



Russian River Watershed Pathogen TMDL Action Plan

Public Workshop

Item No. 6

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Santa Rosa

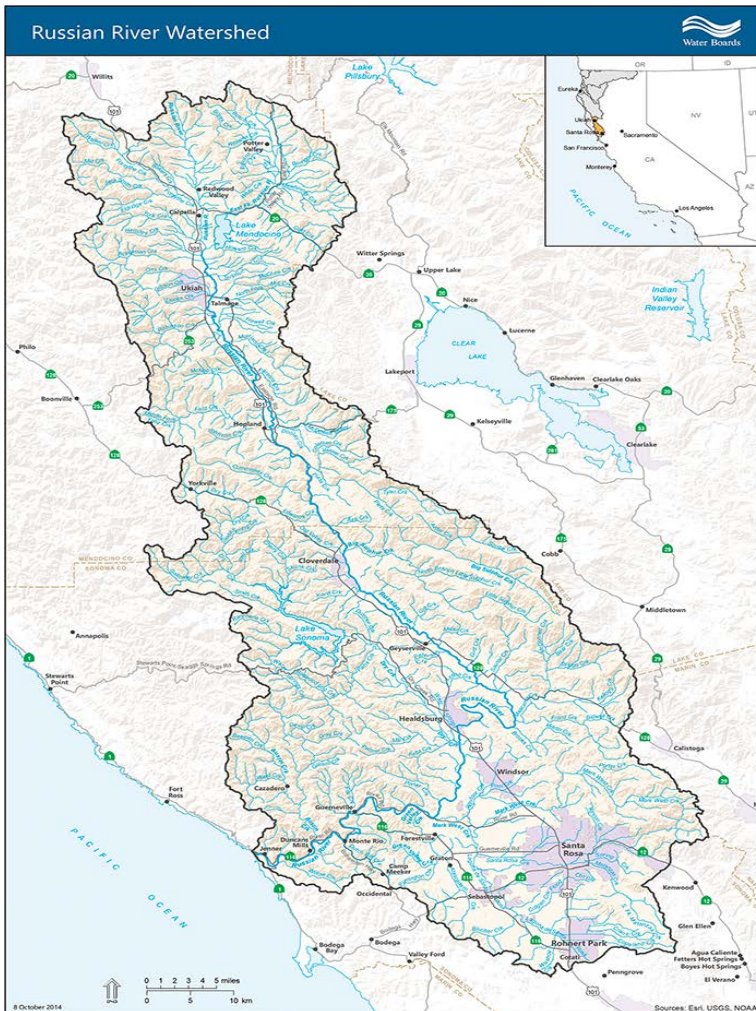
August 17, 2017



Workshop Purpose

- Provide an overview of the technical analysis as presented in the Russian River Watershed Pathogen TMDL Staff Report
- Provide an overview of the Program of Implementation as presented in the draft TMDL Action Plan
- Answer clarifying questions and hear oral comments

Presentation Topics



TECHNICAL ANALYSIS

- TMDL Basics
- Evidence of Pollution
- TMDL, Allocations, and Targets

PROGRAM OF IMPLEMENTATION

- Fecal Waste Discharge Prohibition
- Potential Sources of Pathogens
- Implementation Actions
- Funding Opportunities



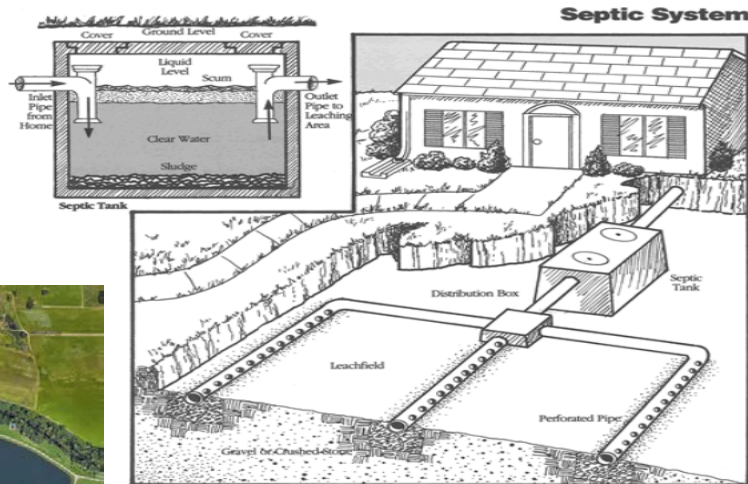
What is a TMDL?

TMDL stands for Total Maximum Daily Load

- TMDL is the maximum amount of a particular pollutant that a surface water can receive and still meet water quality objectives
- TMDL is the Sum of WLAs + LAs + MOS
 - Wasteload Allocations (WLA) for point sources
 - Load Allocations (LA) for nonpoint sources and natural background
 - Margin of Safety (MOS) for uncertainty
- Indicators are identified and numeric targets set by which to measure progress towards attainment of standards

What is a TMDL?

Point Sources



Nonpoint Sources





Regulatory Requirements

Federal

- Clean Water Act requires states to identify waters not meeting water quality standards and list them on the federal Clean Water Act Section 303(d) list
- Develop a TMDL for attainment of water quality objectives for all impaired surface water bodies
 - 303(d) listed waters
 - Any other waters within the watershed identified as impaired during TMDL development

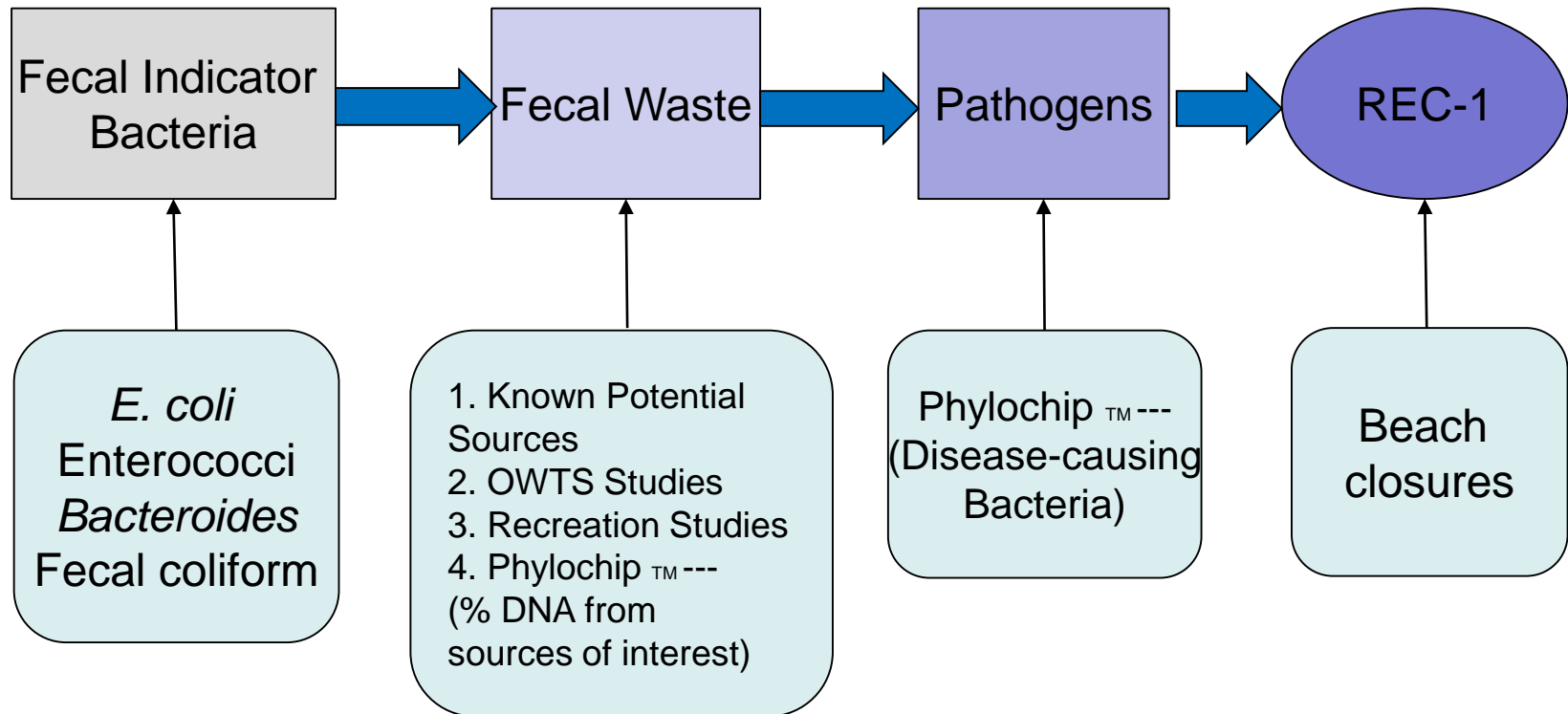


Regulatory Requirements

State

- Porter Cologne Water Quality Control Act (Porter Cologne) authorizes the Regional Water Boards to assess pollution
 - “Pollution” means an alteration of the quality of the 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.
- Porter Cologne specifies requirements for programs of implementation for achieving water quality standards
- Health and Safety Code requires external scientific peer review of a proposed regulation to determine whether the scientific findings, conclusions, and assumptions are based on sound science

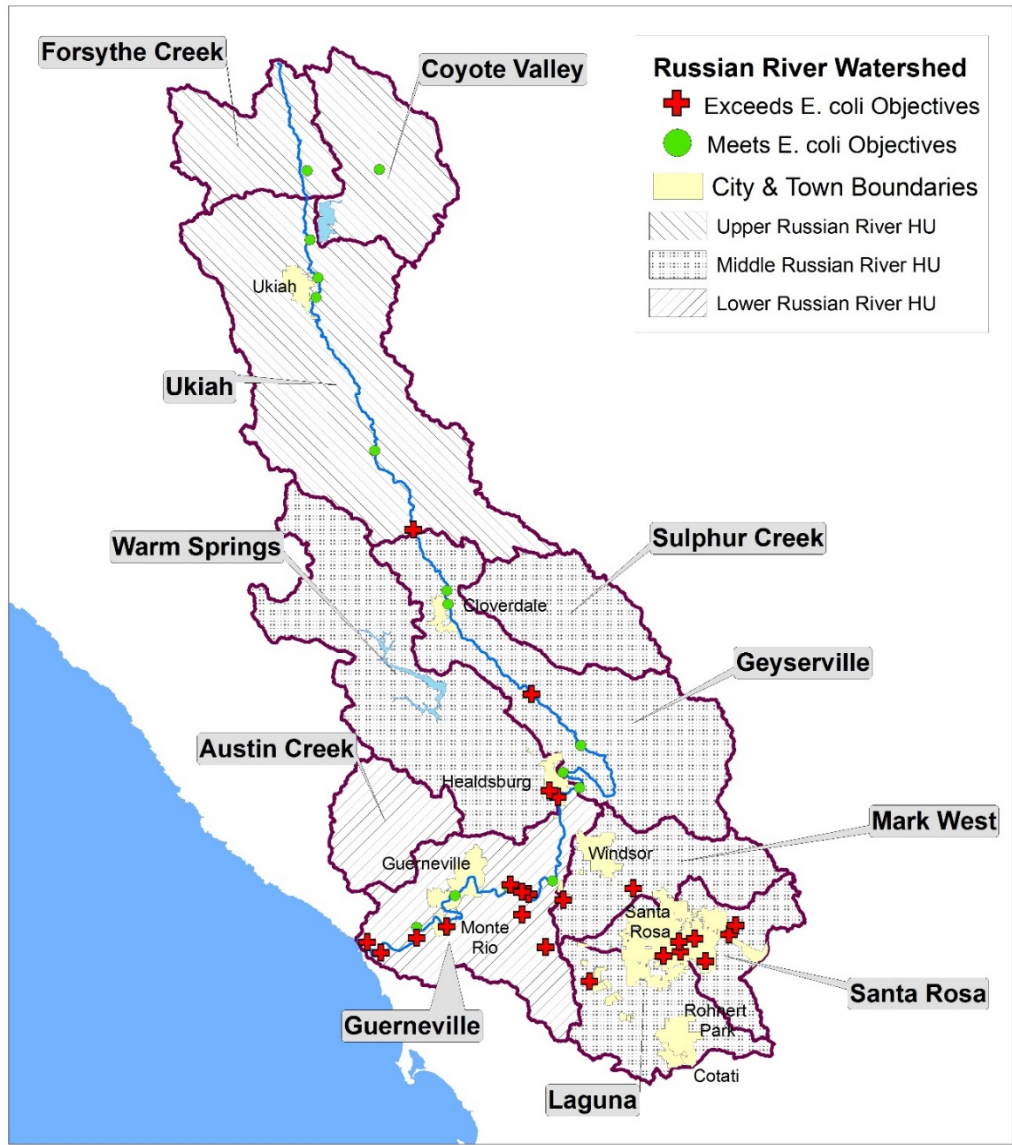
Evidence of Pollution





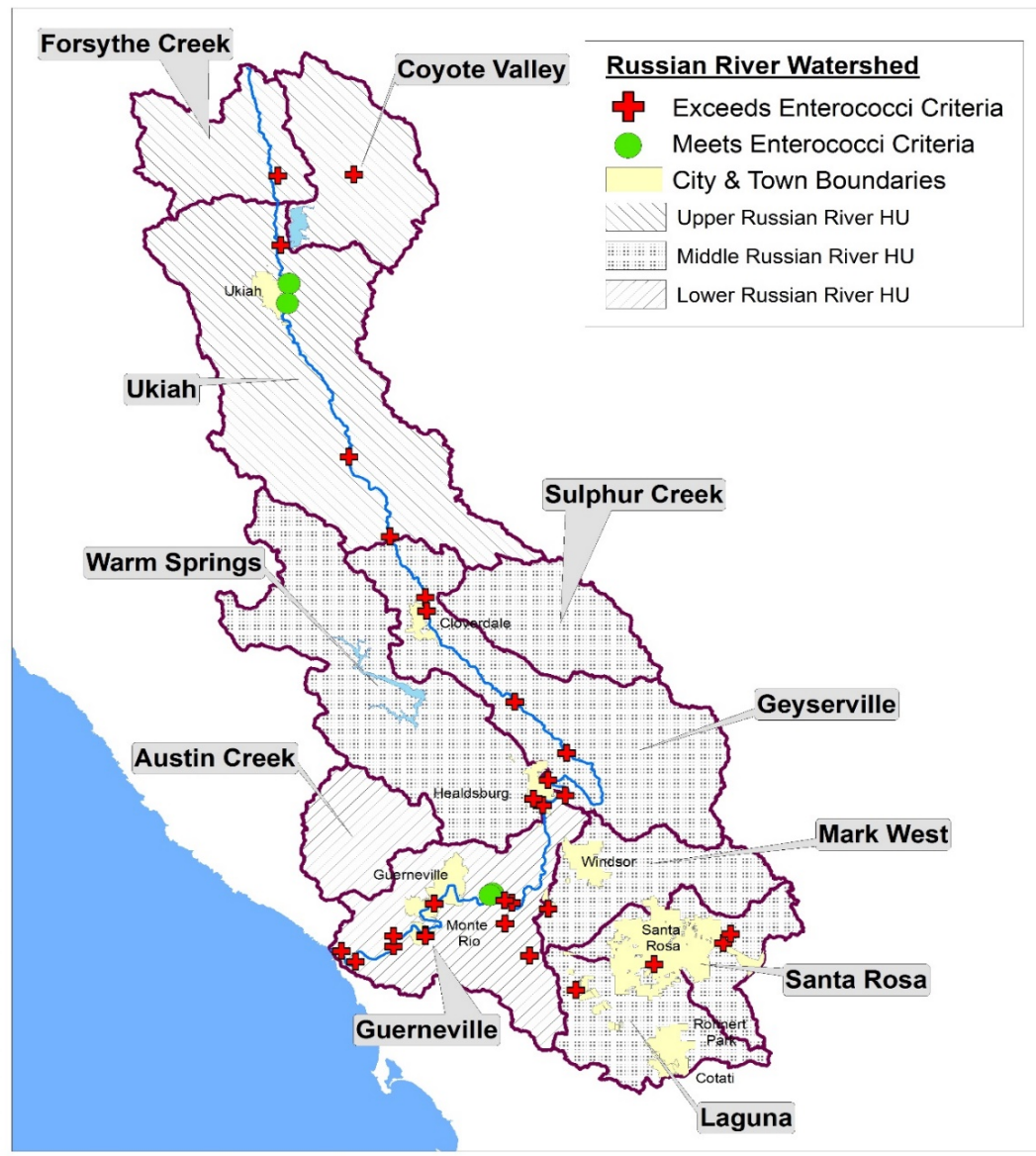
Statewide Bacteria Objective

- 2012 EPA recommended REC-1 criteria for *E. coli* and enterococci
- Draft Statewide Bacteria Objective for *E. coli*, using EPA peer-reviewed science
 - Released for public review on June 1, 2017
 - Public hearing held August 2, 2017
 - Written comment period closed August 16, 2017
 - Adoption hearing scheduled for December 5, 2017
- Amend Inland Surface Water Plan
 - Supersede Basin Plan bacteria objectives for REC-1

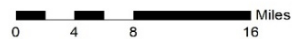


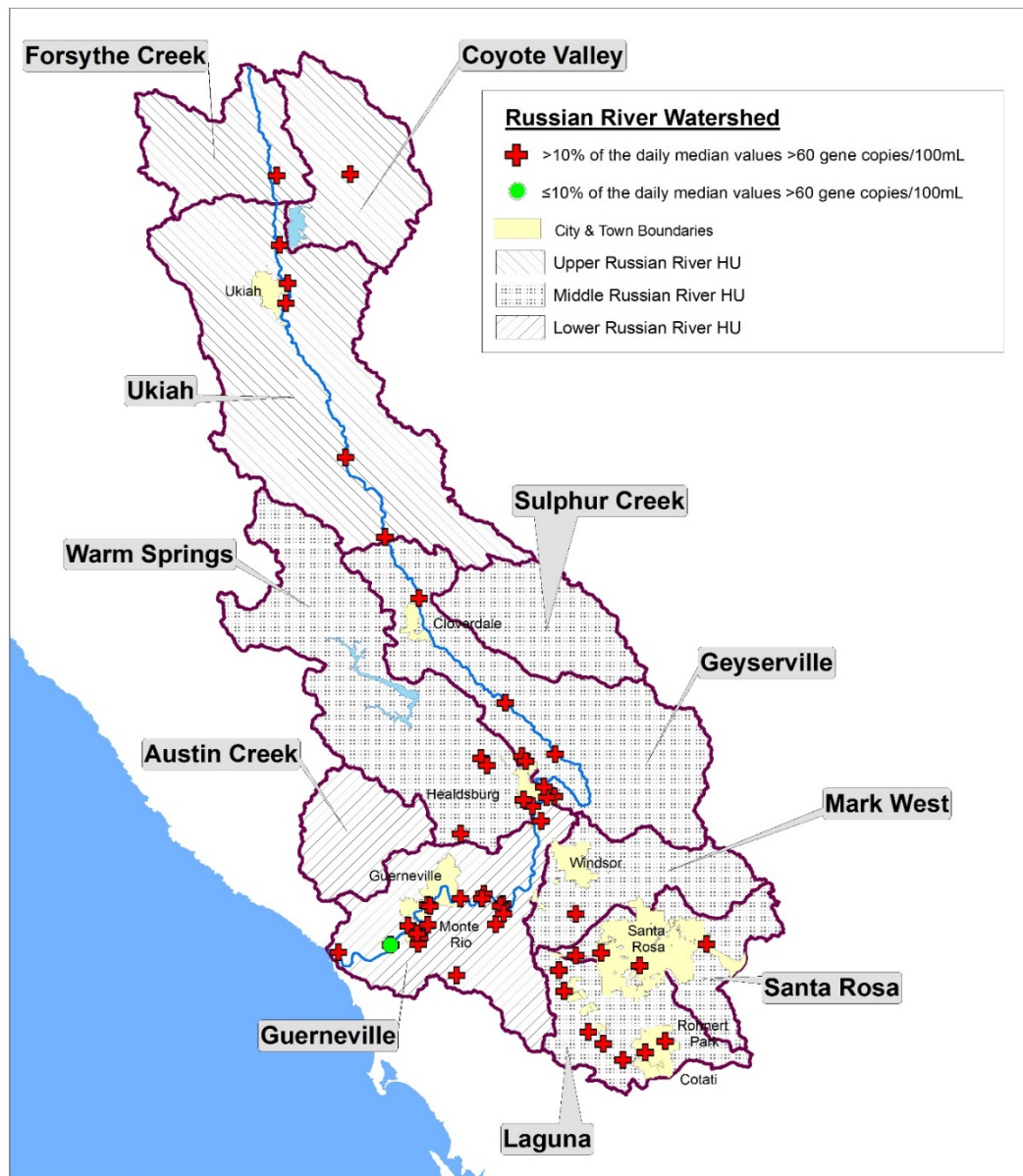
**E. coli Bacteria
Draft Statewide Objective
Attainment & Exceedance**



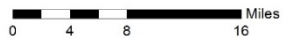


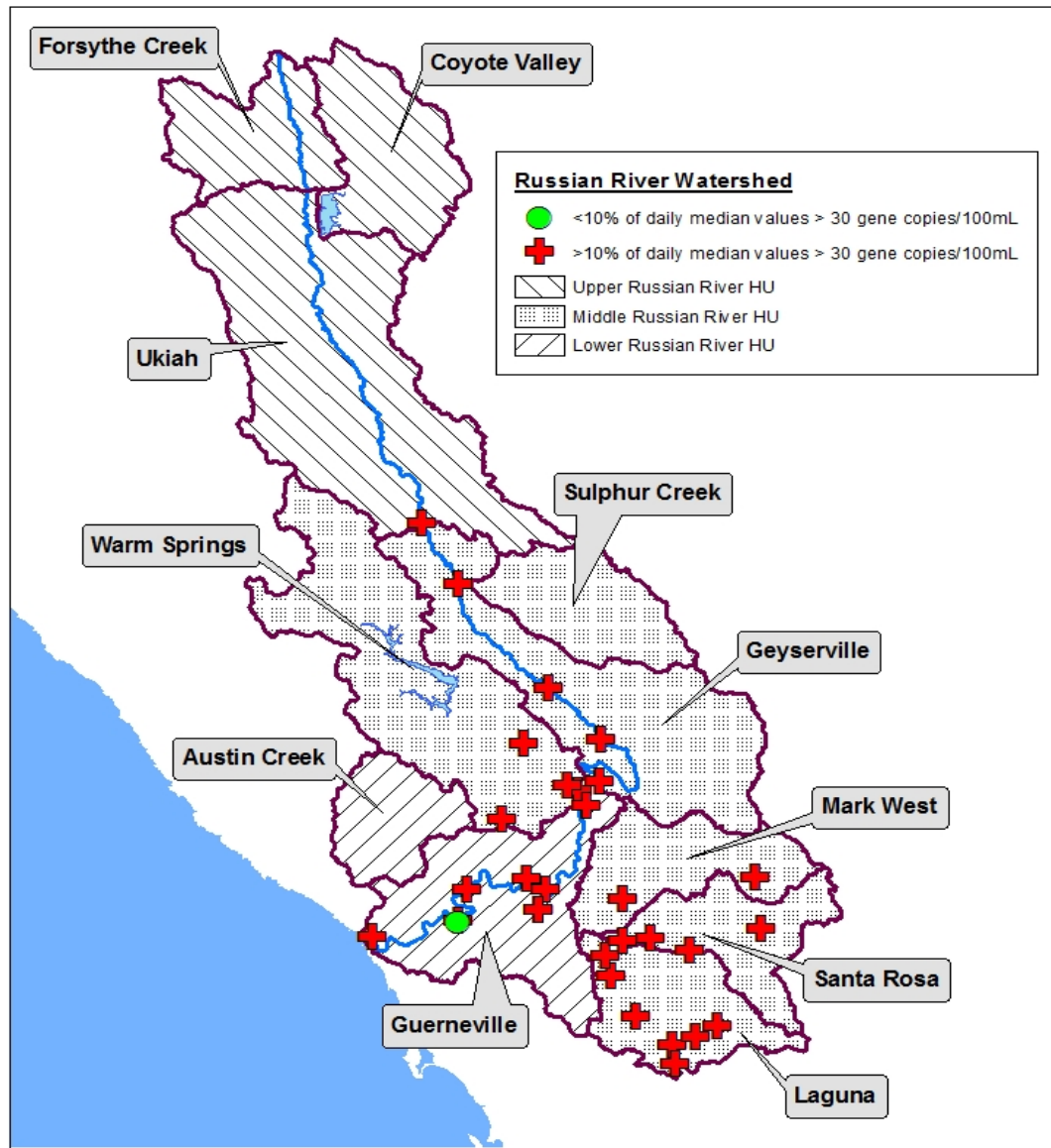
**Enterococci Bacteria
Attainment & Exceedance
of U.S. EPA (2012)
REC-1 Criteria**



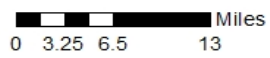


**Human-specific
Bacteroides Bacteria
Detection**

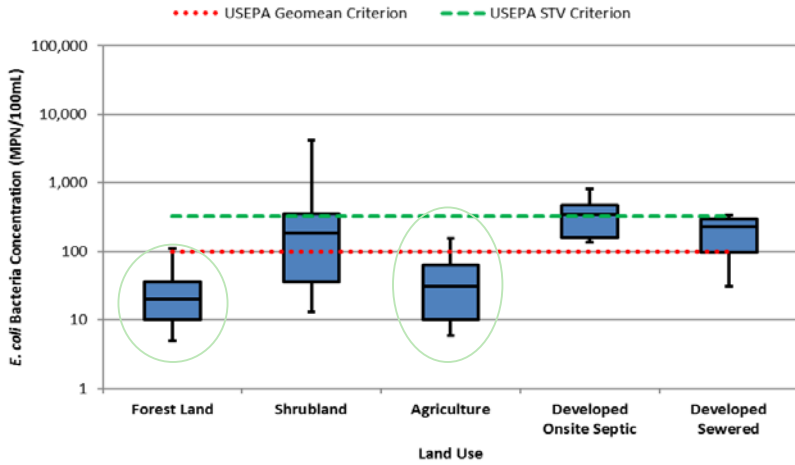




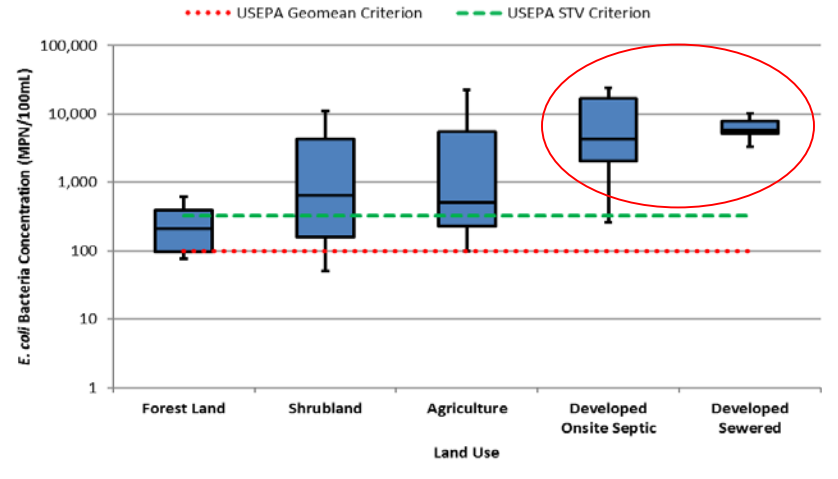
**Bovine-specific
Bacteroides Bacteria
Detections**



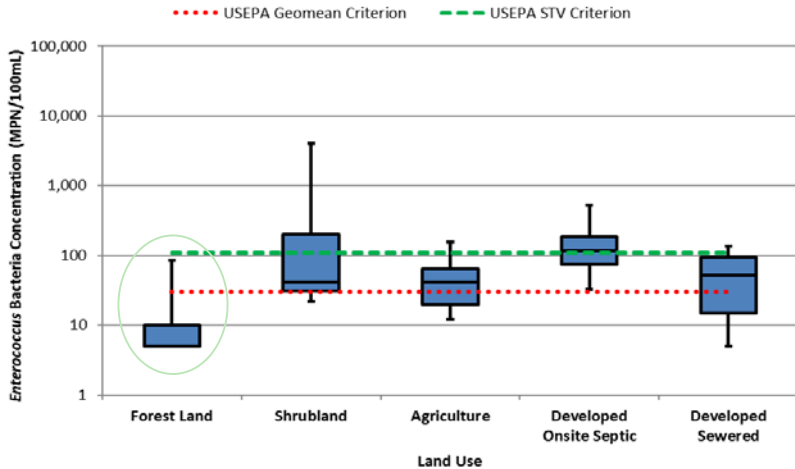
E. coli Bacteria Concentrations Dry Period



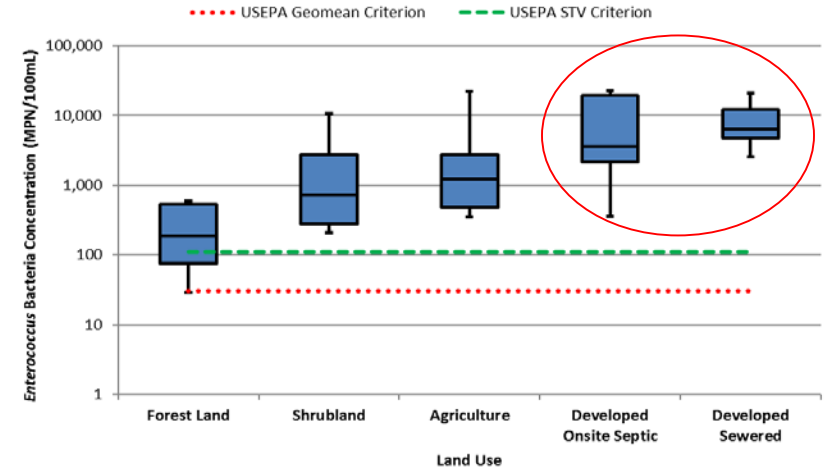
E. coli Bacteria Concentrations Wet Period



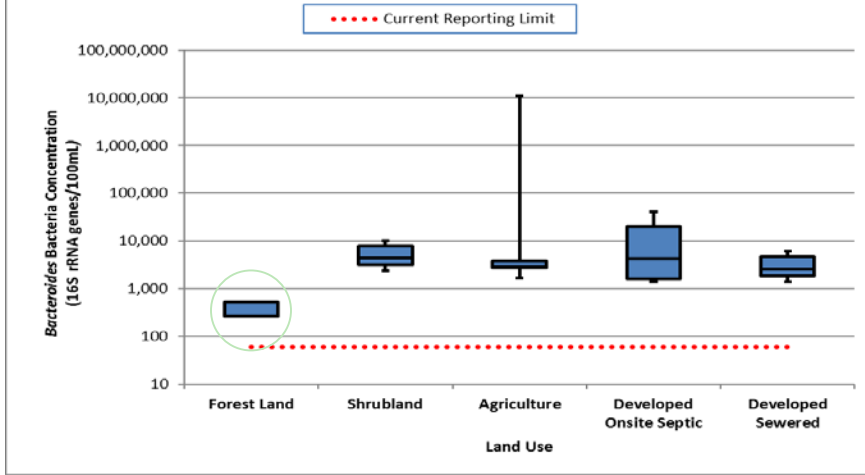
Enterococci Bacteria Concentrations Dry Period



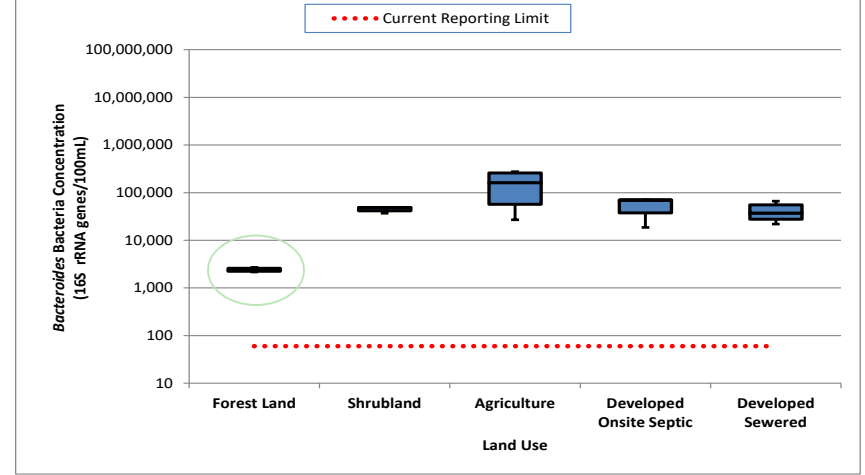
Enterococci Bacteria Concentrations Wet Period



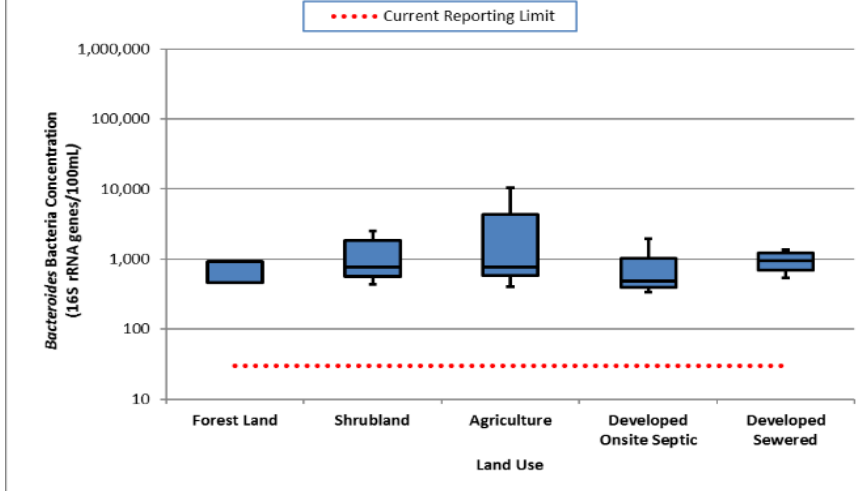
Human-specific *Bacteroides* Bacteria Concentrations Dry Period



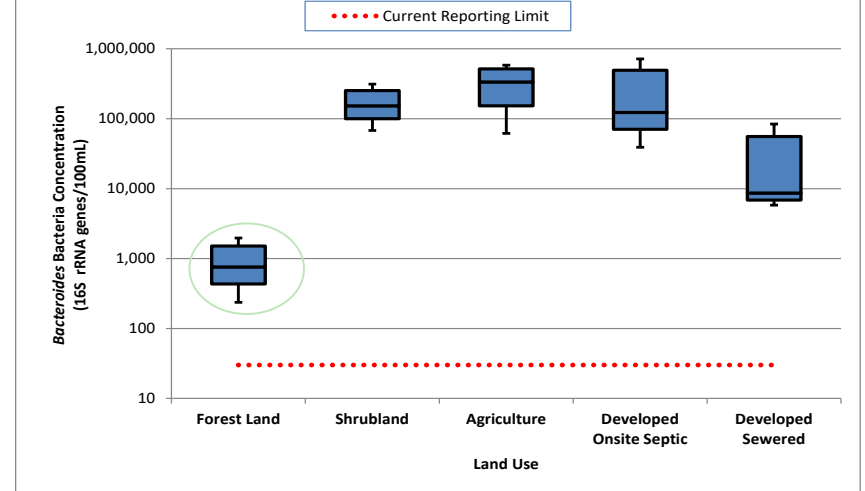
Human-specific *Bacteroides* Bacteria Concentrations Wet Period



Bovine-Specific *Bacteroides* Bacteria Concentrations Dry Period

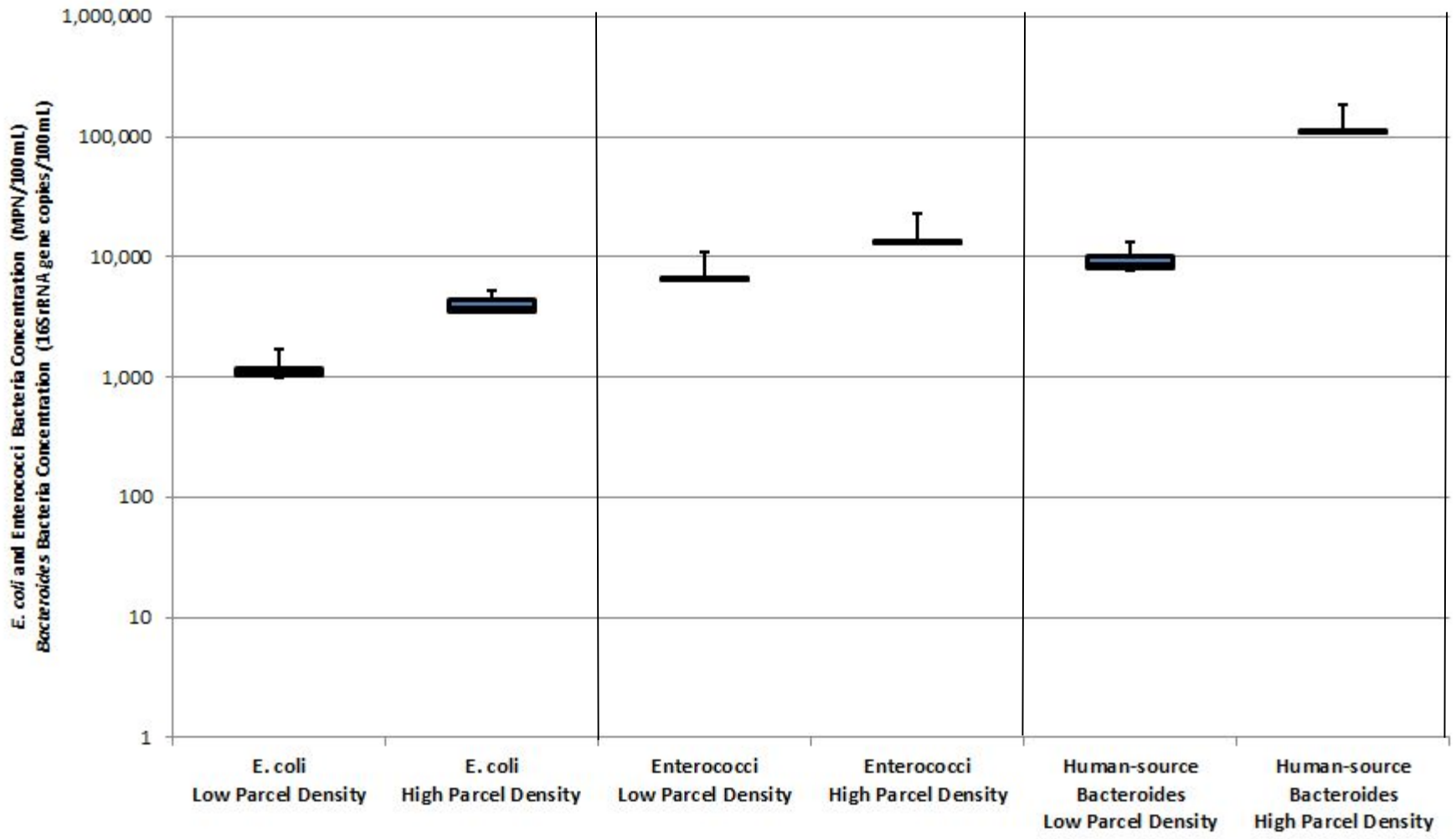


Bovine-specific *Bacteroides* Bacteria Concentrations Wet Period



OWTS Source Study Results

Comparison of Catchment Parcel Densities





TMDL and Allocations

- The TMDL and **waste load allocations (WLAs)** and **load allocations (LAs)** are expressed as receiving water concentrations of *E. coli*, based on the draft statewide objective for REC-1 protection
- **Margin of Safety** based on criteria that are calculated to result in no more than 32 illnesses/1,000 people, rather than the alternative of 36 illnesses/1,000 people
- **Margin of Safety** based on numeric target for enterococci to ensure beneficial use protection
- The WLAs and LAs are expressed in concentrations as a geometric mean (GM) and a statistical threshold value (STV)

E. coli Bacteria TMDL and Allocations:

≤ 100 cfu/100 mL as GM

≤ 320 cfu/100 mL as STV

Purpose of the TMDL

- Ensure protection of public health
- Reduce pathogens and potential for pathogen exposure
- Control discharges of fecal wastes
- Reduce Fecal Indicator Bacteria levels
- Achieve draft statewide water quality objectives for *E. coli*





Program of Implementation

- Fecal Waste Discharge Prohibition

“Discharges 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.”

- Implementation Actions

- Goal: Control sources of human and domestic animal fecal waste

- Monitoring



Sources of Fecal Waste

Human

- Treated Municipal Wastewater to Surface Waters
- Untreated Sewage from Sanitary Sewer Overflows
- Wastewater from Percolation Ponds and through Spray Irrigation
- Runoff from Land Application and Storage of Municipal Biosolids
- Runoff from Water Recycling Projects
- Failing Individual Onsite Wastewater Treatment Systems
- Recreational Water Uses and Users
- Urban runoff
- Homeless Encampments and Illegal Camping

Domestic Animals and Farm Animals

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



Implementation Actions for Probable Sources

1. Compliance with Existing Waste Discharge Requirements (WDRs) or Waiver of WDRs

- Treated Municipal Wastewater to Surface Waters
- Untreated Sewage from Sanitary Sewer Overflows
- Wastewater from Percolation Ponds and through Spray Irrigation
- Runoff from Land Application and Storage of Municipal Biosolids
- Urban Runoff

2. Compliance with New Implementation Actions

- Failing Individual Onsite Wastewater Treatment Systems and Large OWTS
- Wastewater Holding Pond Discharges to Surface Water
- Dairies and Confined Animal Feeding Operations (CAFOs)
- Runoff from Recycled Water Projects
- Non-Dairy Livestock and Farm Animals

3. Public Outreach and Coordination with Local Partners

- Homeless Encampments
- Recreational Water Uses and Users



Implementation Actions – New

- **Wastewater Holding Pond Discharges to Surface Water**

Action: Comply with new effluent limitations for Fecal Indicator Bacteria and disinfection specifications in NPDES permits that will ensure compliance with WLA.

Timeline: Comply as soon as possible after establishment of new limitations, but no later than 10 years after the effective date of the Action Plan, in accordance with approved compliance schedule.

- **Recycled Water Irrigation Runoff**

Action(s): 1) Comply with applicable Waste Discharge Requirements

2) Certify that Recycled Water BMP Plan minimizes spills and incidental runoff

3) Develop and Implement Recycled Water BMP Plan

Timeline(s): Certification: 1 month after effective date of Action Plan

New Recycled Water BMP Plans: 2 years after effective date of Action Plan

Title 22 Engineering Report: Recycled Water Producers/Users



Implementation Actions - New

- **Urban Runoff**

Action: Implement Pathogen Reduction Plans as required by Municipal Separate Storm Sewer Systems (MS4) permits

Timeline: Up to 2 years after the effective date of the Action Plan for MS4 Enrollees without approved Pathogen Reduction Plans

- **Dairies**

Action : Comply with requirements set forth in the Conditional Waiver, the general WDR, an individual WDR, or NPDES permit, as applicable

Facilities required to have a Waste Management Plan (WMP) or a Water Quality Plan (WQP) as a condition of the order, the WMP or WQP shall be updated to address sources of bacteria

Timeline: Within 2 year after the effective date of the Action Plan



Implementation Actions – New

- **Non-dairy Livestock and Farm Animal Waste**

Action: Implement BMPs to properly contain and dispose of waste, and mitigate for potential water quality impacts resulting from surface runoff of animal waste

Timeline: Within 2 years after the effective date of the Action Plan

- **Recreational Water Uses and Homeless Encampments**

Action: Implement Memorandum of Understanding's Joint Protocol to address water quality impacts from these source categories

Timeline: Ongoing

- **Onsite Wastewater Treatment Systems (OWTS) > 10,000 GPD**

Action: Submit a Report of Waste Discharge (ROWD) to the Regional Water Board for consideration of waste discharge requirements for the OWTS

Timeline: Within 3 months after the effective date of the Action Plan



Implementation Actions - New

Onsite Wastewater Treatment Systems (OWTS)

- Existing local programs are not adequate to effectively identify and fix failing and substandard OWTS
- Existing local standards for OWTS are not adequate to protect water quality near impaired waterbodies
- Establish and implement an Advanced Protection Management Program (APMP), as required by the OWTS Policy



Advanced Protection Management Program (APMP)

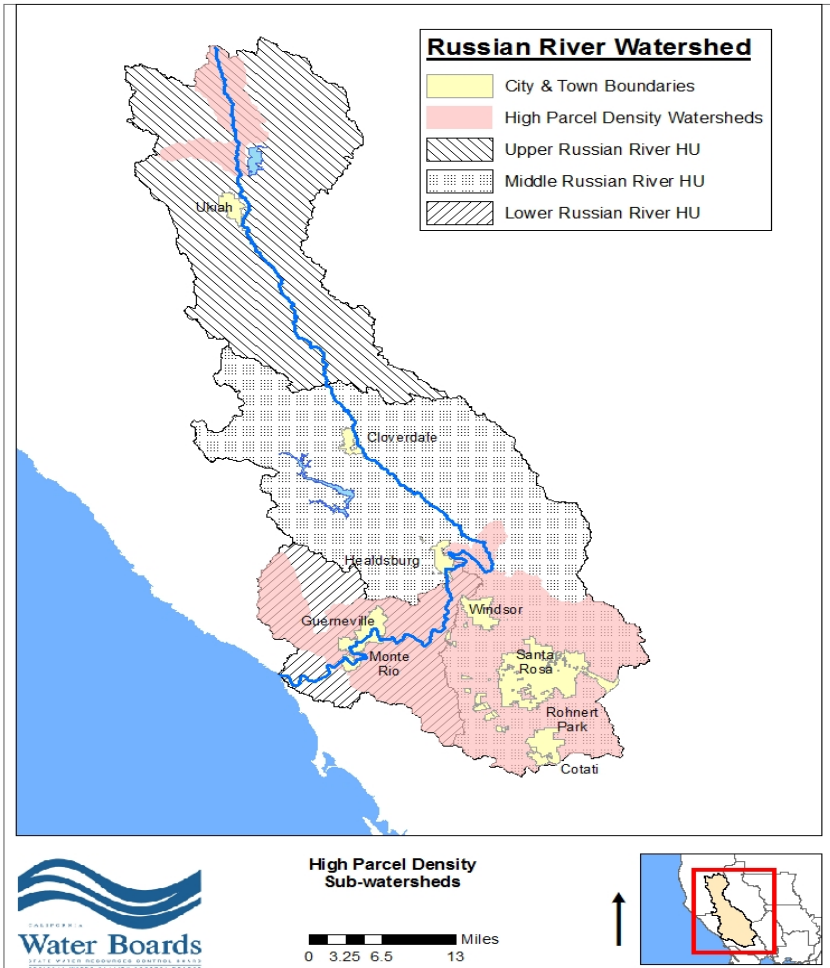
- *Water Quality Control Plan for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy)*
- Required for OWTS near impaired waterbodies
- Established by TMDL Action Plan, Local Agency, or in accordance with OWTS Policy
- Incorporated into Local Agency Management Program (LAMP)
- Must include:
 - Geographic area of the APMP
 - Minimum requirements or special provisions for OWTS



Implementation Actions - OWTS

- Geographic Area of APMP
 1. 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
 2. 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.
- Parcels not located within the APMP boundary do not need to comply with requirements of APMP

Geographic Area of APMP- Subwatersheds



- 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
- Windsor Creek



APMP - Interactive Parcel Map

Regional Water Board Russian River TMDL Webpage:

http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/russian_river/

<http://waterboards.maps.arcgis.com/apps/InformationLookup/index.html?appid=b9527b76e0874c139a59d8d53a538150>



APMP Objectives

1. Establish plan for identifying failing and substandard OWTS
2. Establish criteria for determining when corrective action is needed
3. Establish minimum standards for new and replacement OWTS and OWTS in need of major repair
4. Ensure long-term compliance by establishing requirement for basic operational inspection of all OWTS within the APMP area



APMP Implementation Actions

➤ Owners and Operators of OWTS

1. Maintain OWTS in good working condition
2. Notify local agency and obtain repair permit in the event of a major OWTS failure
3. Obtain basic operational inspection of OWTS every five years

➤ Regional Water Board and Local Agencies

1. Initial Assessment to determine need for corrective action
2. Periodic reassessment based on 5-year inspection results



APMP Implementation Actions

➤ Strategic Planning and Implementation

- Coordinate with local agencies and citizens advisory groups
- Identify areas where community or multi-party solutions exist
- Develop plan for OWTS upgrades
- Establish time schedules and explore funding opportunities

Initial OWTS Assessment Program

- Initial assessment to determine operational status of OWTS
 - survey, questionnaire, OWTS inspection
 - Desktop review
 - Regional Water Board will initiate notifications begin within 6 months after Action Plan's effective date

- Determination of operational status of OWTS
 - Does OWTS require corrective action?

**Step 1:
Initial
Assessment**

**Step 2:
Determination
of Need for
Corrective
Action**

**Step 3:
Corrective Action or
Commence with 5-yr Basic
Operational Inspection**



Corrective Action

Definition:

- OWTS discharging to the ground surface or surface waters;
- OWTS that do not include a septic tank and an effluent dispersal system;
- OWTS with projected wastewater flow exceeding the capacity of one or more components of the treatment and disposal system; or
- OWTS requiring corrective action per OWTS Policy



Requirements for OWTS Repair and Replacement

Supplemental Treatment and/or Enhanced Effluent Dispersal System

- Required (New and Replacement OWTS, OWTS requiring major repair):
 - Effluent dispersal system is within 100 feet of stream bank
 - Projected wastewater flow is 3,500 gallons per day or greater
 - Replacement OWTS is designed for increase in flow
- Discretionary (Replacement OWTS):
 - Not required by Action Plan
 - Replacement due to catastrophic natural events (fire, flood, tree falls)
 - Proposed as voluntary repair or upgrade initiated by OWTS owner
- A local agency may establish more stringent requirements or restrictions



Operation and Maintenance Requirements

- Basic operational inspection within APMP area every 5 years
- Minimum Inspection Requirements
 - ✓ Observations to detect leaks, cracks, corrosion, root intrusion, odors
 - ✓ Assessment of proper operation of high level alarm
 - ✓ Assessment of liquid levels
 - ✓ Assessment of proper operation of pump and effluent distribution systems
 - ✓ Observation of inspection ports



Recent and Ongoing Activities

- Memorandum of Understanding (MOU) between Sonoma County, Sonoma County Community Development Commission, and Regional Water Board
- Preparation of Prop.1 Planning Grant Application for OWTS upgrades for Monte Rio, Villa Grande, Northwood, Camp Meeker
 - Planning grant maximum amount: \$500 thousand
 - Construction grant maximum amount: \$6 million
 - Sonoma County is applicant and would disperse funds to individual homeowners
 - Rural California Assistance Corporation (RCAC) is providing technical assistance for application process
 - Citizens Advisory Group being formed to provide input on Request for Proposal, Planning Grant Application, and project alternatives



Funding Opportunities for OWTS

- Proposition 1 - \$7.545 billion to fund ecosystem and watershed protection, water supply infrastructure projects, drinking water protection [*\$260 million allocated to Small Community Grant Fund*]
- Nonpoint Source 319(h) Grant Program - \$4 million for 2016 for projects that address nonpoint, diffuse sources of pollution
- State Revolving Fund (SRF) Mini-Loan Program – Low interest loans to fund projects with private parties
- Linked Deposit Program – State-backed program that allows private banks to provide reduced interest rate loans to private property owners for eligible projects
- Sonoma County Energy Independence Program (SCEIP) – Financing for residential projects with costs added to the homeowners' property tax bills, with payback periods up to 20 years



Monitoring

- Revise existing permits
- Enhance Regional Water Board's Surface Water Ambient Monitoring Program (SWAMP)
- Support of Local Agencies' Recreational Beach Monitoring Programs
- Encourage participation in a regional monitoring program

TMDL Schedule

Milestone	Timeframe
Public Workshop 1	August 17, 2017 <i>Santa Rosa</i>
Public Workshop 2	TBD <i>Santa Rosa</i>
Deadline to Submit Written Comments NorthCoast@waterboards.ca.gov 5550 Skylane Blvd. Suite A, Santa Rosa 95403	September 29, 2017
Regional Board Consideration/Hearing	December 12-13, 2015 <i>Santa Rosa</i>
State Board Consideration/Hearing	Spring 2018 <i>Sacramento</i>
Office of Administrative Law Review	Summer 2018
U.S. EPA Consideration	Late Summer 2018



Questions and Public Comments

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