

# **ACTION PLAN FOR THE RUSSIAN RIVER WATERSHED PATHOGEN TOTAL MAXIMUM DAILY LOAD (TMDL)**

*The following text is to be inserted into the Water Quality Control Plan for the North Coast Region (Basin Plan) following the Navarro, Eel, and Mattole Temperature TMDL Action Plans:*

The Russian River Watershed encompasses 1,484 square miles in Sonoma and Mendocino counties, California. Major municipalities within the watershed include Ukiah, Cloverdale, Healdsburg, Windsor, Rohnert Park, Santa Rosa, and Sebastopol. The watershed also includes numerous unincorporated communities such as Calpella, Hopland, Forestville, Guerneville, and Monte Rio. The 110 mile mainstem channel of the Russian River originates in the Redwood Valley of central Mendocino County about 15 miles north of Ukiah. The Russian River serves as the primary water source for more than 500,000 residents in Mendocino, Sonoma and Marin counties, and for agricultural production in Mendocino and Sonoma counties. It provides multiple water-based recreational opportunities important to the economies of the watershed and well-being of residents and visitors.

The *Action Plan for the Russian River Watershed Pathogen Total Maximum Daily Load*, hereinafter known as the Russian River Pathogen TMDL Action Plan, or Action Plan, is based on the authorities and requirements of both the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act (Porter Cologne). This Action Plan 1) summarizes the elements of a TMDL; 2) summarizes findings relative to pollution assessment; and 3) describes the Program of Implementation designed to control fecal waste pollution, achieve bacteria water quality objectives (bacteria objectives), and restore the REC-1 beneficial use to protect public health. The overall goal of the Action Plan is to minimize human exposure to waterborne disease-causing pathogens and to protect uses of water for recreational activities such as wading, swimming, fishing, and boating.

## **I. PROBLEM STATEMENT**

Several surface waters in the Russian River Watershed are identified on the 2012 Clean Water Act Section 303(d) List of Impaired Waters due to fecal indicator bacteria (FIB) concentrations that do not support the REC-1 beneficial use nor attain the bacteria objectives. Water quality monitoring studies have been conducted using multiple FIB, which provide evidence of seasonal and episodic fecal waste pollution<sup>1</sup> at locations throughout the watershed, not just those listed on the 2012 Section 303(d) List of Impaired Waters.

Statewide freshwater bacteria objectives for the protection of REC-1 are established using *E. coli* bacteria. The *E. coli* bacteria objectives are set at allowable rates of illness deemed acceptable for the protection of public health (e.g., 32 gastrointestinal illness per 1,000 recreators). Human and bovine *Bacteroides* bacteria detect the presence of fecal waste and allow an assessment of the animal source of the waste detected. Any amount of fecal waste increases risk of exposure to illness-causing pathogens. Elevated concentrations of *E. coli* or enterococci in ambient waters infer the presence of human and animal fecal waste and associated disease-causing microorganisms that pose a risk to human health, which is confirmed by *Bacteroides* measurements. When *E. coli* or enterococci concentrations are elevated, people who recreate in the Russian River Watershed are at risk of contracting waterborne diseases.

## **II. SOURCES OF FECAL WASTE**

Water quality monitoring studies in the Russian River Watershed (studies) find that FIB concentrations (e.g., *E. coli*, enterococci, and *Bacteroides*) in surface waters are significantly higher during wet weather periods, than during dry periods, indicating that storm water runoff has a strong influence on the delivery of fecal waste to the Russian River and its tributaries. Studies also find that regardless of the time of year, FIB concentrations in surface waters are significantly higher in developed areas (both sewered and non-

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<sup>1</sup> Water Code Division 7 (Porter-Cologne Water Quality Control Act) defines “pollution” to mean an alteration of waters of the state by waste to a degree, which unreasonably affects either of the following: (A) the waters for beneficial uses or (B) facilities which serve these beneficial uses.

sewered), than other areas (e.g., shrubland, forestland, and agricultural lands). Focused assessments find that 1) FIB concentrations correlate with parcel density in those areas with onsite wastewater treatment systems (OWTS) and 2) higher concentrations of both *Bacteroides* and *E. coli* bacteria are associated with periods of high use at beach recreational areas.

Water quality monitoring results indicate the following source categories have potential to discharge fecal waste to surface waters in the Russian River Watershed:

#### Sources of Human Fecal Waste Material

- Treated Municipal Wastewater to Surface Waters;
- Untreated Sewage from Sanitary Sewer Systems;
- Wastewater from Percolation Ponds and through Spray Irrigation;
- Runoff from Land Application of Municipal Biosolids and Biosolids Storage Areas;
- Runoff from Water Recycling Projects;
- Onsite Wastewater Treatment Systems;
- Recreational Water Uses and Users;
- Homeless and Illegal Camping; and
- Storm Water to Municipal Separate Storm Sewer System (MS4s) and Areas Outside MS4 Boundaries.

#### Sources of Domestic Animal and Farm Animal Waste

- Pet Waste;
- Non-Dairy Livestock and Farm Animals; and
- Manure from Dairy Cows.

The regulatory mechanism for controlling each potential fecal waste source category is described in Table 1.

### **III. NUMERIC TARGETS**

Numeric targets are developed for metrics that help assess progress towards attainment of the water quality objective, in this case the statewide *E. coli* bacteria objective for the protection of REC-1. As *E. coli* is easily measured, the statewide *E. coli* bacteria objective is reasonably set as its own numeric target. But, *E. coli*, like all FIB, are influenced by environmental conditions and can result in false positives and false negatives, under certain circumstances. To address the uncertainty that results from use of any single FIB, multiple FIBs are instead established as numeric targets. As a margin of safety to address uncertainty and to assess the protection of REC-1, a numeric target for enterococci bacteria is also established. The numeric targets for *E. coli* and enterococci are expressed as six-week rolling geometric means (GM) calculated weekly and statistical threshold values (STV) not to be exceeded more than 10 percent of the time, calculated monthly. The numeric targets are based on colony forming units (cfu) of bacteria per 100 mL water sample.

#### *E. coli* Bacteria Numeric Targets:

- ≤ 100 cfu/100 mL as a GM
- ≤ 320 cfu/100 mL as a STV

#### Enterococci Bacteria Numeric Targets:

- ≤ 30 cfu/100 mL as a GM
- ≤ 110 cfu/100 mL as a STV

### **IV. TMDL CALCULATIONS, ALLOCATIONS, MARGIN OF SAFETY, AND SEASONAL VARIATION**

The TMDL and waste load allocations (WLAs) and load allocations (LAs) are expressed as receiving water concentrations of *E. coli* based on the statewide bacteria objective for protection of REC-1. As with the numeric targets, the WLAs and LAs are expressed as six-week rolling geometric means (GM) calculated

weekly and statistical threshold values (STV) not to be exceeded more than 10 percent of the time, calculated monthly. The WLAs and LAs are based on colony forming units (cfu) of bacteria per 100 mL water sample.

E. coli Bacteria WLAs and LAs:

- ≤ 100 cfu/100 mL as a geometric mean
- ≤ 320 cfu/100 mL as a statistical threshold value

For fecal waste discharges already controlled by a prohibition or effluent limitations related to disinfection requirements, the more stringent requirement applies.

The TMDL incorporates an implicit margin of safety as it is equivalent to the statewide *E. coli* bacteria objective which is based on the lower of two acceptable illness rates (i.e., 32 gastrointestinal illnesses versus 36). Further, establishing enterococci as a numeric target, along with *E. coli*, serves as an implicit margin of safety to account for uncertainties in interpretation of monitoring results.

There is no seasonal variations of the TMDL required because the TMDL is set at the maximum allowable concentration of *E. coli* necessary to protect public health during all times of the year.

## **V. PROGRAM OF IMPLEMENTATION**

### **A. FECAL WASTE DISCHARGE PROHIBITION**

In accordance with Water Code section 13243 and in order to achieve the water quality objective for bacteria, to protect present and future beneficial uses of water, to protect public health, and prevent nuisance, this TMDL sets forth the following:

Fecal Waste Discharge Prohibition

*Discharges of waste containing fecal waste material from humans or domestic animals to waters of the state within the Russian River Watershed that cause or contribute to an exceedance of the bacteria water quality objectives not otherwise authorized by waste discharge requirements or other order or action of the Regional or State Water Board are prohibited.*

Examples of domestic animals include, but are not limited to, cows, horses, cattle, goats, swine, fowl, sheep, dogs, cats, or any other animal(s) in the care of any person(s).

### **B. IMPLEMENTATION ACTIONS**

Requirements for Onsite Wastewater Treatment Systems (OWTS) are specified in Section V.B.1. The requirements for all other sources of fecal waste are specified in Section V.B.2, including Table 1.

To reduce the discharge of fecal waste material to surface waters within the Russian River Watershed, this Action Plan builds upon management measures required by existing regional and statewide regulations and orders that reduce or eliminate fecal waste discharges from wastewater treatment facilities, sanitary sewer systems, recycled water, land application of biosolids, urban runoff, onsite wastewater treatment systems, and dairies. Where existing state-issued waste discharge requirements and actions being undertaken by local regulatory agencies have been inadequate to ensure consistent achievement of bacteria objectives, this Action Plan identifies implementing parties and sets forth specific implementation actions that shall be taken to achieve the TMDL, wasteload allocations, and load allocations; control fecal waste pollution; meet bacteria objectives; and protect public health in the Russian River Watershed. The implementing parties and the specific implementation actions are identified in Table 1.

This Program of Implementation also relies upon the Fecal Waste Discharge Prohibition and requires actions consistent with the California Water Code (Wat. Code § 13000 et seq.) and the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program.

## **B.1. Onsite Wastewater Treatment Systems**

On June 19, 2012, the State Water Resources Control Board (State Water Board) adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). The OWTS Policy took effect on May 13, 2013. The Regional Water Board, in accordance with the statewide OWTS Policy, amended the Basin Plan on June 18, 2015, to incorporate requirements of the OWTS Policy into the Basin Plan for the North Coast Region. The Basin Plan amendment was approved by the Office of Administrative Law on July 18, 2016.

Section 3.2 of the OWTS Policy allows the Regional Water Board to approve individual Local Agency Management Program (LAMP) for local agencies that want to provide alternative minimum standards than those specified in the OWTS Policy for OWTS that pose the lowest threat to water quality and public health. Individual OWTS within the Russian River Watershed are regulated by the Sonoma County Permit and Resource Management Department (PRMD) in Sonoma County and by the County of Mendocino Health & Human Services Agency, Division of Environmental Health (DEH), in Mendocino County. These local agencies review development proposals that rely on individual OWTS for domestic waste treatment and disposal. Local agency staff also review permit applications and project plans for OWTS repairs and upgrades and issue repair permits as necessary in accordance with local policies. To ensure compliance with local regulations and technical standards for OWTS, local agency staff also conducts inspections at the time of OWTS construction and in response to complaints and reports of OWTS failures. For OWTS utilizing supplemental treatment components or enhanced effluent dispersal systems, both Sonoma County PRMD and Mendocino County DEH implement permit programs that include periodic inspections of the OWTS by County staff and/or a service provider and self-monitoring requirements imposed on OWTS owners.

### **B.1.1. Advanced Protection Management Program (APMP)**

Section 10.0 of the OWTS Policy identifies an Advanced Protection Management Program (APMP) as a management program that establishes standards for OWTS near impaired waterbodies. The standards for an OWTS in an APMP may be established by the following:

- A TMDL program of implementation adopted by Regional Water Board
- An approved LAMP with special provisions for OWTS that are near impaired waterbodies listed in Attachment 2 of the OWTS Policy
- The default APMP requirements prescribed in section 10.0 of the OWTS Policy

Based on the TMDL assessment, many surface waters within the Russian River Watershed contain concentrations of fecal indicator bacteria that exceed water quality objectives or indicate fecal waste pollution. Given their proximity to surface waterbodies, OWTS discharging to the subsurface within 600 feet of a waterbody may contribute to the impairment by direct discharge (i.e., surfacing effluent from an improperly designed or located OWTS) or through contamination of groundwater in the vicinity of the OWTS as a result of incomplete soil treatment of the OWTS effluent and the migration of the contaminated groundwater to surface water. The likelihood that surface water will be adversely impacted by OWTS is increased significantly in areas with a high density of OWTS, particularly those areas with small parcel sizes and where there is a high percentage of existing OWTS that predate adopted local standards for the design and siting of OWTS.

The geographic area of the APMP within the Russian River Watershed is defined in this Action Plan, which also specifies the requirements for owners of OWTS within the geographic area of the APMP. Any parcel that is partially or fully contained within the APMP boundary is subject to APMP requirements.

The OWTS Policy and the following APMP minimum requirements apply to OWTS defined as individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. OWTS do not include “graywater” systems pursuant to Health and Safety Code Section 17922.12. Compliance with these minimum requirements is a necessary condition for

owners of OWTS to qualify for coverage under the OWTS Policy's Conditional Waiver of Waste Discharge Requirements. Failure to comply with conditions of the Conditional Waiver of Waste Discharge Requirements may result in revocation of waiver coverage or enforcement.

### **B.1.2. APMP Geographic Area**

The Action Plan defines the Russian River Watershed APMP boundary<sup>2</sup> to include both:

- 1) The area within 600 linear feet from the top of the bank in the horizontal (map) direction on either side of the entire Russian River mainstem and
- 2) The area within 600 linear feet from the top of the bank in the horizontal (map) direction on either side of any mapped waterbody in sub-watersheds where parcel densities are greater than 50 parcels per square mile. Sub-watersheds, defined as Hydrologic Units Code 12 basin names, with parcel densities greater than 50 parcels per square mile include the following: Brooks Creek, Dutch Bill Creek, East Fork Russian River, Green Valley Creek, Lower Laguna de Santa Rosa, Lower Santa Rosa Creek, Mark West Creek, Porter Creek, Salt Hollow Creek, Upper Laguna de Santa Rosa, Upper Santa Rosa Creek, Ward Creek-Austin Creek, and Windsor Creek.

Section B.1.3 of this Action Plan establishes minimum requirements for all OWTS within the designated APMP area. Owners of existing, new and replacement OWTS whose OWTS are located entirely outside the boundaries of the APMP are not subject to the APMP requirements, but must still comply with relevant requirements of the OWTS Policy, any approved Local Agency Management Program (LAMP), and if applicable, individual and/or general waste discharge requirements or waiver of waste discharge requirements.

### **B.1.3. APMP Minimum Requirements for the Protection of Water Quality**

The objective of the APMP is to ensure that OWTS in the Russian River Watershed are properly sited, designed, operated, and maintained to provide adequate removal of pathogenic organisms, comply with the Fecal Waste Discharge Prohibition, and attain numeric targets and load allocations.

This Action Plan provides a framework for identifying and upgrading existing OWTS that are failing, substandard, or in need of repair and establishes minimum inspection requirements to ensure proper operation and maintenance of OWTS within the boundaries of the APMP.

#### **B.1.3.1. APMP for OWTS**

Owners of OWTS within the boundaries of the APMP shall comply with the following as a condition of the OWTS Policy's Conditional Waiver, or, if applicable, of waste discharge requirements or waiver of waste discharge requirements:

##### **1. Operation and Maintenance Requirements**

In accordance with section 2.5 of the OWTS Policy, owners of OWTS shall maintain their OWTS in good working condition, including inspections and pumping of solids, as necessary, or as required by local ordinances and requirements established in an approved LAMP, to maintain proper function and assure adequate treatment and disposal. To facilitate timely identification and resolution of maintenance and operational issues, all owners of OWTS within the APMP shall obtain a basic operational inspection of the septic tank, effluent dispersal area(s), and related appurtenances of the OWTS by a qualified professional<sup>3</sup> once every five years. Satisfaction of operational inspection

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<sup>2</sup> A map of the Russian River APMP Boundary is provided on the Regional Water Board website at [http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/tmdls/russian\\_river/](http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/russian_river/)

<sup>3</sup> 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

requirements may occur in conjunction with pumping of the septic tank, a property transaction, issuance of a local building permit, or an inspection otherwise required by the local agency or Regional Water Board. If directed by the Regional Water Board Executive Officer or the local agency, a report of the inspection shall be created and submitted to the Regional Water Board and/or local agency within 30 days after the inspection.

At a minimum, a basic operational inspection shall include the following evaluations:

- a. Septic Tank and Pump Systems
  - i. Observations to detect leaks, cracks, excessive corrosion, root intrusion, odors
  - ii. Presence and proper operation of liquid high level alarm
  - iii. Assessment of liquid levels in relation to tank outlet
  - iv. Evidence of lack of water tightness
  - v. Evidence of problems in downstream OWTS components (e.g., distribution box, effluent filter, dosing tank)
  - vi. Proper settings and operation of pumping system(s)
- b. Effluent Dispersal Area(s)
  - i. Evidence of odors or surfacing effluent (e.g., excessive vegetation)
  - ii. Evidence of unequal effluent distribution
  - iii. Observations of inspection ports

The minimum requirements of a basic inspection for OWTS utilizing supplemental treatment components and/or enhanced effluent distribution systems will depend on the type of individual OWTS and will be specified in a 13267 Order issued by the Regional Water Board Executive Officer, or in a LAMP.

## 2. OWTS Requiring Corrective Action

In addition to conditions requiring corrective action set forth in section 11.0 of the OWTS Policy, OWTS meeting any of the following criteria are also deemed to be in need of the following corrective action:

- a. OWTS discharging to the ground surface or surface waters shall be modified or upgraded so as to prevent that discharge and comply with Tier 1 or an approved LAMP as appropriate;
- b. OWTS that do not include a septic tank and an effluent dispersal system: must have the dispersal system and septic system replaced or installed and comply with Tier 1 or an approved LAMP as appropriate: or
- c. OWTS with projected wastewater flow exceeding the capacity of one or more components of the treatment and disposal system must have the OWTS replaced, repaired, or modified to meet that capacity, and comply with Tier 1 or an approved LAMP as appropriate.

In addition, OWTS requiring corrective action must also comply with section B.1.3.4 if applicable.

## 3. Regional Water Board OWTS Assessment Program

- a. Program Description. The objective of the Regional Water Board's initial OWTS assessment is to identify OWTS that are failing and/or in need of corrective action. All OWTS within the boundaries of the APMP shall be assessed by the Regional Water Board, or designee serving on behalf of the Regional Water Board, to determine whether the OWTS is failing and/or in need of corrective action. The assessment may include a desktop assessment or local record review, results of a sanitary survey, public survey, questionnaire, or, upon determination by the Regional Water Board Executive Officer, a physical site inspection or evaluation. Information that may be used to ascertain the performance of an existing OWTS includes, but is not limited to, the OWTS type, age, approved variances, repair history, monitoring and inspection results, septic tank pumping records, maintenance records, peak hydraulic loading, and record of complaints received. When an assessment includes a physical site inspection or performance evaluation by the owners, the inspection or evaluation shall be conducted by a qualified professional.

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evaluations, Soil Scientists 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.

- b. Program Implementation. The Regional Water Board Executive Officer will notify each property owner of the need to submit this assessment information. The notification will describe the required information and the due date to submit the information to the Regional Water Board or the local agency.

The schedule for OWTS assessments and/or notifications will be based on the OWTS type, age, threat to water quality, approval date by the local agency, level of function, and other factors as required.

#### 4. OWTS Compliance with TMDL

Property owners with OWTS within the boundaries of the APMP that require corrective action or otherwise do not meet minimum requirements established in this Action Plan may be required to repair or replace the OWTS or, where applicable, offered an opportunity to participate in the planning and completion of a community wastewater treatment and disposal system or equivalent alternative. Property owners that are required to upgrade, repair, or replace an existing OWTS or acquire a new OWTS must obtain the appropriate county permit in accordance with county ordinances and policies, or, must obtain from the Regional Water Board waste discharge requirements or a waiver of waste discharge requirements, if applicable. The local agency will be the lead organization for plan review, local permit issuance, construction inspection and monitoring of new OWTS and upgrades, and repairs or replacement of existing OWTS.

In addition to meeting any of the requirements specified in an approved LAMP, or if there is no approved LAMP, in Tier 1 of the OWTS Policy, owners of new OWTS, replacement OWTS, and OWTS requiring major repair within the boundary of the APMP shall meet the following conditions:

- a. Supplemental treatment<sup>4</sup> components and/or an enhanced effluent dispersal system<sup>5</sup> is required for OWTS within the APMP boundary for:
  - i. Any OWTS with an effluent dispersal system within 100 feet from the top of the bank of any stream within the APMP boundary;
  - ii. Any OWTS that is designed to treat or dispose of a wastewater flow greater than the OWTS being replaced; or
  - iii. Any OWTS with a projected flow of 3,500 gallons per day or greater, where the projected flow is the amount of wastewater flow into the OWTS as determined in accordance with an approved LAMP.
- b. Except for replacement OWTS or OWTS requiring major repair for which supplemental treatment has been specified for any of the reasons specified in section B.1.3.1.4.a, the local agency may authorize a replacement OWTS or major repair without supplemental treatment components or an enhanced effluent dispersal system if the replacement OWTS is:
  - i. required for reconstruction due to a catastrophic natural event (e.g., fire, flood, tree falls); or
  - ii. proposed as a voluntary OWTS upgrade or repair initiated by the owner in response to a failing or marginally functional OWTS.
- c. Any new OWTS for an undeveloped parcel permitted by the local agency after May 13, 2013, or for replacement of an existing OWTS that has been unutilized for five consecutive years or more prior to receipt of a building permit application by the local agency shall meet all local agency requirements for soils and setbacks.

Where a local agency establishes more restrictive requirements, the more restrictive standards shall govern.

#### 5. Planning for Community-based OWTS

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<sup>4</sup> Supplemental treatment means any OWTS or component of an OWTS, except a septic tank or dosing tank, which performs additional treatment of domestic wastewater to decrease the constituents of concern before they reach primary treatment components or the final effluent dispersal field.

<sup>5</sup> Enhanced effluent dispersal system means any distribution system that provides improved effluent dispersal and/or treatment compared to a gravity trench distribution system.

In areas within the APMP where there are significant numbers of existing OWTS that do not meet the minimum standards defined in the Action Plan, and where repairs or upgrades of individual OWTS to meet minimum standards are infeasible or cost prohibitive, the development of a community-based OWTS management plan or Onsite Wastewater Management Authority, where authorized by a local agency, may be appropriate. The Regional Water Board encourages the development of community advisory groups to assist the Regional Water Board and local agencies in the development and implementation of community-based solutions. It is the intent of the Regional Water Board to provide adequate time, through the use of time schedules or equivalent orders, consistent with section 11.6 of the OWTS Policy, for owners of failing and substandard OWTS to comply with this Action Plan and to seek and obtain funding assistance for the planning and construction of community-based wastewater treatment and disposal systems, as necessary.

## **VI. MONITORING**

Monitoring will be conducted to provide information regarding the effectiveness of the Action Plan, including 1) compliance with the Fecal Waste Discharge Prohibition, 2) achievement of WLAs and LAs, 3) attainment of the numeric targets, and 4) attainment of bacteria objectives and protection of beneficial uses, over time. Monitoring activities include project monitoring, special studies, receiving water trend monitoring, and ambient monitoring of public recreational beaches during the summer recreation period. Monitoring and reporting requirements may also include additional metrics (e.g., human and bovine *Bacteroides* bacteria) and analyses, which support accurate, defensible conclusions and provide a reasonable basis for the adaptive management of fecal waste pollution and public health water quality issues in the Russian River Watershed.

Individual monitoring requirements will be specified in the controlling regulatory mechanism developed for each of the potential fecal waste source categories, as described in Table 1. The Executive Officer may require specific monitoring or special studies under separate order. All monitoring results will be reviewed and assessed periodically to inform potential revisions of individual permits, orders, or other regulatory mechanisms or revisions to the TMDL Action Plan.

The Regional Water Board is participating with the Russian River Watershed Association and other partners in the development of a regional monitoring program for the Russian River Watershed called the Russian River Regional Monitoring Program (R3MP). As appropriate, implementing parties under this Action Plan are encouraged to participate in the R3MP, once it is developed. The goal of the R3MP is to ensure that all publicly and privately funded environmental monitoring conducted in the watershed and related to the implementation of public policy is adequately standardized, coordinated, accessible, and designed to cost-effectively answer watershed management questions. The R3MP will initially focus on surface water monitoring within the Russian River Watershed to benefit the current Municipal Separate Storm Sewer System (MS4) co-permittees under their watershed-based National Pollutant Discharge Elimination System (NPDES) permit, with opportunities to expand.

## **VII. SCHEDULE**

To implement requirements set forth in this Action Plan, the Regional Water Board will rely on existing regulatory tools (individual and general National Pollutant Discharge Elimination System (NPDES) permits, individual and general Waste Discharge Requirements (WDRs), individual and general Waivers of WDRs), and through implementation of MOUs with local agencies. Table 1 specifies the implementation actions to be undertaken by implementing parties and the compliance dates by which the implementation actions must be completed. Implementation actions include compliance with existing WDRs or Waivers, the issuance of new WDRs or Waivers for previously unregulated or under-regulated sources of fecal waste material, and the development and implementation of new management plans and practices to control the discharge of fecal waste to surface waters. For OWTS, the TMDL Action Plan establishes an APMP that includes an assessment of the adequacy of existing OWTS, a program by which OWTS in need of major repair or replacement can be upgraded to return them to proper function, and a requirement that all OWTS within the APMP boundary obtain a basic inspection every five years to ensure that the OWTS is functioning as designed and to identify OWTS that are in need of correction action.

The Regional Water Board will periodically review and assess the effectiveness of the Action Plan. The assessment will consider permit compliance, effectiveness of best management practices, and trends in water quality improvement as demonstrated by the R3MP or other equivalent monitoring efforts. Regional Water Board staff will coordinate with local agencies to implement MOUs and similar agreements and revise the agreements as necessary. The Regional Water Board anticipates full attainment of the bacteria water quality objective in 20 years.

**Table 1 Implementation Actions for Source Categories**

Fecal Waste Source Category	Implementing Parties (Source)	Implementation Actions and Compliance Date(s)
Municipal Wastewater Discharges	City of Ukiah, City of Healdsburg, City of Santa Rosa, Russian River CSD, Occidental CSD, City of Cloverdale	Compliance with the applicable NPDES permits - Ongoing
Wastewater Holding Pond Discharges to Surface Water	Town of Windsor, City of Santa Rosa, Graton CSD, Forestville WD, Russian River CSD, other entities with storage pond discharges to surface water.	<ol style="list-style-type: none"> <li>1. <b>Within five year after the effective date of this Action Plan</b>, the Regional Water Board will update waste discharge requirements (WDRs) to include water quality-based effluent limitations for fecal indicator bacteria that will ensure compliance with wasteload allocations for <i>E. coli</i> bacteria.</li> <li>2. <b>Within ten years after the effective date of this Action Plan</b>, in accordance with an approved compliance schedule, implementing parties shall achieve compliance with wasteload allocations for <i>E. coli</i> bacteria.</li> </ol>
Percolation Pond and Irrigation Discharges	Calpella CWD, Hopland PUD, City of Cloverdale, City of Ukiah, Geyserville CSD, Airport-Larkfield-Wikiup SZ, Russian River CSD, other publically and privately-owned wastewater treatment facilities in the Russian River Watershed that collect, treat, and dispose of or recycle treated effluent to land via percolation ponds or by irrigation	Compliance with the applicable WDRs - Ongoing
Sanitary Sewer Systems	City of Ukiah, Ukiah SD, Calpella CWD, Hopland PUD, City of Cloverdale, Geyserville CSD, City of Healdsburg, Town of Windsor, Airport-Larkfield-Wikiup SZ, City of Santa Rosa, South Park CSD, City of Cotati, City of Rohnert Park, City of Sebastopol, Sonoma State University, Graton CSD, Forestville WD, Russian River CSD, Occidental CSD, and other public entities that own or operate sanitary sewer systems	Compliance with the applicable WDRs - Ongoing
Land Application of Treated Municipal Sewage Sludge (Biosolids)	City of Santa Rosa, other public and private entities applying biosolids as a soil amendment	Compliance with the applicable WDRs - Ongoing
Recycled Water Irrigation Runoff	Entities permitted to beneficially reuse treated wastewater through irrigation to land, Regional Water Board	<ol style="list-style-type: none"> <li>1. Compliance with the applicable WDRs - Ongoing</li> <li>2. <b>Within one month after the effective date of this Action Plan</b>, each entity that is permitted to beneficially reuse treated wastewater and is implementing a Recycled Water BMP Plan or equivalent BMP Plan shall submit to the Executive Officer written certification that its existing BMP Plan adequately prevents and/or minimizes overspray, spills, and incidental runoff.</li> <li>3. <b>Within two years after the effective date of this Action Plan</b>, each entity that currently recycles water without a Recycled Water BMP Plan or equivalent BMP plan shall develop and implement a Recycled Water BMP Plan. Where the entity is the producer and user of recycled water, the entity</li> </ol>

**Table 1 Implementation Actions for Source Categories**

Fecal Waste Source Category	Implementing Parties (Source)	Implementation Actions and Compliance Date(s)
		<p>shall also submit to the Regional Water Board Executive Officer a Title 22 Engineering Report approved by the State Water Board Division of Drinking Water.</p> <p>The Regional Water Board will require submission of the certification statement and, where necessary, notices to update existing Recycled Water BMP Plans under authority of section 13267 subdivision (b) of the Water Code. New Recycled Water BMP Plans, or equivalent BMP Plans, shall be submitted as part of a Notice of Intent for coverage under general WDRs or in conjunction with a report of waste discharge.</p>
Urban Runoff	Sonoma County, Sonoma County Water Agency, City of Cloverdale, City of Cotati, City of Healdsburg, City of Rohnert Park, City of Santa Rosa, City of Sebastopol, City of Ukiah, Town of Windsor, County of Mendocino	<ol style="list-style-type: none"> <li>1. Compliance with the applicable NPDES permits, including implementation of approved Pathogen Reduction Plans – Ongoing</li> <li>2. <b>Within two years of the effective date of this Action Plan</b>, MS4 enrollees (excluding the Sonoma County Water Agency, who does not have land use authority) without an approved Pathogen Reduction Plan shall develop and implement a Pathogen Reduction Plan approved by the Regional Water Board Executive Officer.</li> </ol> <p>For Phase I MS4 Permittees without approved Pathogen Reduction Plans on the effective date of the Action Plan, the Regional Water Board will require submission of the Pathogen Reduction Plans under authority of section 13267 subdivision (b) of the Water Code. For Phase II MS4 Permittees, the requirement to develop and implement a Pathogen Reduction Plan will be incorporated in the renewal of the Phase II MS4 Permit. .</p>
California Department of Transportation (Caltrans) Storm Water	Caltrans	Compliance with the applicable NPDES permits – Ongoing
Large Onsite Wastewater Treatment Systems	Owners and operators of all OWTS with projected flow greater than 10,000 gpd or owners of OWTS with project flow greater than set forth in an approved LAMP, Regional Water Board	<ol style="list-style-type: none"> <li>1. <b>Within three months after the effective date of this Action Plan</b>, owners and operators of OWTS with projected flow of over 10,000 gpd shall submit a Report of Waste Discharge (ROWD), or equivalent, to the Regional Water Board</li> <li>2. <b>Within one year after the effective date of this Action Plan</b>, based on the ROWDs received the Regional Water Board may issue WDRs or Waivers of WDRs for Large OWTS located in the geographic area of an Advanced Protection Management Program</li> </ol>
Existing, New and Replacement Onsite Wastewater Treatment Systems	Owners of OWTS, Regional Water Board, Sonoma County, Mendocino County	<p>Owners and operators of Existing, New, and Replacement OWTS shall:</p> <ol style="list-style-type: none"> <li>1. Immediately comply with local codes and ordinances pertaining to OWTS</li> <li>2. Maintain their OWTS in good working condition, including inspecting the OWTS and pumping of solids as necessary, or as required by local ordinances, in order to maintain proper function and assure adequate wastewater treatment and disposal</li> <li>3. Notify the local agency in the event that their OWTS has pooling effluent, discharges wastewater to the ground surface, or has wastewater backed up into plumbing fixtures</li> <li>4. Notify the local agency in the event that their OWTS septic tank has failed such that wastewater is leaking from the tank or groundwater is infiltrating the tank</li> <li>5. As directed by the Regional Water Board, provide information to the Regional Water Board to assess the performance of their OWTS</li> </ol>

**Table 1 Implementation Actions for Source Categories**

Fecal Waste Source Category	Implementing Parties (Source)	Implementation Actions and Compliance Date(s)
		<p>6. As directed by the local agency, obtain an appropriate local agency permit for the repair or replacement of an OWTS deemed to be in need of corrective action pursuant to this Action Plan, and complete OWTS repairs or replacement within the time specified by the local agency or the Regional Water Board</p> <p>7. <b>At least every five years</b>, obtain required inspections and reports and submit to the Regional Water Board, or as directed by the Regional Water Board Executive Officer, the results of inspections, corrective actions, and other required information</p> <p>The Regional Water Board will:</p> <ol style="list-style-type: none"> <li><b>Within six months after the effective date of this Action Plan</b> and pursuant to section 13267 of the California Water Code, commence with notification process to require owners and operators of OWTS within the boundaries of the APMP to submit information pertaining to their OWTS to the Regional Water Board</li> <li><b>Within five years after the effective date of this Action Plan</b>, complete the initial assessment of OWTS within the boundaries for the APMP</li> </ol> <p>The Regional Water Board, Sonoma County, and Mendocino County will:</p> <ol style="list-style-type: none"> <li>Coordinate to procure funding assistance for disadvantaged communities and other individual OWTS owners affected by this Action Plan – Ongoing</li> <li>Develop public outreach actions to involve the public in decision-making related to abatement actions for existing OWTS within the APMP designated areas that are in need of correction action. Outreach actions might include citizen advisory groups and public meetings- Ongoing</li> </ol>
Recreational Water Uses and Users	Regional Water Board, Sonoma County, Mendocino County	<ol style="list-style-type: none"> <li>In accordance with a Memorandum of Understanding, Sonoma County, the Sonoma County CDC, and the Regional Water Board will work with local entities and private parties along the Russian River to address water quality impacts relative to recreational water uses, and to promote the installation and location of sanitary facilities along the Russian River for use by recreational water users – Ongoing</li> <li>Mendocino County and the Regional Water Board will develop a Memorandum of Understanding or equivalent agreement to address water quality impacts relative to recreational water uses - Ongoing</li> </ol>
Homeless Encampments; Illegal Camping	Regional Water Board, Sonoma County, Sonoma County Community Development Commission (CDC), Mendocino County	<ol style="list-style-type: none"> <li>In accordance with a Memorandum of Understanding, Sonoma County, the Sonoma County CDC, and the Regional Water Board will implement a Joint Protocol to address water quality impacts relative to homeless encampments - Ongoing</li> <li>Mendocino County and the Regional Water Board will develop a Memorandum of Understanding or equivalent agreement to address water quality impacts relative to homeless encampments - Ongoing</li> </ol> <p>The Regional Water Board will prioritize permitting for homeless-dedicated and affordable housing projects in the Russian River area for which Regional Water Board permits are required - Ongoing</p>
Non-dairy Livestock and Farm Animal Waste	Owners and operators of animal facilities, inclusive of animal husbandry, livestock production, other similar agriculture	<p><b>Within two years after the effective date of this Action Plan</b>, owners and operators of animal facilities shall implement BMPs to properly contain and dispose of waste, and mitigate for potential water quality impacts resulting from surface runoff of animal waste, or submit a Report of Waste</p>

**Table 1 Implementation Actions for Source Categories**

Fecal Waste Source Category	Implementing Parties (Source)	Implementation Actions and Compliance Date(s)
	operations, and commercial animal boarding facilities	Discharge (ROWD) if such BMPs are not implemented or if directed by the Regional Water Board Executive Officer
Dairies and CAFOs	Owners and Operators of Cow Dairies and CAFOs not subject to NPDES permits	<ol style="list-style-type: none"> <li>1. Compliance with the applicable WDRs or Waivers – Ongoing</li> <li>2. <b>Within two years after the effective date of this Action Plan</b>, enrollees under the Conditional Waiver of WDRs shall update and implement required plans (i.e. Water Quality Plan, Waste Management Plan, or comparable plans) to address sources of bacteria</li> </ol>
Dairies and CAFOs	Owners and Operators of Cow Dairies and CAFOs subject to NPDES permits	<ol style="list-style-type: none"> <li>1. Compliance with the applicable NPDES permits - Ongoing</li> <li>2. <b>Within two years after the effective date of this Action Plan</b>, enrollees under WDRs shall update their permit-required management plans to address sources of bacteria</li> </ol>