



# Monte Rio/Villa Grande Wastewater Solutions Pilot Project & Feasibility Study Update



# Agenda

- I. Welcome and Opening Remarks
- II. Overview and Regulatory Update
- III. Alternatives Analysis Presentation
- IV. Q&A with Resource Panel
- V. Recap and Review
- VI. Next Steps and Closing Remarks



# Welcome



# About the Meeting

The County of Sonoma is committed to creating a safe and inclusive environment free from disruption. We will not tolerate any hateful speech or actions and are well staffed to monitor that everyone is participating respectfully. If necessary, we will immediately end the meeting.

# Polling Instructions

Open your camera app and aim at this QR Code to automatically start the poll.



OR

Open an internet browser (Safari, Chrome) and enter the following URL and Code.

Go to

**[www.menti.com](http://www.menti.com)**

Enter the code

**4184 8015**

# Polling: Your Property

Where do you live or own property?

- Monte Rio?
- Villa Grande?
- Elsewhere in West County?
- Somewhere else?



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# Polling: Your Property

How many years have you lived in or owned your property?

- Less than 1 year
- 2-5 years
- 6-10 years
- 11-20 years
- 21-30 years
- over 30 years
- I don't know/remember



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# Polling: Your Wastewater System

What type of septic system do you have on your property?

- Cesspool
- Redwood Box
- Septic Tank w/Leach Field or Seepage Pit
- Mound System
- Septic Tank w/ Supplemental Treatment
- Don't Know



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# Polling: Your Wastewater System

Have ever had to repair your septic system for surfacing of wastewater, plumbing back up, or collapse?

- Yes
- No
- I don't know
- I would prefer to not say



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# Polling: Your Wastewater System

Does your system operate properly (not surfacing, not backing up in home)?

Do you know of any systems in your neighborhood that are experiencing issues or are failing?



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# Polling: Age of Septic System

What is the approximate age of your septic system?

- Less than 1 year
- 2-5 years
- 6-10 years
- 11-20 years
- 21-30 years
- over 30 years
- I don't know/remember



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# Overview and Regulatory Update



# Connecting the Pieces

Overview and Context for the  
Regulatory Update and Alternatives Analysis



## **Michael Makdisi**

*Ombudsman and Analyst,  
County Administrator's Office*

- Non-regulatory Resource
- Community and Agency Support
- Individual Assistance
- Discuss and Work through Challenges
- Identify Next Steps
- Provide Information and Explanations

Phone: 707-565-3747

Email: [michael.makdisi@sonoma-county.org](mailto:michael.makdisi@sonoma-county.org)

# Polling: Project Awareness

On a scale of 1-5, to what extent are you aware of the MR/VG pilot project?

1 = Low Awareness

2

3

4

5 = High Awareness



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# RUSSIAN RIVER

## Monte Rio and Villa Grande Wastewater Solutions Pilot Project

### PHASE 1

**SUBMIT PLANNING APPLICATION:**  
2018–2021

- Community Meeting
- Receive Funding
- Define Scope
- Issue Request for Qualifications

### PHASE 2

**ENGAGE CONSULTANT:**  
2021–2023

- Assessment
- Possible Solutions
- Financial Options
- Community Meeting

### PHASE 3

**SELECT PREFERRED OPTIONS:**  
2023–2026

- Refine Solutions
- Community Meeting
- Define and Select Management Options
- Complete 10% Design

### PHASE 4

**LAUNCH MANAGEMENT SOLUTION:**  
2026–2029

- Community Meeting
- Apply for and Secure Funding
- Complete Design
- Solicit Bids and Select Contractor(s)

### PHASE 5

**BEGIN IMPLEMENTATION PROJECT(S):**  
2029–2043

- Continue to Engage Residents
- Implement Solutions
- Monitor Results
- Sustain Efforts

2018



2019

2020

2021



2022

2023



2024

2025

2026



2027

2028

2029



...

2040



# Entities Involved



# Terms and Acronyms (see handout)

## Terms

- OWTS/Septic Systems
- Cesspools
- Cluster Systems
- APMP/Impairment Area

## Regulations & Policies

- OWTS Policy (state)
- OWTS Manual (county)
- LAMP
- TMDL Action Plan

# Polling: Septic Regulations Awareness

On a scale of 1-5, to what extent are you aware of the septic regulations?

1 = Low Awareness

2

3

4

5 = High Awareness



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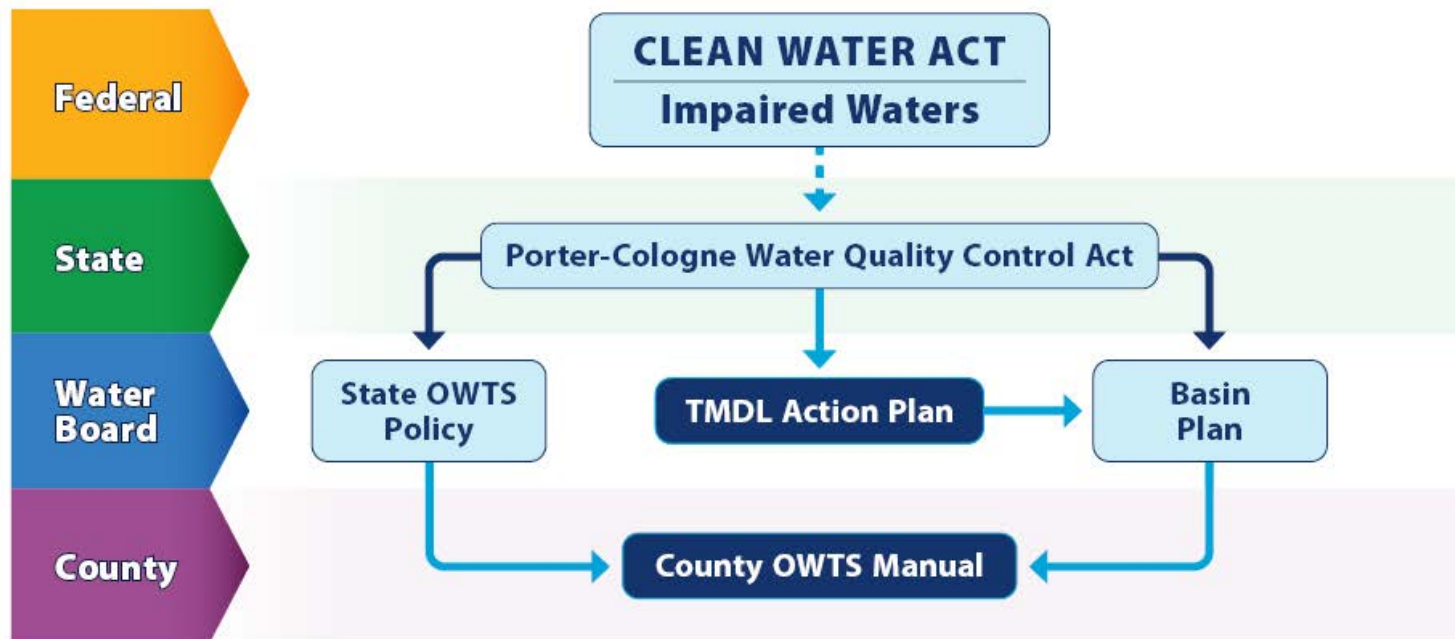
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# Laws, Regulations and Policies

## LAWS, REGULATIONS & POLICIES



# Main Meeting Topics

- Regulatory Update (State and County)
  - Related to septic systems
  - Related to a potential community project
- Alternatives Analysis (Feasibility Study Engineering Consultant)
  - Consultant's presentation
  - Obtain feedback



# Regulatory Update



## Charles Reed, P.E.

Supervising Water Resource Control Engineer

### Topics

- Basin Plan and TMDL Action Plan
- Impact on Septic System Owners
- Impact on Monte Rio/Villa Grande



## Nathan Quarles, P.E.

Deputy Director of Construction and Engineering

### Topics

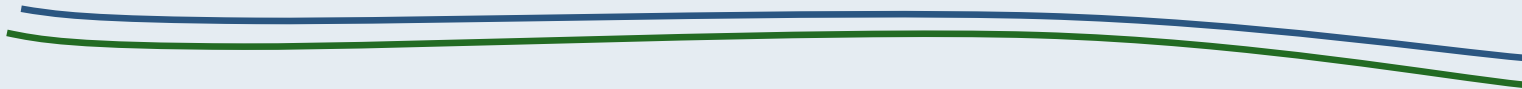
- County Septic Regulations (OWTS Manual)
- Provisions Applicable County-wide
- Special Provisions for Certain Areas Near Russian River



# State Regulatory Changes for Russian River Septic Systems

Charles Reed, P.E.

Supervising Water Resource Control Engineer  
North Coast Regional Water Quality Control Board



# Outline

- Role of Regional Water Board
- Regulatory Overview
- Impact on Septic System Owners
- Impact on Monte Rio/Villa Grande
- Estimated TMDL Timeline





# Regulatory Overview

## Federal

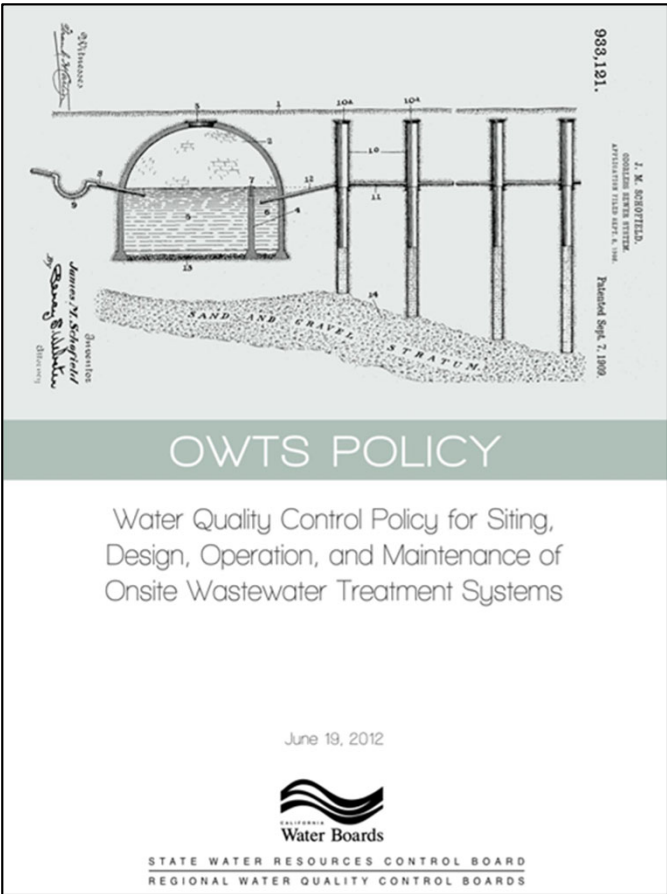
- Clean Water Act Requires Actions for Impaired Water Bodies

## State of California: Regional Water Board

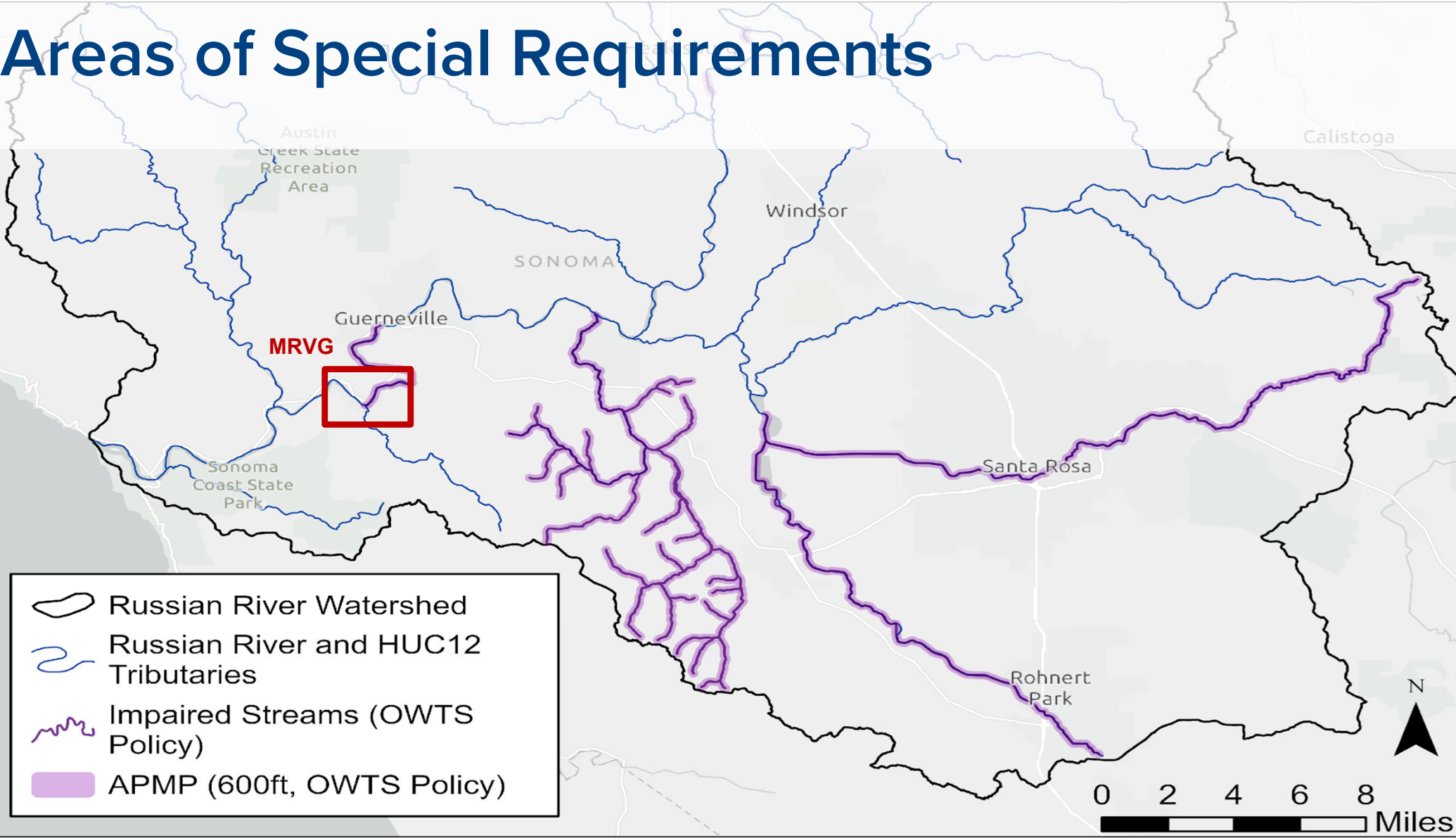
- Pathogen TMDL Developed for the Russian River Watershed and Incorporated into Basin Plan
- OWTS Policy Requires Additional Protections for Impaired Areas
- Advanced Protection Management Program for Septic Systems

## Local: Permit Sonoma

- Draft OWTS Manual Includes Special Provisions for New or Replacement Systems within 600 feet of Impaired Water Bodies



# Areas of Special Requirements



# Polling: Your Wastewater System

What type of maintenance are you performing on your system?  
(Select all that apply)

- Visual Inspection
- Pump Regularly (every 3-5 years)
- Maintain Drain Field
- Make Repairs
- Use Additives



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# Polling: Your Wastewater System

On average, how often are you pumping your system?

- monthly
- yearly
- every 2-3 years
- every 5 years
- rarely/never
- in an emergency



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# Impact on Septic System Owners

Existing systems require action when the system:

- Suffers major failure, **or**
- Is a cesspool, **or**
- Receives non-domestic waste, **or**
- Receives domestic waste flow more than 10,000 gallons per day, **or**
- Requires supplemental treatment or enhanced dispersal



# Impact on Septic System Owners

## New and Replacement Systems

- Must Comply with the Sonoma County OWTS Manual;
- Conditions of the OWTS Policy's Conditional Waiver;
- and the Basin Plan.

## Who is the Permitting Authority?

- Permit Sonoma for Most New, Replacement, or Repaired Systems
- Regional Water Board for Systems that Cannot Comply with Conditional Waiver and Basin Plan

# Impact on Septic Owners

## Anticipated Regional Board TMDL actions:

### 1. Collect information about existing systems to assess compliance with OWTS Policy Conditional Waiver and Basin Plan:

- No surfacing effluent
- No operation when inundated by flooding or in saturated soil
- Not causing or contributing to nuisance or pollution
- Complies with local agency codes, ordinances, and requirements
- Complies with applicable TMDL implementation requirements (Action Plan)
- Eligible for coverage under OWTS Policy (e.g., domestic, flow, strength)

### 2. Noncompliant systems will be required to comply with the OWTS Policy Conditional Waiver and Basin Plan or obtain:

- Local permit(s) from Permit Sonoma
- Waste discharge requirements or waiver from the Regional Board

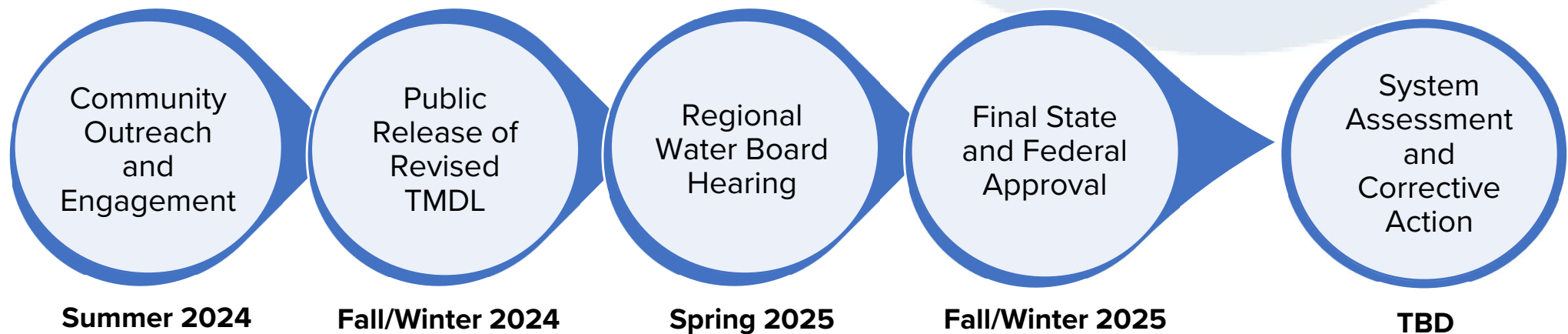
# Impact on Monte Rio & Villa Grande

- Most Owners with Existing Systems Need Take No Immediate Action
- Some Owners Will be Subject to Special Requirements
  - County “Special Provisions” Apply to New and Replacement Systems
- Some Owners May be Required to Replace or Upgrade Existing Systems
  - e.g. Cesspools
- Regional Board May Regulate Some Systems Directly, e.g. Waiver





# Draft Timeline for Russian River TMDL





# Onsite Wastewater Treatment Systems (OWTS) MANUAL

Nathan Quarles  
Deputy Director of Construction and Engineering  
Permit Sonoma



# Outline

- Revisions to the OWTS Manual
- Provisions for Impaired Water Bodies
- Provisions County-Wide
- Importance of Community-Wide Solutions
- Interim Provisions

# Revisions to OWTS Manual

- July 16, 2024, Board of Supervisors
- Process
  - 2019 LAMP to RWQCB
  - Revisions Required
- Highlights
  - New vs Existing Development
  - Reserve Areas
  - TMDL/Impaired Areas
  - Cesspool Conversions

# Provisions for Impaired Water Bodies

- 600 Feet on Either Side of Impaired Reach
- Russian River – Fife Creek to Dutch Bill Creek
  - Dawn Ranch to Monte Rio Bridge
- Supplemental Treatment / Enhanced Dispersal
- Exception with a Slower Application Rate

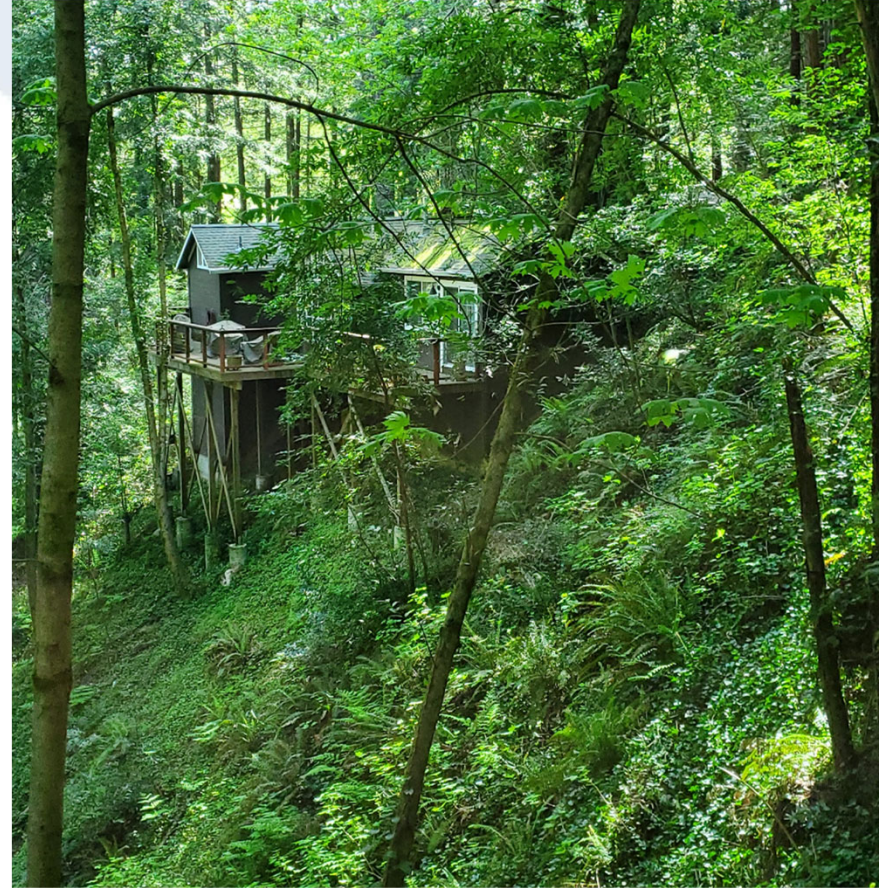
# Provisions County-wide

- 3 Feet Separation to Groundwater
- 3 Feet of Soil
- Setbacks to Streams, Steep Slopes
- Standards Vary based on Level of Development
- Reserve Areas Standards

# Importance of Community-wide Solutions

## Site Constraints

- Constrained Parcels
- Small Lots, Steep Slopes, Site Constraints, New Systems are Expensive
- Replacement Systems are Not Easy



# Interim Provisions

- Replacement System vs Cluster Systems
- Don't Want Owners to Pay Twice
- May Need a Full Replacement System
- Community System May be on the Horizon
- A Repair May Suffice in the Short Term
- Creating an Approach to Address



# Interim Provisions

- Section 20 – Corrective Action
- Repairs
- Replacement Systems Under a Repair Permit
- Cesspool Conversions





# Summary of Alternatives Analysis

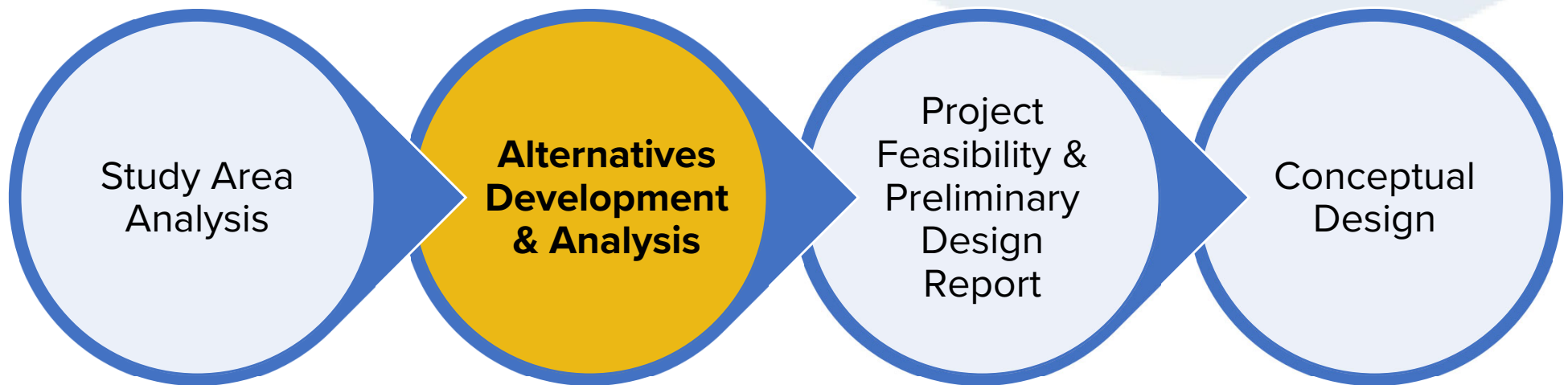


# Summary of Alternatives Analysis

## Brelje & Race Consulting Engineers

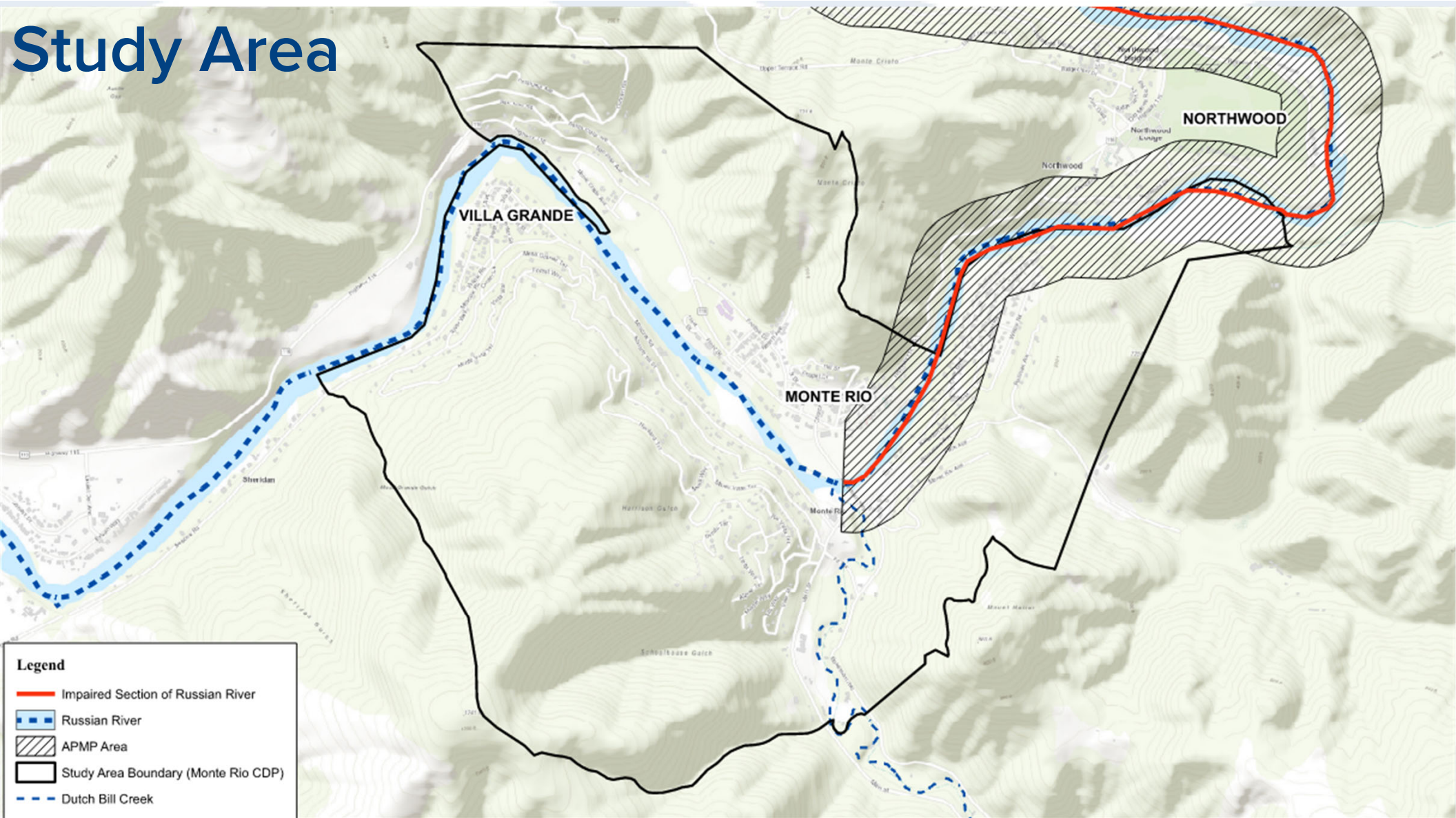
Dave Coleman, Senior Principal  
Sophia Grubb, Project Engineer

# Overview of Scope of the Feasibility Study



Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. California's Clean Water State Revolving Fund is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

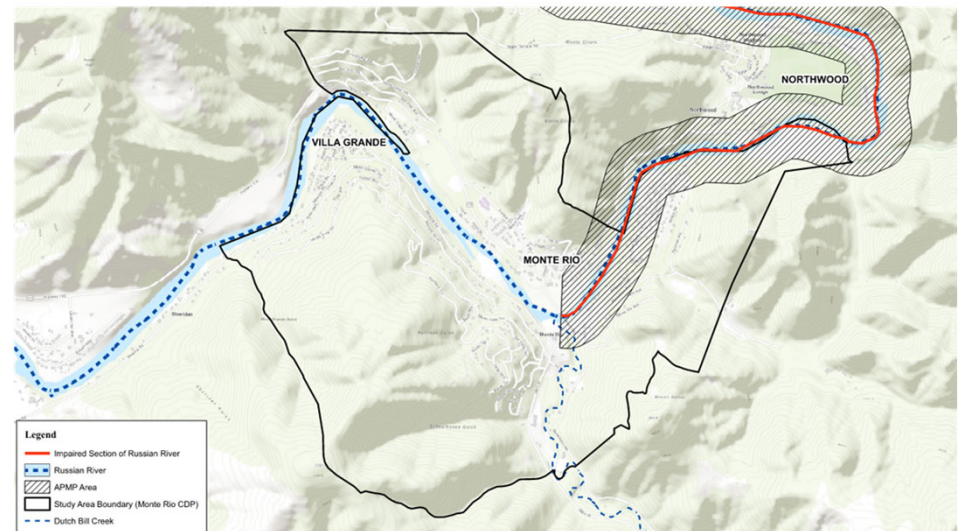
# Study Area



# Polling: Special Requirements Area

Do you have a septic system in the "Special Requirements" area (i.e., 600 feet from the mainstem of the Russian River between Fife Creek and Dutch Bill Creek)?

- Yes
- No
- Maybe
- I don't know.



# Alternatives Development & Analysis

# Alternatives Development & Analysis Scope

Alternatives  
Refinement

Regulatory  
Considerations

Life Cycle Costs  
Analysis

Governance/  
Management

*Recommendation  
of a Preferred  
Project*



# Proposed Alternatives

## Continued Use of Onsite Wastewater Treatment Systems



Both for individual parcels and cluster systems

## Utilize a Centralized Sewage Collection System



Connection to an existing wastewater treatment plant

# Alternative 1: Onsite Wastewater Treatment Systems



# Design Criteria



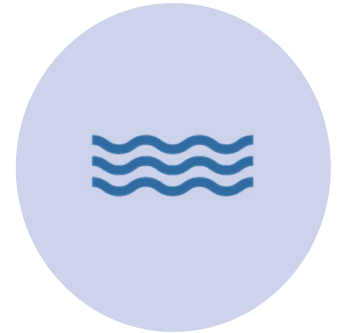
Age of Existing Systems



Parcel Size



Topography



Proximity to a River  
or Creek



Soil Type



Groundwater



Impaired Area

# Onsite Systems Considered

Connection to  
**Cluster Septic  
Systems**

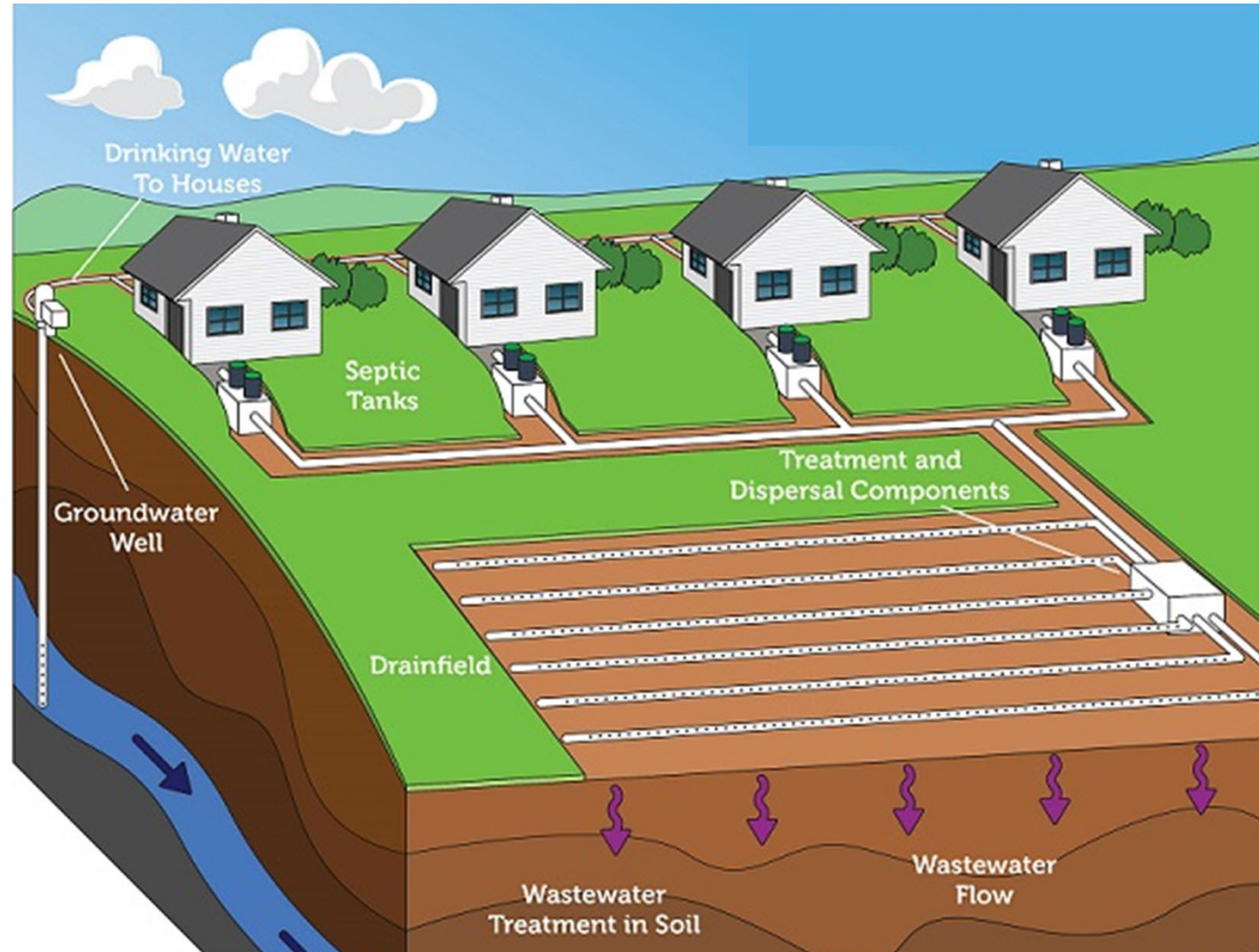
Repair/Replacement  
with **Mound or  
At-Grade Mound**

Repair/Replacement  
with **Subsurface  
Drip System**

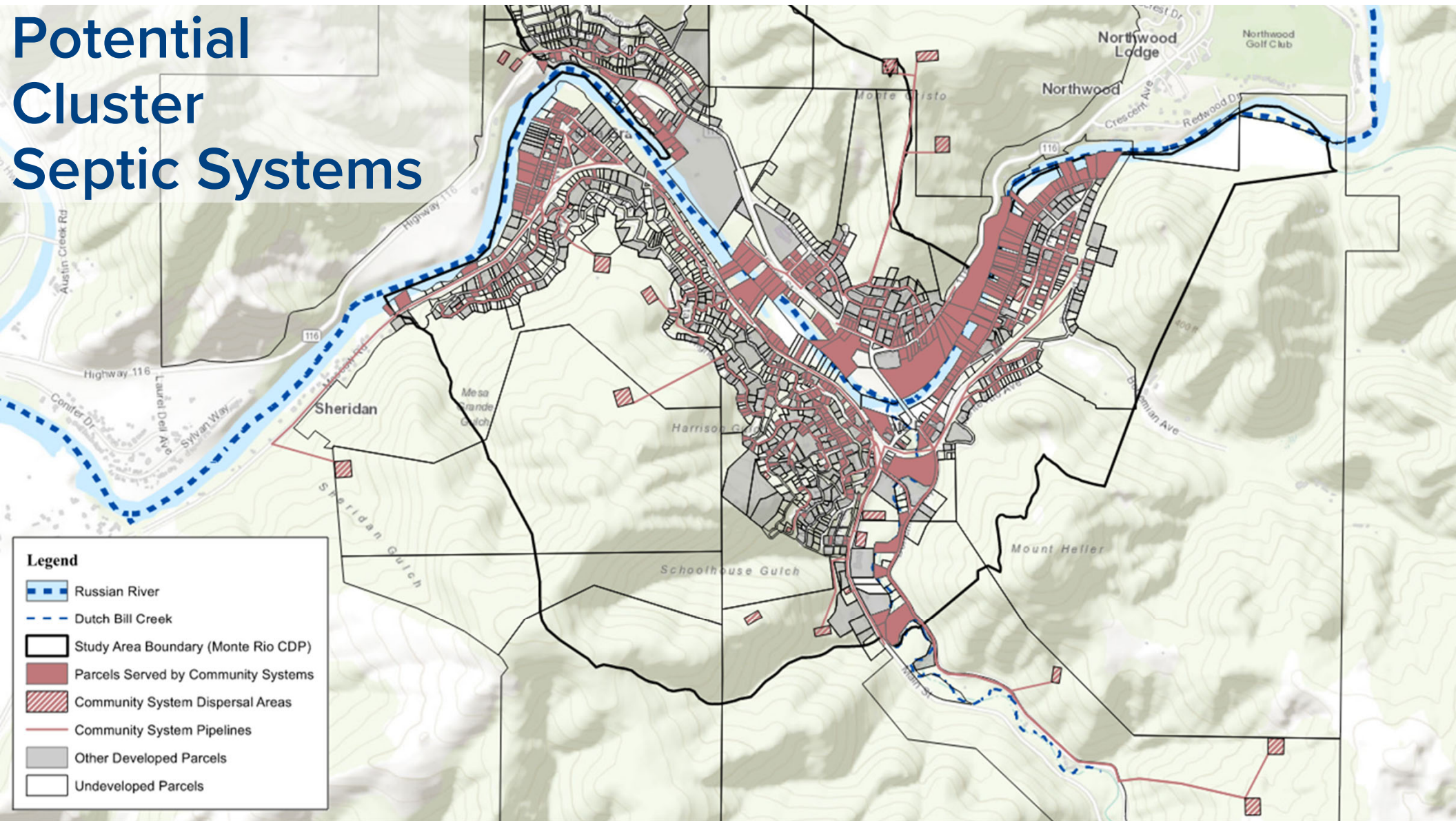
Repair/Replacement  
with **Bottomless  
Sand Filter**

Repair/Replacement  
with **Standard  
System**

# Cluster Septic Systems



# Potential Cluster Septic Systems



# Polling: Cluster System

If deemed the best option for your property, are you open to participating in a cluster system?

- Yes
- No
- Maybe
- I don't know



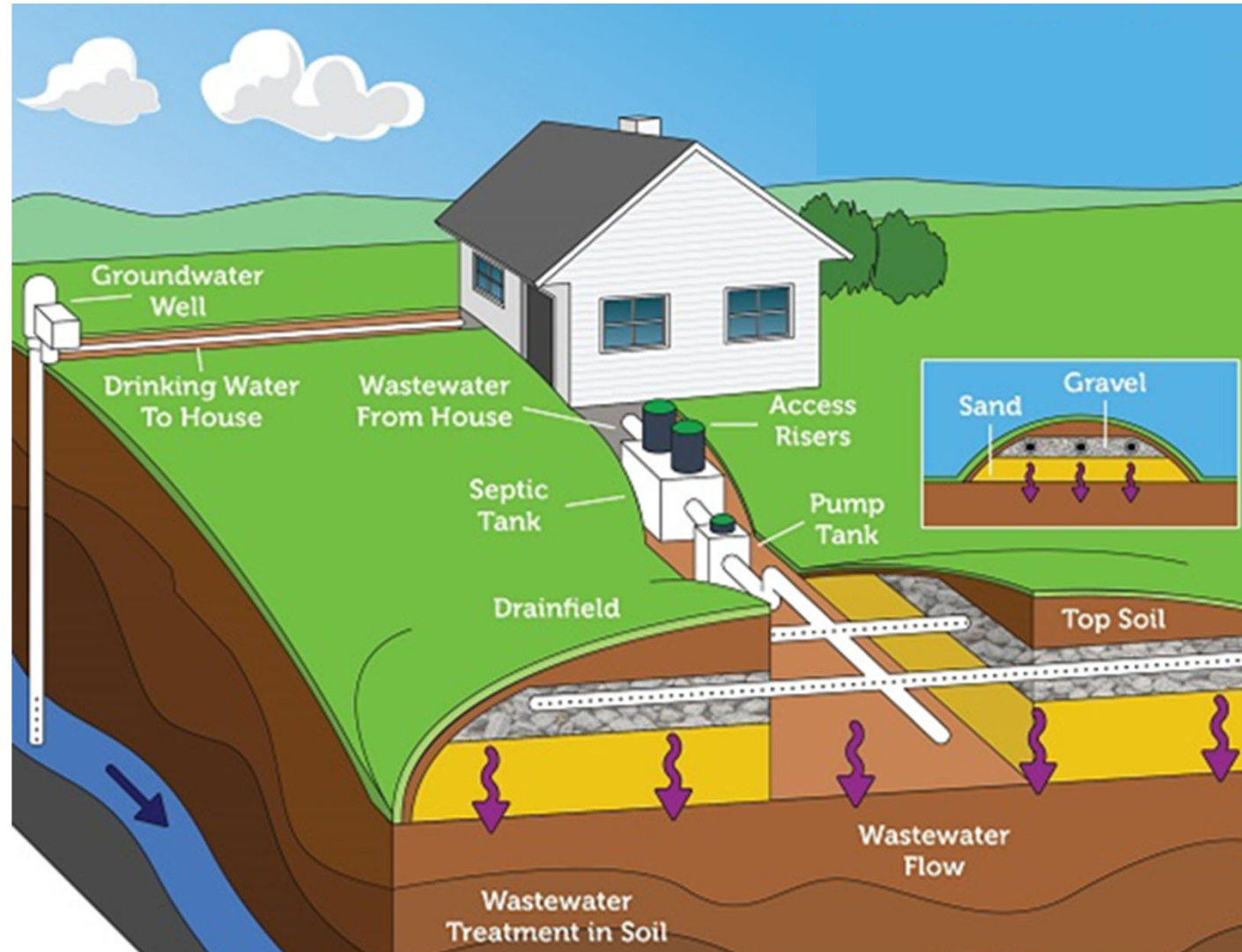
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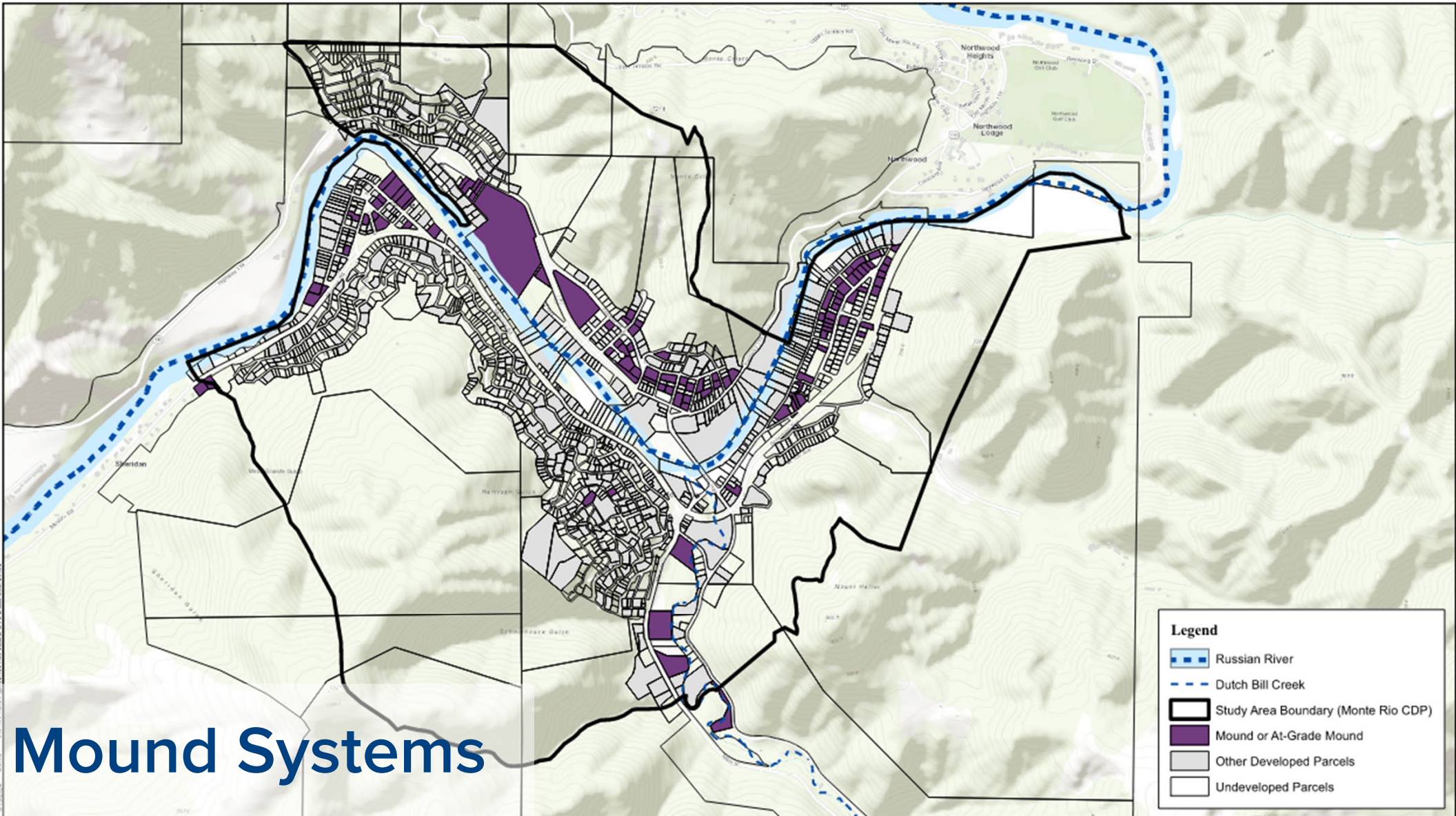
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# Mound Systems





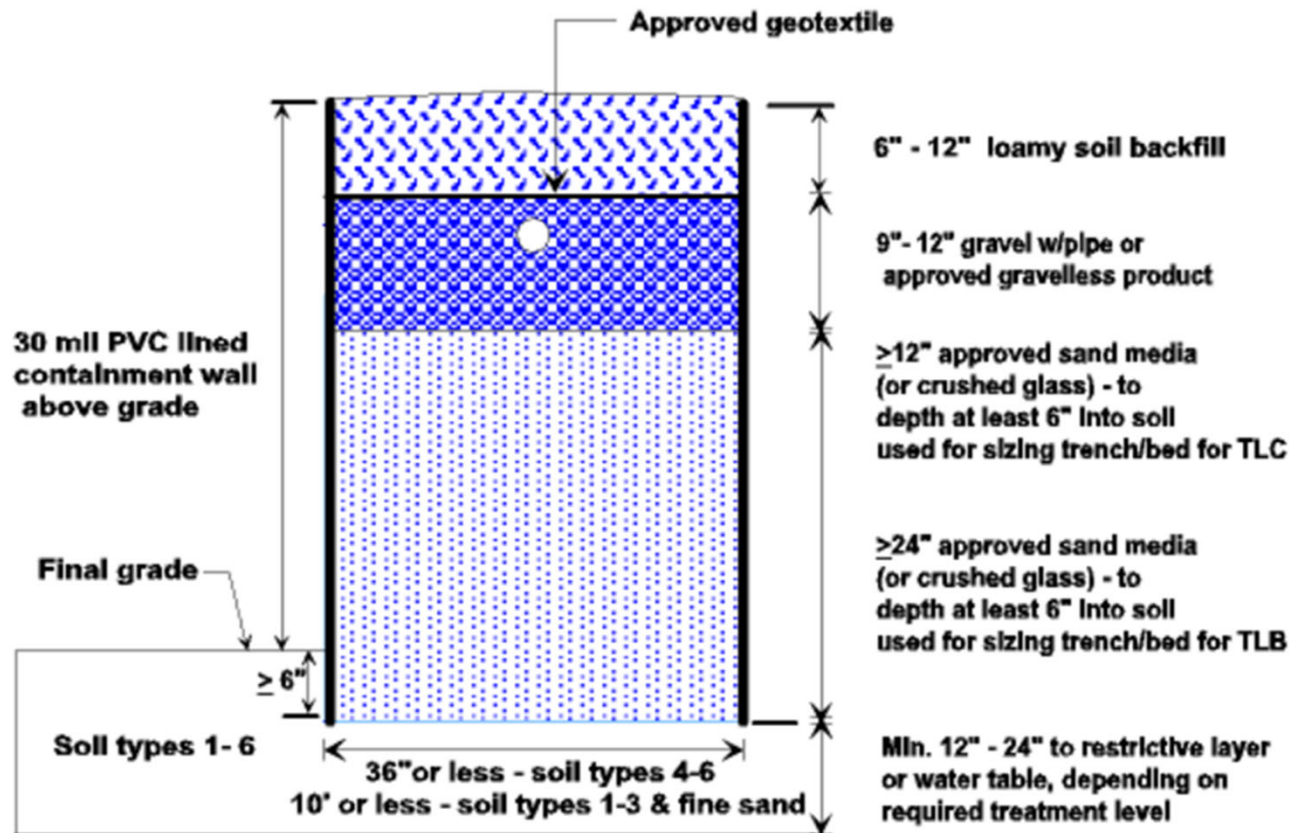


**Legend**

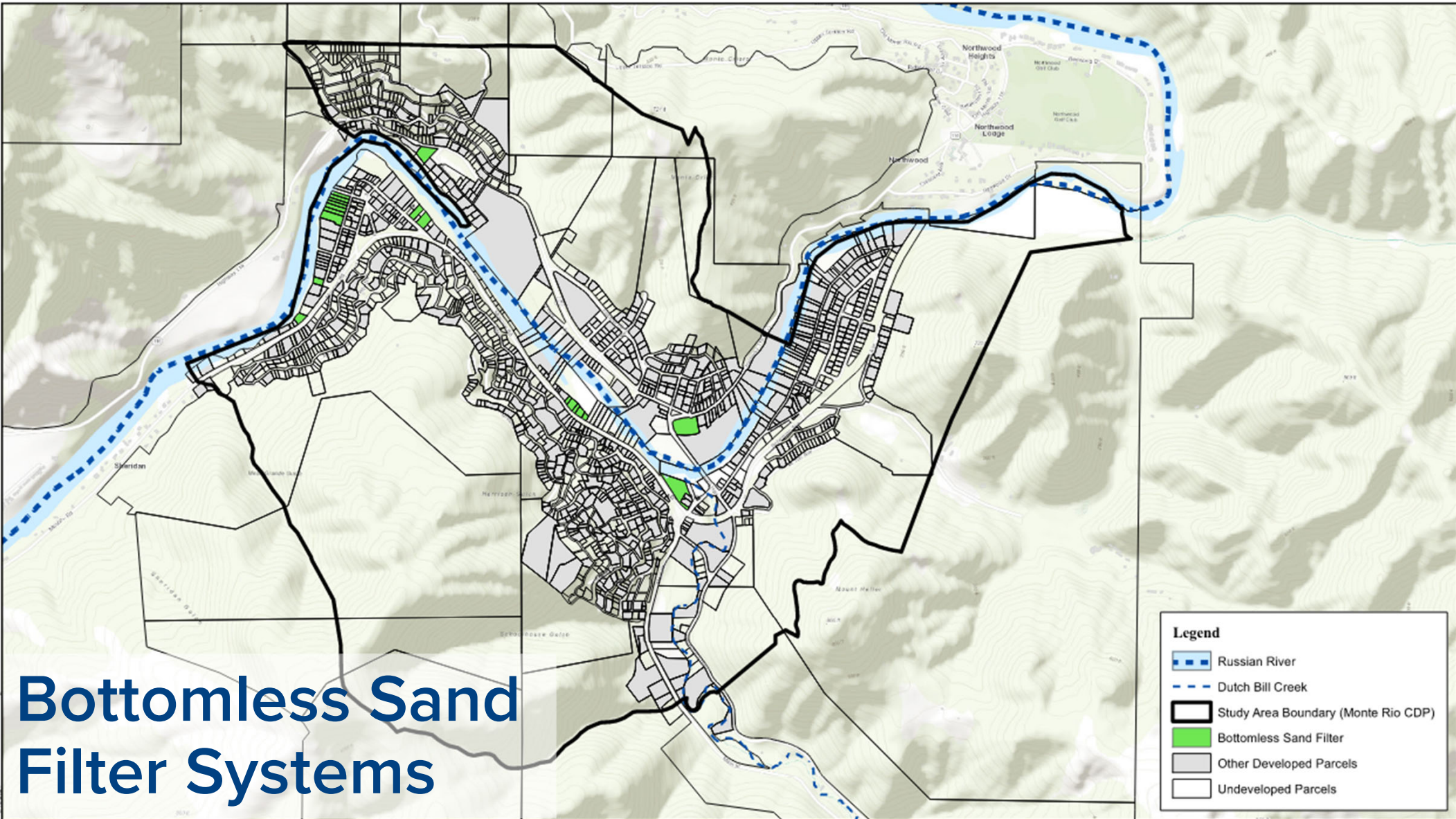
- Russian River
- Dutch Bill Creek
- Study Area Boundary (Monte Rio CDP)
- Mound or At-Grade Mound
- Other Developed Parcels
- Undeveloped Parcels

# Mound Systems

# Bottomless Sand Filter



Washington State Department of Health (March 2014). *Sand Lined Trench Systems*

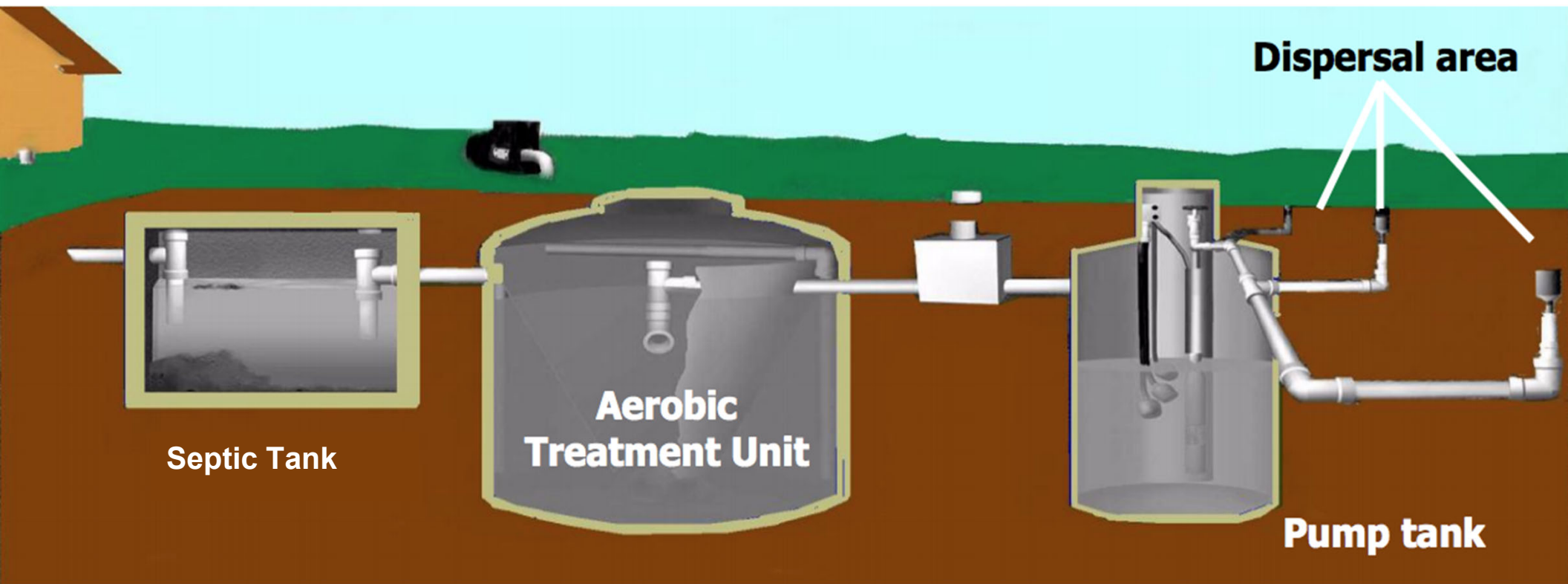


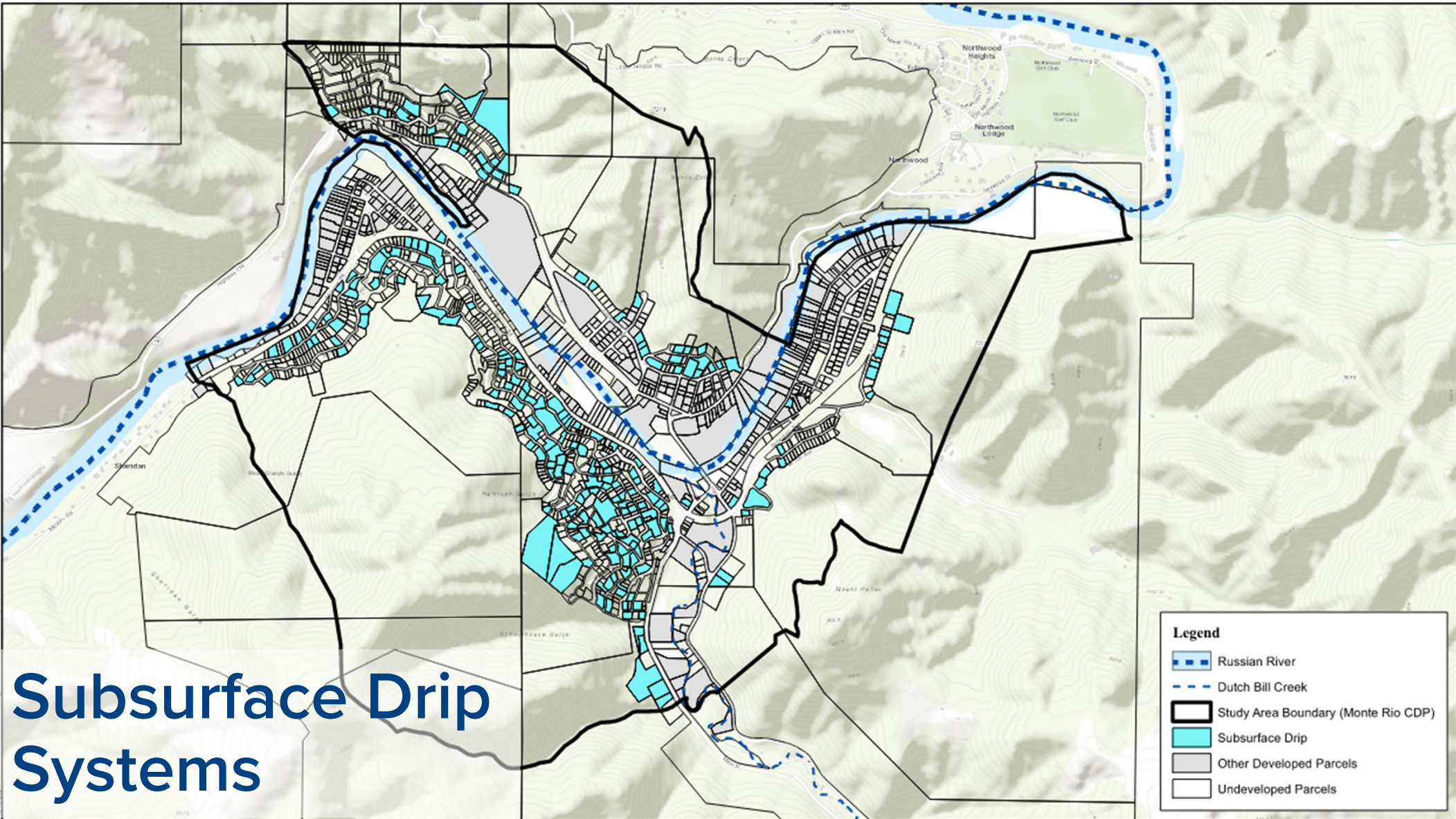
# Bottomless Sand Filter Systems

**Legend**

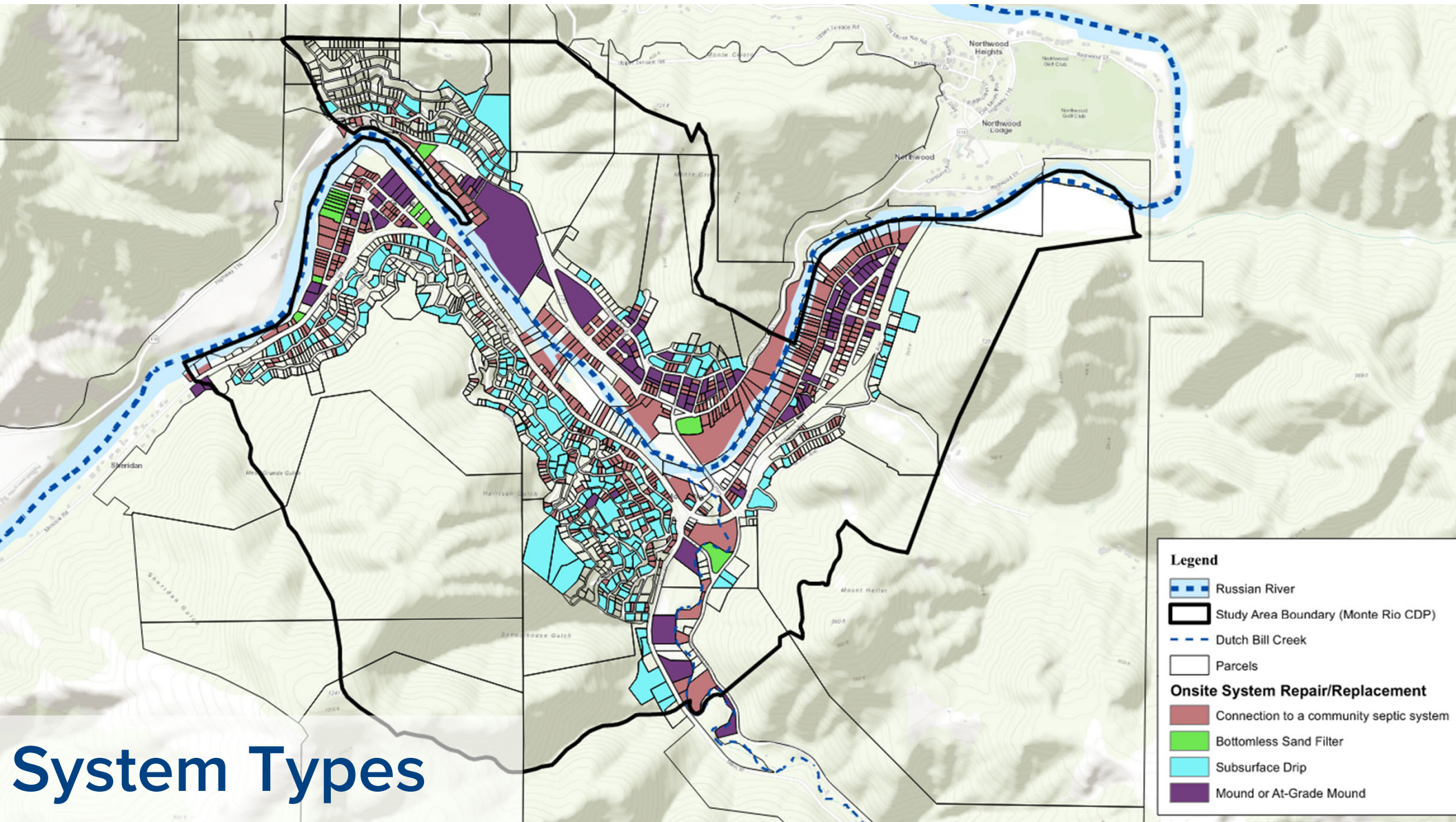
- Russian River
- Dutch Bill Creek
- Study Area Boundary (Monte Rio CDP)
- Bottomless Sand Filter
- Other Developed Parcels
- Undeveloped Parcels

# Subsurface Drip System









# Subsurface Drip Systems







# System Types

**Legend**

-  Russian River
-  Study Area Boundary (Monte Rio CDP)
-  Dutch Bill Creek
-  Parcels

**Onsite System Repair/Replacement**

-  Connection to a community septic system
-  Bottomless Sand Filter
-  Subsurface Drip
-  Mound or At-Grade Mound

# Polling: OWTS System

Are you open to upgrading your individual septic system with one of the options presented?

- Yes
- No
- Maybe
- I don't know

Why or why not?



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# Supplemental Treatment Options



Aerobic Treatment Units



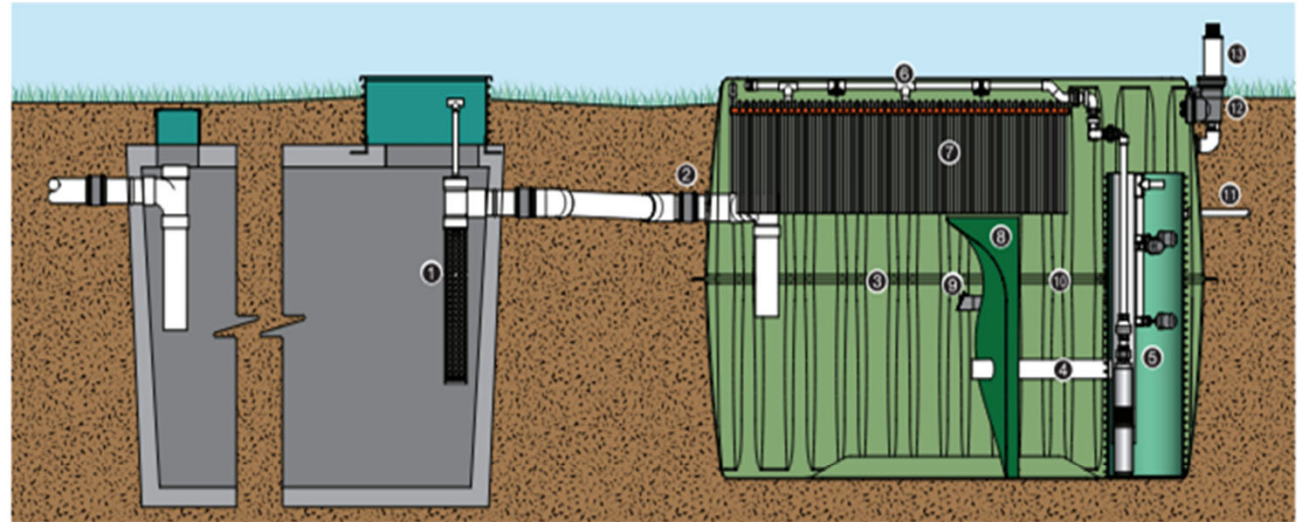
Waterless Toilets



Exceptions To Supplemental Treatment Based On Setback From Russian River, Depth To Groundwater, Percolation Rate, and Wastewater Application Rate.



# Supplemental and Pretreatment Units



The AX-RT is a completely pre-packaged "plug & play" wastewater treatment system that can be quickly installed right behind an existing (or new) watertight septic tank.



# OWTS Improvements: Site Evaluation and Capital Costs

System Type	Estimated Site Evaluation and Capital Costs Per System
<b>Standard System (Reference)</b>	\$34,000
<b>Mound System</b>	\$53,000
<b>Bottomless Sand Filter</b>	\$45,000
Supplemental Treatment (for Mound & Bottomless Sand Filter)	Additional \$10,000 to \$40,000
<b>Pretreatment and Subsurface Drip System</b>	\$65,000 to \$84,000
<b>Cluster Systems</b>	\$44,000 to \$142,000 per connection

# OWTS: Operational and Maintenance Costs

Ongoing Regular Costs	Periodic Costs	Preventative Maintenance	Emergency Maintenance
<ul style="list-style-type: none"><li>• Electricity</li><li>• Telemetry and Monitoring</li><li>• Operational Permits</li></ul>	<ul style="list-style-type: none"><li>• Septage Solids Removal</li><li>• Equipment Replacements</li></ul>	<ul style="list-style-type: none"><li>• Scheduled Inspections</li><li>• Pump Filter Cleaning</li></ul>	<ul style="list-style-type: none"><li>• Repairs</li></ul>

# Onsite Wastewater System Governance/Management

## Governance/Management Options

- Creation of an Onsite Wastewater Disposal Zone (OWTS Zone),
- Expansion of Latent Powers of a Local Agency, or
- Creation of a Community Service Area.

## Local Agency Formation Commission (LAFCO)

- Acceptance and Approval may be Required for all Three Alternatives

## Governing/Managing Agency Responsibilities

- Community Planning
- Operational Permits
- Routine Inspections
- Enforcement
- Operation and Maintenance Contracts for Cluster Systems

# Polling: Rating Alternative 1

How favorable do you feel about  
**Alternative 1: Continued Use of  
Onsite Wastewater Treatment  
Systems?**

1 = Not Favorable

2

3

4

5 = Highly Favorable



OR

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# Polling: Concerns About Alternative 1

What are your most significant concerns about **Alternative 1: Continued Use of Onsite Wastewater Treatment Systems?**

Enter words or phrases



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# Polling: Governance/Management for Alternative 1

What would be your preferred governance/management entity for **Alternative 1: Continued Use of Onsite Wastewater Treatment Systems?**

- Onsite Wastewater Disposal Zone (e.g. Sonoma County)
- Expansion of local agency (e.g. Sweetwater Springs)
- Creation of new service area (new Wastewater District run locally)

Any other entities we should consider?



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# Alternative 2: Centralized Sewage Collection System





# Low Pressure Sewage Collection System

Grinder Pump Station at every Connection

Emergency Storage in the Wet Well

Smaller Diameter Pipes (2 to 6 inch)

Shallow Installation of Pipes

No Onsite Solids Removal



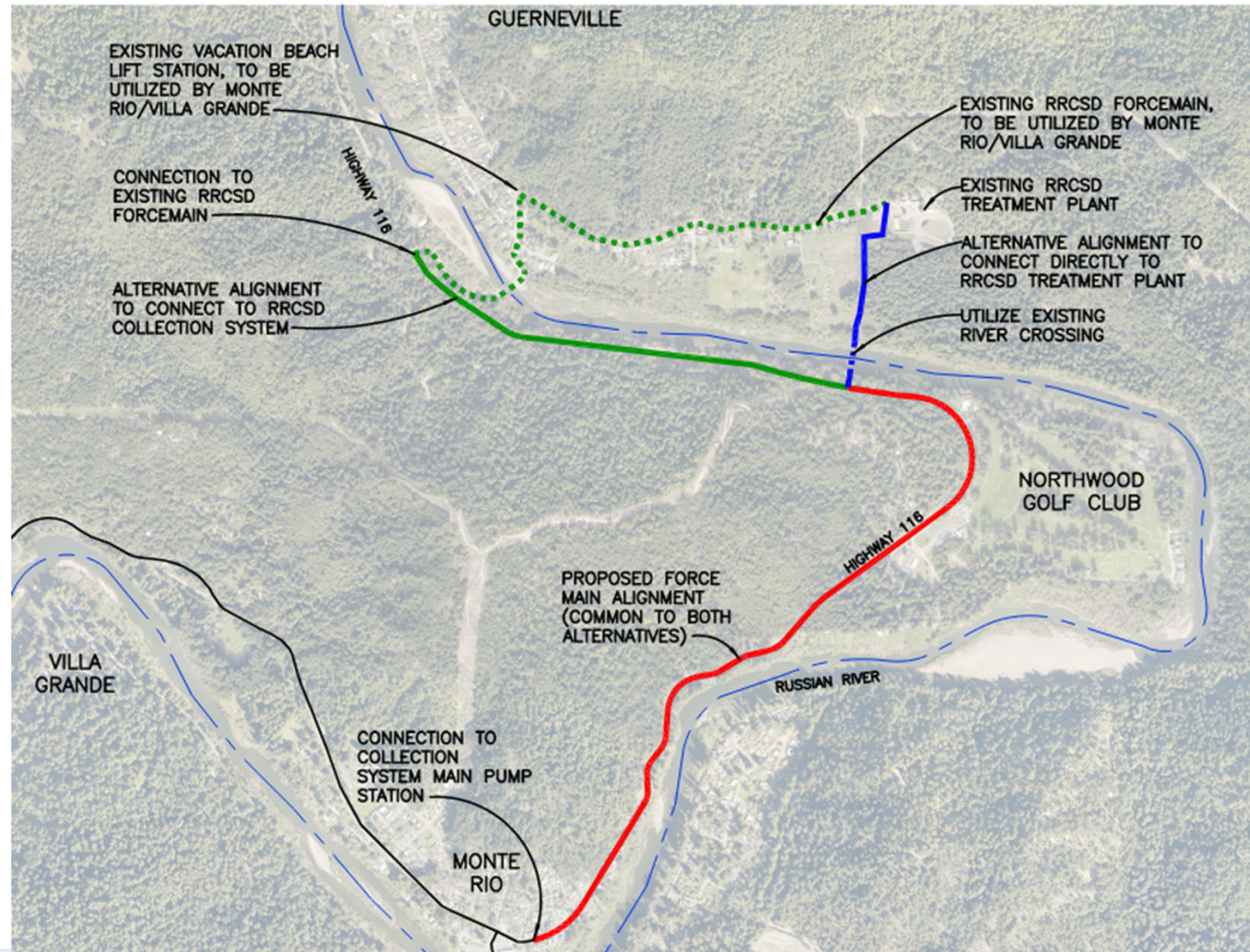
**LEGEND**

- COLLECTION MAIN
- TRANSMISSION MAIN
- DEVELOPED PARCEL
- RUSSIAN RIVER

**NORTH**  
SCALE: 1" = 1000'



# Conveyance to Existing Treatment Plant



# Considerations for the Receiving Wastewater Treatment Facility (RRCSD)

- Wastewater Treatment Facility Capacity
- Needs of Existing Wastewater Treatment Facility
- Needs of Existing Sewage Collection System
- Potential Connection of Other Communities



# Centralized Sewer: Capital Costs

Item	Estimated Total Capital Cost
Sewage Collection System	\$50,200,000
Transmission Main to Russian River WTP	\$3,100,000
<b>Total Capital Cost</b>	<b>\$53,300,000</b>

# Centralized Sewer: Operational and Maintenance Costs

Ongoing Regular Costs	Periodic Costs	Preventative Maintenance	Emergency Maintenance
<ul style="list-style-type: none"><li>• Electricity</li><li>• Telemetry and Monitoring</li><li>• Wastewater Treatment and Disposal</li></ul>	<ul style="list-style-type: none"><li>• Equipment Replacements</li></ul>	<ul style="list-style-type: none"><li>• Scheduled Inspections &amp; Maintenance</li><li>• Transmission Main Cleaning</li></ul>	<ul style="list-style-type: none"><li>• Repairs</li></ul>

# Polling: Rating Alternative 2

How favorable do you feel about  
**Alternative 2: Utilizing a  
Centralized Sewage Collection  
System?**

1 = Not favorable

2

3

4

5 = Highly Favorable



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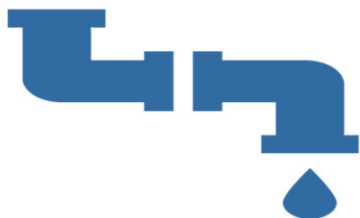
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# Polling: Concerns About Alternative 2

What are your most significant concerns about **Alternative 2: the Centralized Sewage Collection System?**

Enter words or phrase



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# Project Phasing

Collection system could be built in stages:

## Phase 1

Prioritize construction of collection system to serve parcels that are adjacent to the Russian River and Dutch Bill Creek

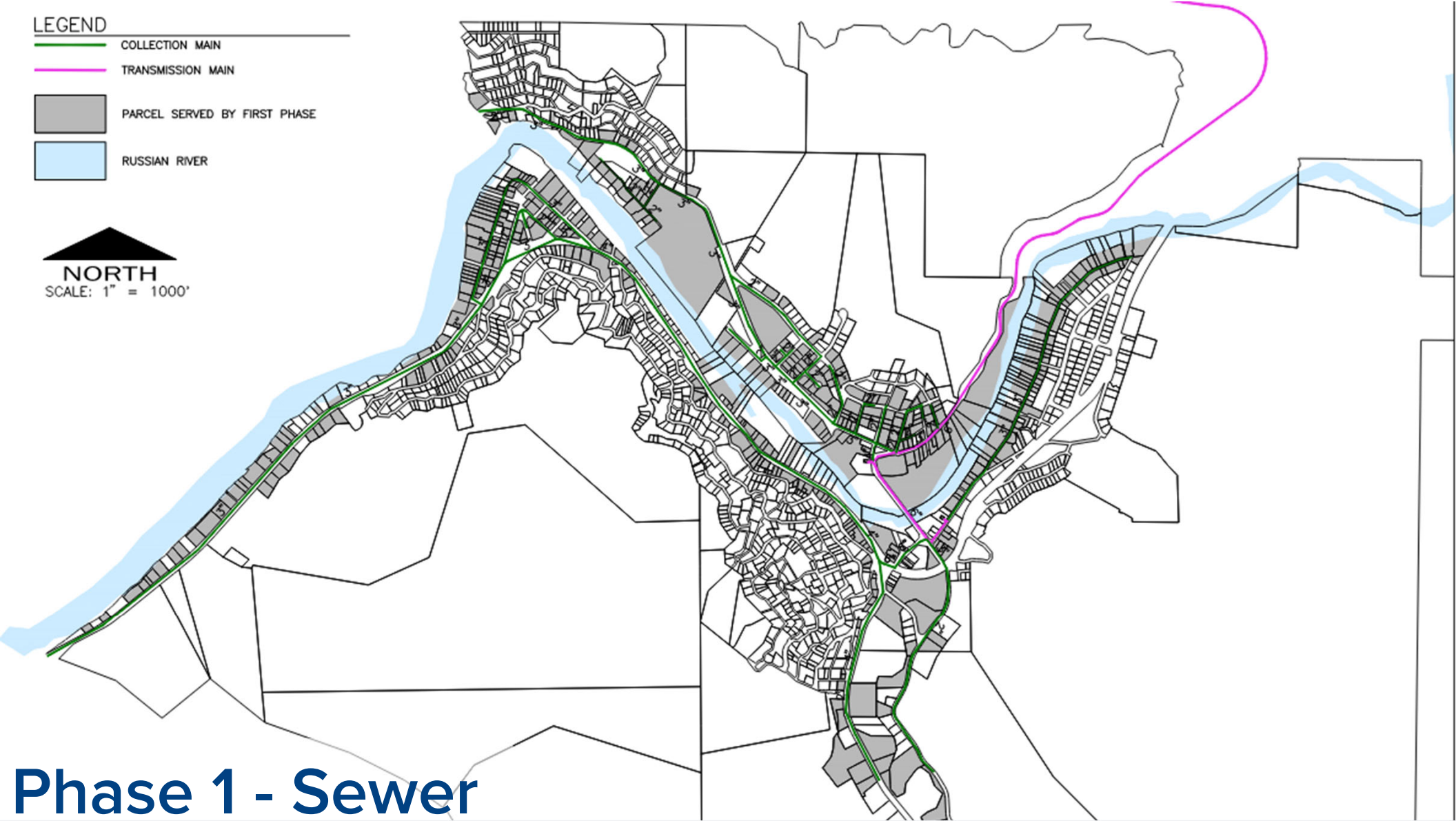


## Phase 2

Develop collection system extensions to connect the remainder of the parcels within the Study Area in subsequent phases

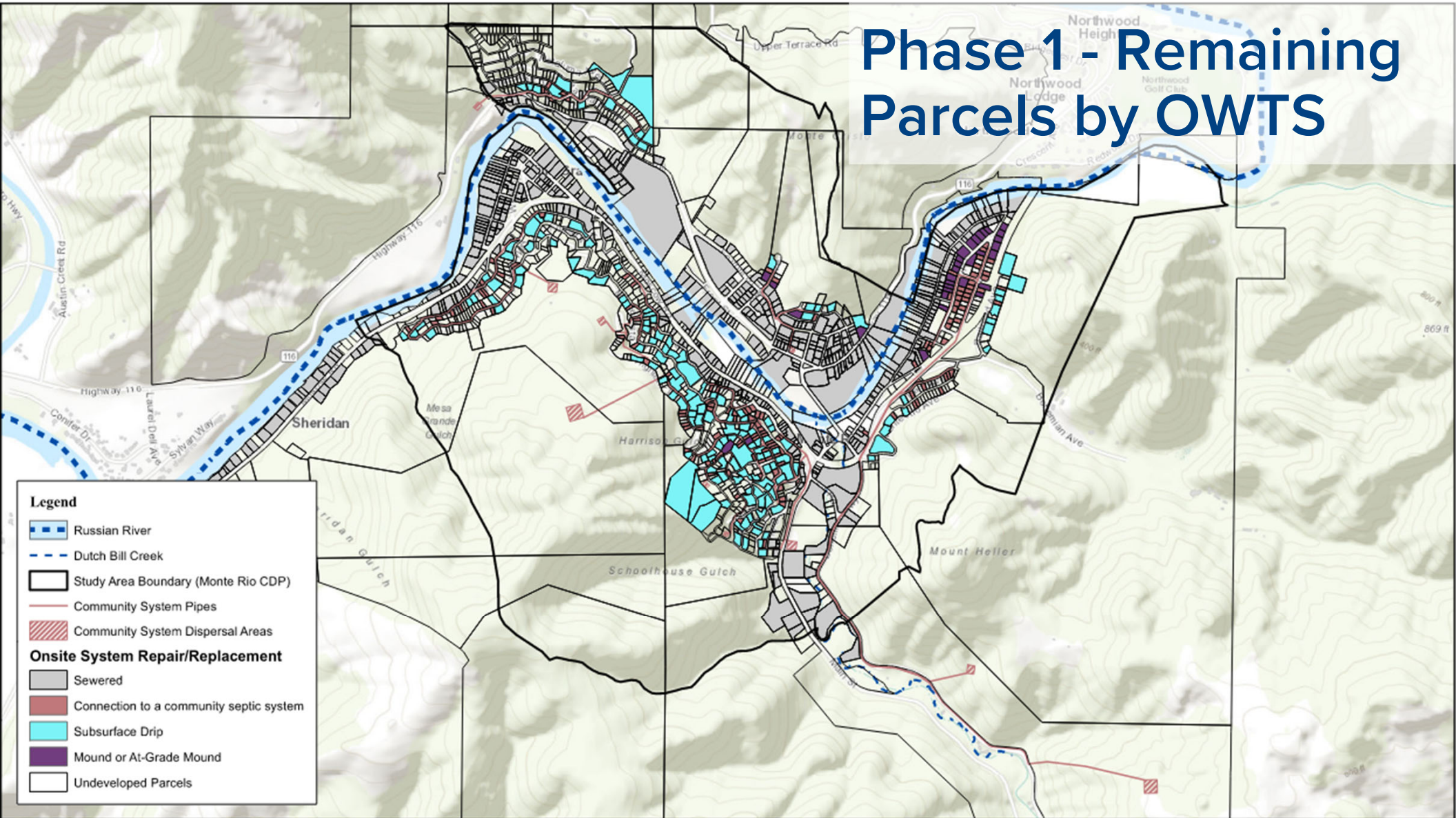
- LEGEND**
- COLLECTION MAIN
  - TRANSMISSION MAIN
  - PARCEL SERVED BY FIRST PHASE
  - RUSSIAN RIVER

**NORTH**  
SCALE: 1" = 1000'



# Phase 1 - Sewer

# Phase 1 - Remaining Parcels by OWTS



# Centralized Collection System Governance/Management

## Governance/Management Options

- Annexation of the service area into an existing local agency,
- Expansion of latent powers of a local agency, or
- Creation of a community service area.

## Local Agency Formation Commission (LAFCO)

- Acceptance and approval required for all three alternatives

## Governing/Managing Agency Responsibilities

- Operation and maintenance of collection system including grinder pump stations
- Conveyance of wastewater to an existing treatment plant for treatment and disposal

# Polling: Governance/Management for Alternative 2

What would be your preferred governance/management entity for **Alternative 2: Utilizing a Centralized Sewage Collection System?**

- Annexation (e.g. Sonoma Water, Windsor, City of Santa Rosa)
- Expansion of services of a local agency (e.g. Sweetwater Springs)
- Creation of new service area

What other entities we should consider?



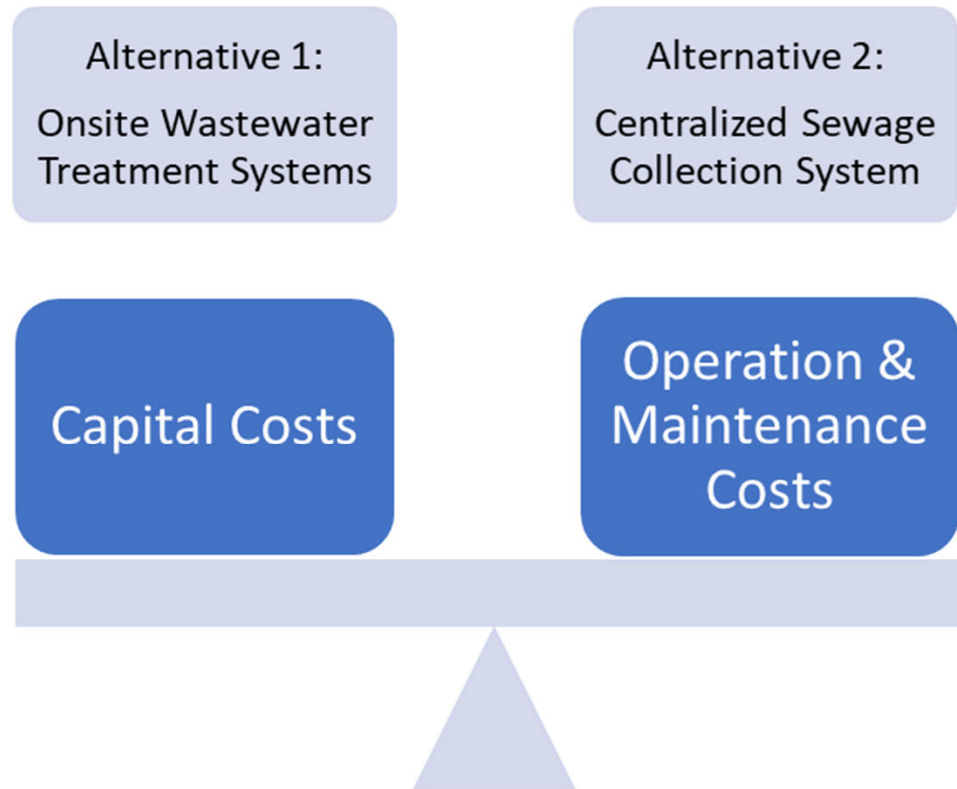
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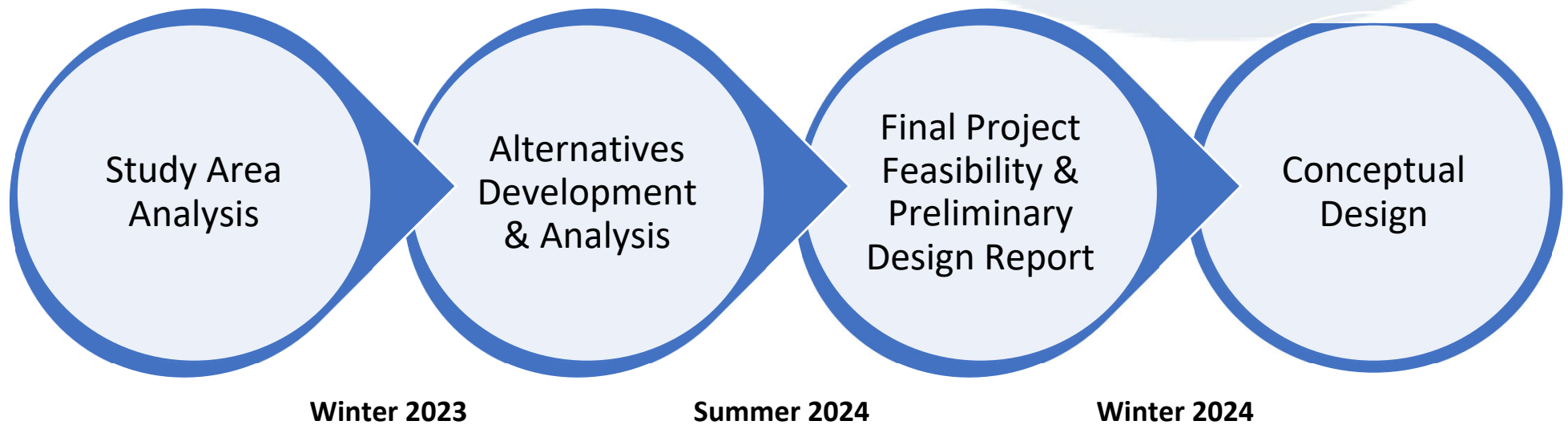
# Comparison of Alternatives



# Next Steps

of the Feasibility Study

# Anticipated Feasibility Study Timeline





# Proposed Alternatives

## Continued Use of Onsite Wastewater Treatment Systems



Both for individual parcels and cluster systems

## Utilize a Centralized Sewage Collection System



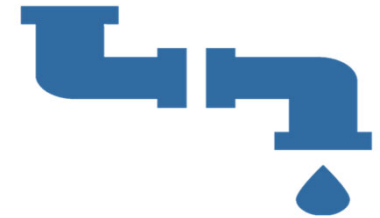
Connection to an existing wastewater treatment plant

# Polling: Alternatives Comparison

Which of the alternatives is better for **the environment and health of the river?**

Which of the alternatives is better for **the economy of the community?**

Which of the alternatives is better for **you as property owner?**



# Polling: Do Nothing Alternative

From your perspective, what would happen if we do nothing?

Enter a word or phrase



OR

[www.menti.com](https://www.menti.com)

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# Polling: Preferred Alternative

If you had to choose today, which alternative would you select for the Monte Rio / Villa Grande Study Area?

- Alternative 1 (OWTS)
- Alternative 2 (Centralized Sewer)
- No action



OR

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# Resource Panel

## Q & A Session





# Recap and Review

## Emerging Questions, Action Items





# What's Next



# On the Horizon

## Wastewater Solutions Pilot Project

- Alternative's Analysis
- Determine preferred solution

## Regulation and Policy updates

- Revised County OWTS Manual
- Revised TMDL Action Plan

## OWTS Mapping Study

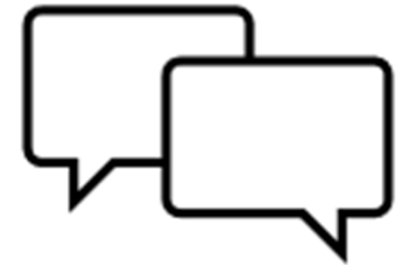
## West County Water Feasibility Study





# Participation & Engagement Opportunities

- CAG Meetings (4<sup>th</sup> Thursday every month)
- Public hearing on proposed Action Plan (Spring 2025)
- Stakeholder Input for West County Water Feasibility Study
- Board of Supervisors' presentations:
  - OWTS Manual (July 16, 2024)
  - OWTS Mapping Study (Aug. 13, 2024)



# What else can you do?

- Maintain your system
- Gather information
- Seek assistance
- Engage and participate with community
- Consider and Discuss alternatives



See <https://www.epa.gov/septic/how-care-your-septic-system>

# Polling: Resources and Assistance

What types of resources would be most helpful?

- Informational Resources (websites, webinars, flyers)
- Access to people (example: Ombudsman)
- Financial assistance
- Meetings/forums for community discussion



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# Polling: Resources and Assistance

What information are you most interested in learning about?

- MR/VG pilot project
- Details about your own system
- Septic system options
- Types of available financial assistance
- Details about rules, regulations, and processes



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## For more information...

- Handouts
- Websites
- Property Documentation
- Direct Contact and Engagement





## How to reach me?

- **Call:** (707) 565-3747
- **Email:** [Michael.Makdisi@SonomaCounty.org](mailto:Michael.Makdisi@SonomaCounty.org)
- **Schedule an appointment**
- **Office Hours**
  - Monte Rio Community Center
  - 2-6 pm on 2<sup>nd</sup> & 4<sup>th</sup> Tuesdays

Thank You

