

RESOLUTION NO. R3-2013-0008

ATTACHMENT - PROPOSED BASIN PLAN AMENDMENTS

Revise the September 8, 1994 Basin Plan as follows:

AMENDMENT NO. 1. TOTAL MAXIMUM DAILY LOADS FOR NITROGEN COMPOUNDS AND ORTHOPHOSPHATE IN THE LOWER SALINAS RIVER AND RECLAMATION CANAL BASIN, AND THE MORO COJO SLOUGH SUBWATERSHED (INCLUDING ALISAL CREEK, ALISAL SLOUGH, BLANCO DRAIN, CHUALAR CREEK, ESPERANZA CREEK, ESPINOSA SLOUGH, GABILAN CREEK, MERRIT DITCH, MORO COJO SLOUGH, NATIVIDAD CREEK, THE OLD SALINAS RIVER, QUAIL CREEK, THE RECLAMATION CANAL, THE LOWER SALINAS RIVER (DOWNSTREAM OF GONZALEZ), SALINAS RIVER LAGOON (NORTH), SANTA RITA CREEK, AND TEMBLADERO SLOUGH).

Add the following to Chapter 4 after IX. P.:

IX. Q. TOTAL MAXIMUM DAILY LOADS FOR NITROGEN COMPOUNDS AND ORTHOPHOSPHATE IN THE LOWER SALINAS RIVER AND RECLAMATION CANAL BASIN, AND THE MORO COJO SLOUGH SUBWATERSHED (INCLUDING ALISAL CREEK, ALISAL SLOUGH, BLANCO DRAIN, CHUALAR CREEK, ESPERANZA CREEK, ESPINOSA SLOUGH, GABILAN CREEK, MERRIT DITCH, MORO COJO SLOUGH, NATIVIDAD CREEK, THE OLD SALINAS RIVER, QUAIL CREEK, THE RECLAMATION CANAL, THE LOWER SALINAS RIVER (DOWNSTREAM OF GONZALEZ), SALINAS RIVER LAGOON (NORTH), SANTA RITA CREEK, AND TEMBLADERO SLOUGH).

The Regional Water Quality Control Board adopted these TMDLs on March 14, 2013.  
These TMDLs were approved by:

The State Water Resources Control Board on: \_\_\_\_\_ (date).

The California Office of Administrative Law on: \_\_\_\_\_ (date).

The U.S. Environmental Protection Agency on: \_\_\_\_\_ (date)

**Problem Statement**

Discharges of nitrogen compounds and orthophosphate are occurring at levels in surface waters which are impairing a spectrum of beneficial uses and, therefore, constitute a serious water quality problem. The municipal and domestic drinking water supply (MUN, GWR) beneficial uses and the range of aquatic habitat beneficial uses are not protected. Additionally, locally some waterbodies do not meet non-regulatory recommended guidelines for nitrate in agricultural supply water for sensitive crops indicating that potential or future designated agricultural supply beneficial uses may be detrimentally impacted. Further, recreational beneficial use (REC-1) of the Old Salinas River is not being supported on the basis of excessive amounts of algal toxins (microcystins) in surface water. A total of 35 waterbody/pollutant combinations are impaired due to exceedances of water quality objectives. The pollutants addressed in this TMDL are nitrate, unionized ammonia, and orthophosphate – orthophosphate is included as a pollutant contributing to biostimulatory impairments of surface waters. Reducing these pollutants will also address several Clean Water Act section 303(d)-listed dissolved oxygen and chlorophyll a impairments in the TMDL project area.

As a result of these conditions, water quality standards are not being attained. By developing TMDLs for the aforementioned pollutants, the water quality standards violations being addressed in this TMDL include:

- Violations of drinking water standard for nitrate
- Violations of the Basin Plan general toxicity objective for inland surface waters and estuaries (violations of unionized ammonia objective)
- Violations of the Basin Plan narrative general objective for biostimulatory substances in inland surface waters and estuaries (as expressed by excessive nutrients, chlorophyll a, algal biomass, microcystins, and low dissolved oxygen)

The TMDLs protect and restore the municipal and domestic water supply beneficial use (MUN) and aquatic habitat beneficial uses currently being degraded by violations of the toxicity objective and the biostimulatory substances objective; the aquatic habitat beneficial uses current being degraded include the following: wildlife habitat (WILD), cold fresh water habitat (COLD), warm fresh water habitat (WARM), migration of aquatic organisms (MIGR), spawning, reproduction, and/or early development (SPWN), preservation of biological habitats of special significance (BIOL), and rare, threatened, or endangered species (RARE). In addition, current or potential future beneficial uses of the agricultural water supply beneficial use (AGR) are not being supported. Nitrate can create problems not only for water supplies and aquatic habitat, but also potentially for nitrogen sensitive crops (grapes, avocado, citrus) by detrimentally impacting crop yield or quality.

For waterbodies that are not expressing biostimulatory impairments, the most stringent relevant water quality objective for nitrate (and therefore the one that is protective of the full range of all nitrate-impaired designated beneficial uses) is the numeric Basin Plan objective for nitrate in municipal and domestic water supply. Reducing nitrate pollution and ultimately achieving the nitrate drinking water quality standard in these waterbodies will therefore restore and be protective of the full range of MUN, GWR and/or AGR designated beneficial uses of the surface waters which are being currently impaired by excess nitrate.

All waterbodies are required to attain the Basin Plan general toxicity objective for unionized ammonia in inland surface waters and estuaries.

For waterbodies that are expressing biostimulatory impairments, the most stringent relevant water quality objective for nitrate-nutrients (and therefore the one that is protective of the full range of all nutrient-impaired designated beneficial uses) is the Basin Plan narrative general objective for biostimulatory substances in inland surface waters and estuaries. These waterbodies must achieve concentration-based TMDLs for nitrate and orthophosphate as identified herein. Reducing nutrient pollution and ultimately achieving the TMDLs for nutrients in these waterbodies will therefore restore and be protective of the full range of aquatic habitat, MUN, GWR, and/or AGR designated beneficial uses of the surface waters which are being currently impaired by excess nutrients.

The following impairments are addressed with this TMDL:

- Alisal Creek: nitrate, unionized ammonia, chlorophyll a
- Alisal Slough: nitrate, unionized ammonia, low dissolved oxygen
- Blanco Drain: nitrate, low dissolved oxygen
- Chualar Creek: nitrate, unionized ammonia
- Esperanza Creek: nitrate
- Espinosa Slough: nitrate, unionized ammonia
- Gabilan Creek: nitrate, unionized ammonia
- Lower Salinas River: nitrate
- Merrit Ditch: nitrate, unionized ammonia, low dissolved oxygen

- Moro Cojo Slough: unionized ammonia, low dissolved oxygen
- Natividad Creek: nitrate, unionized ammonia, low dissolved oxygen
- Old Salinas River: nitrate, low dissolved oxygen, chlorophyll a, microcystin
- Quail Creek: nitrate, unionized ammonia, low dissolved oxygen
- Reclamation Canal: nitrate, unionized ammonia, low dissolved oxygen
- Salinas River Lagoon (north): nitrate
- Santa Rita Creek: nitrate, unionized ammonia, low dissolved oxygen
- Tembladero Slough: nitrate, nutrients, chlorophyll a

**Numeric Targets**

Numeric targets are water quality targets developed and used to ascertain when and where water quality objectives are achieved, and hence, when beneficial uses are protected.

➤ Target for Nitrate (MUN-GWR standards)

For impaired stream reaches that are required to support drinking water (MUN) and groundwater recharge (GWR) beneficial uses, the nitrate numeric target is 10 mg/L (nitrate as N) for this TMDL, which therefore is equal to the Basin Plan’s numeric nitrate water quality objective protective of drinking water beneficial uses.

➤ Target for Unionized Ammonia (toxicity)

For unionized ammonia (a nitrogen compound), the numeric target is 0.025 mg/L (as N) for this TMDL, which therefore is equal to the Basin Plan’s unionized ammonia numeric water quality objective protective against toxicity in surface waters.

➤ Targets for Biostimulatory Substances (nitrate and orthophosphate)

The Basin Plan contains the following narrative water quality objectives for biostimulatory substances:

*“Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.”*

To implement this narrative objective, staff developed scientifically peer reviewed numeric targets, based on established methodologies and approaches. The numeric targets for biostimulatory substances are presented in Table 1.

Table 1. Numeric targets for biostimulatory substances.

<u>Stream Reaches</u>	<u>Nitrate-N (mg/L)</u>	<u>Orthophosphate-P (mg/L)</u>
<u>Lower Salinas River – downstream of Spreckels to and including Salinas River Lagoon (north)</u>	<u>1.4 Maximum Dry Season Samples (May 1-Oct 31)</u>	<u>0.07 Maximum Dry Season Samples (May 1-Oct 31)</u>
	<u>8.0 Maximum Wet Season Samples (Nov 1-Apr 30)</u>	<u>0.3 Maximum Wet Season Samples (Nov 1-Apr 30)</u>
<u>Tembladero Slough all reaches</u>	<u>6.4 Maximum Dry Season Samples (May 1-Oct 31)</u>	<u>0.13 Maximum Dry Season Samples (May 1-Oct 31)</u>
<u>Blanco Drain all reaches</u>		
<u>Merritt Ditch downstream of Merritt Lake</u>		
<u>Reclamation Canal downstream of Hartnell Rd. to confluence w/Tembladero Slough</u>	<u>8.0 Maximum Wet Season Samples</u>	<u>0.3 Maximum Wet Season Samples</u>

<u>Stream Reaches</u>	<u>Nitrate-N (mg/L)</u>	<u>Orthophosphate-P (mg/L)</u>
<u>Alisal Slough all reaches</u>	<u>(Nov 1-Apr 30)</u>	<u>(Nov 1-Apr 30)</u>
<u>Espinosa Slough from Espinosa lake to confluence with Reclamation Canal</u>		
<u>Santa Rita Creek all reaches</u>		
<u>Gabilan Creek all reaches</u>	<u>2.0</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1-Oct 31)</u>	<u>0.07</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1-Oct 31)</u>
<u>Natividad Creek all reaches</u>		
<u>Alisal Creek upstream of Hartnell Rd.</u>	<u>8.0</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>	<u>0.3</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>
<u>Old Salinas River from slide gate infow @ Salinas River Lagoon to Old Salinas River at Potrero Rd.</u>	<u>3.1</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1-Oct 31)</u>	<u>0.07</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1-Oct 31)</u>
	<u>8.0</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>	<u>0.3</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>
<u>Stream Reaches</u>	<u>Total Nitrogen (mg/L)</u>	<u>Orthophosphate-P (mg/L)</u>
<u>Moro Cojo Slough, all reaches</u>	<u>1.7</u> <u>Maximum</u> <u>(total nitrogen)</u> <u>Dry Season Samples</u> <u>(May 1-Oct 31)</u>	<u>0.13</u> <u>Maximum</u> <u>Dry Season</u> <u>(May 1-Oct 31)</u>
	<u>8.0</u> <u>Maximum</u> <u>(total nitrogen)</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>	<u>0.3</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(Nov 1-Apr 30)</u>

➤ Targets for Nutrient-Response Indicators (dissolved oxygen and chlorophyll a and microcystins)

Dissolved oxygen and chlorophyll a numeric targets are identified to ensure that streams do not show evidence of biostimulatory conditions, and to provide primary indicator metrics to assess biological response to future nutrient water column concentration reductions.

For water bodies designated as cold fresh water habitat (COLD) and spawning (SPWN) beneficial uses the dissolved oxygen numeric targets is the same as Basin Plan numeric water quality objective which states that dissolved oxygen concentrations shall not be reduced below 7.0 mg/L at any time.

For water bodies designated as warm fresh water habitat (WARM) beneficial use the dissolved oxygen numeric targets is the same as Basin Plan numeric water quality objective which states that dissolved oxygen concentrations shall not be reduced below 5.0 mg/L at any time.

Additionally, for all inland surface waters, enclosed bays and estuaries, the dissolved oxygen numeric target is the same as Basin Plan numeric water quality objective which states that the

median dissolved oxygen should not fall below 85% saturation as a result of controllable water quality conditions.

For water bodies designated as cold fresh water habitat (COLD) and spawning (SPWN) or warm fresh water habitat (WARM) beneficial uses the numeric water quality target indicative of excessive dissolved oxygen saturation conditions dissolved oxygen is 13 mg/L (i.e., water column dissolved oxygen concentrations not to exceed 13 mg/L).

The numeric water quality target for chlorophyll a is 15 micrograms per liter ( $\mu\text{g/L}$ ) for all water bodies (i.e., water column chlorophyll a concentrations not to exceed 15  $\mu\text{g/L}$ ).

The numeric water quality target for microcystins is 0.8 micrograms per liter ( $\mu\text{g/L}$ ) for all waterbodies (i.e., microcystin not to exceed 0.8  $\mu\text{g/L}$  (includes microcystins congeners LA, LR, RR and YR)).

### **Source Analysis**

Discharges of unionized ammonia, nitrate, and orthophosphate originating from irrigated agriculture, urban lands, grazing lands, and natural sources are contributing loads to receiving waters. Irrigated agriculture is the overwhelming majority of controllable water column loads in the TMDL project area and this source category is not currently meeting its proposed load allocation. Urban storm water is a relatively minor source of nitrogen compounds and orthophosphate, but can be locally significant. Grazing lands are currently meeting proposed load allocations. The source analysis for this TMDL project is consistent with source analyses reported by other scientists in previous nutrient-water quality studies in the lower Salinas Valley, which provides for a qualitative weight-of-evidence approach.

### **TMDLs**

The following TMDLs will result in attainment of water quality standards and will rectify impairments described in the Problem Statement.

The unionized ammonia TMDL for all waterbodies and reaches of the TMDL project area including Alisal Creek, Alisal Slough, Chualar Creek, Espinosa Slough, Merrit Ditch, Moro Cojo Slough, Natividad Creek, the Reclamation Canal, Quail Creek, Gabilan Creek and Santa Rita Creek is:

- Unionized ammonia concentration shall not exceed 0.025 mg/L-N in receiving waters.

The nitrate TMDL for all waters and reaches of the TMDL project area required to support MUN beneficial uses, including, Alisal Creek, Alisal Slough, Chualar Creek, Esperanza Creek, Gabilan Creek, Merrit Ditch, Natividad Creek, the Old Salinas River, Quail Creek, the Lower Salinas River (downstream of Gonzalez to Spreckels), Santa Rita Creek is:

- Nitrate concentration shall not exceed 10 mg/L-N in receiving waters.

The nitrate and orthophosphate TMDLs for the lower Salinas River (from downstream of Spreckels to the Salinas River Lagoon) and the Salinas River Lagoon (north) are:

- For dry season (May 1 to October 31): Nitrate-N concentration shall not exceed 1.4 mg/L in receiving waters; orthophosphate-P concentration shall not exceed 0.07 mg/L in receiving waters, and
- For wet season (November 1 to April 30): Nitrate-N concentration shall not exceed 8.0 mg/L in receiving water; orthophosphate-P concentration shall not exceed 0.3 mg/L in receiving water.

The nitrate and orthophosphate TMDLs for Espinosa Slough (all reaches from Espinosa Lake to confluence with Reclamation Canal), for the Reclamation Canal (all reaches downstream of Hartnell Rd to confluence with Tembladero Slough), for Merrit Ditch (all reaches downstream of Merrit Lake), and for all reaches of Alisal Slough, Santa Rita Creek, Blanco Drain and Tembladero Slough are:

- For dry season (May 1 to October 31): Nitrate-N concentration shall not exceed 6.4 mg/L in receiving waters; orthophosphate-P concentration shall not exceed 0.13 mg/L in receiving waters, and
- For wet season (November 1 to April 30): Nitrate-N concentration shall not exceed 8.0 mg/L in receiving water; orthophosphate-P concentration shall not exceed 0.3 mg/L in receiving water.

The nitrate and orthophosphate TMDLs for Gabilan Creek (all reaches downstream of Crazy Horse Road to confluence with Reclamation Canal), and for all reaches of Alisal Creek, and Natividad Creek are:

- For dry season (May 1 to October 31): Nitrate-N concentration shall not exceed 2.0 mg/L in receiving waters; orthophosphate-P concentration shall not exceed 0.07 mg/L in receiving waters, and
- For wet season (November 1 to April 30): Nitrate-N concentration shall not exceed 8.0 mg/L in receiving water; orthophosphate-P concentration shall not exceed 0.3 mg/L in receiving water.

The nitrate and orthophosphate TMDLs for all reaches of the Old Salinas River are:

- For dry season (May 1 to October 31): Nitrate-N concentration shall not exceed 3.1 mg/L in receiving waters; orthophosphate-P concentration shall not exceed 0.07 mg/L in receiving waters, and
- For wet season (November 1 to April 30): Nitrate-N concentration shall not exceed 8.0 mg/L in receiving water; orthophosphate-P concentration shall not exceed 0.3 mg/L in receiving water.

The total nitrogen and orthophosphate TMDLs for all reaches of the Moro Cojo Slough are:

- For dry season (May 1 to October 31): total Nitrogen-N concentration shall not exceed 1.7 mg/L in receiving waters; orthophosphate-P concentration shall not exceed 0.13 mg/L in receiving waters, and
- For wet season (November 1 to April 30): total Nitrogen-N concentration shall not exceed 8.0 mg/L in receiving water; orthophosphate-P concentration shall not exceed 0.3 mg/L in receiving water.

The TMDLs are considered achieved when water quality conditions meet all regulatory and policy requirements necessary for removing the impaired waters from Clean Water Act section 303(d) list of impaired waters.

### **Final Allocations and Interim Allocations**

Owners and operators of irrigated lands, municipal storm water entities, natural sources, and owners/operators of livestock and domestic animals are assigned unionized ammonia, nitrate, and orthophosphate allocations equal to the TMDL and numeric targets.

The final allocations to responsible parties are shown in Table IX P-1. The final allocations are equal to the TMDLs and should be achieved 30-years after the TMDL effective date. Unlike the load-based TMDL method, the concentration-based allocations do not add up to the TMDL because concentrations of individual pollution sources are not additive. Since the TMDLs are concentration-based, the allocations are not additive.

Recognizing that achievement of the more stringent final dry season biostimulatory allocations embedded in Table IX Q-1 may require a significant amount of time to achieve, interim allocations are identified. Interim allocations will be used as benchmarks in assessing progress towards the final allocations. Interim allocations are shown in Table IX P-2.

#### **Controllable Water Quality Conditions**

In accordance with the Water Quality Control Plan for the Central Coast Basin (Basin Plan) Controllable water quality shall be managed to conform or to achieve the water quality objectives and load allocations contained in this TMDL. The Basin Plan defines controllable water quality conditions as follows: "Controllable water quality conditions are those actions or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled." - Water Quality Control Plan for the Central Coast Basin, Chapter 3. Water Quality Objectives, page III-2.

#### **Compliance with Anti-degradation Requirements**

State and federal anti-degradation policies require, in part, that where surface waters are of higher quality than necessary to protect beneficial uses, the high quality of those waters must be maintained unless otherwise provided by the policies. The federal anti-degradation policy, 40 C.F.R. 131.12(a) states, in part. "Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located..."

Compliance with anti-degradation requirements may be determined on the basis of trends in declining water quality in applicable waterbodies, consistent with the methodologies and criteria provided in Section 3.10 of the California 303(d) Listing Policy (adopted, Sept. 20, 2004, SWRCB Resolution No. 2004-0063). Section 3.10 of the California 303(d) Listing Policy explicitly addresses the anti-degradation component of water quality standards as defined in 40 CFR 130.2(j), and provides for identifying trends of declining water quality as a metric for assessing compliance with anti-degradation requirements.

Section 3.10 of the California 303(d) Listing Policy states that pollutant-specific water quality objectives need not be exceeded to be considered non-compliance with anti-degradation requirements "if the water segment exhibits concentrations of pollutants or water body conditions for any listing factor that shows a trend of declining water quality standards attainment".

Practically speaking, this means that, for example, stream reaches or waterbodies that have an concentration-based TMDL allocation of 10 mg/L nitrate-N, and if current water quality or future water quality assessments in the stream reach indicate nitrate-N in fact well under 10 mg/L nitrate-N, the allocation does not give license for controllable nitrogen sources to degrade the water resource all the way up to the maximum allocation = 10 mg/L nitrate-N.

➤ Table IX Q-1. Final Allocations and Responsible Parties

<b>FINAL WASTE LOAD ALLOCATIONS (WLAs)</b>					
<u>Waterbody the responsible party is discharging to</u>	<u>Party Responsible for Allocation &amp; NPDES/WDR number</u>	<u>Receiving Water Nitrate as N WLA (mg/L)</u>	<u>Receiving Water Orthophosphate as P WLA (mg/L)</u>	<u>Receiving Water Total Nitrogen as N WLA (mg/L)</u>	<u>Receiving Water Unionized Ammonia as N WLA (mg/L)</u>
Salinas River downstream of Spreckels, CA <sup>1</sup>	<p>City of Salinas (Storm drain discharges to MS4s) Storm Water Permit NPDES No. CA00049981</p> <p>County of Monterey (Storm drain discharges to MS4s) Storm Water General Permit NPDES No. CAS000004</p>	Allocation-1 (see descriptions of allocations at bottom of this table)	Allocation-2	Not Applicable	Allocation-5
Santa Rita Creek <sup>2</sup> , Reclamation Canal <sup>3</sup>	<p>City of Salinas (Storm drain discharges to MS4s) Storm Water Permit NPDES No. CA00049981</p> <p>County of Monterey (Storm drain discharges to MS4s) Storm Water General Permit NPDES No. CAS000004</p>	Allocation-3	Allocation-4	Not Applicable	Allocation-5
Gabilan Creek <sup>4</sup>	<p>City of Salinas (Storm drain discharges to MS4s) Storm Water Permit NPDES No. CA00049981</p> <p>County of Monterey (Storm drain discharges to MS4s) Storm Water General Permit NPDES No. CAS000004</p>	Allocation-6	Allocation-2	Not Applicable	Allocation-5

<b>FINAL WASTE LOAD ALLOCATIONS (WLAs)</b>					
<u>Waterbody the responsible party is discharging to</u>	<u>Party Responsible for Allocation &amp; NPDES/WDR number</u>	<u>Receiving Water Nitrate as N WLA (mg/L)</u>	<u>Receiving Water Orthophosphate as P WLA (mg/L)</u>	<u>Receiving Water Total Nitrogen as N WLA (mg/L)</u>	<u>Receiving Water Unionized Ammonia as N WLA (mg/L)</u>
Natividad Creek <sup>5</sup> Alisal Creek <sup>6</sup>	<p>City of Salinas (Storm drain discharges to MS4s) Storm Water Permit NPDES No. CA00049981</p> <p>County of Monterey (Storm drain discharges to MS4s) Storm Water General Permit NPDES No. CAS000004</p>	Allocation-6	Allocation-2	Not Applicable	Allocation-5

<b>FINAL LOAD ALLOCATIONS (LAs)</b>					
<u>Waterbody the responsible party is discharging to</u>	<u>Party Responsible for Allocation (Source)</u>	<u>Receiving Water Nitrate as N LA (mg/L)</u>	<u>Receiving Water Orthophosphate as P LA (mg/L)</u>	<u>Receiving Water Total Nitrogen as N LA (mg/L)</u>	<u>Receiving Water Unionized Ammonia as N LA (mg/L)</u>
Salinas River downstream of Spreckels, CA <sup>1</sup>	Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)	Allocation-1 (see descriptions of allocations at bottom of this table.)	Allocation-2	Not Applicable	Allocation-5
	Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)				
	No responsible party (Natural sources)				
Salinas River upstream of Spreckels, CA <sup>17</sup>	Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)	Allocation-9	Not Applicable	Not Applicable	Allocation-5
	Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)				
	No responsible party (Natural sources)				

<b>FINAL LOAD ALLOCATIONS (LAs)</b>					
<u>Waterbody the responsible party is discharging to</u>	<u>Party Responsible for Allocation (Source)</u>	<u>Receiving Water Nitrate as N LA (mg/L)</u>	<u>Receiving Water Orthophosphate as P LA (mg/L)</u>	<u>Receiving Water Total Nitrogen as N LA (mg/L)</u>	<u>Receiving Water Unionized Ammonia as N LA (mg/L)</u>
Merrit Ditch <sup>7</sup> , Reclamation Canal <sup>3</sup> , Alisal Slough <sup>8</sup> , Santa Rita Creek <sup>2</sup> , Espinosa Slough <sup>16</sup>	<u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u>	Allocation-3	Allocation-4	Not Applicable	Allocation-5
	<u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u>				
	<u>No responsible party (Natural sources)</u>				
Tembladero Slough <sup>9</sup> , Blanco Drain <sup>10</sup>	<u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u>	Allocation-3	Allocation-4	Not Applicable	Allocation-5
	<u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u>				
	<u>No responsible party (Natural sources)</u>				
Gabilan Creek <sup>4</sup>	<u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u>	Allocation-6	Allocation-2	Not Applicable	Allocation-5
	<u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u>				
	<u>No responsible party (Natural sources)</u>				
Natividad Creek <sup>5</sup> Alisal Creek <sup>6</sup>	<u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u>	Allocation-6	Allocation-2	Not Applicable	Allocation-5

<b>FINAL LOAD ALLOCATIONS (LAs)</b>					
<u>Waterbody the responsible party is discharging to</u>	<u>Party Responsible for Allocation (Source)</u>	<u>Receiving Water Nitrate as N LA (mg/L)</u>	<u>Receiving Water Orthophosphate as P LA (mg/L)</u>	<u>Receiving Water Total Nitrogen as N LA (mg/L)</u>	<u>Receiving Water Unionized Ammonia as N LA (mg/L)</u>
	<p><u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u></p> <p><u>No responsible party (Natural sources)</u></p>				
<u>Old Salinas River<sup>11</sup></u>	<p><u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u></p> <p><u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u></p> <p><u>No responsible party (Natural sources)</u></p>	<u>Allocation-7</u>	<u>Allocation-2</u>	<u>Not Applicable</u>	<u>Allocation-5</u>
<u>Moro Cojo Slough<sup>12</sup></u>	<p><u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u></p> <p><u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u></p> <p><u>No responsible party (Natural sources)</u></p>	<u>Not applicable (biostimulation will be assessed on the basis of total nitrogen)</u>	<u>Allocation-4</u>	<u>Allocation-8</u>	<u>Allocation-5</u>
<u>Chualar Creek<sup>13</sup>, Quail Creek<sup>14</sup></u>	<p><u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u></p> <p><u>Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)</u></p> <p><u>No responsible party (Natural sources)</u></p>	<u>Allocation-9</u>	<u>Not Applicable</u>	<u>Not Applicable</u>	<u>Allocation-5</u>

<b>FINAL LOAD ALLOCATIONS (LAs)</b>					
<b>Waterbody the responsible party is discharging to</b>	<b>Party Responsible for Allocation (Source)</b>	<b>Receiving Water Nitrate as N LA (mg/L)</b>	<b>Receiving Water Orthophosphate as P LA (mg/L)</b>	<b>Receiving Water Total Nitrogen as N LA (mg/L)</b>	<b>Receiving Water Unionized Ammonia as N LA (mg/L)</b>
Esperanza Creek <sup>15</sup>	Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)	Allocation-9	Not Applicable	Not Applicable	Allocation-5
	Owners/operators of land used for/containing domestic animals/livestock (Domestic animals/livestock waste not draining to MS4s)				
	No responsible party (Natural sources)				

Description of allocations.

<b>Allocation<sup>A</sup></b>	<b>Compound</b>	<b>Concentration (mg/L)<sup>B</sup></b>
<b>Allocation 1</b>	Nitrate as N	Dry Season (May 1-Oct. 31): <b>1.4</b> Wet Season (Nov. 1-Apr. 30): <b>8.0</b>
<b>Allocation 2</b>	Orthophosphate as P	Dry Season (May 1-Oct. 31): <b>0.07</b> Wet Season (Nov. 1-Apr. 30): <b>0.3</b>
<b>Allocation 3</b>	Nitrate as N	Dry Season (May 1-Oct. 31): <b>6.4</b> Wet Season (Nov. 1-Apr. 30): <b>8.0</b>
<b>Allocation 4</b>	Orthophosphate as P	Dry Season (May 1-Oct. 31): <b>0.13</b> Wet Season (Nov. 1-Apr. 30): <b>0.3</b>
<b>Allocation 5</b>	Unionized Ammonia as N	Year-round: <b>0.025</b>
<b>Allocation 6</b>	Nitrate as N	Dry Season (May 1-Oct. 31): <b>2.0</b> Wet Season (Nov. 1-Apr. 30): <b>8.0</b>
<b>Allocation 7</b>	Nitrate as N	Dry Season (May 1-Oct. 31): <b>3.1</b> Wet Season (Nov. 1-Apr. 30): <b>8.0</b>
<b>Allocation 8</b>	Total Nitrogen as N	Dry Season (May 1-Oct. 31): <b>1.7</b> Wet Season (Nov. 1-Apr. 30): <b>8.0</b>
<b>Allocation 9</b>	Nitrate as N	Year-round: <b>10</b>

<sup>A</sup> Federal and State anti-degradation requirements apply to all waste load and load allocations.

<sup>B</sup> Achievement of final waste load and load allocations to be determined on the basis of the number of measured exceedances and/or other criteria set forth in Section 4 of the *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Listing Policy - State Water Resources Control Board, Resolution No. 2004-0063, adopted September 2004). or as consistent with any relevant revisions of the Listing Policy promulgated in the future.

\* Responsible parties shall meet allocations in all receiving surface waterbodies receiving the responsible parties' discharges.

<sup>1</sup> Salinas River: all reaches from downstream of Spreckels (downstream of monitoring site 309SSP) to the confluence with the Pacific Ocean including Salinas River Lagoon (North)

<sup>2</sup> Santa Rita Creek: all reaches and tributaries, from the confluence with the Reclamation Canal to the uppermost reach of the waterbody.

<sup>3</sup> Reclamation Canal: all reaches and tributaries, which includes from confluence with Tembladero Slough, to upstream confluence with Alisal Creek.

<sup>4</sup> Gabilan Creek: all reaches and tributaries downstream of Crazy Horse Rd.

<sup>5</sup> Natividad Creek: all reaches and tributaries, from the confluence with Carr Lake to the uppermost reach of the waterbody.

<sup>6</sup> Alisal Creek: all reaches and tributaries from the confluence with the Reclamation Canal to the uppermost reach of the waterbody.

<sup>7</sup> Merrit Ditch: all reaches and tributaries from the confluence with the Reclamation Canal to the uppermost reach of the waterbody.

<sup>8</sup> Alisal Slough: all reaches and tributaries of the waterbody.

<sup>9</sup> Tembladero Slough: all reaches and tributaries from the confluence with the Salinas Reclamation Canal downstream to its confluence with the Old Salinas River.

<sup>10</sup> Blanco Drain: all reaches and tributaries of the waterbody.

<sup>11</sup> Old Salinas River: all reaches and tributaries from the slide gate at the head of the Old Salinas River adjacent to Mulligan Hill, downstream to Potrero Road.

<sup>12</sup> Moro Cojo Slough: all reaches and tributaries, from the confluence with Moss Landing Harbor to the uppermost reach of the waterbody.

<sup>13</sup> Chualar Creek: all reaches and tributaries, from the confluence with the Salinas River to the uppermost reach of the waterbody.

<sup>14</sup> Quail Creek: all reaches and tributaries, from the confluence with the Salinas River to the uppermost reach of the waterbody.

<sup>15</sup> Esperanza Creek: all reaches and tributaries, from the confluence with the Salinas River to the uppermost reach of the waterbody.

<sup>16</sup> Espinosa Slough all reaches and tributaries, from the confluence with the Reclamation Canal to the uppermost reach of the waterbody.

<sup>17</sup> Salinas River: all reaches from upstream of Spreckels (upstream of monitoring site 309SSP) to Gonzalez, CA

Table IX Q-2. Interim Allocations

<b>INTERIM WASTE LOAD ALLOCATIONS (WLAs)</b>			
<b>Waterbody</b>	<b>Party Responsible for Allocation (Source)</b>	<b>First Interim WLA</b>	<b>Second Interim WLA</b>
All waterbodies given waste load allocations (WLAs) as identified in Final Waste Load Allocations Table	<p>City of Salinas (Storm drain discharges to MS4s) Storm Water Permit NPDES No. CA00049981</p> <p>County of Monterey (Storm drain discharges to MS4s) Storm Water General Permit NPDES No. CAS000004</p>	<p>Achieve <b>MUN standard-based and Unionized Ammonia objective-based</b> allocations:</p> <p>Allocation-5 Allocation-9</p> <p><b>12 years after effective date of TMDL</b></p>	<p>Achieve <b>Wet Season (Nov. 1 to Apr. 30) Biostimulatory target-based TMDL</b> allocations:</p> <p>Wet Season Allocation/Waterbody combinations as identified in Final Waste Load Allocations Table</p> <p><b>20 years after effective date of TMDL</b></p>

<b>INTERIM LOAD ALLOCATIONS (LAs)</b>			
<u>Waterbody</u>	<u>Party Responsible for Allocation (Source)</u>	<u>First Interim LA</u>	<u>Second Interim LA</u>
All waterbodies given load allocations (LAs) as identified in Final Load Allocations Table <b>Error! Reference source not found.</b>	Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)	Achieve <b>MUN standard-based and Unionized Ammonia objective-based</b> allocations:  Allocation-5 Allocation-9  <b>12 years after effective date of TMDL</b>	Achieve <b>Wet Season</b> (Nov. 1 to Apr. 30) <b>Biostimulatory target-based TMDL</b> allocations:  Wet Season Allocation/Waterbody combinations as identified in Final Load Allocations Table <b>Error! Reference source not found.</b>  <b>20 years after effective date of TMDL</b>

\* Responsible parties shall meet allocations in all receiving surface waterbodies of the responsible parties' discharges.

The parties responsible for the allocation to controllable sources are not responsible for the allocation to natural sources.

### **Margin of Safety**

A margin of safety is incorporated implicitly in the TMDLs through conservative model assumptions and statistical analysis. In addition, an explicit margin of safety is incorporated by reserving 20% of the load, calculated on a concentration basis, from wet season allocations.

### **Implementation**

#### **DISCHARGES FROM IRRIGATED AGRICULTURAL LANDS:**

Implementing parties must comply with the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands (Order R3-2012-0011) and the Monitoring and Reporting Programs in accordance with Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03., or its renewals or replacements to meet load allocations and achieve the TMDL. The requirements in these orders, and their renewals or replacements in the future, will implement the TMDLs and rectify the impairments addressed in this TMDL.

Current requirements in the Agricultural Order that will achieve the load allocations include:

- a. Implement, and update as necessary, management practices to reduce nutrient loading.
- b. Maintain existing, naturally occurring, riparian vegetative cover in aquatic habitat areas.
- c. Develop/update and implement Farm Plans.
- d. Properly destroy abandoned groundwater wells.
- e. Develop, and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) or alternative certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional.

#### *Monitoring*

Owners and operators of irrigated agricultural lands must perform monitoring and reporting in accordance with Monitoring and Reporting Program Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03, as applicable to the operation.

Determination of Compliance with Load Allocations

Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen compound and orthophosphate loading, and water quality monitoring. Flexibility to allow owners/operators from irrigated lands to demonstrate compliance with load allocations is a consideration; additionally, staff is aware that not all implementing parties are necessarily contributing to or causing a surface water impairment. However, it is important to recognize that impacting shallow groundwater with nutrient pollution may also impact surface water quality via baseflow loading contributions to the creek.

To allow for flexibility, Water Board staff will assess compliance with load allocations using one or a combination of the following:

- A. attaining the load allocations in the receiving water;
- B. attaining receiving water TMDL numeric targets for nutrient-response indicators (i.e., dissolved oxygen water quality objectives, chlorophyll a targets and microcystin targets) and mitigation of downstream nutrient impacts to receiving waterbodies may constitute a demonstration of attainment of the nitrate, nitrogen and orthophosphate-based seasonal biostimulatory load allocations. Note that implementing parties are strongly encouraged to maximize overhead riparian canopy, where and if appropriate, using riparian vegetation, because doing so could result in achieving nutrient-response indicator targets before allocations are achieved (resulting in a less stringent allocation);
- C. demonstrating quantifiable receiving water mass load reductions;
- D. owners/operators of irrigated lands may be deemed in compliance with load allocations by implementing management practices that are capable of achieving interim and final load allocations identified in this TMDL;
- E. owners/operators of irrigated lands may provide sufficient evidence to demonstrate that they are and will continue to be in compliance with the load allocations; such evidence could include documentation submitted by the owner/operator to the Executive Officer that the owner/operator is not causing waste to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

STORM DRAIN DISCHARGES TO MS4s:

The Central Coast Water Board will require the MS4 entities to develop and submit for Executive Officer approval a Wasteload Allocation Attainment Program (WAAP). The WAAP shall be submitted within one year of approval of the TMDL by the Office of Administrative Law, or within one year of a stormwater permit renewal, whichever occurs first. The WAAP shall include descriptions of the actions that will be taken by the MS4 entity to attain the TMDL waste load allocations, and specifically address:

1. Development of an implementation and assessment strategy;
2. Source identification and prioritization;
3. Best management practice identification, prioritization, implementation schedule, analysis, and effectiveness assessment;
4. Monitoring and reporting program development and implementation. Monitoring program goals shall include: 1) assessment of stormwater discharge and receiving water discharge quality 2) assessment of best management effectiveness, and 3) demonstration and progress towards achieving interim goals and waste load allocations.
5. Coordination with stakeholders; and
6. Other pertinent factors.

Determination of Compliance with Waste Load Allocations

Waste load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen compound and orthophosphate loading, and water quality monitoring.

To allow for flexibility, Water Board staff will assess compliance with waste load allocations using one or a combination of the following:

- A. attaining the waste load allocations in the receiving water;
- B. attaining receiving water TMDL numeric targets for nutrient-response indicators (i.e., dissolved oxygen water quality objectives, chlorophyll a targets and microcystin targets) and mitigation of downstream nutrient impacts to receiving waterbodies may constitute a demonstration of the attainment of the nitrate, nitrogen and orthophosphate-based seasonal biostimulatory waste load allocations. Note that implementing parties are strongly encouraged to maximize overhead riparian canopy using riparian vegetation, as appropriate, because doing so could result in achieving nutrient-response indicator targets before allocations are achieved (resulting in a less stringent allocation);
- C. demonstrate compliance by measuring concentrations in stormwater outfalls;
- D. demonstrate compliance by demonstrating load reductions on mass basis at stormdrain outfalls;
- E. MS4s may be deemed in compliance with waste load allocations through implementation and assessment of pollutant loading reduction projects (BMPs), capable of achieving interim and final waste load allocations identified in this TMDL in combination with water quality monitoring for a balanced approach to determining program effectiveness;
- F. Any other effluent limitations and conditions which are consistent with the assumptions and requirements of the waste load allocations.

Monitoring

Municipal separate storm sewer systems (MS4) entities with operations and storm water conveyance systems in the TMDL project areas - specifically the City of Salinas, and County of Monterey - are required to develop and submit monitoring programs as part of their WAAP. The goals of the monitoring programs are described in the requirements of the WAAP.

Staff encourages the City of Salinas and County of Monterey to develop and submit creative and meaningful monitoring programs. Monitoring strategies can use a phased approach, for example, whereby outfall or receiving water monitoring is phased in after best management practices have been implemented and assessed for effectiveness. Pilot projects where best management practices are implemented in well-defined areas covering a fraction of the MS4 that facilitates accurate assessment of how well the best management practices control pollution sources, is acceptable, with the intent of successful practices then being implemented in other or larger parts of the MS4.

DOMESTIC ANIMAL/LIVESTOCK DISCHARGES:

The water quality data available from stream reaches that exclusively drain grazing lands, or lands where grazed animals and farm animals can be expected to occur, indicate the nitrogen compounds and orthophosphate proposed water quality targets, and thus load allocations, are being met in these reaches. Based on available data, this source category is meeting their load allocation. As such, no new regulatory requirements are deemed necessary or are being proposed.

It is important to note that the TMDL project area is subject to the Domestic Animal Waste Discharge Prohibition and are subject to compliance with an approved indicator bacteria TMDL load allocation. Implementation efforts by responsible parties to comply with this prohibition and with indicator bacteria load allocations will, as a practical matter, also reduce the risk of nitrogen and phosphorus

loading to surface waters from domestic animal waste. It should be noted that available information does not conclusively demonstrate that all domestic animal operations are currently meeting load allocations; there are potentially unpermitted confined animal facilities, equestrian facilities, or grazing animal operations that do not meet load allocations. More information will be obtained, if merited, during the implementation phase of the TMDL to further assess the level of nutrient contribution from these source categories, and to identify any actions if necessary to reduce loading.

### **Tracking and Evaluation**

Every three years, beginning three years after TMDLs are approved by the Office of Administrative Law, the Central Coast Water Board will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress toward achieving their allocations, dependent upon staff availability and priorities. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and the numeric goal.

Responsible parties will continue monitoring and reporting according to this plan for at least three years, at which time the Central Coast Water Board will determine the need for continuing or otherwise modifying the monitoring requirements. Responsible parties may also demonstrate that although water quality objectives are not being achieved in receiving waters, controllable sources of nitrogen compounds and orthophosphate are not contributing to the exceedance. If this is the case, the Central Coast Water Board may re-evaluate the numeric goal and allocations. For example, the Central Coast Water Board may pursue and approve a site-specific objective. The site-specific objective would be based on evidence that natural conditions or background sources alone were the cause of exceedances of the Basin Plan water quality objectives.

Three-year reviews will continue until the water quality objectives are achieved. The compliance schedule for achieving this TMDL is 30 years after the date of approval by the Office of Administrative Law.

### **Optional Special Studies and Reconsideration of the TMDL**

Additional monitoring and voluntary optional special studies would be useful to evaluate the uncertainties and assumptions made in the development of this TMDL. The results of special studies may be used to reevaluate waste load allocations and load allocations in this TMDL. Implementing parties may submit work plans for optional special studies (if implementing parties choose to conduct special studies) for approval by the Executive Officer. Special studies completed and final reports shall be submitted for Executive Officer approval. Additionally, eutrophication is an active area of research; consequently ongoing scientific research on eutrophication and biostimulation may further inform the Water Board regarding waste load or load allocations that are protective against biostimulatory impairments, implementation timelines, and/or downstream impacts. At this time, staff maintains there is sufficient information to begin to implement the TMDL and make progress towards attainment of water quality standards and the proposed allocations. However, in recognition of the uncertainties regarding nutrient pollution and biostimulatory impairments, staff proposes that the Water Board reconsider the waste load and load allocations, if merited by optional special studies and new research, ten years after the effective date of the TMDL, which is upon approval by the Office of Administrative Law (OAL). A time schedule for optional studies and Central Coast Water Board reconsideration of the TMDL is presented in Table IX Q-3.

Further, the Central Coast Water Board may also reconsider these TMDLs, the nutrient water quality criteria, or other TMDL elements on the basis of potential future promulgation of a statewide nutrient policy for inland surface waters in the State of California.

Table IX Q-3. Time schedule for optional studies and Water Board reconsideration of waste load allocations and load allocations

<u>Proposed Actions</u>	<u>Description</u>	<u>Time Schedule-Milestones</u>
<u>Optional studies work plans</u>	<u>Implementing parties shall submit work plans for optional special studies (if implementing parties choose to conduct special studies) for approval by Executive Officer</u>	<u>By five years after the effective date of the TMDL</u>
<u>Final optional studies</u>	<u>Optional studies completed and final report submitted for Executive Officer approval.</u>	<u>By eight years after the effective date of the TMDL</u>
<u>Reconsideration of TMDL</u>	<u>If merited by optional special studies or information from ongoing research into eutrophication issues, the Water Board will reconsider the Wasteload and Load allocations and/or implementation timelines adopted pursuant to this TMDL.</u>	<u>By ten years after the effective date of the TMDL</u>