⁴ Zinger, Yaron, Godecke-Tobias Blecken, Tim D. Fletcher, Maria Viklander, and Ana Deletić. 2013. "Optimising Nitrogen Removal in Existing Stormwater Biofilters: Benefits and Tradeoffs of a Retrofitted Saturated Zone." *Ecological Engineering* 51: 75–82.

¹⁵ Herrera Environmental Consultants, Inc. (2015). Analysis of Bioretention Soil Media for Improved Nitrogen, Phosphorous and Copper Retention.

¹⁶ Monash University. (2015). Adoption Guidelines for Stormwater Biofiltration Systems (Version 2).

¹⁷ Central California Coast. (n.d.). LID Plant Guidance for Bioretention.

the Bioretention Basin. This design forces the water to follow a longer path to the center subdrains thus allowing for more time for treatment by the newly engineered soil mix and its associated plant roots. These changes, as well as the rest of the LID Testing and Demonstration Facility, will continue being monitored to learn how these systems perform over time.

Data gathered from the SMC CLEAN project will also aid in the management of the HPWQCs of the SMR WMA. The District's LID Facility currently monitors the following nutrients: ammonia, inorganic nitrogen, nitrite, ortho phosphorus, phosphorus (Dissolved) (dissolved phosphorus), phosphorus (Total) (TP), total Kjeldahl nitrogen (TKN), and total nitrogen (TN). Understanding how these nutrients and other pollutants react with the different types of media and BMP designs can assist in the appropriate selection of BMPs during the development of Water Quality Management Plans. District LID Demonstration Facility Nutrient Monitoring Data are provided in **Attachment 4I**.

The District's LID Facility has monitored and sampled a total of 17 storm events from 2012 to 2020. Nutrient data from 2012 to 2019 were consolidated in an effort to gauge the BMPs' performance in nutrient reduction. Nutrient reduction is given as the average percent difference in concentration from influent (either measured at a representative control site, or as actual influent to the BMP) to effluent. Thus, a positive value is associated with a decrease in concentration whereas a negative value indicates the system is introducing additional nutrients into the effluent. An overview of the performance of the District's BMPs in reducing nutrient concentrations is given below per **Figure A4-20**.

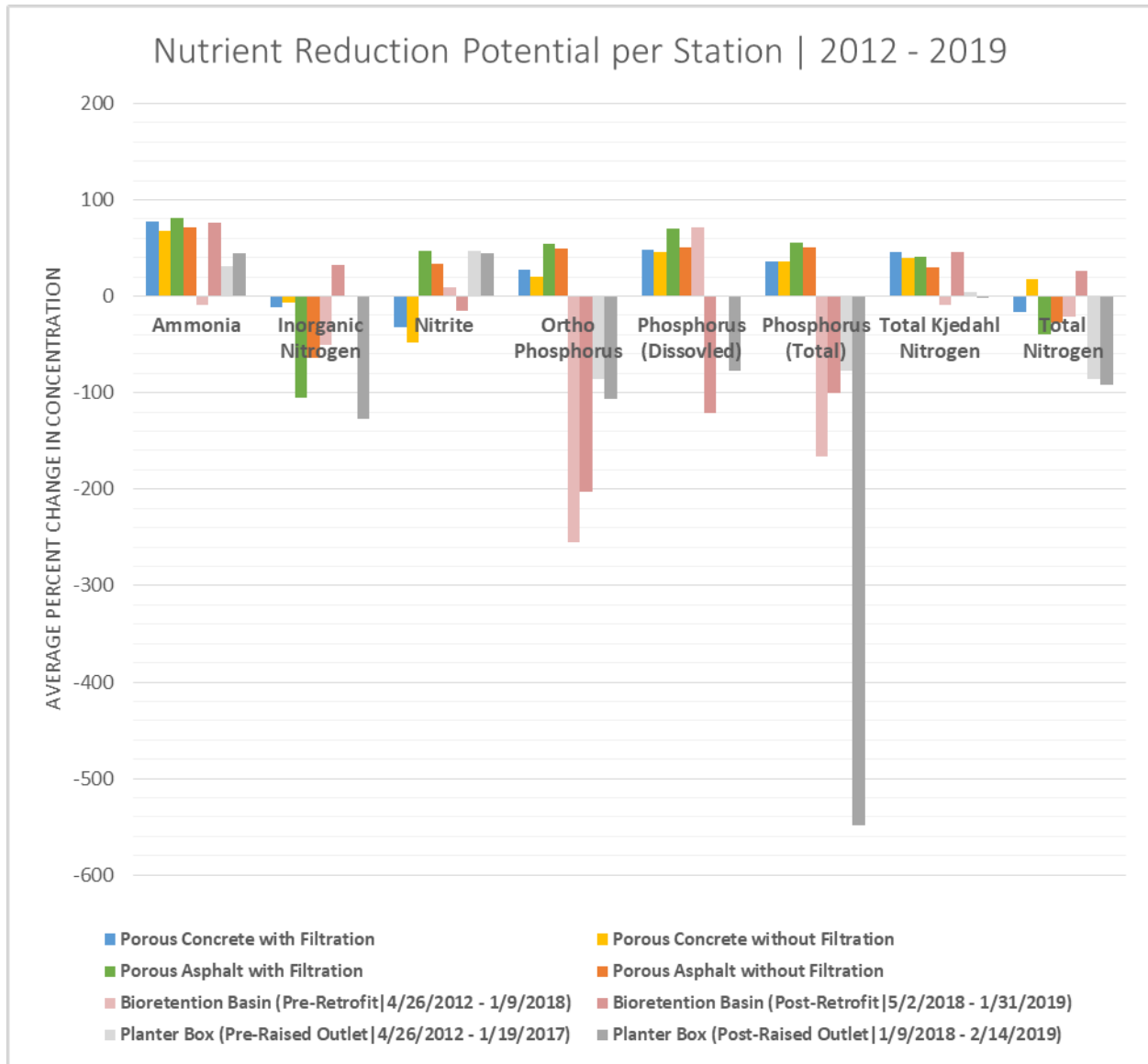


Figure A4-20. Nutrient Reduction Potential

Per the data shown, ammonia was reduced across all monitored BMPs with the exception of Bioretention Basin's original configuration. Moreover, Porous Concrete with Filtration was shown to have the greatest potential at removing ammonia with an average 77% reduction in concentration. The Bioretention Basin's original configuration was found to be the least effective at reducing ammonia with an average 9% increase in concentration. Except for the retrofitted Bioretention Basin, all the other BMP systems increased inorganic nitrogen concentrations in the effluent. As the data indicate, the retrofitted Bioretention Basin saw an average 32% reduction in concentration of inorganic nitrogen. The Planter Box post-raised outlet may have the potential to add the largest amount of inorganic nitrogen with an average 127% increase in concentration.

The Porous Asphalt systems (with and without filtration), pre-retrofitted Bioretention Basin, and both Planter Box configurations reduced nitrite concentrations. Porous Asphalt with Filtration reduced nitrite concentration an average 47%, while the Porous Concrete with and without filtration, and the retrofit to the Bioretention Basin, had increased concentrations of nitrite in their effluent. The retrofitted Bioretention Basin increased nitrite concentrations the least, with an average 9% increase, whereas the Porous Concrete without Filtration system increased nitrite concentrations the most, as indicated by its average 48% increase. On the other hand, all porous pavements reduced concentrations of ortho phosphorus in the effluent, with the greatest reduction found for Porous Asphalt with Filtration, with an average 54% reduction. However, both retrofitted and pre-retrofitted configurations for the Bioretention Basin and the Planter Box increased concentrations of ortho phosphorus in their effluent. The long-term data suggest that the original Bioretention Basin configuration may potentially introduce the most ortho phosphorus into the system with an average 255% increase in concentration.

As with ortho phosphorus, the data suggests that all porous pavements have the potential to remove dissolved phosphorus. Both the Porous Asphalt with Filtration and pre-retrofitted Bioretention Basin appear to have the most potential to reduce dissolved phosphorus with an average 71% reduction, while both retrofitted designs for the Bioretention Basin and the Planter Box were both found to increase dissolved phosphorus concentrations. Similar results are shown for TP, all porous pavements showed reductions, however both pre-and post-retrofitted designs for the Bioretention Basin and the Planter Box showed increased effluent concentrations of TP. Trends in the data suggest Porous Asphalt with Filtration may have the greatest potential to reduce TP concentrations with an average 55% reduction. Conversely, the Planter Box with raised outlet may have the greatest potential to increase TP concentrations.

All porous pavements, along with the retrofitted Bioretention Basin, were able to reduce TKN concentrations. As the data indicate, Porous Concrete with Filtration may have the greatest potential at decreasing TKN concentrations by an average 46% reduction. While the pre-retrofitted Bioretention Basin may be the least effective for TKN reduction, with an average 10% increase in concentration. As for Total Nitrogen, the Porous Concrete without Filtration and the retrofitted Bioretention Basin were the most effective at removing TN. The Bioretention retrofit showed the most potential for removing TN, exhibiting an average 26% reduction in concentration. Both Planter Box configurations showed the most increase in TN concentrations.

On November 28th, 2017, the District equipped its Planter Box with a raised outlet to study its effects on pollutant removal potential. The Planter Box with raised outlet was monitored and sampled during five storm events from January 9th, 2018 to February 14th, 2019. The District's previous configuration, Planter Box without a raised outlet, was monitored and sampled during six storm events from April 26th, 2012 to January 19th, 2017. **Figure A4-21** details the comparative results related to the Planter Box system before and after the installed the raised outlet.

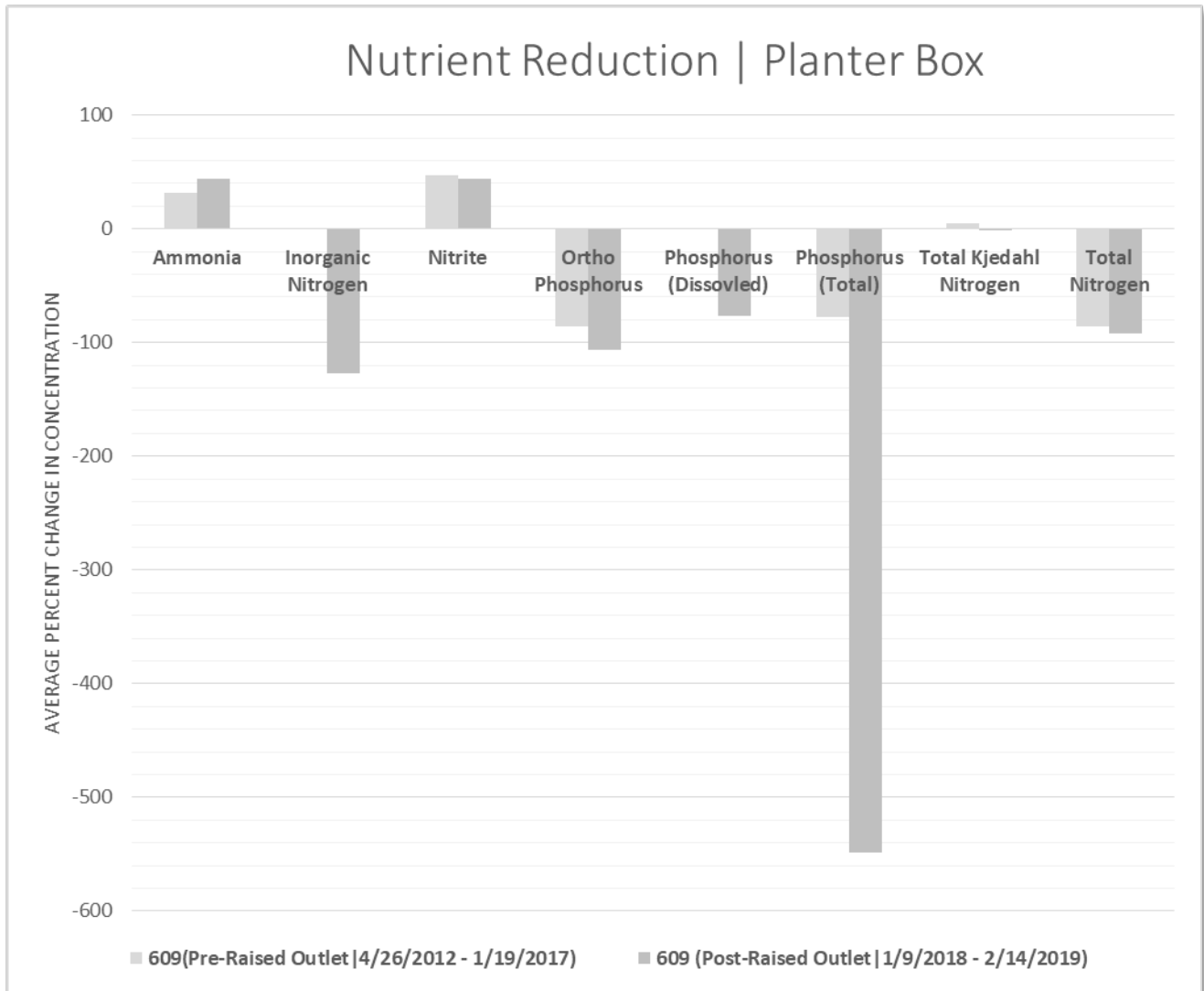


Figure A4-21. Nutrient Reduction – Planter Box Pre-and-Post Raised Outlet

Results suggest that, with the exception of ammonia, the raised outlet did not improve nutrient removal. Ammonia concentrations in the effluent for the Planter Box with a raised outlet were reduced by 44%, compared to a 31% reduction with the previous configuration. For nitrite removal, the reconfigured BMP showed similar results to the previous configuration (44% reduction vs. 42% reduction). While the majority of the results show the raised outlet was less effective for nutrients overall, the District is conducting further review of the data and relevant literature. Different vegetation in combination with different soil types may lead to different results under saturated - anaerobic conditions, as such, the District plans to continue studying its Planter Box BMP as to effectively determine its pollutant reduction potential.

On March 26th, 2018, the District completed a retrofit of the Bioretention Basin to improve volume reduction and pollutant removal. The retrofitted Bioretention Basin was monitored and sampled during

five storm events from May 2nd, 2018 to February 14th, 2019. The District's original Bioretention Basin was monitored and sampled a total of 7 storm events from April 26th, 2012 to January 9th, 2018. **Figure A4-22** details the comparative results related to the District's Bioretention Basin pre- and post-retrofit.

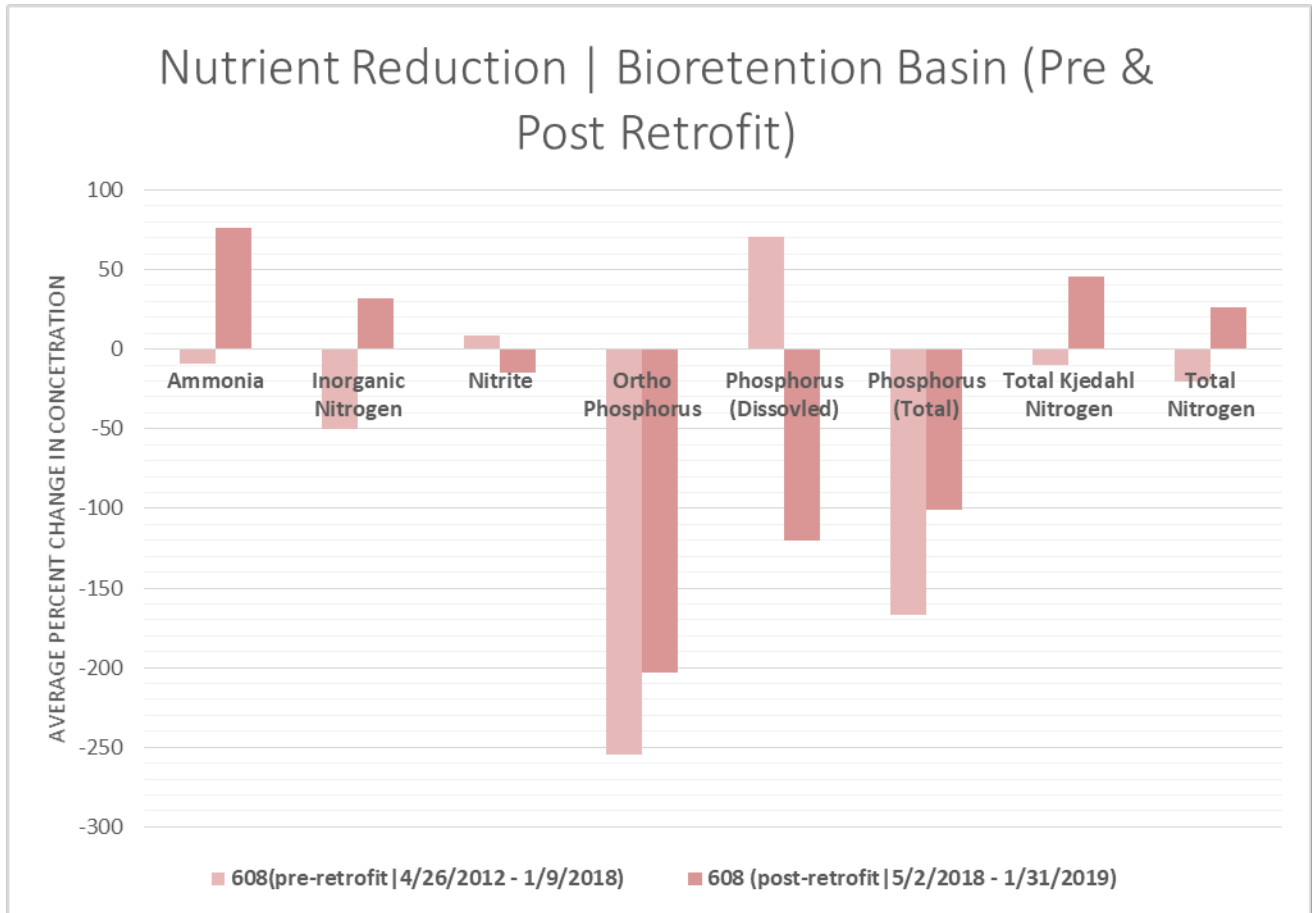


Figure A4-22. Nutrient Reduction – Bioretention Basin Pre-and-post Retrofit

Results indicate that, except for nitrite and dissolved phosphorus, the nutrient reduction potential of the Bioretention Basin was greatly improved following its retrofit. Ammonia was reduced by an average 76% change in concentration, a significant improvement from its previous design which increased ammonia an average 8%. Inorganic nitrogen was also greatly reduced; the Bioretention Basin post-retrofit saw an average 32% reduction in inorganic nitrogen concentration compared to its average pre-retrofit 50% increase. TKN and TN were also substantially reduced. The retrofit showed a reduction in TKN concentrations by an average of 45% compared to its pre-retrofit increase of 10%. Likewise, the retrofit showed a reduction in TN concentrations by an average of 26% compared to its pre-retrofit increase of 21%. However, post-retrofit nitrite concentrations were increased by an average of 14%.

Data for phosphorus show mixed results. For dissolved phosphorus, the retrofit basin effluent showed a substantial 120% increase in average concentration, while the original design reduced effluent concentration by an average 71%. The retrofit basin substantially increased the concentrations of both ortho phosphorus and TP in the effluent (203% and 101%, respectively), although the concentration

increases were smaller compared to data for the original design (255% and 167%, respectively). As with the Planter Box, the District will continue studying the Bioretention Basin as to effectively determine its pollutant reduction potential.

Due in part to the results described and the efforts to make various improvements such as the change in drainage design, improved soil type, and the implementation of specialized vegetation, the Bioretention Basin's retrofit won the California Stormwater Quality Association 2019 Award for Outstanding Stormwater BMP Implementation Project as shown in **Figure A4-23**. The District's retrofitted Bioretention Basin was evaluated on several criteria such as: how well the BMP effectively integrates into the target site or program, the BMP's targeting of priority pollutants or pollutants of concern, the BMP's achievement of objectives and producing of valuable results, the inclusion of outstanding elements which distinguish it from other BMPs, and whether the project has been promoted via professional publications. A before and after of the District's retrofit is given below in **Figure A4-24**. The District will continue to monitor and sample the Bioretention Basin as well as its other BMPs to further study nutrient and pollutant behavior in relation to SMC CLEAN's short-term and long-term goals for Green Infrastructure.



Figure A4-23. CASQA 2019 Award – Outstanding Stormwater BMP Implementation Project



Figure A4-24. Bioretention Basin – Before and After

4.8 California Environmental Data Exchange Network Data Upload and Retrieval

Provision F.4.a.(6) of the Permit requires that monitoring data collected pursuant to Provision D (Monitoring and Assessment Program Requirements) must be uploaded to the CEDEN, a central location for finding and sharing information about California's waterbodies. CEDEN aggregates water quality, aquatic habitat, and wildlife health data and makes them accessible in downloadable forms at www.ceden.org.

Data in CEDEN are searchable by date, location, project, station, or parameter using the "Find Data" functionality of the CEDEN website. The data from the San Diego Region Copermittee Program can be retrieved by identifying the Program as "NPDES Program" and Project as "San Diego Region NPDES", which is the parent Project name. The data from the Riverside County Copermittee Program can be retrieved by identifying the Program as "Riverside County NPDES MS4 Monitoring Program" and Project as "San Diego Region", which is the parent Project name. Within this overall retrieval, the specific datasets described in this Annual Report can be identified using the project names listed in **Table A4-46**. Data are limited to those parameters that are currently storable in CEDEN. SMC data are submitted to the SMC Program.

In accordance with the Permit, data collected during the 2019-2020 monitoring year have been submitted to CEDEN and will become available from CEDEN once loaded by the State into the system. CEDEN data submittals and receipts are provided as **Attachment 4L**. GIS files of the monitoring locations are provided in **Attachment 4M**.

Table A4-46. Project Names for CEDEN Data Retrieval

Program Code	Project Code	Project Name
San Diego County Program		
NPDES	MS4_DW_OFS_T	Dry Weather MS4 Outfall Field Screening
NPDES	MS4_WW_OFM_T	Wet Weather MS4 Outfall Monitoring
NPDES	RCN_TMDL_COSD	Nutrient TMDL for Santa Margarita Watershed
NPDES	RCN_MS4_COSD	MS4 Outfall Monitoring Rainbow Creek Watershed
NPDES	NPDES_RWM	NPDES Receiving Water Monitoring
NPDES	RBC_MS4_BMP_COSD	Rainbow Creek MS4 BMP
SDCWPP	RBN_MST_COSD	Rainbow Creek HF183
Riverside County Program		
RC_NPDES_MS4_MP	SMR_GM	Dry Weather MS4 Outfall Field Screening, Dry Weather MS4 Outfall Monitoring, Wet Weather MS4 Outfall Monitoring, and NPDES Receiving Water Monitoring
RC_NPDES_SSP	SMR_PF	SMR Post-fire Monitoring

**Santa Margarita River Watershed Management Area
2019-2020 Water Quality Improvement Plan
Annual Report
January 2021**

**APPENDIX 5
Adaptive Management/Modifications**

TABLE OF CONTENTS

Section	Page
APPENDIX 5 ADAPTIVE MANAGEMENT/MODIFICATIONS	5-1
5.1 DRIVERS FOR ADAPTIVE MANAGEMENT.....	5-1
5.1.1 Permit-required Monitoring Results.....	5-2
5.1.1.1 Receiving Water Limitations	5-2
5.1.1.2 Exceedances of NALs and/or SALs.....	5-2
5.1.1.3 Special Studies Results	5-4
5.1.2 Regulatory Considerations	5-4
5.1.2.1 San Diego Water Board Recommendations.....	5-4
5.1.2.2 New Regulatory Actions	5-14
5.1.3 Program Effectiveness Assessments/Progress Toward Numeric Goals.....	5-14
5.2 ADAPTIVE MANAGEMENT - CHANGES TO WATER QUALITY IMPROVEMENT PLAN ELEMENTS	5-15
5.2.1 History of Adaptive Management	5-15
5.2.2 Adaptive Management of Priority Water Quality Condition	5-15
5.2.3 Adaptive Management of Goals, Strategies, and Schedules	5-16
5.2.4 Adaptive Management of the MAP.....	5-17
5.2.4.1 County of San Diego Criteria for Determining High-Priority Outfalls in Dry and Wet Weather.....	5-17
5.3 WATER QUALITY IMPROVEMENT PLAN UPDATE.....	5-22

Attachments

5A – SMR WMA WQIP 2017-2018 Annual Report Review Letter Responses

5B – 2021 SMR WMA WQIP Update

5C – 2017-2018 and 2018-2019 Annual Report Review Letters

LIST OF FIGURES

Section	Page
Figure A5-1. Diagram Illustrating Wet Weather MS4 Outfall Site Selection Criteria and Constraints	5-22

LIST OF TABLES

Section	Page
Table A5-1. Exceedances of NALs and SALs during the 2019-2020 Monitoring Year in the Santa Margarita River WMA	5-3
Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews	5-5
Table A5-3. Monitoring Program Percent Completeness for Sample Collection	5-13
Table A5-4. History of WQIP Adaptations	5-15
Table A5-5. Information Used to Modify Goals, Strategies, and Schedules	5-16
Table A5-6. County of San Diego Criteria for Prioritizing MS4 Outfalls	5-19

APPENDIX 5 ADAPTIVE MANAGEMENT/MODIFICATIONS

This appendix presents the potential triggers for adaptation of the [Water Quality Improvement Plan \(WQIP\)](#) and the results of the adaptive management process for the Santa Margarita River (SMR) Watershed Management Area (WMA) following the completion of the 2019-2020 monitoring year.

Adaptive management uses an iterative approach to re-evaluate the water quality conditions, priorities, numeric goals, strategies, and schedules based on the requirements of the Permit. The adaptive management process details how the Copermittees use new data and information to improve the WQIP through updates to priorities, assessments of and adjustments to goals, updates to strategies to achieve the latest goals, and updates to the monitoring and assessment program (MAP).

Multiple triggers may warrant adaptive management or changes to monitoring and assessment program activities. As described in Permit Provision B.5, potential triggers include exceedances of water quality standards in receiving waters, exceedances of action levels for outfall discharges, special study results, new regulatory actions, San Diego Regional Water Quality Control Board (San Diego Water Board) recommendations, public participation, and program effectiveness assessments. Adaptive management updates to the Copermittees' programs are typically evaluated and reported either annually or at the end of the Permit term. The adaptive management process is used in conjunction with water quality and programmatic data to evaluate whether modifications to numeric goals, schedules, and/or strategies are necessary to achieve compliance with the interim and final compliance numeric goals.

The WQIP is in the early stages of implementation; the 2019-2020 monitoring year was the first full year under the accepted WQIP. Consequently, programmatic and monitoring data are limited for conducting assessments that could lead to adaptive management. Adaptive management actions proposed in this WQIP Annual Report are primarily driven by recent directives from the San Diego Water Board. The San Diego Water Board conducted reviews of the 2017-2018 and 2018-2019 WQIP Annual Reports for the San Diego Region, and provided Copermittees with the results of these reviews and deadlines for addressing the items. The itemized comments were provided in a July 19, 2019 letter for the 2017-2018 report and in a September 10, 2020 letter for the 2018-2019 report. Requested items requiring a response by January 31, 2021 (i.e., with this Annual Report) are listed in **Section 5.1.2.1**. Several requests in these letters also require specific adaptive management-related actions. Each potential trigger is more fully considered in **Section 5.1** as part of the adaptive management approach. Detailed responses to these requests are provided in **Section 5.1.2.1**.

Responses to items in the San Diego Water Board's **2017-2018 and 2018-2019 WQIP Annual Report review letters** due in January 2021 are provided in **Section 5.1.2.1**.

5.1 DRIVERS FOR ADAPTIVE MANAGEMENT

Drivers for adaptive management of WQIP elements and results of the adaptive management evaluation for the 2019-2020 monitoring year are discussed in the following sections. In addition, Copermittees have identified where administrative changes are needed to clarify jurisdictional strategies or methods as they have been implemented. Changes made with this 2019-2020 WQIP Annual Report are documented as markup in the Copermittees' strategy tables in **Appendix 2**.

5.1.1 Permit-required Monitoring Results

Results from monitoring conducted in accordance with Permit Provisions D.1 (receiving water) and D.2 (municipal separate storm sewer system [MS4] outfalls) may trigger updates to the WQIP, potentially prompting additions or changes to the strategies that are implemented. Monitoring results are evaluated in two ways:

- (1) comparison of receiving water monitoring data to receiving water limitations, and assessment of potential impacts from MS4 discharges to any persistent exceedances, and
- (2) comparison of dry and wet weather MS4 outfall discharge data to non-stormwater action levels (NALs) and stormwater action levels (SALs).

5.1.1.1 Receiving Water Limitations

A comprehensive evaluation of potential MS4 outfall contributions to receiving water conditions was conducted during WQIP development in order to identify the highest priority water quality conditions (HPWQCs) and priority water quality conditions (PWQCs) for the WMA, as required by Permit Provision B.2.b. The WQIP was accepted in November 2018, and the collection of long-term receiving water monitoring data under the MAP is now underway, with a portion completed during the 2019-2020 monitoring year. The required assessments will be conducted once the complete set of long-term receiving water data have been collected at all of the long-term monitoring stations under the WQIP MAP.

5.1.1.2 Exceedances of NALs and/or SALs

The primary focus of this assessment is on exceedances of NALs or SALs in MS4 outfall discharges during dry and wet weather, respectively. As stated in Permit Provisions C.1 and C.2, NALs and SALs are incorporated into the WQIP to:

- (1) support the development and prioritization of water quality improvement strategies,
- (2) assess the effectiveness of the water quality improvement strategies, and
- (3) support the detection and elimination of non-stormwater and illicit discharges to the MS4 (NALs only).

Appendix 4 includes the detailed results of the dry and wet weather MS4 outfall discharge monitoring programs and compares the data to applicable NALs or SALs. A summary of exceedances of NALs at the 12 sampled highest priority outfalls and SALs at the six sampled outfalls is presented in **Table A5-1**. Exceedances of NALs in **Table A5-1** are associated with one or both samples collected during the monitoring year. Several additional outfalls were visited not sampled (VNS) due to lack of measurable flow. Monitored outfalls are shown in **Appendix 4** in **Figures A4-11** (dry weather) and **A4-15** (wet weather). Repeated exceedances for constituents that are not currently addressed by the WQIP may indicate that these constituents warrant further consideration. During the 2019-2020 monitoring year, the NALs most often exceeded in the SMR WMA (i.e., nutrients and bacteria) were consistent with those identified by the WQIP as PWQCs and HPWQCs. Exceedances of SALs were observed only for nutrients at HST01. These data are consistent with constituents identified by the WQIP as priority water quality conditions.

Because NAL and SAL exceedances were consistent with constituents already addressed by the WQIP, program adaptations based on NAL and SAL exceedances are not warranted at this time.

Table A5-1. Exceedances of NALs and SALs during the 2019-2020 Monitoring Year in the Santa Margarita River WMA

Constituent	Outfalls with NAL Exceedances	Outfalls with SAL Exceedances ^{2,3}
Turbidity ^{1,2}	2 of 12	0 of 6
pH ¹	2 of 12	N/A
Nitrate as N ²	N/A	1 of 6 (HST01)
Nitrate + Nitrite (total) ²	N/A	1 of 6 (HST01)
Total Nitrogen ^{1,2}	11 of 12	1 of 6 (HST01)
Total Phosphorus ^{1,2}	12 of 12	1 of 6 (HST01)
Fecal Coliform ¹	9 of 12	N/A
<i>Enterococcus</i> ¹	12 of 12	N/A
Cadmium ^{1,2}	0 of 12	0 of 6
Copper ^{1,2}	0 of 12	0 of 6
Chromium III ¹	0 of 12	N/A
Chromium VI ¹	0 of 12	N/A
Lead ^{1,2}	0 of 12	0 of 6
Nickel ¹	0 of 12	N/A
Silver ¹	0 of 12	N/A
Zinc ^{1,2}	0 of 12	0 of 6
Dissolved Oxygen ¹	1 of 12	N/A
MBAS ¹	0 of 12	N/A
Iron ¹	4 of 12	N/A
Manganese ¹	10 of 12	N/A

N/A – not applicable; no NAL or SAL in Provision C.

MBAS = methylene blue active substances (MBAS).

1. Applicable to non-stormwater discharges from the MS4 to inland surface waters (Permit Table C-4).

2. Applicable for discharges of stormwater from MS4 outfalls to receiving waters (Permit Table C-5).

3. Exceeds final effluent limitations (Rainbow Creek Nutrient TMDL).

4. One lab value and one field value.

5.1.1.3 Special Studies Results

As part of the MAP, the Copermittees are engaged in special studies related to eutrophication and nutrient loading, the HPWQCs for the watershed. Results supplement the nutrient data collected under Provisions D.1 (receiving water) and D.2 (MS4 outfalls) and can provide additional information about the spatial distribution, processes, and sources of nutrients and non-stormwater flow in the watershed.

Several special studies were conducted in the SMR WMA during the 2019-2020 monitoring year (see **Section 3.3** of the WQIP Annual Report and **Appendix 4** and its **Attachment 4I**) and continued work under several special studies is planned for 2020-2021. As relevant data, conclusions, and lessons learned become available from these studies, the numeric goals, strategies, schedules, and the MAP can be evaluated in terms of special study results to help drive adaptive management.

5.1.2 Regulatory Considerations

The purpose of this section is to summarize changes in regulatory requirements. For the 2019-2020 reporting year, this includes the recommendations from the San Diego Water Board summarized in **Section 5.1.2.1** and regulatory actions in **Section 5.1.2.2**.

5.1.2.1 San Diego Water Board Recommendations

In cases where the San Diego Water Board makes recommendations for modifications to the WQIP or Jurisdictional Runoff Management Programs (JRMP), these recommendations must be considered as part of the adaptive management process. The San Diego Water Board conducted reviews of the 2017-2018 and 2018-2019 WQIP Annual Reports for the Santa Margarita River WMA. They issued letters to the Copermittees dated July 19, 2019 and September 10, 2020, respectively, providing the results of the reviews and requests with deadlines for addressing the items in the letters. A summary of responses for items to be addressed by January 31, 2021 (i.e., in this WQIP Annual Report) is provided in **Table A5-2**, with details provided in in the sections that follow. All letters issued in the San Diego Region included the same Attachment 1: Adaptive Management General Topics. However, the numbered topics need to be addressed only where applicable for the respective WMAs. If a particular topic is not applicable for a particular WMA, then the respective Copermittees need to "describe a technical rationale as to why the topic is not applicable," and do not need to address the topic further unless it becomes applicable for future reports. **Table A5-2** includes responses for each Attachment 1 item. **Attachment 5A** includes a memo with technical rationales for topics that are not applicable at this time as well as supporting information for the applicable topics. The 2021 WQIP Update is provided as **Attachment 5B**, and the 2017-2018 and 2018-2019 Annual Report Review letters are provided as **Attachment 5C**.

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
2017-2018 WQIP Annual Report Review Letter Received July 24, 2019			
Items due by January 31, 2020			
Item 2.b.2, Page 3	The Western Riverside Copermittees are to submit the Final HMP Effectiveness Assessment and HMP Data.		Previously Completed
Item 3, Page 4	Provide a WQIP Annual Report for the 2018-2019 reporting period.		Previously Completed
Item 6.a, Page 4	Rainbow Creek TMDL Monitoring Trends: The County of San Diego is required to submit program changes with the January 31, 2020 JRMP annual report to address the identified program inspection and enforcement deficiencies for agricultural facilities in coordination with the San Water Board staff implementing the Agricultural Orders.	<ul style="list-style-type: none"> • 2018-2019 WQIP Annual Report • Appendix 2 	<p>A summary of Agriculture, Weights, and Measures (AWM) program changes (i.e., enhanced strategies) to help achieve water quality improvement goals in the Rainbow Creek Watershed, was provided with the 2018-2019 WQIP Annual Report.</p> <p>The update to the County of San Diego's JRMP is summarized in Section 7.4 in Appendix 2 to this WQIP Annual Report.</p>
Item 6.b, Page 5 & Attachment 1, Item 9.b, Page 10	Conduct a completeness check of the required monitoring.		Previously completed and will be conducted annually (see response for Attachment 1 Item 9.b)
Item 6.c, Page 5 & Attachment 1, Item 11.b, Page 11	Adaptively manage programs based on outfall exceedances in accordance with Item 11.b of Attachment 1: CT-SMG07: Nutrients (TN) CT-SMG18: FIB and Nutrients (TN)		Previously Completed
Items due by January 31, 2021			
Item 5, Page 4	The revised due date for the WQIP Update to incorporate the final I/O numeric targets, strategies, monitoring and assessment activities, schedules and reporting is now on or before January 31, 2021.	<ul style="list-style-type: none"> • 2021 WQIP Update - Attachment 5B 	The Copermittees updated the WQIP to incorporate the final Investigative Order numeric targets, strategies, monitoring and assessment activities, schedules, and reporting. The updates are provided in Attachment 5B .

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Attachment 1 – Adaptive Management General Topics – Due by January 31, 2021			
Attachment 1 Page 7	The updated JRMP strategies are required to be included in the JRMP Annual Report submitted concurrently with each applicable WQIP Annual Report on or before January 31, 2021 .	<ul style="list-style-type: none"> Appendix 2 	JRMP strategies and JRMP Annual Reports are provided in Appendix 2 for each Copermittee. JRMP Updates may be provided as an attachment to the JRMP Annual Report and/or links to online JRMP documents are provided.
Item 1, Page 7	Homeless Encampments: Identification of potential geographic focus areas for coordination with local and regional programs or strategies to address discharges from encampments. Summaries of efforts, map of geographic prioritized areas, and a description of coordination with other agencies and programs.	<ul style="list-style-type: none"> 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	This topic is largely not applicable to the SMR WMA at this time as the WQIP includes several strategies to address homeless encampments and identifies encampments as a controllable non-point source potentially impacting receiving water quality. However, Copermittees summarized efforts to address discharges from encampments in Section 2.1 of Attachment 5A .
Item 2, Page 7	Identification of Controllable and Uncontrollable Sources	<ul style="list-style-type: none"> 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	This topic is not applicable to the SMR WMA at this time, as the topic is addressed in the WQIP. The technical rationale is provided in Section 2.2 of Attachment 5A .
Item 3, Page 8	Agricultural Orders Update and Assessment	<ul style="list-style-type: none"> 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	This topic is not applicable to the SMR WMA at this time, as the topic is addressed in the WQIP. The technical rationale is provided in Section 2.3 of Attachment 5A .
Item 4, Page 8	Coordination of WQIP HPWQCs, PWQCs, and Strategies with WMA Ecological Reserve Goals and Projects	<ul style="list-style-type: none"> 2021 WQIP Update - Attachment 5B 	The Copermittees have developed an inventory of Ecological Reserves in the WMA and summarized reserve and project goals in Attachment 5B Section A6-1 . An assessment of the compatibility of jurisdictional and WMA strategies with Ecological Reserve goals is also provided in Section A6-1 .
Item 5, Page 8	Storm Drain Biofilms Source of Bacteria	<ul style="list-style-type: none"> 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	This topic is not applicable at this time, as there is no bacteria TMDL or identified concerns regarding storm drain biofilms in the SMR WMA. Technical rationale as to why the topic is not applicable to the WMA is provided in Section 2.4 of Attachment 5A .

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 6, Page 8	Update of 303(d) Listings Since the acceptance of WQIPs, the 303(d) listings have been updated. The San Diego Water Board is requiring that Copermittees' update the 303(d) summaries to the most current OAL approved 303(d) list as of January 31, 2021.	<ul style="list-style-type: none"> • 2017-2018 Annual Report Review Letter Responses - Attachment 5A; and • 2021 WQIP Update - Attachment 5B 	The Copermittees updated the WQIP 303(d) summary and conducted an assessment of any potential changes to PWQCs or HPWQCs based on the revised list. Based on the assessment, no changes to PWQCs or HPWQCs are proposed at this time. The updated summary table is included in the WQIP Update as Table 2-6 in Attachment 5B and the assessment is provided in Section 3.1 of Attachment 5A .
Item 7, Page 9	Over-Irrigation Audit Findings	<ul style="list-style-type: none"> • 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	The Copermittees have reviewed their respective audit notices and evaluated their JRMPs. A summary of program modifications and updates was provided in the 2018-2019 Annual Report. Additional program modifications and updates were evaluated in FY 19-20. A summary of remaining program modifications and updates and the rationale of why the non-structural BMP load reduction assessment is not applicable are presented in Section 3.2 of Attachment 5A .
Item 8, Page 9	Persistent Flow in MS4 Outfalls - Groundwater or Water Agency Maintenance Source Identification	<ul style="list-style-type: none"> • 2017-2018 Annual Report Review Letter Responses - Attachment 5A; and • 2021 WQIP Update - Attachment 5B 	Copermittees incorporated a summary of the Order WQ 2014-0194 DWQ (General Order) enrollee discharges, ongoing source identification activities, and the Permitted Flow Assessment strategy into Section 3.3 of Attachment 5A . The Permitted Flow Assessment strategy was updated in Section 4.2.3.2 and added to Table 4-16 in Attachment 5B .

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 9.a, Page 9	<p>Use of C Value Either provide a corrected pollutant load calculation or propose a method or process to correct the calculations. Based on the revised calculations, the WQIP Copermittees are required to revise the WMA or JRMP strategies as applicable to address the WQIP numeric goals and schedules.</p>	<ul style="list-style-type: none"> • 2017-2018 Annual Report Review Letter Responses - Attachment 5A; and • 2021 WQIP Update - Attachment 5B 	<p>Through the Regional Monitoring Workgroup, the Copermittees met with the San Diego Water Board to present the existing approach and constraints of the Permit and monitoring requirements that led to the methods in use. Copermittees and the San Diego Water Board are in agreement that the assessments should be revised or replaced, which will require time and continued coordination. Current WMA and Copermittee strategies in the WQIP do not utilize the C value to calculate non-structural pollutant load reduction. The Copermittees developed revisions to WQIP text to clarify the C Value is under revision in Attachment 5B Section 5.5.2.2 and a brief discussion that the revised calculation will not result in a change in reprioritization of projects or actions is provided in Section 3.4 of Attachment 5A. In an email dated August 19, 2020 the San Diego Water Board granted regulatory relief from performing some of the Permit-required assessments until after the planned reissuance of the Permit based on the Copermittees' on-going efforts to address this San Diego Water Board request. Details are provided in Appendix 4 Section 4.2.</p>
Item 9.b, Page 10	<p>Conduct a completeness check of the required monitoring.</p>	<ul style="list-style-type: none"> • Sec 5.1.2.1.1 	<p>A monitoring completeness check was conducted; sampling completeness requirements were achieved for each program component. In addition, QA/QC summary reports provided by monitoring element in attachments to Appendix 4 provide further detail on monitoring completeness. A monitoring completeness check was conducted. This item was addressed in Appendix 5 Table A5-3 of the 2018-2019 Annual Report and will continue to be addressed annually. A detailed response is provided in Section 5.1.2.1.1.</p>
Item 9.c, Page 10	<p>Fecal Indicator Bacteria A discussion of these new standards in the monitoring programs in the WMA is required. The discussion shall identify whether or not the Copermittees will add the new FIB standard and to which monitoring stations.</p>	<ul style="list-style-type: none"> • 2021 WQIP Update - Attachment 5B 	<p>Both <i>E. coli</i> and <i>Enterococci</i> are monitored as part of the WQIP Monitoring and Assessment Program, thus no modifications to the monitoring plan are required as both indicators will be analyzed. The Copermittees updated WQIP Table 2-5 to include <i>Enterococci</i> as a REC-1 and REC-2 beneficial use indicator and inserted a discussion of the new standards into the Santa Margarita River Monitoring Plan (WQIP Appendix 5A Section 2) in Attachment 5B.</p>

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 9.d, Page 10	Appropriate use of Surfer Health Study Results Update the evaluations that cite the SHS results to assure the differences in study design is accurately accounted for in the WQIP Annual Reports.	<ul style="list-style-type: none"> 2017-2018 Annual Report Review Letter Responses - Attachment 5A 	This topic is not applicable to the SMR WMA at this time. The SMR Surfer Health Study results are not cited in monitoring reports or the WQIP. Technical rationale as to why the topic is not applicable to the WMA is provided in Section 2.5 of Attachment 5A.
Item 10, Page 10	Coordination with Water and Sewer Agency Planning and Projects	<ul style="list-style-type: none"> 2021 WQIP Update - Attachment 5B 	Copermittees developed a summary of sewer and water agency projects and strategies. Addressed in the 2021 WQIP Update - see Sections 4.2.1.3.2, 4.2.2.3.2, Appendix 3B Table 1, and Appendix 6 Section 2 within the WQIP Update (Attachment 5B). A figure illustrating the service areas and water districts within the WMA is provided as Figure 4-12 in Attachment 5B.
Item 11.a, Page 10	Tabulate and report structural BMP information in a shape file format showing all structural BMPs, including wetland restoration projects and dry- weather diversions. The information for each structural BMP should include at least GPS location; size of BMP; drainage area to BMP; type of BMP; installation year; and target pollutant(s) to be treated.	Previously Completed	
Item 11.b, Page 11	Provide the criteria for determining high-priority outfalls for monitoring in dry and wet weather. Include clarification as to whether, and how, the results summarized in the Five- year Assessment of Random and Targeted MS4 Outfall Discharge Data Collected under NPDES Permit Order No. R9-2007-0001 in San Diego County Watersheds (Weston Solutions, 2015b) were used to prioritize outfall monitoring in each WMA.	Previously Completed. The County of San Diego has made some updates to the process and the revised outfall prioritization process is provided in Section 5.2.4.1.	

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 11.c, Page 11	Provide electronic copies of all monitoring results as a separate submittal turned in concurrently with the WQIP Annual Report. For each WMA, provide a copy of the analytical results for all outfalls and receiving waters in the same Excel format as submitted to CEDEN.	<ul style="list-style-type: none"> Appendix 4, Sec 4.8 	This request was addressed as a separate submittal concurrent with the January 31, 2020 WQIP Annual Report as well as a report attachment. For the January 31, 2021, submittal the San Diego Water Board has indicated that CEDEN data can be provided as attachments to the WQIP Annual Report submittal.
2018-2019 WQIP Annual Report Review Letter Received September 10, 2020			
Item 4, Page 3	The County of San Diego reported completion of 1.7 acres of artificial turf. In addition, the County of San Diego reports that it is in progress to reduce dry weather flow 25 percent from baseline. The baseline flow will be reported in the WQIP Annual Report submitted January 31, 2021.	<ul style="list-style-type: none"> Appendix 4, Sec 4.5.4.4 	The County has determined that the candidate site (MS4-SMG-063) originally identified to establish a baseline flow was not feasible because the outfall drains to Rainbow Creek and is subject to other regulatory requirements under the Rainbow Creek TMDL. The County has identified at least one outfall (MS4-SMG-093) that has the potential to discharge to the SMR during dry weather and can be used to assess progress toward dry weather flow reductions. This outfall will be monitored during the 2020-2021 monitoring year to establish a baseline flow rate. The final dry weather goal is to eliminate anthropogenic dry weather flows from MS4 outfalls (by 100%) by the end of Fiscal Year (FY) 2038, and the first interim goal is to reduce dry weather flows from MS4 outfalls by 25% by the end of FY 2023 from the baseline year.

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 6.a, Page 4	The San Diego Water Board finds that the 2018-2019 WQIP Annual Report is deficient in its assessment of the WMA without discussion of the upper watershed area. This deficiency must be corrected with the WQIP Annual Report due January 31, 2021.	<ul style="list-style-type: none"> • Section 2, Section 3 • Appendix 2, Appendix 4 	<p>Strategies identified in the SMR WQIP are being implemented in the Upper SMR Subwatershed as applicable per the JRMPs for the Counties of Riverside and San Diego to address any pollutants from the developed areas. Strategy implementation status is presented in Section 2 and Appendix 2 of this Annual Report.</p> <p>No goals have yet been established for the Upper Subwatershed because a HPWQC has not been assigned due to insufficient data. Therefore, progress to goals is only reported for the Middle and Lower Subwatersheds. The Copermittees have established a long-term receiving water station in the Upper SMR Subwatershed to collect data for evaluating this portion of the watershed, although no major MS4 outfalls have been identified there. The monitoring section of the Annual Report includes reporting on the efforts made by Copermittees to collect water quality data in the Upper SMR Subwatershed.</p>
Item 6.b, Page 4	The SMR IO specifically includes the County of San Diego as a discharger responsible for reducing pollutant loading to the SMR Estuary. The data and information relevant to the County of San Diego must be included in the January 31, 2021, WQIP Annual Report.	<ul style="list-style-type: none"> • Section 2 	The Riverside County Copermittees and the County of San Diego are all responsible parties for meeting the goals related to the SMR Estuary TMDL Alternative. The WQIP has different sets of goals for these two groups, so progress to goals is also discussed separately for these two groups. Some re-organization of the progress to goals tables and section have been implemented in order to more clearly demonstrate responsibilities. While there are two sets of progress to goals discussions, the actions taken by the Riverside County Copermittees and the County of San Diego are both designed to meet the SMR Estuary TMDL Alternative objectives, as set forth in Investigative Order No. R9-2019-0007.
Item 6.c, Page 5	The County of San Diego Public Education and Outreach information specific to the WMA must be included in the January 31, 2021, WQIP Annual Report.	<ul style="list-style-type: none"> • Section 2 • Appendix 2 	The County's strategy highlights presented in Section 2 of the Annual Report provide WMA-specific information where possible. The County continues to look for opportunities to collect and report information on a WMA basis. The remaining strategy information can be found in Appendix 2 .

Table A5-2. Responses to San Diego Water Board 2017-2018 and 2018-2019 WQIP Annual Report Reviews

Location in Letter	Requested Item	AR Sections Where Addressed	Copermittee Response
Item 6.d, Page 5	A discussion of how the results of the County of San Diego Non-Stormwater Flow Source Study are specific to the WMA must be included in the January 31, 2021, WQIP Annual Report.	<ul style="list-style-type: none"> Appendix 4, Attachment 4I 	The 2018-2019 study was continued during 2019-2020 with the objective to determine flow sources of monitored MS4 outfall dry weather flows at some outfalls within the SMR WMA. Specifically, the 2019-2020 study included HST01 in the SMR WMA and the report can be found in Appendix 4, Attachment 4I .

5.1.2.1.1 Conduct a completeness check of the required monitoring

The monitoring completeness check regarding sample collection was conducted. Monitoring location numbers and frequencies were achieved for each program component, as shown in **Table A5-3**.

Table A5-3. Monitoring Program Percent Completeness for Sample Collection

Program		Total Samples Predicted/Required Visits	Total Visits or Samples Collected	Percent Required	Percent Completeness ⁷
Receiving Water Monitoring	Dry	3	3	90%	100%
	QA ⁴	1	2	90%	200%
	Wet	9 ⁶	11 ⁶	90%	100%
	QA ⁴	2	2	90%	100%
Regional Monitoring - Bioassessment	Samples	4	4	90%	100%
	QA	1	2	90%	200%
Rainbow Creek TMDL	Flow Observations	132	132	100%	100%
	Samples ¹	97	97	90%	100%
Rainbow Creek MS4 ²	MS4 Outfall Inspections	252	252	100%	100%
	Samples ¹	47	47	90%	100%
Rainbow Creek Program ⁵	Field Blanks	6	6	90%	100%
	Field Duplicates	12	12	90%	100%
Field Screening (FS) and MS4 Outfall Monitoring	FS - City of Murrieta	52	71	100%	>100%
	FS - City of Temecula	191	204	100%	>100%
	FS - City of Wildomar	21	25	100%	>100%
	FS - County of Riverside	13	25	100%	>100%
	FS - District	144	174	100%	>100%
	FS - County of San Diego	23	28	100%	>100%
	Wet Weather Samples	6	6	90%	100%
	Wet Data QA ⁴	2	2	90%	100%
	HPPF Samples ^{1,3}	22	22	90%	100%
	Dry Data QA ⁴	*	1	90%	*

¹ Samples are collected when flow is present. Samples required are based on number of visits when flow is present.

² Rainbow Creek MS4 monitoring is not required by the Permit but provides data for MS4 compliance pathways.

³ 60 visits to 30 sites were completed and 22 visits were sampled. 18 sites visited by Riverside County were not sampled because they were ponded, had trickle flow insufficient for sampling, or were dry. Samples were not taken during ponded or dry conditions pursuant to Permit Provision D.2.(b)(2)(e)

⁴ QA sample accounts for one duplicate and one field blank. QA requirements are generally developed programmatically.

⁵ The Rainbow Creek TMDL and MS4 samples are combined for QA purposes. The monitoring requirement stated in the QAPP is 1/24 samples for field blanks and 1/12 samples for field duplicates.

⁶ Five storm mobilizations were made to Wilson Creek LTRW station. No samples were collected due to lack of flow.

⁷ Completeness based upon required monitoring frequencies and includes visited not sampled (VNS) results. This assessment does not consider results of QA/QC data process. QA/QC reports are provided in attachments to Appendix 4.

*QA requirements are determined and met programmatically by the County of San Diego. QA samples were collected in other WMAs to meet overall County of San Diego dry weather monitoring program field QA/QC targets.

5.1.2.2 New Regulatory Actions

When new regulations or policies are adopted that impact watershed planning and implementation processes, modifications to the WQIP numeric goals, strategies, schedules, and/or MAP may be warranted, and, in some cases, required. For example, an update to the WQIP must be initiated no later than six months following approval of a TMDL Basin Plan Amendment by the Office of Administrative Law and the United States Environmental Protection Agency (USEPA). The trigger applies to TMDLs containing waste load allocations assigned to Copermittees within the watershed during the term of the Order (see Provision F.2.c.(2)). Other examples of regulatory drivers that may trigger modifications to the WQIP include new state policies or plans (e.g., trash, toxicity, biological objectives, bacteria standards updates) and changes resulting from modifications to existing Permit requirements (e.g., as a result of revising a TMDL).

Recent regulatory drivers include the July 19, 2019 and September 10, 2020 San Diego Water Board letters, Rainbow Creek Nutrient TMDL letter, program audit letters, and approval of the Statewide [Bacteria Provisions](#).¹ Adaptive management is also required as the Copermittees address Investigative Order No. R9-2019-0007² ([IO](#)) and the Bacteria Provisions and Trash Amendments are incorporated into the Permit.

5.1.3 Program Effectiveness Assessments/Progress Toward Numeric Goals

Strategies developed within the WQIP have been incorporated into Copermittees' monitoring programs through implementation of their JRMPs, e.g., enhanced field screening and illegal discharge detection and elimination (IDDE) investigations. Each Copermittee is implementing programs that are focused on addressing eutrophication and nutrient loading in the watershed. As strategy implementation progresses, periodic refinements to the programs may provide additional focus on the specific water quality issues identified in the WQIP.

At this time, the Copermittees have been implementing their jurisdictional strategies under the WQIP, accepted in November 2018, for less than two years. The Copermittees did not have goals due to be achieved this year but are implementing strategies to reduce eutrophication impacts and nutrient loading in the Middle SMR Subwatershed (Pathway 6), the Lower SMR Subwatershed (Pathway 1), and in Rainbow Creek (Pathway 1). Since the Copermittees have only been implementing the accepted WQIP since November 2018, continued and further implementation of strategies and collection of additional monitoring and programmatic data is necessary for an evaluation that leads to meaningful adaptive management. Assessment of progress to goals thus far demonstrates that the Copermittees are implementing measures to be on track to meet goals. The Copermittees will continue to implement their strategies and demonstrate progress toward achieving the goals set forth in the WQIP.

¹ Revised Proposed Final Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions and a Water Quality Standards Variance Policy (Bacteria Provisions) (State Water Board, 2018).

² *An Order Directing the Cities of Murrieta, Temecula, and Wildomar, the Counties of San Diego and Riverside, the Riverside Flood Control and Water Conservation District, and the United States Marine Corps Base Camp Pendleton to Design and Implement a Water Quality Improvement Monitoring and Assessment Program for Eutrophic Conditions in the Santa Margarita River Estuary and Watershed, California.*

5.2 ADAPTIVE MANAGEMENT - CHANGES TO WATER QUALITY IMPROVEMENT PLAN ELEMENTS

The potential triggers that may result in adaptive management of the WQIP's numeric goals, strategies, schedules, and/or MAP are outlined in **Section 5.1**.

5.2.1 History of Adaptive Management

A summary of WQIP adaptations that have been identified since WQIP implementation began, which will be updated annually, is presented in **Table A5-4**. Details are provided in the 2018-2019 WQIP Annual Report. Potential updates based on the 2019-2020 monitoring year are discussed in **Sections 5.2.2 to 0**.

Table A5-4. History of WQIP Adaptations

Copermittee	WQIP Adaptations
City of Murrieta	2018-2019: Changes to some highest priority outfalls for analytical monitoring and administrative changes to strategies.
City of Temecula	2018-2019: Changes to some highest priority outfalls for analytical monitoring.
City of Wildomar	2018-2019: Administrative changes to strategies.
County of San Diego	2017-2018: Administrative changes to strategies.
	2018-2019: The County of San Diego made updates to their BMP Design Manual. Administrative changes to JRMP and strategies, and new strategies were implemented by the County's Agriculture, Weights, and Measures Agricultural Water Quality Program. Updates to goals associated with Rainbow Creek Compliance Pathway 5 were proposed. Changes to some highest priority outfalls for analytical monitoring.
County of Riverside	None.
District	2018-2019: Changes to JRMP and WQMP, and changes to one highest priority outfall for analytical monitoring.
All Copermittees	None.

5.2.2 Adaptive Management of Priority Water Quality Condition

In general, priority and highest priority water quality conditions and numeric goals are established based on longer periods of record compared to a monitoring year. Their assessment would most appropriately be conducted following the collection of sufficient data to make scientifically-based decisions.

In response to a request from the San Diego Water Board, the Copermittees updated the WQIP 303(d) summary and conducted an assessment of potential changes to PWQCs or HPWQCs based on the 2014 and 2016 303(d) List (State Water Board, 2017). No changes to PWQCs or HPWQCs are proposed at this time. The updated summary table is included in the WQIP Update as **Table 2-6** in **Attachment 5B** and the assessment is provided in the **Section 3.1 of Attachment 5A**.

5.2.3 Adaptive Management of Goals, Strategies, and Schedules

On an annual schedule, modifications may be made to goals, strategies, and implementation schedules. An evaluation of current goals, strategies, and schedules is required by the Permit as part of this Annual Report to ensure effective implementation and assessment as the WQIP progresses.

The information that may be used to modify these elements of the WQIP through adaptive management is summarized in **Table A5-5**. Less than two years of monitoring data have been collected in accordance with the MAP. In general, sufficient information is not yet available to drive meaningful adaptive management of the water quality strategies and schedules. Minor administrative changes, including clarifications, correction of typos and errors, and edits to WQIP strategies, are proposed. These modifications are identified as markup to the Copermittees' tables in **Appendix 2**, and the rationale for each change is also provided in the tables.

Table A5-5. Information Used to Modify Goals, Strategies, and Schedules

Evidence	WQIP AR Sections	2019-2020 Status	Changes Needed? (Y/N)
Receiving water monitoring results.	Section 3, Appendix 4	No new information pertaining to receiving water exceedances not addressed by the WQIP.	N
Storm drain outfall monitoring results.	Section 3, Appendix 4	NAL and SAL exceedances are consistent with WMA priority constituents.	N
Special studies results.	Section 3, Appendix 4	Data from these studies provide additional information about concentrations and sources of nutrients in the SMR Watershed.	N
New or updated regulations, including San Diego Water Board requests and recommendations.	Section 4	Regulatory drivers for 2019-2020 include the July 19, 2019 and September 10, 2020 San Diego Water Board letters, program audit letters, and approval of the Statewide Bacteria Provisions. Adaptive management is also required as the Copermittees address the IO and the Bacteria Provisions and Trash Amendments are incorporated into the Permit.	Y
Program effectiveness assessments and progress toward achieving numeric goals.	Section 2	The Copermittees did not have goals due to be achieved during 2019-2020 but are implementing strategies to reduce eutrophication impacts and nutrient loading in the Middle SMR Subwatershed (Pathway 6), the Lower SMR Subwatershed (Pathway 1), and in Rainbow Creek (Pathway 1). The Copermittees are also adaptively designing and conducting special studies to gather data that will drive effective strategies and progress. The County of San Diego is addressing comments in the San Diego Water Board letters and continues to improve the effectiveness of their program in the Rainbow Creek Watershed.	N

The WQIP update (**Appendix 5, Attachment 5B**) includes proposed updates to goals and explains the rationale for the changes.

5.2.4 Adaptive Management of the MAP

Changes to the MAP may be triggered by several factors including:

- Modifications to other elements of the WQIP, including priority water quality conditions, numeric goals and schedules, and/or strategies and schedules.
- Identification of data gap through the required assessments under Provision D.4.
- Results of special studies.
- Requests/requirements from the San Diego Water Board.

Of these triggers, modifications to the MAP will be needed based on new requests from the San Diego Water Board (**Section 5.1.2.1**), including comments provided in the 2017-2018 and 2018-2019 WQIP Annual Report review letters, and comments received during the 2018-2019 monitoring year in the Rainbow Creek Nutrient TMDL letter.

In addition, the MAP has been updated to summarize the requirements of the IO for the Copermittees as part of the WQIP update provided as an attachment to this Annual Report (see **Attachment 5B**). The MAP references the Investigative Order Workplan and QAPP, which are provided in the WQIP Update as Appendix 5I. The IO required the development of a Monitoring and Assessment Program Workplan (Workplan) that outlined a water quality monitoring and assessment program to track progress towards achieving the numeric targets listed in the Draft Staff Report and total nitrogen and total phosphorus loading reductions to the Estuary. This Workplan was submitted to the San Diego Water Board in November 2019, and the four-year monitoring program was initiated in Spring 2020. Monitoring reports will be prepared annually to allow the Dischargers to evaluate the effectiveness of their actions to reduce nitrogen and phosphorus loading to the Estuary and achieve the numeric targets of the Draft Staff Report. The final report, which evaluates all four years of data, is to be submitted to the San Diego Water Board in March 2024.

Changes to highest priority outfalls for analytical monitoring are planned for the 2020-2021 monitoring year based on review of 2019-2020 monitoring results and application of their outfall prioritization processes by the Copermittees. The County of San Diego has made slight modifications to its criteria for determining high priority outfalls in dry and wet weather, and the updated process is provided in **Section 5.2.4.1** below.

5.2.4.1 County of San Diego Criteria for Determining High-Priority Outfalls in Dry and Wet Weather

5.2.4.1.1 Determining High-Priority Outfalls in Dry Weather

Provision D.2.b.(2)(a) requires each Copermittee to prioritize Non-Storm Water Persistent Flow MS4 Outfalls. According to the provision, Copermittees *must identify and prioritize the MS4 outfalls with persistent flows based on the highest priority water quality conditions identified in the Water Quality Improvement Plan and any additional criteria developed by the Copermittee, which may include historical data and data from sources other than what the Copermittee collects.*

To prioritize major MS4 outfalls with persistent non-storm water flows in the County of San Diego jurisdiction, the Science and Monitoring team has used the following procedures:

All major MS4 outfalls in the County jurisdiction are inspected at least twice per monitoring year for non-stormwater flows per Permit Provision D.2.b.(1). If flowing or standing water is present, instantaneous discharge rate or ponded volume, correspondingly, is measured and recorded. All data are recorded in a database and reviewed annually to determine which outfalls have persistent and intermittent non-stormwater flows. Outfalls with the highest average dry weather flow rates are then selected for more focused study where continuous flow monitoring is conducted to further understand flow patterns and to help identify potential sources. At select locations, samples are collected to test for human-specific markers as part of focused Microbial Source Tracking (MST) investigations. Also, at locations identified as highest priority outfalls with persistent non-stormwater flows (HPPF outfalls) water quality samples are collected twice every monitoring year to test for constituents as required per Provision D.2.b.(2)(e).

Using the abovementioned data and historical data, if/when they are available, outfalls within each WMA are ranked from 1 to 10 (with 1 being the highest priority). The prioritization process is based on the criteria outlined in **Table A5-6** below. The first five major outfalls in the ranking order are then classified as HPPF outfalls in their corresponding WMAs. An up-to-date spreadsheet containing the ranked outfalls and rationales for the rankings is stored and maintained on the Science and Monitoring SharePoint site. The rankings and spreadsheet are reviewed and updated annually.

Table A5-6. County of San Diego Criteria for Prioritizing MS4 Outfalls

No.	Criterion	Primary Decision	Notes
1.	Is the outfall currently classified as having “persistent” or “transient” flow?	Do not include dry outfalls	
2.	Does the flow from the outfall reach receiving water during dry weather?	Do not include outfalls with dry weather flows that do not reach receiving water	
3.	Is the outfall currently listed as Highest Priority Persistently Flowing (HPPF) in WQIP based on the pollutants that may cause or contribute to the highest water quality WQIP priorities?	Consider if the flow and/or pollutant loads have been addressed as outlined in Provision D.2.b(2)(b)(ii)-(iii) ³ . If not, Include in the first 5. If yes, remove from HPPF list in lieu of next highest-ranking major outfall.	
4.	How many exceedances of pollutants that may cause or contribute to impairments in water bodies on the 303(d) List are identified?	Higher number of exceedances = higher rank	
5.	Number of NAL exceedances	Higher number of exceedances = higher rank	
6.	Pollutants identified as a threat to human health or the environment	Exceedances = higher rank	
7.	For SDR, SLR, and SDG WMAs, did the outfall test positive for human markers in the latest MST study (potential threat to human health)?	Include in the first 5	
8.	How high is the average and latest measured discharge rate at the outfall?	Higher discharge rates get higher ranks	When no other factors are available

³ Per MS4 Permit D.2.b(2)(b)(ii) *Each of the highest priority non-storm water persistent flow MS4 outfall monitoring stations identified pursuant to Provision D.2.b(2)(b)(i) must be monitored under dry weather conditions at least semi-annually until one of the following occurs: [a] The non-storm water discharges have been effectively eliminated (i.e. no flowing, pooled, or ponded water) for three consecutive dry weather monitoring events; or [b] The source(s) of the persistent flows has been identified as a category of non-storm water discharges that does not require an NPDES permit and does not have to be addressed as an illicit discharge because it was not identified as a source of pollutants (i.e. constituents in non-storm water discharge do not exceed NALs), and the persistent flow can be re-prioritized to a lower priority; or [c] The constituents in the persistent flow non-storm water discharge do not exceed NALs, and the persistent flow can be re-prioritized to a lower priority; or [d] The source(s) of the persistent flows has been identified as a nonstorm water discharge authorized by a separate NPDES permit.*

(iii) Where the criteria under Provision D.2.b(2)(b)(ii) are not met, but the threat to water quality has been reduced by the Copermitttee, the highest priority persistent flow MS4 outfall monitoring stations may be reprioritized accordingly for continued dry weather MS4 outfall discharge field screening monitoring required pursuant to Provision D.2.b.(1).

Table A5-6. County of San Diego Criteria for Prioritizing MS4 Outfalls

No.	Criterion	Primary Decision	Notes
9.	How viable would it be to address potential source(s) of flow at the outfall? Anthropogenic sources such as irrigation overflows, pool discharges, etc. are addressable through programmatic action; natural sources such as groundwater infiltration, etc. will require further study.	Potential anthropogenic sources get higher ranks	Address first those outfalls with flows primarily from over-irrigation in commercial and residential land use areas
10.	How much information do we have about potential sources of flows and associated pollutants?	Outfalls with more information available will get a bit higher priority as they are more addressable right now.	Example: many outfalls in SDR and SLR that have had sources investigated and delineated for action as part of the 2015 MST study
11.	Is the outfall monitored for continuous flow?	Include in the first 10	Data available to track progress
12.	Does the outfall potentially conduct a blue line?	This will tend to lower the ranking	Source(s), being “natural” such as resurfacing ground water may be difficult to address through programmatic action

5.2.4.1.2 *Determining High-Priority Outfalls in Wet Weather*

Per MS4 Permit Provision D.2.c.(1), the Copermitttees may adjust the wet weather MS4 outfall discharge monitoring locations in the Watershed Management Area, as needed, to identify pollutants in storm water discharges from MS4s, to guide pollutant source identification efforts, and to determine compliance with the WQBELs associated with the applicable TMDLs in Attachment E to this Order in accordance with the highest priority water quality conditions identified in the Water Quality Improvement Plan, provided the number of stations is at least equivalent to the number of stations required under Provision D.2.a.(3)(a). Additional outfall monitoring locations, above the minimum per jurisdiction, may be required to demonstrate compliance with the WQBELs associated with the applicable TMDLs in Attachment E.

Based on this guidance, wet weather storm drain outfall discharge monitoring stations are selected from the inventories developed pursuant to Provision D.2.a.(3).(a).(1) as follows: a least five wet weather storm drain outfall discharge monitoring stations per WMA (at least one per jurisdiction) that is representative of stormwater discharges from areas consisting primarily of residential, commercial, industrial, and typical mixed-use land uses present within the Permit Management Area.

In selecting the locations for wet weather storm drain outfall discharge monitoring, the County must consider factors such as accessibility, security, traffic risk, and the ability to accurately measure flow. Attempts are also made to identify single land uses as that would be ideal in calculations of wet weather loads from the MS4 to receiving waters. However, the sample pool (i.e., the inventory of available major outfall locations) is limited to major MS4 outfalls that are representative of the County jurisdiction in each WMA. For example, it may be relatively easy to find uniform drainage area for the residential land use in a given WMA but not for industrial or open space land uses. For these, intermingled land use drainages only are available. The constraining factors in this selection process are further illustrated in **Figure A5-1** below.

The County of San Diego may adjust the wet weather storm drain outfall discharge monitoring locations, as needed, to identify pollutants in stormwater discharges from storm drains, to guide pollutant source identification efforts, and to determine compliance with the WQBELs associated with applicable TMDLs in accordance with the highest priority water quality conditions identified in the WQIPs.

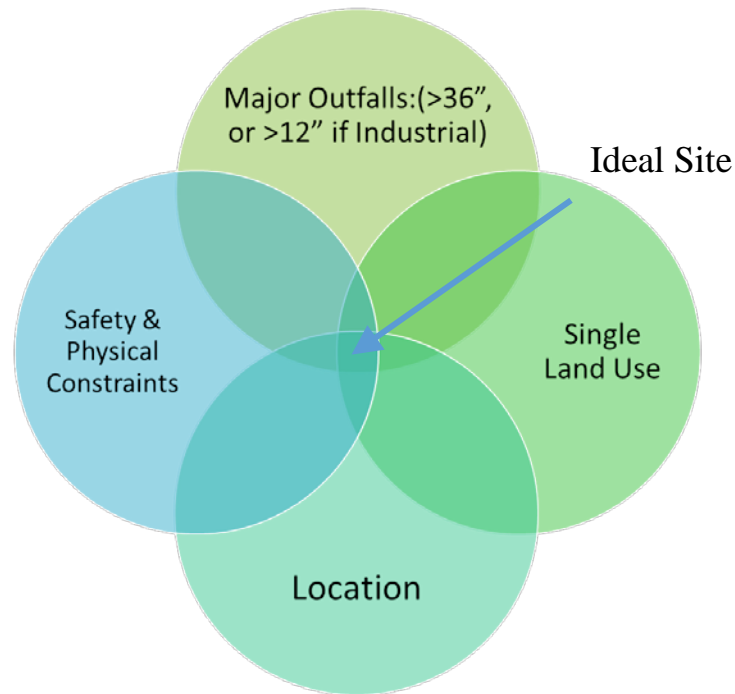


Figure A5-1. Diagram Illustrating Wet Weather MS4 Outfall Site Selection Criteria and Constraints

5.3 WATER QUALITY IMPROVEMENT PLAN UPDATE

In the July 19, 2019 report review letter, the San Diego Water Board required the submittal of a certified updated WQIP that incorporates the final IO numeric targets, strategies, monitoring and assessment activities, schedules and reporting. The WQIP update includes proposed updates to goals and explains the rationale for the changes. The updates were presented to the Consultation Committee on October 22, 2020. These updates were subject to a 30-day public review period from November 5 to December 7, 2020 to satisfy the public participation requirements of Permit Provision F.2.c. They will be deemed acceptable for inclusion in the WQIP 90 days after the submission of the updates with this Annual Report on January 31, 2021, unless directed in writing by the San Diego Water Board Executive Officer. The WQIP update is provided in **Attachment 5B**.