Comment Summary and Responses
Comment Deadline: October 14, 2013
Amendment to the Water Quality Control Plan for the Central Coastal Basin to Adopt Total Maximum Daily Loads for Nitrogen Compounds and Orthophosphate in the Lower Salinas River and Reclamation Canal Basin and the Moro Cojo Slough Subwatershed

List of Commenter's:

Comment Reference	Organization	Representative(s)
1	California Farm Bureau Federation, Western Growers, and Grower Shipper of the Central Coast on behalf of 74,000 farm families, individual members, and the Monterey County Farm Bureau	Danny Merkley, Gail Delihant, and Abby Taylor-Silva
2	General Public	Jacquelyn Griffith
3	KMI	Kay Mercer

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Response to Comments:

No.	Author	Comment	Response
1.1	Danny Merkley, Gail Delihant, and Abby Taylor-Silva	The Ag Organizations of the Central Coast believe it is premature to approve the Draft TMDLS while significant resources from diverse groups of stakeholders and interests are focused on solutions in nitrate high-risk areas. Although much of this focus is on potential impacts to groundwater used for drinking water purposes, there is a direct connection with the Draft TMDLS under consideration here. First, the Draft TMDLS note that impacts to shallow groundwater may also impact surface water quality via baseflow loading contributions to some of the creeks in question. (See Resolution No. R3-2013-0008, p. 15.) Second, and more importantly, the types of management practices being discussed with respect to protection of groundwater supplies are likely to also be effective practices for protection of surface waters such as those at issue in the Draft TMDLS. Due to the significant overlap between the issues, the Ag Organizations of the Central Coast believe it important for the State Water Resources Control Board (State Board) to consider all related efforts prior to approving the Draft TMDLS. With respect to groundwater and nitrates, the State Board's February 20, 2013 report to the Legislature made 15 recommendations to address nitrate in groundwater and many of those recommendations are underway. Recommendation 11 of the report called for the	Thank you for taking the time to submit comments. Staff concur that there is a nexus and potential synergy for management practices that protect both groundwater and surface water quality and applaud these efforts as they will undoubtedly help implement the TMDL. Groundwater and surface waters are not closed systems that act independently from each other, and they are in fact intimately connected through the hydrologic cycle. Staff appreciates that growers, agricultural representatives, resource professionals, and state agencies are holistically considering strategies to better protect our water resources in a broader sense, taking into consideration recognition of the natural hydrologic cycle of surface waters and groundwaters. Staff acknowledges the list of ongoing planning activities highlighted by the commenters. Staff does not typically consider the existence of ongoing research, programs, and planning processes to be the basis for deferring a TMDL, nor have we been informed by management or by the U.S. Environmental Protection Agency to delay TMDLs on the basis of on-going planning and research. TMDLs often recognize that ongoing planning and iterative water quality improvement strategies will be necessary to ultimately attain water quality standards. Ongoing planning, and research can be incorporated into − or be considered consistent with − TMDL implementation. It should be noted that the proposed TMDL implementation strategy does not contemplate or require immediate, prompt or imminent compliance with state water quality standards; indeed this TMDL contemplates that compliance with state water quality standards for biostimulatory substances may not be achievable for up to 20 and 30 years. Undoubtedly, over the coming years additional helpful knowledge about nutrient pollution mitigation strategies will emerge.

		California Department of Food and Agriculture, in coordination with the Water Boards, to convene a Nitrogen Tracking and Reporting System Task Force to identify intended outcomes and expected benefits of a nitrogen mass balance tracking system in nitrate high-risk areas. Key action areas identified by the Task Force are due out this month that will highlight a nitrogen tracking and reporting system to provide meaningful and high quality data to help better protect groundwater quality. Additionally, recommendation 14 in the Water Board's report to the Legislature stated, "The Water Boards will convene a panel of experts to assess existing agricultural nitrate control programs and develop recommendations, as needed, to ensure that ongoing efforts are protective of groundwater quality." The Expert Panel is expected to be identified and begin its work soon. Further, the Governor's Drinking Water Stakeholder Group has worked over the past year and a half to identify key issues and make recommendations to the Legislature that will address drinking water problems associated with high nitrates in groundwater for economically disadvantaged communities who rely on groundwater for their drinking water supply. The Task Force and the Governor's Stakeholder Group are represented by key agricultural and environmental justice organizations, federal, state and local agencies, the California State University system and the University of California, as well as experts and researchers in the private sector. The Task Force, Expert Panel, and the State Board's Order were not in	Staff maintains there is sufficient information about the nature and seriousness of the water quality problem and about some mitigation strategies and holistic water quality management practices to begin to make progress towards complying with state water quality standards now. Further, in recognition that managing nutrient pollution risks will be an iterative process over the long term, this TMDL proposes a number of interim milestones during which the Central Coast Water Board may consider revisions of the TMDL on the basis of new research, new data, new statewide policies, or new information.

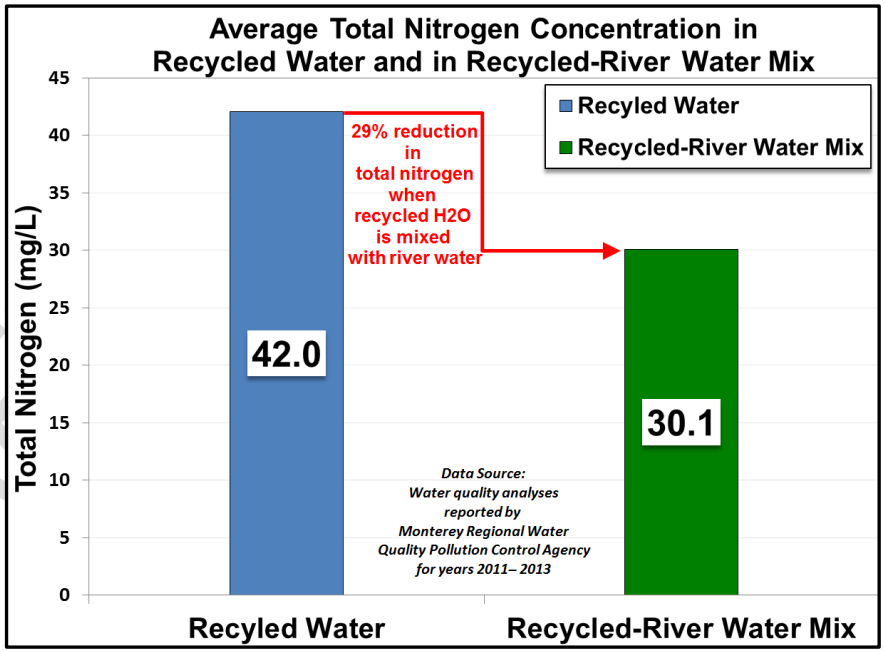
		existence at the time in which the Regional Board adopted the Basin Plan Amendment on March 14, 2013, and therefore, these comments could not have been raised before the Regional Board prior to adoption. Further, the State Board recently adopted, on September 24, 2013, an order which substantially revises the Central Coast Water Board's 2012 Agricultural Order regulating discharges from irrigated lands. This order includes numerous provisions aimed at reducing and preventing nitrate loading of ground and surface waters.	
1.2	Danny Merkley, Gail Delihant, and Abby Taylor-Silva	And more directly, the State Board has its own process for evaluating and establishing a *Proposed Policy for Nutrients for Inland Surface Waters of the State of California*, which is currently in process. It is premature for the Central Coast Water Board to be adopting the Draft TMDLS, which include significant numeric targets for biostimulatory substances in advance of the State Board's own policy development.	The proposed policy for nutrients for inland surface waters of the State of California does not require that regional boards delay or defer development of nutrient TMDLs on the basis of possible future promulgation of a statewide nutrient policy. It should be noted that this issue was also raised before the Central Coast Water Board. In recognition of the need for flexibility and adaptive management, this TMDL and the associated basin plan amendment acknowledges that the Central Coast Water Board may reconsider the TMDLs, the proposed nutrient water quality criteria, or other TMDL elements on the basis of potential future promulgation of a statewide nutrient policy for inland surface waters in the State of California. Finally, Regional Board staff consulted with State Board staff regarding the effort to develop a policy for nutrients for inland surface waters; the strategies to develop nutrient targets in the TMDL mirror closely the strategies being considered for the policy.
1.3	Danny Merkley, Gail Delihant, and Abby Taylor-	The Ag Organizations of the Central Coast are also concerned with the inclusion of numeric targets for Nutrient Response Indicators that are not pollutants as	In the U.S. district court case cited by the commenter, the court limited USEPA's authority to establish flow rates for stormwater as an indirect surrogate for sediment pollution in a Virginia TMDL, since the

	Silva	defined under the Clean Water Act. The US District Court for the Eastern District of Virginia recently ruled that EPA exceeded its authority in establishing a flow-based TMDL[1]. This case ruled that EPA cannot use surrogates in place of regulating pollutants. According to the case, EPA is charged with "establishing TMDLs for appropriate pollutants; that does not give them the authority to regulate nonpollutants." The term "pollutant" is defined in the CWA as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 U.S.C., § 1362(6). The Nutrient-Response Indicators included in the Draft TMDLS are not defined as pollutants by the Clean Water Act. As result, such targets should be removed from the Draft TMDLS. Overall, the Ag Organizations of the Central Coast believe that current efforts to address management practices need to move forward unimpeded by the additional regulatory requirements associated with the Draft TMDLS. The Task Force, the Expert Panel, the Governor's Stakeholder Group and other efforts need to complete their highly technical and complex work before approving the Draft TMDLS. Until this work is completed, it is unknown what discharge levels are reasonable to achieve for irrigated agriculture while maintaining a viable industry in the Central Coast. For these reasons we recommend against approving the amendment to the Water Quality Control Plan for the	court concluded that stormwater is not recognized as a pollutant. Please note that the identified nutrient response indicators in this TMDL are not surrogate measures of pollution. The response indicators – dissolved oxygen, microcystins, and chlorophyll-*a* – are chemical or biological parameters that can directly cause a condition of pollution or nuisance, or an impairment of beneficial uses. These water quality indicators indeed have established regulatory thresholds or recognized water quality criteria, as noted in the TMDL project documentation. Also as noted in the TMDL project documentation, nutrient concentrations contribute to biostimulation in surface waters, but nutrient concentrations alone are not sufficient in and of themselves to demonstrate a risk of biostimulatory problems and impairment of beneficial uses. Consistent with guidance from the California Nutrient Numeric Endpoints approach, staff identified a range of water quality metrics, including nutrient-response indicators (i.e., dissolved oxygen, chlorophyll-a, and algal toxins) that can be used to gage impacts to beneficial uses. Because biostimulation results in a cascade of water quality impacts, it is not prudent to simply have one water quality metric to measure impacts to beneficial uses. Further, using a range of water quality indicators of biostimulatory problems reduces the burden of implementing parties having to be singularly focused on nutrient water column concentrations. Since biostimulation results from a combination of factors, a holistic approach to improve aquatic habitat, water management, and water quality can have corollary benefits in reducing the risk of biostimulation, thus demonstrating progress towards achieving the TMDL. With regard to the comment suggesting that the TMDL will add additional regulatory requirements, please note that this TMDL does not propose additional or new regulatory requirements on agricultural implementing parties. TMDLs are generally not self-implementing,

		Central Coastal Basin. [1] Virginia DOT v. EPA, E.D. Va., No. 1:12-cv-775, 1/3/13	and thus TMDL implementation is achieved through compliance with existing, new, or planned regulatory measures. In the case of this proposed TMDL, compliance with the Central Coast Water Board's Agricultural Order would be deemed to be sufficient to demonstrate that dischargers are implementing the TMDL. No additional or new enforceable regulatory measures are being proposed for agricultural implementing parties. With regard to the comment on the need to develop management practices unimpeded by a TMDL, please refer to staff response to comment 1.1.
2.1	Jacquelyn Griffith	I really appreciate that you are taking action in setting TMDL's. I did not comment before because I was not aware of Resolution No. R3-2013-0008 and the earlier comment period. I have trouble with TMDL's being voluntary and with your allowing 30 years before targets will be reached. That clearly does not take care of the public. Our children are already over-exposed to carcinogens and endocrine disruptors. These TMDL's should be implemented now. How will you encourage their rapid implementation?	Thank you for taking the time to submit comments. With regard to the concerns about public health and a 30 year time frame, please note that the proposed TMDLs in fact identify a 12 year milestone to achieve public-health drinking water standards for nitrate in surface waters of the lower Salinas valley. The 30 year milestone is identified as a feasible target – on the basis of available data – to achieve more stringent nutrient water quality targets which are anticipated to be protective against biostimulation of surface waters. The basis for the 30 milestone to achieve dry-season biostimulatory numeric targets is developed and presented in the TMDL project documents. Further, the Central Coast Water Board committed to re-opening the TMDL for further consideration in ten years, which potentially could include revised timeline milestones on the basis of new data and research. Regarding the suggestion that the TMDL is voluntary, it should be recognized that TMDLS are generally not self-implementing, and thus TMDL implementation is achieved through compliance with existing, new, or planned regulatory measures. As such, TMDLs are not directly enforceable against dischargers and do not create new enforcement authorities apart from the existing water quality standards they implement. Regulatory tools implementing a TMDL are vehicles for enforcement – the TMDL is not. While TMDLs

			adopted with basin plan amendments become formal implementation policy for the regional boards, the regional board in fact implements TMDLs through existing or new permits, orders, and prohibitions. Regarding the comment that the TMDL should be implemented now, TMDL implementation formally beings upon being approved by the California Office of Administrative Law, which is typically about 30 days subsequent to a TMDL approval by the State Water Resources Control Board. As a practical matter, the TMDL objectives are already being implemented by implementation of the Agricultural Order. In addition, an approved TMDL is the administrative basis for additional sources of grant funding to improve nonpoint source pollution problems, and the TMDL is an informational tool to assist Central Coast Water Board staff to prioritize resources and oversight.
2.2	Jacquelyn Griffith	In 2012 the Marina Waste Water Treatment Plant mixed their tertiary treated water with raw lower Salinas River water treated only for pathogens and piped the mix for agricultural use. How was this allowed? Will this be allowed again when by your Board's own criteria the lower Salinas River water is too contaminated for beneficial uses?	Detailed responses regarding the permit history and permit conditions of the Monterey Regional wastewater treatment facility and the Salinas Valley Reclamation Project are beyond the scope of staff responses to comments on the proposed TMDL. According to 23 Cal. Code Regs., § 3779, subd. (f), comments must specifically address the final version of the TMDL basin plan amendment as adopted by the Central Coast Water Board. Briefly, staff notes that the supplemental river water made available was intended, in part, to offset groundwater pumping and to aid in stopping or slowing seawater intrusion into groundwater aquifers. Additionally, using reclaimed water with elevated nitrogen for irrigation can reduce the need for growers to add additional chemical fertilizer to cultivated crop. With regard to the question about the mixing of river water with tertiary-treated recycled water in the context of the proposed nutrient TMDL, please note that while lower Salinas River water is high in nitrogen, it actually has a diluting effect on recycled water and the recycled water-river water mix is actually an improvement in water

quality from the perspective of nutrient concentrations, see the figure below:



From the perspective of beneficial uses, while lower Salinas River water currently frequently exceeds drinking water standards for nitrate, it is suitable as irrigation supply on many types of vegetable and leafy green crops on the basis of nitrate concentrations; additionally it is anticipated to aid in stopping or slowing seawater intrusion. Further, application of re-claimed nitrogen-rich river water on croplands, on balance, may be preferable to allowing all of the nutrient-rich river water to flow into the biologically sensitive Salinas River Lagoon – this is because cropland plants will likely remove at least some of the river nitrogen and other biostimulatory substances that otherwise would have flowed directly into ecologically sensitive

			lagoon areas.
2.3	Jacquelyn Griffith	Your report sounded like it was really the fact that the contaminants were damaging some crops that motivated the TMDL's. Aquatic life and human health are not afterthoughts. I can understand the history and the reality of strong pulls from large land owners and agribusiness. But we are looking at earth's limits in many areas and we have reached a limit. We cannot tolerate more chemical contamination in our food. We are already damaging many children's ability to reproduce, produce healthy offspring, learn ably and avoid cancer and disabling neurological conditions.	Note that the TMDL project in fact is written and developed with the protection and restoration of viable aquatic habitat and public health-based nitrate water quality standards as a top priority. Indeed, as emphasized in the TMDL project documents, two of the Central Coast Water Board's top priorities are preventing and correcting risks to human health and aquatic habitat. With that said, please note that the Water Boards are required by law to protect all beneficial uses of waters of the state, including agricultural water supply (AGR) for irrigation and livestock watering. Consequently, the TMDL identifies stream impaired for AGR beneficial uses on the basis of agricultural water quality criteria. The TMDL project does not assert there is current damage to crops from nitrate in groundwater in the lower Salinas valley. However, some crops such as avocado, grape, and citrus are known to be sensitive to elevated levels of nitrate. High levels of nitrate in water supplies also have adverse effects on livestock. Finally, it is worth noting that protecting and restoring drinking water supply and aquatic habitat beneficial uses on the basis of nitrate water quality criteria will also by extension be fully protective of all designated agricultural beneficial uses of surface waters.
2.4	Jacquelyn Griffith	Everyone knows we don't reproduce as fast as micro-organisms. Even GE crops specially bred to handle heavy sprays of pesticides are finding the weeds out-evolve them. Instead, we need to learn about the organisms that help us in our gardens, and agriculture, as in our bodies. Our children are better off eating fewer organic strawberries, for example, and water from organic agriculture runoff does not contain the POPS and can be reused for beneficial purposes and does not contaminate our aquifers.	Staff acknowledges the comments about human health. Regarding the request for short TMDL timeline milestones, please note that the Central Coast Water Board approved a 12 year milestone for achievement of health-based drinking water quality standards in surface waters. Staff maintains the 12 year milestone is a relatively aggressive timeline given the scope, nature, and magnitude of nutrient pollution is this agricultural watershed. The basis for longer timeframes (20-30 years) to achieve biostimulatory numeric water quality thresholds are described in the TMDL project documents. Further, the Central Coast Water Board is committed to re-opening the TMDL for further consideration in ten years if warranted, which

		Since the completion of the human genome project over 6,000,000 single gene site mutations have been found that affect processing of contaminants and susceptibility to different diseases and conditions. What a terrible shame it will be if by the time science understands, we have already polluted our soil, water and aquifers beyond our children's ability to be healthy and productive! Please set a short timeline for the TMDL's and make them mandatory. Please ask the State for the research and resources to help in transitioning agricultural production efficiently to safe methods that protect water, land, aquifers, people, wildlife and aquatic life for the long haul and make full use of beneficial organisms.	potentially could include revised timeline milestones on the basis of new data and research.
3.1	Kay Mercer	Thank you for the opportunity to provide comment on the Lower Salinas River and Santa Maria River Nutrient TMDL programs. Comments will primarily be focused on the Salinas River Nutrient TMDL. Nevertheless, all concerns could be extrapolated and may applied to the proposed Santa Maria Nutrient Program. This TMDL stakeholder process has been protracted for a variety of reasons. Consequently, there is a considerable history of comment letters. I am attaching a few historical comment letters, as many of the questions and concerns echoed in earlier letters and throughout the stakeholder process have not been addressed by the final TMDL.	Thank you for taking the time to submit comments. The commenter submitted several attachments consisting of 1) a public comment letter, dated Nov. 26, 2012 and submitted for the public comment period for the draft Lower Salinas Nitrogen Compounds and Orthophosphate TMDLs, prior to Central Coast Water adoption of these TMDLs on March 14, 2013; and 2) Comment letters from October 2008 regarding a draft TMDL project report for nutrients in the Santa Maria and Oso Flaco watersheds. Staff cannot ascertain what the commenter believes has not been adequately addressed by Central Coast Water Board staff in the November 26, 2013 comment letter regarding the draft Lower Salinas Nutrients TMDL. Without that information, staff is unable to address this concern. Regarding the attachments of the October 2008 comment letters on the draft TMDL project report for nutrients in the Santa Maria and Oso Flaco watersheds, these pertain to a different TMDL project and do not specifically address the final version of the Basin Plan

			Amendment under consideration here. As noted in the Sept. 3. 2013 public comment notice, State Water Board's CEQA Regulations (23 Cal. Code Regs. § 3779, subd. (f) requires that comments must specifically address the final version of the Basin Plan Amendment adopted by the Central Coast Water Board. Therefore, staff does not provide comment here on concerns regarding the 2008 Santa Maria Oso-Flaco draft TMDL reports.
3.2	Kay Mercer	Unintended and unforeseen consequences are not (and cannot be) considered First, it is understood that Clean Water Act requires a TMDL program when/if a waterbody is listed for impairment Next, it is understood that the TMDL process, in and of itself, does not take unintended or unforeseen consequences of the proposed TMDL program into account. Unintended consequence is a consistent concern that has been expressed throughout the comment record. Unfortunately, the TMDL programs, as promulgated by EPA, are grossly inadequate for complex non-point source issues. They were originally designed for point sources and the processes by which "success" is determined are poorly suited for the regulation of non-point source communities.	Staff acknowledges these comments. Detailed responses regarding U.S. Environmental Protection Agency's TMDL policy and federal regulations implementing TMDLS are beyond the scope of staff responses to comments on the proposed TMDL basin plan amendment. According to 23 Cal. Code Regs., § 3779, subd. (f), comments must specifically address the final version of the TMDL basin plan amendment as adopted by the Central Coast Water Board.
3.3	Kay Mercer	There is not a California Nutrient Surface Water Policy to give guidance to the Regional Boards on nutrient TMDLs. During verbal testimony on March 41, 2013, concern was expressed about the lack of state policy for Surface Water Nutrients. Furthermore, there are numerous nitrate task forces (CDFA, SWRCB,	The proposed policy for nutrients for inland surface waters of the State of California does not require that regional boards delay or defer development of nutrient TMDLs on the basis of possible future promulgation of a statewide nutrient policy. This issue was indeed raised before the Central Coast Water Board, and modifications to the proposed basin plan amendment were added to address this issue. In recognition of the need for flexibility and adaptive management, this TMDL and the associated basin plan amendment

		Governor's office) that have been convened to address nitrate use by the agricultural community. The findings of those task forces have not been reconciled. Therefore, it is uncertain how findings or future policies would be incorporated into this TMDL.	acknowledges that the Central Coast Water Board may reconsider the TMDLs, the proposed nutrient water quality targets, or other TMDL elements on the basis of potential future promulgation of a statewide nutrient policy for inland surface waters in the State of California. While the Central Coast Water Board is committed to re-consideration of this TMDL, if merited, on the basis of potential future adoption of a statewide nutrient policy for inland streams, staff does not have the information and facts about a future policy to be able speculate on how a possible future statewide policy would be incorporated into this TMDL. Please refer to staff response to comment 1.2 for a further discussion on the *Proposed Policy for Nutrients for Inland Surface Waters of the State of California*.
3.4	Kay Mercer	This is not a Drinking Water Program and in fact it is rare for TMDLs to consider groundwater at all. Upon making the March 14, 2013 testimony, Central Coast Water Board Members protested that there was enough evidence regarding drinking water impairment in the Salinas Groundwater Basin to justify this TMDL. It should be reiterated, herein, that the TMDL program is largely intended to be a surface water program. Any mention of groundwater is related to upwelling of contaminated groundwater and the potential for contribution to surface water exceedances. This TMDL is NOT a groundwater program per se. While there is a purported connection between surface water management practices and groundwater, neither current technical knowledge nor the existing TMDL has firmly established this	Regarding the comment on drinking water, the TMDL project documents provide the basis for protection of drinking water and designated drinking water supply (MUN) and groundwater recharge beneficial uses (GWR) of stream reaches. As noted in the TMDL documentation, the nexus between TMDLs and drinking water supply is established by the designated drinking water supply beneficial use (MUN) of surface waters, and the protection of groundwater recharge beneficial uses (GWR) of streams to prevent and control degradation of the underlying groundwater resource. It is unequivocal that surface waters and groundwaters designated for current, potential, or future use as drinking water supply in the lower Salinas Valley frequently exceed established public health-based drinking water standards for nitrate, and thus constitute a potential or future risk to public health on the basis of established water quality standards. Regarding the comment on oral testimony from the *March 14, 2013* Central Coast Water Board hearing, staff reviewed the audio recording for the March 14 TMDL agenda item and were unable to identify any comment from board members protesting that *"there was (sic) enough evidence of drinking water impairment in the Salinas*

		connection. There is a lack of knowledge about the degree and sources of drinking water impairments in the TMDL project areas.	*groundwater basin to justify the TMDL".* Staff informed the Central Coast Water Board that the TMDL and proposed basin plan amendment identified and addressed water quality impairments of designated beneficial uses for drinking water supply (MUN), aquatic habitat (COLD, WARM, MIGR), groundwater recharge (GWR), agricultural supply (AGR), and recreational uses (REC-1). The Central Coast Water Board unanimously adopted the TMDL and basin plan amendment. Regarding the remaining comments on drinking water and groundwater, as noted in the TMDL, some stream reaches in the lower Salinas Valley are legally designated for MUN (municipal and domestic drinking water supply) in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan). Therefore the TMDL appropriately and necessarily implements established health-based drinking water quality objectives for these stream reaches. Streams must be protected for current, potential, or future uses as a drinking water resource – this includes the control of pollution in these waterbodies in order to be protective of downstream and receiving waters. It should be noted that groundwaters are considered receiving waters for streams which recharge the groundwater resource; this was recognized when California adopted the groundwater recharge (GWR) beneficial use for surface waters in state water quality control plans. The Basin Plan requires the Central Coast Water Board to protect the designated groundwater recharge (GWR) beneficial use of stream waters in recognition of the intimate connection of groundwater and surface waters through the hydrologic cycle and – in part – to protect and maintain water quality in the underlying groundwater resource. As noted in the TMDL project documentation, it is widely recognized that stream infiltration is regionally or locally an important source of groundwater replenishment in the central coast region. In this TMDL, staff developed multiple lines of evidence, consistent with Section 3.11 *California's Clean Water Act Section 303(d) Listing Policy*, indicating

			that, locally, the designated GWR beneficial use of streams are not being supported – while acknowledging uncertainties about the scope and magnitude of loading via stream bed infiltration to groundwater resources underlying nitrate-polluted streams. Regarding the suggestion that groundwater considerations are inappropriate in TMDLs, staff does not concur. It is well established that groundwater and surface water are not closed systems that act independently from each other. The physical connection between surface waters and groundwater are widely recognized by scientific agencies and resource professionals: *"Although surface water and groundwater appear to be two distinct sources of water, they are not. Surface water and groundwater are basically one singular source of water connected physically in the hydrologic cycle…Effective management requires consideration of both water sources as one resource."* From: California Department of Water Resources: "Relationship between Groundwater and Surface Water" http://www.water.ca.gov/groundwater/groundwater_basics/gw_sw_interaction.cfm *"Traditionally, management of water resources has focused on surface water or ground water as separate entities….Nearly all surface-water features (streams, lakes reservoirs, wetlands, and estuaries) interact with groundwater. Pollution of surface water can cause degradation of ground-water quality and conversely pollution of ground water can degrade surface water. Thus, effective land and water management requires a clear understanding of the linkages between ground water and surface water as it applies to any given hydrologic setting."* From: U.S. Geological Survey, 1998. Circular 1139: "Groundwater and Surface Water – A Single Resource" Furthermore, the U.S. Environmental Protection Agency (USEPA) explicitly recommends that groundwater-surface water interactions be considered in TMDL development: *"While ground water and surface water are often treated as separate*

			systems, they are in reality highly interdependent components of the hydrologic cycle. Subsurface interactions with surface waters occur in a variety of ways. Therefore, the potential pollutant contributions from ground water to surface waters should be investigated when developing TMDLs." From: U.S. Environmental Protection Agency, Guidance for Water Quality-Based Decisions: The TMDL Process – Appendix B. EPA 440/4-91-001 Regarding the comment that TMDLs frequently do not consider groundwater, staff concurs with this statement. It should be recognized that many TMDLs should not consider groundwater because many pollutants of concern in stream waters do not generally interact with groundwater, or constitute a water quality management risk from the perspective of surface water-groundwater interactions (e.g., sediment TMDLs, dissolved oxygen TMDLs, temperature TMDLs, indicator bacteria TMDLs, trash TMDLs, etc.). Further, some pollutants of concern are not highly mobile in the environment and readily bind to sediment, rendering their risk of leaching or percolation to groundwater very low (e.g. phosphorus TMDLs, lead TMDLs, copper TMDLs). Also, some synthetic pollutants of concern break down rapidly into decay products, and are not likely to be transported to significant distance in groundwater systems (e.g., diazinon TMDLs). Also, as noted in the TMDL documentation, another consideration is whether or not the assimilative capacity of the underlying groundwater body is such that the infiltration from losing streams would not be expected to result in a water quality concern to the groundwater resource. Accordingly, staff endeavors to consider surface water-groundwater interactions only when appropriate and relevant in TMDL development, as consistent with U.S. Environmental Protection Agency guidance and in recognition of the Basin Plan's statutory requirement to support and protect designated groundwater recharge beneficial uses of streams. In the TMDL documentation, staff developed multiple lines of

			evidence for why surface water-groundwater interactions should be considered with respect to nitrate. This included, but was not limited to, the following: some stream reaches of the TMDL project area receive groundwater baseflow inputs, therefore it is important to consider groundwater as a nitrate *source* locally to stream reaches. Further, groundwater data from wells in the vicinity of GWR-designated stream reaches of the TMDL project area frequently exceed the drinking water standard for nitrate – therefore these groundwater resources have *no further assimilative capacity* to absorb *any* nitrate pollution – even incremental or nominal amounts of nitrate – from nitrate-polluted streams which are designated for recharging the underlying groundwater. Nitrate is highly mobile in the environment, in both surface water and groundwater systems, and there is often little vertical separation between stream beds and the shallow water table in parts of the lower Salinas Valley, providing very little opportunity for distance attenuation. Regarding the concern about uncertainties, Staff endeavored to identify and acknowledge uncertainties in the TMDL, and we endeavored to take substantial steps to reduce scientific uncertainties on the basis of available data. Scientific uncertainty is a reality in all water quality programs, including the TMDL program, which cannot be entirely eliminated. Federal regulations and guidance from USEPA do not recommend or contemplate an unwarranted search for full scientific certainty, and a resolution of all uncertainties, before TMDLs can be adopted. Noteworthy, is that TMDLs approved by the Central Coast Water Board provides for the potential of additional studies, and ongoing research, which may further inform the Central Coast Water Board when revising or re-considering this TMDL in the future.
3.5	Kay Mercer	If one insists on considering the CNP Report as evidence for adopting this Nutrient TMDL then one must consider ambiguities in the analysis.	The UC Davis report is cited as background reference in the TMDL project report; staff also cited multiple studies and multiple lines of evidence as informational background highlighting the scope and

		One may point to the UC Davis California Nitrate Project (CNP) Report as evidence of groundwater and drinking water impairment and as subsequent justification for this Salinas Nutrient TMDL. However, there are two basic flaws with the use of the CNP for these purposes. First, although the UC Davis effort concurred with previous work that groundwater concentrations have generally been increasing with time in the [Tulare and Salinas Groundwater] Basins, trends are really not that obvious when one considers that analysis of each basin independently. "Some of the [CNP] analyses indicate increasing nitrate concentrations in the Salinas Valley. Other analyses are less clear, and may indicate either decreasing nitrate concentrations, no obvious pattern of concentration change, or insignificant concentration changes for some periods and locations. The results of the UC Davis effort were intended to be spatially unbiased, but it not clear they are. Much of the groundwater nitrate data analyses made in the CMP was conducted separately for the five regions in the CNP study. However, the broadest conclusions regarding groundwater nitrate occurrence in the CNP, including the magnitude of temporal nitrate concentration trends, were based on summary statistics from the combined Tulare Lake Basin and Salinas Valley dataset It is not completely clear what consequences, if any arise from using the combined dataset for assessing groundwater nitrate occurrence at the local level" (Abrams,	magnitude of nitrate pollution of water resources of the lower Salinas Valley in the context of TMDL development. In addition, staff are required to develop TMDLs in accordance with federal law. Impaired designated beneficial uses of surface waters of the lower Salinas Valley include impairment drinking water supply (MUN) beneficial, aquatic habitat, and wildlife beneficial uses. In addition, nitrate levels in surface waters of the lower Salinas Valley are so high they locally and episodically exceed nitrogen water quality guidelines for sensitive crops, and exceed toxicity thresholds for livestock watering (AGR beneficial uses). Staff provided this body of background information in the TMDL project in an effort to inform decisions makers and the interested public about the nature and scope of nutrient water quality impairments in the lower Salinas Valley, and the nexus of these problems with TMDL development. Further, it is widely recognized that surface waters and groundwaters are not closed systems that act independently of each other. Consequently, it can be relevant to take into consideration water resources and the nature of the hydrologic cycle more broadly in the context of TMDL development – refer to staff response to comment 3.4. With that said, staff acknowledges the comments and concerns provided about the scientific basis and validity of the UC Davis Nitrate Report. However, staff will not provide detailed responses to these comments; according to 23 Cal. Code Regs., § 3779, subd. (f), comments must specifically address the final version of the TMDL basin plan amendment as adopted by the Central Coast Water Board.

		personal communication). The bottom line is that while the CNP is often quoted as demonstrating proof of worsening groundwater quality, there is enough ambiguity in the combined analysis, to lend doubt to these conclusions."	
3.6	Kay Mercer	The stated CNP naturally occurring background levels are less than some proposed numeric standards in this TMDL. It is likely, in this political environment; the SWRCB will stand by the CNP Report In that case, the question becomes whether the SWRCB will also stand behind the 9 mg/L background nitrate concentration range that is posited by the CNP Report It states, "We did not establish specific background nitrate levels. The U.S. Geological Survey typically uses nitrate levels of 9 mg/L, 13.5 mg/L or 18 mg/L as a threshold to differentiate between what is possibly natural nitrate and what is likely "anthropogenically influenced" nitrate. We developed data for all these thresholds, but have focused on the 9 mg/L [2 mg/L Nitrate-N] threshold, the 22.5 mg/L [5 mg/L Nitrate- N] threshold (half the MCL) and the 45 mg/L threshold (10 mg/L Nitrate-N] (the MCL)." When one considers the CNP's naturally occurring background levels of 9 mg/L in light of the proposed Salinas numeric targets, one cannot help but be concerned. The proposed nitrate numeric targets range from 1.4 - 6.4 mg/L in the dry season to 8 mg/L during the wet season in the Salinas Valley. Some of these proposed numeric targets are actually lower than the CNP naturally occurring	Regarding the comment on background nitrate in groundwater, the UC Davis nitrate report cites a 1996 vintage report (Mueller and Hansen, 1996) which reported nitrate water quality generalized trends and averages at the national scale. The 1996 Mueller and Hansen report states: *"Nitrate concentrations in samples from background sites generally were less than 2 mg/L for groundwater." (Mueller and Hansen, 1996)*[1] Staff concurs with the Mueller and Hansen statement that background nitrate concentrations in groundwater are *generally less* than 2 mg/L. Our estimate of background nitrate in groundwater for the lower Salinas Valley is 1.2 mg/L. As outlined in the TMDL documentation, staff chose this estimate of natural background on the basis of a recent report specific to the Salinas Valley (Moran, et al, 2011). The Moran et al. 2011 Salinas Valley data was also supplemented by isotopic analysis, providing an additional line of supporting evidence for a plausible ambient background condition in local groundwater. In general, where reputable local data is available, staff prefers to place greater weight on local and recent data over older vintage water quality data which report generalized national average values and trends. It should also be noted that proposed TMDL numeric stream water quality targets for nitrate are 2 mg/L or higher for almost all streams in the lower Salinas Valley. The exceptions are a reach of the lowermost Salinas River downstream of the community of Spreckels; this reach of river is assigned a TMDL nitrate target of 1.4 mg/l, and

		background levels. It is possible that these levels are so low as to make it impossible for currently high- nitrate demand crops or other less nitrate intensive crops to be grown in the TMDL project area. In essence, the agricultural beneficial use is likely to be destroyed by this TMDL program.	Moro Cojo Slough which is assigned a total nitrogen target of 1.7 mg/L. Staff maintains these targets are not expected to be unattainable on the basis of anticipated natural background inputs of nitrate to streams from groundwater. Further, as outlined in the proposed basin plan amendment, the Central Coast Water Board will have the opportunity in the future to modify TMDL conditions, such as numeric water quality criteria, on the basis of new research and new information. Lastly, staff does not concur with the comment that agricultural beneficial uses will likely be destroyed by the TMDL. In this context, staff presumes the comment implies the economic vitality of agriculture in the Salinas Valley, since in this TMDL staff in fact identified the need to protect livestock watering and irrigation supply (AGR) water quality beneficial uses on the basis of nitrate water quality criteria. Nutrient management strategies and nutrient water quality programs to protect drinking water and aquatic habitat have been underway for many years in agricultural watersheds across the United States and in Europe – staff is unaware of any examples of agriculture being destroyed by these programs and management strategies. [1] *Mueller D.K. and D.R. Helsel. 1996. Nutrients in the Nation's Waters: Too Much of a Good Thing? U.S. Geological Survey Circular 1136.*
3.7	Kay Mercer	While the numeric standards are NOT enforceable there is concern about how these relate to provisions in the Ag Waiver Order. The final concern regarding this TMDL is language in the newly adopted SWRCB Central Coast Ag Order. Current provisions read "24. Dischargers must comply with applicable Total Maximum Daily Loads (TMDLs), including any plan of implementation for the TMDL, commencing with the effective date or other	As the commenter suggests the proposed TMDL biostimulatory numeric targets are not water quality standards themselves; rather they are a quantitative interpretation, a prediction, of the levels of nutrients necessary to implement and achieve an existing narrative water quality objective. With that said, staff acknowledges the concern highlighted by this comment. During future iterations and revisions of the Agricultural Order, TMDL staff will endeavor to coordinate with Central Coast Water Board management and Agricultural Program staff to develop or improve language – if and as needed – which articulates the

		date for compliance stated in the TMDL." In essence, while the numeric targets are NOT enforceable standards, there is question whether the language in the Ag Waiver renders them so. If this is not the case, there needs to be some sort of explanation given to the regulated community about the inter-connectedness of the TMDL Program and the Ag Regulatory Program and the Basin Plan. At present, there is much confusion about the mechanism for which the programs and Basin Plan inform each other and how enforcement is triggered.	intent, utility, and limitations of TMDL numeric water quality targets and their nexus with regulatory programs. With regard to the comment about the inter-connectedness of various water quality programs and plans, staff provide the following information: The Basin Plan is a water quality control plan that establishes water quality standards and implementation policies for the Central Coast Region. Like most things in the Basin Plan, the water quality standards and regulatory thresholds therein do not self-implement. TMDLs are programs or plans to identify watershed pollutant sources and implement existing water quality standards established in the Basin Plan for waterbodies which are identified on the federal Clean Water Act Section 303(d) list. TMDLs are not self-implementing, and thus TMDL implementation is achieved through compliance with existing or new permits, orders, and prohibitions. As such, TMDLs are not directly enforceable against dischargers and do not create new enforcement authorities apart from the existing water quality standards they implement. Finally, it should also be noted that the Water Boards have the discretion, in the context of permit conditions, to implement the assumptions of a TMDL and its numeric water quality allocations through methodologies other than a direct translation of the TMDL's receiving water target/allocation[2]. The Agricultural Order is a regulatory measure identified by this TMDL as an implementing mechanism for the TMDL. At this time, compliance with the Agricultural Order is deemed to be a sufficient demonstration that agricultural dischargers are implementing the TMDL. [2] *SWRCB Office of Chief Counsel, Memo dated June 12, 2002. Subject: The Distinction Between a TMDL's Numeric Target and Water Quality Standards.*