STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 8-9, 2016
Prepared on November 15, 2016

ITEM NUMBER: **16**

SUBJECT: **2014 Integrated Report Assessing Waters of the Central Coast Region- Clean Water Act (CWA) Section 303(d) List of Water Segments not Meeting Water Quality Standards and CWA Section 305(b), Water Quality Condition Report.**

STAFF CONTACT: **Mary S. Hamilton (805) 542-4768 or Mary.Hamilton@waterboards.ca.gov**

THIS ACTION: **Adopt Resolution No. R3-2016-0053, Approving the Changes to the 303(d) List for the Central Coast Region.**

SUMMARY

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) is responsible for developing an Integrated Report for waters within the Central Coast Region in accordance with federal Clean Water Act (CWA) Sections 303(d) and 305(b). Section 303(d) requires the State and Regional Water Boards to establish and periodically update a list of "water quality limited segments" or impaired waters (303(d) List). Section 305(b) requires the state to develop a water quality conditions report (305(b) Report). Together, the 303(d) List and the 305(b) Report are referred to as an Integrated Report. The Integrated Report is important because it describes the overall condition of our surface waters and drives the Water Board's priorities and decisions for many programs.

This staff report summarizes the process for developing the 2014 Integrated Report[1], including proposed changes to the 303(d) List of impaired waters, water quality conditions, and public comments and staff's responses.

As part of this process, staff is proposing changes to the Integrated Report as described in this staff report. In accordance with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy), the Regional Water Quality Control Boards and the State Water Resources Control Board (State Water Board) must adopt changes to the 303(d) List prior to submittal to the US Environmental Protection Agency (USEPA). However, neither the CWA Section 305(b) nor the Listing Policy requires the State or Regional Water

[1] These reports take years to develop due to the massive amount data, the analysis required, and the public participation process. Hence, staff is summarizing the "2014" Integrated Report at this time.

Boards to take formal action on or approve the 305(b) Report. This staff report supports a recommendation for the Central Coast Water Board to adopt Resolution No. R3-2016-0053 approving changes to the 303(d) List.

If approved, Central Coast Water Board staff will provide the 2014 303(d) List to the State Water Board for inclusion in a statewide 2014 303(d) List. State Water Board staff will ultimately submit a statewide 2014 303(d) List to USEPA.

DISCUSSION

In conformance with USEPA guidance from 2005, the State and Regional Water Quality Control Boards prepare a single Integrated Report that meets the reporting requirements of CWA Sections 303(d) and 305(b). The Central Coast Water Board is responsible for developing an Integrated Report for waters within the Central Coast Region. Attachment 3 contains a summary report that describes the Integrated Report assessment process including the procedures utilized by State and Regional Water Board staff to gather and analyze data.

Developing the 303(d) List

Under CWA Section 303(d), states are required to develop, update, and submit to USEPA for approval, a list of waterbody segments (water segments) that do not meet water quality standards (the 303(d) List). Under Title 40 Code of Federal Regulations (40 CFR) Section 130.7(d)(1), states are required to submit the 303(d) List biennially. After approval of the 303(d) List, water segments placed on the 303(d) List must be addressed through either the development of Total Maximum Daily Loads (TMDLs), or an existing regulatory program or action that is reasonably expected to result in the attainment of the water quality standard within a specified timeframe. Prior to submitting the list to USEPA, the Regional and State Water Boards must review and approve the 303(d) List, pursuant to requirements and procedures of the Listing Policy, including opportunity for public comment and responding to any comments. Attachment 1, Resolution No. R3-2016-0053 provides the findings and conclusions for the Central Coast Water Board to approve changes to the 303(d) List for the Central Coast Region.

The water quality assessment process begins with the solicitation of data, pursuant to Title 40 CFR Section 130.7(b)(5) which asserts “each state shall assemble and evaluate all existing and readily available water quality-related data and information” when updating the 303(d) List. The State Water Board solicited data from the public with a formal data solicitation period that began on January 14, 2010 and concluded on August 30, 2010.

State and Central Coast Water Board staff analyzed the data to determine if a water segment is meeting water quality standards in conformance with the Listing Policy (State Water Board, 2004, amended 2015). The approach for developing California’s 2014 303(d) List included two steps:

1) State and Regional Water Board staff developed Lines of Evidence, in which data were compared to water quality objectives, criteria, and guidelines (protective limits) for each beneficial use; and

2) Central Coast Water Board staff combined all Lines of Evidence into fact sheets for each waterbody segment and pollutant combination (water segment/pollutant combination), and employed a statistical approach defined in the Listing Policy to determine whether water quality standards are attained.

Next, Central Coast Water Board staff developed or updated existing fact sheets and, in conformance with the Listing Policy, provided a decision to "list," "de-list," or "do not list." Each fact sheet contains all of the data and information available for a unique water segment/pollutant combination. A decision of "do not list" means that there is not sufficient evidence under the Listing Policy to determine that a water segment/pollutant combination is exceeding water quality standards. Decisions to "list" mean that there is sufficient evidence under the Listing Policy that the water segment/pollutant combination should be added to, or remain on, the 303(d) List. Decisions to "de-list" mean that there is sufficient evidence under the Listing Policy that water quality standards are attained and the water segment/pollutant combination should be removed from the 303(d) List. Central Coast Water Board staff evaluated 23,055 Lines of Evidence and developed 5,431 fact sheets for the 2014 Integrated Report.

Based on the available data and information, and following the Listing Policy procedures to make decisions, staff proposes the following numbers of decisions:

- 4,426 decisions of "do not list;"
- 922 decisions of "list" (add to the 303(d) List or remain on the 303(d) List); and
- 83 decisions of "de-list" (remove from the 303(d) List).

Therefore, Central Coast Water Board staff proposes 922 water segment/pollutant combinations for the 2014 303(d) List, including 279 new combinations added to the 303(d) List and 643 existing combinations. Approximately one-third (298 of the 922) of the water segment/pollutant combinations proposed for the 2014 303(d) List have an USEPA approved TMDL or an action other than a TMDL that is expected to result in attainment of the water quality standard. Two-thirds (624) are yet to be addressed by a TMDL or an action other than a TMDL.

Pursuant to Section 5 of the Listing Policy, Central Coast Water Board staff assigned an expected TMDL completion date to each water segment/pollutant combination placed on the 303(d) List for which a TMDL has not yet been completed. Central Coast Water Board staff prioritized development of TMDLs for nutrients, pesticides, and toxicity in all watersheds, and are evaluating methodologies to address turbidity and temperature impairments in the Central Coast Region. These priorities are aligned with the Region's priorities to prevent and correct threats to human health and aquatic life. Expected TMDL completion dates are included in each fact sheet (Attachment 3, see Appendix H). Staff assigned TMDL completion dates as follows:

- TMDL completion by 2018 for all water segment/pollutant combinations that are in the current TMDL work plan;
- TMDL completion by 2023 for all water segments on the 303(d) List for turbidity, temperature, toxicity, or nutrients; and
- TMDL completion by 2027 for all remaining water segments on the 303(d) List.

The assessment process for the 2014 Integrated Report was more intensive than for the previous Integrated Report update due to the increased amount of data available and analyzed (Table 1). For each assessment cycle, staff adds new data and information to the existing administrative record and all available data are used to determine water quality condition.

Table 1. Comparison of data assessment effort for the Integrated Report cycles 2006-2014.

	2006 Integrated Report	2008/2010 Integrated Report	2014 Integrated Report
Number of Lines of Evidence	382	11,719	23,055
Number of Fact Sheets	286	3,640	5,431

Developing the 305(b) Report

Pursuant to CWA Section 305(b) requirements to report on water quality conditions, Central Coast Water Board staff evaluated all readily available data and developed a Water Quality Condition Report (305(b) Report). The 305(b) Report incorporates the 303(d) List but also reports on waters that are, either attaining water quality standards, or for which there is insufficient information to make a determination.

For each water segment and beneficial use, staff followed the assessment process defined in the Listing Policy to determine a beneficial use support rating. Central Coast Water Board staff assigned a use support rating of "not supporting" to water segment/pollutant combinations that meet the requirement of the Listing Policy to place a water segment on the 303(d) List. Central Coast Water Board staff assigned a use support rating of "fully supporting" to water segment/pollutant combinations that meet the sample count requirements of the Listing Policy and are attaining water quality standards. Consequently, when neither of the above is true, staff assigned a use support rating of "insufficient information."

The combination of beneficial use support ratings assigned to each water segment determines its placement into one of five, non-overlapping categories. Category reports are available in Attachment 3 (Appendices B-G). For the 2014 Integrated Report, Central Coast Water Board staff categorized 388 water segments into the five Categories as shown in Table 2.

Pursuant to Section 2 of the Listing Policy, water segments remain in Category 5 until all 303(d) listed pollutants are addressed by either USEPA approved TMDLs, or by another action that is expected to result in the reasonable attainment of the water quality standards, at which point the water segment will be placed into Category 4a or 4b.

There are 223 water segments placed in Categories 4a or 5. Many of those water segments are not meeting water quality standards, as defined in the Listing Policy, for more than one pollutant, (e.g. 22 pollutants do not meet water quality standards for Orcutt Creek). Therefore, the 922 water segment/pollutant combinations proposed for the 2014 303(d) List are associated with 223 water segments.

The Central Coast Water Board may provide direction to staff regarding staff's recommended changes to the 305(b) Report. However, neither the CWA Section 305(b) nor the Listing Policy requires the State or Regional Water Boards to take formal action on or approve the 305(b) Report. Therefore, staff did not prepare a formal recommendation by resolution for action/approval of the 305(b) Report. Attachment 3, Appendices B-G contains the Central Coast Region's 305(b) Report.

Table 2. Number of water segments assigned to each of the 305(b) Report categories.

Category	Category Definition	Number of water segments
1	All assessed beneficial uses are supported and no beneficial uses are known to be impaired.	**71**
2	There is insufficient information to determine beneficial use support.	**92**
3	There is insufficient data and/or information to make a beneficial use support determination but information and/or data indicates beneficial uses may be potentially threatened.	**2**
4a	At least one beneficial use is not supported and a TMDL has been developed and approved by USEPA for all water segment/pollutant combinations and the implementation plan is expected to result in full attainment of the water quality standard within a specified time frame.	**21**
4b	At least one beneficial use is not supported and another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.	**0**
4c	At least one beneficial use is not supported but the non-attainment of any applicable water quality standard for the water segment is the result of pollution and is not caused by a pollutant.	**0**
5	At least one beneficial use is not supported and a TMDL is needed.	**202**

Summary of Recommended 303(d) List Decisions

Attachment 2 contains a summary of all proposed changes to the Central Coast Water Board's 2014 303(d) List. These changes include the following:

- Recommendations to add a water segment/pollution combination to the 303(d) List;
- Recommendations to remove a water segment/pollution combination from the 303(d) List;
- Recommendations to change a pollutant name (e.g. from "pathogens" to "indicator bacteria"); and
- Changes to the TMDL status (e.g. from "TMDL required" to "TMDL completed and approved").

COMMENTS

A 30-day public comment period began on August 22, 2016 and ended September 23, 2016 and included a public workshop, hosted at the Central Coast Water Board office on September 14, 2016. Central Coast Water Board staff received nine comment letters during the public comment period, participated in six conference calls with interested parties, and responded to

questions and comments from eleven interested parties via email correspondence. Attachment 4 contains written responses to comment letters submitted during the public comment period and a list of changes made to the Integrated Report in response to public comments.

CHANGES MADE SUBSEQUENT TO THE RELEASE OF THE DRAFT DOCUMENTS

In addition to the changes made to the Integrated Report in response to public comment, Central Coast Water Board staff made two changes to the Integrated Report. Staff identified errors in the Integrated Report assessment and revised the 303(d) List status for two waterbodies as follows:

- Revised the 303(d) List status for Carpinteria Creek (below Gobernador Creek)/toxicity from "do not list" to "list." Staff added this waterbody segment and pollutant combination to the 303(d) List. This change has no effect on the 305(b) Report status of this waterbody segment, which remains in Category 5.
- Revised the 303(d) List status for Canada del Capitan/toxicity from "do not list" to "list." This change also results in a change to the 305(b) Report status of this waterbody segment, which, by definition of California's 305(b) Report categories, is now in Category 5.

Staff updated associated documents including the Recommended Changes for the Central Coast Region's 2014 303(d) List (Attachment 2) and the Central Coast Water Board Summary Report for the 2014 Integrated Report (Attachment 3) to reflect all changes made subsequent to the release of the draft documents for public review and comment.

CONCLUSION

The Integrated Report and the specifically the 303(d) List serves to inform the Water Board and public of which waterbodies and pollutants exceed protective water quality standards in the Central Coast Region, and guides the Central Coast Water Board in priority, timing, and approaches to improving water quality conditions per our mission and Vision for Healthy Watershed's. Approval of the 303(d) List, as part of the Integrated Report process, is one of the first steps in the on-going planning and implementation efforts to protect beneficial uses and improve conditions in the waters of the Central Coast Region.

RECOMMENDATION

Adopt Resolution No. R3-2016-0053, as proposed, to approve the changes to the Central Coast Water Board's 303(d) List.

ATTACHMENTS

1. Resolution No. R3-2016-0053
2. Recommended Changes for the Central Coast Region's 2014 303(d) List
3. Central Coast Water Board Summary Report for the 2014 Integrated Report*
4. Public Comments and Staff's Responses for the 2014 Integrated Report Assessing Waters of the Central Coast Region Including Clean Water Act (CWA) Section 303(d) List of Water Segments not Meeting Water Quality Standards and CWA Section 305(b), Water Quality Condition Report

*Due to the high volume of information and number of pages associated with the Appendices A-J in Attachment 3, live links have been provided on the agenda web page for item 16.

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. R3-2016-0053

UPDATING THE CLEAN WATER ACT SECTIONS 303(d) LIST AND 305(b) REPORT (INTEGRATED REPORT) FOR THE CENTRAL COAST REGION

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) finds:

1. A thorough and comprehensive water quality assessment is critical to measuring progress towards the Vision of Healthy Watersheds.

2. Section 303(d) of the federal Clean Water Act (CWA) and section 130.7 of Title 40 Code of Federal Regulations (40 CFR) requires the state to identify and prepare a list of waterbodies for which water quality standards are not attained (303(d) List), and to submit to that list to the USEPA for approval.

3. Section 305(b) of the CWA requires the state to prepare a biennial report on the water quality condition of surface waters within the state (305(b) Report) and to submit that report to the USEPA for inclusion in their "National Water Quality Inventory Report" to Congress.

4. The 2014 Integrated Report for the Central Coast Region combines the 305(b) Report and the 303(d) List into one report.

5. State Water Resources Control Board staff actively solicited water quality information and data from the public between January 2010 and August 2010, and received data and information from multiple monitoring programs.

6. Central Coast Water Board staff assembled and considered all readily available data to assess water quality conditions and prepared fact sheets supporting recommendations for additions, deletions, and changes to the existing 303(d) List, consistent with the State Water Resources Control Board's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy).

7. Central Coast Water Board staff provided advanced notice and opportunity for public comment on the draft recommendations for changes to the 303(d) List during a 30-day public comment period commencing on August 22, 2016 and held a public workshop on August 14, 2016.

8. Central Coast Water Board staff developed written responses to all public comments received and revised the supporting staff report and supporting documentation for the Central Coast Water Board's consideration.

9. The Listing Policy requires that the Central Coast Water Board consider and approve each proposed change to the 303(d) List, as documented in a fact sheet, for the Central Coast Region.

10. On December 9, 2016 the Central Coast Water Board held a public hearing to consider the recommendations to changes the 303(d) List.

THEREFORE, BE IT RESOLVED that the Central Coast Water Board approves each proposed addition, deletion, and change to the 303(d) List as documented in the Staff Report and Attachment 2 (Recommended Changes for the Central Coast Region's 2014 303(d) List).

I, John M. Robertson, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a resolution adopted by the Central Coast Regional Water Quality Control Board on December 9, 2016.

John M. Robertson
Executive Officer

Recommended Changes for The Central Coast Region's 2014 303(d) List

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Alamo Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X	X		
Alisal Creek (Monterey County)	Ammonia		X	X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Chlorophyll-a					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Toxicity		X	X		
	Turbidity			X		
Alisal Slough (Monterey County)	Ammonia		X	X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Alisal Slough (Monterey County)	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Oxygen, Dissolved~~				X	TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X			
	Turbidity			X		
Aptos Creek	Indicator Bacteria		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sedimentation/ Siltation	X				
Arana Gulch	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
Arroyo Burro Creek	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Oxygen, Dissolved			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Arroyo De La Cruz	~~Escherichia coli (E. coli)~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Arroyo De La Cruz Lagoon).
	~~Oxygen, Dissolved~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Arroyo De La Cruz Lagoon).
Arroyo De La Cruz Lagoon	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
Arroyo Grande Creek (below Lopez Lake)	Benthic Community Effects			X		
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nickel			X		
	Nitrate			X		
	Toxicity		X	X		
Arroyo Paredon	Boron	X				
	Chloride	X				
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Arroyo Paredon	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
Arroyo Seco River	Fecal Coliform	X				
	Temperature, water	X				
Atascadero Creek (San Luis Obispo County)	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Oxygen, Dissolved	X				
Atascadero Creek (Santa Barbara County)	Benthic Community Effects			X		
	Chloride	X				
	Enterococcus	X				
	Escherichia coli (E. coli)	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Atascadero Creek (Santa Barbara County)	Fecal Coliform	X				
	Nitrate			X		
	Oxygen, Dissolved	X				
	pH	X				
	Sodium	X				
	Temperature, water	X				
	Toxicity		X	X		
Beach Road Ditch	Nitrate	X				
	Oxygen, Dissolved	X				
	pH	X				
	Turbidity	X				
Bean Creek	Sedimentation/ Siltation	X				
Bear Creek(Santa Cruz County)	Sedimentation/ Siltation	X				
Bell Creek (Santa Barbara Co)	Fecal Coliform	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X			

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Bennett Slough	Chlorophyll-a	X				
	Oxygen, Dissolved	X				
	pH	X				
	Turbidity			X		
Big Creek (Big Sur Coast)	pH			X		
Blanco Drain	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	DDD			X		
	DDE			X		
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Oxygen, Dissolved~~				X	TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Pesticides~~				X	
	Toxicity		X			
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Blosser Channel	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Temperature, water			X		
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity			X		
Boulder Creek	Sedimentation/ Siltation	X				
Bradley Canyon Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Bradley Canyon Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Temperature, water			X		
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Bradley Channel	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Bradley Channel	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity			X		
Branciforte Creek	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Enterococcus					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sedimentation/ Siltation	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Cachuma, Lake	Mercury			X		
Camp Evers Creek	Escherichia coli (E. coli)			X		
	pH	X				
Canada Del Capitan	Toxicity		X	X		
Canada De La Gaviota	Boron	X				
	Chloride	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Sodium	X				
Canada Del Refugio	Chloride	X				
	Fecal Coliform	X				
	Sodium	X				
Carbonera Creek	Indicator Bacteria		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nutrients	X				
	Sedimentation/ Siltation	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Carnadero Creek (Uvas Creek below Bloomfield Road)	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate	X				
	Oxygen, Dissolved	X				
	~~pH~~				X	
	Turbidity	X				
Carneros Creek (Monterey County)	Ammonia		X			
	Chlorophyll-a	X				
	Fecal Coliform	X				
	Nitrate			X		
	Oxygen, Dissolved	X				
	pH	X				
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Carneros Creek (Santa Barbara County)	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Specific Conductivity		X			
Carpinteria Creek	~~Chlorpyrifos~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Carpinteria Creek below Gobernador Creek).
	~~Escherichia coli (E. coli)~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Carpinteria Creek below Gobernador Creek).
	~~Fecal Coliform~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Carpinteria Creek below Gobernador Creek).
	~~Oxygen, Dissolved~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Carpinteria Creek below Gobernador Creek).
	~~Sodium~~				X	Water segment re-mapped. These decisions are now associated with a newly mapped segment (Carpinteria Creek below Gobernador Creek).

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Carpinteria Creek (below Gobernador Creek)	Chloride			X		
	~~Chlorpyrifos~~				X	
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate			X		
	Oxygen, Dissolved	X				
	Sodium	X				
	Toxicity		X	X		
Carpinteria Marsh (El Estero)	Nutrients	X				
	Oxygen, Dissolved	X				
	Priority Organics	X				
Casmalia Canyon Creek	Sedimentation/ Siltation	X				
Chesbro Reservoir	Mercury	X				
Cholame Creek	Boron					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chloride	X				
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Cholame Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
	Sodium	X				
	Specific Conductivity		X			
Chorro Creek	Benthic Community Effects			X		
	Chloride			X		
	Escherichia coli (E. coli)					TMDL status changed from Being Addressed by Completed TMDL to TMDL Required.
	Fecal Coliform	X				
	Nutrients	X				Impaired lengh defined as lower nine miles (below Highway 1 bridge)
	Sedimentation/ Siltation	X				
	Sodium			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Total Dissolved Solids			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Toxicity		X	X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Chualar Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Dimethoate			X		
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	pH	X				
	~~Temperature, water~~				X	
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Chualar Creek, South Branch	Ammonia			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH			X		
	Temperature, water			X		
	Turbidity			X		
Chumash Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
Cieneguitas Creek	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Oxygen, Dissolved	X				
	Temperature, water	X				
Clear Creek (San Benito County)	~~Mercury~~				X	
Corcoran Lagoon	pH	X				
	Total Coliform	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Corralitos Creek	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Turbidity	X				
Cuyama River (above Twitchell Reservoir)	Boron	X				
	Chloride	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Sodium	X				
	Specific Conductivity		X			
	Turbidity			X		
Dairy Creek	Enterococcus			X		
	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
	Oxygen, Dissolved	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Devereux Creek	Fecal Coliform	X				
	Oxygen, Dissolved	X				
Dos Pueblos Canyon Creek	Sodium	X				
Elkhorn Slough	Nitrate			X		
	Oxygen, Dissolved	X				
	Pesticides	X				
	pH	X				
	Sedimentation/ Siltation	X				
	Total Coliform	X				
Espinosa Lake	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
Espinosa Slough	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Pesticides	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Espinosa Slough	pH	X				
	Priority Organics	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Estrella River	Boron					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chloride	X				
	Fecal Coliform	X				
	pH	X				
	Sodium	X				
	Toxicity			X		
	Turbidity			X		
Fall Creek	Sedimentation/ Siltation	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Franklin Creek (Santa Barbara County)	~~Chlorpyrifos~~				X	
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate	X				
	pH	X				
	Sodium	X				
	Toxicity		X	X		
Furlong Creek	~~Chlorpyrifos~~				X	
	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate	X				
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Gabilan Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Gallighan Slough	Indicator Bacteria		X			
Glen Annie Canyon	~~Chloride~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
	~~Enterococcus~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Glen Annie Canyon	~~Escherichia coli (E. coli)~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
	~~Fecal Coliform~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
	~~Nitrate~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
	~~Sodium~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
	~~Toxicity~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Glen Annie Canyon Creek and/or Tecolotito Creek).
Glen Annie Canyon Creek	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity	X				
Goleta Slough/Estuary	Indicator Bacteria		X			
	Priority Organics	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Greene Valley Creek (Santa Barbara County)	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Temperature, water	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Hanson Slough	Indicator Bacteria		X			
Harkins Slough	Chlorophyll-a	X				
	Indicator Bacteria		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Hernandez Reservoir	Mercury	X				
Jalama Creek	Chloride					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
Kings Creek	Sedimentation/ Siltation	X				
La Brea Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
Las Tablas Creek	Metals	X				
Las Tablas Creek, North Fork	Metals	X				
Las Tablas Creek, South Fork	Metals	X				
Little Oso Flaco Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Llagas Creek (above Chesbro Reservoir)	pH	X				
	Temperature, water	X				
Llagas Creek (below Chesbro Reservoir)	Chloride	X				
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate		X			
	Oxygen, Dissolved	X				
	Sedimentation/ Siltation	X				
	Sodium	X				
	Specific Conductivity		X			
	Total Dissolved Solids	X				
	Turbidity	X				
Lockhart Gulch	Oxygen, Dissolved	X				
	pH	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Lompico Creek	Fecal Coliform		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate		X			
	Sedimentation/ Siltation	X				
Los Berros Creek	Chloride	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
Los Osos Creek (Los Osos to Los Osos Creek Estuary)	Fecal Coliform	X				
	Nitrate		X			
	Oxygen, Dissolved	X				
	Sedimentation/ Siltation	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Los Osos Creek (Los Osos to Morro Bay)	~~Fecal Coliform~~				X	Water segment re-mapped. These decisions are now associated with newly mapped segments (Los Osos Creek - upstream of Los Osos, Los Osos Creek - Los Osos to Estuary, and Los Osos Creek Estuary). TMDL status changed from Being Addressed by Completed TMDL to TMDL Required.
	~~Nitrate~~				X	See previous comment
	~~Nutrients~~				X	See previous comment
	~~Oxygen, Dissolved~~				X	See previous comment
	~~Sedimentation/ Siltation~~				X	See previous comment
Los Osos Creek (upstream of Los Osos)	Oxygen, Dissolved			X		
Los Osos Creek Estuary	Fecal Coliform	X				
	Nitrate		X			
	Oxygen, Dissolved	X				
	Turbidity			X		
Love Creek	Sedimentation/ Siltation	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Main Street Channel	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	~~pH~~				X	
	Temperature, water			X		
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Majors Creek (Monterey County)	Copper	X				
	Escherichia coli (E. coli)	X				
	Lead	X				
	Zinc	X				
Maria Ygnacio Creek	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	pH	X				
	Sodium	X				
	Turbidity			X		
McEnery Spring	pH	X				
McGowan Ditch	DDD			X		
	DDE			X		
	Malathion			X		
	Nitrate	X				
	Toxicity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Merrit Ditch	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH			X		
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Millers Canal	Chlorophyll-a	X				
	~~Chlorpyrifos~~				X	
	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Millers Canal	Oxygen, Dissolved	X				
	pH	X				
	Temperature, water	X				
	Toxicity		X	X		
	Turbidity	X				
Mission Creek (Santa Barbara County)	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Oxygen, Dissolved	X				
	Toxicity		X			
Monterey Harbor	Arsenic			X		
	Copper			X		
	~~Metals~~				X	
	Oxygen, Dissolved			X		
	PCBs (Polychlorinated biphenyls)			X		
	Toxicity		X			

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Moore Creek	Escherichia coli (E. coli)	X				
	Oxygen, Dissolved	X				
	pH	X				
	Specific Conductivity		X			
Moro Cojo Slough	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)	X				
	Nitrate			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Pesticides	X				
	pH	X				
	Sedimentation/ Siltation	X				
	Total Coliform	X				
	Toxicity		X	X		
	Turbidity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Morro Bay	Arsenic			X		
	Indicator Bacteria		X			
	Oxygen, Dissolved	X				
	Sedimentation/ Siltation	X				
Morro Creek	Fecal Coliform			X		
Moss Landing Harbor	Arsenic			X		
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	DDT			X		
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Dieldrin			X		
	Indicator Bacteria		X			
	Nickel	X				
	Oxygen, Dissolved	X				
	PCBs			X		
	~~Pesticides~~				X	
	pH	X				
	Sedimentation/ Siltation	X				
	Toxicity		X			

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Mountain Charlie Gulch	Sedimentation/ Siltation	X				
Nacimiento Reservoir	Mercury	X				
	~~Metals~~				X	
Natividad Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~pH~~				X	
	Temperature, water	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Newell Creek (Lower)	pH	X				
Newell Creek (Upper)	Sedimentation/ Siltation	X				
Nipomo Creek	Escherichia coli (E. coli)			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Temperature, water			X		
	~~Toxicity~~		X		X	
Nobel Gulch Creek	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
North Main Street Channel	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
Old Creek (above Whale Rock Reservoir)	Escherichia coli (E. coli)			X		
	Fecal Coliform			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Old Salinas River	Chlorophyll-a					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Old Salinas River Estuary	Nutrients	X				
	Pesticides	X				
Orcutt Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Boron	X				
	Carbaryl			X		
	Chloride	X				
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Cyfluthrin			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Cyhalothrin, Lambda			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDD			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDE			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDT					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Orcutt Creek	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Dieldrin					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Specific Conductivity		X			
	Temperature, water	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Oso Flaco Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chloride	X				
	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity			X		
Oso Flaco Lake	Chlorophyll a			X		
	DDT			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Oso Flaco Lake	Dieldrin					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Endrin			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Mercury			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved			X		
	Toxicity		X	X		New Listing, TMDL status is Being Addressed by Completed TMDL.
Pacheco Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
	Turbidity	X				
Pacific Ocean (Point Ano Nuevo to Soquel Point)	Dieldrin	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pacific Ocean at Arroyo Burro Beach (Santa Barbara County)	Enterococcus	X				
	Total Coliform	X				
Pacific Ocean at Avila Beach (Avila Pier)	~~Enterococcus~~				X	
	PCBs	X				
	Total Coliform			X		
Pacific Ocean at Avila Beach (SLO creek mouth)	Enterococcus	X				
	Total Coliform			X		
Pacific Ocean at Capitola Beach (Santa Cruz County)	Enterococcus	X				
	Fecal Coliform	X				
	Total Coliform			X		
Pacific Ocean at Carpinteria State Beach (Carpinteria Creek mouth)	Fecal Coliform	X				
Pacific Ocean at Cayucos (Cayucos Creek Mouth)	Enterococcus	X				
Pacific Ocean at Cowell Beach (Santa Cruz County)	Fecal Coliform			X		
	Total Coliform			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pacific Ocean at East Beach (mouth of Mission Creek, Santa Barbara County)	Enterococcus	X				
	Fecal Coliform	X				
	Total Coliform	X				
Pacific Ocean at East Beach (mouth of Sycamore Creek, Santa Barbara County)	~~Enterococcus~~				X	
Pacific Ocean at Goleta Beach (Santa Barbara)	Total Coliform	X				
Pacific Ocean at Guadalupe Dunes (Santa Barbara County)	Total Coliform			X		
Pacific Ocean at Hammonds Beach (Santa Barbara County)	Fecal Coliform	X				
	Total Coliform	X				
Pacific Ocean at Haskells Beach (Santa Barbara)	~~Enterococcus~~				X	
Pacific Ocean at Hope Ranch Beach (Santa Barbara County)	Fecal Coliform	X				
	Total Coliform	X				
Pacific Ocean at Jalama Beach (Santa Barbara)	~~Enterococcus~~				X	
	Fecal Coliform	X				
	Total Coliform	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pacific Ocean at Leadbetter Beach (Santa Barbara County)	Enterococcus			X		
	Total Coliform	X				
Pacific Ocean at Main Beach (Santa Cruz County), at Boardwalk	Total Coliform			X		
Pacific Ocean at Main Beach (Santa Cruz County), at San Lorenzo River mouth	Total Coliform			X		
Pacific Ocean at Mitchells Cove Beach	Total Coliform			X		
Pacific Ocean at Monterey State Beach (Del Monte Beach)	Enterococcus			X		
	Total Coliform			X		
Pacific Ocean at Natural Bridges Beach	Total Coliform			X		
Pacific Ocean at New Brighton Beach (Santa Cruz County)	Total Coliform			X		
Pacific Ocean at Ocean Beach (Santa Barbara County)	Fecal Coliform	X				
	Total Coliform	X				
Pacific Ocean at Olde Port Beach (131 yards west of restrooms)	Total Coliform			X		
Pacific Ocean at Olde Port Beach (at restrooms)	~~Enterococcus~~				X	

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pacific Ocean at Pismo Beach (San Luis Obispo County)	Enterococcus			X		
	Fecal Coliform			X		
	Total Coliform			X		
Pacific Ocean at Pismo State Beach (San Luis Obispo County), Park Ave	Total Coliform			X		
Pacific Ocean at Pismo State Beach (San Luis Obispo County), south of Pismo Pier	Fecal Coliform	X				
Pacific Ocean at Pismo State Beach (San Luis Obispo County), Wadsworth Ave	Total Coliform			X		
Pacific Ocean at Point Rincon (mouth of Rincon Cr, Santa Barbara County)	~~Fecal Coliform~~				X	
	~~Total Coliform~~				X	
Pacific Ocean at Refugio Beach (Santa Barbara County)	~~Enterococcus~~				X	
	Total Coliform	X				
Pacific Ocean at Rio Del Mar (Santa Cruz County), Aptos Creek mouth	Total Coliform			X		
Pacific Ocean at Seabright (Castle) Beach	Total Coliform			X		
Pacific Ocean at Stillwater Cove Beach	Enterococcus	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pacific Ocean at Twin Lakes Beach (Santa Cruz County)	Total Coliform			X		
Pacific Ocean at Waddell Creek Beach	Total Coliform			X		
Pajaro River	Boron	X				
	Chlordane	X				
	Chloride	X				
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chromium			X		
	DDD	X				
	DDE			X		
	DDT			X		
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Dieldrin	X				
	Escherichia coli (E. coli)	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pajaro River	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate	X				
	Oxygen, Dissolved	X				
	PCBs (Polychlorinated biphenyls)	X				
	pH	X				
	Sedimentation/ Siltation	X				
	Sodium	X				
	Toxicity		X	X		
	Turbidity	X				
Pajaro River Estuary	DDE			X		
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Malathion			X		
	Oxygen, Dissolved			X		
	pH			X		
	Temperature, water			X		
	Toxicity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Pennington Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
Pico Creek	Oxygen, Dissolved	X				
Pinto Lake	Ammonia		X	X		
	Chlorophyll-a	X				
	Cyanobacteria hepatotoxic microcystins	X				
	DDT			X		
	Oxygen, Dissolved	X				
	pH	X				
	Scum/Foam-unnatural	X				
Pismo Creek	Chloride	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Oxygen, Dissolved	X				
	Sodium	X				
	Turbidity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Port San Luis	Arsenic			X		
	Dieldrin			X		
	PAHs			X		
	PCBs			X		
Porter Gulch Creek	Enterococcus	X				
	Escherichia coli (E. coli)	X				
Prefumo Creek	Fecal Coliform	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
	Toxicity		X	X		
	Turbidity	X				
Quail Creek	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Dimethoate			X		
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Quail Creek	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Permethrin, total			X		
	Temperature, water	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Rider Creek	Sedimentation/ Siltation	X				
Rincon Creek	Boron	X				
	Chloride	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate			X		
	Oxygen, Dissolved			X		
	Sodium	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Rincon Creek	Toxicity		X			
	~~Turbidity~~				X	
Rodeo Creek Gulch	pH	X				
	Turbidity	X				
Romero Creek	pH	X				
Salinas Reclamation Canal	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Copper	X				
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Salinas Reclamation Canal	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Permethrin, total			X		
	~~Pesticides~~				X	
	pH	X				
	Priority Organics	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Salinas River (lower, estuary to near Gonzales Rd crossing, watersheds 30910 and 30920)	Benthic Community Effects			X		
	Chlordane	X				
	Chloride	X				
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	DDE			X		
	DDT		X			
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Dieldrin	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Salinas River (lower, estuary to near Gonzales Rd crossing, watersheds 30910 and 30920)	Enterococcus	X				
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	PCBs	X				
	~~Pesticides~~				X	
	pH	X				
	Sodium	X				
	~~Specific Conductivity~~		X		X	
	Total Dissolved Solids	X				
	Toxaphene	X				
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Salinas River (middle, near Gonzales Rd crossing to confluence with Nacimiento River)	~~Escherichia coli (E. coli)~~				X	
	Fecal Coliform	X				
	~~Pesticides~~				X	
	pH	X				
	Temperature, water	X				
	Toxicity		X			
	Turbidity	X				
Salinas River (upper, confluence of Nacimiento River to Santa Margarita Reservoir)	Chloride	X				
	pH	X				
	Sodium	X				
	Turbidity			X		
Salinas River Lagoon (North)	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDE			X		
	Nutrients					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Pesticides~~				X	
	pH			X		
	Temperature, water			X		
	Toxicity			X		New Listing, TMDL status is Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Salinas River Refuge Lagoon (South)	pH	X				
	Turbidity	X				
Salsipuedes Creek (Santa Barbara County)	Chloride	X				
	Fecal Coliform			X		
	Sodium	X				
	Turbidity			X		
Salsipuedes Creek (Santa Cruz County)	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate			X		
	Oxygen, Dissolved	X				
	pH	X				
	Toxicity		X	X		
	Turbidity	X				
San Antonio Creek (Los Alamos to downstream at Railroad Bridge)	~~Ammonia~~		X		X	
	Boron	X				
	Chloride	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Antonio Creek (Los Alamos to downstream at Railroad Bridge)	~~Chlorpyrifos~~				X	TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate			X		New Listing, TMDL status is Being Addressed by an Action Other Than a TMDL.
	~~Nitrogen, Nitrite~~				X	
	Oxygen, Dissolved	X				
	Sodium	X				
San Antonio Reservoir	Mercury	X				
San Antonio River (below San Antonio Reservoir)	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
San Benito River	Boron	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Benito River	pH	X				
	Sedimentation/ Siltation	X				
	Specific Conductivity		X			
	~~Toxicity~~		X		X	
San Bernardo Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
San Jose Creek (Santa Barbara County)	Chloride	X				
	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	pH	X				
	Sodium	X				
	Specific Conductivity		X			
	Temperature, water			X		
San Juan Creek (San Benito County)	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Juan Creek (San Benito County)	Nitrate	X				
	Oxygen, Dissolved	X				
	Toxicity		X			
	Turbidity	X				
San Lorenzo Creek (Monterey County)	Boron	X				
	Chloride	X				
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
	Sodium	X				
	Specific Conductivity		X			
San Lorenzo River	Chlordane	X				
	Chloride			X		
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Enterococcus			X		
	Escherichia coli (E. coli)			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Lorenzo River	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate		X			
	~~Pathogens~~				X	TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	PCBs (Polychlorinated biphenyls)	X				
	Sedimentation/ Siltation	X				
	Sodium			X		
	Temperature, water			X		
San Lorenzo River Lagoon	Indicator Bacteria		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
San Luis Obispo Creek (above Osos Street)	~~Fecal Coliform~~				X	
San Luis Obispo Creek (below Osos Street)	Benthic Community Effects			X		
	Chloride	X				
	~~Chlorpyrifos~~				X	
	Escherichia coli (E. coli)			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Luis Obispo Creek (below Osos Street)	Fecal Coliform		X			
	Nitrate		X			
	~~Nutrients~~				X	
	Oxygen, Dissolved			X		
	Sodium	X				
San Luisito Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform	X				
San Miguelito Creek	Chloride	X				
	Fecal Coliform			X		
	Nitrate			X		
	Oxygen, Dissolved			X		
	pH	X				
	Sodium	X				
	Temperature, water	X				
	Toxicity		X	X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
San Pedro Creek (Santa Barbara County)	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	pH	X				
	Sodium	X				
	Temperature, water	X				
San Simeon Creek	Chloride	X				
	Nitrate	X				
	Oxygen, Dissolved	X				
	Sodium	X				
San Vicente Creek (Santa Cruz County)	~~Sedimentation/ Siltation~~				X	
Santa Barbara Harbor	Arsenic			X		
	Copper			X		
	Dieldrin			X		
	Oxygen, Dissolved			X		
Santa Cruz Harbor	Arsenic			X		
	Copper			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Santa Cruz Harbor	Dieldrin			X		
	Oxygen, Dissolved			X		
	PCBs			X		
Santa Maria River	Chloride	X				
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Cypermethrin			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDD			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDE			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDT					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Dieldrin					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Endrin					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Santa Maria River	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Toxaphene					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Santa Maria River Estuary	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDD			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	DDE			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Santa Maria River Estuary	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Oxygen, Dissolved			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	pH			X		
	Total Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
Santa Monica Creek	Fecal Coliform	X				
	pH	X				
Santa Rita Creek (Monterey County)	Ammonia		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Santa Rita Creek (Monterey County)	Oxygen, Dissolved					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	Turbidity	X				
Santa Rosa Creek (San Luis Obispo County)	Fecal Coliform			X		
	~~Temperature, water~~				X	
	Total Dissolved Solids			X		
Santa Ynez River (above Lake Cachuma)	Temperature, water			X		
	Toxicity		X	X		
Santa Ynez River (below city of Lompoc to Ocean)	Chloride	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate	X				
	Oxygen, Dissolved	X				
	pH			X		
	Sedimentation/ Siltation	X				
	Sodium	X				
	Temperature, water	X				
	Total Dissolved Solids	X				
	Toxicity		X	X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Santa Ynez River (Cachuma Lake to below city of Lompoc)	Sedimentation/ Siltation	X				
	Sodium	X				
	Temperature, water	X				
	Total Dissolved Solids	X				
	Toxicity		X	X		
Schwan Lake	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nutrients	X				
	Total Coliform	X				
Scott Creek Lagoon	Chloride			X		
	Sodium			X		
Shingle Mill Creek	Nitrate		X			
	Sedimentation/ Siltation	X				
Shuman Canyon Creek	Sedimentation/ Siltation	X				
Sisquoc River	pH			X		
Sloans Canyon Creek	Ammonia			X		
	pH			X		
	Turbidity			X		
Soda Lake	Ammonia		X			

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Soquel Creek	Enterococcus	X				
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Turbidity~~				X	
Soquel Lagoon	Indicator Bacteria		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sedimentation/ Siltation	X				
Stenner Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH			X		
Struve Slough	Chlorophyll a			X		
	Escherichia coli (E. coli)			X		
	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
	~~Pathogens~~				X	

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Struve Slough	pH	X				
	Toxicity		X	X		
	Turbidity			X		
Sycamore Creek	Chloride	X				
	Fecal Coliform	X				
	Oxygen, Dissolved			X		
	pH			X		
	Sodium	X				
	Turbidity			X		
Tecolote Creek (Santa Barbara County)	Chloride	X				
	Fecal Coliform			X		
	Sodium	X				
Tecolotito Creek	Chloride	X				
	Enterococcus	X				
	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
	~~Toxicity~~		X		X	

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Tembladero Slough	Chlorophyll-a					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Diazinon					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Enterococcus	X				
	Escherichia coli (E. coli)					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Malathion			X		
	Nickel			X		
	Nitrate					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	~~Nutrients~~				X	
	Oxygen, Dissolved			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	~~Pesticides~~				X	

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Tembladero Slough	pH	X				
	Total Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Toxicity		X			TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Turbidity	X				
Tequisquita Slough	Ammonia		X	X		
	Chlorophyll a			X		
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Oxygen, Dissolved	X				
	pH	X				
	Toxicity		X	X		
	Turbidity	X				
Toro Canyon Creek	Fecal Coliform	X				
Toro Creek	Fecal Coliform	X				
	~~Oxygen, Dissolved~~				X	

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Tres Pinos Creek	Escherichia coli (E. coli)	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	pH	X				
Trout Creek Gulch	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
Tularcitos Creek	Chloride	X				
	Fecal Coliform					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Sodium	X				
Unnamed tributary to Orcutt Creek	Ammonia			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Chlorpyrifos			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Diazinon			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Nitrate			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Toxicity			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Turbidity			X		

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Uvas Creek (above Uvas Reservoir)	pH	X				
	Temperature, water	X				
Uvas Creek (below Uvas Reservoir)	Oxygen, Dissolved	X				
	Turbidity	X				
Uvas Reservoir	Mercury	X				
Valencia Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	~~Pathogens~~				X	
	Sedimentation/ Siltation	X				
Villa Creek	Fecal Coliform			X		
Waddell Creek Lagoon	Chloride			X		
	pH			X		
	Sodium			X		
Walters Creek	Fecal Coliform	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Warden Creek	Escherichia coli (E. coli)			X		
	Fecal Coliform					TMDL status changed from Being Addressed by Completed TMDL to TMDL Required.
	Nitrate	X				
	Oxygen, Dissolved	X				
Watsonville Creek	Escherichia coli (E. coli)	X				
	Fecal Coliform	X				
	Nitrate	X				
	Oxygen, Dissolved	X				
	pH	X				
Watsonville Slough	DDE			X		
	Escherichia coli (E. coli)			X		
	Fecal Coliform			X		New Listing, TMDL status is Being Addressed by Completed TMDL.
	Malathion			X		
	Nitrate			X		
	Oxygen, Dissolved	X				

			Revisions			
Waterbody Segment Name	Pollutant Name	No Change to 303(d) List	Pollutant Name Change	Add to 303(d) List	Remove From 303(d) List	Other Revisions
Watsonville Slough	~~Pathogens~~				X	
	~~Pesticides~~				X	
	Toxicity		X	X		
	Turbidity	X				
Willow Creek (Monterey County)	pH			X		
Zayante Creek	Chlorpyrifos					TMDL status changed from TMDL Required to Being Addressed by Completed TMDL.
	Fecal Coliform	X				
	Sedimentation/ Siltation	X				

CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

2014 CLEAN WATER ACT SECTIONS 303(d) LIST AND 305(b) REPORT INTEGRATED REPORT FOR THE CENTRAL COAST REGION

SUMMARY REPORT

November 2016

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Edmund G. Brown*, Governor*

California Environmental Protection Agency
Mathew Rodriguez*, Secretary for Environmental Protection*

REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

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_____

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support and input provided by
Researchers, individuals, agencies, and organizations that have a special interest in the Central Coast Region.

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List of Acronyms and Abbreviations

List of acronyms and abbreviations used in the development of this report and the fact sheets.

303(d) List	Clean Water Act Section 303(d) List of Water Quality Limited Segments
305(b) Report	Clean Water Act Section 305(b) Water Quality Condition Report
Basin Plan	Water Quality Control Plan for the Central Coast Region
BPTCP	Bay Protection and Toxic Cleanup Program
BMI	Benthic Macro Invertebrates
CalWQA	California Water Quality Assessment (database)
CCAMP	Central Coast Ambient Monitoring Program
CCC	Criteria Continuous Concentration
CCR	California Code of Regulations
CDPH	California Department of Public Health
CFR	Code of Federal Regulations
CMC	Criteria Maximum Concentration
CSCI	California Stream Condition Index
CTR	California Toxics Rule
CWA	Clean Water Act
ºC	degrees Celsius
ºF	degrees Fahrenheit
FED	Functional Equivalent Document
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DFW	California Department of Fish and Wildlife, formerly California Department of Fish and Game (DFG)
DO	Dissolved oxygen
dw	dry weight
ERM	Effects Range Median
HCH	Hexachlorocyclohexane
HSA	Hydrologic Sub Area
HU	Hydrologic Unit
IBI	Index of Biological Integrity
ILRP	Irrigated Lands Regulatory Program
IR	Integrated Report
kg	kilogram(s)
Listing Policy	Water Quality Control Policy for Developing California's Section 303(d) List
LOE	Line of Evidence
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	milligrams per kilogram (parts per million)
mg/L	milligrams per liter (parts per million)
µg/g	micrograms per gram (parts per million)
µg/L	micrograms per liter (parts per billion)
MTBE	Methyl tertiary-butyl ether
MTRL	Maximum Tissue Residue Level
NAS	National Academy of Sciences
ng/g	nanograms per gram (parts per billion)
ng/L	nanograms per liter (parts per trillion)
NNE	Nutrient Numeric Endpoint
NOAA	National Oceanic and Atmospheric Administration

NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
oc	organic carbon
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polynuclear aromatic hydrocarbon
PBDE	Polybrominated diphenyl ethers
PCB	Polychlorinated biphenyl
PEL	Probable Effects Level
pg/L	picograms per liter
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RBI	Relative Benthic Index
RL	Reporting Level
SFEI	San Francisco Estuary Institute
SMWP	State Mussel Watch Program
SQG	Sediment quality guideline
SWAMP	Surface Water Ambient Monitoring Program
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TSMP	Toxic Substance Monitoring Program
TSS	Total Suspended Solids
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement
WQO	Water quality objective
WQS	Water quality standard
ww	wet weight

Acknowledgements

Numerous individuals provided valuable input and support in the development of this report. Staff at the Central Coast Regional Water Quality Control Board including Shanta Keeling, Melissa Daugherty and Karen Worcester greatly helped with reviewing of Lines of Evidence, as well as making decisions and preparing fact sheets in the California Water Quality Assessment Database. The Surface Water Quality Assessment Unit at the State Water Resources Control Board tremendously assisted in the development of Lines of Evidence, and coordinated statewide efforts. David Paradies, of the Bay Foundation of Morro Bay, provided programming assistance to create the data scanning tool which automated the development of many Lines of Evidence used in this assessment and saved staff hundreds of hours of data entry. Jon Marshack's Water Quality Goals compilation was used as a resource for finding available guidelines for the protection of water quality. Credit is also given to all the individuals whose long hours of sample collection, laboratory work, and report preparation provided the data and information used as the basis for this report.

Executive Summary

Please see Staff Report.

Central Coast Water Board staff modified this report subsequent to the public comment period, which ended on September 23, 2016 to reflect changes made during that time. All changes are summarized in the Staff Report and the Public Comments and Staff's Responses document.

Introduction

The federal Clean Water Act (CWA) gives states the primary responsibility for protecting and restoring surface water quality. In California, the State Water Quality Control Board (State Water Board) and nine Regional Water Quality Control Boards (Regional Water Boards), collectively referred to as the California Water Boards, serve as the agencies with the primary responsibility for implementing CWA requirements. One such responsibility includes developing and implementing programs to ensure attainment of water quality standards. Water quality standards, pursuant to the CWA, consist of designated beneficial uses of waterbodies and criteria or objectives (numeric and narrative) which are protective of those beneficial uses.

Section 305(b) of the CWA requires each state to report biennially to the United States Environmental Protection Agency (USEPA) on the water quality conditions of its surface waters (the 305(b) Report). Although the 305(b) Report does not require Water Board or USEPA approval, USEPA compiles the state's assessment reports into their biennial "National Water Quality Inventory Report" to Congress.

Under CWA Section 303(d), states are required to develop, update, and submit to the USEPA for approval, a list of waterbody segments (water segments) not meeting water quality standards. Under Title 40 Code of Federal Regulations (CFR) Section 130.7(d)(1), states are required to submit the List biennially. This list is commonly referred to as the "303(d) List" or the "List of Impaired Waters." The List is compiled consistent with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, commonly referred to as the Listing Policy (SWRCB, 2004, amended 2015). Pursuant to Section 6.2 of the Listing Policy, waterbodies proposed for the 303(d) List, require public review and approval by the Regional

Water Board during a public Board hearing and staff then submit the approved 303(d) List to the State Water Board where staff compile the regional 303(d) Lists into the California 303(d) List. Water segments placed on the 303(d) List must be addressed through the development of Total Maximum Daily Loads (TMDLs), or an existing regulatory program that is reasonably expected to result in the attainment of the water quality standard within a specified timeframe.

In conformance with USEPA guidance (USEPA, 2005), the State and Regional Water Quality Control Boards prepare a single Integrated Report that meets the reporting requirements of CWA Sections 303(d) and 305(b). This summary report provides background on the assessment process and summarizes Central Coast Water Board staff's recommended updates to the California 303(d) List (Appendix A) and 305(b) Report (Appendices B-G).

Background

The Central Coast Water Board last approved changes to the 303(d) List on July 10, 2009 (referred to hereafter as the 2008/2010 303(d) List). The State Water Board approved that list on August 4, 2010 and USEPA partially approved the list on November 12, 2010. The USEPA gave final approval of the 2008/2010 303(d) List on October 11, 2011.

The Listing Policy

In California, recommendations to place a water segment on the 303(d) List are made in conformance with the Listing Policy (SWRCB, 2004, amended 2015). The Listing Policy establishes a standardized approach for developing California's 303(d) List. It outlines the rules for making listing decisions based upon different types of data and establishes a systematic framework for statistical analysis of water quality data. The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Listing and de-listing factors are provided for chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisance such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; degradation of aquatic life populations and communities; trends in water quality; and weight of evidence. The "weight of evidence" approach considers multiple types of data and information in the absence of data numeric criteria.

The Listing Policy requires the water quality assessments and listing decisions for specific waterbody segment and pollutant combinations (referred to hereafter as water segment/pollutant combinations) to be documented in "fact sheets." Fact sheets consist of "Lines of Evidence" (LOEs) summarizing the applicable standards and the data for a water segment in relation to a specific beneficial use. Staff then recommends "decisions" regarding listing based on beneficial use support (e.g. list, do not list, etc.). The 5,431 fact sheets supporting the 2014 Integrated Report for waters in the Central Coast Region are provided in Appendix H.

Pursuant to Section 6.2 of the Listing Policy, changes to the 303(d) List, require public review and approval by the Regional Water Board during a public hearing and are then by the State Water Board.

State-wide Assessment Process and Timeline

State Water Board staff initiated the data solicitation process for the current assessment (the 2014 Integrated Report) in January of 2010. At the close of the solicitation period (August 2010), State Water Board staff began data assessment and development of LOEs. Due to the volume of data and diversity of data types, the State Water Board staff could not complete assessments for all nine regions with existing resources under the two-year timeline.

The State Water Board issued a memo on November 12, 2013, defining a new strategy for completing the assessment for those data solicited from the public in 2010 (SWRCB, 2013). This strategy established three groups, each group consisting of three Regional Water Boards and each group submitting an Integrated Report each assessment cycle (Table 1). Consequently, the 2012 Integrated Report contained new assessments for water segments located within the boundaries of three Regional Water Boards: North Coast, Lahontan and Colorado River Water Boards. The Central Coast Region is included in the second group and the 2014 assessment cycle. This memo also stated that the State Water Board would not solicit additional data until all of the data received during the 2010 solicitation is assessed and the Integrated Reports for all nine Regional Water Boards have been approved. Therefore, the Central Coast Water Board's recommendations for the 2014 Integrated Report are based on data collected prior to August 2010.

On July 30, 2015, USEPA gave final approval to the 2012-303(d) List (including new recommendations for North Coast, Lahontan and Colorado River Water Boards only). In September 2015, State Water Board staff released the State's assessment database to group 2 and Central Coast Water Board staff began working on the fact sheets for water segments within the Central Coast Region.

Table 1. Reporting cycles for the nine Regional Water Boards.

Integrated Report Cycle	**Regional Water Board Groups**
2012 Integrated Report Approved by USEPA on July 30, 2015	North Coast Water Board Lahontan Water Board Colorado River Basin Water Board
2014 Integrated Report (in process)	Central Coast Water Board Central Valley Water Board San Diego Water Board
2016 Integrated Report	San Francisco Bay Water Board Los Angeles Water Board Santa Ana Water Board

After completing the 2014 Integrated Report, Central Coast Water Board staff is scheduled to develop the next Central Coast Region Integrated Report update in 2020. There is a significant amount of data available but not included in this current assessment because of the data solicitation cutoff date in 2010. All readily available data, defined as data in the State's database (The California Environmental Data Exchange Network or CEDEN), will be assessed in the next update of the Integrated Report for the Central Coast Region, in 2020. However, should staff identify high priority data before the 2020 assessment cycle, the three-group process is

designed to allow for those Regional Water Boards that are "off cycle" to draft and submit fact sheets summarizing high priority changes to the 303(d) List during any assessment cycle.

Current Water Quality Assessment Process

The water quality assessment process begins with the solicitation and evaluation of data collected from monitoring activities in the region. Water Board staff analyze the data in conformance with the Listing Policy to determine if a water segment is meeting or exceeding water quality standards. Staff determines whether water quality standards are being met by comparing data to water quality objectives, criteria, and guidelines (protective limits) for each beneficial use and summarizing that information in a line of evidence. Then, for each water segment assessed, Water Board staff combines all data assessments into fact sheets and determines whether water quality standards are attained or not under the Listing Policy.

Data Solicitation

Federal regulations in 40 CFR Section 130.7(b) (5) state that "Each state shall assemble and evaluate all existing and readily available water quality-related data and information" when developing the 303(d) List. Section 6.1.2.1 of the Listing Policy states, "Readily available data and information shall be solicited from any interested party, including but not limited to, private citizens, public agencies, state and federal governmental agencies, non-profit organizations, and businesses possessing data and information regarding the quality of the Region's waters." The State Water Board solicited data from the public with a formal "Notice of Public Solicitation of Water Quality Data and Information for the California Integrated Report" sent to interested parties subscribed to the statewide Integrated Report e-mailing list and the Central Coast Regions Integrated Report e-mailing list. Data used for the 2014 Integrated Report were received January 14, 2010 through August 30, 2010. Data sources include government agencies, municipalities, environmental groups, citizen groups, and receiving water data from the National Pollutant Discharge Elimination System (NPDES) dischargers. Data collected by the Regional and State Water Boards under the Surface Water Ambient Monitoring Program (SWAMP), and by monitoring programs of the Irrigated Lands Regulatory Program, provided the majority of the data used to develop and revise fact sheets for the 2014 Integrated Report.

All data and information submitted are available as part of the electronic administrative record (Appendix J). Fact sheets summarize all data and information pertaining to specific water segment/pollutant combination assessment, and contain direct links to the original data files in the administrative record.

Water Quality Standards Used in the Data Assessment

The CWA and federal regulations define water quality standards to include the designated uses of a water segment, the adopted water quality criteria, and the State's Antidegradation Policy (State Water Resources Control Board Resolution No. 68-16, SWRCB 1968). Under state law (Porter-Cologne Water Quality Control Act, revised 2015), water quality standards include designated beneficial uses of waterbodies, criteria or water quality objectives (numeric or narrative limits) established to protect those beneficial uses, and policies to prevent or limit the degradation of waterbodies. The water quality standards for waterbodies in the Central Coast Region are primarily contained in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan).

The Basin Plan designates beneficial uses for all waters within the Central Coast Region (see Chapter 2). Table 2-1 of the Basin Plan is a list of most of the Central Coast Region's water segments and their designated beneficial uses. Alternatively, the Basin Plan states that "surface waterbodies within the Region that do not have beneficial uses designated for them in Table 2-1 [of the Basin Plan] are assigned the following designations: municipal and domestic supply, protection of both recreation and aquatic life uses." Therefore, any water segment not listed in Table 2-1 of the Basin Plan is, for the purposes of the Integrated Report assessment, designated the following specific beneficial uses: Municipal and Domestic Supply (MUN), Water Contact Recreation (REC-1), Non-contact Recreation (REC-2), Cold Freshwater Habitat (COLD), and Warm Freshwater Habitat (WARM).

Central Coast Water Board staff assessed data using regulatory limits when available. The most common regulatory limits used include water quality objectives in the Basin Plan or any statewide Water Quality Control Plan applicable to the water segment and criteria for toxic chemicals promulgated by the USEPA under the California Toxics Rule (40 CFR 131.27). However, when numeric regulatory limits were not available, Water Board staff use evaluation guidelines (that meet the requirements of Section 6.1.3 of the Listing Policy) to interpret narrative water quality objectives.

All water quality objectives, criteria, and evaluation guidelines utilized in the 2014 Integrated Report assessment are available as part of the electronic administrative record (Appendix J). Water quality objectives, criteria, and evaluation guidelines are summarized in the fact sheets, which link directly to the documentation containing these objectives, criteria, and guidelines in the administrative record.

Data Analysis

State and Regional Water Board staff developed the LOEs for this assessment cycle in the California Water Quality Assessment (CalWQA) Database. Staff developed one LOE for each data source, specific water segment, pollutant, and beneficial use combination. For example, one LOE for dissolved oxygen data collected by CCAMP in Big Sur River evaluated with the water quality objective for Cold Freshwater Habitat and a second LOE for that same data but evaluated with the water quality objective for Warm Freshwater Habitat. Each LOE contains a summary the pollutant sampled, the relevant beneficial use(s), the sampling entity, the number of samples collected, the number of samples that exceed the water quality objective or guideline, the location and time of sampling activity, and quality assurance documentation associated with the data. All LOEs also contain links to the administrative record (Appendix J) for the documents containing the water quality objective or guideline, the dataset, and the quality assurance information used in the assessment.

Staff aggregate data by water segment following the requirements of Section 6.1.5.4 of the Listing Policy. Staff revised the mapped extent of some water segments to account for hydrologic features and to identify more accurately water segments being addressed (Table 2). However, in some cases, changes to the mapped extent of a water segment resulted in recommendations to de-list one segment because the impaired reach is now specifically delineated. Of the 83 recommendations to "de-list," 22 are due to a mapping change where the listing applies to another water segment. The Miscellaneous Changes Report summarizes these changes, as well as non-substantive modifications to water segments (Appendix I).

Table 2. Waterbodies re-segmented during the 2014 Integrated Report (IR) Cycle.

2008/2010 IR Water Segment Name	Type of Change	New 2014 IR Water Segment Name
Arroyo De La Cruz	Split into 2 segments	Arroyo De La Cruz (San Luis Obispo) and Arroyo De La Cruz Lagoon
Carpinteria Creek	Split into 2 segments	Carpinteria Creek (above Gobernador Creek) and Carpinteria Creek (below Gobernador Creek)
Glen Annie Canyon	Split into 2 segments	Glen Annie Canyon Creek and Tecolotito Creek
Los Osos Creek (Los Osos to Morro Bay)	Split into 3 segments	Los Osos Creek (upstream of Los Osos), Los Osos Creek (Los Osos to Estuary), and Los Osos Creek Estuary
Scott Creek	Split into 2 segments	Scott Creek (Santa Cruz County) and Scott Creek Lagoon
Waddell Creek	Split into 2 segments	Waddell Creek (Santa Cruz) and Waddell Creek Lagoon

State Water Board and Central Coast Water Board staff considered all readily available data and information received during the public data solicitation period in the development of the 2014 303(d) List. Due to the volume of information submitted and the limited resources available to assess that information, Water Board staff prioritized assessment of data that are:

a) Included in the 303(d) List assessment (as opposed to those data that would only inform CWA Section 305(b) Categories 4c, 3, 2, and 1[1]); and
b) Are in spreadsheet formats that are compatible with the State's surface water database and assessment tools.

Pursuant to Section 6.1.4 of the Listing Policy, Central Coast Water Board staff used data supported by a Quality Assurance Project Plan, or equivalent documentation, to make determinations of water quality standards attainment. In the absence of quality assurance documentation, staff used data only as supporting evidence and was not the sole basis of a listing decision.

Following development of LOEs, Central Coast Water Board staff determined whether the water segment was attaining relevant water quality standards under the Listing Policy. Staff combined all LOEs for a water segment/pollutant combination (e.g. Salinas River and nitrate) into a single fact sheet in the CalWQA database. Based on statistical evaluation described in the Listing Policy, staff determined if the total number of samples exceeding the water quality criteria constitutes a recommendation to either add or retain a water segment/pollutant combination on the 303(d) List. In the fact sheets, staff also made a determination of the beneficial use support rating to inform the categorization of water segments in the 305(b) Report.

[1]The 305(b) Water Quality Condition Report categorizes water segments into one of five Categories based on whether water quality standards are attained. Categories are explained in detail in the Integrated Report Categories section of this report.

Determination of Beneficial Use Support

Determinations of the beneficial use support rating in the CalWQA database are based on the number of samples available for the assessment, the number of exceedances of the relevant water quality objective or guideline, and the minimum sample counts required to apply the binomial distribution (statistical test) defined in Sections 3.1, 3.2, 4.1, and 4.2 of the Listing Policy. Staff assigned a beneficial use rating as follows:

- Not Supporting – where the number of samples exceeding a water quality objective or evaluation guideline exceeds the allowable exceedance frequency defined in Sections 3.1, 3.2, 4.1, and 4.2 of the Listing Policy (e.g. 5 of the 25 samples exceed).
- Fully Supporting – where the minimum sample size, defined in Sections 3.1, 3.2, 4.1, and 4.2 of the Listing Policy, are available and demonstrate that water quality standards are attained (e.g. none of the 25 samples exceed).
- Insufficient Information – where the previous criteria are not met.

This conservative approach was taken by staff state wide to prevent waterbodies with insufficient sample counts from being classified as fully attaining standards.

Integrated Report Categories

To meet CWA Section 305(b) requirements of reporting on water quality conditions, the Integrated Report places each assessed water segment into one of five non-overlapping categories based on the overall beneficial use support of the water segment. Definitions for each 305(b) Report Category is provided in Table 3.

Table 3. California 305(b) Report Category definitions and the number of Central Coast Region water segments placed in each Category.

Category	Description	Number of Segments
1	All assessed beneficial uses are supported and no beneficial uses are known to be impaired.	71
2	There is insufficient information to determine beneficial use support.	92
3	There is insufficient data and/or information to make a beneficial use support determination but information and/or data indicates beneficial uses may be potentially threatened.	2
4a	At least one beneficial use is not supported and a TMDL has been developed and approved by USEPA for all water segment/pollutant combinations and the implementation plan is expected to result in full attainment of the water quality standard within a specified time frame.	21
4b	At least one beneficial use is not supported and another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.	0
4c	At least one beneficial use is not supported but the non-attainment of any applicable water quality standard for the water segment is the result of pollution and is not caused by a pollutant.	0
5	At least one beneficial use is not supported and a TMDL is needed.	202

In previous Integrated Report assessments, California used the following USEPA definition for Category 1 - “All designated uses are supported, no use is threatened.” California interpreted this to mean “all core beneficial uses (Drinking Water Supply, Aquatic Life Support, Fish Consumption, and Recreation) are supported.” This definition inadvertently resulted in no water segments in California being placed into Category 1, because none of those water segments had fish tissue data needed to evaluate the consumption uses. The lack of Category 1 waterbodies inaccurately represented California’s overall water quality by giving the impression that California has no waters that support all designated beneficial uses, when in fact over 250 waterbodies are supporting the most sensitive designated beneficial uses. Consistent with USEPA recommendations on assessment for 305(b) Report Categories (USEPA 2005), states can alter those definitions to be consistent with their Integrated Report purposes. The State Water Board has redefined Categories 1-3 (Table 3) in an effort to better categorize the water quality conditions in California. Detailed Category Reports can be found in Appendices B-G.

The new definition for Category 3 states “there is insufficient data and/or information to make a beneficial use support determination but information and/or data indicates beneficial uses may be potentially threatened.” During the Central Coast Water Board’s Integrated Report public comment period, State Water Board staff revised the CalWQA database to include this new definition. As a result, staff re-categorized two water segments (Big Sur River and Carmel River) into Category 3 because there is evidence that the “beneficial uses may be potentially threatened” (see Appendix E).

Pursuant to Section 2 of the Listing Policy, water segments remain in Category 5 until all 303(d)-listed pollutants are addressed by USEPA approved TMDLs (or by another action that is expected to result in the reasonable attainment of the water quality standards). Water segments for which all 303(d) listed pollutants are “being addressed” are placed into one of the Category 4 sub-categories (4a or 4b). Water segments placed in Categories 4a, 4b, or 5 are also on the 303(d) List. Figure 1 is a map of all Central Coast Region water segments assessed for this Integrated Report with those water segments that are in Categories 4a, 4b, or 5 (and therefore on the 303(d) List) identified in red.

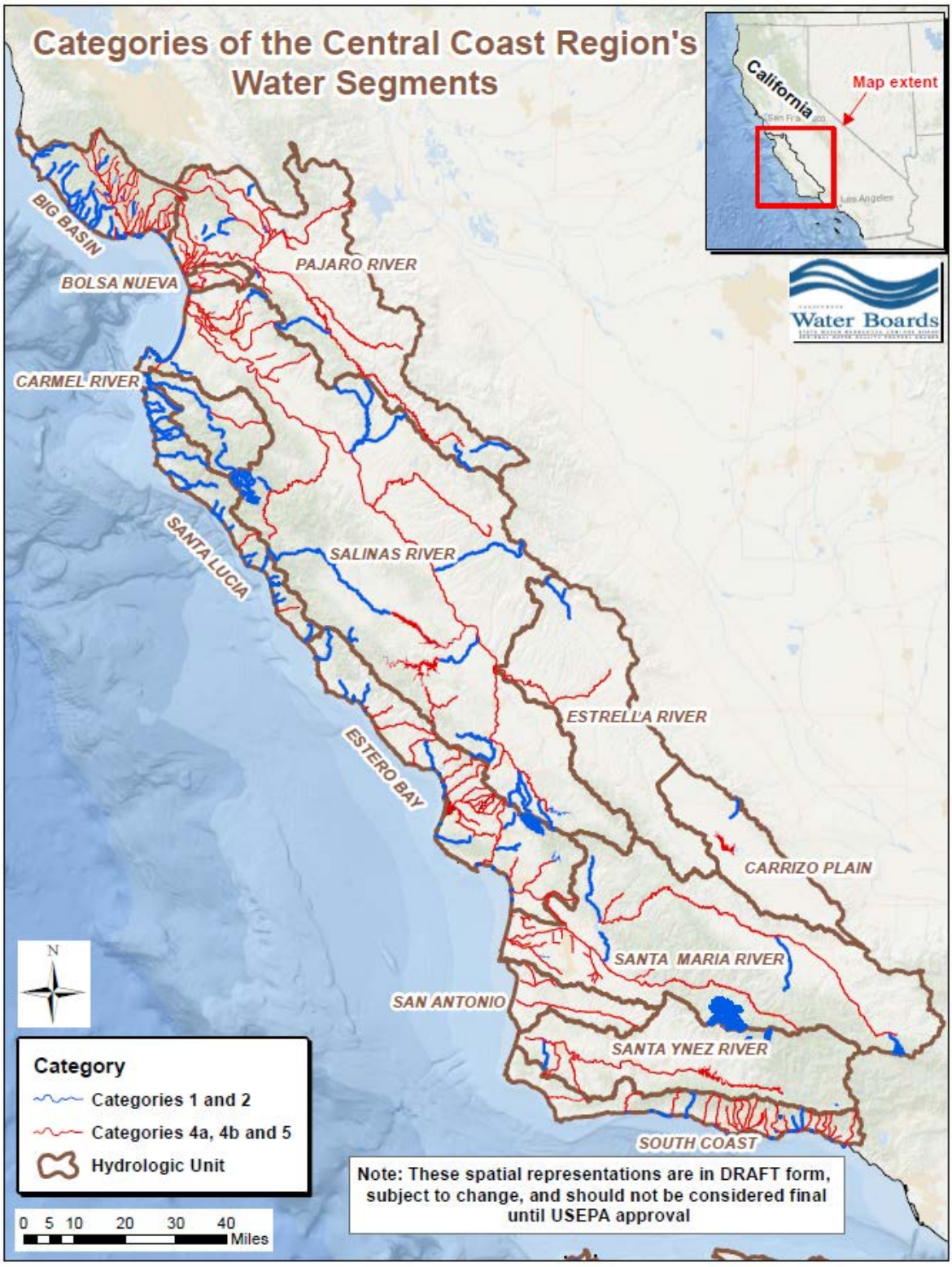

Figure 1. Map of all Central Coast Region's Hydrologic Units with water segments assessed for the 2014 Integrated Report. Water segments shown in blue are in 305(b) Report Categories 1, 2 or 3. Water segments shown in red are assigned to Categories 4a, 4b, or 5 and therefore are on the 303(d) List.

New Assessment - Benthic Invertebrate Community Health

The evaluation of benthic invertebrate community data is often referred to as bioassessment. The State of California has been conducting bioassessment monitoring using stream benthic macroinvertebrates for over fifteen years in the Central Coast Region. The development of biological scoring tools (often referred to as indices or metrics) has been ongoing during that time, with various regional and statewide indices developed.

In prior Integrated Report cycles, the Central Coast Water Board did not utilize benthic macroinvertebrate data because calculated metric scores were not readily available for use in those assessments. Those scores are not readily available. In the 2014 assessment cycle and in the future, all Regional Water Boards are expected to include assessments of biological community data.

For the Integrated Report in the Central Coast Region, both the Southern California Index of Biotic Integrity or SoCal IBI (Ode et al., 2005) and the California Stream Condition Index or CSCI (Mazor et al., 2016) were used to evaluate the condition of benthic invertebrate communities in wadeable streams.

Both theSoCal IBI and CSCI utilize a multi-metric index approach, combining information about diversity, habitat preferences, and sensitivity to pollution of benthic invertebrates to determine an index score. The CSCI is different in that it also utilizes a combined reference site approach to determine the site-specific benthic community expected to be present at any sampled site. SoCal IBI scores are available for use for all data collected prior to 2010 but the CSCI scores are available only for those same data where the appropriate level of taxonomic identification was reported. Therefore, some locations will have only IBI scores and some locations with have both IBI and CSCI scores.

The CSCI is applicable statewide, accounts for a much wider range of natural variability, and provides equivalent scoring thresholds in all regions of the state. Although CSCI scores are not yet calculated for all Central Coast Region's water segments, it is anticipated that CSCI scores will be available for most data used in future assessments. Where both IBI and CSCI scores are available, staff used the CSCI score in the assessment over the regional IBI scores. In general, these scores agree on the condition of the benthic macroinvertebrate community condition.

Staff assessed bioassessment data in accordance with Sections 3.9, 4.9, and 6.1.5.8 of the Listing Policy. Staff assessed bioassessment data for 42 water segments and recommends adding 5 water segments to the 303(d) List for "benthic community effects" where all of the following conditions are true:

a) The water segment exhibits significant degradation in biological populations and/or communities (as determined by a CSCI score below 0.79 and/or a SoCal IBI score below 40); and
b) The aquatic life beneficial uses of the water segment are also impaired by concentrations of pollutants or factors including, but not limited to, chemical concentrations, temperature, and/or dissolved oxygen; and
c) For a given water segment, data are available from one or more stations and/or from more than one season at the same station.

State Water Board staff also utilized bioassessment data in a multiple weight of evidence approach to determine if a wadeable stream is supporting aquatic life beneficial uses and therefore is qualified for placement in Category 1. This assessment is new to the 2014 assessment cycle and based on a single sample collected as part of a statewide reference condition study (Ode et al., 2016). State Water Board staff recommends placing seven water segments from the Central Coast Region into Category 1 where all of the following is true:

a) The water segment is identified as "reference," having low risk of human-associated stress, based on land use analysis conducted by Ode et al. (2016); and
b) One or more CSCI score(s) >0.92; and
c) There are additional data available and there is no evidence of impairment to aquatic life beneficial uses (zero exceedances of any water quality objective or guideline).

Assessment Procedures Unique to the Central Coast Region

Interpreting Sediment Effects Using Benthic Macroinvertebrates

The Basin Plan narrative water quality objective for settleable material states "Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses." Effects of excessive fine-grain sediment deposition (cover) are evaluated in association with benthic macroinvertebrate (BMI) community diversity measurements. Herbst et al. (2014) compared sediment and BMI diversity conditions at relatively undisturbed reference streams in Santa Cruz County and the Pajaro watershed, to that of streams currently on the 303(d) List in those watersheds for sediment impacts to aquatic life beneficial uses. Funding for this study was specific to the sediment TMDLs developed in the watersheds of Santa Cruz County and the Pajaro River. This study identified significant loss of BMI species diversity (measured by the number of Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichoptera (caddisfly) taxa or EPT richness), where fine-grain sediment exceeded 40% cover.

The Central Coast Water Board contracted with Herbst et al. to develop and refine tools to assist the Central Coast Regional Water Board in developing and implementation of TMDLs for sediment.

Central Coast Water Board staff evaluated both EPT richness and percent cover of fine and sand sized sediments in the 13 water segments already on the 303(d) List due to sedimentation in Santa Cruz County and the Pajaro River Watershed. The 40% fine grain sediment cover evaluation guideline was exceeded at seven of the water segments, and in most cases, the sites also had poor BMI community condition. For these seven water segments, this assessment supports the previous 303(d) List decision that sediment is impacting aquatic life beneficial uses. Conversely, BMI and sediment grain size assessments for five water segments do not appear to support the previous decision but the sample counts are insufficient to determine if the water segment should be removed from the 303(d) List. For these segments, additional sediment and benthic macroinvertebrate data are needed to determine the sediment condition and potential impacts to aquatic life beneficial uses.

Interpreting Narrative Objectives for Biostimulatory Substances

The Basin Plan narrative water quality objective for biostimulatory substances states, "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." Excessive

nutrient concentrations can stimulate algal growth, which can create nuisance conditions for municipal water use and recreation, and can also remove oxygen from water, creating conditions unsuitable for aquatic life. Waters that contain excessive algal growth are characterized by wide variation in dissolved oxygen concentrations, typically dropping below concentrations set to protect for aquatic life at night, and rising above fully saturated levels during mid-day.

California contracted with Tetra Tech Inc. to develop the California Numeric Nutrient Endpoint (NNE) technical approach (Creager et al., 2006) to interpret the biostimulatory narrative objective, and to support development of numeric criteria for nutrients to protect for aquatic life beneficial uses. The NNE approach provides background support for use of the associated California Benthic Biomass Tool v.13 (Tetra Tech, February 2007), to predict in-stream benthic algal density and other metrics in response to a number of inputs. The Benthic Biomass Tool utilizes data inputs for nutrient concentrations, as well as for latitude, canopy cover, stream depth, and velocity to generate several model outputs including predicted benthic biomass and chlorophyll *a* concentrations for freshwater streams with Cold Freshwater Habitat (COLD) and/or Warm Freshwater Habitat (WARM) beneficial use designations. It also predicts the anticipated maximum oxygen deficit resulting from biostimulation. This is the maximum amount of dissolved oxygen expected to be removed from the water resulting from predicted algal growth.

Central Coast Water Board staff evaluated large regional datasets to develop a screening criterion for nitrate of 1.0 mg/L- as nitrogen, to protect for aquatic life uses. This approach is detailed in a peer reviewed technical report (CCRWQCB, April 2009). Staff used data from the CCAMP and the Cooperative Monitoring Program for Irrigated Agriculture to identify “reference sites” based on dissolved oxygen data that always meets COLD and/or WARM water quality objectives. Staff then examined nutrient characteristics of those reference sites and chose the 95^{th} percentile of the nitrate data from the reference data to establish screening criterion for nitrate. Staff used the Benthic Biomass Tool to further evaluate these sites in terms of predicted level of risk for biostimulation.

For the 2014 Integrated Report, Central Coast Water Board staff screened water segments using 1.0 mg/L nitrate as nitrogen as a criterion to protect for aquatic life beneficial uses. Where nitrate levels exceed this screening level, staff evaluated additional evidence to determine the risk for and/or presence of biostimulatory conditions. Staff evaluated onsite measurements of dissolved oxygen, chlorophyll *a* in the water column, and percent cover of algal mats. In addition, staff used site-specific Benthic Biomass Tool outputs including predicted oxygen deficit, predicted benthic algal biomass, and predicted benthic chlorophyll *a* concentration. Water segments are proposed for addition to the 303(d) List only where nitrate concentrations exceed the nitrate screening level and there is supporting evidence of risk for and/or presence of biostimulatory conditions. Staff recommends placing 10 new water segments on the 303(d) List for which there is evidence of nitrate causing or contributing to a biostimulatory condition.

TMDL Scheduling

A TMDL is the total maximum daily load(s) of a pollutant(s) that can be discharged into a water segment and still ensure the attainment of applicable water quality standards. In accordance with Section 5 of the Listing Policy, Central Coast Water Board staff assigns a TMDL completion schedule date to each water segment/pollutant combination placed on the 303(d) List. Although this is referred to as a TMDL completion date, a listing can be addressed through updates of

water quality standards or implementation of an existing regulatory program, rather than through development of TMDLs. Water Board staff relied on guidance from the USEPA (1997), which states that "schedules should be expeditious and normally extend from eight to thirteen years in length, but could be shorter or slightly longer depending on state-specific factors." Therefore, USEPA sets a maximum timeline of 13 years to complete TMDLs for waterbodies listed for the first time. For the 2014 303(d) List, that equates to an estimated completion date of 2027.

Staff assigned one of three completion dates to all existing and proposed water segment/pollution combinations on the 303(d) List (Table 4). Generally, Central Coast Water Board staff assigned shorter timeframes for TMDL completion for the highest priority listings and longer timeframes for lower priority listings. The two highest priorities for the Central Coast Region, as listed in the Staff Report for the July 11, 2012 Board Meeting, are 1) preventing and correcting threats to human health, and 2) preventing and correcting degradation of aquatic habitat. Expected TMDL completion dates are also included in the fact sheets attached to this report (Appendix H).

Table 4. TMDL Completion dates, priorities, and number of 303(d) listings assigned each date.

TMDL Completion Date	Priority for TMDL Completion	Number of Listings
Completed	All water segment/pollutant combinations that are being addressed by an USEPA approved TMDL or another action.	298
2018	Highest priority for TMDL development. All water segment/pollutant combinations that are in the current TMDL work plan which was developed based on the Central Coast Water Board's priorities.	59
2023	All remaining Category 5 Listings for the following pollutants also deemed to be high priority for TMDL development: turbidity, temperature, toxicity and nutrients	116
2027	All Category 5 water segment/pollutant combinations not included above.	449

Of the 922 water segment/pollutant combinations proposed for the Central Coast Region's 2014 303(d) List, 298 (33%) of those are already being addressed by an approved TMDL. An additional 20% of the water segment/pollutant combinations proposed for the Central Coast Region's 2014 303(d) List are anticipated to "be addressed" by 2023.

Identification of Potential Sources

The Listing Policy requires staff to identify potential sources when adding a water segment/pollutant combination to the 303(d) List. Staff chose potential sources from a standard list in the CalWQA database. Staff identifies potential sources only when a specific source analysis has been performed as part of a TMDL or other source identification process. Otherwise, staff chose "Source Unknown." Table 5 shows the most common sources associated with the 303(d) listed waters.

Table 5. Most common "potential sources" identified in the 2014 assessment cycle. Note, some water segment/pollutant combinations have more than one source.

Potential Sources	Percent of Listings	Number of Listings
Grazing	3%	28
Collection System Failure	5%	47
Natural Sources	13%	114
Urban/Storm Water	13%	118
Domestic Animals / Livestock	14%	126
Agriculture	21%	191
Source Unknown*	66%	614

*Used in the absence of a source identification process.

Staff Recommendations for Changes to the 303(d) List

Central Coast Water Board staff provide all proposed changes for the Central Coast Region's 2014 303(d) List in Appendix A. Recommended changes to the 303(d) List include the following:

- Add a water segment/pollution combination to the Central Coast Water Board's 303(d) List;
- Remove a water segment/pollution combination from the Central Coast Water Board's 303(d) List;
- Change a pollutant name (e.g. "Metals" to "Lead"); and/or
- Change the TMDL status based on approval of TMDLs.

Summary of Pollutant Listings

Staff proposes 922 water segment/pollutant combinations for the Central Coast Region's 2014 303(d) List. Figure 2 shows the number and proportion of 303(d) listings for each pollutant group.

Central Coast Water Board staff prioritized development of TMDLs for nutrients, pesticides, and toxicity in all watersheds and are evaluating methodologies to address turbidity and temperature impairments in the Central Coast Region. These priorities are aligned with the Region's priorities to prevent and correct threats to human health and aquatic habitats. Nineteen percent of the pollutants are nutrients or biostimulatory responses (i.e. low dissolved oxygen or elevated levels of chlorophyll *a* in the water column). Pesticides make up 13 percent of the pollutant listings, with several water segments having more than one pesticide listing. Toxicity listings make up six percent of the listings but many of the toxicity listings are the result of toxic responses in both sediment and in water samples, formerly counted as two separate listings. Turbidity and water temperature combine for eight percent of the pollutants proposed for the Central Coast Region's 2014 303(d) List.

Although indicator bacteria make up 27 percent of the Region's pollutant listings, it should be noted that in many cases, a water segment (including stream and beach segments) are listed for two or more specific indicator bacteria (e.g. *E.coli*, *Enterococcus,* and fecal coliform). Also noteworthy, 18 percent of the listings are for pH, total dissolved solids (TDS) or salts, such as chloride, boron or sodium. In some areas of the Central Coast Region, the geology is of marine

origin and therefore higher levels of these salts are naturally occurring. Some of these listings may be addressed through the development of site-specific objectives that account for the geologic conditions instead of developing a TMDL.

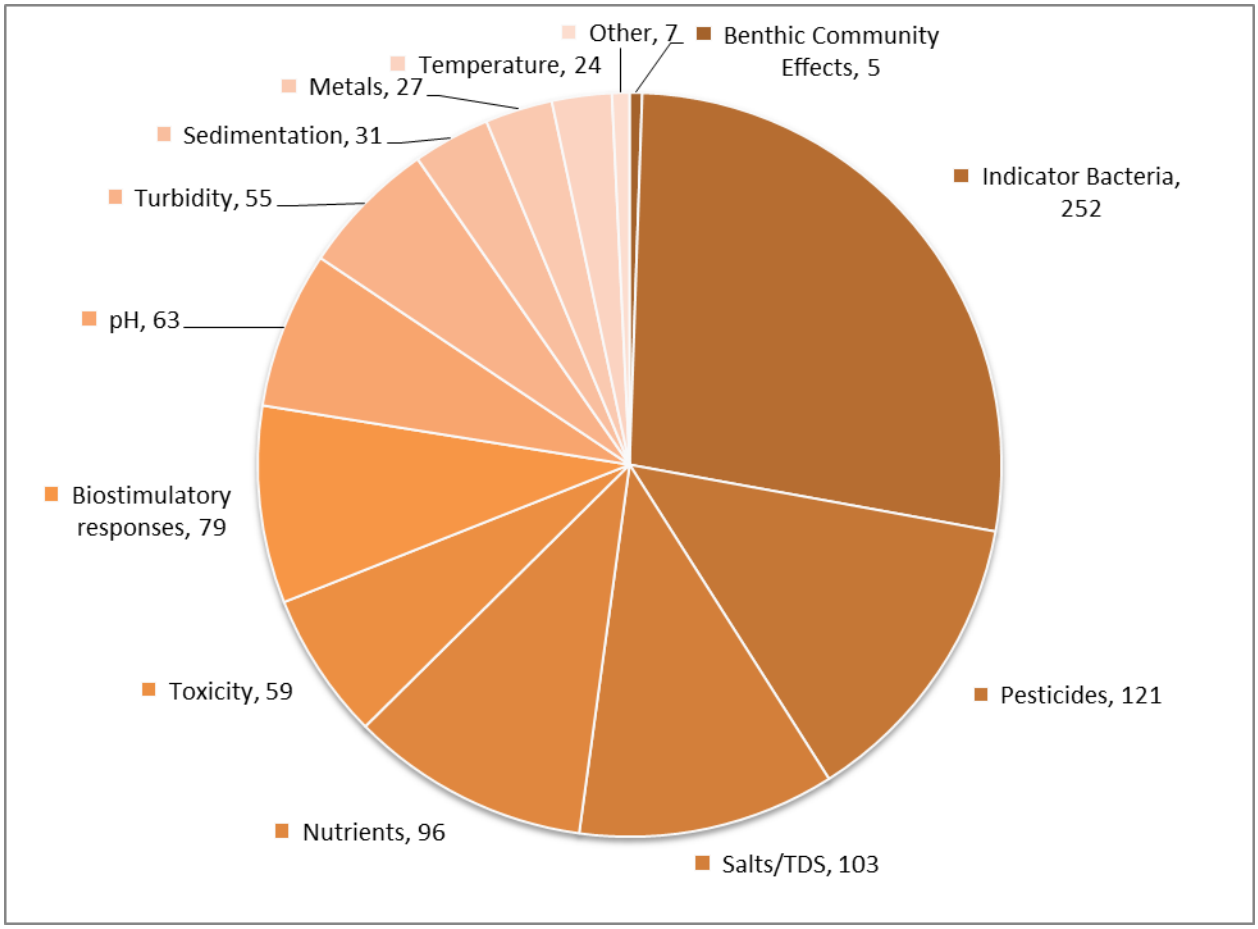

Figure 2. Number and proportion of 303(d) listings for each pollutant group proposed for the 2014 303(d) List.

Watershed Area Summaries

The following summaries are specific to each of the watershed areas (formally called Hydrologic Units) in the Central Coast Region. For each Hydrologic Unit, staff summarizes the numbers, locations, and types of data assessments as well as the listing recommendations.

Big Basin Hydrologic Unit (HU 304)

The Big Basin Hydrologic Unit includes all the Santa Cruz County Coastal Watersheds north of the Pajaro River watershed. Central Coast Water Board staff assessed data for 86 water segments, including 51 creek or river segments, 5 lagoons, 3 lakes, 1 harbor, 3 coastline segments, and 23 beach segments in the Big Basin Hydrologic Unit. Staff identified 98 listings on 47 different water segments, including 11 beaches and a coastline segment. Beach listings

are for one or more indicator bacteria. Stream or river segment listings include a variety of pollutants including the following: nutrients, indicator bacteria, low dissolved oxygen, pH, sedimentation, turbidity, water temperature, and chlorpyrifos. TMDLs have been developed and approved for 31 of these listings. The water segments with the most listings include San Lorenzo River (11 listings), Branciforte Creek (5 listings), and Santa Cruz Harbor (5 listings).

Central Coast Water Board staff recommends removal of six Big Basin Hydrologic Unit water segment/pollutant combinations from the 303(d) List. Noteworthy is the recommendation based on attainment of water quality standards at Soquel Creek for turbidity. In addition, staff recommends removal of the listings for sedimentation in San Vicente Creek because the previous data used to add this water segment to the list was incomplete and upon review of the complete data set, the data do not indicate sediment impairment in the water segment. Other de-listing recommendations either occurred in previous assessment cycles or are changes from a general pollutant name, such as “pathogens” to the specific indicator bacteria such as “fecal coliform.”

Pajaro River Watershed Hydrologic Unit (HU 305)

The Pajaro River Hydrologic Unit includes the Pajaro River and all of its tributaries. Central Coast Water Board staff assessed data for 35 creek and river segments, 5 lakes, and 3 beaches in the Pajaro River Hydrologic Unit. As a result of the assessments, staff identified 9 water segment/pollutant combinations that warrant removal from the 303(d) List (de-list) including Clear Creek for mercury where restoration and clean-up activities have resulted in attainment of the water quality standard. Staff identified 143 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or be added to the 303(d) List. USEPA approved TMDLs for 32 of the water segment/pollutant combinations. Listings primarily include the following pollutants: ammonia, nitrate, several individual pesticides, toxicity, chlorophyll *a*, low dissolved oxygen, water temperature, turbidity, pH, salts, TDS, and indicator bacteria. In addition, water quality standards are not being met in four of the five lakes in this Hydrologic Unit. The water segments with the most listings include Pajaro River (20 listings), Llagas Creek (13 listings), and Miller’s Canal (9 listings). One unique listing in this Hydrologic Unit is at Pinto Lake, for Microcystin toxins produced by cyanobacteria.

Bolsa Nueva Hydrologic Unit (HU 306)

The Bolsa Nueva Hydrologic Unit includes Moss Landing Harbor and the watersheds of Elkhorn Slough and Moro Cojo Slough. Central Coast Water Board staff assessed data for six water segments including one creek, one harbor, and four sloughs/estuaries. As a result of the assessments, staff identified 42 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or be added to the 303(d) List. USEPA approved TMDLs for five of these water segment/pollutant combinations. Pollutant listings primarily include the following: ammonia, nitrate, several individual pesticides, toxicity, chlorophyll *a*, indicator bacteria, low dissolved oxygen, pH, and turbidity. The water segments with the most listings include Moss Landing Harbor (12 listings), Moro Cojo Slough (11 listings), Carneros Creek (7 listings), and Elkhorn Slough (6 listings). Four water segment/pollutant combinations are proposed for removal from the 303(d) List; all due to either changes from a general pollutant name, (i.e. “pesticides” to the specific pesticides such as “DDT”), or due to a mapping change in the length of the delineated segment for this assessment cycle.

Carmel River Hydrologic Unit (HU 307)

The Carmel River Hydrologic Unit includes the Carmel River, all of its tributaries, and the beaches within the watershed boundary. Central Coast Water Board staff assessed 93 water segment/pollutant combinations including one creek, one river, and two beach segments in the Carmel River Hydrologic Unit. As a result of the assessments, staff identified three water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or be added to the 303(d) List. All three listings are for Tularcitos Creek, for chloride, sodium, and fecal coliform. The USEPA approved a TMDL for the fecal coliform listing.

It is noteworthy that the benthic invertebrate community data from the Carmel River indicate degraded condition, and as a result, Central Coast Water Board staff placed Carmel River in Category 3 of the 305(b) Report to reflect that the water segment is threatened. Central Coast Water Board staff did not place the Carmel River on the 303(d) List because, in accordance with the decision-making rules of the Listing Polity, the benthic invertebrate community data could not be associated with “water or sediment concentrations of pollutants.”

Santa Lucia Hydrologic Unit (HU 308)

The Santa Lucia Hydrologic Unit includes the coastal watersheds of Monterey County, south of the Carmel River Watershed. Central Coast Water Board staff assessed data for 23 creek and river segments, and 5 beaches, resulting in the assessment of 246 water segment/pollutant combinations. As a result of the assessments, staff identified two water segment/pollutant combinations that are not meeting water quality standards and therefore should be added to the 303(d) List: pH for Big Creek and for Willow Creek. However, it should be noted that 1) there are no known anthropogenic sources or land uses in these watersheds that could cause elevated pH levels, 2) the elevated pH levels are likely due to the marine origin of the geologic formations in these watersheds, and 3) all other water quality indicators show extremely high water quality in these watersheds.

It is noteworthy that the benthic invertebrate community data from the Big Sur River indicate degraded condition, and as a result, Central Coast Water Board staff placed Big Sur River in Category 3 of the 305(b) Report to reflect that the water segment is threatened. Central Coast Water Board staff did not place the Big Sur River on the 303(d) List because, in accordance with the decision-making rules of the Listing Polity, the benthic invertebrate community data could not be associated with “water or sediment concentrations of pollutants.”

Salinas River Watershed Hydrologic Unit (HU 309)

The Salinas River Water Watershed Hydrologic Unit includes the Salinas River and all of its tributaries (with the exception of the Estrella River), the Gabilan Creek sub-watershed (which includes the Salinas Reclamation Canal, and Tembladero Slough), the watersheds of the Monterey Peninsula north of Carmel River watershed, as well as the beaches and coastline segments within the watershed boundary. Central Coast Water Board staff assessed data for 42 creek and river segments, 1 harbor, 4 lakes, 7 beaches, and 4 coastal segments and identified 207 water segment/pollutant combinations that are not meeting water quality standards and therefore should be added to or remain on the 303(d) List. USEPA approved TMDLs for 95 of these water segment/pollutant combinations.

The Salinas River is divided in to three segments for the purpose of this assessment. Staff proposes 92 listings for the Salinas River segments and its direct tributaries including the

following: ammonia, nitrate, several pesticides, toxicity, chlorophyll *a*, low dissolved oxygen, water temperature, turbidity, pH, salts, TDS, indicator bacteria, and benthic community effects. Two of the three reservoirs in this watershed are listed for elevated levels of mercury. Staff proposes 20 pollutant listings for the lower Salinas River segment. Other water segments with numerous pollutant listings include Chualar Creek (13 listings), Quail Creek (14 listings), and Blanco Drain (8 listings). Staff identified four water segment/pollutant combinations for which water quality standards are attained. Staff recommends removal of the following from the 303(d) List: Blanco Drain for dissolved oxygen, Chualar Creek for water temperature, Lower Salinas River for specific conductivity, and the middle segment of the Salinas River for *E. coli*.

The Gabilan Creek sub-watershed is connected to the Salinas River Lagoon by the Old Salinas River channel. All 11 water segments in this sub-watershed have two or more pollutant listings and 98 water segment/pollutant combinations are proposed for the 303(d) List. In general, pollutants are the same as are mentioned above for the Salinas River and its tributaries. Water segments with the most pollutant listings include Tembladero Slough (15 listings), Salinas Reclamation Canal (15 listings), and Old Salinas River (11 listings). Staff identified two water segment/pollutant combinations for which water quality standards are attained and recommends removal of the following from the List: Alisal Slough for dissolved oxygen and Natividad Creek for pH.

Assessments of Monterey Harbor, the coastal segments, and beaches resulted in five recommendations for listings in Monterey Harbor, and three listings for indicator bacteria at beaches.

Estero Bay Hydrologic Unit (HU 310)

The Estero Bay Hydrologic Unit includes the coastal watersheds of San Luis Obispo County north of Oso Flaco Lake Watershed. Central Coast Water Board staff assessed 756 water segment/pollutant combinations for 63 water segments including the following: 34 creek or river segments, 26 beaches, 1 lake, and 2 bay/harbors. As a result of the assessments, staff identified 100 water segment/pollutant combinations that are not meeting water quality standards and therefore should be added to the 303(d) List. USEPA approved TMDLs for 20 of these water segment/pollutant combinations.

Recreation beneficial uses for seven beach segments are impaired by one or more indicator bacteria while creek segments listings primarily include the following: nitrate, toxicity, salts, TDS, indicator bacteria, low dissolved oxygen, pH, turbidity, and benthic community effects. The water segments with the most listings include San Luis Obispo Creek (7 listings), Chorro Creek (10 listings), and Arroyo Grande, below Lopez Lake (7 listings). Staff identified 2 beach segment-pollutant combinations for which water quality standards are attained, and recommends removal of the following from the List: Pacific Ocean at Avila Beach (Avila Pier) and Pacific Ocean at Olde Port Beach (at restrooms) for *Enterococcus*.

Carrizo Plains Hydrologic Unit (HU 311)

The Carrizo Plains Hydrologic Unit includes the watershed of Soda Lake. Central Coast Water Board staff assessed data for Soda Lake in the Carrizo Plains Hydrologic Unit and identified a single listing for ammonia in Soda Lake.

Santa Maria River Watershed Hydrologic Unit (HU 312)

The Santa Maria River Water Watershed Hydrologic Unit includes the Santa Maria River and all of its tributaries as well as the Oso Flaco Lake watershed. Central Coast Water Board staff assessed data for 23 creek and river segments, 2 lakes, 1 estuary, and 1 coastal segment and identified 152 listings on 19 different water segments.

For the Santa Maria River Watershed, staff identified 126 water segment/pollutant combinations that are not meeting water quality standards and therefore added to or remain on the 303(d) List. USEPA approved TMDLs for 93 of these water segment/pollutant combinations. Listings primarily include the following pollutants: ammonia, nitrate, several individual pesticides, toxicity, chlorophyll *a*, low dissolved oxygen, water temperature, turbidity, pH, salts, TDS, and indicator bacteria. In the Cuyama and Sisquoc Rivers, elevated levels of salts and pH may be natural and the result of geologic formations in those areas. Staff proposes 22 pollutant listings for Orcutt Creek; the most number of pollutants proposed for a single water segment in the Central Coast Region. Other water segments with numerous pollutant listings include the following: Santa Maria River (18 listings), Santa Maria River Estuary (12 listings), Main Street Canal (12 listings), Bradley Channel (11 listings), and Bradley Canyon Creek (10 listings).

For the Oso Flaco Lake Watershed, staff identified 25 water segment/pollutant combinations that are not meeting water quality standards and therefore added to the 303(d) List. USEPA approved TMDLs for 18 of these water segment/pollutant combinations. Pollutants primarily include the following: ammonia, nitrate, several individual pesticides, toxicity, low dissolved oxygen, turbidity, and indicator bacteria. Staff proposes 10 pollutant listings each for Oso Flaco Lake and Oso Flaco Creek.

Staff identified a single pollutant listing for the beach segment at Guadalupe dunes for total coliform.

San Antonio Creek Watershed Hydrologic Unit (HU 313)

The San Antonio Creek Watershed Hydrologic Unit includes San Antonio Creek and its tributaries as well as the creeks in the Casmalia watershed. Central Coast Water Board staff assessed data for three creeks in the San Antonio Creek Hydrologic Unit. As a result of the assessments, staff identified two water segment/pollutant combinations that warrant removal from the 303(d) List (de-list): San Antonio Creek for ammonia and nitrite. Staff identified 9 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or be added to the 303(d) List. Pollutant listings include the following: nitrate, salts, indicator bacteria, low dissolved oxygen, and sedimentation. Staff proposes six pollutant listings for San Antonio Creek, and one pollutant listing (sedimentation) for both Casmalia Canyon Creek and Shuman Canyon Creek.

USEPA has not approved TMDLs for these water segment/pollutant combinations. However, in the development of the TMDL for nutrients in the San Antonio Creek Watershed, staff identified a point source and worked with landowners to eliminate that source. This water segment/pollutant combination is being addressed by an action other than a TMDL.

Santa Ynez River Watershed Hydrologic Unit (HU 314)

The Santa Ynez River Watershed Hydrologic unit includes the Santa Ynez River and all of its tributaries and the coastal segment within the watershed boundary. Central Coast Water Board

staff assessed data for nine water segments including six stream or river segments, two lakes, and one beach in the Santa Ynez River Hydrologic Unit. As a result of the assessments, staff identified 37 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or be added to the 303(d) List. Pollutant listings in stream or river water segments primarily include the following: nitrate, toxicity, chloride, sodium, TDS, indicator bacteria, dissolved oxygen, pH, and temperature. The water segments with the most listings include Santa Ynez River below Lompoc (11 listings), Santa Ynez River between Lake Cachuma and Lompoc (5 listings), and San Miguelito Creek (8 listings). Cachuma Lake is impaired due to elevated levels of mercury in fish, which exceed the human health criteria/evaluation guidelines for safe consumption, and Ocean Beach is impaired due to elevated levels of total coliform, which exceed the shellfish consumption guidelines. USEPA has not approved TMDLs for these water segment/pollutant combinations.

South Coast Hydrologic Unit (HU 315)

The South Coast Hydrologic Unit includes all of the coastal watersheds south of the Santa Ynez Watershed. Central Coast Water Board staff assessed data for 130 water segments including 82 stream segments, 5 estuaries, 1 harbor, 40 beaches and, 1 coastline segment in the South Coast Hydrologic Unit. As a result of the assessments, staff identified 7 water segment/pollutant combinations that warrant removal from the 303(d) List (de-list): 6 beach segments for indicator bacteria and Rincon Creek for turbidity. Staff identified 140 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on or added to the 303(d) List. TMDLs have been approved for 9 of these water segment/pollutant combinations.

Pollutant listings in stream or river water segments primarily include the following: nitrate, toxicity, specific pesticides, salts, indicator bacteria, low dissolved oxygen, pH, temperature, turbidity, and benthic community effects. Eight water segments are beaches where recreation uses are impaired due to one or more pathogen indicators. The water segments with the most listings include Atascadero Creek (11 listings), Arroyo Paredon (9 Listings), Rincon and San Jose Creeks (8 listings), and Carpinteria and Franklin Creeks (7 Listings). Santa Barbara Harbor has 4 pollutant listings for arsenic, copper, dieldrin, and low dissolved oxygen.

Santa Barbara Channel Hydrologic Unit (HU 316)

The Santa Barbara Channel Hydrologic Unit includes all the watershed of the Channel Islands. Central Coast Water Board staff did not receive or assess any data or information for the watersheds of this Hydrologic Unit.

Estrella River Watershed Hydrologic Unit (HU 317)

The Estrella River Watershed is a tributary to the Salinas Watershed and the Hydrologic Unit includes all the tributaries to the Estrella River. Water Board staff assessed data for 2 water segments in the Estrella River Hydrologic Unit. As a result of the assessments, staff identified 14 water segment/pollutant combinations that are not meeting water quality standards and therefore should remain on the 303(d) List. TMDLs have been approved for 4 of these water segment/pollutant combinations. Listings primarily include the following pollutants: toxicity, boron, chloride, sodium, conductivity, pH, dissolved oxygen, turbidity, and indicator bacteria. It should be noted that the geology in this watershed are of marine origin and elevated salt levels

and pH are expected. However, the potential anthropogenic activities throughout the watershed may also contribute to the elevated levels.

Public Input Process and Water Board Approval

Pursuant to Section 6.2 of the Listing Policy, changes to the 303(d) List, require public review and approval by the Regional Water Board during a public hearing.

The Central Coast Water Board's public participation process included a 30-day public comment period, a public workshop during that comment period, and a public hearing. Central Coast Water Board staff held a public workshop on September 14, 2016 to provide information to and solicit comments from interested parties regarding the draft 2014 303(d) List. In addition, interested parties submitted written comments during the 30-day public comment period from August 22, 2016 to September 23, 2016. Staff considered and responded to public comments (Attachment 4 of the Staff Report) in the development of the final 303(d) List and this revised summary report. The Central Coast Water Board will hear staff's recommendations for updates to the 303(d) List at the public hearing scheduled for December 8-9, 2016.

The Listing Policy also requires State Water Board approval for changes to the 303(d) List. Following approval by the Central Coast Water Board, the proposed updates to the 303(d) List are then submitted to the State Water Board and combined with the recommended changes from the other Regional Water Boards. Once the changes for all Regions are compiled, the California Integrated Report is noticed for additional public review and approval by the State Water Board or Executive Officer.

The California 303(d) List will also require final approval by the USEPA. Should USEPA determine that changes are needed to the submitted List, they will initiate further public review before finalizing and publishing the Integrated Report. The 305(b) Report does not require Water Board or USEPA approval. However, USEPA will compile the data from the state's 305(b) Reports and transmit the summaries in their "National Water Quality Inventory Report" to Congress.

Conclusion

Central Coast Water Board staff will recommend approval of the proposed updates to the 303(d) List to the Central Coast Water Board at a regularly scheduled public meeting on December 8-9, 2016. The 303d List serves to inform the public of which waterbodies and pollutants exceed protective water quality standards in the Central Coast Region and guide the Central Coast Water Board in priority, timing and approaches to improving water quality conditions. Water quality standards in the Basin Plan and the Central Coast Vision of Healthy Watersheds inform these recommendations. Approval of the 303(d) List is one of the first steps in our on-going planning and implementation efforts to protect beneficial uses and improve conditions in the waters of the Central Coast Region.

References

For a complete list of references used in all the assessment fact sheets, see Appendix J

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PUBLIC COMMENTS AND STAFF'S RESPONSES

FOR

2014 Integrated Report Assessing Waters of the Central Coast Region Including Clean Water Act (CWA) Section 303(d) List of Water Segments not Meeting Water Quality Standards[1] and CWA Section 305(b), Water Quality Condition Report
(Resolution No. R3-2016-0053)

Preface

The purpose of this document is to present public comments regarding draft Resolution No. R3-2016-0053 received by staff of the Central Coast Regional Water Quality Control Board (Central Coast Water Board), and staff's responses to the comments.

Public outreach and public involvement are a part of the Integrated Report Assessing Waters of the Central Coast Region Including Clean Water Act (CWA) Section 303(d) List (303(d) List) of Water Segments not Meeting Water Quality Standards and CWA Section 305(b), Water Quality Condition Report (Integrated Report). It is also required under the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy). Central Coast Water Board staff's efforts to inform and involve the public included a 30-day public comment period. Staff solicited public comments from a wide range of stakeholders including owners/operators of agricultural operations, representatives of the agricultural industry, representatives of environmental groups, academic researchers and resource professionals, representatives of local, state, and federal agencies, representatives of municipal wastewater treatment facilities, representatives of city and county stormwater programs, representatives of permitted facilities, ranchers and representatives of the livestock industry, and other individuals and groups interested in the water quality of streams in the Central Coast Region.

In August 2016, Central Coast Water Board staff distributed notice of an opportunity to provide public comment on the changes to the Integrated Report. This provided interested parties an opportunity to provide comment prior to any Central Coast Water Board hearing regarding these updates. The public comment period for this project commenced on August 22, 2016 and ended September 23, 2016. In addition, Central Coast Water Board staff held a public workshop on September 14, 2016 at the Central Coast Water Board office. Nine interested parties attended the public workshop representing irrigated agriculture, municipalities, volunteer monitoring programs and a harbor district).

Overview of Comments Received

Central Coast Water Board staff received nine comment letters during the public comment period. Central Coast Water Board staff has reproduced direct transcriptions of the comments received, shown in *italics*, and inserted staff's responses below them using **blue, bold text.**

[1] Water Quality Standards, pursuant to the Clean Water Act, consist of designated beneficial uses of water bodies and criteria or objectives (numeric and narrative) which are protective of those beneficial uses and consideration of anti-degradation.

Many of the comments submitted, prompted Central Coast Water Board staff to edit the Integrated Report, as discussed below.

The following entities provided comment letters:

Summary of Changes in Response to Public Comments

1. In response to Commenter 2, Central Coast Water Board staff revised the 305(b) Report status for Carmel River and Big Sur River and placed both Rivers into Category 3 because benthic community effects data indicate that the beneficial uses may be threatened.

2. In response to Commenter 2, Central Coast Water Board staff added a line of evidence and a fact sheet for flow alteration in the Carmel River.

3. In response to Commenter 2, Central Coast Water Board staff revised the fact sheet for Salinas River (Lower)/benthic community effects. The potential sources now include "source unknown, channelization, flow alteration/regulation/modification, and hydromodification."

4. In response to Commenter 4, Central Coast Water Board staff revised the fact sheet for Chorro Creek/nutrients to identify the impaired waterbody segment length is limited to the reach between the creek mouth at Morro Bay and the monitoring location near the Highway 1 Bridge (station 310CHO).

5. In response to Commenter 6, Central Coast Water Board staff revised the fecal coliform fact sheets for the following eight waterbody segments and removed the recommendation to de-list:
   - Pacific Ocean at Capitola Beach (Santa Cruz County)
   - Pacific Ocean at Carpinteria State Beach (Creek mouth, Santa Barbara County)
   - Pacific Ocean at East Beach (mouth of Mission Creek, Santa Barbara County)
   - Pacific Ocean at Hammonds Beach (Santa Barbara County)
   - Pacific Ocean at Hope Ranch Beach (Santa Barbara County)
   - Pacific Ocean at Jalama Beach (Santa Barbara County)
   - Pacific Ocean at Ocean Beach (Santa Barbara County)
   - Pacific Ocean at Pismo State Beach (San Luis Obispo County), south of Pismo Pier

6. In response to Commenter 2, Central Coast Water Board staff revised the fact sheet for Morro Bay/fecal indicator bacteria. The potential sources now include groundwater loadings (see comment A.2.)

Comments and Staff Responses

1. Santa Cruz Port District

Comment letter dated September 23, 2016

Comment 1.1: *Santa Cruz Port District staff learned of the recommended listing [for Santa Cruz Harbor] just days before the RWQCB conducted its Public Meeting and Workshop on September 14, 2016. I attended the meeting to learn more about the listing and process. We were disappointed that there was no advance notice or outreach from the RWQCB to entities that had never before been listed. It was only after hearing about the process from another harbor in our region that we learned Santa Cruz Harbor was recommended for listing. We have since subscribed to receive notices, but too late for this review cycle.*

Response(s): Central Coast Water Board staff will continue to look for improvements in our outreach to interested parties to increase awareness of our website and the email subscription system we use to communicate information about the Integrated Report (http://www.waterboards.ca.gov/resources/email_subscriptions/reg3_subscribe.shtml). Please do not hesitate to contact staff if you have further question about this or other email subscription lists available to interested parties.

Comment 1.2: *While we appreciate the time that RWQCB staff took to educate us about the process and guidelines, the Port District contends that the 303(d) listing is not warranted. The majority of test data dates back to 2004, and the sample sizes do not appear to be valid to list an entire water body as impaired. In 2010, Santa Cruz Harbor was reviewed and not recommended for listing. However, in the current review cycle, outdated tests are a major factor in the recommendation to list:*

Response(s): In the development of the 2014 Integrated Report, Central Coast Water Board staff used all data that were readily available and submitted during the 2010 public data solicitation period.

Regarding the comment that the Santa Cruz Harbor was assessed for the 2008/2010 Integrated Report and was not placed on the 303(d) List, some data were evaluated for Santa Cruz Harbor for the 2008/2010 Integrated Report. However the 2014 Integrated Report assessment includes additional data supporting the recommendations to add the above mentioned pollutants and Santa Cruz Harbor to the 303(d) List that were not available for inclusion in the 2008/2010 Integrated Report Assessment.

Regarding the comment on the age of the data, Central Coast Water Board staff acknowledges that data collected in 2004 is now 12 years old. However, inclusion of all

data, regardless of age, is consistent with the requirements of the Federal Code of Regulations (40 CFR 130.7(b)(5)) to assemble and evaluate all existing and readily available water quality related data and information to develop the Integrated Report.

It is also important to note that inclusion of older data is essential to evaluate trends in water quality, especially in locations where data are sparse.

Central Coast Water Board staff make decisions about the 303(d) listing status of a waterbody segment and pollutant combination in accordance with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy). Until newer data indicate that water quality objectives are supported in accordance with the decision-making rules of the Listing Policy, , the harbor can and should remain on the 303(d) List. Sections 3.10 and 4.10 of the Listing Policy allow for evaluation of older data separately where trends in water quality show that the most recent 3 years of data or other information indicate that water quality impacts are no longer observed. For example, where effective management actions have been carried out and data collected since the implementation of those management measures show the water quality condition has improved, staff can use the most recent data alone to recommend removing a waterbody segment and pollutant combination from the 303(d) List.

Comment 1.2.a: *The PCB listing is based on two fish samples and one shellfish sample from tests dating back to 2004. The "Water Body Quick Report" states, "Two out of two fish tissue samples exceeded the evaluation guideline applied to protect for the commercial beneficial use. Zero out of two fish tissue samples exceeded the evaluation guideline applied to protect for the freshwater habitat beneficial use." The report acknowledges that the sample size is insufficient, but ultimately goes on to argue in favor of listing.*

Response(s): Regarding PCBs in Santa Cruz Harbor, the data show that the Commercial and Sport Fishing Beneficial Use is "not supported," as defined by the decision-making rules of the Listing Policy. Section 3.1 of the Listing Policy states that for pollutants that are considered toxicants (such as PCBs, pesticides, and metals), if there are 24 or less samples and 2 or more samples exceed the relevant water quality objective, then the beneficial use is not supported. When the beneficial use is not supported, the waterbody segment must be added to the 303(d) List.

Comment 1.2.b: *The Dieldrin tests also date back to 2004, and are based on the same limited sample size of two fish tissue samples and one shellfish sample. The "Water Body Quick Report" states, "Two of two fish tissue samples exceeded the evaluation guideline applied to protect for the commercial beneficial use. These same two fish tissue samples did not exceed the evaluation guideline applied to protect for the freshwater habitat beneficial use." For Dieldrin, there is additional sediment data, "Zero out of six sediment samples exceeded the evaluation guideline." Similar to the PCB listing recommendation, the report acknowledges the sample size is insufficient, but then goes on to argue in favor of listing.*

Response(s): Regarding Dieldrin in Santa Cruz Harbor, the data show that the Commercial and Sport Fishing Beneficial Use is "not supported," as defined by the decision-making rules of the Listing Policy. In accordance with the Listing Policy, when any of the beneficial use is "not supported," the waterbody segment must be added to the 303(d) List (see response to comment 1.2.a. regarding Section 3.1 of the Listing Policy).

Comment 1.2.c: *Arsenic tests date back to 2004, and are based on the same limited sample size for fish tissue (two) and shellfish (one) and also involve sediment tests, which indicate that "Zero out of six sediment samples exceeded the evaluation guideline."*

Response(s): Regarding Arsenic in Santa Cruz Harbor, the data show that, the Commercial and Sport Fishing Beneficial Use is not supported, as defined by the decision-making rules of the Listing Policy. In accordance with the Listing Policy, when any of the beneficial use is "not supported," the waterbody segment must be added to the 303(d) List (see response to comment 1.2.a. regarding Section 3.1 of the Listing Policy).

Comment 1.2.d: *Copper was evaluated in the 2010 review cycle, and did not result in a recommendation to list. The "Quick Water Body Report" notes that the "Past cycle decision changed from 'Do Not List' to 'List' in this cycle." The Line of Evidence notes that data was collected on a single day in 2004. This recommendation appears to be based entirely on new guidance and not new data.*

Response(s): Central Coast Water Board staff evaluated sediment data (six copper samples from the 2004 monitoring event) for the 2008/2010 Integrated Report and those data alone did not result in adding Santa Cruz Harbor to the 303(d) List. However, Central Coast Water Board staff evaluated the water column data (from the 2004 monitoring event) for the first time as part of this 2014 Integrated Report. All three of the water samples exceed the criteria for aquatic life protection and therefore that use is not supported. Consequently, Central Coast Water Board staff placed Santa Cruz Harbor on the 303(d) List based on the inclusion of the water samples, which were not previously assessed.

Comment 1.2.e: *Dissolved oxygen samples were taken once per month between August-October 2006, and resulted in a recommendation to list. The Port District has experienced a number of fish kills since its construction in 1964. One of the tools used by the Port District to prevent fish kills is monitoring for dissolved oxygen and using aerators as needed. None of the dissolved oxygen data taken by the Port District on a weekly and sometimes daily basis in spring, summer and fall each year was considered in the recommendation to list.*

Response(s): The Central Coast Water Board commends the Santa Cruz Harbor District for implementing practices to detect risk for and prevent fish kills in the Harbor. The Central Coast Water Board recommends that the Santa Cruz Harbor District submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report. Please contact Mary

Hamilton at the Central Coast Water Board for assistance in beginning the process to deliver data to CEDEN.

Comment 1.2.f: *Additionally, the harbor (specifically, the north harbor area where the subject samples were taken) was in a state of emergency due to the 2005 El Nino mud flows that had filled the north harbor with sediment from Arana Gulch. The Port District conducted emergency dredging operations throughout 2005 and 2006 under special permits issued by, among others, the Central Coast Water Board. The severe sedimentation introduced to the harbor during that declared disaster could have produced anomalous data such as that used in the 303(d) listing.*

Response(s): The 2004 sediment data used in this data assessment pre-dates the emergency dredging operations conducted by the Santa Cruz Harbor District in 2005 and 2006.

The Central Coast Water Board recommends that the Santa Cruz Harbor District submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report. Please see response to comment 1.2.e.

Comment 1.2.g: *The Port District contends that the 303(d) listing is not warranted. The testing is outdated and the sample sizes do not appear to be valid to list an entire water body as impaired.*

Response(s): Please see responses to comments 1.2 and 1.2.a-1.2.f.

Comment 1.3: *Furthermore, the Port District is concerned that not all available data was considered in the recommendation to list. Santa Cruz Harbor performs annual maintenance dredging of its entrance channel and inner harbor. Each year, sediment is sampled and tested and results are submitted for review and approval to regulators of the dredging operation, including the RWQCB. The data submitted to the Water Board has not been considered because its format did not meet California Environmental Data Exchange Center (CEDEN) criteria, which the Water Board has determined meets its definition of readily available data. (It should be noted that the Port District's sediment testing lab was able to provide the June 2016 data in CEDEN format. That data is pending upload to the database.)*

The Central Coast Water Board recommends that the Santa Cruz Harbor District submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comment 1.4: *Santa Cruz Port District respectfully requests that the Central Coast Regional Water Quality Control Board take action to "Do Not List" Santa Cruz Harbor on the 303(d) "TMDL required" list, at least until such time as the Port District can provide its comprehensive data for the RWQCB to consider.*

Response(s): Central Coast Water Board staff revisited each of the fact sheets for Santa Cruz Harbor. The 303(d) listings for Santa Cruz Harbor are consistent with the requirements of the Listing Policy and based on the readily available data and information.

2. Earth Law Center

Comment letter dated September 23, 2016

Note Central Coast Water Board staff did not reproduce footnotes, or the references cited in footnotes in the comment letter, here.

Comment 2.1: *Full Compliance with Clean Water Act Sections 305(b) and 303(d) Require Listing for Hydrologically Impaired Waterways.*

Clean Water Act (CWA) Section 305(b) requires states to submit biennial reports that "shall include" significant data and information on the health of "all navigable waters," for compilation and submission to Congress. EPA regulations further describe this requirement and its purpose, stating that the Section 305(b) report "serves as the primary assessment of State water quality" and as the basis for states' water quality management plan elements, which "help direct all subsequent control activities." States must use the Section 305(b) report to develop their annual work program under Sections 106 and 205(j). California's Integrated Report accordingly must include an adequate Section 305(b) report in order for the state to develop meaningful water quality management plans that appropriately direct staff and resources to the most important control activities.

As discussed further below, the Section 305(b) report must particularly include information regarding waterway flow, once again to ensure that the fundamental purpose of the Section in guiding workplanning is met. The provision of information regarding waterway flow is also called for by CWA Section 101, which sets the national objective of restoring and maintaining the "chemical, physical, and biological integrity of the Nation's waters." (Emphasis added.) The U.S. Supreme Court itself explicitly affirmed the importance of addressing physical elements of waterway health such as flow, stating that the distinction between water quality and quantity under the CWA is "artificial."

Accordingly, for the state to offer an adequate Section 305(b) report to US EPA and Congress, it must include waterways impaired by pollution, including hydrologically impaired waterways, whether or not the waterways are also impaired by a pollutant. This information is critical for the state to set waterway protection priorities properly.

Further, proper identification of hydrologically impaired waterways is also important if the state is to fully comply with CWA Section 303(d). This section not only calls for identification of impaired and threatened waterways, but also requires the state to prepare a priority ranking of such waters, "taking into account the severity of the pollution" and waterway uses. Flow and other hydrologic alteration data and information are critical to proper prioritization of impaired waters for further staff and resource attention.

Response(s): The Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) provides the decision-making rules (methodology) for interpreting data and information in the context of beneficial uses, existing numeric

and narrative water quality objectives, and antidegradation considerations. The Listing Policy requires a defined methodology or water quality objective by which to evaluate any "factor" for listing. The Listing Policy does not include decision-making rules to evaluate hydrologic conditions. The Central Coast Water Board does not, at this time, have a methodology or water quality objectives available to conduct an analysis of flow data or flow alteration information that meets the requirements of the Listing Policy.

The Integrated Report listing determinations must be supported by documentation that explains the analytical approaches used. This is consistent with the USEPA's 2005 Guidance for Assessment and Listing (see page 29 and USEPA's review of a state's methodology for consistency with the CWA and a state's water quality standards).

Central Coast Water Board staff are in discussion with State Water Board Division of Water Rights staff and other Regional Water Boards about developing policies and methods for future listings for developing flow criteria and flow objectives to address hydrologic impairments.

There are efforts to develop flow objectives and criteria in California and the central coast. The State Water Board's Division of Water Rights staff is currently drafting a manual with the goal of providing a framework to develop regional flow criteria and objectives (personal communication with Division of Water Rights staff). Locally, Central Coast Water Board staff is evaluating the flow (discharge) measurements from USGS, SWAMP, CCAMP, counties, and other monitoring efforts. Central Coast Water Board CCAMP staff has also collaborated with staff from California Department of Fish and Wildlife Water Branch Instream Flow Program to develop flow indices to allow for screening level evaluation of flow conditions and trends among watersheds (including the lower Carmel River). This project is not robust enough for development of flow objectives. However, the project is a step toward planning, priority setting, and identifying regulatory approaches to address flow, and to develop and implement flow objectives in the Central Coast Region.

Comment 2.2: *USEPA Guidance and Reports Call for Identification of Hydrologically Impaired Waterways in Category 4C.*

USEPA issued formal Integrated Report Guidance to states and territories in August 2015 specifically addressing the topic of flow listings. The Guidance clearly states that, "If States have data and/or information that a water is impaired due to pollution not caused by a pollutant…those causes should be identified and that water should be assigned to Category 4C." EPA's 2015 Guidance also applies hydrologic (e.g., flow) alteration as an example of a Category 4C listing. It further references EPA Guidance going back at least to 2006, which similarly said that flow-impaired waters should be identified in the Integrated Report under Category 4C (this 2006 Guidance is additionally referenced in the 2010 CCKA [California Coastkeepers Alliance] et al. Letter in support of flow listings).

US EPA and USGS reinforced this mandate in a joint report earlier this year on flow, stating in part that "EPA recommends reporting impairments due to hydrologic alteration in Category 4c, which are those impairments due to pollution not requiring a TMDL."

Response(s): With respect to the suggestion that waterbodies should be placed in Category 4c of the Integrated Report when data and information indicate that waterbody

is impaired due to flow alteration, at this time, there is no defined methodology or water quality objective available to make determinations about flow alterations and the extent to which they impact beneficial uses in accordance with the Listing Policy. Consequently, there is no methodology to determine classification into any 305(b) Report Category based on flow data or flow alteration information. Please see response to comment 2.1 on this topic.

However, after reviewing the associated documentation provided with the Earth Law Center letter and the 2010 California Coastkeepers Alliance letter (see Appendix A at the end of this document), Central Coast Water Board staff determined that it was appropriate to change the 305(b) Report status of the Big Sur and Carmel Rivers to Category 3 (for waterbodies where one or more beneficial uses may be threatened). This change is based on the evaluation of biological population data Benthic Community Effects (see change No. 1 in the *Summary of Changes in Response to Public Comments* section above). The revised fact sheets reflect the following changes:

- **a) Revised justification language for the decisions to state that there is evidence of degradation to the benthic invertebrate community but, Carmel and Big Sur Rivers could not be placed on the 303(d) List in accordance with the decision-making rules of the Listing Policy;[2]**
- **b) Revised justification language for the Carmel River decision to include citations for documents indicating flow alteration is having negative effects on aquatic life; and**
- **c) Assigned Carmel and Big Sur Rivers into Category 3 of the 305(b) Report (as opposed to Category 1).**

In addition, Central Coast Water Board staff has created a new fact sheet for "flow alteration" in the Carmel River (see change No. 2 in the *Summary of Changes in Response to Public Comments* section above). This new fact sheet reflects the documentation in the Higgins report (see the California Coastkeepers Alliance letter submitted during the 2010 public data solicitation period and relevant comments also included here as Appendix A). The fact sheet concludes that there is insufficient information to determine if beneficial uses are supported.

Comment 2.3: *The San Diego RWQCB Has Proposed Numerous Listings for Hydrologic Impairment for Its Current Integrated Report.*

The SD RWQCB recently released a draft Integrated Report and Staff Report that identified 30 waterway segments for listing in Category 4C, either with a Category 5 pollutant listing or alone. Consistent with US EPA Guidance, the SD RWQCB recognized that identifying all pollutant and pollution impairments provides a far more accurate picture of the challenges before the state than ignoring key impairments. For example, the Staff Report found that "over 96 percent of streams that exhibited biological degradation had both an associated pollutant(s) and supporting information showing pollution from in-stream habitat/hydrologic alteration and/or watershed hydrologic alteration hydromodification, Table 3)." If the Regional Board had ignored such pollution impairments, then virtually all of the impaired streams in the San Diego Region would

[2] **Section 3.9 of the Listing Policy requires that data showing degradation in biological populations and/or communities is associated with water or sediment concentrations of pollutants to place the waterbody segment on the 303(d) List.**

be under-assessed, likely resulting in misallocation of limited resources and attention. ELC commented to the San Diego Board in support of these listings; these comments are attached.

Response(s): Central Coast Water Board staff has followed State Water Board guidance for identifying potential sources. In previous 303(d) List updates, potential sources, such as groundwater, were sometimes identified using best professional judgement of Central Coast Water Board staff. However, State Water Board staff directed Central Coast Water Board staff to identify sources on the 2014 303(d) List only when a Total Maximum Daily Load (TMDL) or other source identification document is available for the waterbody segment and pollutant combination. This methodology provides a consistent and transparent approach to source identification because it does not rely on staff's best professional judgement.

Applying this methodology to the states 2012 Integrated Report, State Water Board staff revised the potential sources to "source unknown" for all waterbody segment and pollutant combinations where no source identification documentation was available. Thus, Central Coast Water Board staff included flow alteration as a source of impairments where there is source identification documentation.

Central Coast Water Board staff are aware of the San Diego Water Board's approach to assign waterbody segments to more than one 305(b) Report Category and that USEPA's 2006 and 2015 Integrated Report guidance (dated July 29, 2005 and August 13, 2005 respectfully) permits assignment of waterbodies to multiple categories. However, the use of multiple categories is not required and in fact, the guidance states that it is optional. The State Water Board staff's guidance on developing the 305(b) Report for California is to assign waterbodies to a single category. Further, the California Water Quality Assessment Database assigns waterbodies to a single category. Consequently, when the State Water Board staff compiles the Integrated Reports for each Regional Water Board into a single Integrated Report for the State, each waterbody segment will be assigned to a single 305(b) Report Category.

Comment 2.4: *California Has Identified Hydrologically Impaired Waterways in the Past.*

In California, "Pumping" and "Water Diversion" are listed as the sole causes of impairment for Ventura River Reach 4, in the Los Angeles Region. Also in the Los Angeles Region, Ventura River Reach 3 lists for "Pumping" and "Water Diversion," and Ballona Creek Wetlands is listed as impaired by "Hydromodification," among other impairments. All three water body segments are listed for these specific flow-related impairments in Category 5. California's history of identifying flow-related impairments for action should be considered here.

Response(s): California does not have a defined methodology or water quality objective for evaluating the beneficial use impacts from "pumping" and "water diversion" in accordance with the Listing Policy. Please see response to comment 2.1. Central Coast Water Board staff developed this Integrated Report and its recommendations consistent with the Listing Policy and the State Water Board Guidance for developing California's Integrated Report.

Regarding the Los Angeles Water Boards decision to place waterbodies on the 303(d) List (and in Category 5 of the 305(b) Report) for flow related impairments, it is important to note that Los Angeles Water Board staff placed these waterbodies on the 303(d) List

before the adoption of the Listing Policy. More importantly, there is no supporting documentation or data associated with the fact sheets for these waterbody and pollutant combinations. Consequently, the methodology used is absent.

Comment 2.5: *Numerous Other States Have Identified Hydrologically Impaired Waterways in Categories 4C and 5.*

Many states around the country have followed US EPA Guidance and the CWA by properly identifying flow-impaired waterways in their Integrated Reports. These include, but are not limited to, Western states such as Idaho, Montana, Wyoming, Washington and New Mexico. Notably, some of the states that list for flow impairments regularly include flow-impaired waterways on their 303(d) list as well as their 305(b) Report. ELC has collected a significant amount of information on other states' listings and can make this readily available if desired.

Response(s): Please see responses to comment 2.4. Further, Central Coast Water Board staff will review and evaluate assessment methodologies employed by other states during the development of the next Integrated Report.

Comment 2.6: *Most, if not all, of the states that identify hydrologic (including flow) impairments make those listing decisions based on best professional judgment and the information before them; flow standards are not required to be developed first. ELC has again compiled significant information collected on various states' flow listing strategies and would be pleased to provide this additional information if desired.*

US EPA addresses the issue of identifying hydrologically impaired waters in its 2015 Guidance, stating that: if States have data and/or information that a water is impaired due to pollution not caused by a pollutant (e.g., aquatic life use is not supported due to hydrologic alteration or habitat alteration), those causes should be identified and that water should be assigned to Category 4C. Examples of hydrologic alteration include: a perennial water is dry; no longer has flow; has low flow; has stand-alone pools; has extreme high flows; or has other significant alteration of the frequency, magnitude, duration or rate-of-change of natural flows in a water; or a water is characterized by entrenchment, bank destabilization, or channelization.

Where circumstances such as unnatural low flow, no flow or stand-alone pools prevent sampling, it may be appropriate to place that water in Category 4C for impairment due to pollution not caused by a pollutant. In order to simplify and clarify the identification of waters impaired by pollution not caused by a pollutant, States may create further subcategories to distinguish such waters.

Note that this description of the process for identifying flow impairments does not require adoption of flow standards as a prerequisite for listing.

The SD RWQCB also addressed this topic in their recent Staff Report and Integrated Report, stating that:

> *where a water segment exhibited significant degradation in biological populations and/or communities as compared to reference site(s) the San Diego Water Board assessed the segment for inclusion in Category 4c using data and information as prescribed in USEPA's 2015 Guidance ... Where in-stream data was lacking, stream segments were evaluated using desktop aerial reconnaissance for potential in-stream habitat and*

hydrologic alteration associated with channel modifications, stream diversion or augmentation, and to evaluate the level of associated development and use of best management practices to mitigate hydromodification.

Response(s): Central Coast Water Board staff developed this Integrated Report and its recommendations consistent with the Listing Policy and the State Water Board Guidance for developing California's Integrated Report. Staff typically uses a water quality objective (numeric or narrative) to determine if water quality standards are attained. The Central Coast Basin Plan does not contain a water quality objective for protection of aquatic life from flow alteration. However, in accordance with Section 3.10 of the Listing Policy, there is a methodology to evaluate an antidegradation component of water quality standards by identifying trends of declining water quality in the absence of specific water quality objectives. The data and information provided by Earth Law and the California Coastkeepers Alliance do not satisfy the requirements of Section 3.10 of the Listing Policy.

Regarding the San Diego Water Board's approach, please see previous responses to comment 2.3.

Comment 2.7: *Sound Public Policy Dictates That Flow-Impaired Waterways Must Be Identified.*

States, including California, have identified and are identifying flow-impaired waterways in their Integrated Reports not only because the Clean Water Act calls for it and US EPA Guidance reinforces it. They also do so because it makes smart policy sense. Why would a state limit the amount of information it releases, information that could help it make better decisions about how to prioritize its resources? If the main problem with a waterway is not temperature or dissolved oxygen but flow, for example, then that information should be available so the best permitting and resource allocation decisions can be made to protect affected waterways.

Identification of flow-impaired waterways is also important because those listings help the public exercise their own responsibility to help improve waterway health. US EPA agreed in its Guidance, stating that "a variety of watershed restoration tools and approaches to address the source(s) of the impairment" exist even in the absence of TMDLs, increasing the importance of full and complete listing identification for impaired waterways.

Hydrologic impairment listings also can and should be used in CEQA analyses of proposed projects that could further impact the flow of identified waterways, thus preventing additional damage to already-impacted waterways and fish.

Response(s): Please see responses to comment 2.1.

Comment 2.8: *Water Bodies Can and Should Be Placed in All Relevant Categories of Identification.*

The Staff Report states that the "combination of beneficial use support ratings assigned to each water segment determines its placement into one of five, non-overlapping categories." (Emphasis added.) This statement appears to limit the RWQCB to placing water bodies in only one category, an interpretation presumably reflected in the zero listings in Category 4C.

This approach is incorrect. US EPA has been quite clear that water bodies can be placed into multiple categories, and in fact should be in order to provide the best available waterbody information to US EPA and Congress. As explained by the SD RWQCB:

> *It is important to note that USEPA recommended in its 2015 guidance that States assign all of their surface water segments to one or more of five reporting categories" (emphasis added).*

US EPA reiterated this point in its joint report with USGS, stating that "EPA's guidance has noted that assessment categories are not mutually exclusive, and waters may be placed in more than one category (for example, categories 4C and 5)."

Accordingly, flow impairments should be reflected in Category 4C whether or not there is a pollutant present, the approach taken recently by the SD RWQCB.

In addition, failing to list water bodies in all applicable categories is inconsistent with CWA Sections 305(b) and 303(d) and implementing regulations, as those statutes and regulations require that the Integrated Report both provide "a description of the water quality of all navigable waters in such State during the preceding year" and "identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters." Because these Clean Water Act requirements overlap, the Integrated Report—meant to satisfy the requirements of both Sections 305(b) and 303(d)—must list all categories applicable to a single water body. Currently, the Integrated Report, which does not even meaningfully consider Category 4C as a potential listing category, does not meet these overlapping requirements.

Response(s): Central Coast Water Board staff followed direction from State Water Board staff for assigning waterbody segments to one 305(b) Report category. Please see response to comment 2.3.

Regarding the comment to consider Category 4C, please see responses to comments 2.1 and 2.2.

Regarding the San Diego Water Board's approach, please see response to comment 2.3.

Comment 2.9: *Reasonably Available Data Exist and Have Been Provided in Support of the Listing of Waterways as Hydrologically Impaired.*

Federal regulations state that states must evaluate "all existing and readily available information" in developing their 303(d) lists and prioritizations. The SWRCB's Executive Director Tom Howard reinforced the breadth of this requirement in a memorandum on the scope of listing regulations at 40 CFR § 130.7(b)(5).25 Given the concurrent preparation and submittal of the state's 305(b) and 303(d) reports into a single Integrated Report, the state may not exclude readily available information relating to the listing and prioritization of impaired and threatened water bodies. US EPA reinforced this position recently, stating that the integrated reporting format is key to "acknowledge the important role of flow in contributing to water-body impairments."

The August 2010 CCKA [California Coastkeepers Alliance] et al. Letter identified at least six Central Coast water bodies as evidencing hydrologic impairment, and supplied existing and

reasonably available information in support of these assertions: Salinas River, Santa Clara River, Carmel River and San Clemente Creek, Big Sur River, and Santa Maria River. The existing and readily available data proffered in the August 2010 CCKA et al. Letter must be considered, and these water bodies should be examined for listing for low/hydrologic impairments in Category 4C, as was done in the SD RWQCB Staff Report and as called for by US EPA.

The provided data and other reasonably available information (such as from fish and wildlife agencies) demonstrates a direct link to flow reductions, hydrologic changes and/or habitat alteration that lead to impacts in beneficial uses, most notably those associated with the protection of fish and wildlife. As the State Water Resources Control Board just summarized this month:

> *Nearly every feature of habitat that affects native fish and wildlife is, to some extent, determined by flow (e.g., temperature, water chemistry, physical habitat complexity). These habitat features, in turn, affect risk of disease, risk of predation, reproductive success, growth, smoltification, migration, feeding behavior, and other physiological, behavioral, and ecological factors that determine the viability of native fish.*

In other words, flow is the core variable on which the viability of native fish depends. For example, California's south-central coast steelhead populations have declined from about 25,000 spawning adults per year to fewer than 500, with all of the watersheds in the south-central coast distinct population segment (DPS) primarily from water management activities, such as diversions. Impacts are particularly direct when dams are involved; indeed, "the alteration of flows below dams is generally considered to be the most serious threat to ecological sustainability of rivers."

The above and attached information, and that provided in the CCKA et al. Letter, expands upon this logical finding with data and scientific and historical analysis on fish impacts from altered flow, hydrology and/or habitat. Summaries of such information is provided in Attachment 1, which provides excerpts of submitted reports that tie flow and hydrology to reduced numbers to fish species, often to critically low levels.

Response(s): Regarding the comment that states must evaluate all readily available information, staff has done so in the development of the 2014 Integrated Report. State Water Board staff provided the above-mentioned letter, from the California Coastkeepers Alliance, to the Central Coast Water Board, in September 2015. At that time, the Central Coast Water Board staff evaluated the information provided in the context of Water Board priorities, and available resources to meet the timeline for the 2014 Integrated Report. Due to limited resources, staff did not formally develop fact sheets to include all of the information provided by California Coastkeepers Alliance. However, staff did use information provided by California Coastkeepers Alliance (in the 2010 letter) to identify causes of observed degradation of biological communities and to create a new fact sheet for flow alteration in the Carmel River. Please see California Coastkeepers Alliance comments relevant to the Central Coast Water Board in Appendix A at the end of this document and see changes No. 1 and 2 in the *Summary of Changes in Response to Public Comments* section above. In addition, please refer to responses to comment 2.1 regarding Integrated Report decision-making in accordance with the Listing Policy and efforts to develop flow objectives and assessment methodologies. Please see responses to comment 2.7 regarding evaluating flow data and information under Section 3.10 of the Listing Policy.

Regarding the comment that other reasonably available information, including State Water Board findings, supports the request of Earth Law Center to add the above-mentioned waterbodies to Category 4c due to flow alteration, flow is a factor in attaining water quality standards. However, Central Coast Water Board staff does not have, at this time, a mechanism to move forward with evaluating flow alteration impacts. Please see response to comment 2.1.

Regarding the comment that information were provided for six central coast waterbodies during the public data solicitation period, staff has reviewed those data and has made the following determinations in accordance with the Listing Policy.

- **Both the Salinas and Santa Maria Rivers are currently on the 303(d) List for multiple pollutants and are assigned to Category 5. In accordance with State Water Board guidance for developing the 305(b) Report, staff assigned these waterbodies to a single category.**
- **Both the Carmel and Big Sur Rivers are currently assigned to Category 3 because, although there are no pollutant impairments to beneficial uses, there is data indicating degradation to benthic invertebrate communities (see change No. 1 in the *Summary of Changes in Response to Public Comments* section above).**
- **Central Coast Water Board staff created a new fact sheet for "flow alteration" in the Carmel River (see change No. 2b in the *Summary of Changes in Response to Public Comments* section above). This new fact sheet reflects the documentation in the Higgins report (Appendix A to the California Coastkeepers Alliance et al. letter referenced in the comment).**
- **There are no factsheets developed for San Clemente Creek and at this time. Until San Clemente Creek is identified as a waterbody in the assessment database, no fact sheets can be developed. Central Coast Water Board staff submitted a request to add this waterbody segment to the database for future assessments.**
- **The Santa Clara River is just outside the boundaries of the Central Coast and within the boundary of the Los Angeles Water Board.**

Comment 2.10: *The Regional Water Board Should Specifically Review and Approve Transmission of the Entire Integrated Report to USEPA.*

Finally, and more broadly, we would like to address the Staff Report's statement that the Central Coast RWQCB "is not required to take formal action on or approve staff's recommended changes to the 305(b) Report; therefore, … staff did not prepare a formal recommendation by resolution for action/approval of the 305(b) Report." As noted in the Staff Report, the state must submit the 305(b) Report to EPA and Congress as the state's affirmative attestation of California's water quality. The Section 305(b) report forms the basis of the state's water quality management plan elements, including the state's annual work program under Sections 106 and 205(j). The 305(b) report should not go directly from staff to EPA and Congress without formal review and approval from the Regional and State Water Boards.

We ask that the final staff Resolution to the Regional Board clarify this role by specifically including recommendations related to the Board's necessarily formal review and approval of the Section 305(b) Report. This should include Board review and approval of staff's changes to the Report, as well as staff's recommendations in light of public comments.

Response(s): Central Coast Water Board staff provided all recommended changes to the 305(b) Report to the public and to the Central Coast Water Board for their review. Central Coast Water Board staff will take direction from the Board on their response to these recommendations. However, although submittal of the 305(b) Report to USEPA is required by the Clean Water Act, approval of the 305(b) Report is not (see 33 U.S.C. 1315(b)(1); see also 40 CFR §§ 130.7(b)(5), 130.8(a), and 130.10(a)(1)). The only portion of the Integrated Report requiring approval is the 303(d) List (see 33 U.S.C. § 1313(d)(2); 40 CFR §§ 130.7(a) 130.10(b)(10)). Accordingly, Resolution R3-2016-0053 acknowledges the Central Coats Water Board's review of the 305(b) Report but does not explicitly approve any changes thereto.

3. California Department of Fish and Wildlife, Central Region

Comment letter dated September 21, 2016

Comment 3.1: *Staff from the Elkhorn Slough Ecological Reserve and the Elkhorn Slough National Estuarine Research Reserve have been conducting water quality monitoring for over twenty years. We have documented elevated constituents at various locations throughout the Reserve for many years. Elevated constituents include: turbidity, nitrate, nitrite, ammonia, orthophosphate, and chlorophyll-a. We believe these elevated constituents are significantly impacting fish and wildlife resources and their habitats within the Elkhorn Slough watershed. We observed harmful algal blooms every summer throughout the reserve. We also observed extensive blooms of floating algae, which can be harmful to marsh plants, when deposited on the marsh by high tides.*

Additionally, in several local areas within the reserve, we observed dissolved oxygen (DO) concentrations below 2 mg/L, for extended periods of time. DO levels that loware known to be harmful to fish and some invertebrate species

The Department concurs that the following water bodies and proposed constituents be added to the section 303(d) list as follows:

Bennet Slough	*Turbidity*
Elkhorn Slough	*Nitrate*
Carneros Creek	*Ammonia*
Moro Cojo Slough	*Nitrate, Toxicity, Turbidity*
Tembladero Slough	*Malathion, Nickel, Oxygen (dissolved)*
Moss Landing Harbor	*Arsenic, DDT, Dieldrin, PCB's*

The Department supports the Board's efforts to list the above water bodies as impaired water bodies for the above mentioned constituents pursuant to Section 303(d).

Response(s): Central Coast Water Board staff included data provided by the Elkhorn Slough National Estuarine Research Reserve in previous updates to the Integrated Report and are aware of the efforts of Reserve staff to enter recently collected data into CEDEN. All data submitted to CEDEN in advance of the next public data solicitation period for the Central Coast Water Board are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comments regarding support for the additions to the 303(d) List are noted.

4. Morro Bay National Estuary Program
Comment letter dated September 22, 2016

Comment 4.1: *Estuary Program data shows that on Chorro Creek upstream of the California Men's Colony (CMC) Wastewater Treatment Plant outfall, the criteria for listing for nitrates are not met. Analysis of our lab-generated data from 2008 through 2010 indicates an average concentration of 0.18 mg/L NO3-N from 34 samples, while the four sites downstream of the CMC outfall had average nitrate concentrations of above 1 mg/L during the same time period. We recommend that the Board designate a reach-specific listing for nitrates downstream of this outfall and that the segment upstream from the outfall be removed from the 303(d) list for nitrates on Chorro Creek.*

Response(s): Central Coast Water Board staff reviewed the data in the administrative record for the Chorro Creek watershed and revised the length of the impaired waterbody segment. Staff revised the fact sheet for Chorro Creek and the pollutant "nutrients" to limit the impaired reach to the lower 9 miles (approximately), from the creek mouth at Morro Bay upstream to the monitoring location near the Highway 1 bridge (station 310CHO). This monitoring station is located upstream of the effluent discharge point from the California Men's Colony waste water treatment plant, and is the first upstream location where data indicate that water quality standards for nutrients are attained. See change No. 4 in the *Summary of Changes in Response to Public Comments* section above.

Comment 4.2: *Estuary Program analysis of data collected by the Central Coast Ambient Monitoring Program (CCAMP) and the Estuary Program indicates that the segment of Chorro Creek upstream of the CMC outfall is not suffering from impairment for Benthic Community Effects. Of the 11 Southern California Index of Biotic Integrity (IBI) scores from 2010 and earlier from the site directly below Chorro Reservoir, only three have scores less than 40, so this upper reach does not meet the criteria for listing. Sites downstream of the CMC outfall meet the listing criteria. Thus, we recommend that the Board exclude Chorro Creek upstream of the CMC outfall from the listing for Benthic Community Effects. Data collected after 2010 support this same conclusion.*

Response(s): The administrative record for Benthic Community Effects in Chorro Creek contains only nine samples, all of which are for monitoring stations located below the effluent discharge point for the California Men's Colony. As a result, Central Coast Water Board staff cannot evaluate the data mentioned for stations located upstream at this time. Central Coast Water Board staff recommends that all available data be delivered to the CEDEN database, at www.ceden.org, so that they can be included in the next update to the Integrated Report.

It should be noted that when following the decision-making rules described below (and Section 3.9 of the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy)), 3 of 11 samples is sufficient evidence to recommend placing the waterbody segment on the 303(d) List for Benthic Community Effects. Statewide, staff has used the following decision-making rules, which are consistent with Section 3.9 of the Listing Policy, for benthic invertebrate data and decisions to add a waterbody segment to the List:

- **Use a minimum of two samples either from two different locations or from two different events (typically two different years).**
- **Use the sample and exceedance counts listed in Table 3.1 of the Listing Policy to make determinations about listing status and biological community data.**
- **Associate water and or sediment concentrations of pollutants that support the conclusion.**

Comment 4.3: *Our analysis shows that the Los Osos Estuary segment meets criteria for listing for the COLD beneficial use for Turbidity. However, this segment of Los Osos Creek is tidally-influenced and its natural substrate condition is thought to be silty with fine sediment. We realize that this segment must automatically be placed on the 303(d) list because it triggers the listing criteria, but we hope that the Water Board will consider a reach-specific target for this segment, as the COLD beneficial use target is likely not attainable due to naturally-occurring conditions.*

Response(s): Central Coast Water Board staff has shared this comment with TMDL and Basin Planning unit staff who will consider it during the TMDL annual work planning and prioritization process as well as the Basin Plan triannual review.

Comment 4.4: *For the 2014 303(d) update, the recommendation is to change the pollutant name from "Pathogen" to "Indicator Bacteria". The 303(d) list will also have E. coli listings added for numerous tributaries. Based on our analysis of the available data, we concur with the CCRWQCB's recommendation that our local creeks should be listed for E. coli.*

Response(s): Comment noted.

Comment 4.5: *According to Water Board analysis (and we concur), the bay does not trigger a listing for Enterococcus. E. coli is not an appropriate indicator in marine waters, so our assumption is that the Water Board is not considering a listing for this indicator species in the bay. This leaves fecal coliform as the only indicator species to be addressed in the bay by the TMDL. The challenge with evaluating this indicator bacteria is that other than the California Department of Public Health (CDPH) and shellfish farmers, no one is monitoring fecal coliform in the bay. These entities are not required to publish their data in CEDEN, thus it is not available for inclusion in the 303(d) solicitation. Because CDPH is responsible for ensuring that the waters support the SHELL beneficial use, the Water Board can be assured that the SHELL objectives will always be met in waters where harvesting is permitted. In this sense, the beneficial use is being supported because there are two viable shellfish operations in the bay that are engaged in the protected use. The fecal coliform data from CDPH and the shellfish farms is not currently included in the analysis and is a significant missing link in examining fecal coliform levels in the bay. We recommend that the Water Board incorporate this data source in order to obtain a more accurate view of fecal coliform conditions in the bay.*

Response(s): California Department of Public Health (CDPH) fecal coliform data for Morro Bay's shellfish farming operation is essential to evaluate the attainment of water quality standards in the bay. These data were not provided during the 2010 public data solicitation period for this update to the Integrated Report and therefore cannot be used at this time to make a determination about water quality standards attainment. Central Coast Water Board staff encourages the Morro Bay National Estuary Program to work with the Morro Bay shellfish farming operation and/or CDPH to submit data to the CEDEN

database so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comment 4.6: *We have found Water Board staff to be extremely responsive and knowledgeable as we have gone through this review process*.

Response(s): Comment noted.

Comment 4.7: *We would like to bring to the Board's attention the complexity of navigating the information provided. In particular, Appendix H on the CCRWQCB's 303(d) update website is a large and cumbersome document to work with. In the future, a searchable database such as the one for accessing the 2012 Integrated Report would be a great improvement and improve our ability to review the data and provide meaningful feedback*.

Response(s): Appendix H is not a searchable database and its format is tied to the State Water Board's Water Quality Assessment Database. Central Coast Water Board staff has relayed this comment to the State Water Board for their consideration in making updates to the state's Water Quality Assessment Database. To assist the public in their review, Central Coast Water Board staff created Attachment 1, a table summarizing all changes made to the Integrated Report, which provides a summary of the details of Appendix H.

5. City of Santa Barbara

Comment letter dated September 22, 2016

Comment 5.1: *The City commends the Central Coast Regional Water Quality Control Board (Board) for the thorough, rational, and exhaustive analysis summarized in the report, reflecting an enormous amount of sampling and analytical work done by a limited number of staff. The report and fact sheets are clear and helpful for understanding the Board's approach to the List of Impaired Waterbodies. In addition, Board staff have been very helpful and prompt over the past several years when responding to questions and discussing sampling strategies and equipment.*

Response(s): Comment Noted.

Comment 5.2: *The City respectfully requests that the Board delist Sycamore Creek (Santa Barbara) for Sodium (Decision ID 37445) and Chloride (Decision ID 37034) under the reasoning that the sources are natural. The City has provided extensive evidence that high sodium and chloride levels in Sycamore Creek result from natural upwelling of high conductivity water that supplies base flow to Sycamore Creek. The City supplied this information in written form and discussed the results over the phone with you in December 2013, at which time you specified that showing the source is natural and from seeps could lead to a delisting. The City also supplied the written information and discussed the material with Dominic Roques in April 2014. At this meeting, it was confirmed that the City should not continue to address the Sycamore Creek listing in the 303(d) Monitoring Plan required by the Phase II General Permit because the source is likely natural.*

Response(s): Central Coast Water Board staff acknowledges that our staff has discussed this topic with City of Santa Barbara in the past. Staff follows the state's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) and the federal Clean Water Act to identify impaired waterbodies and add them to state's Clean Water Act 303(d) List.

Federal law defines an "impaired" waterbody differently than a "polluted" waterbody. Federal regulation defines pollution as "the *manmade or man induced* alteration of the chemical, physical, biological, and radiological integrity of the water"[3] (emphasis added). Thus, the Clean Water Act 303(d) List implicitly allows for inclusion of impaired waters which are *not* a result of manmade or man induced alteration of the water quality.

Central Coast Water Board followed decision-making rules of the Listing Policy when developing the 303(d) List. If the water quality standards are not attained (as defined in the Listing Policy) then the waterbody and pollutant combination is added to the 303(d) List. Each waterbody and pollutant combination on the 303(d) List must be addressed by development of a TMDL. In cases of naturally poor water quality, the Water Board must implement an alternative action, such as revising water quality standards for the creek in recognition of natural conditions. A future water quality standards action could result in a new recommendation to remove the creek from the 303(d) List.

Central Coast Water Board staff will archive and maintain the information the City submitted regarding naturally poor sodium and chloride water quality which will help us to support potential future actions (as priorities allow), such as revising water quality standards for sodium and chloride in Sycamore Creek.

6. Santa Barbara Channelkeeper
Comment letter dated September 22, 2016

Comment 6.1: *Generally, Channelkeeper supports the Regional Board's ongoing efforts to document water quality impairments on the 303(d) List that are based on credible water quality monitoring data and appropriate evaluation criteria.*

Response(s): Comment noted.

Comment 6.2: *Channelkeeper is troubled that the Regional Board has fallen so far behind on data solicitations and review of 303(d) listings. 40 C.F.R. § 130.7(d)(1) mandates that:*

> *"Each State shall submit **biennially** to the Regional Administrator beginning in 1992 the list of waters, pollutants causing impairment, and the priority ranking including waters targeted for TMDL development within the next two years as required under paragraph (b) of this section."*

The 2014 Integrated Report is based on data submitted in 2010 and will not be finalized until the end of 2016. Based on EPA Guidance, the 2016 Integrated Report was due in April 2016. Clearly, the Regional Board has failed to achieve pertinent milestones and mandates related to the biennial review process.

[3] **Code of Federal Regulation, Title 40, Part 130 §130.2(c).**

The lack of any recent data solicitation is particularly troubling as a fully accurate and current depiction of water quality is not available for the 2014 Integrated Report. The Regional Board has a mandate to "assemble and evaluate all existing and readily available water quality-related data and information to develop the list." Accordingly, the Regional Board should base 2014 Integrated Report decisions based on "all existing and readily available" data, which includes data collected since the 2010 data solicitation. Six years of additional data is available to the Board and should be appropriately utilized for the Region's listing, de-listing and planning purposes. Channelkeeper questions how such determinations can reasonably or legally be made without consideration of the last six years of existing and readily available data.

It is additionally concerning that due to the State's new staged approach to 303(d) List review, further data solicitation will be delayed until the Central Coast Regional Board's 2020 report. This means that the Regional Board will not have reviewed existing water quality data for our region for a complete decade. This is clearly unacceptable from a legal standpoint.

Response(s): Central Coast Water Board staff is developing the Integrated Report consistent with project plans and timelines established by the State Water Resources Control Board. Staff is working closely with the State Water Board and USEPA to ensure that the remaining steps in the process to submit the 2014 Integrated Report to USEPA go smoothly and timely.

Central Coast Water Board staff considered all readily available data and information available in the administrative record in the development of the 2014 California Integrated Report. The State Water Board defined readily available data as those data submitted during the 2010 public data solicitation period, which began on January 14, 2010 and concluded on August 30, 2010. The State Water Board issued a memo dated November 12, 2013, which explains the strategy of handling the data assessment for the 2014 Integrated Report as follows:

> **Due to the volume of data received during the 2010 data solicitation period, the State Water Board will not solicit additional data until all of the current data is assessed and migrated to the California Water Quality Assessment Database (CalWQA) for Regional Water Board listing and delisting recommendations.**

Consequently, Central Coast Water Board staff did not include data submitted after the 2010 solicitation period in the development of the 2014 Integrated Report for the Central Coast Water Board.

Further, the State Water Board adopted Resolution No. 2015-0005, to amend the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) on February 3, 2015. The revisions to the Listing Policy were available for public comment prior to the public hearing to adopt those changes. Finding number eight in the Resolution states the following:

> **State Water Board staff anticipates that next notice of solicitation will be sent out to solicit data and information for the 2018 Integrated Report (the CWA section 303(d) and 305(b) reporting requirements). For the upcoming 2012, 2014 and 2016 Integrated Reports, the data and information submitted in response to the 2010 notice of solicitation shall be assessed and considered.**

Note that State Water Board staff issued the public data solicitation notice for the 2018 Integrated Report on November 3, 2016. The notice states that the 2018 Integrated Report will include three Regional Water Boards (not including the Central Coast Water Board). The Central Coast Water Board may decide to identify high priority data to assess during the 2018 Integrated Report update but the Central Coast Water Board is not scheduled for its next update to the Integrated Report until 2020.

Notwithstanding the above information, Central Coast Water Board staff appreciates the concern that data must be is as up-to-date as possible and reviewed frequently in order to implement our various programs. Staff reviews all types of water quality data on an ongoing, real-time basis separately from the Integrated Report process (also see reponse to comment 6.3 reguarding the CCAMP and My Water Quality websites). Staff strives to increase its use and application of current data, and improving in this manner is one of our highest priorities.

Comment 6.3: *Given the Regional Board's failure to conduct timely data solicitation processes, any view that data need be submitted via the State's CEDEN database system for purposes of the 2014 Integrated Report is unfairly burdensome and inappropriate. Monitoring entities, such as Channelkeeper, depend on timely notifications by agencies to manage our programmatic resources and undertakings. Integration with the CEDEN system is a significant undertaking that Channelkeeper is now pursuing in coordination with Regional data center staff. However, this process will take additional time to complete. Channelkeeper, therefore, submits pertinent and readily available water quality data as a component of these comments. It is our view that the Regional Board must consider this data in its analysis for the 2014 Integrated Report. Should the Regional Board choose not to incorporate existing data for this report, Channelkeeper requests that the Board commit to performance of a formal data solicitation in 2017 and subsequent redevelopment of an Integrated Report in 2018.*

Response(s): Regarding the comment that delivering data to the CEDEN database for inclusion in future updates to the Integrated Report is unfairly burdensome, there are many resources (e.g. the Moss Landing Regional Data Center and Water Board staff) available to assist the Santa Barbara Channelkeeper with this effort. Having data delivered into CEDEN ensures that the large volume of data submitted for the Integrated Report assessment is consistent, delivered in a usable format, and available to the public. It will also create efficiencies for future Integrated Report assessment.

Regarding the comment that integration with CEDEN is a significant undertaking and the process will take additional time for the Santa Barbara Channelkeeper to complete, the current timeline allows approximately two years. The next formal data solicitation period for the Central Coast Water Board is scheduled for 2019, in advance of the due date for developing the 2020 Integrated Report.

Regarding the comment that Santa Barbara Channelkeeper relies on timely notification by agencies to manage resources and undertakings, Central Coast Water Board staff make every effort to ensure that data are available to interested parties. There are tools available to the public that do evaluate current data and provide report card style grades. For example, all surface water quality data that are delivered to CEDEN are also available on the Central Coast Water Boards Central Coast Ambient Monitoring Program (CCAMP)

Data Navigator website. The CCAMP website compares data to relevant water quality standards and provides report card scores for those data. Although this is not equivalent to the assessment conducted for the Integrated Report updates, these tools are available and updated quarterly with new data from CEDEN. Further, the State Water Board's My Water Quality website contains links to report card assessments based on all currently available data (mostly CEDEN) such as the Heal the Bay Beach Report Cards.

Regarding the request to include the additional data submitted with Santa Barbara Channelkeeper's comment letter in the 2014 Integrated Report, Central Coast Water Board staff followed the State Water Board's direction and did not include this data. Please see comment 6.2.

Regarding the request to commit to a formal data solicitation in 2017, please see response to comment 6.2 for State Water Board communication on the date of the next anticipated notice of solicitation. Central Coast Water Board staff will share this, and all public comments with State Water Board staff following Regional Water Board approval and in advance of the State Water Board Hearing.

Comment 6.4: *Channelkeeper submitted data to the State Water Resources Control Board during the 2010 Data Solicitation process, which appears to have not been considered during development of this Draft Integrated Report. Specifically, Channelkeeper submitted trash monitoring data collected in accordance with State Board Rapid Trash Assessment protocols (Appendix A [to the comment letter]). This monitoring indicated water quality segments impaired by trash, which are not reflected in the Draft 2014 Integrated Report. We ask that the Regional Board revise the Draft Integrated Report to reflect analysis of our complete 2010 data submittal.*

Response(s): Central Coast Water Board staff commends the Santa Barbara Channelkeeper for collecting trash data in accordance with the Rapid Trash Assessment Protocols as it is a comprehensive methodology that accurately accounts for trash at the time of the assessment and accounts for the accumulation of trash when the method is repeated at the same location but at a later date.

Unfortunately, Central Coast Water Board cannot find any record of this data submittal during the 2010 public data solicitation period. Although this data is not included in the 2014 Integrated Report, Central Coast Water Board staff has reviewed the trash data submitted with this comment letter in the context of the assessment Methodology used by the San Francisco Water Board in previous Integrated Report cycles. Central Coast Water Board staff finds that the data summarized in the comment letter are insufficient to make a determination related to the impairment of a water segment due to trash. Staff based this conclusion on the spatial and temporal data requirements of the Listing Policy, which require data from more than one station and/or more than one occurrence to support a conclusion that water quality standards are not attained. For a complete description of the data requirements and data assessment methodologies used to make decision about trash impairment for the Integrated Report please see pages 8-13 of Resolution No. R2-2009-008.

Central Coast Water Board staff encourages the Santa Barbara Channelkeeper to submit all trash data in the next public data solicitation period. Because there is no data reporting format for trash data in the CEDEN database, these data can be submitted

directly to the State Water Board during the next public data solicitation period, in accordance with Section 6.1.1 of the Listing Policy.

Comment 6.5: *Channelkeeper echoes and supports comments submitted to the Regional Board on September 21, 2016 by Earth Law Center regarding the necessity for evaluation and listing for hydrologically impaired waterways to fully comply with Clean Water Act Sections 305(b) and 303(d). Such evaluation and listing is clearly called for under the Clean Water Act, is supported by EPA Guidance, and paves the way for sound public policy and planning. Many other states around the country follow such Guidance to properly identify flow impaired waterways in their Integrated Reports. The San Diego Regional Water Quality Control Board notably proposes 30 waterway segments for listing in Category 4C for flow impairments. Channelkeeper notes with concern that the Central Coast Region has apparently forgone assessment of Category 4C impairments altogether in the Draft 2014 Integrated Report. We question the legality of such an oversight.*

Response(s): Please refer to Central Coast Water Board staff responses to comments 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, and 2.8 on this topic.

Comment 6.6: *Channelkeeper questions the legality of removing impairments from the 303(d) List based on outdated data. Such determinations need be based on all existing and readily available data. We therefore oppose delisting proposals (apart from those made to correct administrative errors) until an appropriate data analysis has been completed.*

Response(s): In accordance with the Listing Policy, Central Coast Water Board staff reviewed all the readily available data (defined as those data submitted to the State Water Board during the 2010 public data solicitation), and has made changes to the 303(d) List (including the removal of waterbody segment and pollutant combinations) based on those data. During the next listing cycle, the Central Coast Water Board will review all readily available data and will determine if beneficial uses are supported based on the decision-making rules of the Listing Policy.

Comment 6.7: *Channelkeeper has additional and ongoing concerns with proposals to de-list Central Coast beaches for fecal bacteria. Despite previous Channelkeeper comments in the administrative record (May 2009) addressing this issue, the Regional Board continues to inappropriately use E. coli data as a sole metric to inform de-listing determinations for fecal coliform impairments. According to the Regional Board's fact sheets, the decision to de-list beaches for fecal coliform was made by comparing AB 411 data to the Ocean Plan fecal coliform criteria for Water Contact Recreation. AB 411 data is collected by the Santa Barbara County Public Health Department Beach Monitoring Program. This program uses the IDEXX Colilert-18 method to analyze water samples for E. coli. E. coli results are then reported as fecal coliform. E. coli, however, is a subset of fecal coliform. The fecal coliform family includes additional species other than E. coli. The true fecal coliform concentration is inherently at least as high as the E. coli result, but there may be other fecal coliform present. The IDEXX Colilert-18 method does not identify additional fecal coliform species. Therefore, although it may be appropriate to list a water body for fecal coliform when E. coli results exceed applicable fecal coliform standards, it is not an appropriate comparison for a de-listing decision. To quote our 2009 comment letter:*

> *"If we may propose an analogy using M&Ms: Let us assume that the State passes a law that a person can only consume ten M&Ms per day but they devise a monitoring program that only counts the green ones. If monitoring determines that an individual has consumed eleven green M&Ms, then we can be assured that the person is over their limit. However, if monitoring determines that an individual has consumed only five green M&Ms, we cannot conclude that they are not over their limit. There are many other colors in the bag.*

The Regional Board must either apply a marine E. coli evaluation criteria for comparison purposes or utilize fecal coliform data from an approved fecal coliform test such as Membrane Filtration or Multiple Tube Fermentation methods.

We suggest that an additional alternative could be for the Regional Board to adopt and apply a "margin of safety" to the fecal coliform Water Quality Objective for purposes of comparison to E. coli data. As it stands, however, Channelkeeper currently opposes all proposals to de-list Central Coast beaches for fecal coliform impairments.

Response(s): Santa Barbara Channelkeeper identified an error in the assessment; statewide, staff incorrectly compared *E. coli* data to the Ocean Plan objectives for fecal coliform. This led to potentially erroneous recommendations to de-list beach segments from the 303(d) List. Due to limited resources, Central Coast Water Board staff did not reassess the beaches *E. coli* data using the correct criteria. Instead, staff revised the fact sheets for fecal coliform at eight beach segments to remove the recommendation to de-list to prevent the any erroneous decisions to de-list. See change No. 5 in the *Summary of Changes in Response to Public Comments* section above.

In 2009, and in response to the comments of the Santa Barbara Channelkeeper for the 2008/2010 Integrated Report on this topic, Central Coast Water Board staff worked with CEDEN database staff to ensure that the records in the database were correctly revised to reflect the correct pollutant name (i.e. *E. coli*) where appropriate. Unfortunately, those updates occurred in the CEDEN database after the close of the 2010 data solicitation period. Consequently, staff statewide incorrectly assessed those data in the lines of evidence. Those data are now correctly documented in the CEDEN database. Central Coast Water Board staff will evaluate all of the existing *E. coli* data in the next update to the Integrated Report (including data from the 2008/2010 assessment) to make new recommendations related to the attainment of water quality standards for *E. coli* specifically.

Comment 6.8: *Channelkeeper's Stream Team data demonstrates that water quality conditions are often vastly different in a lagoon compared the main stem reach. Here, we highlight Bell Creek and Tecolote Creek where this is apparent. pH and dissolved oxygen data collected by Channelkeeper's Stream Team from October 2008 through July 2016 is summarized in Table 1. As shown, the lagoon sites exhibit impaired conditions at a greater frequency than their upstream counterparts. When sites are combined for evaluation purposes, the less impaired site often precludes the waterbody from listing. However, such listings may be appropriate if lagoons are evaluated independently. We recommend that the Regional Board evaluate whether lagoon sites should receive separate listings when both main stem and lagoon data are available.*

To this end, Channelkeeper has separated Bell Creek and Tecolote Creek Lagoon sites from main stem sites for the analyses below. As shown, our data indicates that Bell Creek Lagoon

should be added to the 303(d) List as pH impaired. Tecolote Creek Lagoon should be added to the 303(d) List as dissolved oxygen impaired. We also note, that Bell Creek Lagoon qualifies for addition to the 303(d) List if an evaluation criteria for super-saturated dissolved oxygen concentrations is considered (i.e. > 13 mg/L).

Response(s): Water quality conditions are often different in creek and lagoon ecosystems, especially for parameters like pH, dissolved oxygen and water temperature. In the development of the Integrated Report, there are two options to address this: 1) Map or delineate the lagoon as an individual water segment or 2) verbally describe that the length of the impaired reach is confined to the lagoon. Central Coast Water Board staff delineated some lagoons as unique waterbody segments elsewhere in the region for the 2014 Integrated Report. This is appropriate where there is an obvious hydrologic break and a lagoon boundary staff can map a unique waterbody segment.

Central Coast Water Board staff will coordinate with Santa Barbara Channelkeeper to review their documentation to justify delineating a given lagoon as a separate water segment and would like to initiate this process immediately. The process to make changes to the mapped representation of a waterbody segment (or delineation of a waterbody segment) is time consuming. Central Coast Water Board staff will be working on tasks of this nature in between assessment cycles, so that the lines of evidence and fact sheets can be prepared for any newly delineated water segments.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data summarized in the comment letter to CEDEN, at www.ceden.org, in advance of the next public data solicitation period so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comment 6.9: *Failure to solicit current data is resulting in an incomplete 303(d) list. Below, are highlighted additional impairments based on an analysis of Channelkeeper Stream Team data from June, 2002 through July, 2016. We performed a listing analysis on two dataset timelines: Stream Team data already submitted through the 2010 data solicitation and the complete Stream Team dataset through July, 2016.*

Response(s): In accordance with the State Water Board Resolution No. 2015-0005, the 2014 Integrated Report update only includes those data submitted in response to the 2010 notice of solicitation.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comment 6.10: *An analysis of Channelkeeper's pH data (Table 2) reveals that current data supports the listing of Devereux Creek, Arroyo Paredon Creek, and Carpinteria Creek Lagoon for pH. We note with concern that our analysis also reveals that pH impairment listings are justified for Devereux Creek based on data previously submitted to the Regional Board in 2010. The Draft 2014 Integrated Report fails to recognize this impairment. Channelkeeper recommends that Devereux Creek, Arroyo Paredon Creek, and Carpinteria Creek Lagoon be added to the 2014 303(d) List.*

Response(s): Central Coast Water Board staff cannot find any record of this data submission during the 2010 public data solicitation period. Staff reviewed the existing data and information available in the Administrative Record for Devereux Creek and Arroyo Paredon Creek and did not add these waterbody segments to the 303(d) List for pH. There are no data for Carpinteria Creek Lagoon in the Administrative Record nor has the lagoon been identified as a unique waterbody segment.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Central Coast Water Board staff will work with the Santa Barbara Channelkeeper to obtain any documentation and justification to aid us in identifying a hydrological break between Carpinteria Creek and Carpinteria Creek Lagoon in advance of the next public data solicitation period. See response to comment 6.8.

Comment 6.11: *Channelkeeper also analyzed Stream Team data for dissolved oxygen impairments using the binomial test (Table 3). This data again indicates a pressing need for the Regional Board to evaluate readily available data. Tecolote Creek is designated critical habitat for Southern Steelhead and our analysis demonstrates that the lagoon is impaired by low dissolved oxygen concentrations. We recommend its inclusion in the 303(d) List.*

Response(s): Central Coast Water Board staff cannot find any record of this data submission during the 2010 public data solicitation period. Further, there is no data for Tecolote Creek Lagoon in the Administrative Record nor has the lagoon been identified as a unique waterbody segment for the purposes of the Integrated Report assessments. However, the staff can revise the delineation of the lagoon in advance of the next Central Coast Water Board update to the Integrated Report.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Central Coast Water Board staff will work with the Santa Barbara Channelkeeper to obtain documentation and justification to aid us in identifying a hydrological break between Tecolote Creek and Tecolote Creek Lagoon in advance of the next public data solicitation period.

Comment 6.12: *Table 4 [in the comment letter] demonstrates that the Board neglected to designate the Goleta Slough as impaired for dissolved oxygen (per the cold water Quality Objective) based on historical data previously submitted by Channelkeeper. An analysis of more current data further supports this determination. Additionally, we note that Tecolote Creek should also be designated as impaired for low dissolved oxygen based on current datasets.*

Response(s): Central Coast Water Board staff cannot find any record of this data submission during the 2010 public data solicitation period.

Central Coast Water Board staff reviewed the data in the Administrative Record for dissolved oxygen in Tecolote Creek. Based on those data, staff did not find evidence of beneficial use impairment due to low dissolved oxygen.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Comment 6.13: *In the 2014 Integrated Report, Board staff used 13 mg/L as an initial indication of biostimulatory impairment. Channelkeeper supports the incorporation of this quantitative benchmark to assess bio-stimulatory related impairments. Table 5 provides an analysis of Stream Team data using <5 mg/L and >13 mg/L as evaluation criteria.*

Application of these criteria to Channelkeeper's previously submitted dataset indicates that the Goleta Slough and Tecolote Lagoon should be designated as having bio-stimulatory impairment. We recommend that the Draft 2014 Integrated Report be updated to reflect these additions. We also note that an evaluation of our current dataset supports biostimulatory listings for additional water bodies including: Arroyo Paredon Creek, Bell Creek Lagoon, Carpinteria Creek Lagoon, Franklin Creek, the Goleta Slough, Las Vegas Creek, Santa Monica Creek, and San Pedro Creek. Channelkeeper recommends that the Regional Board analyze these water bodies for "bio-stimulatory" impairment as part of the 2014 Integrated Report.

Response(s): Central Coast Water Board staff cannot find any record of this data submission during the 2010 public data solicitation period.

Central Coast Water Board staff recommends that the Santa Barbara Channelkeeper submit the data to CEDEN so that those data are "readily available" as defined by the Listing Policy and can be considered for the next update to the Integrated Report.

Note that in the development of the 2014 Integrated Report, staff did use dissolved oxygen data and results greater than 13 mg/L as *supporting* evidence of a biostimulatory condition caused by nutrients. Please see fact sheets for nitrate and specifically the Lines of Evidence for Cold or Warm Freshwater Habitat beneficial uses. However, the 13 mg/L value does not meet the requirements of the Listing Policy for evaluation guidelines and therefore was not used *alone* to recommend placing a waterbody segment on the 303(d) List due to elevated dissolved oxygen levels.

7. Grower-Shipper Association of Central California and Monterey County Farm Bureau Comment letter dated September 23, 2016

Comment 7.1: *The Grower-Shipper Association of Central California (GSA) and Monterey County Farm Bureau (MCFB) would like to commend the Central Coast Regional Water Quality Control Board Staff for their diligence in undertaking the review of an incredible amount of data and their multi-perspective assessment of these data for the purposes of The Integrated Report. In addition, we appreciate efforts to assist the agriculture community with understanding the process and the significance of the assessments.*

Response(s): Comment noted.

Comment 7.2: *GSA and MCFB are respectfully requesting an extension of the 30-day public comment period. The requested extension is for December 15, 2016. The rationale for the requested extension is provided below.*

Response(s): Central Coast Water Board staff cannot extend the public comment period and meet the State Water Board's schedule for inclusion in the state's 2014 Integrated Report. State Water Board staff has stated that they will proceed with their recommendations for the updates to the Integrated Report on January 1, 2017 and if the Central Coast Water Board has not completed updates they will not be included in the 2014 Integrated Report update for the state. The Central Coast Region's updates would have to wait for the next Integrated Report cycle.

Comment 7.2.a: *The production of an Integrated Report is not simple or easy to understand. Multiple layers of laws and policies dictate the assessment process. At a minimum, the Clean Water Act sections 101(a)(2), 303(d) and 305(b), the 2004 Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, as well as regional procedures, direct how to conform to state and federal requirements*.

There are enormous amounts of data to evaluate. The assessment process for the Integrated Report produced 23,054 lines of evidence. The public was required to read and understand the Staff Report, three attachments and 12 appendices. By itself, the Appendix H Fact Sheets consisted of 21,763 pages of data.

Response(s): Central Coast Water Board staff acknowledges the complexity and quantity of the Integrated Report data and the laws and policies that guide its development. To aid interested parties, Central Coast Water Board staff hosted a public workshop and made themselves available for direct questions and assistance. Staff participated in six conference calls with interested parties and responded to questions and comments from eleven interested parties via email correspondence during the public comment period.

Comment 7.2.b: *The Science is overwhelming:*

- *Multiple standards are used. At least six sets of standards were mentioned during the public workshop.*
- *Multiple technical tools are used. The following were mentioned in the Public Workshop:*
    - *Technical Approach to Develop Nutrient Numeric California Numeric Nutrient Endpoints (NNEs) for California, 2006.*
    - *California's Evaluation Guidelines for Benthic Invertebrate Communities*
    - *A Quantitative Tool for Assessing the Integrity of Southern Coastal California Streams*
    - *California Stream Index (CSCI)*
- *No Federal, State or Regional Agency provides clear guidance of the use of some of the tools mentioned above. Agency websites provide much discussion about the need to develop NNE tools or the potential uses for biotic community health indicators, but there are no vetted, official "go-to" documents that truly guide the process.*

- *Much of the science used for 305(b) is in its infancy. The sciences of biotic community health, biostimulatory responses to nutrients, and the use of nutrient numeric endpoint tools are still under foundational development.*
- *Additionally, it has yet to be determined how these tools should be used: for policy development, regulation or as assessment guidelines?*
- *The sciences of biostimulatory nutrient numeric endpoints and biotic community health indicators are highly technical and complex. Because the science is still evolving, regulated communities must self-educate in order to provide meaningful comment. This cannot be done within a 30-day comment period.*
- *The California Stream Index requires the identification of reference sites. However, it is widely acknowledged that the Central Coast does not have adequate reference sites for the alluvial types of watersheds that predominate the region. There needs to be time for the public to digest the use of this tool and whether watersheds were appropriately listed as a result of its use.*

Response(s): The Central Coast Water Board staff acknowledges the complexity of some of the evaluation guidelines used to interpret water quality objectives in the development of the Integrated Report.

Regarding the comment that no agency provides clear guidance on the use of the tools mentioned: (1) each evaluation guideline used meets the requirements in Section 6.1.3 of the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy); and (2) within each fact sheet, there is a link to the documentation for each evaluation guideline.

Regarding the comment that several of the guidelines used in this update to the Integrated Report are in their infancy, and still under development: (1) the evaluation guideline requirements defined in the Listing Policy ensure that the guideline is "scientifically based and peer reviewed" and therefore evaluated by other scientific experts; (2) both the nutrient numeric endpoint tools and the multi metric scoring tools used for benthic invertebrate communities have been used in previous Integrated Reports.

Regarding the comment that the California Stream Condition Index (CSCI) requires identification of reference sites and that there are none for the alluvial valleys in the Region (e.g. Salinas River), Central Coast Water Board staff defer to the authors of the CSCI and the reference site identification studies. In personal communication, report author Andy Rehn, stated the following:

> **Because of the predictive nature of the CSCI, any given test site gets matched to a subset of reference sites from the statewide pool that are most similar in terms of elevation, watershed size, annual precipitation, geology, etc., and those most-similar reference sites may come from other regions. The [benthic macroinvertebrates] that were observed in the most-similar group of reference sites are then used to predict what should be observed at the test site if it's in reference condition. Because the statewide reference pool adequately represents important environmental gradients, and because predictive modeling matches test sites to their most environmentally similar reference sites, the CSCI is appropriate for use in settings like the Salinas River, even though biological expectations may not be established from reference sites in close geographic proximity.**

Comment 7.2.c: *Finally, the timeline for public review is insufficient when one considers the entire timeline needed to prepare the 2014 Integrated Report. Water Board Staff needed five years to gather data and one year to analyze it, but alas, the regulated community is given one month to review the data, vet a response within their respective communities, and provide cogent response? Combined with the fact that October 1 is a major reporting deadline for a large number of farmers, this comment period is simply unreasonable.*

Response(s): Central Coast Water Board staff acknowledges this comment and acknowledges that there were large amounts of data to review for the Integrated Report public comment period that ended on September 23, 2016.

Please see responses to comments 7.2 and 7.2.a regarding the 30-day comment period and Central Coast Water Board staff's efforts to aid interested parties in understanding the Integrated Report assessment.

Comment 7.3: *GSA and MCFB are pleased to learn that waterbodies are being delisted for attainment of water quality standards. We are also reassured that the Water Board Staff recognized that some listings are based upon insufficient data that do not meet California listing requirements. We encourage Water Board Staff to continue to work with the agricultural community to further discuss which waterbodies should be removed from the 303(d) lists due to attainment, data insufficiency or changes in waterbody conditions.*

Response(s): Central Coast Water Board staff will continue to work with the agriculture community in the development of all future Integrated Reports.

8. City of Santa Cruz

Comment letter dated September 23, 2016

Comment 8.1: *Majors Creek Sediment/Turbidity. The City of Santa Cruz has provided turbidity and sediment data from Majors Creek on several occasions to the RWQCB in support of previous TMDL listing processes. While it is our opinion that this data shows impairment of several beneficial uses – including MUN and RARE – this creek remains unlisted. Given the relatively unwieldy scope of TMDL processes in Region 3 and the other high priority issues (i.e. the multiple impairments of the San Lorenzo watershed) – as well as the fact that current and future land use in the Majors Creek watershed will ultimately lead to an improvement in conditions there – it may be advisable to leave Majors Creek unlisted at this time. However - as it stands currently - there is no discussion of the history or current status of the Majors Creek listing in the current TMDL proposal. It would be helpful to include this information in the final proposal so that the institutional memory of the decision-making and continuity with previous years' TMDL efforts are preserved.*

Response(s): In the development of the 2014 Integrated Report, State Water Board initially assessed the data submitted in the 2010 public data solicitation period and developed the lines of evidence associated with each fact sheet. In September 2015, State Water Board staff provided the lines of evidence and all unassessed data to Central Coast Water Board staff. At that time, Central Coast Water Board staff determined that development of assessments for Majors Creek, and all other data that was unassessed

by State Water Board staff, was a low priority given the limited resources available to complete the factsheets and the Integrated Report.

Regarding the recommendation to ensure that staff maintains these data in the "institutional memory", the Administrative Record (see Appendix J to the Summary Report) does contain data and information regarding the sediment condition in Majors Creek. Although staff did not summarize these data in any fact sheets as part of this Integrated Report, the data are available for inclusion in future Integrated Report assessments. Further, Central Coast Water Board staff has archived these data into the working Administrative Record for the next Central Coast Water Board update for the Integrated Report.

Comment 8.2: San Lorenzo River Temperature Listing Proposal.

Comment 8.2.a: *Climate change – related vegetation distribution maps using National Marine Fisheries Services (NMFS) climate models show that by 2070 there will likely be no conifer south of the Golden Gate. This vegetation community shift generally speaks to longer, hotter dry seasons, fewer, more intense storms during each wet season and – ultimately - substantial hydrology and stream morphology changes which will likely not favor anadromous salmonids (especially coho). Given that water temperatures already exceed thermal tolerances for coho in many San Lorenzo watershed stream reaches, that there are few opportunities for improvement of this condition and that climate models indicate hotter/drier conditions in the future, development and implementation of a successful San Lorenzo River temperature TMDL will be challenging at best.*

Response(s): Central Coast Water Board staff assigned the temperature listings a medium priority with a 2023 target TMDL completion date (see Table 4 of Attachment 3 to the Staff Report, which is the Summary Report for the 2014 Integrated Report). In the development of a TMDL for San Lorenzo/temperature, Central Coast Water Board staff will identify an appropriate implementation plan. Central Coast Water Board staff also acknowledges the practical challenges with respect longer-term climate change and the need to be reasonable as we move forward.

Comment 8.2.b: *We previously corresponded with the RWQCB on the temperature listing proposal on June 17, 2015 (attachment 1). At that time, we expressed concerns that the metrics being used to assess impairment were inappropriate and that the relative uncertainty of ever achieving use attainability – especially in light of future effects of climate change on temperature – warranted further analysis prior to a listing decision. Subsequent to that correspondence, the RWQCB responded on September 9, 2015 with more background information and stated that they would recommend listing should further data analysis support it. Most significantly, the RWQCB acknowledged several of our concerns with regard to the need for stream reach and life cycle – relevant temperature criteria once development of a temperature TMDL is initiated. Given that there are substantial differences between tributary and mainstem reaches of the San Lorenzo River system as well as anadromous salmonid life cycle – relevant temperature tolerances, we believe this is the only sensible way to approach this challenging issue – in spite of its complexity relative to simply applying a conservative (and unattainable) 16 degree C criteria across the whole San Lorenzo River basin.*

Response(s): Central Coast Water Board acknowledges the efforts of the City of Santa Cruz to work with Central Coast Water Board staff and National Oceanic and Atmospheric Administration Fisheries staff in the development of temperature assessment methodology that may be more relevant to the San Lorenzo watershed.

Regarding the comment that the temperature metrics (criteria) are inappropriate, Central Coast Water Board staff has solicited input on the use of the 16 degree C temperature metric from other agency staff including National Oceanic and Atmospheric Administration Fisheries. Those agency staff confirmed that the San Lorenzo watershed is a focus watershed for coho and that the criteria in the coho recovery plan, including the 16 degree C value, are relevant for the watershed and this assessment. Staff has also reviewed the coho recovery plan for the central coast of California (NMFS, 2012). This report confirms that the San Lorenzo River supported large runs of coho in the past and identifies this watershed as having 117.5 miles of potential habitat to support a "focus population". Therefore, the metrics used in this assessment, which are protective of coho, are appropriate at this time.

Staff not only evaluated the San Lorenzo Temperature data using the metric protective of coho (the 16 degree C criteria) but also evaluated that data using the metric protective of steelhead (18 degrees C). In all cases, temperature data exceeded both the 16 degree C and 18 degree C metrics at a frequency that is indicative of beneficial use impairment.

Regarding the comment that stream reach and life cycle relevant temperature criteria are needed for TMDL development, this will be considered during the development of the TMDL. The timing of development of this TMDL is unknown because it is not currently included in the TMDL 2016-2017 work plan. Please see response to comment 8.2.a.

Comment 8.2.c: *The City of Santa Cruz is currently developing a Habitat Conservation Plan (HCP) with the National Marine Fisheries Service and the California Department of Fish and Wildlife (CDFW) that will address the conservation needs of steelhead and coho salmon and result in the issuance of incidental take permits for City operations. The permits will require a commitment by the City to provide substantially more instream flow than the City's historic operations have provided. One of the primary foci of our work in developing the HCP has been to evaluate the effects on temperature in the San Lorenzo River from City operations. Based on that work, it is clear that habitat improvements in this degraded watershed must play a key role in addressing temperature.*

The HCP process has been extremely time-consuming and expensive, and the instream flow requirements developed are one of the primary drivers for current water supply planning efforts. Once implemented, the HCP will provide significant benefits to local anadromous salmonid populations. Given the substantial commitments by the City set forth in the HCP, it will be important that any process to establish a temperature TMDL for the San Lorenzo River is aligned with the HCP and fully recognizes the City's flow commitments in the HCP. With that in mind, we request that the RWQCB Executive Officer and relevant staff join the City in meeting with NMFS and CDFW senior management to develop a plan for ensuring this alignment and to identify opportunities for leveraging the two processes for the mutual benefit of our respective agencies' missions, goals and objectives.

Response(s): Central Coast Water Board staff request that the City of Santa Cruz notify us of opportunities to participate in meetings to discuss the development of the Habitat

Conservation Plan (HCP) for the San Lorenzo River. Although the 2016-2017 TMDL work plan does not include development of a TMDL for the San Lorenzo River temperature impairment (please see response to comment 8.2.a), Central Coast Water Board staff can track and engage in the development of the HCP. In addition, when Central Coast Water Board staff begins the process to develop a TMDL for San Lorenzo temperature, we will solicit input and data from interested parties. Central Coast Water Board staff recommends that the City of Santa Cruz provide staff with current information (including information on the HCP) during TMDL development.

Comment 8.3: *Due to our engagement in these critical operations involving the river, as well as the City's commitment to protection of special status species which are found there, we are very interested in the development of a SLR temperature TMDL. As we currently understand it, a 16 degree Celsius maximum weekly maximum temperature (MWMT) goal is currently being considered for this TMDL. While we agree that specific reaches of the river may be impaired, a blanket 16 degree MWMT goal is completely unrealistic, unjustifiable and unattainable in our opinion.*

The 16 degree MWMT goal is pulled from RWQCB Region 1 and is specific to coho salmon on the North Coast, apparently. While this may be a reasonable metric in that locale, it is inappropriate in the SLR for the following reasons:

- *While highly dynamic depending on the water year, etc., it is highly unlikely that the San Lorenzo River ever had optimal growth conditions for coho. The SLR is characterized by being naturally flat and hot in the lower reaches or steep and cool in the headwaters and tributaries. Coho prefer flat and cool streams such as Scott Creek, etc.*
- *Areas of the San Lorenzo River basin potentially exceed the proposed standard by significant amounts. There is no baseline water temperature data to indicate how far current conditions depart from pre-development conditions or if they depart at all.*
- *16 degrees may represent optimal growth conditions for coho, but this single metric seems inappropriate when compared to other metrics such as a coho-specific maximum weekly average temperature (MWAT). MWAT or other metrics which more fully describe conditions should either also be included for consideration or should replace the 16 degree MWMT.*
- *Reach, life stage, species and seasonally –specific metrics would be more meaningful for protection of the species. For example coho aren't known to use coastal lagoons in this area – even in unimpaired watersheds – during the time of year when the temperatures exceed the 16 degree threshold (i.e. summer and fall). Perhaps a steelhead –centric metric is more appropriate in reaches like this.*
- *A 16 degree goal may well interfere with production in the mainstem where steelhead currently grow very quickly and therefore have more potential to return as adult spawners in future years. Therefore, unanticipated effects of any future TMDL should be carefully considered.*
- *The warmest reach of the SLR is located in a flood control channel which is especially subject to thermal loading when compared to the rest of the watershed. This is by design, as intact riparian woodlands are incompatible with flood protection in this reach. Furthermore – while upstream reaches have substantial riparian understory disturbance associated with residential development – riparian overstory canopy in the watershed is fairly intact and there are few large water diversions during the time of year when temperature is an issue. Therefore, it will be challenging to find means of reducing temperatures in these reaches should TMDL development be initiated.*

- *Given that many reaches of the SLR will likely get hotter in the future due to climate change, the potential use attainability with a 16 degree goal is inherently low.*
- *Focus on implementation of a flawed TMDL will necessarily pull resources away from other worthy watershed restoration activities – thereby potentially jeopardizing other beneficial uses and public trust resources.*

Therefore, we recommend that the RWQCB:

- *Continue analysis of temperatures throughout the watershed under different hydrologic conditions;*
- *Review existing literature on salmonid temperature preferences, particularly at the southern extent of their ranges;*
- *Consult with NMFS staff on salmonid temperature preferences, coho recovery priorities and climate change – related future impacts on water temperature;*
- *Refrain from declaring the SLR as impaired until this issue is more fully defined.*

Response(s): Please see responses to comment 8.2.b.

Regarding the four recommendations provided:

a) Central Coast Water Board staff will, in the development of the TMDL, consider different hydrologic conditions when identifying numeric targets;
b) Central Coast Water Board staff will, in the development of the TMDL, review relevant and existing literature;
c) Central Coast Water Board staff will, in the development of the TMDL, and in the development of future Integrated Reports, consult National Marine Fisheries Service staff; and
d) Central Coast Water Board staff have reviewed the readily available data and information, consulted with National Marine Fisheries Service staff to identify appropriate criteria, and have determined that the San Lorenzo River water temperature is not supporting the Cold Freshwater Habitat beneficial use as defined by the Listing Policy.

9. Costa Farms

Comment letter dated September 23, 2016

Comment 9.1: *Costa Farms supports the CCRWQCB's determination that there was insufficient evidence under the Listing policy to include the North Chualar Creek [branch] on the 303(d) List for temperature.*

Response(s): Comment noted. In the development of the 2014 Integrated Report assessments, there is no distinction made between North Chualar Creek branch and Chualar Creek.

Comment 9.2: *Costa Farms suggests that a robust data set may not have been available to support listings for pH and turbidity on North Chualar Creek, so the CCRWQCB could consider delisting North Chualar Creek for additional parameters pH and turbidity.*

Response(s): The Administrative Record contains limited pH and turbidity data for the monitoring station located in the segment of Chualar Creek referred to here as the north branch. However, one of the four pH measurements from the station located in the north branch of Chualar Creek does exceed the water quality objective for drinking water and recreational uses. In addition, all four turbidity measurements exceed the evaluation guidelines for freshwater habitat uses. These data indicate risk for water quality criteria to exceed the allowable frequency described in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy). Consequently, Central Coast Water Board staff did not change the 303(d) List for pH or turbidity in the Chualar Creek segment, which includes the north branch.

References Used in Central Coast Water Board Staff Response

Central Coast Regional Water Quality Control Board (CCRWQCB). 2016. Water Quality Control Plan for the Central Coastal Basin, March 2016 Edition. California Environmental Protection Agency.

National Marine Fisheries Service (NMFS). 2012. Final Recovery Plan for Central California Coast Coho Salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.

State Water Resources Control Board. 2015. Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. State Water Resources Control Board Resolution No. 2004-0063. State Water Resources Control Board, Sacramento, CA.

Federal Code of Regulations section 130.7. Total Maximum Daily Loads (TMDL) and individual water quality-based effluent limitations. (40 CFR 130.7(b)(5))

Appendix A

The California Coastkeepers Alliance submitted this letter to the State Water Resources Control Board during the data solicitation period, on August 30, 2010 (see Administrative Record reference No. 4125). Some of the comments in the letter are included here because:

a) Public comment letters submitted by Earth Law Center and the Santa Barbara Channelkeeper refer to this 2010 letter and its contents (see Comments No 2.2, 2.9, and 6.4.); and
b) Earth Law Center brought this letter to the attention of Central Coast Water Board staff (Commenter No. 2) because State Water Board did not address some of the central coast specific comments in any previous Integrated Report.

For the 2010 letter's comments and responses, Central Coast Water Board staff reproduced direct transcriptions of the comments received, shown in *italics*, and inserted staff's responses below them using **blue, bold text.** Central Coast Water Board staff did not reproduce footnotes and the references cited in footnotes in the letter here (please see the original letter from California Coastkeepers Alliance for these references).

Comment A.1: From page 10 of the letter. *Despite Santa Barbara Channelkeeper's (SBCK) submission of data and photographic evidence reflecting a serious trash problem in San Pedro Creek, the Creek was not listed for trash on the 2010 303(d) List. SB Channelkeeper's data for 2012, which was collected in compliance with the State Water Board's SWAMP guidance on rapid trash assessments, confirms that trash impairs over half the streams monitored in the Santa Barbara and Goleta Area. The State Water Board should review this carefully, and consider other data submitted on trash listings so that another listing cycle does not go by without action to address this important water quality issue.*

Response(s): Central Coast Water Board staff assumed that the 2012 date in the comment ("*SB Channelkeeper's data for 2012")* is a typo because this letter is dated August 2010. Central Coast Water Board staff reviewed the Administrative Record for the 2008/2010 Integrated Report and concluded the following regarding trash data and information for San Pedro Creek.

- **The data and information submitted by Santa Barbara Channelkeeper during the public solicitation period for the 2008/2010 Integrated Report does not contain any documentation for trash in San Pedro Creek. The record does however contain four photos for San Jose Creek, which do not show nuisance levels of trash.**
- **The comment letter submitted by Santa Barbara Channelkeeper for the 2008/2010 Integrated Report public comment period, dated May 2009, does contain several photos documenting trash in San Pedro Creek.**
- **As part of the response to public comment for the 2008/2010 Integrated Report, Central Coast Water Board staff made the recommendation to Santa Barbara Channelkeeper to submit these photos and any other relevant trash data during the next public data solicitation period, which would have been the 2010 solicitation. The State Water Board does not have record of these data or information being submitted during the 2010 solicitation.**

Central Coast Water Board staff encourages Santa Barbara Channelkeeper to submit data and information during the next public data solicitation for the Integrated Report. Water Board staff will consider all data and information that meets the requirements of

the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) in the next Central Coast Region Integrated Report.

Comment A.2: From pages 31-33 of the letter. *The State Water Board Must Ensure that Groundwater Sources of Surface Water Impairment Are Specifically Identified in All Affected Regions of California. The State Water Board has made progress in identifying groundwater "sources" of surface water impairment in its 303(d) assessment and listing process. Whereas the 2006 303(d) List contained only two references to groundwater as a source of impairment, the 2010 303(d) List contains 27 water body-pollutant segments which identify groundwater as a source of impairment. This type of information is extremely useful in prioritizing waters for action and setting appropriate loads.*

The problem of contaminated groundwater loadings to surface waters is not limited to 27 waterbody-pollutant segments, nor is it limited to Regions 3 and 4; it is a pervasive issue that must be proactively addressed throughout the State's 303(d) Listing Process. There are myriad examples spanning the entire state of contaminated groundwater impacts to surface waters. For example, researchers working in San Francisco Bay found that excess levels of certain dissolved metals in the Bay resulted in large part from groundwater seepage. Similarly, nitrate contamination of groundwaters in California Central Coast valleys, such as Salinas, has become a national example of how fertilizers can impact public health and water quality. For example, the Salinas River is severely impaired by nutrients and nitrates, flows of which often originate from groundwater tainted by irrigation releases. In 2007, the Central Coast Regional Quality Control Board staff investigated reports of heavily nutrient-contaminated discharges from greenhouses near the City of Carpinteria, finding that such discharges of groundwater contribute to existing nutrient impairments in the Carpinteria Salt Marsh and its tributary streams. Data from the Malibu Watershed, Los Osos, and San Francisco Bay Area demonstrate another pervasive form of surface water pollution caused by groundwater: septic tank releases that reach coastal waters, estuaries and other surface waters.

The State Water Board's "Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List" makes clear that for each water body-pollutant combination proposed for the 303(d) list, the Regional Water Quality Control Board must prepare fact sheets. These fact sheets must identify a pollutant's potential source, and "the source category should be identified as specifically as possible."

Response(s): In previous 303(d) List updates, Central Coast Water Board staff often identified potential sources, such as groundwater, using their best professional judgement. However, State Water Board staff directed Central Coast Water Board staff to identify sources on the 2014 303(d) List only when a Total Maximum Daily Load (TMDL) or other source identification document is available for the waterbody segment and pollutant combination. This methodology provides a consistent and transparent approach to source identification because it does not rely on staff's best professional judgement.

Applying this methodology to the state's 2012 Integrated Report, State Water Board staff revised the potential sources to "source unknown" for all waterbody segment and pollutant combinations (statewide) where no source identification documentation was available. Since revisions to central coast pollutant sources did not affect the 303(d) List status of any waterbody segment and pollutant combination, the revisions did not require approval by the Central Coast Water Board. In the development of the 2014

Integrated Report, Central Coast Water Board staff identified potential sources only for those waterbody segment and pollutant combinations where an approved TDML or other source identification document is available, consistent with direction from State Water Board staff.

For some central coast waterbody segments, California Coastkeepers Alliance has cited a memo signed by the Central Coast Water Board's Executive Officer (dated January 29, 1993) which cites groundwater as a source of pollutants in surface waterbodies and specifically in Morro Bay. This document is an acceptable source identification document, in accordance with State Water Board staff direction, for assigning potential sources. Accordingly, Central Coast Water Board staff has made the following revisions to the 2014 Integrated Report:

- **Revised the fact sheet for Morro Bay and the pollutant fecal indicator bacteria to include "groundwater loadings" as a potential source and included citations for documents attached to the California Coastkeepers Alliance letter as evidence of the groundwater loading source. See change No. 1 in the *Summary of Changes in Response to Public Comments* section above.**

Regarding the central coast watersheds areas mentioned in the comment above (Salinas, Carpinteria, and Los Osos), waterbody segments in each of these areas are on the 303(d) List for nutrients and/or fecal indicator bacteria. In most cases, Central Coast Water Board staff did not identify groundwater loading as one of the potential sources for these waterbody segment and pollutant combinations because the approved TMDLs do not identify groundwater as sources and Central Coast Water Board staff are not aware of alternative source identification studies for the waterbody segment.

If California Coastkeepers Alliance is aware of additional source identification documents (in addition to the approved TMDLs), Central Coast Water Board staff encourages them to submit those during the next public data solicitation period so that they can be included in the next update to the Integrated Report for the Central Coast Water Board.

Comment A.3: From page 35 of the letter. *One Central Coast Region waterbody segment, Blosser Channel, is mentioned where the 2010 CCA letter states, "Despite a growing movement nationwide to address groundwater withdrawals that affect the health of surface waters, "Groundwater withdrawal" is listed as a source of impairment of a surface water body in only two listings in the State Water Board's 2010 List (Blosser Channel in Region 3 and…[other waterbodies outside of the Central Coast Region)."*

Response(s): In accordance with the new guidance from the State Water Board regarding identifying sources (please see response to comment A.2.), the "Groundwater Withdrawal" potential source was removed from Blosser Channel by State Water Board staff and the potential source is now "Source Unknown."

Comment A.4: From pages 36-45 of the letter. *The state water board must include in its 2012 303(d) list anthropogenic climate change-driven sources and impairments of California waterways.*

[Note that comments on pages 36-45 include information about ocean acidification, sea level rise, air and water temperature increases, and shifting precipitation patterns:]

Response(s): With respect to comments about ocean acidification, and the suggestion to include the Pacific Ocean on the 303(d) List for Ocean Acidification, these comments were previously addressed by State Water Board staff (responses available online and titled "June 12, 2010 response to public comments"). The State Water Board staff did evaluate the information provided for the coastal waters of California and found that the "available information is not meeting the requirements of the Listing Policy, Section 3." Further, the State Water Board's response to public comments does encourage Regions to "investigate ocean acidification within existing monitoring resources and if the investigation would meet program needs." At this time, the Central Coast Water Board does not have a monitoring program in place to document pH conditions in the nearshore environment. However, other major research efforts such as the Southern and Central California Ocean Observing Systems are doing so.

Central Coast Water Board staff encourages all interested parties to submit data specific to California's marine waters to the State's water quality database at www.ceden.org. All data collected from California waters and available in CEDEN will be considered in developing future Integrated Reports.