Appendix D

Response to Comments

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Bacteria In the Petaluma River Watershed
Total Maximum Daily Load (TMDL)

Response to Comments

California Regional Water Quality Control Board
San Francisco Bay Region

November 2019

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STAFF RESPONSE TO WRITTEN COMMENTS ON THE STAFF REPORT AND PROPOSED BASIN PLAN AMENDMENT

We received six comment letters during the public comment period, which closed on September 3, 2019. The list of comment letters and our responses are presented here.

Comment letters received:

1. San Francisco Baykeeper (Baykeeper)
2. Mr. William Bennett (Bennett)
3. California Department of Transportation (Caltrans)
4. Sonoma County Farm Bureau (Farm Bureau)
5. Marin County Stormwater Pollution Prevention Program (MCSTOPPP)
6. North Bay Association of Realtors (North Bay Realtors)

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(1) Baykeeper 1.1	Baykeeper is concerned that the Proposed TMDL 1) lacks Load Allocations ("LAs") and Wasteload Allocations ("WLAs") that recognize seasonal variation and source-dependence in the concentration and magnitude of discharges; 2) lacks a monitoring plan to judge attainment of LAs and WLAs; and 3) is insufficient to determine the effectiveness of implementation actions or whether allocations are met, in conflict with minimum TMDL requirements established in EPA guidance for TMDL development, in general, as well as for bacteria-specific TMDLs.	Staff disagrees. The proposed Total Maximum Daily Load (TMDL) does include LAs and WLAs that considered seasonal variation in Section 8.5 of the TMDL Staff Report. Staff also disagrees that the TMDL does not include a water quality monitoring plan to judge attainment of LAs (for nonpoint sources of pollution such as onsite wastewater treatment systems (OWTS), vessel marinas, confined animal facilities (CAFs), grazing lands, and wildlife) and WLAs (for point sources of pollution such as municipal wastewater, sanitary sewer collection systems, municipal stormwater runoff, and Caltrans stormwater runoff). Please see Section 10.7 of the Staff Report for a full description. The water quality monitoring plan and tracking of the required implementation actions will allow us to determine effectiveness of the implementation actions. The TMDL is not in conflict with minimum TMDL requirements established by the United States Environmental Protection Agency (EPA). For more information on all three points, see response to comments 1.4, 1.5, 1.7, 1.8, and 1.11.
1.2	Baykeeper believes the Proposed TMDL broadly represents a status quo approach with little to no consequence for non-compliance. For example, the Implementation Actions and Schedules provided in Tables 7.8.5-3 through	Staff disagrees that the TMDL represents a status quo approach. This TMDL includes requirements for all sources of bacteria throughout the watershed. Aside from the dairy facilities and the Ellis Creek wastewater treatment plant that are already under permits all other

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	7.8.5-11 generally require compliance with existing regulations or guidance or submission of vaguely-specified implementation and monitoring plans by the regulated entities. If the implementation of those plans, which are not subject to public review, unsuccessfully meets LAs and WLAs for bacteria in the Petaluma River, there is no trigger for prescriptive action. Further, Table 8.8.5-11 merely requires monitoring of the Petaluma River and its tributaries, rather than the regulated discharges, which makes source attribution and compliance determinations impossible.	source categories are required to implement additional and appropriately-specific actions to control their waste discharges. We summarize some specific actions below, but Section 10 of the Staff Report outlines the detailed Implementation Plan. For example, this TMDL requires sanitary sewer collection agencies to submit an updated Sewer System Management Plan (SMP) that prioritizes sewer system inspections and repairs in areas within 1000 feet of the Petaluma River and its major tributaries, including a diagram of prioritized infrastructure, a time schedule for implementing short- and long-term actions, and, as necessary, a schedule for developing the funds needed for the capital improvement plan. After their submitted SMP is reviewed and accepted by the Executive Officer, they are then required to complete inspections and repairs identified in the SMP within five years of the TMDL effective date. As another example, this TMDL requires owners of Onsite Wastewater Treatment Systems (OWTS) to obtain and submit a basic operational inspection report for their existing systems, within three years of the TMDL effective date. They are then required to obtain appropriate local agency permits and complete repair or replacement of their systems, as needed, according to the nature of the failure and level of threat to water quality.

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		The vessel marina owners are required to submit a plan and implementation schedule for evaluating and ensuring adequacy and proper performance of sewage collection systems for their marina, and installing, as needed, an adequate number of sewage pumpout and dump stations. This TMDL requires commercial horse facilities to obtain coverage and comply with the Regional Water Board's General Waste Discharge Requirements Order for Confined Animal Facilities (CAF), (CAF Order). These facilities are currently not regulated under a Water Board permit. They are subsequently required to implement Best Management Practices (BMPs) and other actions specified in the CAF Order's ranch water quality control plan. Currently grazing lands in the Petaluma River watershed are not regulated under a Water Board permit. However, this TMDL requires, grazing lands owners or operators to obtain coverage and comply with applicable general waste discharge requirements order (Grazing Order) or waiver thereof (Grazing Waiver) for grazing lands/operations in the Petaluma River Watershed. They will then be required to produce a ranch or other plan required by the Grazing Order or Waiver and implement BMPs and management actions specified in the ranch or other plan. Staff also disagrees that the TMDL requires "vaguely-specified implementation and monitoring plans." The level

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		of specificity is appropriate for a watershed-wide TMDL. It would be inappropriate to specify the numbers, types, and locations of implementation actions within the TMDL, because initial actions, for example, assessment of sewer collection system leakage onto streets or into storm drains, or operational inspection of OWTS, or BMPs identified in ranch management plans will drive subsequent follow-up actions. Implementation plans submitted by the implementing parties are subject to the Water Board's Executive Officer review and approval. Therefore, the Water Board staff has the opportunity to review, require revision(s), or reject them, if they are not adequate, to ensure success. We have revised the Staff Report and Basin Plan amendment (BPA) to clearly state the requirement for the plans to be acceptable to the Executive Officer. In addition, plans submitted to the Water Board for approval are public records and available for review by the public. Staff disagrees with the comment that if implementation of plans submitted by the implementing parties unsuccessfully meets LAs and WLAs for bacteria in the Petaluma River, there is no trigger for prescriptive action. In all cases, if the implementation of those plans does not result in attainment of allocations, the implementing parties are required to take additional and subsequent or continued actions. In some cases, the additional actions are pre-prescribed. For example, if TMDL targets are not achieved in the first five years, then the sanitary sewer

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		collection agencies would be required to update their SMP to expand their assessment and repair program for the sewer lines within a greater distance of the river and its tributaries. Similarly, the Municipal Separate Storm Sewer Systems (MS4s) permittees would be required to implement additional BMPs to control bacteria discharges from their stormwater system. In some other cases, such as with the CAFs and grazing lands, the respective permits will have built-in measures to require additional/continued BMPs, as needed, in perpetuity. Yet, in some other cases, such as with the OWTS source category, the TMDL Implementation Plan requires prevention of bacteria discharges by ensuring the systems are routinely inspected and repaired, as needed. As long as the systems are evaluated and repaired such that they are not discharging bacteria to the river or its tributaries, there would be no need for any other "prescriptive actions." Similarly, bacteria discharges from the homeless encampments and vessel marinas are also addressed by requiring a plan from the responsible parties that requires their management in perpetuity, or in the case of the homeless encampments, until they no longer exist. In addition, Water Board staff evaluate TMDLs throughout the implementation process to assess progress towards attaining TMDL targets. The current TMDL language allows flexibility for Water Board staff to adaptively

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		manage bacteria sources in the watershed as BMPs and source reduction options change over time. Further, the TMDL can be formally reopened and amended should these implementation actions not result in attainment of targets. Staff also disagrees with the comment that the TMDL "merely requires monitoring of the Petaluma River and its tributaries, rather than the regulated discharges, which makes source attribution and compliance determinations impossible." The only discrete regulated discharge in the watershed that is practical to monitor at the property/facility level is the municipal wastewater discharge from the Ellis Creek wastewater treatment facility, and this is being monitored and compared against effluent limits as commenter recommends. However, as nonpoint sources of pollution constitute the majority of bacteria sources in this watershed, monitoring of diffused and spatially-comingled discharges from those sources would be infeasible, and will not yield useful information, for the purposes of source attribution and compliance determination. When pollution (e.g., bacteria) sources are diffused, it means that their discharges may be running off in many different directions from a ranch or property, through many different drainages, and accessing and measuring bacteria levels from those surface flows over land or in various small drainage channels would simply not be feasible, or cost effective. In addition, the variability of

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		bacteria level under such circumstances can be very high leading to erroneous conclusions. When sources are comingled, meaning more than one source contributes pollution (e.g., bacteria) to a discharge, even if it is possible to monitor that discharge, it is impossible to determine which source is contributing what amount of pollutant to that discharge. For example, in a likely scenario, waste discharges from a dairy facility may also include waste discharges from a local or neighboring OWTS, discharges from an upstream or neighboring horse facility or grazing ranch, etc. Therefore, for nonpoint sources such as grazing lands, CAFs, and vessel waste, it is more feasible and useful to monitor and track the actual implementation actions by each source category to determine discharger compliance with the TMDL, and to ensure that bacteria discharges are eliminated or sufficiently controlled by assessing the functioning of the BMPs. Both the dischargers and the Water Board staff will be conducting ambient water quality monitoring in the receiving waters to assess overall progress towards meeting the TMDL targets throughout the watershed.
1.3	The San Francisco Bay Regional Water Quality Control Board has demonstrated a pattern of assigning responsibility for the development of implementation and monitoring programs to regulated entities, and pursuing decadal plan-	Staff disagrees that the TMDL assigns responsibility for development of implementation and monitoring to the regulated entities. Water Code section 13242 requires a program of implementation that includes a description of the nature of actions which are necessary to achieve the

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	development processes, in several TMDLs and National Pollutant Discharge Elimination (NPDES) permits approved in recent years. This is a source of concern for Baykeeper and other observers.	objectives, including recommendations for appropriate action by any entity, public or private; a time schedule for actions to be taken; and a description of surveillance to be undertaken to determine compliance with water quality objectives. The TMDL complies with all of these requirements. To the extent that the commenter objects to requirements for regulated entities to submit plans, they are an effective means to get entities to comply, especially since the Water Board cannot specify methods of compliance under Water Code section 13360, and the TMDL sets forth clear and specific parameters and elements that have to be met in those plans. The Regional Water Board does not "pursue decadal plan-development processes" in this TMDL. In most cases, when the TMDL requires submittal of source-specific action plans by implementing parties, it does so within one year of the TMDL effective date. After the plans are developed and approved by the Executive Officer, the implementing parties have five years from the TMDL effective date to implement them. If the TMDL targets are not met by that time, the implementing parties generally need to develop a secondary enhanced plan and complete implementation within 10 years of the TMDL effective date. As an exception, OWTS implementation actions were extended to 12 years per the response to comment 4.4, to allow more time for private parties to address their OWTS repairs. Given the magnitude of the bacteria impairment in the Petaluma

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		River Watershed, that is an appropriate and realistic timeline.
1.4	Proposed TMDL does not establish the Loading Capacity of the Petaluma River for Bacteria. The Proposed TMDL fails to establish the loading capacity of the Petaluma River, resulting in an over-simplified approach to TMDL development based on the assumption that LAs and WLAs may mirror WQS. Baykeeper recommends referencing EPA guidance for strategies to estimate loading capacity for fecal indicator bacteria (FIB)-based TMDLs.	Staff disagrees that this TMDL runs contrary to TMDL guidance and demonstrates below that we followed the EPA TMDL guidance to adequately develop the loading capacity as well as associated WLAs and LAs. TMDL loading capacity, otherwise known as assimilative capacity, is defined as the maximum amount of pollutant loading (e.g., FIB) a waterbody can assimilate and still attain water quality standards (*Protocol for Developing Pathogen TMDLs, First Edition, 2001*)[1]. When using a load-based TMDL approach, individual permitted pollutant loadings (WLAs or LAs) can be calculated by multiplying the pollutant (e.g., sediment) unit concentration by the volume of water discharged from a given source during a certain time period. Measuring or estimating water flows from the abundant nonpoint source discharges in this watershed such as 200 cattle ranches, 250 individual OWTS, and more than 30 horse facilities with various drainage networks would be infeasible and error-prone task (as described in response to comments 1.2 and 1.5). Calculating a load-based water body pollutant load and then correlating that to individual WLAs and LAs for

[1] https://nepis.epa.gov/Exe/ZyPDF.cgi/20004QSZ.PDF?Dockey=20004QSZ.PDF

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		individual parcels, as well as predicting water quality response to such loads, in this manner, would be extremely inaccurate leading to wildly over- or under-protective load allocations. Therefore, we developed a concentration-based TMDL, following EPA guidance (*Protocol for Developing Pathogen TMDLs, First Edition, 2001*) in which EPA allows States to determine the most appropriate method to express a TMDL. We used a concentration-based approach here, so the loading capacity is identical to the water quality standard (WQS) to protect water contact recreation beneficial use (REC-1). This concentration-based loading capacity is more accurate than a mass-based loading capacity and is effectively more stringent because it requires meeting the WQS during all time periods and flow conditions. In other words, it does not make any allowance for dilution or seasonality. Although it is mathematically possible to estimate loading capacity for bacteria, in a complex system like the Petaluma River and its tributaries, such an estimate of loading capacity would have a lot of uncertainty, due to difficulties in accurately measuring flow volumes, representative FIB concentrations, etc. These uncertainties would necessitate incorporation of a large margin of safety (margin of safety accounts for the uncertainty about the relationship between pollutant loads and the quality of the receiving waterbody), which would minimize any benefit, if there were one, of a load

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		capacity-based TMDL. Furthermore, there are other shortcomings of a loading capacity-based TMDL in this watershed, which has many diffuse sources (see response to comment 1.5).
1.5	Proposed TMDL Does not Provide Wasteload Allocations or Load Allocations. The Proposed TMDL does not reflect essential TMDL features required to derive numeric LAs and WLAs, including a numeric source assessment, the linkage between water quality targets and numeric targets, or numeric load allocation according to long-standing guidance. The Staff Report accurately recognizes that "[t]he density of FIB in a discharge and/or the receiving waters is a technically relevant criteria for assessing the impact of discharges, water quality, and public health risk." The Staff Report, however, over-simplifies U.S. EPA guidance, which accepts that concentration-based TMDLs for FIB are acceptable alternatives to mass-based approaches. All available EPA guidance and EPA-suggested examples of FIB-based TMDLs that use concentration-based allocations incorporate a flow component, to link discharge concentrations and estimated flows to resulting concentrations in the receiving water.	Staff disagrees. The TMDL does include LAs and WLAs that were developed in compliance with EPA Guidance and the Clean Water Act (CWA). Please see Section 8.3 of the Staff Report and our response below. For many pollutants, TMDLs are expressed on a mass loading basis (e.g., pounds of a given pollutant allowed to be discharged into a water body per day). For FIB, however, TMDLs can be expressed in terms of organism counts (or resulting concentration), in accordance with the Code of Federal Regulations 40 CFR 130.2(i): "TMDLs can be expressed in terms of mass per time, toxicity, or other appropriate measure," and NPDES regulations at 40 CFR 122.45(f): "All pollutants limited in permits shall have limitations...expressed in terms of mass except... pollutants which cannot appropriately be expressed by mass." As discussed in Section 8.3 of the Staff Report, for FIB, it is the number of organisms in a given volume of water, or density, expressed as most probable number (MPN) per / 100 mL, and not their total number (or mass) that is significant with respect to public health risk and protection of beneficial use. The density of FIB in a discharge and/or in the receiving waters is the technically relevant criteria

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	The Proposed TMDL also fails to recognize that specific source categories, particularly stormwater sources, will almost certainly never meet the established numeric target, based on the prescriptions established in the Proposed TMDL Implementation Plan. To illustrate the gulf between what the TMDL requests and what is currently being discharged, consider recent fecal indicator bacteria results, based on samples collected by Baykeeper in 2019, from the intake and discharge points of a pump station along a tidal portion of the Petaluma River, which drains agricultural lands and confined animal facilities ("CAFs"). These samples represent stormwater taken on a day with a recorded 24-hour precipitation depth of 1.83 inches.	for assessing the impact of discharges, water quality, and public-health risk, not the total load of FIB. The applicable FIB density used in this TMDL is the value expressed by EPA for protecting recreational water quality in its 2012 nationally recommended water quality criteria (*2012 Recreational Water Quality Criteria, 2012*)[2]. EPA guidance (*Protocol for Developing Pathogen TMDLs First Edition, 2001*) recommends establishing density based TMDLs for pollutants that are not readily controllable on a mass basis (page 7-1). Therefore, the TMDL, and associated WLAs and LAs as well as the TMDL targets in this project are all expressed in terms of FIB densities. Establishment of a density-based, rather than a mass/load-based TMDL for FIB, carries the advantage of eliminating the need to conduct a complex and highly error-prone analysis. A load-based FIB TMDL would require calculation of acceptable loads based on acceptable bacterial densities and anticipated discharge volumes, and then back-calculation of expected densities under various load reduction scenarios. Since discharge volumes in the Petaluma River Watershed are highly variable and difficult to measure, such an analysis would

[2] https://www.epa.gov/sites/production/files/2015-10/documents/rwqc2012.pdf

Pathogen concentrations from pump-station stormwater discharges to Petaluma River, from grazing lands and CAFs

Date	Time	Sample Location	*E Coli* concentration (MPN/ 100ml)	*Enterococcus* concentration (MPN/ 100ml)
1/16/19	14:30	Intake	24,196	6,900
1/16/19	14:30	Discharge -a	12,033	6,100
1/16/19	14:30	Discharge -b	4,106	6,500
1/16/19	14:30	Field Blank	non-detect	non-detect

Compared with the load allocations reflected in Table 7.8.5-2 of the Proposed TMDL [BPA], Enterococcus concentrations must be reduced by over 100x, which seems highly unlikely given the limited scope and consequences of non-compliance with the proposed TMDL Implementation Plan. Moreover, urban runoff contains comparable or higher FIB concentrations, which generally requires a flow-reduction strategy, based on the assimilative capacity of the receiving water, as documented in other California-based TMDLs.

The Proposed TMDL fails to perform the necessary analysis to establish numeric LAs and WLAs of fecal indicator bacteria for Petaluma River's various sources. By setting LAs and WLAs equal to water quality standards, the Proposed TMDL arbitrarily assumes flows from all sources are equivalent and ignores long-standing guidance and inevitably involve a great deal of uncertainty and be unreliable for purposes of setting loads.

Discharge volumes from FIB sources or source areas in the Petaluma River Watershed are highly variable both spatially and temporally (e.g., most tributaries are seasonal), and thus difficult to measure because of the complexity of the system, size of the watershed, and number of non-point sources of pollution constituting the significant majority of bacteria sources. Non-point sources of pollution, by definition, are diffused, comingled (see response to comment 1.2), and difficult to accurately measure. In addition, collecting dry weather runoff and stormwater runoff flow combined with FIB concentrations, in order to calculate FIB loads, at 17 dairies, 32 horse facilities, up to 200 grazing parcels or up to 250 OWTS parcels is not feasible.

Grazing lands and OWTS have no point source discharge to receiving waters. In general, confined animal facilities (dairies or horse facilities) do not have a single or even just a few points of discharge that can be monitored in order to identify the load and measure attainment of the reduced load after the implementation measures have been applied. Consider a 200-acre cattle ranch with dozens of small headwaters that only flow during storm events or seasonally. These channels will rarely concentrate into a single perennial stream leading from a single property that could be used as a point of compliance for that individual ranch. Also, there may be a neighboring ranch across the creek whose actions affect the water quality at such a point of compliance.

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	TMDL examples of where load reduction via flow retention and detention is an appropriate strategy for meeting TMDL load allocations for FIB. The Proposed TMDL establishes unrealistic LAs and WLAs based on concentration-based TMDLs, which lack transparent compliance criteria. To what degree must loads be reduced? Are concentration-based allocations to be monitored at the end-of-pipe and edge-of-field? Will the Water Board be judging compliance in the receiving water? If so, how will individual allocations be monitored and judged for compliance with the TMDL? Baykeeper recommends referencing EPA guidance for strategies to estimate loading capacity and resulting LAs and WLAs.	Measuring compliance with the TMDL allocations by evaluating BMPs that generally limit cattle interactions with these seasonal and perennial channels is more effective. Horse CAFs also lack one or even a few places of discharge that could be monitored for permit and TMDL compliance because they generally do not have discharge points, and generally do not store liquid waste which could be accidentally discharged (liquid waste is prohibited from direct discharge into water bodies in the CAF Order). Stormwater runoff from CAFs corrals and areas with possible manure are normally not concentrated thus there is not a simple point of discharge that can be used to monitor FIB levels. Therefore, the Board's CAF program requires BMPs to prevent stormwater from accessing corrals and solid waste storage areas via berms and roofing or by cleaning up all waste prior to rain events. It is more effective to review a ranch plan and know they put a permanent roof over their waste pile storage areas than it is for the Water Board to obtain access to private property during a rain event, which normally occurs at night, and monitor FIB levels from runoff possibly intersecting a waste pile. A single horse ranch may store manure waste in a several locations and have a number of corralled areas. So, stormwater compliance monitoring at five to 10 locations per horse CAF is not as effective as doing a single site inspection prior to the rainy season and evaluating if the

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		structural ranch BMPs were implemented and reviewing the non-structural BMPs with the rancher to make sure the process is in place for cleaning of the corrals prior to the winter rains. Further, EPA guidance, especially draft guidance in the case of the referenced 1999 TMDL guidance, are not prescriptive. By definition, they are meant to provide general guidance to states developing TMDLs based on the thinking of EPA at that time. Moreover, EPA has already approved bacteria TMDLs in this region that use the same approach as the proposed TMDL for the Petaluma River Watershed. In addition, EPA guidelines are primarily focused on addressing point-source discharges of pollution, which as mentioned before, are rare in this watershed. A load-based approach for a TMDL can work well when there are a number of point sources already regulated by NPDES permits. Compared to non-point sources, point sources are substantially easier to separate, monitor, assess, and track. Therefore, staff has long used a much more practical and efficient approach of using a concentration-based TMDLs for bacteria in this region. This TMDL uses the same proven and effective approach as can be seen in the

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		reductions in bacteria levels observed in Tomales Bay Tributaries[3] and Richardson Bay[4] TMDLs. Staff disagrees that specific source categories, particularly stormwater sources, will almost certainly never meet the established numeric target. The numeric targets in this TMDL are meant to be measured in the receiving waters, where the beneficial uses exist and need to be protected, not in the storm drain outlets, where there is a high variability rate in the concentrations of pollutants of concern. Based on past experiences in some other TMDLs (e.g., Richardson Bay TMDL, Tomales Bay Watershed TMDL) these TMDL targets are achievable. Further, the average *Enterococcus* single sample concentrations in the receiving water, in the vicinity of the example grazing land and CAF discharge presented by the commenter, meet the TMDL target. As this location is tidal and estuarine, the *E. Coli* targets do not apply to this section of the Petaluma River. In regard to the comment that urban runoff FIB load reductions require a flow-reduction strategy, we disagree that such methods should be required in this largely undeveloped watershed. We do agree that general stormwater practices "sinking" stormwater containing FIB

[3] https://www.waterboards.ca.gov/about_us/performance_report_1718/plan_assess/tmdl_outcomes/r2_tomales_bay_pathogens.pdf

[4] https://www.waterboards.ca.gov/about_us/performance_report_1718/plan_assess/docs/fy1718/2018_richardson_bay_tmdl.pdf

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		will reduce this source's bacteria contribution to receiving waters and result in environmental improvements. However, stormwater low impact development (LID) BMPs focused on slowing and spreading stormwater, which is usually effective at reducing concentrations of sediment-bound pollutants, are generally both expensive and not that effective at reducing FIB bacteria concentrations. Therefore, this TMDL does not require specific LID-based or flow-based reductions for stormwater runoff. Instead, it utilizes a phased approach, starting with addressing common sources such as human waste from homeless encampments and sanitary sewer systems, and pet waste from domestic animals. The proposed TMDL does not assume flows from all sources are equivalent. One of the biggest advantages of using a concentration-based TMDL is that it does not require or rely on flow measurements which are highly variable especially during storm events. Instead, it relies on a target FIB concentration of bacteria in the receiving waters, which can be reliably measured and tracked over time. As long as the target FIB concentration is achieved in receiving waters, there will be no need to measure flows and associated FIB levels from 200-300 individual properties, which would be infeasible for property owners or the Water Board to measure, would be extremely expensive to sample at multiple locations and over multiple sized rain events, and, in many cases, infeasible, as explained above.

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		To answer the question, “to what degree must loads be reduced?”, the current bacteria concentrations in the Petaluma River and its tributaries must be reduced to the degree necessary for the TMDL numeric targets to be met. The numeric targets are measured in the receiving waters, where the beneficial uses exist. In order to meet the proposed numeric targets in the river, on average from all stations monitored, the *E. Coli* concentrations need to decrease by 85% and the *Enterococcus* concentrations need to decrease by 55%. In regard to questions about compliance monitoring, this information is described in Section 10.7 of the Staff Report. In short, end of pipe monitoring will be used for the Ellis Creek wastewater treatment plant, but receiving water monitoring in conjunction with best management practices (BMPs) implementation will be used to determine compliance with the allocations as opposed to end of pipe or end of field monitoring since those are not appropriate methods to monitor grazing sources, OWTS, horse CAF sources, or hundreds of stormwater sources. The allocations for all human sources of bacteria with a WLA or LA of zero will be verified by ensuring all required implementation measures are completed. These could include ensuring the sanitary sewer collection agencies have assessed and repaired or replaced their faulty sewer lines, the OWTS owners have inspected, and repaired or replaced their faulty systems, and the vessel

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		marinas have assessed and ensured the adequacy and proper performance of their sewage collection systems. For the nonpoint sources of bacteria, which have received a concentration-based allocation that is identical to the numeric targets or water quality objectives, the compliance with the allocations would primarily be achieved through tracking of the required implementation actions and the bacteria concentrations in the receiving water in the vicinity of their discharges, as highlighted in the load allocation discussion in Section 8.3 of the Staff Report. As explained above, due to the very high number and diffused and comingled nature of the bacteria discharges from various sources, it is not practical to track and monitor source discharges individually.
1.6	Proposed TMDL does not provide a source assessment. The Proposed TMDL and Staff Report provide a narrative description of known sources and compile available date, yet this information is not used to inform numeric LAs or WLAs. Baykeeper recommends referencing EPA guidance for strategies to perform source analyses that incorporate numeric analyses of the amount, timing, and point of origin of FIB loading.	Staff disagrees that the TMDL does not include a source assessment. Please see Section 7 of the Staff Report, which evaluates the sources of fecal indicator bacteria. As recommended by the EPA guidance, the proposed TMDL has identified the bacteria sources in the watershed, characterized them, and grouped them into logical categories. Numerically calculating the amount, timing, and points of origin of FIB loadings in a large and complex watershed such as Petaluma River is not feasible or beneficial as it requires information and data that are not available, unreliable, or highly speculative (see response to comments 1.4. and 1.5 for further

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		explanation). Instead, the TMDL focuses on ensuring FIB discharges from all sources are adequately reduced or eliminated, by requiring appropriate control measures, such that the conservatively-set TMDL LAs and WLAs are met. As such, the source assessment conducted for this TMDL is appropriate and satisfactory.
1.7	Proposed TMDL does not Consider seasonal variations or provide a Margin of Safety. The Proposed TMDL includes statements regarding margin of safety and seasonal variation but undertakes no formal analysis needed to fulfill the regulatory intent. The Proposed TMDL concludes that "[n]o additional or explicit margin of safety is needed for this TMDL" since concentration-based load allocations mirror the U.S. EPA criteria and State Water Board water quality objectives for bacteria. As above, repetition of the applicable numeric criteria does not constitute a load allocation exercise. Similarly, a one-sentence statement stating that the requirement to undertake a margin of safety analysis has been performed, since allocations were set to unrealistically low concentrations that fail to consider the assimilative capacity of the Petaluma River, does not address uncertainty, and uncertainty is what motivates the need to calculate a margin of safety.	Staff disagrees that the proposed TMDL does not consider seasonal variations or provide a margin of safety. The margin of safety (MOS) is a required component of a TMDL and accounts for the uncertainty about the relationship between pollutant loads and the quality of the receiving waterbody (CWA section 303(d)(1)(c)). The MOS is traditionally either implicitly accounted for by choosing conservative assumptions about loading and/or water quality response or is explicitly accounted for during the allocation of loads (*Protocol for Developing Pathogen TMDLs, First Edition, 2001*). In this TMDL, we included an implicit MOS as described below. As discussed in Section 8.4 of the Staff Report, the TMDL is based on the more protective of EPA's 2012 nationally recommended criteria for recreational water quality and identical to the statewide bacteria objectives for water contact recreation (REC-1) beneficial use protection such that an MOS is implicitly included by the selection of this TMDL target and associated LAs and WLAs. The statewide bacteria objectives for REC-1 protection incorporated an implicit MOS by establishing limitations

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	The Proposed TMDL takes a similarly abrupt approach to satisfy the need to account for seasonal variation. Without context, the Proposed TMDL explains that "[w]hile FIB densities can be greater during the winter wet season due to factors such as stormwater runoff, they can be high at any time of year." This statement provides the rationale for ignoring seasonal variations to the TMDL and associated allocations. Bacteria concentrations are nearly always higher during the wet season – due virtually entirely to stormwater runoff as a transport pathway for bacteria from non-point sources. This is why the EPA and TMDL writers around the nation have undertaken the difficult work of expressing seasonally-variable allocations, for various flow regimes, to represent times of peak loading and variable in-stream conditions. Recommended approaches for establishing seasonally-variable daily load expressions include, among other strategies, the load duration approach, with daily loads expressed as flow variable rates. The Proposed TMDL thus fails to adequately recognize a margin of safety or seasonal variation to inform the development of numeric LAs and WLAs of fecal indicator bacteria for the Petaluma River. Baykeeper recommends referencing EPA	based on the lower of EPA's two acceptable illness rates (i.e., 32 gastrointestinal illnesses per 1,000 recreational users, versus 36). This TMDL considered the need for seasonal variation as required such that water quality standards will be met for the allocated pollutant during all seasons of the year (40 CFR 130.33(b)(8)). This consideration was discussed in Section 8.5 of the Staff Report. There was no need to include seasonal variation of the TMDL because the TMDL was set at the maximum allowable concentrations of *E. coli* and *Enterococcus* necessary to protect public health during all times of the year. In other words, because the TMDL uses concentration-based limits as the WLAs and LAs, it intrinsically accounts for seasonality in both wet and dry seasons. Put another way, we are not proposing a higher (less protective) TMDL for wet seasons; the same protective TMDL must be attained during all seasons.

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	guidance for strategies to estimate loading capacity and resulting LAs and WLAs.	
1.8	The proposed allocation for the Petaluma River is not daily. The CWA and its federal implementing regulations require these TMDLs to establish "daily" load limits. But the proposed language describing a "rolling 30-day E. Coli geometric mean" does not meet this requirement. Further, the Regional Board does not even attempt to explain how, in its view, a six-week interval E. Coli geometric mean, calculated weekly, can function as a "daily" load. Thus, the Regional Board has not provided a daily wasteload allocation as required by law.	Two federal circuit courts of appeal have interpreted the term "total maximum daily load" differently, one holding that loads must be expressed as "daily" loads and the other holding that the term TMDL is susceptible to a broader range of meanings than loads calculated on a daily basis. (*Friends of Earth, Inc. v. EPA*, 446 F.3d 140 (D.C. Cir. 2006) and *NRDC v. Muszynski*, 268 F.3d 91 (2nd Cir. 2001.) These decisions are controlling precedent for cases brought in those circuits (i.e., the District of Columbia, New York, Connecticut, and Vermont). EPA does not require "daily" load limits outside the D.C. Circuit and recognizes that loads should be the appropriate time step to meet water quality standards (See, e.g., *EPA Memo on Establishing TMDL "Daily Loads," 2006*)[5]. It is true that the proposed allocations are not daily because the TMDL targets and some WLAs and LAs are expressed in a manner equivalent to the nationally-recommended recreational water quality criteria set by EPA, which is the appropriate time step to meet water quality standards. EPA guidance asks states to provide a daily load calculation in TMDLs if the load was not already

[5] https://www.epa.gov/sites/production/files/2015-10/documents/2006_11_21_tmdl_anacostia_memo111506.pdf

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		expressed in a daily format. In this case, with a concentration-based TMDL, the daily allowable concentration metric is the same as an instantaneous concentration (e.g., the statistical threshold value (STV) stated in the TMDL numeric targets) and should be expressed as the FIB concentration per 100 mL. We omitted this daily expression of the TMDL, WLAs, and LAs in the draft TMDL, so we have revised the discussion in Sections 8.2 and 8.3 of the Staff Report and Sections 7.8.5.5 and 7.8.5.6, of the BPA to include this information as follows: *The "daily" load expression of this TMDL is equivalent to the STV value for Enterococcus and/or E. coli as applicable based on water body type.* *The "daily" load expression of the WLAs and LAs are equivalent to the appropriate STV, unless the discharge of bacteria is prohibited and the allocation is zero.*
1.9	Staff Report underestimated the scope and cost of compliance with the Proposed TMDL. The scale and associated cost of achieving water quality standards for bacteria are significantly under-represented. For example, the implementation actions for municipal stormwater in Table 7.8.5-9, which prioritizes homelessness and pet waste, does not closely resemble the implementation actions	Commenter does not provide actual or detailed information as to how we have underestimated cost of implementation measures. We would revise our estimates if actual and verifiable cost numbers are provided for the appropriate BMPs or requirements. For example, during the public review period we received some additional cost information for the OWTS source category. After we were able to verify the recommendations, we revised our cost estimates accordingly.

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	prioritized to address bacteria impairment in other areas. Flow reduction, 'first-flush' capture for treatment at wastewater plants, stormwater treatment, and large-scale adoption of green infrastructure is required in other regions and would be effective, here. Similarly, Table 7.8.5-7 requires CAFs to obtain coverage and comply with the Water Board's General Waste Discharge Requirements Order No.R2-2016-0031 for CAFs. Ignoring the fact that such facilities are already required to obtain coverage under this permit, federal standards define CAFOs as point sources and require WLAs, rather than LA's as indicated in Table 7.8.5-2 of the Proposed TMDL. WLAs apply to sources defined as "point sources" under NPDES regulations. Additionally, the Regional Board's CAF permit follows statewide standards applicable to any waste discharge requirements for CAFs, which establish the minimum standards for discharges of animal waste, serving as General Waste Discharge Requirements ("WDRs") for discharges of waste from CAFs to waters of the State. The Statewide standards require containment of manure, wash water, and stormwater runoff from animal	40 CFR § 122.23 designates only certain concentrated animal feeding operations (CAFOs) as point sources subject to NPDES permitting requirements. (40 CFR § 122.23(b) and (c).) NPDES permits are only required for CAFOs that discharge pollutants into waters of the United States. (40 CFR § 122.23(d).) There are no CAFOs in the Petaluma watershed that have coverage under an NPDES permit. The Water Board has been regulating dairies in this watershed with Waste Discharge Requirements (WDRs) Orders. That is because complying with the Water Board's General WDRs Order No. 2016-0031 (CAF Order) makes obtaining NPDES permits unnecessary. Specifically, under that order, confined animal facilities (defined as any place where cattle, calves, sheep, swine, horses, mules, goats, fowl, or other domestic animals are corralled, penned, tethered, or otherwise enclosed or held and where feeding is by means other than grazing under Cal. Code Regs., tit. 27, § 20164) are prohibited from discharging waste, including stormwater contacting waste, from the animal production or housing area to any surface area, as well as applying manure or process water to land in a manner that discharges into surface waters. The dairy-based CAFs in the Petaluma watershed are currently enrolled in the CAF Order and all horse-based CAFs will be regulated by this order as well. As such, there will be no need for the Water Board to issue an NPDES permit to regulate such facilities. Thus, to our knowledge, there are

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	confinement areas. CAFs must be designed and constructed to retain all facility wastewater generated, together with all precipitation on, and drainage through, manured areas during a 25-year, 24-hour storm. The Petaluma River Watershed hosts CAF facilities subject to these requirements, and the Proposed TMDL Implementation Plan must reflect compliance criteria. Baykeeper encourages a re-examination of the Implementation Plan to ensure the scope and associated costs are appropriate to achieve compliance with the TMDLs.	no NPDES CAFO sources in the Petaluma watershed such that a WLA for these sources is necessary. In terms of cost estimates, all the dairies are already permitted by the Water Board's CAF Order and are required to comply with its requirements, including the statewide minimum standards of Title 27 for CAFs. Therefore, no additional implementation costs would be associated with complying with the proposed TMDL for this source category. That is why we did not include those costs in the economic analysis. The requirements of the 25-year 24-hour storm are included in our CAF Order and will continue to be required. The commercial horse facilities in the Petaluma River Watershed, on the other hand, are not currently enrolled in the CAF order. So, there will be new costs associated with their enrollment in and compliance with the CAF Order as required by the proposed TMDL. These costs are identified and discussed in Section 11.4.5 of the Staff Report.
1.10	Implementation Plan Elements Insufficient to Ensure Achievement of Wasteload Allocations. Accordingly, a TMDL must include an implementation plan "that explains the techniques that will be used to meet the load reductions identified."	Staff disagrees that the implementation plan is insufficient to achieve the wasteload allocations or the load allocations. The TMDL Implementation Plan (Section 10 of the Staff Report) does describe the general actions each entity must take to comply with the TMDL (e.g., reduce bacteria levels in municipal stormwater runoff), and lists a range of appropriate means of accomplishing

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	Specifically, the implementation plan must include a "description of the implementation actions and/or management measures required to implement the allocations contained in the TMDL, along with a description of the effectiveness of these actions and/or measures in achieving the required pollutant load or reductions." The proposed TMDL does not satisfy the stated purpose or the minimum requirements of TMDL implementation plans. Here, the Regional Board attempts to delegate its duty to describe specific measures that will be taken to reduce pollutant loads to the sources themselves. It provides that the source of bacteria discharges, such as municipal stormwater entities and cities with responsibility for homeless encampments, will develop plans to describe BMPs and other measures for implementation. The duty to develop these plans for inclusion in TMDLs, however, rests on the Regional Board. We respectfully request for staff to conduct the requisite analysis necessary to present the minimum elements necessary for any TMDL submitted to EPA, as established by EPA guidance.	these actions (e.g., implementing structural or nonstructural BMPs). In addition, it establishes specific elements and parameters required by the implementing parties to further develop source-specific action plans. As discussed in response to comment 1.2, overly prescribing site- or property-specific actions would be inappropriate and premature at this point. Required actions such as the assessment of sewer collection systems leakage or OWTS functionality and performance will drive subsequent follow-up actions that are unknown at this time. The Clean Water Act does not require TMDLs to have implementation plans. As a matter of state law, however, the Regional Water Board is required to include an implementation plan for TMDLs. Specifically, federal law requires the Regional Water Board to incorporate TMDLs into its Basin Plan. (40 CFR § 130.7(d).) State law, in turn, requires that basin plans have a program of implementation to achieve water quality objectives. (Wat. Code, § 13050(j).) The implementation program must include a description of actions that are necessary to achieve the objectives, including recommendations for appropriate action by any private or public entity; a time schedule for these actions; and a description of surveillance to determine compliance with the objective. (Wat. Code, § 13242.) The proposed program of implementation complies with these requirements—it describes the actions necessary to achieve the TMDL, a

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		time schedule for action, and monitoring requirements. A program of implementation is by definition programmatic and need not set forth, for example, all of the details of a permit requirement that may be imposed when implementing the TMDL. Moreover, as stated in *City of Arcadia v. U.S. Environmental Protection Agency* (N.D. Cal. 2003) 265 F. Supp.2d 1142, 1144-1146, a TMDL does not by itself prohibit any conduct or require any actions; rather, it forms the basis for further administrative action that may require or prohibit conduct regarding particularized pollutant discharges and waterbodies. Consistent with these principles, the proposed program of implementation establishes the framework of actions that the Regional Water Board will require of regulated entities to achieve the TMDL, including the requirement to submit plans to control bacteria discharges. It is neither required nor feasible for the Water Board to develop site-specific plans for inclusion in the TMDL.
1.11	Bacteria TMDL Fails to Require Monitoring for Effectiveness of Load Reduction Actions. Pursuant to Section 7.8.5.8, "[t]he implementing parties are responsible for developing and implementing a comprehensive monitoring plan." This is in conflict with EPA guidance, which requires all TMDL submittals to include a monitoring or modeling plan "designed to determine the effectiveness of the implementation	Staff disagrees that the TMDL fails to require monitoring for effectiveness of load reduction actions, monitoring for receiving waters, and for specific categories of dischargers. As described in Section 10.7 of the Staff Report and Section 7.8.5.8 of the BPA, the required water quality monitoring plan achieves all these. As stated, The implementing parties are responsible for developing and implementing a comprehensive monitoring plan to accomplish the following goals:

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	actions and to help determine whether allocations are met." The Bacteria TMDL specifically excludes monitoring requirements for CAFs, in conflict with the Regional Board's own WDRs. Monitoring requirements for receiving waters and for specific categories of dischargers is not provided, in conflict with bacteria TMDLs and stormwater NPDES permits throughout the Los Angeles, Santa Ana and San Diego regions. Nor does the Bacteria TMDL request refinement of bacteria source identification through, for example, methods described in *The California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches*. Baykeeper requests that the Regional Board develop a monitoring plan sufficient to meet the dual objectives of assessing the adequacy of control actions to implement the TMDL, and to provide a basis for reviewing and revising TMDL elements or control actions in the future, in accordance with federal guidance.	1) better characterize FIB contributions from their respective sources/jurisdictions, 2) assess BMP effectiveness, and 3) assess progress towards attainment of their respective LAs and WLAs. Relying on Water Code section 13267, the Regional Water Board will require the implementing parties to submit a monitoring plan for achieving these goals within one year of the TMDL effective date... Sampling stations should be identified at a number of major tributaries and along the river's main stem [e.g., receiving waters] at locations associated with particular sources and locations, where previous water quality data were collected, to identify water quality trends. In addition, monitoring of FIB discharges direct from a source (e.g., stormwater outfalls) within the watershed is an accurate method to characterize and identify their contributions and reductions resulting from BMPs… The Regional Water Board will collect water quality data to evaluate whether TMDL targets are attained throughout the Petaluma River watershed… Specifically, it will collect data every five years, starting after the effective date of the TMDL. Sampling stations will be identified at a number of major tributaries [e.g., receiving waters] and along the river's main stem at locations associated with particular sources and

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		locations where previous water quality data were collected to identify water quality trends. We have revised Table 10.9 of the Staff Report and Table 7.8.5-11 of the Basin Plan, to more clearly state that the implementing parties are required to not only develop a water quality monitoring plan, as specified, but also to implement it. Further, the proposed TMDL monitoring plan is not in conflict with the Water Board's WDRs Oder for CAFs. Nothing in the proposed TMDL prevents or void any of the requirements of that Order. The permitted CAF facilities are still required to comply with the monitoring program laid out in the CAF Order. To clarify this point, we have revised the relevant discussions in Section 10.7 of the Staff Report and Section 7.8.5.8 of the BPA as follows: *"The CAF permittees are still required to comply with the monitoring requirements of the Water Board's CAF Order. However, in lieu of the TMDL water quality monitoring,…"* As stated above, the proposed water quality monitoring plan does require further identification and characterization of the source areas or land uses with greatest bacteria contributions (see Section 10.7 of the Staff Report). In addition, even though we have discussed the *California Microbial Source Identification Manual* with the implementing parties and most of them are aware of it, we have revised Section 10.7 of the Staff Report and

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		Section 7.8.5.8 of the BPA to specifically reference this manual, as follows: *"Implementing parties should use the methods described in The California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (Griffith, et al. 2013)."*
1.12	Bacteria pollution is often overlooked in the San Francisco Bay region, due in part to the perception REC1 exposure is limited to so-called fringe activities like kiteboarding or open water swimming. In fact, San Francisco Bay is a world-class destination for such activities and all forms of board sports, sailing, swimming, and other recreational activities throughout the year. The Petaluma River is a high-quality resource for board sport enthusiasts, kayakers, and anglers. The Regional Board should use this Proposed TMDL as a means to enhance water-oriented recreation, in general. Technical guidance and numerous bacteria TMDLs exist from which to glean useful examples for implementation and monitoring strategies aimed at urban beach settings. We hope that staff and members of the Board amend the draft Bacteria TMDL to introduce enforceable implementation and monitoring guidelines that will ensure attainment of water quality standards within a defined period.	Staff disagrees that bacteria pollution is overlooked in the San Francisco Bay Region. The Water Board has completed six bacteria TMDLs, is proposing this one, and two more are in the early stages of development. Protecting the San Francisco Bay, Pacific Ocean, and Bay Area creeks and rivers is a very high priority for our Water Board as demonstrated by these past actions and current efforts. Staff agrees that Petaluma River is a high-quality resource for various water-oriented recreational uses. In developing this TMDL, we strived to strike a balance between requiring enough environmental actions to improve water quality and support beneficial uses of the river while being feasible, efficient, and not requiring unnecessary actions. The TMDL has explicit check-in points for many implementing parties and Water Board to evaluate actions taken and look at the expected associated improvement in water quality. If improvements are not observed, then implementing parties are required to propose additional actions. Such an adaptive approach

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		is necessary when developing broad TMDLs that apply to entire watersheds.
(2) Bennett 2.1	I would like my property to be excluded because the home is more than 200 feet from the creek.	Our geographic information system (GIS) analysis indicates that your onsite wastewater treatment system (OWTS) may be located within the advanced protection management program (APMP) boundary (i.e., within 200 feet of a stream). It is the location of the OWTS tank or dispersal system and not the house that determines whether a system is within the APMP boundary or not. If you believe your OWTS is outside of the APMP boundary, please provide a site survey completed by a qualified professional that shows the location of your OWTS tank and dispersal lines and its distance from the nearby stream. We will review those documents and, if needed, remove your parcel from the list of OWTS that require inspection.
2.2	There was no testing of the water or soil to develop this TMDL.	Staff disagrees. We conducted extensive water quality monitoring throughout the watershed for a number of years. Please see Section 5 of the TMDL Staff Report for a description of the water quality monitoring conducted and a summary of its results and findings. Since this TMDL addresses a water quality impairment, we did not conduct any soil bacteria testing, as it was not needed.
2.3	Sonoma County Water Agency refuses to clear debris from Marin Creek because of endangered species issues and this causes stormwater to overflow onto adjacent fields which are grazed by	We checked with the Sonoma County Water Agency (SCWA) on their maintenance practices for Marin Creek. We were informed that the Water Agency does not hold any flood control easements on Marin Creek, and

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	animals. At those times, stormwater picks up fecal matter carrying it into the Petaluma River. SCWA should clear the debris from the creek.	accordingly, does not have a responsibility to maintain the creek. Also, the proposed Petaluma River Watershed grazing program for controlling waste discharges from the grazing lands, when implemented, will require property owners to manage their practices (e.g., preventing animals access to low spots that have hydrologic connectivity to the creek and to the creek itself, usually through fencing and/or provision of alternative water supplies on the ranch) such that the likelihood of animal waste getting into the streams during the stormwater runoff events is significantly lowered.
2.4	Asking homeowners to pay for inspections on their property is a violation of proposition 218.	Proposition 218 requires voter approval for all local government taxes, and expands the local initiative power by voters to reduce or repeal any local government tax, assessment, fee, or charge. The TMDL requirement for homeowners to have their OWTS inspected does not constitute a local government tax, assessment, fee, or charge.

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2.5	The Water Board's selection process and criteria to identify septic systems within 200 feet of Petaluma River or its major tributaries was questionable and haphazard.	Staff disagree that our process to identify OWTS that are likely to cause and contribute to the bacteria impairment is haphazard. As described in Section 7.6 of the TMDL Staff Report, we followed a systematic GIS approach for identifying OWTS located within the APMP boundary. The 200-foot APMP distance covers the systems within a distance that is twice as long as the standard minimum setback distance of 100 feet historically used by the Regional Water Board to protect nearby waterbodies. Thereby, it provides an additional safety factor for controlling potential OWTS discharges from malfunctioning systems most likely to adversely impact water quality of the river and its tributaries.
2.6	The TMDL has missed a number of neighboring properties with homes [OWTS] within 200 feet.	Thank you for bringing this to our attention. We have tried to be as accurate in our GIS selection process as possible. However, after looking into your neighboring properties, we realized we had missed a few parcels whose OWTS are potentially within the APMP boundary. We have since added these properties, and other ones we discovered during this practice, to our APMP boundary parcel list.
2.7	I ask that the Water Board assume the cost of all septic system inspections. I will give permission for Water Board or other inspectors to look at my septic system but do not want to pay for that inspection.	Thank you for being willing to allow inspectors on your property. It is the responsibility of property owners to inspect their OWTS to ensure their proper functioning and operation. Nonetheless, we are investigating the possibility of providing financial help for the low-income property owners to perform such inspections.

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		We discussed the cost of the inspections and repairs in our meetings with County Supervisors and are open to discussing funding mechanisms to support those actions.
2.8	I am opposed to the 5-year inspection frequency into perpetuity because this puts a cloud on the property.	Preforming routine inspections of the OWTS, to ensure their proper functioning and operation, is a prudent practice and legal requirement that can make participating properties more appealing to potential buyers who want reassurances the OWTS are in good working condition Also, we have revised the frequency of required OWTS inspections from every five years to every 10 years.
2.9	There are two subdivisions farther upstream on Marin Creek called West Haven and Victoria which were built on pastureland. When these homes were built, the storm flows were directed to storm drains, which are directed into a detention pond that flows into Marin Creek. This development caused the stream flow dynamics to change and increased flooding downstream of the development. During storms the stream tops its banks and the flows pass through private property where the stormwater will pick up fecal material from grazing animals.	See response to comment 2.3.
2.10	I am a small property owner and am environmentally concerned. I don't want this TMDL to be approved.	Comment noted.

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2.11	The Water Board is re-writing Sonoma County standards with this TMDL because this TMDL seeks to address septic systems within 200 feet of the creek which is outside the 100-foot setback distance established in County ordinances.	We believe this comment stems from confusion about OWTS setbacks and the proposed TMDL APMP boundary. The Sonoma County 100-foot setback ordinance for OWTS prohibits OWTS from being built within a 100-foot buffer of any streams. The 200-foot APMP boundary is not a prohibition of OWTS. It simply requires that any OWTS within this distance of the streams are properly maintained, inspected, and repaired, as needed, so that they do not pollute the nearby waterbodies. The APMP boundary established in this TMDL does not alter the County setback ordinance.
(3) Caltrans 3.1	Maintain a Consistent Stormwater Program. Requirements in this TMDL do not align with pollutant-based requirements of other bacteria TMDL (e.g., wildlife/background sources of bacteria in Richardson Bay TMDL vs. homeless sources of bacteria in Petaluma TMDL). Caltrans request that the Water Board maintain a consistent statewide stormwater program. Varying monitoring and implementation requirements for bacteria TMDL in Petaluma River Watershed restricts Caltrans ability to use a comprehensive statewide approach. Caltrans request that the TMDL Implementation Plan be made consistent with the requirements of attachment IV of the Caltrans Conformed NPDES Permit.	Staff disagrees. TMDL plans are not a one-size-fit-all plans for all waterbodies. The extent, causation, and solutions for addressing bacterial impairments in different waterbodies/watersheds can be very different. While homeless encampments and their associated waste discharges may not have been an issue in previous bacteria-impaired watersheds/TMDLs, they clearly are a significant issue in the Petaluma River Watershed that needs to be addressed by responsible parties such as the California Department of Transportation (Caltrans). TMDLs require watershed-specific measures, not a "comprehensive statewide approach." As such, they do not need to, nor are they likely to, require the same control measures, statewide. Therefore, the TMDL Implementation Plan should not conform to what is currently in Caltrans' NPDES Statewide Stormwater

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		Permit – Order 2012-0011-DWQ (stormwater permit). Instead, the stormwater permit, currently scheduled for reissuance in October 2020, will be amended to incorporate the specific requirements proposed in this TMDL for controlling bacteria discharges from the Caltrans' right-of-way.
3.2	Caltrans footprint and impacts are likely minor to overall bacteria loads in the watershed. A 2002 Caltrans study on presence of human pathogens in urban storm drains found majority of pathogens detected in stormwater are from domestic and wild animals. Homeless encampments were not observed at the time of the study. Caltrans percentage of impact to the watershed is likely negligible. Therefore, implementing resources to reduce pollutant loading from Caltrans highway within the TMDL watershed would likely have minimal impacts to the overall load reductions within Petaluma River Watershed. Caltrans request that WB recognizes that 1) the occurrence and discharges of pathogens from Caltrans right-of-way are caused by natural background sources, and 2) the impact caused by these sources represent a negligible impact to the Petaluma River Watershed. Further, since the majority of the highway system's proximity to the	Although we agree the Caltrans footprint in the watershed is relatively small, we disagree that footprint size alone means Caltrans properties are not a source of bacteria. A source category's impact to the bacterial impairment of the river is not necessarily proportional to the footprint or acreage of that source and the magnitude of waste discharges from the homeless encampments within Caltrans' right-of-way can be significant. While natural background sources (e.g., wildlife) contribute to bacteria discharges from Caltrans' right-of-way and this TMDL is not requiring reductions in wildlife sources, they are not the only source of bacteria. Discharges of bacteria from the homeless encampments within Caltrans' right-of way in the watershed are a source of bacteria that need to be controlled now and into the future. Regarding the reach prioritization requirements in Caltrans' stormwater permit, multiple miles of U.S. Highway 101 are located within 0.25 miles of the Petaluma River. Water Board staff has observed homeless encampments on Caltrans right-of-way under

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	receiving waters is greater than 0.25 miles, this reach watershed would fall under the low priority ranking based on the prioritization requirements of attachment IV. Therefore, the WLAs assigned to Caltrans should be equal to existing loads.	bridges and in riparian corridors of tributary creeks within 0.25 miles of the Petaluma River. Regardless of how this reach would rank under the stormwater permit's prioritization requirements, Caltrans is given a wasteload allocation that is equal to the protective water quality objectives for bacteria. Giving Caltrans a wasteload allocation that is equal to existing loads would maintain status quo and would not achieve improvements in water quality. Such an outcome is in conflict with the TMDL's goal of improving the water quality in the watershed in order to rectify the existing impairment.
3.3	Homelessness is a multi-agency responsibility. The presence of an encampment may not necessarily result in increased waste discharges (City of El Cajon Study indicating no HF183 hits downstream, and lower FIB levels above and below camps than the receiving water limitations). Impacts from encampments may vary on an individual basis. Addressing homeless issue requires significant resources and a coordinated multi-agency approach. Caltrans alone cannot solve homelessness issue or be solely responsible for its discharges. A longer-term solution, beyond repeated cleaning of encampments, is required to address the issue.	Staff agrees that impacts from homeless encampments may vary on a site-by-site basis. However, given the transient nature of such encampments (e.g., fluctuation in their location, number, and persistence), those impacts could easily and quickly change within a short period of time. As such, appropriate measures must be planned for and put in place to address such impacts, when and where they arise. Staff agrees that homelessness is a multi-agency responsibility. As such, the TMDL Implementation Plan asks both the City of Petaluma and Caltrans to develop a plan for addressing bacteria discharges from the homeless encampments within their respective jurisdictions. The TMDL does not require Caltrans to solve the homelessness issue; rather, it requires Caltrans to

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	Caltrans encourages an approach in which 1) both government and non-government agencies evaluate homeless services programs as a whole, and 2) agencies work jointly to identify the most efficient and effective ways to share resources across jurisdictions.	manage bacteria pollution coming from its properties by addressing human waste from homeless individual through a plan that Caltrans will develop. Caltrans is only responsible for the bacteria discharges from its right-of-way. Caltrans is, however, encouraged to coordinate its efforts with other responsible parties, such as the City of Petaluma, where possible and beneficial. We agree that effective long-term solutions to reduce homeless populations will require interagency coordination. Thus, we look forward to working with Caltrans, the City of Petaluma, and other interested parties with the aim of reducing pollution from homeless camps in the Watershed.
(4) Farm Bureau 4.1	We appreciate that the TMDL will only apply to grazing lands over 50 acres and will be limited to confined animal facilities that house dairy and horses. The proposed regulations indicate that a grazing plan will be developed after the TMDL is approved. Although the 50 acres is adequate as a compliance trigger, we recommend that a minimum number of animal grazing units be added into the grazing land requirements. With limited water supply and low nutrient quality or feed availability on parcels in the Petaluma River Basin, landowners may only have a few head of grazers on a parcel larger than 50 acres. Low animal unit to acre ratio is an ideal BMP	Comment noted. The specifics of the proposed grazing permit for controlling waste discharges from the grazing lands/operations in the Petaluma River Watershed will be determined at a later time. The development of a grazing permit would include a separate public approval process with opportunities for all interested parties to participate in and provide input. In the meanwhile, we will pass on this comment to our grazing program staff for their consideration during the permit development stage.

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	to wastewater management, and any requirements put on these animal owners who unknowingly are doing the right thing would only burden them with unnecessary costs. Please consider including minimum animal unit requirements like the Dairy WDR and other WDRs developed by neighboring water boards.	
4.2	The report estimates that there are 193 parcels with 149 owners covering 31,500 acres. This equates to an average parcel size of around 160 acres. The plan requires testing of any OWTS where the system is located within 200 feet of the top of the bank of the Petaluma River or to streams shown as a National Hydrography dataset mapped stream. With such large parcels and a tendency to build on top of hills and ridges, why require landowners to comply with the TMDL when their OWTS system may be thousands of feet away from the Petaluma River? We ask that you consider compliance requirements not only based on the property line proximity to the river but also based on the location of the OWTS.	To clarify, the TMDL's APMP boundary and the associated requirements are currently based on the proximity of the OWTS itself, not the property line, to the river or its tributaries. Thus, we are not asking the estimated 3,600 OWTS in the whole watershed to comply with the requirements in the APMP, but are focusing on the 250 that are closest to a creek, stream, or the Petaluma River. If the commenter is asking why the APMP boundary includes OWTS that are in the proximity of some "distant" tributaries to the mainstem Petaluma River, it does so because even though the Petaluma River is the main/prominent impaired waterbody the TMDL addresses, our water quality monitoring results (see Section 5 of the TMDL Staff Report) show that the bacterial impairment extends to all the tributaries/streams tested throughout the watershed. Because of their hydrological connection, these tributaries also carry local sources of bacteria pollution to the Petaluma River mainstem so controlling bacteria sources in the

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		watershed will reduce bacteria concentrations in the mainstem. Further, under the Water Board's Water Quality Control Plan's "tributary rule," beneficial uses of any specifically identified water body (e.g., Petaluma River) generally apply to all of its tributaries. In this case, the same recreational beneficial uses of the Petaluma River also apply to these tributaries and must be protected from bacterial pollution caused by OWTS and other sources.
4.3	The plan outlines very rigorous inspection and reporting requirements (much more onerous than the requirements recently adopted for the Russian River TMDL). In addition, the first inspection must be completed within 18 months of the effective date of the TMDL and every five years thereafter. Realizing that these property owners most likely have owned their parcels for decades if not for several generations, compiling the information required is going to be difficult, time-consuming, and costly. We ask that you look at a phase-in period where property owners have five years from the TMDL effective date to do the required initial inspection and provide the necessary data requested. This will allow the small pool of OWTS professionals to be available at their regular contractual rates to help these property owners comply. Also, given the	The proposed inspection programs for both the Petaluma and Russian Rivers TMDLs are designed to facilitate timely identification and resolution of maintenance and operational issues for OWTS within their respective APMP areas. The main differences between the two TMDLs' APMP are that 1) the Russian River APMP includes all parcels that are at least partially within 600 linear feet from the blueline steams; whereas the Petaluma River APMP includes OWTS within a 200-foot distance of the Petaluma River and streams, and 2) the Russian River APMP requires supplemental treatment for OWTS in the APMP; whereas the Petaluma River TMDL defers to the local County to make a determination whether supplemental treatment is required for new or replaced OWTS. Nonetheless, to allow more flexibility and feasibility in the operational inspection requirements, we have revised the "APMP Requirements" discussion in

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	age of some of these OWTS systems and the lack of written plans or information on these systems, there could be a hardship appeal process where landowners can show the cost to have "as-built" designs excessive, especially if they will eventually be required to upgrade or replace the system.	Section 10.5.3 of the Staff Report and Section 7.8.5.7 of the BPA as follows: *~~At a minimum, a~~A basic operational inspection shall provide sufficient information for the Water Board or local agencies to determine that OWTS are not discharging any waste to the river or its tributaries and ~~shall~~ may include the following evaluations: …* To clarify, the proposed inspection program for OWTS does not intend to require as-built-plans in all occasions. The inspection criteria do include review of relevant documents, such as "plans," but it is meant to be applicable where those plans are already available. To clarify this point, we have revised the descriptions of a basic operational inspection on Section 10 of the TMDL Staff Report and the BPA as follows: *"Inspection of all relevant documents, when available, such as: permits, plans, operation and maintenance manuals, and recent pumpers reports (within last 5 years)."* Detailed plans, or verification by a qualified professional inspector, is required as evidence if a property owner believes their septic system is more than 200 feet from the creek. Staff disagrees with postponing the due date for the initial inspection to 5 years after the TMDL effective date because: 1) at this time we lack data to justify delaying the very critical tasks of assessment, identification, and

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		repair of faulty OWTS that long, and 2) a five year phase-in period would coincide with the Russian River TMDL inspection timeline, which includes thousands of OWTS and could draw down available inspection resources in the Petaluma River Watershed. However, to allow adequate time for OWTS owners to plan for and conduct the initial basic operational inspection, we have increased the timeline for doing so from 18 months after the TMDL effective date to 3 years after the TMDL effective date. Further, to lessen the financial burden on OWTS owners, we have also reduced the frequency of inspections from every five years to every 10 years.
4.4	People are struggling to live in Sonoma County. How will taxpayers see this added financial burden? The costs to comply with the requirements of this TMDL are significant. The inspection costs, coupled with the likely professional services that will be needed to respond to the reporting requirements, will be a minimum of $1,200 every five years. Then, if there needs to be an upgrade or replacement of the OWTS, the financial burden could be closer to $70,000. State officials recognized the financial challenges that water quality management policy would have on property owners; thus, AB 885 was enacted. Further, the State OWTS Policy calls explicitly for	Thank you for providing information on your estimated inspection cost. After being able to verify this estimate, we have updated our inspection cost estimates accordingly. Our estimate of capital cost for replacement of a standard gravity OWTS is between $5,600 - $10,000, which also matches the recently-adopted Russian River TMDL cost estimate. A nonstandard system with supplemental treatment or enhanced effluent dispersal components could cost significantly more, and perhaps up to $70,000. However, the Petaluma River TMDL APMP does not require installation of supplemental treatment systems or enhanced dispersal, so we did not include cost estimates for such a system in this TMDL.

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	the provision of low-interest loans to owners of all income levels for OWTS repair/replacement. These assistance programs are not in place yet in our County. Please consider delaying OWTS replacement or significant improvements until public financial assistance in the form of low-interest loans or grants are available to landowners. This consideration should allow for a phased-in of upgraded or new systems to allow all property owners to have the opportunity to seek and achieve financial assistance.	In regard to financial assistance, the Assembly Bill No. 885 (AB 885) states the following: It is the intent of the Legislature to assist private property owners with existing systems who incur costs as a result of the implementation of the regulations established under this section by encouraging the state board to make loans under Chapter 6.5 (commencing with Section 13475) to local agencies to assist private property owners whose cost of compliance with these regulations [for onsite sewage treatment systems] exceeds one-half of one percent of the current assessed value of the property on which the onsite sewage system is located. As stated by the commenter, based on our discussions with the local agencies (Sonoma and Marin County OWTS programs), there are currently no financial assistance programs in place. However, we are exploring options for offering financial support to low-income property owners to offset or pay for their OWTS inspection cost. We commit to continuing efforts to identify possible funding options in coordination with North Coast Regional Water Board, the State Water Board, and County staff. The “Category 3” OWTS (those “needing major repairs”) will be reported to the local agencies for immediate follow-up based on the local regulations and timelines. For “Category 2” OWTS (those needing possible follow-up) that are under the control of the Water Board, at this

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		point we lack the necessary data to consider creating a phased-in program based on relevant factors such as threat to water quality. We plan on using the results of the initial operational inspections to prioritize and develop a compliance schedule for these OWTS. However, to allow adequate time for OWTS owners in this category to come into compliance, we have extended our maximum compliance deadline from 10 to 12 years from the TMDL effective date.
4.5	The policy relating to Qualified Professionals imposes undue financial pressures on homeowners, and more so upon the multitudes of fixed-income, senior citizens living in the APMP boundary. The requirement for having a Qualified Professional (defined as a Registered Civil Engineer or Registered Environmental Health Specialist) perform the 5- year inspection is costly. We request that you allow the local LAMP to permit a licensed contractor (C42, C36, A license), or a pumper who has received certification from the National Association of Wastewater Technicians to perform the required inspections.	After reviewing the definitions of the recommended licenses (included at the end of this response), Staff agrees with the recommendation to allow the local LAMP to permit a licensed contractor (C42, C36, A license), or a pumper who has received certification from the National Association of Wastewater Technicians to perform the required inspections. Accordingly, we have revised our definition of qualified professionals as follows: *"Qualified Professional is an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists*

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		certified by the Soil Science Society of America are considered qualified professionals. A local agency may modify this definition as part of its Local Agency Management Program to permit a licensed contractor (C42, C36, A license), or a pumper who has received certification from the National Association of Wastewater Technicians to perform the required inspections." The three recommended licenses are defined as follows: **A - General Engineering Contractor:** A general engineering contractor is a contractor whose principal contracting business is in connection with fixed works requiring specialized engineering knowledge and skill, including the following divisions or subjects: irrigation, drainage, water power, water supply, flood control, inland waterways, harbors, docks and wharves, shipyards and ports, dams and hydroelectric projects, levees, river control and reclamation works, railroads, highways, streets and roads, tunnels, airports and airways, sewers and sewage disposal plants and systems, waste reduction plants, bridges, overpasses, underpasses and other similar works, pipelines and other systems for the transmission of petroleum and other liquid or gaseous substances, parks, playgrounds and other recreational works, refineries, chemical plants and similar industrial plants requiring specialized engineering knowledge and skill, powerhouses, power plants and other utility plants and installations, mines and metallurgical plants, land leveling and earthmoving projects, excavating, grading,

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		trenching, paving and surfacing work and cement and concrete works in connection with the above mentioned fixed works. **C-36 - Plumbing Contractor:** A plumbing contractor provides a means for a supply of safe water, ample in volume and of suitable temperature for the purpose intended and the proper disposal of fluid waste from the premises in all structures and fixed works. This classification includes but is not limited to: (a) Complete removal of waste from the premises or the construction and connection of on-site waste disposal systems; (b) Piping, storage tanks and venting for a safe and adequate supply of gases and liquids for any purpose, including vacuum, compressed air and gases for medical, dental, commercial and industrial uses; (c) All gas appliances, flues and gas connections for all systems including suspended space heating units. This does not include forced warm air units; (d) Water and gas piping from the property owner's side of the utility meter to the structure or fixed works; (e) Installation of any type of equipment to heat water, or fluids, to a temperature suitable for the purposes listed in this section, including the installation of solar equipment for this purpose; and

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		(f) The maintenance and replacement of all items described above and all health and safety devices such as, but not limited to, gas earthquake valves, gas control valves, back flow preventers, water conditioning equipment and regulating valves. **C-42 - Sanitation System Contractor:** A sanitation system contractor fabricates and installs cesspools, septic tanks, storm drains, and other sewage disposal and drain structures. This classification includes the laying of cast-iron, steel, concrete, vitreous and nonvitreous pipe and any other hardware associated with these systems.
4.6	The proposed plan states: "The local agencies are the lead for contacting the landowner to require corrective actions, setting an appropriate schedule for compliance that shall be commensurate with the risk, and taking enforcement actions as necessary. The schedule for compliance in no case shall be more than 10 years from the TMDL effective date." Sonoma County is trying to bounce back from one of the worst disasters in the history of our state, if not the nation. Housing stock is critically low, GSAs have been formed and require public staff efforts, and there is a significant shortage of professional job seekers in our region.	Staff appreciates the challenges Sonoma County has experienced in recent years; however, we disagree with the statement that “the proposed TMDL for the Petaluma River TMDL will require more local government resources than the Russian River TMDL.” The Petaluma River TMDL requirements apply to approximately 250 OWTS owners; whereas, the Russian River TMDL applies to thousands of OWTS. The workload and total cost created by the Petaluma River TMDL in comparison would be much lower than that of the Russian River TMDL. The Water Board has no intention to overburden local agencies; however, we are mandated by the Federal Clean Water Act to develop a TMDL to address the bacterial impairment in the Petaluma River Watershed. We strive to protect water quality in an efficient, practical,

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	This proposed TMDL for the Petaluma River will require more local government resources than the Russian River TMDL recently approved in District 1. Is it the State's intent to overburden a local agency that is already struggling to keep up with disaster recovery efforts? To make this plan more achievable for the County of Sonoma and the property owners within the APMP boundaries, a more phased-in approach that allows for a longer compliance period should be considered.	and cost-effective manner for all stakeholders, including property owners and local governments. To better do so, we have extended our compliance schedule for OWTS from 10 to 12 years from the TMDL effective date. In response to the request for a phased approach, this TMDL already has a phased approach as noted by the Tiering of OWTS issues observed in the basic operational inspection.
4.7	We agree there needs to be a way to monitor and improve water quality in the Petaluma River; however, the imposed action steps enacted to get to a level of acceptable water quality needs to be affordable, unencumbered by regulatory overreach and fair to all local agencies and property owners involved.	The Water Board has a mandate to protect water quality and develop TMDLs to rectify water quality impairments, such as those existing in the Petaluma River Watershed. In doing so, it has sought to be fair, not overreach, and consider the interests of all stakeholders. See response to comment 4.6 for additional information.
(5) Marin County Stormwater Pollution Prevention Program (MCSTOPPP) 5.1	We do not believe human waste from homeless encampments is a significant contributor to bacteria levels in Marin. The latest 2019 Marin County Homeless Count & Survey Comprehensive Report indicates very low totals of unsheltered homeless populations. Typically, homeless encampments in Marin are not in MS4 connected land uses. At this time, we do not believe there is sufficient evidence of pathogen sources to the	Staff disagrees. The TMDL Implementation plan requires Municipal Separate Storm Sewer Systems (MS4s) permittees (e.g., County of Marin and City of Novato) to develop an effective approach for preventing illicit discharges into the stormwater system (drains, curbs, and gutters) from homeless encampments. Unfortunately, homeless encampments are becoming more pervasive in the Bay Area, including in Marin. As such the MS4 permittees need to have a plan in place for addressing

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	municipal MS4 from homeless encampments in Marin to further develop an illicit discharge program for homeless encampments.	this source of pollution when it is present. The level of effort to control this source can be commensurate with the tools available to MCSTOPP, the County, and with the proportional cause and contribution of this source to the bacterial impairment.
5.2	Marin County Stormwater Pollution Prevention Program (MCSTOPPP) conducted visual inspections of all outfalls under our Phase II Permit requirements (Section E.9.a-d.) and did not find evidence of any illicit connections in the watershed. MCSTOPPP also performs yearly outfall inspections in all priority areas for each jurisdiction, including Novato. Although typically rare (and the MCSTOPPP archive had no reports from this TMDL watershed) illicit connections are typically found either during yearly maintenance and inspection activities by road and drainage crews, by our existing IDDE reporting and investigation programs, or during required re-sale inspections of sewer laterals. The development of a separate inspection program is unwarranted given the limited threat from the areas in question.	The TMDL Implementation Plan requires MS4 permittees to ensure at least 20% of their stormwater system is systematically evaluated and addressed for illicit sanitary sewer connections each year. The TMDL Implementation Plan does not necessarily require development of a separate inspection program, only if one does not already exist. Our understanding is that MCSTOPPP currently does not have a systematic illicit sanitary sewer connection detection and elimination program in place. Therefore, MCSTOPPP is required to develop and implement such plan.
5.3	The Water Board sample data failed to demonstrate Marin as a significant contributor of pet waste in the lower watershed since it did not include MST data for the PET-2 sample point. Furthermore, the upper watershed, where MST	The commenter correctly points out the lack of microbial source tracking (MST) data from the lower part of the watershed, where their jurisdiction is mainly located. However, the lower portion of MCSTOPPP's jurisdiction in the Watershed does include some urban areas and, in

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	samples show low-to-moderate amounts of canine bacteria levels, is rural and agricultural, with low population density, no parks or walking paths, no MS4 infrastructure, and resident populations of wild coyotes. Therefore, we do not find it necessary to take Category I actions beyond what is already implemented through existing programs.	general, urban areas are known as sources of pet waste (*Pathogens in Urban Stormwater Systems 2014*)[6]. Therefore, we expect MCSTOPP to comply with the requirements of the TMDL Implementation Plan that requires MS4 permittees to address potential pet waste discharges into the stormwater systems.
5.4	MCSTOPPP's assessment of pet waste at the public facilities (trails and boat launch) in the watershed found no evidence of the need for additional prevention activities. Diversion of stormwater to the sanitary sewer system is not feasible in Marin's contributing areas, and there is already coordination for spill response to prevent sanitary sewer overflows from reaching the storm sewer system in Novato or the unincorporated County areas.	The measures described by the commenter are only required if the implementation of the other actions described above are insufficient to meet the wasteload allocations five years after the TMDL effective date. At that point, the TMDL Implementation plan requires either implementation of these secondary actions or justification as to why they are not appropriate.
5.5	Marin represents 34 square miles or 23% of the Petaluma River Watersheds' 146 square miles. Over 55% of Marin's contribution area is Agricultural Use Areas, much of it outside of the Phase II Permit urbanized area boundary. MCSTOPPP does not believe that characterization monitoring in Marin will provide useful data to	Staff disagrees that characterization monitoring will not provide useful data. One important objective of the monitoring program is to determine if progress towards attainment of the TMDL numeric targets and allocations is being made. Without the required water quality monitoring, it would be impossible for the Water Board or MCSTOPPP to know what the bacteria contributions from

[6] http://www.asce-pgh.org/Resources/EWRI/Pathogens%20Paper%20August%202014.pdf

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	change existing management actions and programs. The proposed Water Board monitoring every five years should be sufficient to determine progress toward the wasteload allocation. The monitoring data presented in the Staff Report shows the highest load sources with contributions from Marin come from upper watershed samples in San Antonio Creek where contributions from Sonoma and Marin are indistinguishable. In addition, these sources are addressed through other Water Board regulatory permits and programs such as Confined Animal Facility Permits (CAFs) and the Grazing Waiver Program. Additionally, Marin's MS4 contribution in the lower watershed is minimal. If monitoring data must be collected at the end of the watershed, cost effective sampling is unlikely to produce meaningful data to inform management decisions. The Water Boards five-year monitoring plan should be sufficient to assess progress towards attainment without additional monitoring requirements for Marin.	their MS4 stormwater system are, how bacteria contributions change over time, and whether progress towards attaining the TMDL targets and allocations are being made by MSCSTOPP implementation actions. The Water Board's five-year monitoring plan is not meant to replace implementing parties' source-specific monitoring. The source-specific monitoring should be tailored to further identify source areas or hotspots and then show reduced loads from those sources over time. The Water Board has no proposed monitoring station in its five-year monitoring plan that will directly reflect the implementation actions from MCSTOPP.
(6) North Bay Realtors 6.1	Financial Assistance: Implementation should be delayed until prescribed assistance is in place. AB 885 (2000) and the State OWTS Policy specifically call for the provision of low-interest loans to owners of all income levels for OWTS repair/replacement. The TMDL could easily push owners into	To allow adequate time for OWTS owners to plan for and conduct the initial basic operational inspection, we have increased the timeline for doing so from 18 months after the TMDL effective date to 3 years after the TMDL effective date. Further, to lessen the financial burden on OWTS owners, we have also reduced the frequency of

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	premature inspection/replacement, wreaking havoc on our local homeowners, housing stock, and economy. Despite repeated calls for assistance during the Sonoma County LAMP and Russian River TMDL processes, neither the State nor County of Sonoma established a program, leaving thousands and thousands of owners without options. Many live on Social Security alone and are struggling to meet the rising cost of ownership and cannot shoulder a ~$1200 inspection every 5 years, much less corresponding repairs/replacement. Following the 2017 wildfires, many Sonoma County homeowners saw their insurance rates double or triple, and additional increases in interest rates, labor and materials, and so on. The average cost of an inspection in Sonoma County is $1100, including required pumping.	inspections from every five years to every 10 years. Please see response to comment 4.3 for related discussion. Further, for the "Category 2" systems (those needing possible follow-up), we have extended our maximum compliance deadline from 10 to 12 years from the TMDL effective date. Please see response to comment 4.4 for related discussion.
6.2	APMP: What is the rationale for including parcels where OWTS are located beyond the 200-foot boundary? Please allow owners that can demonstrate that their system falls outside of the 200-foot APMP boundary to obtain an exemption. The APMP applies to any OWTS that is partially or fully contained within the 200-foot boundary, even though that system may be thousands of feet away	We would like to clarify that the APMP does not include parcels where OWTS are located beyond the 200-foot boundary. The APMP was designed to only include OWTS with any part of the septic system within 200 feet of a major tributary or the Petaluma River. If an owner can demonstrate with an OWTS site map or other evidence that their entire OWTS is outside the 200-foot APMP boundary, we will consider that parcel exempt

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	from the mainstem/waterway. Similarly, OWTS located on parcels just outside of the APMP would be exempt – so an OWTS located 212-feet from the mainstem/waterway could be exempt. The State and local the permitting process would identify if/when a property owner moved their system to a new site on an included parcel.	from the APMP. Please see response to comment 4.2 for additional information.
6.3	Qualified Professionals (QP): Inspections could easily be performed by a licensed contractor (C42, C36), or by a pumper who has received certification from the National Association of Wastewater Technicians. Requiring a QP (Registered Civil Engineer or Registered Environmental Health Specialist) is excessive and costly for basic inspections. The State OWTS Policy sets minimum standards for the required registration for conducting soils analysis and OWTS design, but does not mandate this threshold for inspections. Pumpers are well qualified to recognize and correct basic OWTS problems, and if a pumper is certified, inspections could occur when the tank is pumped, streamlining the process and reducing costs to owners. Please work with stakeholders and County decision-makers to provide this flexibility to owners.	We updated the definition of “Qualified Professionals” to match this request. Please see response to comment 4.5 for related discussion.

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6.4	Compliance Timeline: We urge you to increase the compliance timeline to 15-years (as the North Coast Regional Water Quality Control Board recently did for the Russian River TMDL). As proposed, owners will have 10 years to complete upgrades/replacements. The costs of the design and installation of a new system can reach $70,000. Zero financial assistance is in place, and our permit timeline oftentimes reaches 16-19 weeks here in Sonoma County.	We have changed the OWTS compliance timeline to 12 years. Please see response to comment 4.4 for related discussion.
6.5	Housing & Homeowners: The TMDL should allow delayed or phased-in requirements to homeowners in order to preserve our vital housing stock. The APMP requirements fall hardest on low and fixed-income owners. It is likely that people with limited resources will be unable to afford costs/loans for system upgrades. This could result in properties being sold at below market rate, rent increases, and an overall loss of availability.	The TMDL already includes a phased approach by the very nature of the tiering of repairs subsequent to the OWTS basic inspection. Please see response to comment 4.4 for related discussion. Also, see response to comment 4.4 to read more about our consideration of costs and efforts to identify funding sources.