

Agenda
Santa Margarita River (SMR)
Nutrient Initiative Group (Group) Meeting
December 15, 2016
9:30 am to 4:00 pm
City of Murrieta
Veteran's Room at 1 Town Square
Murrieta, CA 92562

Meeting Goals:

1. *Discuss Regional Water Quality Control Board (RWQCB) Draft Staff Report*
2. *Update on RWQCB Ag Order*
3. *Discuss Alternative TMDL Next Steps*
4. *Discuss State Water Quality Policy Updates*
5. *Provide Updates on Estuary Water Quality*

- 9:30 am Welcome, introductions, agenda review (*Facilitator*)*
- 9:35 Action Item Review and Updates
- Action Items status
 - General updates
- 10:00 Review and Discussion: Agricultural Order - Regulatory and Permitting Program (*Cynthia Gorham, Barry Pulver - RWQCB*) (see web links below)
- http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2016/R9-2016-0004.pdf
 - http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2016/R9-2016-0005.pdf
- 11:00 Presentation and Discussion: Estuary Monitoring Update
- Update – Water Quality Conditions (*Chuck Katz, SPAWAR*)
 - Other Updates (TBD)
- 11:30 Presentation and Discussion: Preliminary Load Allocations (*Jo Ann Weber – County of San Diego, Clint Boschen, Tetra Tech*)
- 12:00 Lunch
- 12:40 Update on Science Plan to Support the Combined State Water Board Biointegrity and Biostimulatory Policy, and Implications for Approach to Setting “Targets” for the Lower River (*Martha Sutula, SCCWRP*)
- 2:40 Review and Discussion: SMR Alternative TMDL Draft Staff Report (*Cynthia Gorham*)
- Report content
 - TMDL schedule - update
 - Targets and Allocations - update and expectations
- 3:40 Next Steps / Action Items (*Facilitator*)
- 4:00 Adjourn

Notes* All agenda item start times are approximate and subject to change. Breaks will be taken on an as-needed basis as assessed by the facilitator and addressed with meeting participants

nsn.gov; bigdaddyblue13@aol.com; shorn@rceo.org; sjacobson@caltrout.org; njonkhoff@ramona-nsn.gov; joyj@emwd.org; jjungreis@rutan.com; chuck.katz@navy.mil; khalique.khan@usmc.mil; eric.klein@sdcounty.ca.gov; landon@usgs.gov; eric@sdfarmbureau.org; LLaudon@waterboards.ca.gov; Aldo.Licitra@cityoftemecula.org; lin.cindy@epa.gov; ymacalalad@cityofmenifee.us; vickiglong@aol.com; fmanghi@wmwd.com; jeff@fpud.com; SMCKIBBI@rcflood.org; dmilner@rainbowmwd.com; mayram@sccwrp.org; judy@missionrcd.org; ottolinir@ranchowater.com; jozouf@murrieta.org; pamela05n@yahoo.com; Pastor@riversidecfb.com; plajzere@ranchowater.com; peggy@temeculawines.org; hpotter@mbakerintl.com; beth@missionrcd.org; bpulver@waterboards.ca.gov; mrahn@sciences.sdsu.edu; michael.rouse@usmc.mil; environmentaldirector@cahuilla.net; hiram.sarabia@waterboards.ca.gov; gregory.g.seaman1@usmc.mil; ashmitas@sccwrp.org; john.o.simpson@usmc.mil; dsmith@vid-h2o.org; karla@missionrcd.org; kstricker@pechanga-nsn.gov; brittany.struck@noaa.gov; gsland@cox.net; marthas@sccwrp.org; JUHLEY@rcflood.org; scottt@stetsonengineers.com; joann.weber@sdcounty.ca.gov; webstera@ranchowater.com; mwelch1@san.rr.com; Witheridge, Alison; dwilliams@geoscience-water.com; roya_yazdanifard@dot.ca.gov; dyork@cityofwildomar.org; Jim.Fitzpatrick@hdrinc.com; mwillard@murrieta.k12.ca.us

Cc: Ceppos, David M

Subject: RE: Final Agenda and Meeting Materials - December 15 Santa Margarita River Nutrient Initiative Group Meeting

Good Evening,

Attached is one more document for tomorrow regarding the discussion on MS4 allocations. Please print or download this if you can as we'll likely not have the ability to print it before tomorrow.

Thanks.

Dave Ceppos
Associate Director
Center for Collaborative Policy
California State University Sacramento
815 S Street
Sacramento, CA 95811
email: dceppos@ccp.csus.edu
Direct Phone: 916-341-3336
Cell Phone: 916-539-0350
Office Phone: 916-445-2079
Fax: 916-445-2087
website: <http://www.csus.edu/ccp/>

"The family began as--and remains--a survival unit, with parents agreeing to care for the kids, the kids agreeing to carry on the genes and all of them doing what they can to make sure no one gets eaten by wolves." - Jeffery Kluger

MEMORANDUM

To: Jo Ann Weber (San Diego Co.)

Date: December 12, 2016

Cc: Ashli Desai (LWA), Martha Sutula (SCCWRP)

Subject: SMR Estuary MS4 Nutrient Loads for WY 2008

From: J. Butcher, Ph.D., P.H.; M. Schmidt, E.I.T.; C. Boschen

1.0 INTRODUCTION

Nutrient reduction targets and load allocations are being developed for the Santa Margarita River (SMR) Estuary. Recently, Tetra Tech (Sutula et al., 2016) provided a preliminary summary of at-source and delivered nutrient loads to the estuary, tabulated by jurisdiction and land use, through an application of the SMR watershed Hydrological Simulation Program-FORTRAN (HSPF) model (Bicknell et al., 2005). That work provided winter and summer load estimates tabulated for both dry and wet periods from the watershed area downstream of Diamond Valley, Vail, and Skinner Reservoirs.

Sutula et al. (2016) provided recommendations on estuary nutrient targets based on simulations calibrated to Water Year (WY) 2008 (10/1/2007 – 9/30/2008) and are based on dry weather flows. The objective of this memorandum is to specify Total Nitrogen (TP) and Total Phosphorus (TP) loads for jurisdictions and land-uses that drain to or through permitted municipal separate storm sewer systems (MS4s) for the WY 2008 calibration period.

2.0 LOADING ANALYSIS APPROACH

MS4 permits are applicable to separate storm sewer systems in Riverside County (including three incorporated municipalities), San Diego County, and USMC Camp Pendleton within the SMR watershed. The Fallbrook Naval Weapons Annex is not a designated Phase II MS4 area and thus does not hold an MS4 permit. Other Federal lands (e.g., Forest Service) also do not hold MS4 permits. Figure 1 shows the county and municipal boundaries, while Figure 2 shows the location of Federal lands

A separate MS4 permit applies to CALTRANS property. CALTRANS is delineated as a separate land use in the model, but coverages of CALTRANS outfalls and contributing areas were not provided. In many cases, runoff from CALTRANS roads is subsequently transmitted through county-owned MS4 drainages.

SMR Estuary MS4 Nutrient Loads (DRAFT)

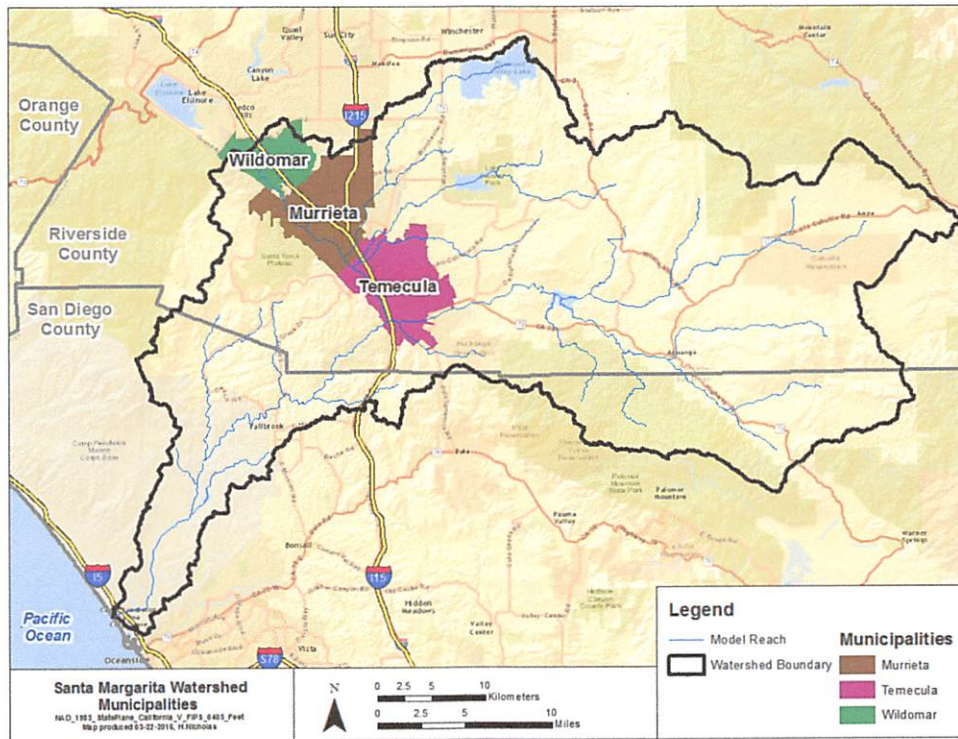


Figure 1. Counties and Incorporated Municipalities within the Santa Margarita Watershed

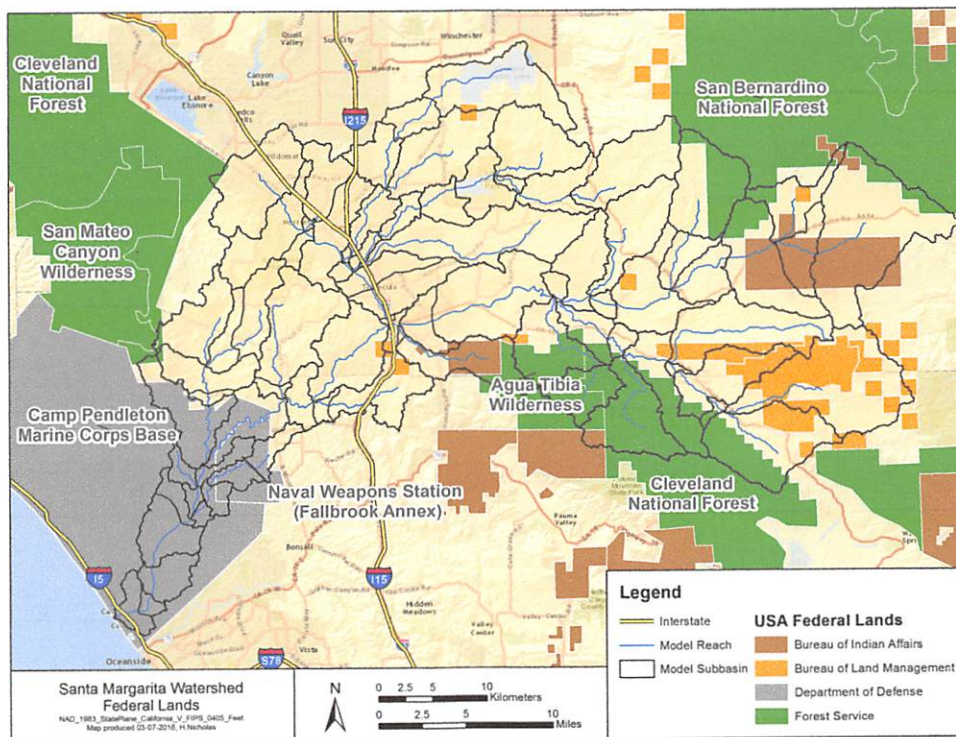


Figure 2. Santa Margarita Watershed Federal Lands

SMR Estuary MS4 Nutrient Loads (DRAFT)

We used the existing HSPF model to tabulate WY 2008 loads for each of the MS4s and to identify the contributions of specific land use types to those loads. The accuracy of these estimates is limited by the accuracy of the model, for which we have recommended improvements and updates.

San Diego County, Riverside County, and Camp Pendleton provided spatial coverages of MS4 outfalls and associated upstream drainage area (Figure 3). In some cases (especially along I-215 in Riverside County), the MS4 drainage delineations do not fully match the outer boundary of the HSPF model domain, which was developed from older coverages. These discrepancies need to be rectified in future updates of the HSPF model. Drainage areas that lie outside the HSPF model boundary are not tabulated in this memorandum, as model output is not available.

The Riverside County coverage differentiated MS4 systems by type (referred to as major, minor, unknown, and null) whereas the San Diego County and Camp Pendleton MS4 coverages are aggregated. Nutrient loading summaries are provided separately for each of the four MS4 system types for jurisdictions in Riverside County.

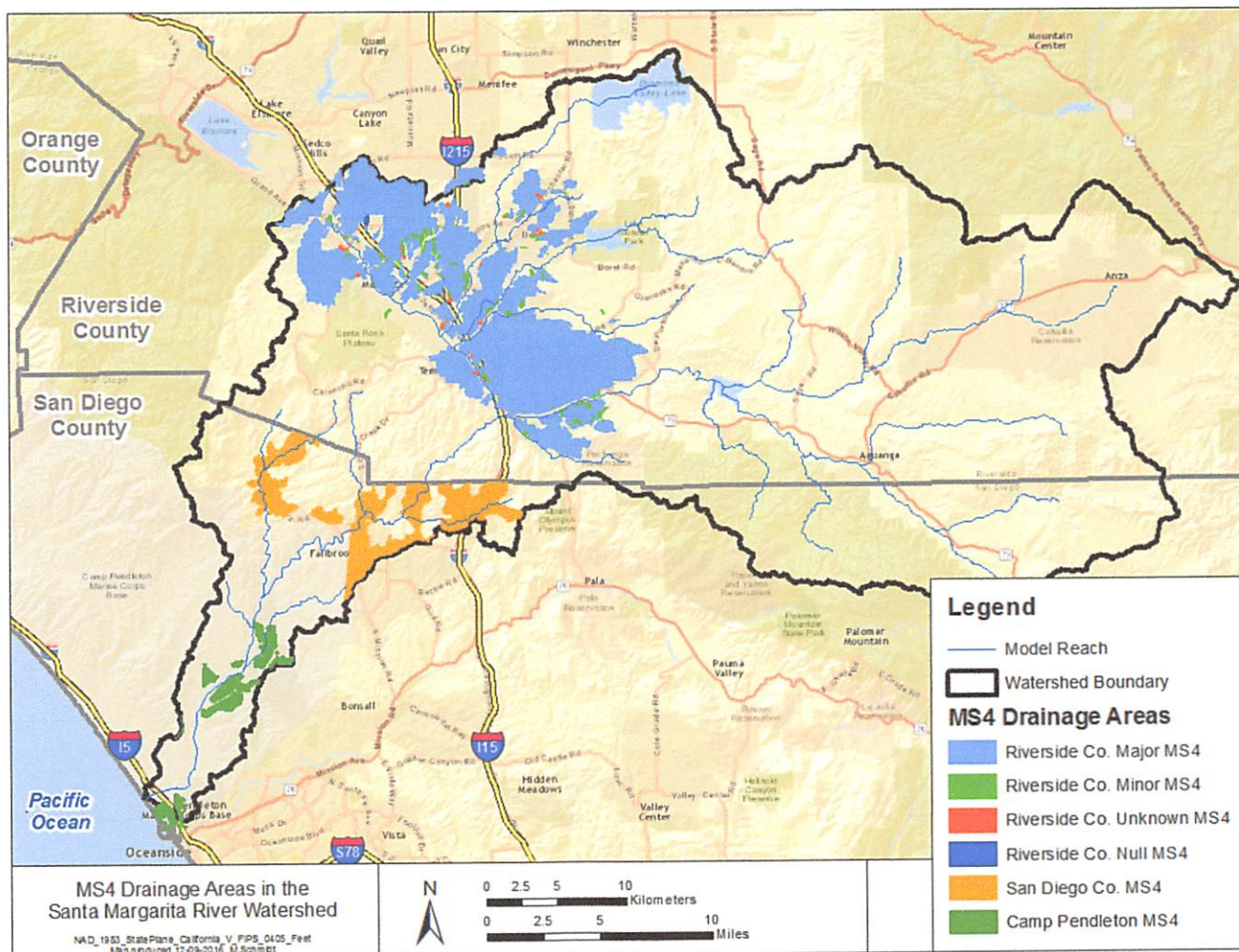


Figure 3. Riverside County, San Diego County, and Camp Pendleton MS4 Conveyance System Drainage Areas

SMR Estuary MS4 Nutrient Loads (DRAFT)

Jurisdictional areas that overlap were identified following the procedures used in the original analysis. For example, the City of Wildomar coverage overlays Riverside County and California Transportation (CALTRANS) coverages. Table 1 shows the approach for allotting upland area loads to a specific jurisdiction. In this example, CALTRANS land was tabulated separately from the remainder of the City of Wildomar and the City of Wildomar was tabulated separately from the unincorporated Riverside County coverage.

The HSPF model is built on gridded Hydrological Response Units (HRUs), the base upland unit in an HSPF model, which incorporate an overlay of land use/cover and soil characteristics. Unit loading rates for HRU areas tabulated for each jurisdictional area draining to an MS4 provides the basis for developing the land-use based loads. The underlying land use/cover information for the HSPF model is shown in Figure 4 and is documented in detail in Tetra Tech (2013).

Table 1. HRU Tabulation Approach for Overlapping Jurisdictions and Geographic Areas

Overlapping Areas	Jurisdiction or Geographic Area Assigned the Overlapping Area
CALTRANS that overlap with cities, counties, or federal land	CALTRANS
Incorporated municipalities that overlap with a county	Municipality
Federal land that overlaps with a county	Federal land

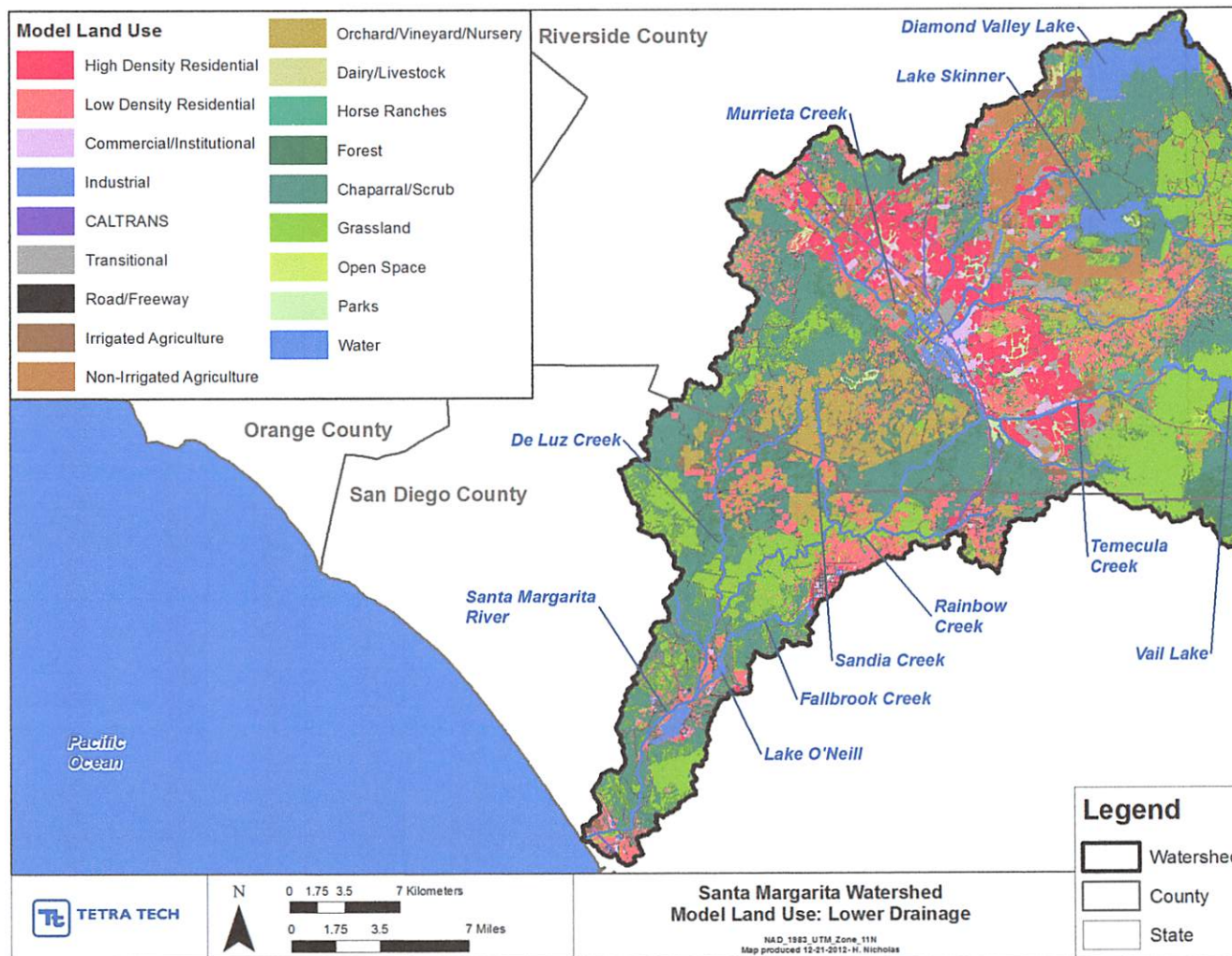


Figure 4. Modeled Land Use in the Lower Santa Margarita Watershed

At-source loads were established using methods consistent with the methods in Sutula et al. (2016). At-source loads were tabulated for each land use category by calculating the unit loading rate for each HRU (lb/acre/day) from model output and multiplying by the area (acres) of the land use in a particular region of interest. Loads were established for dry (year round) and dry summer conditions. Consistent with the previous study, summer days are classified as May 1 – September 30 and dry days are defined as days with < 0.1 inch of rainfall observed on that day or on any of the three previous days. The loads for WY 2008 are used for this tabulation because WY 2008 was the calibration period for the SMR Estuary model, so the reported loads are specific to the rainfall-runoff characteristics of this individual year. There were 303 dry days during WY 2008, 147 of which were dry summer days.

At-source dry (year-round) and dry summer loads were transformed to annual rates using the number of dry (year-round) and dry summer days in WY 2008, respectively.

As nutrients are transported on the landscape and through the stream network losses due to uptake, settling, or chemical transformations may occur. Seasonal attenuation rates previously developed for the SMR Watershed (Sutula et al., 2016) transform at-source loads to loads delivered to the estuary. Delivery factors are specified at the subbasin level. In general, delivery factors are higher for subbasins nearer the estuary compared to subbasins located further from the estuary. This is because nutrients originating from subbasins near the estuary are transported a shorter distance and the shorter transport time hinders natural nutrient reduction processes. Summer TP delivery factors, for example, range from less than 2 percent near Vail Lake to 99 percent for land areas near the SMR mouth (Sutula et al., 2016). Delivered TN and TP loads were computed by multiplying MS4 at-source loads by the delivery factors.

3.0 AT-SOURCE AND DELIVERED NUTRIENT LOADS

At-source and delivered TN and TP dry-weather (full-year and summer) loading rates for WY 2008 are provided for Riverside County, San Diego County, and Camp Pendleton MS4s in Table 2 - Table 9. The table specifies loads for each modeled land use in the MS4 drainage areas. The last two columns compare the total MS4-derived load to the total upland load from both MS4 and non-MS4 sources. The total does not include CWRMA discharges or other non-upland sources. Table 10 - Table 17 provide the same information in a different format, with attribution to specific MS4 entities.

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 2. At-Source Total Nitrogen Loads (lb/year) for Dry Weather (Year Round) by Land Use and MS4 in the Santa Margarita Watershed (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	1,763	72	2,870	48	13	2,931	4,765	11,716
High density residential	36	4	3,710	378	47	4,135	4,175	4,497
Commercial, institutional	31	27	958	38	8	1,004	1,062	1,318
Industrial	27	47	468	6	19	493	567	1,102
Road, freeway	183	10	366	9	4	379	572	1,614
Parks and recreation	2	0	224	6	3	233	235	375
Open and recreation	0	0	14	0	0	15	15	25
Irrigated agriculture	582	0	484	0	0	484	1,067	5,122
Non-irrigated agriculture	0	0	59	3	1	62	62	314
Orchard, vineyard, and nursery	2,206	0	1,769	18	0	1,787	3,992	39,474
Dairy, livestock	0	0	0	0	0	0	0	48
Horse ranches	0	0	740	0	2	743	743	3,265
Forest	39	0	19	0	0	19	58	310
Chaparral, scrub	4,363	3	671	8	2	681	5,048	20,399
Grassland, herbaceous	1,994	1	247	3	3	253	2,248	8,467
Transitional	0	0	512	33	9	555	555	1,025
CALTRANS	39	0	110	7	0	118	156	252
Total	11,263	164	13,222	558	112	13,892	25,319	99,325

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 3. At-Source Total Nitrogen Loads (lb/year) for Dry Weather (Summer) by Land Use and MS4 in the Santa Margarita Watershed (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	280	29	356	6	2	363	672	1,815
High density residential	5	1	453	46	6	505	512	551
Commercial, institutional	4	10	105	4	1	110	124	159
Industrial	3	16	52	1	2	54	73	148
Road, freeway	13	3	37	1	1	38	55	176
Parks and recreation	0	0	23	1	0	24	24	39
Open and recreation	0	0	1	0	0	2	2	3
Irrigated agriculture	7	0	12	0	0	12	19	61
Non-irrigated agriculture	0	0	5	0	0	5	5	29
Orchard, vineyard, and nursery	189	0	13	0	0	14	203	1,255
Dairy, livestock	0	0	0	0	0	0	0	0
Horse ranches	0	0	54	0	0	54	54	270
Forest	1	0	2	0	0	2	4	24
Chaparral, scrub	294	1	61	1	0	62	357	1,855
Grassland, herbaceous	96	0	25	0	0	26	122	535
Transitional	0	0	49	3	1	52	52	106
CALTRANS	3	0	13	1	0	14	17	29
Total	896	61	1,260	64	14	1,337	2,294	7,055

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 4. Total Nitrogen Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Year Round) by Land Use and MS4 (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	1,122	50	1,321	22	5	1,347	2,519	6,296
High density residential	23	3	1,892	176	21	2,089	2,115	2,274
Commercial, institutional	20	20	539	18	5	561	601	740
Industrial	18	30	276	3	12	292	340	594
Road, freeway	128	8	180	4	2	186	322	889
Parks and recreation	1	0	121	2	1	123	124	203
Open and recreation	0	0	7	0	0	8	8	13
Irrigated agriculture	434	0	159	0	0	159	594	3,314
Non-irrigated agriculture	0	0	30	2	0	32	32	165
Orchard, vineyard, and nursery	1,524	0	913	10	0	923	2,447	27,012
Dairy, livestock	0	0	0	0	0	0	0	29
Horse ranches	0	0	226	0	1	227	227	1,197
Forest	28	0	10	0	0	10	38	194
Chaparral, scrub	3,035	2	281	4	0	285	3,323	13,346
Grassland, herbaceous	1,415	1	109	1	1	112	1,527	5,486
Transitional	0	0	248	14	5	267	267	516
CALTRANS	27	0	52	4	0	57	83	130
Total	7,775	114	6,364	260	53	6,677	14,566	62,398

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 5. Total Nitrogen Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Summer) by Land Use and MS4 (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	10	11	5	0	0	5	27	96
High density residential	0	1	7	0	0	8	9	9
Commercial, institutional	0	4	2	0	0	2	6	11
Industrial	0	2	1	0	0	1	4	5
Road, freeway	1	1	1	0	0	1	2	7
Parks and recreation	0	0	0	0	0	0	0	1
Open and recreation	0	0	0	0	0	0	0	0
Irrigated agriculture	0	0	0	0	0	0	0	3
Non-irrigated agriculture	0	0	0	0	0	0	0	0
Orchard, vineyard, and nursery	7	0	0	0	0	0	7	43
Dairy, livestock	0	0	0	0	0	0	0	0
Horse ranches	0	0	0	0	0	0	0	2
Forest	0	0	0	0	0	0	0	1
Chaparral, scrub	10	0	1	0	0	1	11	67
Grassland, herbaceous	3	0	0	0	0	0	4	21
Transitional	0	0	1	0	0	1	1	2
CALTRANS	0	0	0	0	0	0	0	1
Total	32	20	19	1	0	20	72	269

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 6. At-Source Total Phosphorus Loads (lb/year) for Dry Weather (Year Round) by Land Use and MS4 in the Santa Margarita Watershed (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	179	10	286	5	2	292	481	1,188
High density residential	4	1	370	38	5	412	416	449
Commercial, institutional	3	6	96	4	1	100	109	137
Industrial	3	14	47	1	2	49	66	120
Road, freeway	18	5	36	1	0	38	60	166
Parks and recreation	0	0	22	1	0	23	23	37
Open and recreation	0	0	1	0	0	1	1	2
Irrigated agriculture	59	0	49	0	0	49	107	517
Non-irrigated agriculture	0	0	9	0	0	9	9	48
Orchard, vineyard, and nursery	222	0	178	2	0	180	402	3,973
Dairy, livestock	0	0	0	0	0	0	0	5
Horse ranches	0	0	74	0	0	74	74	327
Forest	6	0	3	0	0	3	9	47
Chaparral, scrub	50	1	107	1	0	109	160	829
Grassland, herbaceous	19	0	37	0	1	38	58	365
Transitional	0	0	51	3	1	55	55	101
CALTRANS	4	0	11	1	0	12	16	25
Total	567	36	1,376	56	12	1,444	2,048	8,333

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 7. At-Source Total Phosphorus Loads (lb/year) for Dry Weather (Summer) by Land Use and MS4 in the Santa Margarita Watershed (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	29	4	36	1	0	36	69	187
High density residential	1	0	45	5	1	51	51	55
Commercial, institutional	0	2	11	0	0	11	14	18
Industrial	0	5	5	0	0	5	11	18
Road, freeway	1	2	4	0	0	4	7	20
Parks and recreation	0	0	2	0	0	2	2	4
Open and recreation	0	0	0	0	0	0	0	0
Irrigated agriculture	1	0	1	0	0	1	2	7
Non-irrigated agriculture	0	0	1	0	0	1	1	4
Orchard, vineyard, and nursery	19	0	2	0	0	2	21	128
Dairy, livestock	0	0	0	0	0	0	0	0
Horse ranches	0	0	5	0	0	5	5	27
Forest	0	0	0	0	0	0	1	4
Chaparral, scrub	3	0	10	0	0	10	13	83
Grassland, herbaceous	1	0	4	0	0	4	5	36
Transitional	0	0	5	0	0	5	5	11
CALTRANS	0	0	1	0	0	1	2	3
Total	56	13	131	6	1	139	208	606

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 8. Total Phosphorus Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Year Round) by Land Use and MS4 (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load
Low density residential	146	8	225	4	1	230	384	937
High density residential	3	1	297	30	4	331	334	360
Commercial, institutional	3	5	79	3	1	82	90	112
Industrial	2	11	39	0	2	41	54	96
Road, freeway	16	4	30	1	0	31	51	136
Parks and recreation	0	0	18	0	0	19	19	30
Open and recreation	0	0	1	0	0	1	1	2
Irrigated agriculture	55	0	40	0	0	40	95	461
Non-irrigated agriculture	0	0	7	0	0	8	8	39
Orchard, vineyard, and nursery	195	0	158	2	0	160	355	3,633
Dairy, livestock	0	0	0	0	0	0	0	4
Horse ranches	0	0	58	0	0	58	58	259
Forest	5	0	2	0	0	2	8	40
Chaparral, scrub	45	1	86	1	0	88	134	686
Grassland, herbaceous	17	0	30	0	0	31	48	275
Transitional	0	0	41	3	1	45	45	82
CALTRANS	3	0	9	1	0	9	13	20
Total	493	28	1,122	45	8	1,176	1,697	7,174

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 9. Total Phosphorus Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Summer) by Land Use and MS4 (WY 2008)

	San Diego County	Camp Pendleton	Riverside County				SMR Watershed	
Land Use Category	All MS4	All MS4	Major MS4	Minor MS4	Unknown or null MS4	All MS4	Total MS4 Load	Total Upland Load)
Low density residential	2	2	1	0	0	1	5	17
High density residential	0	0	2	0	0	2	2	2
Commercial, institutional	0	1	0	0	0	0	2	3
Industrial	0	2	0	0	0	0	2	2
Road, freeway	0	1	0	0	0	0	1	2
Parks and recreation	0	0	0	0	0	0	0	0
Open and recreation	0	0	0	0	0	0	0	0
Irrigated agriculture	0	0	0	0	0	0	0	1
Non-irrigated agriculture	0	0	0	0	0	0	0	0
Orchard, vineyard, and nursery	1	0	0	0	0	0	1	8
Dairy, livestock	0	0	0	0	0	0	0	0
Horse ranches	0	0	0	0	0	0	0	0
Forest	0	0	0	0	0	0	0	0
Chaparral, scrub	0	0	0	0	0	0	1	6
Grassland, herbaceous	0	0	0	0	0	0	0	3
Transitional	0	0	0	0	0	0	0	0
CALTRANS	0	0	0	0	0	0	0	0
Total	4	5	4	0	0	4	14	45

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 10. At-Source Total Nitrogen Loads (lb/year) for Dry Weather (Year Round) by MS4 and Land Use in the Santa Margarita Watershed (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	1,763	36	31	27	183	2	0	582	0
Total San Diego County	1,763	36	31	27	183	2	0	582	0
Riverside County MS4s									
City of Wildomar									
Major MS4	416	219	19	5	50	0	0	6	10
Minor MS4	11	15	1	0	1	0	0	0	0
Unknown MS4	1	3	2	0	1	0	0	0	0
Null MS4	5	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	426	976	226	98	76	58	4	66	6
Minor MS4	20	206	17	3	4	3	0	0	0
Unknown MS4	5	31	2	11	3	3	0	0	0
City of Temecula									
Major MS4	1,064	1,704	524	273	125	87	8	80	8
Minor MS4	10	92	6	3	3	1	0	0	0
Unknown MS4	1	8	4	8	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	937	795	152	92	109	77	2	333	34
Minor MS4	8	65	14	0	0	2	0	0	3
Unknown MS4	0	4	0	0	0	0	0	0	0
Total Riverside County	2,903	4,120	968	493	373	231	14	484	61
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	72	4	27	47	10	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	27	15	36	0	6	2	1	0	1

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 10 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	2,206	0	0	39	4,363	1,994	0	0	11,224
Total San Diego County	2,206	0	0	39	4,363	1,994	0	0	11,224
Riverside County MS4s									
City of Wildomar									
Major MS4	34	0	39	0	150	41	41	0	1,031
Minor MS4	5	0	0	0	2	1	5	0	40
Unknown MS4	0	0	0	0	0	0	4	0	11
Null MS4	0	0	2	0	1	3	0	0	12
City of Murrieta									
Major MS4	160	0	68	2	100	29	104	0	2,399
Minor MS4	3	0	0	0	5	1	10	0	272
Unknown MS4	0	0	0	0	1	0	2	0	60
City of Temecula									
Major MS4	14	0	31	7	50	45	199	0	4,221
Minor MS4	0	0	0	0	0	0	5	0	120
Unknown MS4	0	0	0	0	0	0	2	0	24
Unincorporated Riverside Co.									
Major MS4	1,561	0	603	8	351	127	168	0	5,348
Minor MS4	10	0	0	0	1	1	13	0	118
Unknown MS4	0	0	0	0	0	0	1	0	5
Total Riverside County	1,787	0	743	18	661	248	555	1	13,662
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	39	39
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	109	109
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	7	7
Federal Land									
Camp Pendleton MS4	0	0	0	0	3	1	0	0	164
Other Federal Land, Riverside Co. Major MS4	0	0	0	1	20	5	0	0	114

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 11. At-Source Total Nitrogen Loads (lb/year) for Dry Weather (Summer) by MS4 and Land Use in the Santa Margarita Watershed (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	280	5	4	3	13	0	0	7	0
Total San Diego County	280	5	4	3	13	0	0	7	0
Riverside County MS4s									
City of Wildomar									
Major MS4	48	28	2	1	5	0	0	0	1
Minor MS4	1	2	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	1	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	50	119	25	11	7	7	1	1	0
Minor MS4	3	25	2	0	0	0	0	0	0
Unknown MS4	1	4	0	1	0	0	0	0	0
City of Temecula									
Major MS4	124	203	56	29	12	9	1	2	0
Minor MS4	1	10	1	0	0	0	0	0	0
Unknown MS4	0	1	1	1	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	131	101	17	12	12	7	0	9	3
Minor MS4	1	9	2	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	360	503	107	54	37	24	1	12	5
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	29	1	10	16	3	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	4	2	4	0	1	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 11 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	189	0	0	1	294	96	0	0	893
Total San Diego County	189	0	0	1	294	96	0	0	893
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	2	0	9	4	4	0	103
Minor MS4	0	0	0	0	0	0	0	0	4
Unknown MS4	0	0	0	0	0	0	0	0	1
Null MS4	0	0	0	0	0	0	0	0	2
City of Murrieta									
Major MS4	1	0	5	0	7	2	8	0	245
Minor MS4	0	0	0	0	0	0	1	0	32
Unknown MS4	0	0	0	0	0	0	0	0	7
City of Temecula									
Major MS4	0	0	2	1	7	4	19	0	469
Minor MS4	0	0	0	0	0	0	0	0	13
Unknown MS4	0	0	0	0	0	0	0	0	3
Unincorporated Riverside Co.									
Major MS4	12	0	45	1	35	14	18	0	416
Minor MS4	0	0	0	0	0	0	1	0	14
Unknown MS4	0	0	0	0	0	0	0	0	1
Total Riverside County	14	0	54	2	59	25	52	0	1,310
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	3	3
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	13	13
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	1	1
Federal Land									
Camp Pendleton MS4	0	0	0	0	1	0	0	0	61
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	2	1	0	0	13

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 12. Total Nitrogen Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Year-Round) by MS4 and Land Use (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	1,122	23	20	18	128	1	0	434	0
Total San Diego County	1,122	23	20	18	128	1	0	434	0
Riverside County MS4s									
City of Wildomar									
Major MS4	132	68	6	2	17	0	0	2	3
Minor MS4	3	5	0	0	0	0	0	0	0
Unknown MS4	0	1	0	0	0	0	0	0	0
Null MS4	2	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	186	420	104	51	35	22	2	33	3
Minor MS4	8	95	8	1	2	1	0	0	0
Unknown MS4	2	12	1	7	2	1	0	0	0
City of Temecula									
Major MS4	681	1,004	336	178	82	55	4	22	5
Minor MS4	6	56	4	2	2	0	0	0	0
Unknown MS4	0	5	3	5	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	308	391	74	46	43	43	1	102	18
Minor MS4	4	20	5	0	0	1	0	0	1
Unknown MS4	0	2	0	0	0	0	0	0	0
Total Riverside County	1,333	2,080	542	292	183	122	7	159	31
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	50	3	20	30	8	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	14	9	19	0	3	1	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 12 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	1,524	0	0	28	3,035	1,415	0	0	7,749
Total San Diego County	1,524	0	0	28	3,035	1,415	0	0	7,749
Riverside County MS4s									
City of Wildomar									
Major MS4	12	0	13	0	54	14	13	0	336
Minor MS4	2	0	0	0	1	0	2	0	13
Unknown MS4	0	0	0	0	0	0	2	0	4
Null MS4	0	0	1	0	0	1	0	0	4
City of Murrieta									
Major MS4	84	0	25	1	45	13	51	0	1,076
Minor MS4	1	0	0	0	3	0	5	0	125
Unknown MS4	0	0	0	0	0	0	1	0	27
City of Temecula									
Major MS4	10	0	21	4	31	29	114	0	2,576
Minor MS4	0	0	0	0	0	0	3	0	74
Unknown MS4	0	0	0	0	0	0	1	0	15
Unincorporated Riverside Co.									
Major MS4	806	0	167	4	142	50	70	0	2,266
Minor MS4	7	0	0	0	1	0	4	0	43
Unknown MS4	0	0	0	0	0	0	0	0	3
Total Riverside County	923	0	227	9	276	110	267	1	6,563
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	27	27
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	52	52
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	4	4
Federal Land									
Camp Pendleton MS4	0	0	0	0	2	1	0	0	114
Other Federal Land, Riverside Co. Major MS4	0	0	0	1	9	2	0	0	58

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 13. Total Nitrogen Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Summer) by MS4 and Land Use (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	10	0	0	0	1	0	0	0	0
Total San Diego County	10	0	0	0	1	0	0	0	0
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	0	1	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
City of Temecula									
Major MS4	4	5	2	1	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	1	1	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	5	8	2	1	1	0	0	0	0
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	11	1	4	2	1	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 13 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	7	0	0	0	10	3	0	0	32
Total San Diego County	7	0	0	0	10	3	0	0	32
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	0	0	0	0	0	0	0	0	1
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
City of Temecula									
Major MS4	0	0	0	0	0	0	0	0	13
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	0	0	0	0	0	0	0	0	4
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	0	0	0	0	1	0	1	0	20
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	0	0	0	0	0	0	0	0	20
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 14. At-Source Total Phosphorus Loads (lb/year) for Dry Weather (Year Round) by MS4 and Land Use in the Santa Margarita Watershed (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	179	4	3	3	18	0	0	59	0
Total San Diego County	179	4	3	3	18	0	0	59	0
Riverside County MS4s									
City of Wildomar									
Major MS4	41	22	2	1	5	0	0	1	1
Minor MS4	1	1	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	1	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	42	97	23	10	8	6	0	7	1
Minor MS4	2	21	2	0	0	0	0	0	0
Unknown MS4	1	3	0	1	0	0	0	0	0
City of Temecula									
Major MS4	106	170	52	27	12	9	1	8	1
Minor MS4	1	9	1	0	0	0	0	0	0
Unknown MS4	0	1	0	1	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	93	79	15	9	11	8	0	33	5
Minor MS4	1	6	1	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	289	411	97	49	37	23	1	49	9
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	10	1	6	14	5	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	3	1	4	0	1	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 14 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	222	0	0	6	50	19	0	0	563
Total San Diego County	222	0	0	6	50	19	0	0	563
Riverside County MS4s									
City of Wildomar									
Major MS4	3	0	4	0	23	6	4	0	114
Minor MS4	0	0	0	0	0	0	0	0	4
Unknown MS4	0	0	0	0	0	0	0	0	1
Null MS4	0	0	0	0	0	1	0	0	1
City of Murrieta									
Major MS4	16	0	7	0	16	4	10	0	247
Minor MS4	0	0	0	0	1	0	1	0	27
Unknown MS4	0	0	0	0	0	0	0	0	6
City of Temecula									
Major MS4	1	0	3	1	9	7	20	0	428
Minor MS4	0	0	0	0	0	0	1	0	12
Unknown MS4	0	0	0	0	0	0	0	0	2
Unincorporated Riverside Co.									
Major MS4	157	0	60	1	55	19	17	0	563
Minor MS4	1	0	0	0	0	0	1	0	12
Unknown MS4	0	0	0	0	0	0	0	0	1
Total Riverside County	180	0	74	3	105	38	55	0	1419
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	4	4
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	11	11
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	1	1
Federal Land									
Camp Pendleton MS4	0	0	0	0	1	0	0	0	36
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	3	1	0	0	13

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 15. At-Source Total Phosphorus Loads (lb/year) for Dry Weather (Summer) by MS4 and Land Use in the Santa Margarita Watershed (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	29	1	0	0	1	0	0	1	0
Total San Diego County	29	1	0	0	1	0	0	1	0
Riverside County MS4s									
City of Wildomar									
Major MS4	5	3	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	5	12	3	1	1	1	0	0	0
Minor MS4	0	3	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
City of Temecula									
Major MS4	12	20	6	3	1	1	0	0	0
Minor MS4	0	1	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	13	10	2	1	1	1	0	1	0
Minor MS4	0	1	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	36	50	11	5	4	2	0	1	1
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	4	0	2	5	2	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 15 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	19	0	0	0	3	1	0	0	56
Total San Diego County	19	0	0	0	3	1	0	0	56
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	0	0	1	1	0	0	11
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	0	0	1	0	1	0	1	0	25
Minor MS4	0	0	0	0	0	0	0	0	3
Unknown MS4	0	0	0	0	0	0	0	0	1
City of Temecula									
Major MS4	0	0	0	0	1	1	2	0	48
Minor MS4	0	0	0	0	0	0	0	0	1
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	1	0	4	0	6	2	2	0	45
Minor MS4	0	0	0	0	0	0	0	0	1
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	2	0	5	0	9	4	5	0	136
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	1	1
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	0	0	0	0	0	0	0	0	13
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	2

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 16. Total Phosphorus Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Year-Round) by MS4 and Land Use (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	146	3	3	2	16	0	0	55	0
Total San Diego County	146	3	3	2	16	0	0	55	0
Riverside County MS4s									
City of Wildomar									
Major MS4	32	16	1	0	4	0	0	0	1
Minor MS4	1	1	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	34	77	18	8	6	4	0	6	1
Minor MS4	2	16	1	0	0	0	0	0	0
Unknown MS4	0	2	0	1	0	0	0	0	0
City of Temecula									
Major MS4	90	140	45	23	11	7	1	6	1
Minor MS4	1	8	0	0	0	0	0	0	0
Unknown MS4	0	1	0	1	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	69	63	12	7	8	6	0	27	4
Minor MS4	1	5	1	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	228	330	80	41	30	19	1	40	8
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	8	1	5	11	4	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	2	1	2	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 16 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	195	0	0	5	45	17	0	0	489
Total San Diego County	195	0	0	5	45	17	0	0	489
Riverside County MS4s									
City of Wildomar									
Major MS4	3	0	3	0	19	5	3	0	88
Minor MS4	0	0	0	0	0	0	0	0	3
Unknown MS4	0	0	0	0	0	0	0	0	1
Null MS4	0	0	0	0	0	0	0	0	1
City of Murrieta									
Major MS4	15	0	5	0	13	4	9	0	200
Minor MS4	0	0	0	0	1	0	1	0	22
Unknown MS4	0	0	0	0	0	0	0	0	5
City of Temecula									
Major MS4	1	0	3	1	8	6	16	0	359
Minor MS4	0	0	0	0	0	0	0	0	10
Unknown MS4	0	0	0	0	0	0	0	0	2
Unincorporated Riverside Co.									
Major MS4	140	0	46	1	44	15	13	0	456
Minor MS4	1	0	0	0	0	0	1	0	9
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	160	0	58	2	85	30	45	0	1,157
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	3	3
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	9	9
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	1	1
Federal Land									
Camp Pendleton MS4	0	0	0	0	1	0	0	0	28
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	2	1	0	0	9

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 17. Total Phosphorus Loads (lb/year) Delivered to the SMR Estuary for Dry Weather (Summer) by MS4 and Land Use (WY 2008)

Land Use Category	Low density residential	High density residential	Commercial and institutional	Industrial	Road, freeway	Parks and recreation	Open and recreation	Irrigated agriculture	Non-irrigated agriculture
San Diego County MS4s									
Unincorporated San Diego Co.	2	0	0	0	0	0	0	0	0
Total San Diego County	2	0	0	0	0	0	0	0	0
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
City of Temecula									
Major MS4	1	1	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	1	2	0	0	0	0	0	0	0
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	2	0	1	2	1	0	0	0	0
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

Table 17 continued

Land Use Category	Orchard, vineyard, and nursery	Dairy, livestock	Horse ranches	Forest	Chaparral, scrub	Grassland, herbaceous	Transitional	CALTRANS	Total
San Diego County MS4s									
Unincorporated San Diego Co.	1	0	0	0	0	0	0	0	4
Total San Diego County	1	0	0	0	0	0	0	0	4
Riverside County MS4s									
City of Wildomar									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Null MS4	0	0	0	0	0	0	0	0	0
City of Murrieta									
Major MS4	0	0	0	0	0	0	0	0	0
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
City of Temecula									
Major MS4	0	0	0	0	0	0	0	0	3
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Unincorporated Riverside Co.									
Major MS4	0	0	0	0	0	0	0	0	1
Minor MS4	0	0	0	0	0	0	0	0	0
Unknown MS4	0	0	0	0	0	0	0	0	0
Total Riverside County	0	0	0	0	0	0	0	0	4
State of California									
CALTRANS, San Diego Co. MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0
CALTRANS, Riverside Co. Minor MS4	0	0	0	0	0	0	0	0	0
Federal Land									
Camp Pendleton MS4	0	0	0	0	0	0	0	0	5
Other Federal Land, Riverside Co. Major MS4	0	0	0	0	0	0	0	0	0

SMR Estuary MS4 Nutrient Loads (DRAFT)

As noted above, results are for WY 2008. Dry weather nutrient loads, however, vary from year-to-year due to changing weather conditions, specifically the occurrence of dry weather days with no or low (< 0.1 in/d) precipitation. During WY 2008, there were 303 total dry days and 147 dry days during the summer. The annual average number of dry weather days for the period of 2003-2010 was significantly lower at 285 days. As shown in Figure 5 and Figure 6, the occurrence of more dry weather days in WY 2008 compared to 2003-2010 results in higher TN and TP dry-weather loads delivered to the SMR Estuary from MS4 conveyance systems. The total TN load (year-round) from all MS4 systems that eventually discharges to the Estuary for 2003-2010 and WY 2008 are 8,998 and 14,566 lb-N/year, respectively. The number of days classified as dry summer for WY 2008 (147 days) is similar to the average number of dry summer days for 2003-2010 (144 days) and, consequentially, delivered TN and TP are more similar (Figure 7 and Figure 8).

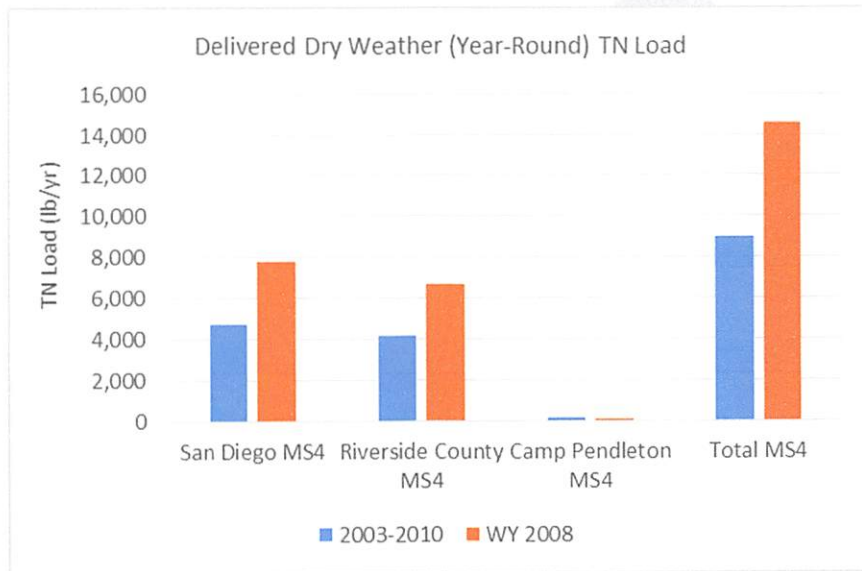


Figure 5. MS4 Dry Weather TN Loads (lb/year) Delivered to the SMR Estuary (Year Round)

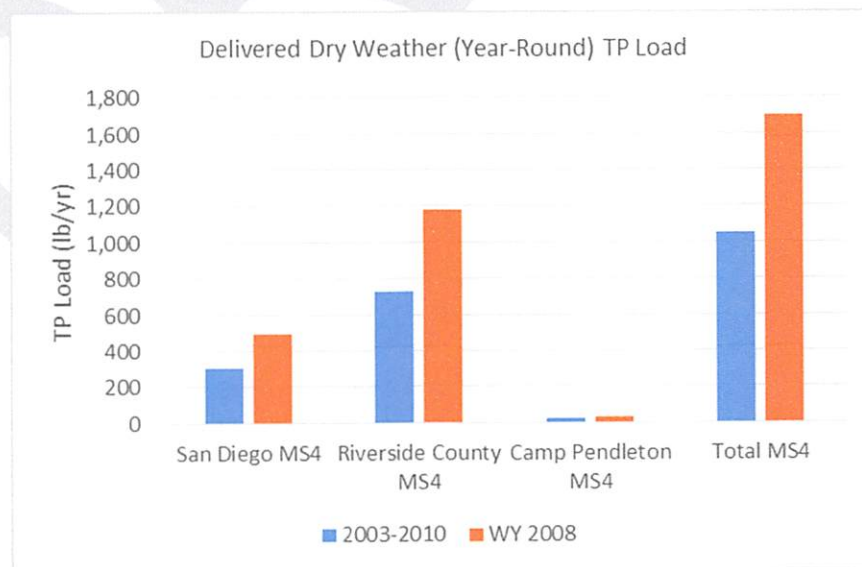


Figure 6. MS4 Dry Weather TP Loads (lb/year) Delivered to the SMR Estuary (Year Round)

SMR Estuary MS4 Nutrient Loads (DRAFT)

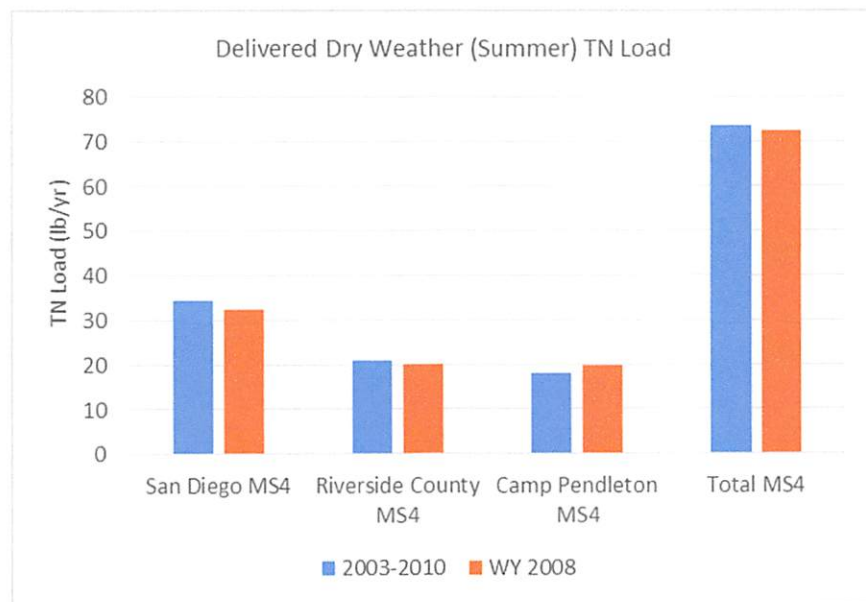


Figure 7. MS4 Dry Weather TN Loads (lb/year) Delivered to the SMR Estuary (Summer)

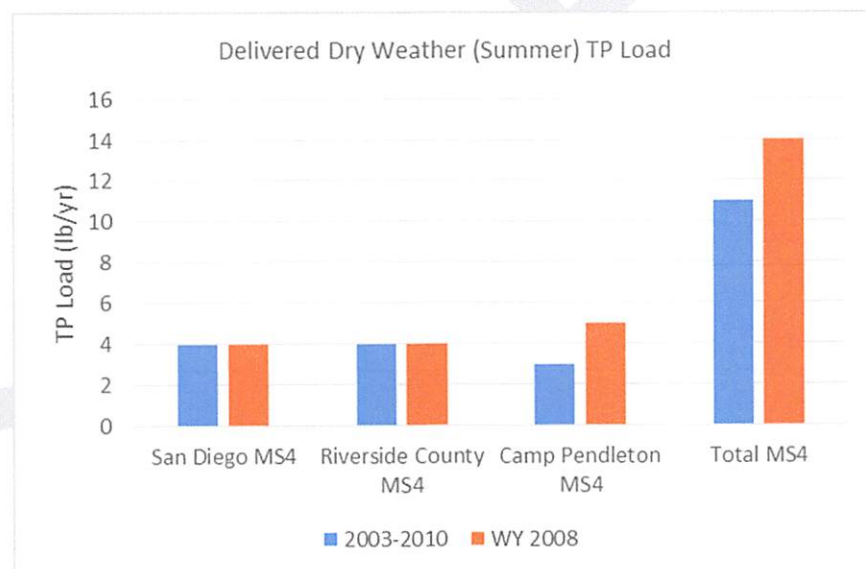


Figure 8. MS4 Dry Weather TP Loads (lb/year) Delivered to the SMR Estuary (Summer)

4.0 REFERENCES

Bicknell, B.R., J.C. Imhoff, J.L. Kittle, Jr., T.H. Jobes, and A. Donigian, Jr. 2005. Hydrological Simulation Program – FORTRAN; HSPF, Version 12.2, User's Manual. Prepared for Office of Surface Water, Water Resources Discipline, U.S. Geological Survey, Reston, VA; and National Exposure Research

SMR Estuary MS4 Nutrient Loads (DRAFT)

Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens, GA. Prepared by AQUA TERRA Consultants, Mountain View, CA.

Tetra Tech. 2013. Santa Margarita River Watershed, Phase I – Hydrology Update and Re-calibration Memorandum. Prepared for U.S. Environmental Protection Agency, Region IX by Tetra Tech, Inc., San Diego, CA.

Sutula, M., J. Butcher, C. Boschen, and M. Molina. 2016. Application of Watershed Loading and Estuary Water Quality Models to Inform Nutrient Management in the Santa Margarita River Watershed. Technical Report 933. Southern California Coastal Water Research Project, Costa Mesa, CA.
www.sccwrp.org.

REBECCA SPENCER
Registrar of Voters



ART TINOCO
Assistant Registrar of Voters

REGISTRAR OF VOTERS
COUNTY OF RIVERSIDE

DATE: November 2, 2016

TO: Temecula-Elsinore-Anza-Murrieta Resource Conservation District
21535 Palomar Road, Suite A
Wildomar, CA 92595

FROM: Rachel Rathbone, Chief Deputy Registrar of Voters

SUBJECT: Appointment in Lieu of Election Procedures for Resource Conservation Districts

This is a reminder that the terms will be ending for some Resource Conservation District Board Members on November 25, 2016. All Resource Conservation Districts in Riverside County appoint board members in lieu of election.

In order to assist you with the appointment process, I am providing you with a calendar that outlines the appointment in lieu of election procedures. Also, enclosed are applications that you can issue to persons who want to apply for the open positions.

Please note that it is the district's responsibility to interpret Public Resource Code § 9314 and Government Code § 54974; therefore, the time frames listed on the enclosed calendar are suggested dates only.

Kecia Harper-Ihem, Clerk of the Board, is your contact person at the Clerk of the Board. We recommend that you contact her at (951) 955-1069 if you have any questions regarding the appointment in lieu of election process.

If you have additional questions, please feel free to call me at (951) 486-7318 or Leticia Flores at (951) 486-7212.

**Resource Conservation Districts
Appointment in Lieu of Election Procedures
(Public Resource Code § 9314 & Government Code § 54974)**

The materials contained in this calendar represent the research and opinions of the staff at the Riverside County Registrar of Voters. The contents of this calendar and any legal interpretations contained herein are not to be relied upon as being correct either factually or as legal opinion. Reliance on the content without prior submission to and approval of your appropriate public counsel is at the reader's risk.

Please call (951) 486-7200 if you have any questions or comments or visit our website at www.voteinfo.net. Thank you.

DATE	PERSON RESPONSIBLE	DESCRIPTION
July 5 (125)	Board of Directors	<i>APPOINTMENT IN LIEU OF ELECTION (PRC § 9314)</i> All Resource Conservation Districts in Riverside County have adopted resolutions to appoint their board members in lieu of election. The resolutions remain in effect until rescinded by the board of directors, or until a petition requesting recession is received by the election official.
Nov. 5 – Nov. 11 (20 – 14)	Clerk of the Board	<i>NOTICE OF VACANCY</i> In lieu of publishing a notice of election, a notice of vacancy shall be posted pursuant to Government Code § 54974 by the legislative body having the appointing power. The Notice of Vacancy must be posted no sooner than 20 days before and no later than 20 days after the vacancy occurs. The notice shall remain posted until the close of the application period. The notice shall include the qualifications for office, the filing period, when, and where applications can be obtained and filed.
Nov. 14 – Dec. 2	District Secretary / Clerk of the Board	<i>TIME FRAME TO ISSUE APPLICATIONS</i> Suggested dates for District Secretary and the Clerk of the Board to issue applications to candidates. The applications are to be filed with the Registrar of Voters no later than 5:00 p.m. on December 2 nd . The Registrar of Voters will verify that applicants are registered voters and landowners within the district.
Dec. 7	District Secretary / Clerk of the Board	<i>EXTENSION OF APPLICATION PERIOD</i> If there are insufficient applicants for offices to be filled, there will be an extension of the application period until 5:00 p.m., December 12 th .
Dec. 12	Registrar of Voters	<i>FORWARD QUALIFIED LIST OF APPLICANTS</i> Suggested date for Registrar of Voters to forward a list of qualified applicants to the Clerk of the Board and the district secretary.
Dec. 19 – Jan. 13	Clerk of the Board	<i>BOARD OF SUPERVISORS TO CONDUCT INTERVIEWS</i> Suggested date for Board of Supervisors to coordinate and conduct interviews with applicants. It is the intent of the legislature that the Board of Supervisors solicit recommendations from within the district, including public, private, and nonprofit entities, and appoint only applicants determined by the board of supervisors to have a demonstrated interest in soil and water conservation.

State of California

PUBLIC RESOURCES CODE

Section 9314

9314. (a) The term of office of the directors, except those first elected, shall be four years. The expiration of the term of any director does not constitute a vacancy, and the director shall hold office until his or her successor has qualified.

(b) (1) As an alternative to the election of directors, the board of directors may, by a resolution presented to the board of supervisors of the principal county, request the board of supervisors to appoint directors, except those first elected. In any election year, the board of directors shall file its request with the board of supervisors not later than 125 days prior to the election. A copy of the resolution shall be furnished to the official responsible for conducting the election at the time it is presented to the board of supervisors of the principal county. The board of supervisors shall appoint directors, after consultation with the board of supervisors of any other county which contains any part of the district, from those candidates who have filed an application with the board of supervisors, as prescribed by the board of supervisors. If the directors are to be appointed, a notice of election shall not be published, but a notice of vacancy shall be posted pursuant to Section 54974 of the Government Code.

(2) The resolution shall remain in effect until rescinded by the board of directors, or until a petition requesting the rescission is received by the elections official. The petition shall be signed by 5 percent of the registered voters in the district, and shall be received not later than the 120th day before the election. Upon verification by the elections official that the petition contains the requisite number of signatures, the resolution shall be rescinded.

(3) The appointment of directors by the board of supervisors does not affect the status of a district as an independent special district.

(4) If the board of supervisors does not conduct interviews of potential candidates or make an appointment within 60 days after the expiration of the term, the board of directors may make the appointment.

(c) It is the intent of the Legislature to encourage districts to opt for the selection of directors by election, but where directors are appointed pursuant to subdivision (b), it is the intent of the Legislature that the board of supervisors solicit recommendations from within the district, including public, private, and nonprofit entities, and appoint only applicants who are determined by the board of supervisors to have a demonstrated interest in soil and water conservation. In selecting directors pursuant to subdivision (b), the board of supervisors shall endeavor to achieve balanced representation on the board of directors. To avoid undue financial burdens to districts and to thereby promote the objectives of this division, the Legislature hereby

State of California

GOVERNMENT CODE

Section 54974

54974. (a) Whenever an unscheduled vacancy occurs in any board, commission, or committee for which the legislative body has the appointing power, whether due to resignation, death, termination, or other causes, a special vacancy notice shall be posted in the office of the clerk of the local agency, the library designated pursuant to Section 54973, and in other places as directed by the legislative body, not earlier than 20 days before or not later than 20 days after the vacancy occurs. Final appointment to the board, commission, or committee shall not be made by the legislative body for at least 10 working days after the posting of the notice in the clerk's office.

(b) Notwithstanding subdivision (a), the legislative body may, if it finds that an emergency exists, fill the unscheduled vacancy immediately. A person appointed to fill the vacancy shall serve only on an acting basis until the final appointment is made pursuant to this section.

(Amended by Stats. 1991, Ch. 669, Sec. 8.)

**APPLICATION FOR THE OFFICE OF DIRECTOR
RESOURCE CONSERVATION DISTRICT
(P.R.C. § 9314; E.C. § 10511)**

(Name of District)

Pursuant to section 9314 of the California Public Resources Code, no election will be held for the purpose of electing directors to term ending offices. In lieu of election, the governing board has requested that the County Board of Supervisors appoint a qualified candidate from the list of persons who have filed an application.

I, _____, hereby declare that I am a qualified applicant for the office of director and that I meet the qualifications as follows: (check the appropriate boxes)

1. ☐ A registered voter of the state in the county of _____ and

2. ☐ Resident landowner within the district or
☐ Designated agent of _____, Resident Landowner
(letter attached)

(Landowner's qualifying address) and _____
(Parcel Number)

3. ☐ Associate Director for the district for 2 years or more

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on: _____ at _____

Signature of Applicant

Telephone Number(s)

Residence address of Applicant

Mailing address if different from residence

SEE OTHER SIDE FOR STATEMENT OF QUALIFICATIONS

OFFICE QUALIFICATIONS

I, _____ wish to file as a candidate for the office of
(Name of Candidate)

Director of the _____
(Name of District)

Name under which property is owned: _____

Address of Property: _____

Parcel/APN #: _____
Obtain from Property Tax Bill

.....
Official Use Only
Candidates do not complete this section of form

State of California)
) ss.
County of Riverside)

CERTIFICATE OF LANDOWNER

This is to certify the above named property owner *is* ☐ *is not* ☐ owner of the property listed above within the _____ as shown on the last equalized assessment roll of the Assessor of the County of Riverside.

Dated: _____

PETER ALDANA
County Assessor

By: _____
Deputy

Return this form to the Registrar of Voters - 2724 Gateway Drive, Riverside, CA 92507
The assessor will complete this section