Comment Summary and Responses
Comment Deadline: May 21, 2014
Amendment to the Water Quality Control Plan for the Central Coast Basin to Total Maximum Daily Loads (TMDLs) for Toxicity and Pesticides in the Santa Maria River Watershed in Santa Barbara, San Luis Obispo, and Ventura Counties, California

List of Commenter's:

Comment Reference	Organization	Representative
1	California Association of Sanitation Agencies (CASA)	Greg Kester
2	California Farm Bureau Federation	Danny Merkley
3	California Stormwater Quality Association (CASQA)	Gerhardt Hubner
4	City of Santa Maria	Richard Sweet
5	Somach Simmons & Dunn on behalf of Pyrethroid Working Group (PWG)	Theresa (Tess) Dunham
6	U.S. Environmental Protection Agency (USEPA)	Janet Parrish
7	Western Growers and Grower-Shipper Association of Santa Barbara and San Luis Obispo Counties	Claire Wineman and Gail Delihant

Response to Comments:

No.	Author	Comment	Response
1.1	Mr. Kester	CASA is a statewide association of cities, counties, special districts and joint powers agencies that provide wastewater collection, treatment, water recycling and biosolids management services to more than 90% of the sewered population of California. CASA is concerned about the potentially precedential nature of the TMDL for the Santa Maria watershed if adopted as proposed. Adoption of this TMDL will likely be mimicked in other watersheds and by other Regional Water Boards, which could have significant treatment and cost impacts on the essential public services provided by the wastewater sector, without a quantified benefit to	Thank you for the background information on your organization. The group you represent, sanitary sever agencies, are not identified as sources of toxicity or pesticide pollution in the TMDL and waste water treatment plants in the Santa Maria River watershed do not discharge to surface waters and do not have TMDL allocations. Mr. Kester's comments to State Board are nearly identical to comments previously submitted to the Regional Board on March 26, 2013 during the CEQA public comment period for the TMDL. The comments and previous responses are found in Attachment 7:

		the environment. CASA does not routinely comment on matters within individual regions except under circumstances such as this, where the proposed regional action could ultimately have significant statewide implications. In this case CASA is concerned about the potentially precedential nature of the TMDL for the Santa Maria watershed if adopted as proposed. Adoption of this TMDL will likely be mimicked in other watersheds and by other Regional Water Boards, which could have significant treatment and cost impacts on the essential public services provided by the wastewater sector, without a quantified benefit to the environment.	Public Comments and Staff Responses on Revised CEQA Substitute Documentation. As noted in the April 18, 2014 public comment notice, State Water Board's CEQA Regulations (23 Cal. Code Regs. § 3779, subd. (f) requires that: 1. Comments must specifically address the final version of the Basin Plan Amendment adopted by the Central Coast Water Board. 2. If the Central Coast Water Board previously responded to a similar or identical comment, the commenter must explain why and in what manner the commenter believes each of the responses provided by the Central Coast Water Board to each comment was inadequate or incorrect. As such, the Central Coast Water Board has previously responded and the State Board refuses to respond to the Mr. Kester's comments.
2.1	Danny Merkley on behalf of Richard Adam	Comments were submitted to the Central Coast Regional Water Quality Control Board (Central Coast Board) by Mr. Richard E. Adam, a long time Santa Barbara County Farm Bureau member and thus commenting before the State Water Resources Control Board (State Board) is proper. Mr. Adam stated, "As I read these proposals I am struck with the many inconsistencies and what I think are basically flawed studies which lead to flawed conclusions. I deem the C. Camp (CCAMP) study that leads to the conclusion that many (if not all) of the manmade drainways in Santa Maria are impaired waterways a flawed study. It is flawed in the basic elements as	The study that Mr. Adam is referring to is the 2010 Integrated Report (Clean Water Act 303(d) / 305(b) Report) also referred to as the 303(d) List. In the central coast region, the assessment for the 303(d) list are prepared by Regional Board staff and not by the Central Coast Ambient Monitoring program (CCAMP). CCAMP monitors water quality on the central coast and provides data for the assessment along with other monitoring programs. The 303(d) list was compiled by State Board and approved by USEPA on October 11, 2011. For the TMDL, staff reviewed the supporting toxicity and pesticide lines of evidence and monitoring data that are

		they are interpreted in the Santa Maria drainage area." The response to comments by the Central Coast Board was dismissive and inadequate.	the basis of the 303(d) listings in the Santa Maria River watershed and confirmed that the 303(d) impairment assessments are correct.
2.2	Danny Merkley	Farm Bureau concurs with the points raised in the comment letter submitted by the Pyrethroid Working Group (see letter submitted by Theresa Dunham, Somach, Simmons and Dunn on May 21, 2014.)	Mr. Merkley reiterates and concurs with detailed comments provided below by Ms. Dunham and the comments are addressed below in section 5.
2.3	Danny Merkley	Farm Bureau respectfully requests that the State Board, pursuant to its authority under Water Code section 13245, remand the Santa Maria Pesticide TMDL to the Central Coast Water Board for further consideration, and include specific direction to ensure that such further consideration complies with state law and policy.	This comment is addressed in staff's response to comments from Ms. Dunham in section 5, below.
3.1	Gerhardt Hubner	It is the first California Water Board TMDL since the mid-2000s to address pesticides that are currently used in California's urban areas.	Comment noted.
3.2	Gerhardt Hubner	CASQA is concerned about pesticides because, on a recurring basis, the use of U.S. EPA and DPR- approved pesticides has resulted in adverse impacts to water quality and aquatic life in receiving waters, potentially leading to violations of NPDES stormwater permits. In recent years, numerous studies have documented the presence of pesticides and pesticide-caused toxicity in both water and sediment of California's urban waterways. According to the State Water Board, toxicity is widespread in California watersheds—and is almost exclusively caused by currently used pesticides. As the staff report recognizes, the presence of pyrethroids in the Santa Maria River watershed is not unique. Last summer, CASQA compiled pyrethroids monitoring data from California urban areas and found that water and sediment toxicity is widespread in urban waters, with pyrethroids almost always identified as the apparent cause.	Staff acknowledges the comment by Mr. Hubner that numerous studies have found that the use USEPA and DPR approved pesticides are sources of impacts to surface water quality and aquatic life beneficial uses in receiving waters. Staff has reviewed the recent CASQA study that found widespread pyrethroid pesticides and sediment toxicity in urban waters.

3.3	Gerhardt Hubner	CASQA supports the overall framework for the urban pyrethroids portion of the proposed TMDL, which builds on collaborative efforts that CASQA embarked on many years ago in cooperation with California Water Boards. CASQA long ago determined that proactive engagement with pesticide regulators was the best means to achieve the goal of ensuring that currently registered pesticides do not impair urban receiving waters. For many years, CASQA has collaborated with the Water Boards in a coordinated statewide effort to address urban pesticides water pollution. This unique collaboration between Water Boards (including the Central Coast Region) and dischargers is called the Urban Pesticides Pollution Prevention Partnership or "UP3 Partnership." Our collaborative work with the California Department of Pesticide Regulation (DPR) has resulted in significant changes in pesticide regulation. The pyrethroids application regulations that DPR adopted in 2012—specifically to protect California's urban watersheds—provide strong evidence of the success of our collaboration. DPR has committed to continued collaboration with Water Boards and CASQA to solve pesticide water pollution problems in urban areas. Based on this commitment, and DPR's recognition that state law prevents municipal regulation of pesticide use, we expect that DPR will continue to take the lead for addressing future urban pesticide water pollution, as it has already been doing for pyrethroids.	Staff acknowledges and appreciates Mr. Hubner's support of the overall urban pesticide framework in the TMDL.
3.4	Gerhardt Hubner	We support the TMDL's integration of the collaborative statewide UP3 Project approach in both the staff report and the proposed Basin Plan amendment. We particularly appreciate that the	Staff acknowledges and appreciates Mr. Hubner's support for statewide collaboration and coordinated implementation by CASQA, DPR and the Water Boards

		staff report explicitly recognizes that State and Federal pesticide regulators—not municipalities—have the authority and primary responsibility to end urban pesticide water pollution. The proposed Basin Plan Amendment contains two critical elements to integrate the collaborative approach: 1. For urban water bodies, full implementation of pesticide regulators' authorities can be the primary mechanism for addressing pyrethroids impairments. 2. TMDL implementation monitoring for urban areas can be linked with the DPR-Water Board monitoring programs that that are currently underway to assess the effectiveness of DPR's pyrethroids regulations. Tremendous opportunities exist to improve California's disjointed programs for pesticides monitoring in urban watersheds. CASQA, the Water Boards, and DPR are just beginning discussions of how we can better coordinate and potentially collaborate on a broader basis to improve the effectiveness our pesticides monitoring programs. The TMDL anticipates a future of continued collaboration among the Water Boards, CASQA, and DPR toward ending pyrethroids water pollution in California urban areas. CASQA agrees with and supports this vision.	to implement the TMDL.
4.1	Richard Sweet	The Santa Maria Pesticide TMDL is the third TMDL to be considered by the State Board with in the last 18 months, and the TMDL and water quality requirements creates challenges for the City of Santa Maria (City).	Staff acknowledges the challenges that the TMDLs and other regulatory requirements have created for the City and have strived to work with the City towards gradual compliance.
4.2	Richard	The City views manmade concrete lined ditches and channels	Staff acknowledges the comment by Mr. Sweet

	Sweet	around the City as components of the storm water/flood control system and not “water bodies” under the Basin Plan. The channels receive dry and wet weather discharges from agriculture.	regarding the designation of channels as water bodies and his comment regarding the channels receiving inputs from agriculture. The TMDL identifies agriculture as a source of pesticides in the channels. Note that this comment was addressed during the regional board hearing. The Central Coast Water Board, through its approval of this and other TMDLs, supports protection of beneficial uses in the channels.
4.3	Richard Sweet	The City has no legal authority to stop pesticide water pollution and the Santa Maria Pesticide TMDL acknowledges that State and Federal pesticide regulators and not the City, have the legal authority and obligation to stop the basic sources of pesticide water pollution.	Staff concurs with Mr. Sweet that the City lacks legal authority to regulate individual pesticide use, which is regulated by State and Federal agencies. As with other pollutants present in stormwater, the permitted municipality is responsible for the pollutants present in their discharge.
4.4	Richard Sweet	Because of these significant constraints, the City greatly appreciates the final approach taken by the Regional Board to assessing compliance with the Santa Maria Pesticide TMDL, with some minor caveats. The TMDL recognizes the City's lack of legal authority to address the true sources of the impairment, and then recognizes that compliance may be achieved through "participation in statewide efforts, by organizations such as California Stormwater Quality Association ("CASQA"), that coordinate with DPR and organizations taking action to protect water quality from the use of pesticides in the urban environment ...." Given the City's limited legal authority, this approach is appropriate	Staff acknowledges and appreciates participation of the City along with CASQA in a coordinated approach with DPR to protect water quality from the urban use of pesticides. As noted by Mr. Sweet, this participation can be used for compliance with the TMDL and must be assessed for effectiveness during the implementation phase. Staff notes that this collaborative approach may be the most effective way to address impairments driven from urban pesticide use.
4.5	Richard Sweet	However, an important correction to the proposed Basin Plan Amendment is necessary to fully implement this approach. The City previously requested that the following phrase on page 20 of the Basin Plan Amendment be deleted: *"though sole reliance on such statewide efforts may not be adequate."* At the January	Mr. Sweet is correct; the phrase was inadvertently included in the public comment version for the State Board hearing. The phrase will be deleted from the basin plan amendment language.

		30, 2014 Regional Board hearing, the City understood that the Regional Board had agreed to delete this phrase, which does not appear in the related section of the TMDL Technical Report. To be consistent with the Regional Board action at the hearing and to remain consistent with the overall approach, the State Board should delete this phrase from the Basin Plan Amendment.	
4.6	Richard Sweet	The City would also like to take this opportunity to reiterate its desire to work with the Regional and State Boards to develop an Integrated Plan to achieve the City's water quality requirements. Since the time the City first-mentioned this approach to the State Board in connection with the Santa Maria Nutrient TMDL, the City has submitted an Integrated Plan proposal to the Regional Board and has met several times with the Board to move that process forward. Key to the successful development of an Integrated Plan is a regulatory structure that supports watershed based efforts and has sufficient flexibility to accommodate watershed compliance approaches. The City's minor requested change above to the Santa Maria Pesticide TMDL would support that effort.	Staff acknowledges the City's development of an Integrated Plan to achieve the City's water quality requirements and their willingness to work with the Water Boards on this approach. The watershed approach advocated by the City in the Integrated Plan is consistent with the watershed approach outlined in the Santa Maria Pesticide TMDL. As noted above by the City, the main drainage channels also receive discharge from agriculture and staff encourages the City to coordinate with agriculture on the Integrated Plan.
5.1	Tess Dunham	Our firm represents the Pyrethroid Working Group (PWG), which is a coalition of registrants of pyrethroid pesticides. We appreciate the opportunity to comment on the Proposed Approval of an Amendment to the Water Quality Control Plan for the Central Coastal Basin to Establish Total Maximum Daily Loads (TMDLs) for Toxicity and Pesticides in the Santa Maria River Watershed in Santa Barbara, San Luis Obispo, and Ventura Counties (Snta Maria Pesticide TMDL). The comments provided below are in compliance with Title 23 of the California Code of Regulations, section 3779, subdivision (f) in that these comments were submitted to the Central Coast Regional Water Quality Control Board (Central Coast Water Board), and as indicated	This is a summary of Ms. Dunham's comments, which are addressed individually below. Ms. Dunham requests delaying the hearing date to later this summer to allow the board ample time to review the issues. She also requests in a comment below, that the TMDL be remanded back to the regional board; this comment is addressed below. Staff recommends that the hearing currently scheduled for July 2, 2014 not be delayed because ample review time has been provided throughout the TMDL development process and the majority of the issues raised in the current comments

		below the responses provided by the Central Coast Water Board were inadequate. Where such comments were not raised below, a statement of explanation is provided as to why the PWG was unable to raise such comment. In general, we believe that the Santa Maria Pesticide TMDL raise important policy and technical issues of first impression that need to be consider[ed] by the State Water Resources Control Board (State Board) in its review of the Santa Maria Pesticide TMDL. We understand at this time that the State Board intends to consider this matter at its June 17, 2014 Board hearing date. Considering the significant issues raised, we believe a June 17, 2014 hearing date is too soon, and the State Board should allow itself sufficient time to evaluate the contents of the Santa Maria Pesticide TMDL and comments it receives with respect to the TMDL Accordingly, we request that the hearing on this matter be delayed to later this summer. The specific issues of concern we raise below are as follows: (1) the Central Coast Water Board failed to comply with State Board's *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d)List* (State's Listing Policy) in making determinations of impairment for pyrethroid pesticides simultaneously while developing the total maximum daily load (TMDL); (2) the Central Coast Water Board used data that lacks scientific rigor and transparency to make determinations of impairment; (3) the Central Coast Water Board used water quality criteria developed by the University of California, Davis (UCD) as numeric water quality targets that have not been subject to rigorous public review or comment; (4) the Central Coast Water Board improperly compared total water sample measurements to dissolved criteria; and, (5) the Central Coast Water Board is improperly mandating use of the Test of Significant Toxicity (TST). With respect to many of these issues, the Central Coast Water Board has responded inadequately. Some issues are new that arose due to changes made after the	have been previously addressed. Many of the comments provided by Ms. Dunham are similar to previous comments by the PWG to the Regional Board, which were provided to State Board and the hearing should not be delayed. Staff elaborates, where necessary, to individual comments below.

		close of the written comment period. Based on the significant errors contained in the TMDL, and in light of all of the evidence in the record, the inclusion of pyrethroid pesticides in the Santa Maria Pesticide TMDL by the Central Coast Water Board was arbitrary and capricious. Using its authority under Water Code section 13245, the State Board must return the Santa Maria Pesticide TMDL to the Central Coast Water Board for further consideration, and include specific direction to ensure that such further consideration complies with state law and policy.	
5.2	Tess Dunham	(1) <u>Improper Finding That the State Listing Policy Does Not Apply to Impairment Determinations Made Simultaneously With TMDL Development</u> In the PWG March 29,2013 comments, we argued that the Central Coast Water Board's findings of impairment for the pyrethroid pesticides, which then triggered their inclusion into the Santa Maria Pesticide TMDL, were improper because such findings of impairment were not consistent with the State's Listing Policy. Specifically, we argued that the State's Listing Policy applies for determinations of impairment, regardless if pollutant/waterbody combinations are being declared as impaired as part of the State's listing process or at the time of TMDL development. (See PWG March 27, 2013 comments, p. 2.) The Central Coast Water Board responded merely by stating that since they were not adding any pollutant/waterbody combinations to the State's 303(d) list that the State's Listing Policy did not apply. (Final Project Report, Attachment 6, p. 54.) In other words, it is the position of the Central Coast Water Board that they have the discretion to make determinations of impairment as	Ms. Dunham's comments on impairment determinations and the listing policy are nearly identical to prior comments submitted by Mr. Wells on March 29, 2013, on behalf of the PWG, that were addressed by the Central Coast Water Board in Attachment 6 Public Comments and Responses for the TMDL under comment 7.2. As noted in the April 18, 2014 public comment notice, State Water Board's CEQA Regulations (23 Cal. Code Regs. § 3779, subd. (f) requires that: 1. Comments must specifically address the final version of the Basin Plan Amendment adopted by the Central Coast Water Board. 2. If the Central Coast Water Board previously responded to a similar or identical comment, the commenter must explain why and in what manner the commenter believes each of the responses provided by the Central Coast Water Board to each comment was inadequate or incorrect.

		part of TMDL development in a manner that does not need to comply with the State's Listing Policy, and that they may add new pollutants at the time of TMDL development in any manner that they determine appropriate. Under the Central Coast Water Board's approach, impairment determinations can be made at the time of TMDL development that would otherwise not be impairments under the State's Listing Policy. Such a position fails to comply with state policy, and ultimately undermines the intent and purpose of the State's Listing Policy and the public's confidence in the regulatory process.	However, staff further elaborates here: Staff disagrees that it is necessary to use guidance described in the Listing Policy (SWRCB, 2004) to assess impairment of water quality standards and therefore assign TMDLs. CFR Title 40 section 130.7 (c)(1)(ii) states: "TMDLs shall be established for **all** pollutants preventing **or expected to prevent** attainment of water quality standards…[emphasis added]." Nevertheless, using Listing Policy guidance and available data, surface waters in the TMDL project area qualify as impaired for pyrethroid pesticides and inclusion on the Clean Water Act section 303(d) list of impaired waters. Five surface waters (Blosser Channel, Bradley Channel, Main Street Canal, Orcutt Creek, and the Santa Maria River) meet the requirements for Clean Water Act section 303(d) listing and are summarized in Table 2-5 in the TMDL Technical Report, and the data and analysis is included in Appendix C-3 and the Final Project Report. The exceedances for pyrethroids are based on toxicity unit evaluation of sediment pyrethroid concentrations and water concentrations of pyrethroids. The toxicity unit evaluation method was used on the 2010 303(d) List for the listing of Kirker Creek for pyrethroids in the Region 2 and the UC Davis water concentration criteria for pyrethroids, and the evaluation method was used by USEPA for the identification of bifenthrin impairments for

			the Oxnard Drain pyrethroid TMDL in Region 4. Furthermore, the magnitude of the pyrethroid water quality problem in the Santa Maria River watershed further demonstrates the importance of pyrethroid TMDLs in the Santa Maria River watershed. Table 4-9 of the Technical Report summarizes pyrethroid toxicity units in sediment detected in the impaired waters. For example, surface waters with urban runoff had toxicity levels as high as 54 toxicity units in Main Street Canal, and the other urban detections were 8.12 toxicity units in Bradley Channel and 13.74 toxicity units in Blosser Channel. The agricultural drainages were 1 to 2 toxicity units. Additionally, as a separate line of evidence, the Listing Policy states that if toxicity is present, and the pollutant causing the toxicity is identified, then the pollutant should be included in the listing; this is the case with sediment toxicity and pyrethroids. During development of the TMDL, UC Davis used Toxicity Identification Evaluations (TIEs) to identify the sources of sediment toxicity, and identified pyrethroids as a source of sediment toxicity (Phillips et al., 2010). Finally, Blosser Channel, Bradley Channel, Main Street Canal, Orcutt Creek, and the Santa Maria River are currently listed as impaired on the Clean Water Act section 303(d) list because the general toxicity objective is not attained. Given the entirety of the data and weight of evidence, staff developed TMDLs for pyrethroids for these waters

			now, rather than waiting until they were listed on the Clean Water Act sction 303(d) list. The Central Coast Water Board agreed with staff's conclusions and recommendations and approved the TMDLs.
5.3	Tess Dunham	(2) <u>Data Used Lacks Scientific Rigor and Does Not Meet Data Requirements Established in the State's Listing Policy</u> The PWG March 29, 2013 comments included significant information on the adequacy of data used to make determinations of impairment for pyrethroid pesticides. Specifically, the PWG comments identified major technical concerns and a lack of transparency associated with the data and information contained in the Santa Maria River Watershed and Oso Flaco Creek Watershed TMDL Monitoring Study- Final Report, prepared by Philips, B., et al., from the University of California, Davis (Philips 2010), which is the Central Coast Water Board's bases of information for all pyrethroid water column samples, and more than half of the sediment samples for pyrethroids. (See Final Project Report, Appendix C-3, pp. 1-2, Table 1, and p. 4, Table 3.) The PWG comments addressed the fact that data from this study did not meet the data requirements as set forth in the State's Listing Policy, and that the data as reported was questionable and that Philips 2010 failed to include sufficient information to judge the quality of the data. (See PWG March 29, 2013 comments, pp. 3-6.) However, rather than responding to the PWG's substantive comments with respect to the study, its lack of transparency, and concerns with the efficacy of the data contained in the study, the Central Coast Water Board dismissed all of the PWG comments by stating, "The above comments on data and information preprocessing are in regards to the Listing Policy, and staff did not add water bodies to the 303(d) list. The comments are outside the scope of the TMDL." (Final Project	Ms. Dunham's comments apply to the 303(d) Listing process and her comments are nearly identical to prior comments on the Santa Maria Pesticide TMDL by Mr. Wells on March 30, 2013 on behalf of the PWG, comment 7.3 of Attachment 6, that were addressed by the Central Coast Water Board. Ms. Dunham incorrectly asserts that the Central Coast Water Board is making a determination of impairment for the 303(d) List with the TDML and as noted above under response to comment 5.2 this is not the case and the listing policy does not apply. As noted in the April 18, 2014 public comment notice, State Water Board's CEQA Regulations (23 Cal. Code Regs. § 3779, subd. (f) requires that: 1. Comments must specifically address the final version of the Basin Plan Amendment adopted by the Central Coast Water Board. 2. If the Central Coast Water Board previously responded to a similar or identical comment, the commenter must explain why and in what manner the commenter believes each of the responses provided by the Central Coast Water Board to each comment was inadequate or incorrect. Ms. Dunham fails to provide evidence that the Central

		Report, Attachment 6, pp. 57, 58.) Such a response is completely inadequate and lacking in that it (1) ignores the fact that the State's Listing Policy does apply (see discussion above); and (2) ignores the significant substantive comments made on the study in general. (See, e.g., PWG March 29, 2013 comments, p. 4 [the study used abbreviated toxicity identification evaluations (TIEs), which meant that treatments were not used to determine toxicity between various classes of pesticides].)	Coast Water Board response to comment 7.3 of Attachment 6 was inadequate or incorrect and staff recommends that State Board reject this comment. However, staff further elaborates here: The pyrethroid sediment and water data meets the requirements for 303(d) listing; the data was collected under the SWAMP quality assurance program plan (SWAMP, 2008) and meets the quality control policy of the Listing Policy Section 6.1.4. While TIE analysis supports the impairment determination, it is not used as the basis for concluding impairment; please see response to comment 5.2.
5.4	Tess Dunham	(3) <u>TMDL Improperly Uses UCD Criteria To Interpret Data and as Numeric Water Column Targets</u> The Santa Maria Pesticide TMDL uses the UCD criteria to interpret the narrative toxicity objective. Their use here is the first time such criteria have been used by a regional board in a regulatory manner. To provide a brief background, the UCD criteria were developed by the University of California, Davis through a contract with the Central Valley Water Board. Although funding was provided by the Central Valley Water Board, the Central Valley Water Board itself has not evaluated the UCD criteria to determine if they are appropriate for interpreting the narrative toxicity objective, or if they are appropriate as water quality objectives. Response to the PWG March 29, 2013 comments properly acknowledges this fact, however, it then implies that adoption of the criteria by the Central Valley Water Board is a given. (Final Project Report, Attachment 6, pp. 58-59.)	Ms. Dunham states that the Central Coast Water Board in Attachment 6, pp. 58-59, speculates the action by the the Central Valley Water Board in the following response to comment: ***Staff Response: Staff clarified in the report that the pyrethroid criteria were developed by UC Davis. Staff acknowledges that the Central Valley Water Board has not adopted the criteria but is in the process of developing a Basin Plan objective to adopt the criteria along with a Central Valley Pyrethroid TMDL. The following is a link to the Central Valley Water Board's pyrethroid project website and CEQA documents for their Basin Plan Amendments.*** ***Central Valley Pyrethroid Pesticides TMDL and Basin Plan Amendment*** In the above response to comments staff states that the

		The Central Coast Water Board does not know, nor can it speculate to the action that the Central Valley Water Board will take in the future. Accordingly, the Central Coast Water Board's response to this comment is only partially correct. More importantly, the UCD criteria themselves have been subject to only limited public review and comment, and are not appropriate for use here until there has been more rigorous review of their efficacy before being used for regulatory purposes. As noted, the Central Valley Water Board is currently in the process of developing a basin plan amendment that will likely consider and evaluate the UCD criteria, and determine if they are appropriate for adoption as water quality objectives. Through the Central Valley Water Board's process, it is anticipated that the UCD criteria will be subject to significant public review and comment, and through this process, issues with respect to how they should be applied (e.g., total vs. dissolved) and other issues will be fully discussed.	Central Valley Board is <u>developing</u> a Basin Plan Amendment for pyrethroid pesticides and does not state or indicate that adoption is " a given" as stated by Ms. Dunham. Staff stating that they are <u>developing</u> a Basin Plan Amendment is consistent with what is stated on the Central Valley Board's website for the project, which states the following: *The goal of this project is to **develop** an amendment to the Basin Plan for Regional Board consideration. The amendment will be designed to establish water quality objectives and a program of implementation for the control of pyrethroid pesticides that are impacting or could potentially impact aquatic life uses in surface waters in the Sacramento and San Joaquin River watersheds of the Central Valley. The amendment will also be designed to establish Total Maximum Daily Loads for waterbodies that are listed for pyrethroids on the Clean Water Act Section 303(d) list, and establish provisions to address and/or prevent future pyrethroid listings. For additional information, please contact Tessa Fojut at (916) 464-4691 or by e-mail at tfojut@waterboards.ca.gov or Danny McClure at (916) 464-4751 or dmcclure@waterboards.ca.gov.* Ms. Dunham States that the UCD criteria have been subject to only limited public review. This statement is incorrect. The development of the UC Davis pesticide criteria methods and criteria reports for specific pesticides have all undergone extensive peer and public review. For example, the criteria methodology was peer reviewed, and a separate review occurred for the development of the pesticide criteria reports. There

			were several opportunities for public review and comment during the development of the criteria. The criteria development and review process is well documented on this link to the Central Valley Water Board's pesticide water quality criteria method development website. Furthermore, the TMDLs for toxicity and pesticides in the Santa Maria River watershed underwent extensive scientific and public review during the TMDL process, which provided opportunity for comments on the criteria. Finally, the proposed TMDL uses the pyrethroid criteria developed by UC Davis as numeric targets, and not as water quality objectives or even as allocations assigned to implementing parties. Ms. Dunham's concern regarding the use of the criteria in a "regulatory manner" would be more appropriate if the criteria were being used as a numeric effluent limit, which they are not.
5.5	Tess Dunham	Another key factor, and perhaps the most significant issue of concern, is that the Central Coast Water Board has determined it appropriate to compare total water sample measurements (referred to in the Final Project Report as whole water samples) against the criteria, which are based on dissolved water measurements. The UCD criteria documents correctly note that with respect to pyrethroid pesticides, the issue of concern is the amount that is bioavailable. Even though the Central Coast Water Board is aware of this fact as is shown by statements in the Final Project Report, it decided to compare total sample	Staff acknowledges Ms. Dunham's concerns regarding the comparison of whole water measurements of pyrethroids to the UC Davis criteria. However, the UC Davis criteria report states the following (Palumbo et.al., 2010): *The freely dissolved bifenthrin concentration is recommended for determination of criteria compliance because the literature suggests that the freely dissolved concentrations are the most accurate predictor of*

		measurements against the "dissolved" criteria and claim that it provided for a "margin of safety." There is no rationale or justification provided that explains how such a comparison is proper and appropriate for creating a margin of safety. Use of total water sample measurements by claiming "margin of safety" further ignores the fact that the UCD criteria themselves include several different levels of "margins of safety" and are very conservative.	*toxicity. Environmental managers may choose an appropriate method for determination of the concentration of freely dissolved bifenthrin, or <u>they may also choose to base compliance on whole water concentrations.</u>* The criteria report states that compliance can be based on whole water concentration. Staff used a combination of water and sediment concentrations to determine that surface waters in the Santa Maria River watershed were impacted by pyrethroids (refer to Appendix C). In addition, water samples were compared to USEPA Aquatic Life Benchmarks for pyrethroids and of the 6 samples that exceeded the UC Davis criteria for pyrethroids, 3 of the samples also exceeded the USEPA benchmarks (USEPA, 2012).
5.6	Tess Dunham	An additional key factor as to why use of the UCD criteria is not appropriate without further rigorous public review and discussion pertains to issues associated with native Hyalella versus laboratory Hyalella. Specifically, the UCD criteria incorporate data from samples that have been analyzed with laboratory cultures of Hyalella azteca. The UCD criteria do not incorporate data from samples that have been analyzed with native cultures of Hyalella, which are more environmentally relevant. Recent studies with native cultures of Hyalella show that Hyalella in the environment are not as sensitive as laboratory Hyalella. This fact is not addressed or considered in the UCD criteria or directly in the Final Project Report because such information has come to light in the more recent past. With respect to this issue before the Central Coast Water Board, such issues were generally raised	The recent study published in the *Proceeding of the National Academy of Science* by Dr. Donald Weston reported that some populations of *Hyalella azteca* in urban and agricultural areas with high pesticide loading have developed genetic resistance to pyrethroids (Weston et al., 2013). This was indicated by genetic sequencing and some of the mutations that they identified in this aquatic species are the same ones seen in pyrethroid-resistant agricultural pests. Typically, a population can develop resistance when they are regularly exposed to high levels of a chemical, as occurs with agricultural pests when a pesticide or class of pesticides is used repeatedly on the same crop. This study is one of the first to document resistance in non-target aquatic organisms exposed primarily through

		at the hearing on the Santa Maria Pesticide TMDL, but there was no real discussion. At most, Central Coast Water Board staff had Tessa Fojut make limited comments on this issue before the Central Coast Water Board in an effort to try and dismiss the relevance of such information, but such comments were brief and no response to her claims was allowed.	runoff. Dr. Weston's study also reported that wild populations collected from undeveloped areas with few pesticide inputs were equally sensitive to pyrethroids as laboratory cultures and these sensitive populations did not have the genetic mutations seen in the resistant populations. This indicates that repeated exposure is a difference between developing resistance and being sensitive. Adaptations, such as development of pyrethroid resistance, may reduce the genetic and biological diversity of these populations, and as such reduce their ability to adapt to other stressors. The UC Davis criteria are an appropriate interpretation of the toxicity objective because they are based on the response of sensitive indicator organisms. The goal of toxicity testing is to use the organisms as a biological indicator of contaminants, not to determine whether field populations have developed resistance. The UCD criteria were developed with the goal of protecting aquatic ecosystems, thus, it is appropriate that the criteria are protective of non-resistant *Hyalella azteca* populations found in areas with little pesticide contamination, rather than only protecting those populations that have adapted to live in water bodies degraded by pyrethroids. The General Objective for Toxicity in the Basin Plan states that: *All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with the objective will*

			be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, toxicity bioassays of appropriate duration, or other appropriate methods. Ms. Dunham asserts that Central Coast Water Board had Dr. Fojut make limited comments on *Hyalella* resistance at the Regional Board hearing to dismiss the relevance of this information on *Hyalella azteca* resistance. No attempt was made by staff or the Regional Board to limit Dr. Fojut or limit discussion on the topic. In addition to Dr. Fojut, Brian Anderson, an environmental toxicologist with UC Davis discussed the issue of *Hyalella azteca* resistance at the Regional Board hearing.
5.7	Tess Dunham	In light of these serious concerns with the UCD criteria and how they were applied in this TMDL, the State Board should remand the Santa Maria Pesticide TMDL back to the Central Coast Water Board with specific direction to either not apply such UCD criteria, or, at the very least, apply the UCD criteria as dissolved criteria to dissolved data.	The UC Davis criteria are sound and appropriate for the TMDL targets. The criteria were extensively reviewed during development by UC Davis and underwent extensive scientific peer review for the TMDL as well as well as reviewed by the public. Staff acknowledges Ms. Dunham's recommendation that the UC Davis criteria be applied to freely dissolved samples, which is also recommended by UC Davis. However, as noted above, UC Davis also supported the use of whole water samples. Additionally, staff based the assessments on sediment data and sediment criteria along with evaluation using USEPA Aquatic Life Benchmarks and the overall approach to protecting water quality in the TMDL also incorporates sediment and water toxicity testing to assure that waters are free of toxic substances.

			Therefore, staff does not agree that the TMDL be remanded back to the Central Coast Water board.
5.8	Tess Dunham	(4) Santa Maria Pesticide TMDL Mandates Use of the TST for Determining Compliance With Aquatic Toxicity Numeric Targets In the January 25, 2013 draft version of the Santa Maria Pesticide TMDL, it recommended-but did not mandate-use of the TST for implementing the TMDL. (January 25, 2013 Draft Technical Project Report, p. 24.) Now, the Santa Maria Pesticide TMDL mandates the use of the TST. (Final Project Report, Attachment 2, p. 24.) It further adds new language stating that the causative toxicant can be identified based on land use patterns and similar responses in sub-watersheds. We have significant concerns with both of these issues. Our comments are provided here since these are new issues, and there was not the opportunity to provide such comments previously. First, with respect to the TST, the State Board is in the process of adopting a statewide Toxicity Policy that may include use of the TST. However, at this time, the policy has not been adopted. Thus, mandating the use of the TST here is premature until the Toxicity Policy is adopted and in effect. Second, it is improper to speculate as to the specific pollutant or pollutants that may be causing toxicity based on land use patterns and responses in other sub- watersheds. There are many environmental factors that can cause toxicity in the aquatic environment that are unrelated to land use patterns. By automatically assuming that toxicity is caused by a pollutant without actually having data that connects the pollutant to the toxicity' efforts to address the issue	Ms. Dunham incorrectly states that the Final Project Report mandates the use of the Test of Significant (TST). The TMDL does not have the authority to mandate use of the TST and implementing parties may propose alternatives. However, the TST is recommended. The TST was developed by USEPA and has undergone extensive peer review. Ms. Dunham states that use of the TST is premature since State Board is developing a Toxicity Policy and this seems unnecessary. The TST is already in use in various monitoring and assessment programs in the state and a very suitable statistical method for analyzing and interpreting toxicity test data. The comment regarding land use patterns and similar responses is taken out of context. The language referred to simply recommends that if toxicity continues to occur even after management practices have been implemented, that the management practices be evaluated for effectiveness, or, further management practices be implemented.

		may be misplaced and may result in an inefficient and improper use of resources. Due to these concerns, we believe it necessary for the State Board to further remand the Santa Maria Pesticide TMDL to the Central Coast Water Board with direction to remove mandates associated with the TST, and remove language that allows for improper speculation as to pollutants that may or may not be causing toxicity.	

5.9	Tess Dunham	Conclusion As shown above, the inclusion of pyrethroid pesticides into the Santa Maria Pesticide TMDL is an arbitrary and capricious action that lacks evidentiary support. As a fundamental matter, the Central Coast Water Board fails to acknowledge or apply the State's Listing Policy for determining if there is in fact impairment for such pesticides because it "claims" that the State's Listing Policy does not apply. This alone is cause for remand, and makes the determinations of impairment for pyrethroid pesticides arbitrary as a matter of law. Further, the data used for impairment determinations is flawed, lacks scientific rigor, and the study from which they come is not transparent. Finally, the Santa Maria Pesticide TMDL relies on UCD criteria as numeric water column targets yet such criteria have not been subject to the level of public review necessary for their use in a regulatory process, and more importantly, the Central Coast Water Board applies the criteria in a manner that is contrary to the criteria as developed. For these reasons, the State Board must remand the Santa Maria Pesticide TMDL back to the Central Coast Water Board to remove pyrethroid pesticides. Alternatively, the State Board could remand the Santa Maria Pesticide TMDL back to the Central Coast Water Board with specific direction to: (1) remove water column targets; (2) remove reference to the UCD criteria; (3) remove statements that imply impairment to water from pyrethroid pesticides; and, (4) remove mandates associated with the TST and causative language. Such an action would be appropriate because there is no evidence in the record that supports findings of impairment for pyrethroid pesticides in water	Inclusion of pyrethroid pesticides in the Santa Maria River Watershed pesticide TMDL is not arbitrary and capricious. CFR Title 40 section 130.7 (c)(1)(ii) states: "TMDLs shall be established for **all** pollutants preventing **or expected to prevent** attainment of water quality standards…[emphasis added]" Please refer to response to comment 5.2 above. The Santa Maria River watershed pesticide and toxicity TMDL documents provide evidence (refer especially to Appendix C and Section 2 of the TMDL Technical Report) that pyrethroid water and sediment samples exceed water quality criteria and guidelines on multiple monitoring events in the watershed and are preventing or expected to prevent attainment of water quality standards. These waters are currently listed as impaired on the Clean Water Act section 303(d) list because the general toxicity objective is not attained. Other comments contained in Ms. Dunham's conclusion are addressed above.

6.1	Janet Parrish	U.S. Environmental Protection Agency (EPA) recommends and supports the State Board's adoption of the proposed Toxicity and Pesticides Total Maximum Daily Loads (TMDLs) for the Santa Maria River Watershed. These TMDLs address the full range of pesticides in the Santa Maria River Watershed, including organophosphates, pyrethroids, and legacy pesticides in the organochlorine class. We applaud the inclusion of toxicity targets and TMDLs for the water column, sediment, and fish tissue, to address known, unknown and future impairments due to pesticides and other pollutants. We appreciate that you have included numeric targets equivalent to the water quality objectives for acute and chronic conditions, and for additive conditions (i.e., adding the effects of two or more pesticides when present concurrently in a water body). Extensive scientific evidence shows pesticide compounds within the same class will have a combined, additive effect. Therefore, it is necessary and important to address these issues.	Staff acknowledges the recommendation by USEPA that State Board adopt the proposed toxicity and pesticide TMDLs for the Santa Maria River Watershed.
6.2	Janet Parrish	These TMDLs are toxicity- and concentration-based, which is appropriate for these compounds. EPA supports the analysis used to develop the TMDLs, which are scientifically sound and rigorously peer-reviewed. They are consistent with EPA water quality guidelines for the pesticides identified.	Staff acknowledges Ms. Parrish's support for the TMDL analysis and the toxicity and concentration based TMDLs to address pesticide impairments.
7.1	Claire Wineman and Gail Delihant	**No Reasonably Foreseeable Methods of Compliance** Our main concern is that we do not agree that there is a reasonably foreseeable method of compliance for the targets or that the implementation process described in the TMDL that may reasonably control the constituents using the best available technology at this time. **Growers in this region have already implemented feasible agronomic methods in their farming practices.** Unless unexpected new BMPs emerge in the near future, the	Staff acknowledges Ms. Wineman's concern regarding reasonable foreseeable methods of compliance. However, as noted below, pesticide application patterns for organophosphate pesticides, such as chlorpyrifos and diazinon, have already changed and targets for these pesticides should be achieved. Analysis has shown that urban pyrethroid regulations adopted by DPR should greatly reduce pesticide loading. Ms. Wineman questions the ability of growers to further implement practices to achieve targets, since growers

		likelihood that growers will be able to reduce pesticide or toxicity levels to meet the unreasonable TMDL targets is questionable. **Unintended consequences.** With many of these purported methods, there will most certainly be negative, unintended consequences. For example, by discontinuing the use of chlorpyrifos, pest pressures, such as maggots, increase and farmers are likely applying more irrigation water and fertilizer to try to keep the struggling plants alive. Additionally, farmers may rely on pesticides that are less effective, which increases the number of required applications and may create a combined effect that has a greater environmental impact than a single, effective application.	have already implemented all agronomical BMPs. Staff anticipates that implementing parties and researchers will make progress towards developing improved management practices. Additionally, water quality impairments such as sediment toxicity, are associated with pesticides that can be transported in sediment and there are reasonable sediment control BMPs that can implemented now that are not currently implemented broadly. Staff acknowledges Ms. Wineman's comments on potential negative unintended consequences from implementing the TMDL, and staff previously addressed them in the TMDL CEQA analysis and checklist, which was adopted by the Central Coast Water Board. The Central Coast Water Board, DPR and central coast agricultural commissioners are working on ways to minimize the unintended consequences of chlorpyrifos consequences.
7.2	Claire Wineman and Gail Delihant	We strongly contest the aquatic toxicity numeric targets and find that they are ambiguous as written. We do not agree that there are reasonable controls to achieve these targets. We oppose the unachievable organochlorine target date. Compliance methods are limited or nonexistent, particularly for organochlorines currently in aquatic sediment. The Technical Project Report (page 11) indicates the half-life of DDT is 150 years in an aquatic environment. As such, proposing a target date of 30 years is misleading and chemically impossible to achieve.	Staff acknowledges Ms. Wineman's comment about organochlorine target dates. The target dates are estimated milestones based on the current levels of breakdown products. The target dates can be adjusted during the implementation phase, if necessary. Staff acknowledges Ms. Wineman's comment regarding the Pesticide Management Plan and the Organochlorine Implementation Plan. Note that "requirements" for implementation are described in the regulatory instruments, such as NPDES permits and waivers of WDRs.

		Furthermore, the Pesticide Management and Organochlorine Implementation Plans would be duplicative, have limited usefulness, and would not benefit water quality. We ask that these requirements are reworked to fit within the framework of the Farm Plans and existing cooperative monitoring developed to comply with the Ag Order.	The Pesticide Plan described in Attachment-2 of the staff report is not a requirement, it is a recommendation for evaluating TMDL implementation; it is simply a memorialization of recommended future actions to consider. However, the Pesticide Plan can be implemented through existing Ag Order farm planning and management practice reporting and water quality monitoring and reporting. The Organochlorine Pesticide Implementation Plan recommendation is a new community-based watershed approach that would be led by implementing parties; a similar approach is currently being implemented for the organochlorine pesticide TMDL for Ventura County. Organochlorine monitoring could be implemented through CCAMP regional monitoring program that monitors in the watershed on a five year rotation. These approaches allow for adaptive management through the implementation phase. Potential duplicative efforts can be identified in the implementation phase since the Water Board and implementing parties will be communicating with each other, not only as parties to each of the plans, but also to the regulatory instruments described above.
7.3	Claire Wineman and Gail Delihant	**<u>Technical Project Report Inadequacies</u>** The Technical Project Report includes the following inadequacies: **Outdated application information.** For example, information on organophosphate application dates to 2008. Application patterns of chlorpyrifos (diazinon is not widely used) have changed dramatically since information on the Ag	Regarding Ms. Wineman's comments that the TMDL contains outdated pesticide application data. Data were selected in the TMDL technical report to coincide with water quality monitoring data for analysis of pesticide sources. Staff previously received comments requesting more current chlorpyrifos use reporting data and provided updated information at the January 30, 2014 board meeting (refer to Table below). The updated

Order tier criteria emerged. This information is no longer applicable and no longer represents the current circumstances in the watershed.

Pesticide Management Plan. It is still unclear if the Pesticide Management Plan as described is a new requirement or would be a component of the Farm Plan. As outlined, the Plan would increase the administrative burden of farmers under the Order but not benefit water quality.

Organochlorine Implementation Plan. The Plan does not capture the full contribution of historical vector control measures to the current level of organochlorines in aquatic habitat. We also strongly believe that existing monitoring efforts are adequate and additional efforts will be duplicative and have limited usefulness.

Gross Underestimate of Cost. Depending on the clarification of the various Plan requirements, the actual cost will likely be much higher.

information does not change the conclusions and recommendations described in the TMDL.

Year	Pesticide Application	Lbs. Granular Lorsban 15 G a.i. Chlorpyrifos[1]
2006	773	85,700
2007	653	75600
2008	516	55,300
2009	477	44,700
2010	223	22,300
2011	244	35,000
2012	65	9,400

[1]Source Santa Barbara County Ag. Commissioner , a.i. = active ingredient

Regarding Ms. Wineman's concern that the Pesticide Management Plan could increase administrative burden. Staff supports efforts to optimize the use of existing programs to achieve TMDL goals and minimize burden. The Pesticide Management Plan, as described in Attachment-2 of the staff report is not a requirement, but more of a memorialization of potential future actions. Outcomes could be described in Farm Plans, and would be consistent with current requirements described in the Central Coast agricultural waiver.

Ms. Wineman comments that the Organochlorine Implementation Plan does not capture the full contribution of historic vector control measure. The full contribution of historic vector control applications is unknown and the vector control agency does not have a TMDL allocation. The residues of historic applications are stored in soils and sediments in the Santa Maria

			River Watershed across the spectrum of land uses. The flood control channels and drainages that may have received historic vector control applications are stores of contaminated sediments and are addressed in the TMDL. The agencies that manage the channels did receive allocations and should participate in the plan. Staff estimated costs based on current knowledge and believe the estimate is justifiable.
		<u>Potentially Significant Impacts</u> The CEQA "Substitute Document" has been revised to correctly identify several potentially significant impacts. Given these findings, we oppose the assertions related to the statement of overriding considerations.	Ms. Wineman states that the CEQA documentation has been revised to correctly identify several potentially significant impacts and based on these findings opposes the Regional Board Statement of overriding consideration. The Central Coast Water Board has the authority and responsibility to protect water quality and the many pesticide impaired waterbodies in the watershed. The Central Coast Water Board determined the benefit to water quality outweighed potential impacts from implementation.
7.4	Claire Wineman and Gail Delihant	**We urge you to take these concerns into account and not approve the TMDL. We ask you to remand the TMDL to the Regional Water Board with specific direction to better consider reasonable controls, foreseeable compliance, and potential impacts on other long-term factors impacting basin health.** As always, we are willing to continue to work with the Water Board to address these concerns.	Staff acknowledges the concerns of Ms. Wineman and her willingness to work with staff. Staff recommends approval of the TMDL.

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