
North Coast Regional Water Quality Control Board

Regional Water Quality Control Board North Coast Regional Staff Summary Report August 14-15, 2025

ITEM: 7

SUBJECT: Update on the Status of Recycled Municipal Wastewater Production and Use in the North Coast Region

BOARD ACTION: This is an informational item; no action will be taken by the Board.

BACKGROUND:

California is facing a climate reality in which we are experiencing extreme and sustained drought conditions caused by hotter, drier weather. This warming climate means that in conjunction with less rainfall, more water will be taken up by dry soils, thirsty vegetation, and evaporated into the air—leaving less water available for our water supply needs. Recycled municipal wastewater is an important tool to ensure water supply resilience in a changing climate.

Statewide Context and Policies

Water Resilience Portfolio

California has made tremendous investments towards adapting to climate change, managing the State's water infrastructure, and securing water supplies for the ecosystems and people that rely on clean water. Since July 2020, the [Water Resilience Portfolio](#) (WRP) has guided State water policy. It is the blueprint for California to cope with more extreme droughts and floods, and rising temperatures. The Portfolio directs the State to implement a suite of actions to maintain and diversify water supplies to strengthen local and regional resilience.

Specifically, the WRP states the State “*should prioritize regional supply diversification that achieves multiple benefits, such as increased water supply, restored habitat, improved public health, reduced energy consumption, and cleaner drinking water.*” In the context of a suite of actions, the WRP highlights recycled water as a sustainable, nearly drought-proof supply when used efficiently and states that water recycling could triple in the coming years.

Water Supply Strategy

In August 2022, just two years after the Portfolio, Governor Newsom issued the [Water Supply Strategy](#) (WSS) in response to growing knowledge regarding the accelerating impacts of climate change on the State's water supply. The WSS outlines a strategy and priority actions to adapt and protect water supplies from the effects of rising temperatures and drier conditions.

Key points of the WSS include:

- The Department of Water Resources estimates that California could lose 10 percent of its water supplies by 2040 due to a hotter, drier climate.
- Priority actions include developing new water supplies by increasing water recycling.
- Recycled water goals are to: reuse at least 800,000 acres of water per year by 2030 and 1.8 million acre-feet by 2040, with most of that additional recycling involving direct wastewater discharges that are now going to the ocean.

The State and Regional Water Boards, together with federal and state agency partners, local water agencies and stakeholders work collaboratively to implement these policies.

Recycled Water Regulatory Landscape

Recycled water is defined as “*water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore a valuable resource*” (Wat. Code § 13050(n)). Recycled water is primarily municipal sewage that has been treated in a wastewater treatment facility and complies with recycled water regulations for a specific beneficial use. The Water Boards (i.e. State Water Board, Division of Drinking Water, and Regional Water Boards) regulate the production and use of recycled water in a manner that protects public health and the environment.

Title 22 Uniform Statewide Recycling Criteria

The Uniform Statewide Recycling Criteria are contained in California Code of Regulations, Title 22, Chapter 3 and address each type of recycled water use where the use involves protection of human health. Public health is protected through appropriate treatment to reduce pathogens to an acceptable level depending on the type of use, limits of the type of uses, and use area requirements. Recycled water can either be for nonpotable reuse (i.e. not part of drinking water supply) or potable reuse (i.e. part of drinking water supply following high levels of treatment). For nonpotable reuse, the regulations define four levels of treatment:

- Disinfected tertiary (highest level of nonpotable treatment)

- Disinfected secondary-2.2
- Disinfected secondary-23
- Undisinfected secondary (lowest level of nonpotable treatment)

The allowable nonpotable uses for each level of treatment are stated in the Uniform Statewide Recycling Criteria and are based on the level of public health risk and/or exposure for different uses. For example, disinfected tertiary recycled water is required for irrigation of public parks (which has a greater potential for public exposure), while sanitary sewer flushing can be done with recycled water of a lower level of treatment.

Potable reuse regulations are subject to more complex and specific requirements. Currently, all recycled water use in the North Coast is nonpotable.

Title 22 requires that each proposed water recycling project must submit an engineering report detailing how the project complies with state regulations. The State Water Board's Division of Drinking Water reviews these engineering reports and makes permit recommendations to the regional water boards, who then issue permits for the production and use of recycled water.

Recycled Water Policy

The Water Quality Control Policy for Recycled Water ([Recycled Water Policy](#)) encourages the safe use of recycled water, provides statewide consistency when issuing permits to recycled water projects and requires annual reporting of wastewater and recycled water.

DISCUSSION:

This section discusses recycled water use on a regional scale, including region-specific drivers and challenges, along with wastewater and recycled water data.

Basin Plan prohibition

Unique within the State, the North Coast Region's Water Quality Control Plan (Basin Plan) contains a prohibition on point-source discharges to inland surface water with limited exceptions (i.e. seasonal exemptions and at a discharge rate not exceeding one percent of the receiving water's flow in limited watersheds, and discharges that meet low threat criteria). While the purpose of the prohibition is to achieve water quality objectives and protect beneficial uses, the prohibition affects treated effluent storage, use and discharge management options. When seasonal and flow discharge prohibitions are in effect, point-source dischargers (i.e. wastewater facilities regulated under NPDES permits) have limited or no ability to discharge to surface waters. Therefore, they need to store or beneficially reuse their effluent, creating a driver for developing recycled water programs. Water recycling becomes a multi-benefit option, particularly given that demand for irrigation water occurs during the summer when point-source discharges to inland receiving waters are prohibited.

Challenges to Producing Recycled Water in the North Coast Region

While there are drivers for developing recycled water projects, there are also region-specific challenges. These challenges include identifying recycled water users, operating recycled water facilities, and securing funding for treatment and distribution infrastructure. A majority of communities in the region are disadvantaged and there is a shortage of treatment operators with the technical capacity and certifications to operate these more complex recycled water systems. Many disadvantaged communities cannot afford the rate increases needed to support such facilities nor can they recruit qualified operators to operate them, especially in the more remote areas of the region. For these reasons, communities that have the technical and economic advantages to operate and maintain recycled water treatment and distribution infrastructure (such as the Town of Windsor, the City of Healdsburg, and the City of Santa Rosa) produce over 90 percent of the recycled water volume for the North Coast Region.

Recycled Water Use in the North Coast Region

We now have data collected from the Volumetric Annual Report (VAR) of Wastewater and Recycled Water (reporting which is required by the Recycled Water Policy) for years 2019- 2023. These data include wastewater influent, effluent and reuse volumes for approximately 750 wastewater and recycled water facilities, statewide. Within the North Coast region, 55 facilities must report. The VAR data includes reuse volumes within each specific category of reuse. Currently, all recycled water use in the region is nonpotable and our facilities report reuse in the following nonpotable reuse categories:

- Agricultural Irrigation (pasture or crop irrigation)
- Geothermal Energy Production
- Industrial Application
- Landscape Irrigation
- Golf Course Irrigation
- Commercial Application
- Other Non-Potable Uses (e.g., dust control, flushing sewers, fill stations, fire protection)

Recycled Water Facilities and Production

Staff analyzed 5 years (from 2019-2023) of VAR data to evaluate trends and status of recycled water production and use with the region. This analysis indicated that:

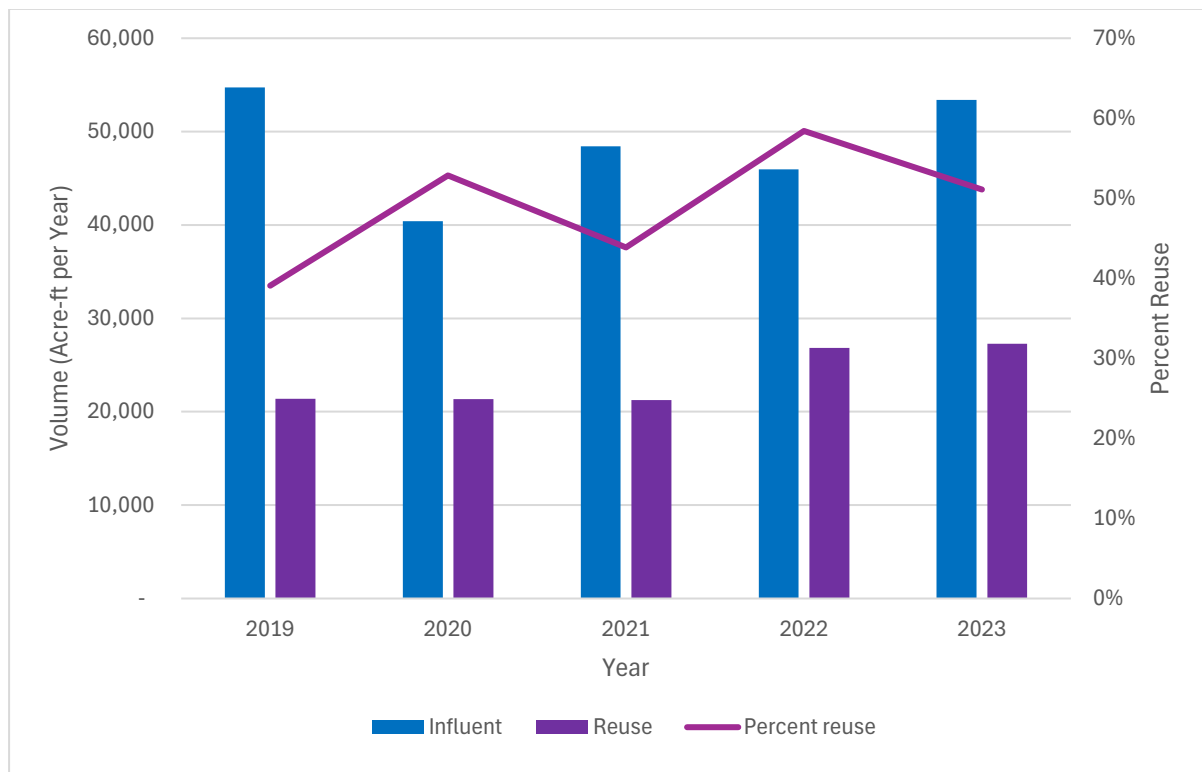
- Of the 55 wastewater facilities reporting, 19¹ facilities produce recycled water.
- Approximately 40-60% of the wastewater influent volume was recycled each year during this 5-year period.

¹ Not all facilities produce recycled water in each year.

- Water recycling rates are highest in the areas in the region with higher population
 - Most of the reuse volume is produced in the southern portion of the region
 - The highest five recycled water-producing facilities are:
 - Santa Rosa Regional Water Reuse system - Laguna Treatment Plant
 - Windsor Wastewater Treatment, Reclamation, and Disposal Facility
 - City of Ukiah Wastewater Treatment Plant
 - McKinleyville Community Services District Wastewater Management Facility
 - City of Healdsburg Wastewater Treatment, Recycling and Disposal Facility
 - The highest five recycled water-producing facilities produced 95 percent of the recycled water used in the region.
- Recycled water use is trending upwards.

Figure 1 shows the wastewater influent volume, reuse volume, and percentage of influent that was reused for the years 2019-2023.

Figure 1: 2019-2023 North Coast Region
Municipal Wastewater and Recycled Water Trends



Source: [Volumetric Annual Report data](#), adjusted for quality control

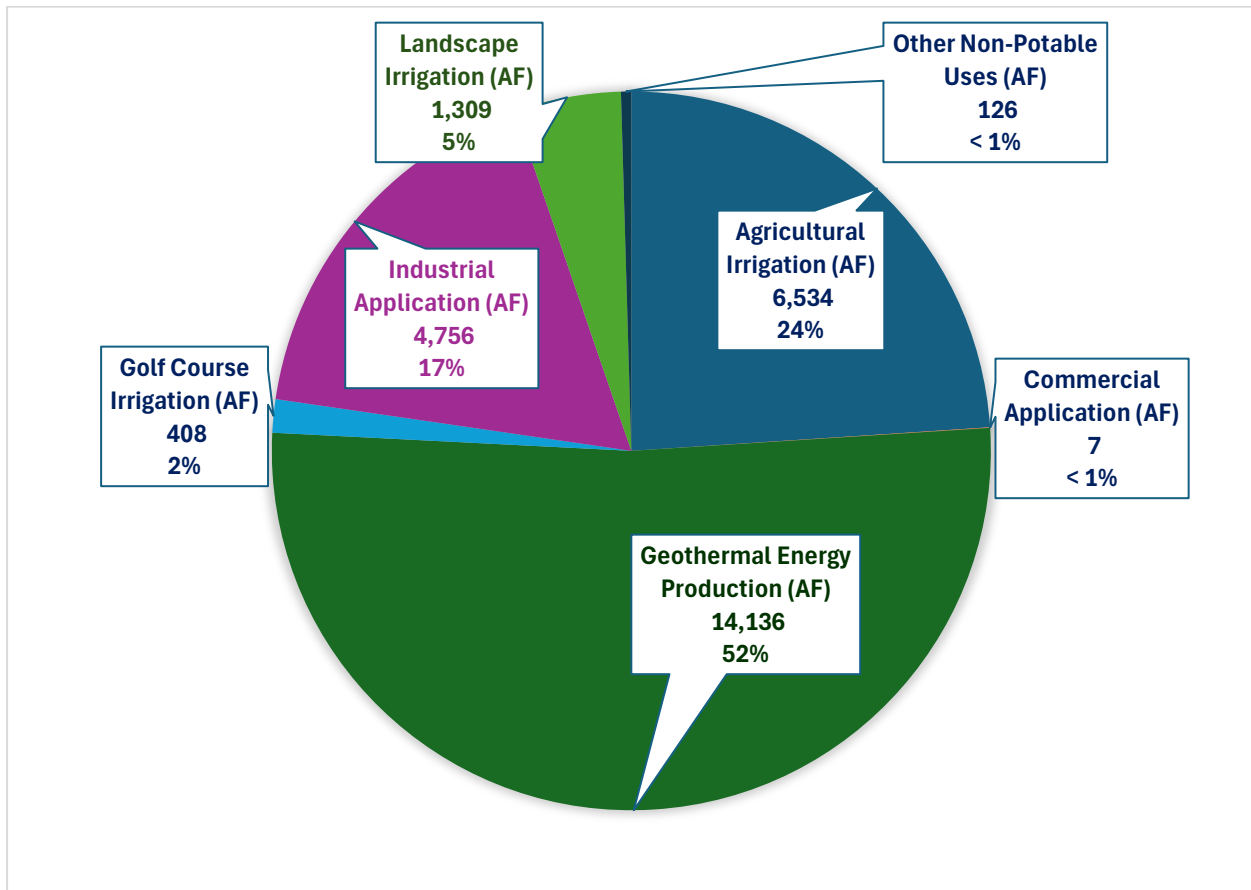
Recycled Water Uses

Currently, all recycled water use in the region is nonpotable. The decision whether to pursue a nonpotable or a potable reuse project needs to consider the water supply needs alongside the infrastructure and treatment costs necessary to produce potable recycled water. While potable reuse projects can help augment drinking water supplies, the treatment and infrastructure costs are often cost-prohibitive for most communities in the region. For example, potable facilities require more advanced facility operator qualifications (therefore demanding higher wages), which can present challenges to small and disadvantaged communities. In our region, 67% of municipal NPDES-permitted facilities serve disadvantaged communities and this percentage rises to approximately 90% when Sonoma County is excluded. While nonpotable reuse does not directly augment drinking water supplies, efficient use of nonpotable recycled water offsets the demand for freshwater and potable water sources.

Recycled water in the region is primarily used for geothermal energy production at the Geysers Geothermal Complex, agricultural irrigation and industrial application (e.g. cooling towers). Smaller percentages of reuse are used for landscape irrigation, commercial application, golf course irrigation and other nonpotable uses (e.g. recycled water fill stations, dust control). Figure 2 shows the volumes and percentages of recycled water use in 2023.

While geothermal energy production is a dominant use (with approximately half the recycled water use volume in the region), agricultural irrigation is an important and significant use in several communities. In 2023, according to VAR data, 6,534 acre-feet of recycled water was used to irrigate agricultural areas. Staff reviewed monitoring data from facilities producing recycling water for agricultural irrigation to better characterize this use. Of the total recycled water volume used for agricultural irrigation (about 6,500 acre-feet in 2023), approximately 5,700 acre-feet of recycled water was used to irrigate around 6,200 acres of fodder crops, pasture lands and non-vineyard crops. In the vineyard areas of the region, approximately 850 acre-feet of recycled water was used to irrigate around 2,700 acres of vineyards. These volumes and acreages highlight the role of recycled water as a significant water supply for agricultural uses in the region.

Figure 2: Recycled Water Uses in North Coast Region in 2023 in acre-feet (AF)



North Coast Region Activities to Support Recycled Water Projects

In June 2024, the Regional Water Board filled a recycled water engineer position to implement the Water Supply Strategy and support the planning and permitting of recycled water projects in the region. The recycled water engineer, other permitting staff and specialists engage with facilities, water and wastewater agencies and community partners to:

- Encourage facilities to evaluate recycled water programs as part of water supply and wastewater management solutions
- Facilitate and support funding discussions for planning studies and implementation projects
- Provide technical assistance and connections to resources

These activities are supplemental to regular case management and inspections to ensure that recycled water is produced and used in a manner that is protective of public health and the environment.

Funding Support for Recycled Water Projects

Recycled water is an important tool to increase water supply resilience and state and federal agencies have administered funding programs to plan, design and construct recycled water projects. The State Water Board-Division of Financial Assistance administers the Water Recycling Funding Program (WRFP) to provide funding for water recycling infrastructure projects that offset or augment state or local fresh water supplies. In the past decade (from 2015 to June 2025), the WRFP has executed agreements to provide a total of \$96.8 million dollars in funding for projects in our region as shown in Table 1.

Most of the funding provided is for construction projects. Funding agreements for construction projects tend to involve larger funding amounts compared to planning projects, which are typically feasibility studies evaluating alternatives to develop recycled water projects. The City of Ukiah's Recycled Water Phases 1-3 were built in 2019 to produce and distribute approximately 1,000 acre-feet of recycled water annually and the Phase 4 project (currently under construction) is intended to increase recycled water production to 1,500 acre- feet per year, per the City of Ukiah's webpage. Mendocino City Community Services District Recycled Water Systems Upgrades project intends to expand the use of recycled water on properties owned by the Mendocino Unified School District to offset potable water use and provide additional fire water storage and supply. The project includes new recycled water pipelines, irrigation systems, fire hydrants, and a new recycled water storage tank (Source: [CEQA documentation](#))

Table 1. Recycled Water Projects Receiving Funding from the Water Recycling Funding Program from 2015 – 2025 in the North Coast Region

Recipient	Project Name	Type of Funding	Projected Recycled Water Increase (Acre-ft per year)	Recycled Water Production Start Date	Funding Amount
City of Ukiah	Recycled Water Pipeline Project (Phases 1-3)	Construction	1,000	Completed	\$26.6 Million
City of Ukiah	Recycled Water Phase 4	Construction	500	Fall 2025	\$53.8 Million
Mendocino City Community Services District	Mendocino City Community Services District Recycled Water Systems Upgrades	Construction	48	By 2030	\$14.96 Million
City of Crescent City	City of Crescent City Recycled Water Feasibility Study	Planning			\$150,000
Brooktrails Township Community Services District	Wastewater Treatment Recycling to Lake Ada Rose	Planning			\$500,000
City of Fort Bragg	City of Fort Bragg Recycled Water Planning Study	Planning			\$500,000

Recipient	Project Name	Type of Funding	Projected Recycled Water Increase (Acre-ft per year)	Recycled Water Production Start Date	Funding Amount
City of Cloverdale	City of Cloverdale Recycled Water Feasibility Study	Planning			\$150,000
McKinleyville Community Services District	Water Recycling Expansion Project	Planning			\$150,000
Total Executed Water Recycling Agreements in North Coast Region from 2015-2025					\$96.8 Million

Table 1 notes:

- 1) Source of Projected Recycled Water Increase: Water Supply Strategy Implementation Planned Recycled Water Projects
- 2) City of Ukiah communicated to staff that Recycled Water Phase 4 is anticipated to be online in Fall 2025.

Table 1 is not all inclusive of all projects that may involve recycled water. The Division of Financial Assistance, through the Clean Water State Revolving Fund (CWSRF) program, has also funded projects for wastewater treatment plant upgrades and infrastructure to improve plant performance and may therefore support recycled water production. Additionally, while there are no specific recycled water projects in the application review process (i.e., on the CWSRF 25-26 list), there are projects on the list for treatment plant upgrades. For example, the Town of Windsor has funding applications for a biosolids handling project and an aeration basin upgrade/ replacement project.

Federal agencies including the U.S. Environmental Protection Action, U.S. Bureau of Reclamation, and U.S. Department of Agriculture also administer funding programs that

support recycled water projects. Recycled water projects are often funded from a combination of funding sources.

Opportunities to Expand Recycled Water Production and Use

In addition to the existing recycled water use and production, there are several additional projects in the region in various stages of planning, expansion or implementation. The [Water Supply Strategy Planned Recycled Water Projects](#) report provides a list of projects that have the potential to be operational by 2030 or 2040. The list includes six projects in the North Coast Region and staff work closely with project proponents to provide planning, permitting or funding support. The Water Supply Strategy Planned Recycled Water Projects list was developed as part of a statewide planning effort and is complementary to our region-specific list (Table 1) that is based on funding information. Staff utilize both lists as well as facility-specific knowledge to support expanding water recycling opportunities. Staff will also evaluate additional opportunities for expanding recycled water use by analyzing how much treated wastewater, that is currently being discharged rather than reused, may be available for water recycling.

RECOMMENDATION: N/A

SUPPORTING DOCUMENTS: See documents linked within this summary report