5.0 RECYCLED WATER SUPPLY

The recycled water supply is one of three supply sources available to the City. This section describes the City's recycled water supply, its hydrologic availability, its water quality, various contracts that affect its use including provisions for transfers and exchange, its reliability and vulnerability, and water supply plans and programs being undertaken related to recycled water.

This Plan projects that 1,300 AFY of Agency supply will be available to the City based on analysis of the existing and planned recycled water system.

Section 10633 of the Act requires that this Plan include specific discussions related to the recycled water source. These are found in Section 5.1 Description of the Recycled Water Supply and summarized in the Table 5-1, below.

Table 5-1 Index of Additional Reporting Requirements for Recycled Water Supply

Requirement	Location in Document
Description and Quantification of the Wastewater System	Section 5.1.1
Description of Current Recycled Water Use in the Service Area	Section 5.1.2
Description and Quantification of Potential Recycled Water Uses	Section 5.1.3
Projected Use in the Service Area (5-year Increments)	Section 5.1.3
Description of Actions Taken to Encourage the Use of Recycled Water	Section 5.1.4
Plan of Optimizing the Use of Recycled Water	Section 5.1.4

Section 10633 of the Act also requires inter-agency coordination within the Service Area on the development of recycled water plans and projections. Table 5-2, below summarizes the agencies and interest groups that participate in coordinated recycled water planning within the City's service area.

Table 5-2 (DWR Table 32) Participating Agencies Table

Agency Type	Agency Name	Plan Development Role
Wholesale Water Supplier	Sonoma County Water Agency	Provided recycled water supply and demand information
Regional Wastewater Agency and Recycled Water Purveyor	Santa Rosa Subregional Water Reuse System	Provided recycled water supply and demand information
Local Water Supplier	City of Rohnert Park	Provided recycled water supply and demand information
Local Land Use Authority	City of Rohnert Park	Provided current and projected land uses
Public Constituency	Northeast Specific Plan Area Proponents	Provided land use and recycled water demand information
Public Constituency	University District Specific Plan Area Proponents	Provided land use and recycled water demand information
Public Constituency	Southeast Specific Plan Area Proponents	Provided land use and recycled water demand information
Public Constituency	Stadium Lands Development Plan Area Proponents	Provided land use and recycled water demand information

5.1 Description of the Recycled Water Supply

"Recycled water" is defined in the California Water Code 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." DHS sets the water quality criteria for specific uses of recycled water in Title 22 of the California Code of Regulations. The City currently utilizes recycled water as part of its water supply portfolio and plans to expand recycled water use concurrent with the implementation of its General Plan land use program.

5.1.1 Description and Quantification of the Wastewater System

The City currently provides wastewater collection service and is a partner in the Subregional System's wastewater treatment, disposal and water recycling system. The Subregional System is operated and managed by the City of Santa Rosa and includes:

- The Laguna Water Reclamation Plant (WRP), a tertiary wastewater treatment plant that utilizes aeration, clarification, conventional filtration, and ultraviolet disinfection;
- A permitted wet weather discharge to the Russian River of up to 5% of the river flow under the NPDES Permit CA 0022764;
- The forty-mile long Geysers Pipeline that delivers 11 mgd of recycled water, year round, to the Geysers Steamfield; and
- Approximately 62 miles of recycled water distribution piping that deliver recycled water to approximately 675 parcels for agricultural reuse and impoundment and approximately 100 parcels for urban reuse, largely in the cities of Rohnert Park and Santa Rosa. [18] This recycled water distribution system includes approximately 1,480 million gallons of storage[19] in open ponds.

The Subregional System's facilities have a rated dry weather capacity of 21.4 million gallons per day (mgd) and the City is allotted 3.43 mgd of the total capacity. These facilities, including the existing Rohnert Park Reuse System, are illustrated in Figure 5.1.

Table 5-3 illustrates the current and projected volume of wastewater that is collected and treated at the Laguna WRP. The calculation is based on average dry weather flow rates.

[18] Engineering Report for Master Water Recycling Permit for the City of Santa Rosa Water Reclamation System.
[19] Santa Rosa Incremental Recycled Water Program, Technical Memorandum No. 16 – Water Balance Modeling Summary

Table 5-3 (DWR Table 33-modified) Wastewater Collection and Treatment[20]

Type of Wastewater	2000 Volume (AFY)	2005 Volume (AFY)	2010 Volume (AFY)	2015 Volume (AFY)	2020 Volume (AFY)	2025 Volume (AFY)	2030 Volume (AFY)
Total volume of wastewater collected and treated by the Subregional System	19,600	20,250	22,700	25,000	29,000	30,600	31,700
Total quantity that meets recycled water standard	19,050	19,700	22,150	24,450	29,000	30,600	31,700
Volume of wastewater generated within the service area	3,950	4,350	4,790	5,200	5,650	6,050	6,500
Volume of recycled water used in the service area	976	1,135	1,200	1,300	1,300	1,300	1,300

While a great deal of the Subregional System's recycled water is used for urban, agricultural or industrial purposes, the Subregional System maintains a permitted discharge to the Russian River. The Subregional System is committed to supplying recycled water users first and its permitted discharge is used primarily to manage variations in hydrologic conditions (for example, in a cool wet year when rainfall is high and irrigation demand is low, the Subregional System will discharge more water than in a warm dry year when irrigation demand is high). Table 5-4 illustrates how discharges vary based on hydrologic cycles and summarizes analysis developed by the Subregional System in its Water Balance Model. A portion of these volumes is contributed by the City.

Table 5-4 (DWR Table 34 - modified) Disposal of Wastewater (Non-Recycled) by Subregional System[21]

Method of disposal	Treatment Level	Driest Year	10th percentile	Median (50th percentile)	90th percentile	Wettest
Permitted Discharge	Tertiary	4,800	5,400	7,200	12,900	13,500
Percentage of 2020 Flow that is Discharged		17%	19%	25%	45%	47%

5.1.2 Current Recycled Water Use in the City

The City hosts the largest urban recycled water system in Sonoma County. This system was installed in the 1990s and recycled water is used for irrigation of parks and school grounds, various commercial and industrial sites, and the Foxtail Golf Course. Recycled water use offsets historic demands on the City's potable water system and demands on irrigation wells. Recycled water use averages just over 1,000 AFY as illustrated in Table 5-5. The use is relatively constant,

[20] Projections from 2000 through 2020 are sourced from the Incremental Recycled Water Program Master Plan (2004, CH2M Hill with Winzler & Kelly). Projections beyond 2020 are straight-line projections of current trends to assist in long range planning. These projections do not reflect General Plan projections or land use entitlements anticipated by any of the Subregional System partners.

[21] IBID

however because recycled water is used almost exclusively for irrigation purposes the demand can fluctuate with local rainfall patterns and attendant irrigation demands.

Table 5-5 (DWR Table 37-modified) Recycled Water Uses

Type of Use	2000 Use (AFY)	2001 Use (AFY)	2002 Use (AFY)	2003 Use (AFY)	2004 Use (AFY)	2005 Use (AFY)
Agriculture	0	0	0	0	0	0
Landscape	976	1,090	950	1,057	1,165	1,135
Wildlife Habitat	0	0	0	0	0	0
Wetlands	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Groundwater Recharge	0	0	0	0	0	0
Other (type of use)	0	0	0	0	0	0
Total	976	1,090	950	1,057	1,165	1,135

Note: No projections were made in the 2000 Urban Water Management Plan.

5.1.3 Potential and Projected Recycled Water Use

In 2004 the Subregional System completed its Incremental Recycled Water Program (IRWP) Master Plan and certified a programmatic Environmental Impact Report (EIR) for the Master Plan. The 2004 IRWP Master Plan identified up to 6,600 AFY in potential urban and agricultural recycled water uses throughout Sonoma County. The 2004 IRWP Master Plan defined urban reuse as recycled water use that occurs within the Urban Growth Boundaries of the cities of Santa Rosa, Rohnert Park and Cotati or at the Santa Rosa Golf and Country Club. The 2004 IRWP Master Plan set a 1,500 AFY "Target" for urban reuse and established a programmatically approved range from 0 to 6,600 AFY to allow for the development of cost-effective systems from both the water and wastewater perspective. In 2007, the Subregional System updated its IRWP Master Plan and identified up to 3,000 AFY of urban reuse potential currently under study.[22]

Review of the City's planned development indicates that an additional 300 AFY of recycled water could be used for urban use, primarily in areas of new growth. Recycled water would be used for landscape irrigation in a variety of settings as authorized by California's Title 22 Code of Regulations.

The volume of actual and potential recycled water use is shown in Table 5-6. These projections are based upon the City's current practices, the IRWP analysis of available recycled water and the City's projections of future land uses and water needs. These projections are slightly different from the projections includes in the WSA, which projected 1,256 AFY available in 2010 and 1,302 AFY available in 2015. These slight differences are a result of ongoing planning activities by the Subregional System. Table 5-7 presents the projected future uses of recycled water in 5 year increments as required by the Act.

[22] 2007 Update to the Recycled Water Master Plan, Table S-5.

Table 5-6 (DWR Table 35) Recycled Water Uses – Actual and Potential

Type of Use	Treatment Level	2005 Use (AFY)	2010 Use (AFY)	2015 Use (AFY)	2020 Use (AFY)	2025 Use (AFY)	2030 Use (AFY)
Agriculture							
Landscape	Tertiary	1,000	1,200	1,300	1,300	1,300	1,300
Wildlife Habitat							
Wetlands							
Industrial							
Groundwater Recharge							

Table 5-7 (DWR Table 36) Projected Future Use of Recycled Water in Service Area

Type of Use	2010 Use (AFY)	2015 Use (AFY)	2020 Use (AFY)	2025 Use (AFY)	2030 Use (AFY)
Agriculture	0	0	0	0	0
Landscape	1,200	1,300	1,300	1,300	1,300
Wildlife Habitat	0	0	0	0	0
Wetlands	0	0	0	0	0
Industrial	0	0	0	0	0
Groundwater Recharge	0	0	0	0	0
Total	1,200	1,300	1,300	1,300	1,300

5.1.4 Actions Taken and Plans for Optimizing the Use of Recycled Water

5.1.4.1 City Promotion of Recycled Water Use

The City has fully integrated recycled water use with its land use planning. Specifically within the Water Supply and Conservation Section of its 2000 General Plan, the City has adopted the following goals and policies

Goal PF-G: Continue to encourage water conservation through the use of reclaimed water and reduction of water consumption and discharge for both existing and new development.

Policy PF-21: Continue to use reclaimed water to irrigate parks, recreation facilities and landscapes.

On October 29, 2004, the City adopted its Ordinance 723, a Water Waste Ordinance. This Ordinance requires the use of recycled water when it is available and of appropriate quality. This Ordinance will assure that the recycled water supply is fully utilized where appropriate. A copy of the City's Water Waste Ordinance is included in Appendix F. This Ordinance provides City staff with the authority necessary to condition new development to install the infrastructure required to deliver recycled water.

On June 13, 2006 the City adopted its 2006 Public Facilities Finance Plan Update and revised its Public Facilities (PF) Fees. The PF Fees were established to provide a funding source for the infrastructure required to serve new development. The IRWP Master Plan and EIR have identified new seasonal storage as necessary to serve new urban reuse projects. The City's PF Fees provide a funding mechanism for the construction of 300 AFY of new recycled water

storage. This volume of storage is sufficient to allow the development of 480 AFY of new recycled water supply.

5.1.4.2 Subregional System Promotion of Recycled Water Use

The Subregional System's IRWP Master Plan and EIR provide critical programmatic guidance and planning support for an expanded recycled water system. The Subregional System's has historically priced recycled water at 75% of the alternative supply. This financial incentive provides property owners with a reason to convert to recycled water use.

5.1.4.3 Agency Promotion of Recycled Water Use

The Agency encourages recycled water use by collecting, as part of its water rates, funds that are held in a special reserve for water recycling and Tier 2 water conservation projects that are carried out by its Contractors. This funding source provides an incentive to the Contractors to invest in local recycling and conservation projects because the Agency will contribute to the costs of these projects. Because the City is working with the Subregional System to study the expansion of the recycled water system, it has not yet developed an application for funding under this program. However, because the City is a Contractor, it will be eligible to utilize these funds to supplement its PF funding for the recycled water system expansion.

The Agency's Program has been effective in promoting local projects. A total of $4,187,464 has been disbursed between the program's inception on July 1, 2000 and June 30, 2005. It is anticipated another $8,812,536 will be disbursed in the next five years of program operation. Methods to encourage recycled water use and the projected amount of recycled water used are listed in Table 5-8.

Table 5-8 (DWR Table 38) Methods to Encourage Recycled Water Use

Actions	Additional AFY of use projected to result from this action				
	2010	2015	2020	2025	2030
City General Plan Policies	✓	✓	✓	✓	✓
City Mandatory Use Ordinance	✓	✓	✓	✓	✓
City PF Fee Funding	✓	✓	✓	✓	✓
Subregional System Planning Support	✓	✓	✓	✓	✓
Subregional System Financial Incentives	✓	✓	✓	✓	✓
Agency Financial Incentives	✓	✓	✓	✓	✓
Total Additional Use as a Result of Combined Incentives	200	100	0	0	0

5.2 Hydrologic Availability of the Recycled Water Supply

The recycled water supply available to the City is relatively drought-proof because of the operational nature of the Subregional System's recycled water program. The Subregional System facilities include extensive recycled water storage ponds, Subregional System owned land ("City Farms"), facilities to deliver recycled water to customers including urban and agricultural users and the Geysers Steamfield, and facilities to discharge recycled water under an NPDES permit.

The Subregional System treats and stores recycled water for reuse by its customers. The volume of wastewater recycled is relatively constant, but the total volume of water available to the System is influenced by rainfall on the open storage ponds. During periods of lower rainfall, the system can be operated to minimize discharges to the Russian River and delivery of water to the City Farms in order to assure delivery to paying recycled water customers first. The Subregional System's Water Balance Model helps guide operational decisions related to discharge versus reuse. Table 5-4 presented previously illustrates how the volume of water discharged is reduced in drier years. The Subregional System has operational flexibility and the ability to meet recycled water demands under a range of hydrologic conditions. Expanding the recycled water system will require additional seasonal storage facilities in order to retain this level of flexibility. Section 5.6 discusses planned expansions.

5.3 Quality of the Recycled Water Supply

The Subregional System produces Title 22 Tertiary Recycled Water which is suitable for unlimited irrigation uses and most industrial process water uses. Without additional treatment, the recycled water supply is not suitable for potable use.

5.4 Contracts for Recycled Water Supply

The Subregional System currently maintains a contract with each individual user of the Rohnert Park Urban Reuse system, including the City. These contracts are included in the Subregional System's Engineering Report for Master Water Recycling Permit for the City of Santa Rosa Water Reclamation System. The Contracts outline the acreage which is committed to recycled water use and generally provide for a 20-year term.

Recycled water service can only be suspended as a result of inadequate treatment of recycled water (a temporary situation) or regulatory directive (i.e. changes in the State Health or Regional Board Regulations regarding the use of recycled water for landscape irrigation). These regulatory requirements are well established, well tested and have been the basis of recycled water use throughout the State for over 30 years

5.4.1 Transfers and Exchanges of Recycled Water

Because of the Title 22 requirements for site-specific documentation on recycled water use, the Subregional System's current contracts for recycled water use do not provide for transfers or exchanges of recycled water between users.

5.5 Reliability and Vulnerability of the Recycled Water Supply

As noted in Section 5.2 above, the recycled water supply is highly reliable under a range of hydrologic conditions. Because highly treated recycled water can always be drawn from the Subregional System's network of seasonal storage ponds, this supply is not vulnerable to interruption because of temporary issues related to the treatment of the recycled water.

5.6 Plans and Programs Related to the Recycled Water Supply

Planned recycled water use will reach 1,300 AFY. Expansion to the City's recycled water system has been documented in the IRWP EIR prepared by the Subregional Water Recycling System. The system expansions are anticipated to begin to be available in 2010. Recycled water use would increase over time as new development connects to the system.

Expansion of the recycled water system allows for additional irrigation with recycled water in order to offset new demands on the potable water system. Expansion of the recycled water system will require the addition of approximately 300 AFY of recycled water storage and modifications to the recycled water distribution facilities in the City. The IRWP EIR has provided an overview of these facilities and their potential impacts. The City is currently working with the Subregional System to develop project level proposals.

5.7 Summary of the Recycled Water Supply

The City benefits from established recycled water infrastructure and established contracts with the recycled water purveyor. The City has worked to support the development of additional recycled water supplies through its planning and policy documents. Because of the inherent flexibility of the Subregional System facilities, the recycled water is not subject to hydrologic variation. Table 5-9 below summarizes the City's projections of the recycled water supply available from the Subregional System.

Table 5-9 Summary of City's Anticipated Supply from Subregional System

Hydrologic Condition	Total 2020 Recycled Water Supply from the Subregional System (AFY)	Recycled Water Supply Available to City (AFY)
Normal Year	29,000	1,300
Single Dry Year	29,000	1,300
Multiple Dry Year 1	29,000	1,300
Multiple Dry Year 2	29,000	1,300
Multiple Dry Year 3	29,000	1,300