

CHAPTER 9 IMPLEMENTATION

The purpose of the Implementation Plan is to describe the steps necessary to reduce pathogen concentrations and achieve the TMDLs. The Implementation Plan identifies:

1. Actions that staff expects will reduce pathogens;
2. Parties responsible for taking these actions;
3. Regulatory mechanisms by which the Regional Water Board will ensure that these actions are taken; and
4. A timeline for completion of actions.

9.1 WASTE DISCHARGE PROHIBITIONS

Discharges of fecal material from humans or from domestic animals to waters of the state are controllable water quality factors that shall conform to the bacteria water quality objective. Controllable water quality factors are those actions, conditions, or circumstances resulting from man's activities that may influence the quality of waters of the state and that may be reasonably controlled.

In accordance with Water Code section 13243 and in order to achieve the bacteria water quality objective, to protect present and future beneficial uses of water, to protect public health, and to prevent nuisance, this TMDL sets forth the following 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 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, sheep, dogs, cats, or any other animal(s) in the care of any person(s). Exceptions to the prohibition include discharges authorized in accordance with waste discharge requirements or other provisions of the Water Code, Division 7, as amended. Compliance with this Waste Discharge Prohibition implies compliance with the wasteload and load allocations for this TMDL.

Sources of human fecal waste material identified in this TMDL project include:

- Discharges of municipal wastewater directly to surface waters;
- Discharges of untreated sewage from sanitary sewer systems;
- Discharges of wastewater from percolation ponds and through spray irrigation;

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Discharges of runoff from land application of municipal biosolids;
- Discharges of runoff from water recycling projects;
- Discharges from onsite wastewater treatment systems;
- Discharges from recreational water uses and users;
- Discharges from homeless encampments; and
- Discharges of storm water to municipal separate storm sewer system (MS4s) and from areas outside MS4 boundaries.

Sources of domestic animal and farm animal waste identified in this TMDL project include:

- Discharges of pet waste;
- Discharges from non-dairy livestock and farm animals; and
- Discharges of manure from dairy cows.

9.2 IMPLEMENTATION ACTIONS

The implementation actions included in this TMDL address pathogens from specific controllable pathogen sources, including humans and domesticated animals. Each probable source, its responsible parties, and its implementation actions are described in the following sections and summarized in Table 9.1.

9.2.1 MUNICIPAL WASTEWATER DISCHARGES TO SURFACE WATERS

There are four municipal wastewater treatment facilities in the Russian River Watershed that collect, treat, and discharge fully-treated effluent directly to the Russian River or its tributaries. These facilities are operated by:

- City of Ukiah
- City of Healdsburg
- City of Santa Rosa
- Occidental County Sanitation District

The waste discharges are regulated under existing NPDES permits that include effluent limitations and disinfection specifications to ensure treatment processes achieve effective and reliable pathogen reduction. Disinfection requirements in these permits are derived from standards for tertiary-treated recycled water contained in title 22 of the California Code of Regulations. The limitations are consistent with Basin Plan requirements for advanced treated wastewater for such discharges. When a disinfection system operates properly and attains the effluent limitations, direct discharges of treated wastewater to surface waters will also attain *E. coli* and enterococci bacteria wasteload allocations.

In order to ensure that direct discharges of treated wastewater from municipal wastewater treatment facilities to the Russian River and its tributaries maintain existing performance,

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

and thus remain in compliance with Basin Plan standards, these permittees are required to attain the following effluent limitations:

1. The median concentration of total coliform bacteria shall not exceed 2.2 MPN/ 100 mL, using the daily bacteriological results of the last 7 days for which analyses have been completed;
2. The number of total coliform bacteria shall not exceed 23 MPN/ 100 mL in more than one daily result in any 30-day period; and
3. No daily total coliform result shall exceed 240 MPN/ 100 mL.

To demonstrate compliance with limitations, direct dischargers of treated wastewater shall conduct daily effluent monitoring at a location or locations where a representative sample of the effluent can be collected. Direct dischargers shall provide to the Regional Water Board monthly discharge monitoring reports and other reports, as necessary, to demonstrate compliance with effluent limitations and with the *E. coli* and enterococci bacteria wasteload allocations.

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
Municipal Wastewater Discharges	City of Ukiah, City of Healdsburg, City of Santa Rosa, Occidental CSD	Municipal wastewater discharger shall comply with effluent limitations for fecal indicator bacteria and disinfection specifications in NPDES permit.	As specified in applicable NPDES permits
Wastewater Holding Pond Discharges to Surface Water	City of Ukiah, City of Healdsburg, Town of Windsor, City of Santa Rosa, Graton CSD, Forestville WD, Russian River CSD, Occidental CSD Other entities with storage pond discharges to surface water.	Storage pond dischargers shall submit demonstration that discharge does not contain human-source bacteria and pathogens, or submit a Bacterial Load Reduction Plan (BLRP) with time schedule of compliance with waste load allocations. The discharger shall comply with applicable NPDES permit requirements.	a) 18 months after the effective date of the TMDL to submit demonstration of compliance with WLAs b) Two years after the effective date of the TMDL to submit BLRP, and up to ten years after the effective date of the TMDL to comply with effluent limitations c) Four years after the effective date of the TMDL for Regional Water Board to update WDRs, if applicable
		The Regional Water Board shall update waste discharge requirements (WDRs) for those municipalities and special districts that do not demonstrate to the satisfaction of the Regional Water Board Executive Office that the holding pond effluent discharge does not contain human-source bacteria and pathogens. The WDRs shall include effluent limitations based on holding pond effluent sampling using the bacteriological results of holding pond effluent samples collected at least weekly for the calendar month for which analyses have been completed: 1. The geometric mean concentration of <i>E.coli</i> bacteria shall not exceed 100 MPN/ 100 mL, and 2. The Statistical Threshold Value (STV) for <i>E. coli</i> bacteria shall not exceed 320 MPN/ 100 mL. 3. The geometric mean concentration of <i>enterococci</i> bacteria shall not exceed 30 MPN/ 100 mL, and 4. The STV for <i>enterococci</i> bacteria shall not exceed 110 MPN/ 100 mL.	

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
Percolation Pond and Irrigation Discharges	<p>Calpella CWD, Hopland PUD, City of Cloverdale, Geyserville CSD, Airport-Larkfield-Wikiup SZ, Russian River CSD, Occidental CSD</p> <p>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</p>	<p>The Regional Water Board shall update waste discharge requirements for percolation pond and irrigation discharges to include effluent limitations in which:</p> <ol style="list-style-type: none"> 1. The geometric mean concentration of total coliform bacteria shall not exceed 23 MPN/100 mL in any calendar month. 2. The geometric mean concentration of enterococci bacteria shall not exceed 30 MPN/100 mL, and 3. The STV for <i>enterococci</i> bacteria shall not exceed 110 MPN/ 100 mL. <p>The frequency of effluent monitoring for bacteria established in waste discharge requirements is at the discretion of the Regional Water Board, but shall be sufficient to demonstrate compliance with effluent limitations. Waste discharge requirements shall provide justification for the frequency of monitoring. Justification shall be based on factors such as discharge flow, proximity of the discharge to surface waters or other site conditions, effluent variability, and other factors, as appropriate. The discharger shall comply with the applicable WDR.</p>	<p>a) As specified in applicable WDRs</p> <p>b) As soon as practicable for Regional Water Board to update WDRs</p>
Sanitary Sewer Systems	<p>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 Sebastopol, Sonoma State University, Graton CSD, Forestville WD, Russian River CSD, Occidental CSD</p> <p>Other public entities that own or operate sanitary sewer systems</p>	<p>Each municipality and district with a sanitary sewer system shall comply with State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems, the revised Monitoring and Reporting Program Order No. WQ 2013-0058-EXEC, and subsequent revisions.</p> <p>Each municipality and district with a sanitary sewer system shall submit or update a Sanitary Sewer Management Plan (SSMP) that describes actions with time schedules that it takes or plans to take to further minimize sanitary sewer overflows, spills, and exfiltration from its sanitary sewer system. The Regional Water Board will require submission of the SSMP amendment under authority of section 13267 subdivision (b) of the California Water Code.</p>	As specified in the applicable general WDR
Land Application of Treated	City of Santa Rosa	The discharger shall comply with State Water Resources	a) As specified in an applicable general WDR

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
Municipal Sewage Sludge (Biosolids)	Other public entity applying biosolids as a soil amendment	<p>Control Board Order No. 2004-0012-DWQ, General WDRs for the Discharge of Biosolids to Land, subsequent general orders, or individual waste discharge requirements.</p> <p>The discharger shall submit or update an Erosion Control Plan describing enhanced protections to prevent the movement of biosolids from the application area. The Regional Water Board will require submission of the Erosion Control Plan under authority of section 13267 subdivision (b) of the Water Code.</p>	b) One year after the effective date of the TMDL to submit (or update) and implement the Erosion Control Plan
Recycled Water Irrigation Runoff	Entities permitted to beneficially reuse treated domestic wastewater through irrigation to land	<p>Each entity that is permitted to beneficially reuse treated wastewater for landscape irrigation, agricultural irrigation, or other use allowable under California Code of Regulations, title 22, chapter 3, article 3, section 60303 through 60307 shall maintain compliance with water recycling requirements in State Water Resources Control Board Order WQ 2014-0090-DWQ, General WDRs for Recycled Water Use, subsequent general orders, individual waste discharge requirements, or Master Water Reclamation Permits.</p> <p>Each municipality and district that is permitted to beneficially reuse treated wastewater shall develop (or update), submit, and implement a Non-Storm Water BMP Plan.</p> <p>The Regional Water Board will require submission of the Non-Storm Water BMP Plan under authority of section 13267 subdivision (b) of the Water Code.</p>	<p>a) One year after the effective date of the TMDL to update and submit existing BMP Plan, or sooner if the entity to submit a Non-Storm Water BMP Plan in accordance with an existing Order.</p> <p>b) Two years after the effective date of the TMDL to develop and submit new BMP Plan,</p> <p>c) Final compliance within 5 years after the effective date of TMDL</p>
Existing, New and Replacement Onsite Wastewater Treatment Systems (<i>High Priority Areas</i>)	Owners of Onsite Wastewater Treatment Systems in High Priority Areas	Owners of Onsite Wastewater Treatment Systems in High Priority areas shall comply with the Advanced Protection Management Program established by this TMDL. For a complete description of the options and requirements of the Advanced Protection Management Program, see section 9.2.7.1.	For a complete description of compliance dates, see section 9.2.7.1.

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
Existing, New and Replacement Onsite Wastewater Treatment Systems (<i>Low Priority Areas</i>)	Owners of Onsite Wastewater Treatment Systems in High Priority Areas	Owners of Onsite Wastewater Treatment Systems in Low Priority areas shall comply with the Advanced Protection Management Program established by this TMDL. For a complete description of the options and requirements of the Advanced Protection Management Program, see section 9.2.7.2.	For a complete description of compliance dates, see section 9.2.7.2.
Existing, New and Replacement Onsite Wastewater Treatment Systems (<i>Non-Priority Areas</i>)	Owners of Onsite Wastewater Treatment Systems in High Priority Areas	Owners of Onsite Wastewater Treatment Systems in Low Priority areas shall comply with the requirements of the Basin Plan's OWTS Policy.	Compliance schedule shall be consistent with an approved LAMP or the Basin Plan's OWTS Policy.
Large Onsite Wastewater Treatment Systems	Owners and operators of all OWTS with projected flow greater than 10,000 gpd or owners of all OWTS with project flow greater than set forth in an approved LAMP	Owners and operators of Large Onsite Wastewater Treatment Systems shall submit a Report of Waste Discharge (ROWD) to the Regional Water Board. The Regional Water Board shall issue WDRs or Waivers of WDRs for the OWTS. For Owners of OWTS located in the geographic area of an Advanced Protection Management Program, the Regional Water Board shall include requirements in the Waiver or WDR that the OWTS Owner comply with supplemental treatment components for pathogens in accordance with requirements in sections 10.10.2 through 10.15 of the Basin Plan's OWTS Policy. Supplemental treatment components shall ensure OWTS effluent does not exceed a 30-day average of 30 mg TSS/L, can achieve an effluent <i>E. coli</i> bacteria concentration of less than or equal to 100 MPN/100 mL, and can achieve an effluent enterococci bacteria concentration of less than or equal to 30 MPN/ 100 mL. As an alternative to installing supplemental treatment components for OWTS, owners of large OWTS in High Priority Areas can commit to connecting to a centralized wastewater collection and treatment system, in accordance with Option 2 in Section 9.2.7.1 for individual OWTS.	<p>a) For OWTS with projected flow of over 10,000 gpd, one year from the effective date of the TMDL to submit a ROWD</p> <p>b) For OWTS with projected flow greater than set forth in an approved LAMP, six months after approval of a LAMP for the local agency with jurisdiction over the OWTS</p>

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
Other Onsite Wastewater Treatment Systems	<p>OWTS not covered by the Conditional Waiver of the Basin Plan's OWTS Policy:</p> <p>Cesspools of any kind or size</p> <p>OWTS that utilize any form of effluent disposal on or above the ground surface, slopes greater than 30 percent without a slope stability report approved by a registered professional</p> <p>Decreased leaching area for International Association of Plumbing and Mechanical Officials (IAPMO) certified dispersal systems using a multiplier less than 0.70</p> <p>OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections</p> <p>OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks</p> <p>Separation of the bottom of dispersal system to groundwater less than two feet, except for seepage pits, which shall not be less than 10 feet</p> <p>Minimum horizontal setbacks less than specified in section 10.6.9 of the Basin Plan's OWTS Policy</p>	<p>Owners of OWTS with conditions described here shall submit Report of Waste Discharge (ROWD) to the Regional Water Board. The Regional Water Board shall issue WDRs or Waivers of WDRs for the OWTS.</p>	<p>a) ROWD shall be submitted as soon as possible, but no later than 5 years after the effective date of the TMDL.</p> <p>b) As specified in applicable WDRs</p>
Recreational Water Use	<p>Sonoma County, Mendocino County, other landowner of a recreational beach</p>	<p>The County or landowner shall submit BLRP to control sources of bacteria. The Regional Water Board will require submission of the BLRP under authority of section 13267 subdivision (b) of the Water Code.</p>	<p>Two years from the effective date of the TMDL to submit a BLRP</p>
Homeless and Farmworker Encampments and Illegal Camping	<p>Sonoma County, Mendocino County, Municipalities, Sonoma-Marín Area Rail Transit (SMART)</p> <p>Other owners of land with homeless or farmworker encampments</p>	<p>The entity shall submit BLRP to control sources of bacteria. The Regional Water Board will require submission of the BLRP under authority of section 13267 subdivision (b) of the Water Code.</p>	<p>Two years from the effective date of the TMDL to submit a BLRP</p>

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

**Table 9.1
Summary of Implementation Actions**

Bacteria Source Category	Implementing Parties (Source)	Implementation Actions	Compliance Date(s)
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	The public entity shall comply with the applicable MS4 Permit	As specified in the applicable NPDES Permit
		The public entity shall submit BLRP to control sources of bacteria. The Regional Water Board will require submission of the BLRP under authority of section 13267 subdivision (b) of the Water Code.	Two years from the effective date of the TMDL to submit a BLRP
California Department of Transportation (Caltrans) Storm Water	Caltrans	The public entity shall comply with General Storm Water Permit (NPDES Permit No. CAS000003)	As specified in the applicable NPDES Permit
Non-dairy Livestock and Farm Animal Waste	Owners and operators of animal facilities, inclusive of animal husbandry, livestock production, other similar agriculture operations, and commercial animal boarding facilities	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 and submit a report of waste discharge, as applicable.	Two years from the effective date of the TMDL to establish BMPs
Dairies and CAFOs	Owners and Operators of Cow Dairies and CAFOs	Owners and Operators of Cow Dairies and CAFOs shall comply with requirements set forth in the Conditional Waiver of Waste Discharge Requirements, the general WDR, an individual WDR, or NPDES permit, as applicable. If an enrollee is required to have a Waste Management Plan (WMP) and Nutrient Management Plan (NMP) or a Water Quality Plan (WQP) as a condition of the order, the WQP and NMP shall be updated to address sources of bacteria.	<ul style="list-style-type: none"> a) As specified in the applicable WDRs or Waiver of WDRs b) For Enrollees under the Conditional Waiver, one year from the effective date of the TMDL to update and implement the Water Quality Plan to address sources of bacteria c) For Enrollees under the general WDR or Permittees under an individual WDR, one year from the effective date of the TMDL to update and implement the Waste Management Plan for production areas (WMP) and/or Nutrient Management Plan (NMP) for manure to land application areas, as appropriate, to address sources of bacteria

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

The Regional Water Board will include the above effluent limitations and requirements in applicable waste discharge requirements as soon as is practicable, but no later than at the time of the facility's next permit renewal.

9.2.2 WASTEWATER HOLDING POND DISCHARGES TO SURFACE WATERS

There are six municipal wastewater treatment facilities in the Russian River Watershed that collect, treat, dispose, or recycle municipal wastewater and discharge treated effluent from a wastewater holding pond to the Russian River or its tributaries. These facilities are operated by:

- City of Santa Rosa
- Forestville Water District
- Graton Community Services District
- Occidental County Sanitation District
- Russian River County Sanitation District
- Town of Windsor

Each entity authorized to discharge treated wastewater from wastewater holding ponds to the Russian River or its tributaries shall maintain compliance with the following effluent limitations (which equal the *E. coli* and enterococci bacteria wasteload allocations) using the bacteriological results of holding pond effluent samples collected at least weekly for the calendar month for which analyses have been completed:

1. The geometric mean concentration of *E.coli* bacteria shall not exceed 100 MPN/ 100 mL, and
2. The Statistical Threshold Value (STV) for *E. coli* bacteria shall not exceed 320 MPN/ 100 mL.
3. The geometric mean concentration of *enterococci* bacteria shall not exceed 30 MPN/ 100 mL, and
4. The STV for *enterococci* bacteria shall not exceed 110 MPN/ 100 mL.

Within 18 months of the effective date of this TMDL, each entity permitted to discharge treated wastewater from wastewater holding ponds to surface waters shall provide evidence that its discharge is in compliance with the *E. coli* and enterococci bacteria WLAs in this TMDL or prepare and submit to the Regional Water Board a Bacteria Load Reduction Plan (BLRP) (further described in Section 8.3). The BLRP shall provide a description and a time schedule up to ten years after the effective date of the TMDL for actions that will bring the entity into compliance with the *E. coli* and enterococci bacteria WLAs. Possible compliance actions could include any combination of the following:

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Upgrades to existing disinfection systems to a process more completely destructive of wastewater pathogens (e.g., ozone, heat sterilization, ultrafiltration);
- Initial or additional disinfection of holding pond effluent immediately prior to discharge; and
- Zero discharge through expansion of recycled water use or enlargement of wastewater holding ponds.

If studies or other evidence demonstrate to the satisfaction of the Regional Water Board Executive Officer that human-source bacteria and pathogens are effectively killed or removed from the waste stream and are not present in the holding pond discharge, the entity will be considered to be in compliance with the waste load allocations. Accordingly, NPDES permits renewed for these entities will not include effluent limitations for *E. coli* and enterococci bacteria for the discharge from the wastewater holding ponds. Monitoring requirements for wastewater holding pond effluent to document continued compliance with wasteload allocations may be established in the NPDES permit, at the discretion of the permit writer.

For each entity that does not demonstrate to the satisfaction of the Regional Water Board Executive Officer that the holding pond effluent discharge does not contain human-source bacteria and pathogens, the Regional Water Board will include the above effluent limitations and requirements in applicable waste discharge requirements within four years after the effective date of this TMDL. Following the inclusion of effluent limitations and requirements, affected entities shall conduct effluent monitoring for *E. coli* and enterococci bacteria at least weekly at a location or locations where a representative sample of the effluent can be collected. Affected entities shall provide to the Regional Water Board monthly discharge monitoring reports and other reports, as necessary, to demonstrate compliance with effluent limitations.

9.2.3 PERCOLATION PONDS AND DISPOSAL BY IRRIGATION

There are six municipal wastewater treatment facilities and seven 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. These facilities are operated by:

- Bohemian Grove (private)
- Calpella County Water District (public)
- Camp Royaneh (private)
- City of Cloverdale (public)
- City of Ukiah (public)
- Geyserville County Sanitation Zone (public)
- Hopland County Water District (public)

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Mayacamas Golf Club (private)
- Rio Lindo Academy (private)
- Russian River County Sanitation District (public)
- Rodney Strong Vineyards (private)
- Salvation Army Lytton Springs Rehabilitation Facility (private)
- Vintner's Inn (private)

Each municipality, district, and private wastewater treatment facility permitted to discharge treated municipal or domestic wastewater to a percolation pond within the Russian River Watershed shall use a treatment process designed to meet the following effluent limitations:

1. The geometric mean concentration of total coliform bacteria shall not exceed 23 MPN/100 mL in any calendar month.
2. The geometric mean concentration of enterococci bacteria shall not exceed 30 MPN/100 mL, and
3. The STV for *enterococci* bacteria shall not exceed 110 MPN/ 100 mL.

The effluent limitation for total coliform bacteria is derived from standards for disinfected secondary-23 treated recycled water contained in California Code of Regulations, title 22, chapter 3, article 1, section 60301.225. Disinfection systems that are designed to consistently achieve this level of disinfection are effective in reducing most wastewater pathogens to non-detectable or very low levels. Use of an effluent disinfection system to meet this total coliform bacteria effluent limitation will ensure compliance with load allocations for *E. coli* bacteria in this TMDL. The effluent limitation for enterococci bacteria implements the load allocation in this TMDL.

For disposal of wastewater to land through irrigation disposal, attainment of bacteria load allocations is achieved through proper treatment plant design and siting and through compliance with waste discharge requirements that contain appropriate effluent limitations and discharge specifications derived to meet standards for secondary-23 treated recycled water in California Code of Regulations, title 22, chapter 3, article 1, section 60301.225, and other requirements that prevent the creation of runoff that could impact surface water.

To demonstrate compliance with these bacteria limitations, facilities shall conduct effluent monitoring at a location or locations where a representative sample of the effluent can be collected, and provide discharge monitoring reports to Regional Water Board staff. The frequency of effluent monitoring for bacteria established in waste discharge requirements is at the discretion of the Regional Water Board, but shall be sufficient to demonstrate compliance with effluent limitations. Waste discharge requirements shall provide justification for the frequency of monitoring. Justification shall be based on factors such as

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

discharge flow, proximity of the discharge to surface waters or other site conditions, effluent variability, and other factors, as appropriate.

The Regional Water Board shall include the above effluent limitations and requirements in applicable waste discharge requirements as soon as is practicable.

9.2.4 SANITARY SEWER SYSTEMS

There are eighteen sanitary sewer systems in the Russian River Watershed that collect and convey domestic wastewater to wastewater treatment facilities for treatment, and disposal or recycling. These facilities are operated by:

- Airport/Larkfield/Wikiup Sanitation Zone
- Calpella County Water District
- City of Cloverdale
- City of Cotati
- City of Healdsburg
- City of Rohnert Park
- City of Santa Rosa
- City of Sebastopol
- City of Ukiah
- Forestville Water District
- Geyserville County Sanitation Zone
- Graton Community Services District
- Hopland County Water District
- Occidental County Sanitation District
- Russian River County Sanitation District
- Sonoma State University
- South Park County Sanitation District
- Town of Windsor
- Ukiah Valley Sanitation District

In order to comply with this TMDL, each municipality and district shall (1) maintain compliance with General Waste Discharge Requirements for Sanitary Sewer System, Water Quality Order No. 2006-0003-DWQ (General Order) and all amendments and subsequent updates to the General Order.

In addition, within one year of the effective date of this TMDL, the municipality or district shall revise its approved Sanitary Sewer Management Plan (SSMP) to describe actions that it takes or plans to take to further minimize sanitary sewer overflows, spills, and exfiltration from its sanitary sewer system. Possible actions might include:

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Increasing the frequency and method of surveillance of sanitary sewer pipes, pump stations, siphons, and other sewer infrastructure that are located where overflows, spills, and exfiltration may adversely impact the Russian River or its tributaries;
- Accelerating schedules for pipeline rehabilitation and/or replacement;
- Revising sewer design standards to specify construction materials and methods that will ensure a water-tight sanitary sewer system for new and replacement sewer components in areas adjacent to the Russian River and its tributaries;
- Establishing local ordinances to require property owners to inspect their private sewer lateral upon property transfer, in response to chronic sanitary sewer overflows (SSOs), or after significant changes in property use; and
- Developing programs to enable and help finance ratepayers to voluntarily inspect and repair deteriorating private service laterals.

The Regional Water Board will require submission of the SSMP amendment under authority of section 13267 subdivision (b) of the California Water Code.

9.2.5 LAND APPLICATION OF TREATED MUNICIPAL SEWAGE SLUDGE (BIOSOLIDS)

Currently, the City of Santa Rosa is the only public entity permitted for the land application of biosolids as a soil amendment in the Russian River Watershed. In order to comply with this TMDL, the City of Santa Rosa shall maintain coverage for its biosolids land application projects under General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities, Water Quality Order No. 2004-12-DWQ (General Order), and all amendments and subsequent updates to the General Order, or equivalent individual waste discharge requirements.

In addition, within one year of the effective date of this TMDL, the City of Santa Rosa shall prepare and submit an Erosion Control Plan that describes actions and time schedules for enhanced protections to prevent the movement of biosolids from the application area. Enhanced protections might include:

- Increasing minimum allowable setbacks;
- Installing vegetation buffer strips between the application area and gullies, washes, and other areas that are vulnerable to erosion and washout; and
- Decreasing the pathogen concentration of land-applied biosolids.

The Regional Water Board will require submission of the Erosion Control Plan under authority of section 13267 subdivision (b) of the Water Code. Applicants seeking permit coverage for future projects involving the land application of municipal biosolids shall be required to prepare and submit an Erosion Control Plan, as described above, with the Notice of Intent.

9.2.6 RECYCLED WATER IRRIGATION RUNOFF

There are six municipal wastewater treatment facilities and districts responsible for water recycling projects in the Russian River Watershed that recycle treated effluent through spray irrigation. These facilities are operated by:

- Airport/Larkfield/Wikiup Sanitation Zone
- City of Cotati
- City of Healdsburg
- City of Rohnert Park
- City of Santa Rosa
- City of Sebastopol
- City of Ukiah
- Forestville Water District
- Graton Community Services District
- Occidental County Sanitation District.
- Russian River County Sanitation District, and
- Sonoma State University
- Town of Windsor

Each municipality and district or other entity that is permitted to beneficially reuse treated wastewater for landscape irrigation, agricultural irrigation, or other use allowable under California Code of Regulations, title 22, chapter 3, article 3, section 60303 through 60307 shall maintain compliance with water recycling requirements in State Water Resources Control Board Order WQ 2014-0090-DWQ, General Waste Discharge Requirements for Recycled Water Use, subsequent general orders, individual waste discharge requirements, or Master Water Reclamation Permits.

BMPs to prevent and/or minimize overspray, spills, and incidental runoff shall be described in a Non-Storm Water Best Management Practices (BMP) Plan, or equivalent plan, approved by the Regional Water Board Executive Officer. For Non-Storm Water BMP Plans approved by the Executive officer prior to the effective date of this TMDL, the implementing party shall update and submit to the Regional Water Board Executive Officer for approval an updated BMP Plan within one year of the effective date of this TMDL. The updated Non-Storm Water BMP Plan shall describe existing and/or planned actions to be undertaken to comply with *E. coli* and enterococci bacteria WLAs. Any implementing party without an approved Non-Storm Water BMP Plan by the effective date of the TMDL, shall submit to the Regional Water Board a Non-Storm Water BMP Plan that provides a description and a time schedule for actions that will bring the municipality or other entity into compliance with the *E. coli* and enterococci bacteria WLAs. The Non-Storm Water BMP Plan shall describe actions that prevent recycled water spills and incidental runoff from reuse areas adjacent to the Russian River and its tributaries. All new and updated Non-

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

Storm Water BMP Plans shall be fully implemented within 5 years of the effective date of the TMDL.

Possible actions in the Non-Storm Water BMP Plan might include:

- Evaluating and, when necessary, improving BMPs to prevent overspray, spills, and incidental runoff;
- Increasing setbacks from recycled water points of use to waterbodies, curbs, pavement and storm water inlets; and
- Improving compliance with recycled water user requirements through increased public outreach and, when necessary, through progressive enforcement.

The Regional Water Board will require the submission of a Non-Storm Water BMP Plan under authority of section 13267 subdivision (b) of the Water Code.

9.2.7 INDIVIDUAL ONSITE WASTEWATER TREATMENT SYSTEMS

Based on evidence of exceedances of the bacteria objective and the presence of human-source pathogenic indicator bacteria in the tributaries and in association with areas with a high density of onsite wastewater treatment systems (OWTS), this TMDL prescribes a risk-based management approach for the regulation of individual OWTS in the Russian River Watershed. This management approach mandates special requirements for those OWTS whose operation is likely to pose the greatest threat to public health and water quality.

To most efficiently implement this risk-based approach, areas within the Russian River Watershed that rely primarily on OWTS for wastewater treatment and disposal are identified and prioritized for application of special provisions based on the threat to water quality from OWTS discharges. Priority ranking consists of two threat ranks: High Priority and Low Priority. In accordance with the Basin Plan's On-site Wastewater System Requirements (Basin Plan OWTS Policy), the geographic area of the Advanced Protection Management Program (APMP) includes the High Priority and Low Priority Areas described below. Areas within the Russian River Watershed that have not been designated as High or Low Priority by the Regional Water Board are not covered by the APMP. Owners of existing, new and replacement OWTS not covered under the APMP must still comply with requirements of the Basin Plan's OWTS Policy.

Based on the TMDL assessment by Regional Water Board staff, High and Low Priority Areas are identified below. The Regional Water Board, in consultation with the local agency, will further define and rank communities and other areas based on the threat to water quality from OWTS within these areas as new data become available.

High Priority Areas include:

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Areas with a high density of OWTS in the lower Russian River Watershed, including the communities of Jenner, Cazadero, Monte Rio, Camp Meeker, Guerneville, Rio Nido, Summer Home Park, Hacienda, Mirabel, and in the Middle Russian River Watershed, including Fitch Mountain near Healdsburg.

Low Priority Areas include:

- Areas with a high density of OWTS in the middle and upper Russian River Watershed, including Oakmont in East Santa Rosa, North Cloverdale, Talmage, and Redwood Valley;
- Areas where OWTS are within 600 linear feet in the horizontal (map) direction of the mainstem Russian River and the following tributaries of the Russian River in the middle and upper Russian River Watershed: Austin Creek, Big Sulphur Creek, Little Sulphur Creek, Commisky Creek, Dry Creek, Dutch Bill Creek, Feliz Creek, Fife Creek, Forsythe Creek, Franz Creek, Green Valley Creek, Laguna de Santa Rosa, Maacama Creek, Mark West Creek, Mill Creek, Pieta Creek, East Fork Russian River, Santa Rosa Creek, Sausal Creek, and York Creek.

9.2.7.1 REQUIREMENTS FOR ALL OWTS IN HIGH PRIORITY AREAS

To comply with the Section 8.1 of this TMDL, which prohibits the discharges of fecal waste material from humans to waters of the state, all existing, new, and replacement OWTS in High Priority Areas in the Russian River Watershed shall meet one of the following options:

Option 1: OWTS Meets Performance Standards for Pathogens

To ensure that any OWTS adequately disinfects domestic wastewater discharges, owners of OWTS shall employ supplemental treatment components for their OWTS. OWTS operating on the effective date of the TMDL shall meet this requirement within three years after the effective date of the TMDL or subsequently being identified as a High Priority Area by the Regional Water Board or the local agency. OWTS using supplemental treatment components shall comply with following requirements:

1. Supplemental treatment components shall ensure effluent does not exceed a 30-day average of 30 mg/L of TSS and can achieve an effluent *E. coli* bacteria concentration of less than or equal to 100 MPN/100 mL and an effluent enterococci bacteria concentration of less than or equal to 30 MPN/ 100 mL.
2. The minimum soil depth and the minimum depth to the anticipated highest level of groundwater below the bottom of the effluent dispersal system shall not be less than three feet. All dispersal systems shall have at least twelve inches of soil cover.
3. Supplemental treatment components shall be designed to meet the applicable performance requirements above and shall be stamped or approved by a Qualified Professional, as defined in Section 1.0 of the Basin Plan's OWTS Policy.

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

4. Prior to the installation of any proprietary treatment OWTS installed to comply with the performance requirements above, all such treatment components shall be tested by an independent third party testing laboratory.
5. OWTS monitoring to demonstrate continuous compliance with the performance requirements above shall be in accordance with the operation and maintenance manual for the OWTS or more frequently as required by the local agency or Regional Water Board.
6. OWTS shall be equipped with a visual or audible alarm as well as a telemetric alarm that alerts the owner and service provider in the event of system malfunction. Where telemetry is not possible, the owner or owner's agent shall inspect the system at least monthly while the system is in use as directed and instructed by a service provider and notify the service provider not less than quarterly of the observed operating parameters of the OWTS. As defined in the Basin Plan's OWTS Policy, a service provider means a person who is capable of operating, monitoring, and maintaining an OWTS in accordance with the Basin Plan's OWTS Policy.
7. OWTS designed to meet the disinfection requirements shall be inspected for proper operation quarterly while the system is in use by a service provider unless a telemetric monitoring system is capable of continuously assessing the operation of the disinfection system. Testing of the effluent from supplemental treatment components that perform disinfection shall be sampled at a point in the system after the treatment components and prior to the dispersal system and shall be conducted quarterly based on analysis of *E. coli* and enterococci bacteria with a minimum detection limit of 2.2 MPN. All effluent samples must include the geographic coordinates of the sample's location. Effluent samples shall be taken by a service provider and analyzed by a laboratory certified by the State Water Resources Control Board Division of Drinking Water.
8. Reporting of compliance with performance requirements and other pertinent information regarding the operation and maintenance of the OWTS shall be provided to the local agency or the Regional Water Board, as required.
9. New and replacement OWTS shall also comply with local agency requirements for new and replacement OWTS in a Local Agency Management Program (LAMP), or comply with Tier 1 requirements in the Basin Plan's OWTS Policy, as applicable.

Option 2: Connection to a Centralized Wastewater Collection and Treatment System

An owner of an OWTS will be considered to be in compliance with the TMDL if the owners (1) commit by way of a legal document within 4 years after the effective date of the TMDL or subsequently being identified as a High Priority Area by the Regional Water Board or the local agency to connect to the sanitary sewer system of a permitted centralized wastewater collection and treatment system; and (2) the specified date for the connection to the centralized wastewater collection and treatment system does not extend beyond 10 years after the effective date of the TMDL.

Option 3: Permitting of the OWTS under a Local Agency Management Program (LAMP)

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

In an approved LAMP, a local agency may provide alternative methods to comply with the Fecal Waste Discharge Prohibition to owners of existing, new, and replacement OWTS. To account for local conditions and community preferences, the LAMP could include standards and requirements that differ from requirements in Option 1. However, in order to qualify for use as an alternative means of compliance with this TMDL, the approved LAMP must include the following elements, at a minimum:

1. Minimum standards for existing OWTS (e.g., site requirements, supplemental treatment requirements, etc.) specific to the High Priority Area;
2. A program to review existing, new and replacement OWTS to ensure that they are correctly sited, designed, installed, and operated and maintained;
3. A plan for development of community-specific management plans;
4. A policy governing the repair or replacement of OWTS that ensures that the OWTS does not threaten public health or water quality;
5. Water quality monitoring and reporting; and
6. Time schedule to complete LAMP elements.

In addition, OWTS in High Priority Areas must be inspected and evaluated by a qualified professional to assess their performance. OWTS owners in High Priority Areas are required to obtain a third-party service provider to ensure proper operation and ongoing maintenance of OWTS through inspections performed at least annually.

Local agencies are required to submit their LAMPs for approval to the Regional Water Board no later than May 13, 2016, in accordance with Basin Plan's OWTS Policy. Regional Water Board staff is currently working with staff from Sonoma County and Mendocino County on the development of their LAMPs and anticipate the possibility of revising the LAMPs after the effective date of the TMDL to incorporate requirements and local programs designed to comply with the Russian River TMDL Action Plan.

9.2.7.2 REQUIREMENTS FOR ALL OWTS IN LOW PRIORITY AREAS

All existing OWTS in Low Priority Areas in the Russian River Watershed presumptively covered under the Conditional Waiver of Waste Discharge Requirements established in the Basin Plan's OWTS Policy shall be inspected within three years of the effective date of the TMDL to ascertain whether the OWTS is functioning properly to the extent that the OWTS does not require major repair, as defined in Section 1.0 of the Basin Plan's OWTS Policy, or is not affecting, or will not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses, or is not causing a human health or other public nuisance condition. The minimum requirements for an inspection to satisfy this requirement are listed in section 8.2.7.3, below and a qualified professional's report shall be submitted to the Regional Water Board.

For any existing OWTS that is found as a result of an inspection or report by a qualified professional to be not functioning properly to the extent that the OWTS requires major

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

repair, or is affecting, or will affect groundwater or surface water to a degree that makes it unfit for drinking or other uses, or is causing a human health or other public nuisance condition, the owner of the OWTS shall be required to take corrective action in accordance with the Basin Plan's OWTS Policy. In addition, once corrective actions are completed, the owner of the existing OWTS shall obtain a service provider to ensure proper operation and ongoing maintenance of the OWTS system through annual inspections, at least initially, and longer intervals, as appropriate.

For any existing OWTS found as a result of an inspection or report by a qualified professional to be functioning properly, not requiring major repair, not causing human health or nuisance conditions, and not affecting groundwater or surface water, shall be inspected at least once every five years thereafter, in accordance with section 8.2.7.3, below.

Owners of new and replacement OWTS in Low Priority Areas shall comply with local agency requirements for new and replacement OWTS in a LAMP, or comply with Tier 1 requirements in the Basin Plan's OWTS Policy, as applicable. Owners of new OWTS in Low Priority Areas are required to obtain a third-party service provider within six months after commencing use of the OWTS to ensure proper operation and ongoing maintenance of OWTS. New OWTS shall be inspected at least every five years, in accordance with section 8.2.7.3, below. Replacement OWTS in Low Priority Areas are required to obtain a third-party service provider prior to commencement of operation of the replacement OWTS to ensure proper operation and ongoing maintenance of OWTS through annual inspections, at least initially, and longer intervals, as appropriate.

9.2.7.3 MINIMUM REQUIREMENTS FOR OWTS INSPECTIONS

Where inspections of OWTS are required, owners of OWTS shall submit a qualified professional's report to the Regional Water Board (or County if applicable) that includes a determination of whether the OWTS is functioning properly and as designed or requires corrective action pursuant to Tier 4 of the Basin Plan OWTS Policy. The report shall include, but is not limited to, the following:

1. A general description of system components, their physical layout, and horizontal setback distances from property lines, buildings, wells, and surface waters.
2. A description of the type of wastewater discharged to the OWTS such as domestic, commercial, or industrial and classification of it as domestic wastewater or high-strength waste.
3. A determination of the systems design flow and the volume of wastewater discharged daily derived from water use, either estimated or actual if metered.
4. A description of the septic tank, including age, size, material of construction, internal and external condition, water level, scum layer thickness, depth of solids, and the results of a one-hour hydrostatic test.

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

5. A description of the distribution box, dosing siphon, or distribution pump, and if flow is being equally distributed throughout the dispersal system, as well as any evidence of solids carryover, clear water infiltration, or evidence of system backup.
6. A description of the dispersal system including signs of hydraulic failure, condition of surface vegetation over the dispersal system, level of ponding above the infiltrative surface within the dispersal system, other possible sources of hydraulic loading to the dispersal area, and depth of the seasonally high groundwater level.
7. A determination of whether the OWTS is discharging to the ground's surface.
8. A determination of the OWTS dispersal system's separation from its deepest most infiltrative surface to the highest seasonal groundwater level or fractured bedrock.

9.2.7.4 GENERAL RESTRICTIONS FOR ALL OWTS IN THE HIGH PRIORITY AND LOW PRIORITY AREAS

For new, replacement, and existing OWTS in High Priority and Low Priority Areas, the following are not authorized for OWTS in the Russian River Watershed, but may be authorized by a separate Regional Water Board order:

1. Cesspools of any kind or size.
2. OWTS receiving a projected flow over 10,000 gallons per day.
3. OWTS that utilize any form of effluent disposal on or above the ground surface.
4. Slopes greater than 30 percent without a slope stability report approved by a registered professional.
5. Decreased leaching area for International Association of Plumbing and Mechanical Officials (IAPMO) certified dispersal systems using a multiplier less than 0.70.
6. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.
7. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks.
8. Separation of the bottom of dispersal system to groundwater less than two feet, except for seepage pits, which shall not be less than 10 feet.
9. Minimum horizontal setbacks less than specified in section 10.6.9 of the OWTS Policy.

9.2.8 LARGE ONSITE WASTEWATER TREATMENT SYSTEMS

For the purpose of this TMDL, a large OWTS means any OWTS with a projected flow greater than 10,000 gpd or any OWTS with projected flow greater than that specified in an approved LAMP. Owners of large OWTS in the Russian River Watershed not regulated by WDRs or a Waiver of WDRs on the effective date of this TMDL shall notify the Regional Water Board by submitting a report of waste discharge containing information about their OWTS. Based on the report of waste discharge, the Regional Water Board may issue WDRs

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

or Waivers of WDRs for the OWTS. Owners of OWTS with a projected flow greater than 10,000 gpd shall submit a report of waste discharge to the Regional Water Board within one year of the effective date of this TMDL. Owners of OWTS not meeting conditions and requirements in a LAMP approved for the local agency with jurisdiction over the OWTS shall submit a report of waste discharge to the Regional Water Board within six months after the approval of the LAMP.

OWTS subject to this subsection that are identified in this TMDL as being located in High Priority Areas shall be required in a WDR or Waiver of WDR to comply with supplemental treatment components for pathogens in accordance with requirements in sections 10.10.2 through 10.15 of the Basin Plan's OWTS Policy for impaired areas. Supplemental treatment components shall ensure OWTS effluent does not exceed a 30-day average of 30 mg TSS/L, can achieve an effluent *E. coli* bacteria concentration of less than or equal to 100 MPN/100 mL, and can achieve an effluent enterococci bacteria concentration of less than or equal to 30 MPN/ 100 mL. As an alternative to installing supplemental treatment components for OWTS, owners of large OWTS in High Priority Areas can commit to connecting to a centralized wastewater collection and treatment system, in accordance with Option 2 in Section 8.2.7 for individual OWTS. In Low Priority Areas, appropriate waste discharge requirements will be prescribed by the Regional Water Board.

For large OWTS permitted, constructed, or operating prior to the effective date of this TMDL and regulated by existing waste discharge requirements, the Regional Water Board will include in the waste discharge requirements, as soon as is practicable, effluent limitations and other requirements to demonstrate compliance with the above discharge specifications. For permitted large OWTS, the Regional Water Board shall require the submission of the report of waste discharge under authority of section 13260 of the Water Code.

For large OWTS constructed after the effective date of this TMDL, effluent limitations and other requirements shall be established in waste discharge requirements as the permits are adopted.

9.2.9 RECREATIONAL WATER USE

Within two years of the effective date of this TMDL, Sonoma County, Mendocino County, and other landowners of recreational beaches shall prepare and submit a BLRP that describes actions to reduce bacteria loading associated with activities at recreational beaches and other known swimming areas within their jurisdiction to attain load allocations. Regional Water Board staff will review the BLRP and determine the appropriate program actions to regulate the implementation actions proposed in the BLRP. Potential implementation actions could include:

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Installing temporary or permanent restroom facilities, including diaper changing stations, near the recreation use areas and signage to effectively direct recreators to restroom facilities;
- Establishing interagency agreements with local sanitation districts to provide maintenance and waste disposal for temporary restroom facilities;
- Developing and distributing educational and outreach materials (fliers, brochures) to inform river recreators about proper waste disposal and sanitation at beaches and access points along the Russian River and tributaries;
- Conducting outreach to private recreational beach operators and commercial river outfitters to improve beach housekeeping and provide adequate sanitation facilities for customers;
- Publicizing locations of public restroom facilities on the county website and at recreational outfitters' headquarters;
- Improving restroom facilities at popular private beaches; and
- Limiting availability of parking along county roads near beach areas where waste collection is difficult.

9.2.10 HOMELESS AND FARMWORKER ENCAMPMENTS AND ILLEGAL CAMPING

Within two years of the effective date of this TMDL, Sonoma County, Mendocino County, municipalities, and other owners of land with homeless and farmworker encampments within the Russian River Watershed shall prepare and submit a BLRP that describes actions to: (1) reduce noncompliance with existing ordinances pertaining to illegal camping and farmworker housing; and (2) provide secure waste disposal facilities for homeless persons currently residing along watercourses and other areas within the public space. The BLRP must include an implementation schedule that ensures attainment of load allocations in the shortest time practicable, milestones to achieve compliance, a commitment to provide periodic status reports to the Regional Water Board to monitor progress toward completing the BLRP and compliance milestones, and a monitoring plan through which compliance with load allocations can be assessed. Regional Water Board staff will review the BLRP and determine the appropriate program actions to regulate the implementation actions proposed in the BLRP.

Implementation actions might include:

- Providing or improving options for shelters, transitional housing, affordable housing, and other homeless services;
- Conducting public outreach to owners of private property in the Russian River Watershed to inform and assist them on how best to prevent illegal camping and trespassing on their property, including how to report illegal use to local law enforcement;

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Establishing a program, including a hotline, for reporting homeless encampments and facilitating camp cleanup activities;
- Installing physical barriers to prevent illegal camping and habitation under bridges and overpasses; and
- Initiating and participating in pilot programs that provide public restroom facilities along public trails and upgraded restroom facilities at public parks.

Options to reduce water quality impacts of homeless and farmworker encampments can also be combined with efforts to reduce homelessness. Sonoma County, Mendocino County, and municipalities are encouraged to fully fund and implement goals, objectives, and policies contained in their general plans for homeless and farmworker populations. More affordable, available housing will result in fewer residents seeking shelter along waterways, away from adequate sanitation facilities.

Where suitable housing for homeless persons and farmworkers exists or is planned, and the housing unit is served by an individual septic system, community septic system, or other approved waste treatment and disposal system, the design, installation, and operation of the system shall comply with this TMDL Action Plan and the LAMP for the local agency with jurisdiction over individual OWTs.

9.2.11 URBAN RUNOFF

Within the Russian River Watershed's urban boundaries, storm water runoff and non-storm water runoff is regulated under a Phase I Municipal Separate Storm Sewer Systems (MS4) Permit. The current Phase I MS4 Permit, Order No. R1-2009-0050 (NPDES Permit No. CA0025054) became effective on October 1, 2009, and continues in force until a new permit is issued. Small MS4s within the watershed are enrolled under Water Quality Order No. 2013-0001-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Phase II MS4 General Permit).

Permittees currently named under the Phase I MS4 Permit are:

- City of Santa Rosa
- County of Sonoma
- Sonoma County Water Agency

Small MS4s in the Russian River Watershed currently enrolled under the Phase II MS4 General Permit are:

- City of Cloverdale
- City of Cotati.
- City of Healdsburg

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- County of Sonoma
- Sonoma County Water Agency
- Sonoma State University
- Town of Windsor

In order to comply with this TMDL, discharges of urban storm water from MS4s in the Russian River Watershed shall attain the *E. coli*, and enterococci bacteria waste load allocations.

Upon renewal of the Phase I MS4 permit or as soon as is practicable, the Regional Water Board will establish permit requirements for MS4s to comply with wasteload allocations. In addition, MS4 permittees will be required to develop and implement additional best management practices to reduce the discharge of pathogens from MS4s to surface waters from illicit discharges, sanitary sewer overflows, and improper disposal of pet waste. To reduce pet waste from entering surface waters, possible action include:

- Improving or establishing a pet waste program that could include more widespread availability of pet waste collections systems and a higher profile outreach program to educate the public about proper disposal of pet waste and the environmental consequences of improper disposal; and
- Partnering with local businesses and organizations to sponsor the installation, operation, and maintenance of pet waste collection systems.

For Phase II MS4 permittees, TMDL-specific permit requirements shall be submitted to the State Water Board for inclusion in Attachment G of the Phase II MS4 General Order, as soon as practicable.

9.2.12 CALTRANS STORM WATER RUNOFF

The California Department of Transportation (Caltrans) is regulated under General Storm Water Permit (NPDES Permit No. CAS000003), Waste Discharge Requirements Order No. 2012-0011-DWQ and Order 2014-0077-DWQ, which is an amendment to include TMDL-specific permit implementation requirements. The statewide permit regulates storm water and non-storm water discharges from the Department's properties and facilities, and discharges associated with operation and maintenance of the state highway system.

In order to comply with this TMDL, storm water and non-storm water discharges from Caltrans' facilities and properties in the Russian River Watershed shall attain the waste load allocations identified in Table 8.1. Upon renewal of the statewide storm water permit or as soon as is practicable, Regional Water Board staff will work with the State Water Board to include the Russian River Pathogen Indicator Bacteria TMDL in the TMDL requirements of the permit to ensure compliance with *E. coli* and enterococci bacteria wasteload allocations. Permit renewal is likely in 2017 or 2018.

Implementation actions might include:

- Managing irrigation to ensure overwatering and runoff does not occur;
- Identifying and fixing broken sprinklers and irrigation pipes;
- Increasing infiltration by improving soil structure and texture;
- Adding structural management practices such as biofiltration strips, biofiltration swales, bioretention and bioretention basins;
- Diverting storm water runoff to bioretention/bioretention/infiltration basins;
- Street sweeping;
- Cleaning up illegal dumping;
- Limiting or excluding access for camping under bridges and in the right-of-way; and
- Developing and implementing a program, in collaboration with local jurisdictions, to report, respond to, and remove homeless encampments.

9.2.13 NON-DAIRY LIVESTOCK AND FARM ANIMALS

Owners and operators of animal facilities, inclusive of animal husbandry, livestock production, other similar agriculture operations, and commercial animal boarding facilities, shall implement best management practices to properly contain and dispose of waste, and mitigate for potential water quality impacts resulting from surface runoff of animal waste. Possible actions may include:

- Regular cleanup of manure and soiled bedding in animal habitation areas;
- Use of impermeable surfaces for storage of manure;
- Use of onsite composting to stabilize and reuse manure;
- Siting of manure storage areas away from water courses and off slopes;

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- Reduction of storm water contacting manure storage areas, paddocks, and kennel areas;
- Use of vegetated buffers to encourage uptake of pollutants; and
- Limiting of animals' access to waterways.

The requirement of owners and operators of animal facilities to submit a report of waste discharge for discharges from these operations is waived for animal facilities that implement these or similar best management practices that achieve the same purpose, which is to protect water quality and public health. Owners and operators of animal facilities found to be in violation of the prohibition may be subject to enforcement action for the unpermitted discharge, and may be required to submit a report of waste discharge for the possible establishment of waste discharge requirements for the discharge.

9.2.14 DAIRIES & CAFOS

Each cow dairy and Confined Animal Feeding Operation (CAFO) in the Russian River Watershed is required to maintain compliance with requirements set forth in the Conditional Waiver of Waste Discharge Requirements, the general WDR, an individual WDR, or NPDES permit, as applicable.

Within two years of the effective date of this TMDL, in order to prevent discharges of animal waste to surface water, each enrollee under the Conditional Waiver of Waste Discharge Requirements shall update its Water Quality Plan (WQP) to address sources of bacteria. Each enrollee under the general WDR and each permittee under an individual WDR shall update their Waste Management Plan and Nutrient Management Plan (NMP), as appropriate, to address sources of bacteria. The updated actions to be taken by the enrollee or permittee shall be actions that are beyond what is currently required under the respective permit.

At a minimum, the WQP and NMP shall be updated to include:

- Actions, such as riparian fencing, that prevent animal access to water courses and provide a vegetated buffer to reduce manure runoff;
- A surface water monitoring plan that includes routine monitoring for pathogen indicator bacteria to demonstrate attainment of WLAs or LAs. Coordination between dairies and CAFOs, including but not limited to group monitoring, is encouraged; and
- An implementation schedule, with a commencement date not exceeding two years from the effective date of this TMDL.

The Regional Water Board will incorporate the requirement to address sources of bacteria into renewed Conditional Waiver of Waste Discharge Requirements, Waste Discharge Requirements, or NPDES Permit when these orders come up for renewal, and into new

dairy WDRs as they are proposed and adopted. WLAs for CAFOs will be incorporated into the NPDES permit as effluent limitations.

9.3 BACTERIA LOAD REDUCTION PLAN

The goal of the BLRP is to describe and ensure effective implementation of actions that will reduce pathogens and indicator bacteria to attain the WLAs and LAs in the Russian River Watershed. The BLRP should be designed to identify, eliminate, reduce and clean up existing sources to the maximum extent practicable, prevent and control new sources, monitor, and implement additional actions as necessary.

The BLRPs can be developed cooperatively with other implementing parties or individually. An implementing party that is required to submit BLRPs for more than one source type may combine the individual BLRPs into one master document.

9.3.1 TIME SCHEDULE FOR PLAN DEVELOPMENT AND REVIEW

The following is the development and review process for a BLRP:

1. The implementing party or parties develops a draft BLRP.
2. The implementing party or parties submits its BLRP to the Regional Water Board in accordance with Table 9.1. Additional time to submit a BLRP may be granted by the Regional Water Board's Executive Officer upon the request of the implementing party or parties if necessary due to the complexity or level of public involvement in the BLRP.
3. Regional Water Board staff reviews the BLRP.
4. Within 6 months of the submittal of a complete BLRP, Regional Water Board staff will publicly notice a Memorandum of Recommended BLRP Acceptance for 21 days.

9.3.2 PLAN ORGANIZATION

The BLRP shall contain the following elements in order to be deemed complete and accepted. Should an element not apply, the implementing party or parties should provide a brief explanation of its inapplicability.

1. Party Information and Legal Authority
 - a. The BLRP shall include the name of the implementing party or parties.
 - b. For a municipality, state, federal, or other public agency, the BLRP shall include the name of the duly authorized representative(s). A duly authorized representative is either a principal executive officer or ranking elected official, or a duly authorized representative of that person. A duly authorized representative is also a person who has responsibility for the overall operation of the subject facility or activity.

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

- c.** The BLRP shall include a map of the implementing party's or parties' jurisdictional boundary along with the receiving waters and sub-watershed boundaries that overlap the jurisdictional boundary to facilitate planning, assessment, and collaborative decision-making.
- d.** The BLRP shall include a demonstration that the implementing party or parties or duly authorized representative(s) possess the legal authority to implement the actions contained in the BLRP, such as through ordinances, service agreements, or other legally binding procedures.

2. Sources

- a.** The BLRP shall include the sources of pathogens and indicator bacteria potentially contributing to exceedances of the WLAs or LAs within the jurisdiction of the responsible party or parties.
- b.** The sources of potential sources of fecal waste shall be identified on a map.
- c.** The BLRP shall describe how sources are determined and characterized.

3. Description of Actions

- a.** The BLRP shall include a description of specific pollution prevention actions (e.g., water conservation and waste minimization), management measures, or treatment facilities that are being implemented or will be implemented to reduce the concentration of pathogens and indicator bacteria from identified sources.
- b.** The locations of the specific management measures shall be identified on a map if appropriate. For example, it is appropriate to map new restroom facilities, but not appropriate to map public outreach efforts.
- c.** The BLRP shall include scientific and technical documentation used to conclude that the actions, once fully implemented, are expected to achieve compliance with the WLAs and LAs.
- d.** If the BLRP is a cooperative document among multiple implementing parties, the BLRP shall indicate which party is responsible for each of the actions.

4. Schedule

- a.** The BLRP shall include a schedule for implementing the actions within the shortest time practicable.

5. Monitoring, Reporting, and Adaptive Management

- a.** The BLRP shall describe the frequency of periodic status reports, which shall be submitted to Regional Water Board staff. Reports shall include the status of the actions taken and to be taken, and any other necessary content.
- b.** The BLRP shall describe how, when, and where the effectiveness of actions will be monitored and assessed. The BLRP shall describe the frequency of effectiveness monitoring reports and assessments, which shall be submitted to Regional Water

**Draft Staff Report
for the Action Plan for the Russian River Pathogen TMDL**

Board staff. The purpose of effectiveness monitoring is to understand if actions are improving pathogen and indicator bacteria concentrations (or loads) in the Russian River and its tributaries.

- c.** All water quality data collected to satisfy the BLRP shall be collected in accordance with a Quality Assurance and Project Plan developed per Guidance for Quality Assurance Project Plans EPA QA/G-5. Publication No. EPA/240/R-02/09 (U.S. EPA 2002c). Additionally, such data shall be uploaded by the implementing party or parties into the California Environmental Data Exchange Network.
- d.** The BLRP shall describe how the BLRP will be updated based on monitoring and performance assessments. It is expected that, in some cases, additional actions will be required if data from effectiveness monitoring shows exceedances of allocations. It is expected that the BLRP will be assessed and revised at least every 5 years.