

5.5 WATER SUPPLY AND CONSERVATION

The City of Rohnert Park currently derives its drinking-water supply from a wellfield consisting of 42 municipal supply wells, 31 of which were active in 1999; and eight active connections to the Sonoma County Water Agency (SCWA) Petaluma Aqueduct, which supplies water from the Russian River. The Sonoma County Water Agency operates and maintains a water transmission system authorized by the Agreement for Water Supply and Construction of Russian River-Cotati Intertie Project. Parties to the Agreement are the Agency and eight public entities, including Rohnert Park. Table 5.5-1 shows the amount of water supplied by each source. The total amount of water pumped from the 31 operational wells in 1999 was approximately 1.5 billion gallons. Agricultural users in the vicinity of Rohnert Park use a combination of private well water and reclaimed water for irrigation. Canon Manor residences use both shared and individual wells as their water supply.

**Table 5.5-1:
Rohnert Park Water Sources and Consumption, 1999**

	<i>Water Provision (mgd)</i>	<i>Percent of Total</i>
Municipal Wells	4.19	61
SCWA Petaluma Aqueduct	2.68	39
Total	6.87	100

Source: City of Rohnert Park

EXISTING SUPPLY

Municipal Wells

Municipal wells are typically 280 to 1,500 feet below ground and tap into an aquifer that lies under the Santa Rosa plain. The aquifer is recharged from the mountains around the Cotati Valley. The majority of the wells pump from water-bearing zones present within the alluvial fan deposits, Glen Ellen Formation, and Wilson Grove Formation located from 200 to 1,200 feet below ground surface (bgs).

No sites within the existing City limits use private wells for drinking-water supply, although many sites outside the City limits do, including Canon Manor and Sonoma State University. The private wells in the Canon Manor area are usually less than 200 feet in depth. Sonoma State University maintains and operates their own municipal well field that consists of three municipal supply wells. In 1999, two wells were operated by SSU which produced a total of approximately 13 million gallons of water for the year (0.04 mgd).

Since at least 1966, it was less expensive for the City to pump groundwater as a source to supplement water-supply requirements, than to purchase water from the SCWA. However, over time, purchasing water from the SCWA became less expensive due to increased energy

costs and capital and operation costs associated with maintaining a wellfield. Also, groundwater pumping has been affected by increasing well maintenance requirements. Hence, since the mid-1990s, the City has used additional SCWA water and relied less on their municipal wellfield; the excess well capacity serves as a back-up system in case of emergency situations or drought conditions. The production rates range from an annual average of approximately 0.8 mgd in 1970 to 4.8 mgd in 1994.

Sonoma County Water Agency

“SCWA provides potable water to more than 500,000 people in Sonoma and Marin counties. Rohnert Park receives SCWA water from the Petaluma Aqueduct. The sources of the aqueduct water is are the Dry Creek and Russian River Watersheds. To facilitate water supply, the SCWA stores water in two reservoirs, Lake Mendocino and Lake Sonoma. Water from these reservoirs is conveyed as released flows to Dry Creek and the Russian River to diversion facilities located near the community of Forestville. Water is then diverted, treated, and delivered to the SCWA’s contractors including Rohnert Park, via the Agency’s water transmission system.

In 1999, Rohnert Park’s entitlement to SCWA water was 1.0 mgd, but the City was able to purchase additional water beyond its entitlement. In 1998, the City used 2.62 mgd (annual average) of SCWA water;

Rohnert Park was provided additional water from the unused allocation of another SCWA member, the North Marin Water District (NMWD). In 1991, the City of Petaluma entered into an agreement with the NMWD that allows NMWD to take excess water from Petaluma’s allocation in exchange for granting the City of Petaluma permission to connect to the NMWD aqueduct. Since then, Rohnert Park has continued to use NMWD’s excess allocation.

To continue to provide a safe, economical, and reliable water supply to meet the future needs of SCWA’s service area, SCWA proposed the Water Supply and Transmission System Project (WSTSP) in 1998. When fully constructed and operational, the WSTSP will increase the amount of water that can safely be diverted, and increase SCWA’s delivery capacity to its service area.

However, due to delays in implementation resulting from litigation and regulatory constraints, all facilities associated with the WSTSP have not been constructed. As a result of SCWA’s ongoing Federal Endangered Species Act compliance efforts for listed salmonid species and current litigation on the WSTSP Environmental Impact Report, SCWA estimates their new water facilities will not be constructed for ten years. Consequently, current limitations exist in the Transmission System primarily due to temporary impairment during summertime water production and new development within the service area.

PROJECTED DEMAND AND CAPACITY NEEDS

In 1999, average annual water use in Rohnert Park was 6.87 mgd (Table 5.5-1); an annual average of 4.19 mgd of water was derived from the City of Rohnert Park’s municipal well system and an annual average of 2.68 mgd of water was obtained from SCWA water allocations to Rohnert Park (1.0 mgd entitlement) and an unused portion of NMWD’s allocation (1.68 mgd). As of 1999/2000, Rohnert Park’s population is approximately 41,000. Applying the 1999 average annual water use of 6.9 mgd and a population of 41,000, it is projected that the City’s water supply requirement to meet the year 2020 buildout at a population of 50,400 is estimated to be an annual average of 8.5 mgd.

As of 2000, a Memorandum of Understanding (MOU) Regarding Water Transmission System Capacity Allocation During Temporary Impairment has been established between the SCWA and the eight public parties to whom the SCWA provides water supply. The purpose of the MOU is to establish a procedure to optimize allocation of the available supply of SCWA water among the eight public parties during the projected period of temporary impairment of Transmission System capacity. As part of the MOU, a temporary delivery capacity allocation (that remains in effect until September 2010) was developed which includes the schedule presented in Table 5.5-2 for the City of Rohnert Park. The delivery rates are based on historic maximum monthly demand.

**Table 5.5-2:
Temporary Delivery Capacity Allocation – Rohnert Park
SCWA Average Day Maximum Month Delivery Rate**

<i>Year</i>	<i>Rates in mgd</i>
2000	4.8
2001	4.8
2002	4.8
2003	5.2
2004	5.3
2005 – 2010	5.3

Source: Sonoma County Water Agency

On the basis of SCWA’s allocation schedule developed for Rohnert Park as presented in Table 5.5-2, and the planned increase for an entitlement of 15 mgd by 2010, the City’s reliance on groundwater from their municipal wellfield to meet future demands through the

⁷ Total Rohnert Park water consumption divided by the number of residents.

⁸ An alternative way to project future water consumption is to use wastewater flow rates, assuming than all water supplied to land uses is ultimately discharged again. For this method, separate rates are used for residential and non-residential uses, as well as students. As discussed in Section 5.4, projected wastewater flows are 5.04 mgd under buildout. The 5.04 mgd water consumption implies a consumption rate of only 100.8 gallons per person per day. At almost 40 percent less than 1998 rates, the rate does not reflect known amounts of consumption.

2020 buildout is summarized below in Table 5.5-3. As indicated, the planned SCWA entitlement of 15.0 mgd by 2010 would fulfill future growth demands from 2010 through 2020, and allow the City to reserve municipal wellfield production for backup and emergency supply purposes. However, during the interim, the City will continue to rely on their municipal wellfield as a source of water to supplement the SCWA allocation schedule. Production requirements from the municipal wellfield are estimated to range from 1.9 mgd in 2004, to 2.3 mgd in 2009.

Groundwater conditions were assessed based on historical data and a groundwater study prepared for the City in May, 2000 entitled City of Rohnert Park Groundwater Study. Conditions indicate that in previous years, production has exceeded recharge. Comparison of the range of estimated annual average recharge rates (0.66 to 3.28 mgd) with the City's municipal wellfield requirements during implementation of the General Plan (1.9 to 2.3 mgd as indicated in Table 5.5-3), indicates the potential for short-term impacts to occur during years of implementation from 2000 through 2009 if annual average recharge is less than 1.9 to 2.3 mgd. Annual average recharge would be less than 1.9 to 2.3 mgd if annual precipitation is less than 36 to 44 inches. The magnitude of the impact, if any, depends on the amount of precipitation in years 2000 through 2009. Policies have been developed to ensure that groundwater levels are not substantially lowered.

**Table 5.5-3:
Schedule and Sources for Projected Water Supply Requirements
Average Annual Estimates**

	<i>Water Supply Requirement (mgd)</i>	<i>Allocation from SCWA (mgd)</i>	<i>City of Rohnert Park Municipal Wellfield (mgd)</i>
2000	6.89	4.8	2.09
2001	6.97	4.8	2.17
2002	7.05	4.8	2.25
2003	7.12	5.2	1.92
2004	7.20	5.3	1.90
2005	7.28	5.3	1.98
2006	7.36	5.3	2.06
2007	7.44	5.3	2.14
2008	7.52	5.3	2.22
2009	7.60	5.3	2.30
2010	7.68	15.0	Backup & Emergency Supply
2020	8.47	15.0	Backup & Emergency Supply

Source: City of Rohnert Park Groundwater Study

Although the infrastructure associated with the current water distribution system is adequate to serve areas within the existing City limits, new development extending to the 2020 Urban Growth boundary would necessitate the installation of additional distribution lines to serve the new areas.

WATER CONSERVATION

Use of reclaimed water, discharge reduction programs, and water metering are used to promote water conservation.

Discharge Reduction Programs

Discharge reduction programs are used to limit wastewater discharge, and reuse of reclaimed water, rather than discharge, is the primary method of wastewater disposal. Discharge reduction programs include the use of water-efficient devices and water-efficient use patterns for both residential and non-residential uses. Strategies used by Rohnert Park include:

- Distribution of information and conservation devices;
- Required low flush toilets and low flow showers for new residential development (required by State law);
- Toilet and shower replacement program, which includes give-aways, rebates, and direct installation; and
- Water metering of all new residential uses (although all single-family homes continue to pay a flat rate).

Reclaimed Water

Rohnert Park uses approximately 10 million gallons of reclaimed water per month in summer months and is one of the largest users of reclaimed water in the county. Approximately 270 acres in Rohnert Park and on the SSU campus use reclaimed water, out of 570 “urban” acres countywide.⁹ Rohnert Park uses reclaimed water for irrigation of trees and landscaping throughout the city. Sites in Rohnert Park that use reclaimed water include all parks and school grounds south of Golf Course Drive, the North and South Rohnert Park Municipal Golf Courses, Roberts Lake, and various commercial and industrial sites, including Hewlett Packard, State Farm, Press Democrat, Compumotor, and Fresh Choice.

⁹ Letter from Scott Stinebaugh, Deputy Director of Utilities Operations, City of Santa Rosa, Subregional Water Reclamation System, to Joseph Ferrucci, Dyett & Bhatia, July 27, 1999.

Water Metering and Dry-Weather Thresholds

To reduce water consumption, Rohnert Park requires water meters on all new construction. The City's Water Shortage Contingency Plan establishes water supply thresholds that trigger automatic restrictions on water use during dry weather.

GOALS: WATER SUPPLY AND CONSERVATION

- PF-E Provide sufficient quantities of water for Rohnert Park residents and businesses, while ensuring that safe groundwater yield is not exceeded.
- PF-F Utilize purchased water supplies (Table 5.5-2), and reduce reliance on groundwater drawn from municipal wells, except for emergency use.
- PF-G Continue to encourage water conservation through use of reclaimed water and reduction of water consumption and discharge, for both existing and new development.
- PF-H Ensure that groundwater withdrawal does not exceed safe yield.

POLICIES: WATER SUPPLY AND CONSERVATION

Water Supply

- PF-11 Based upon the groundwater study prepared for the City in May, 2000 entitled City of Rohnert Park Groundwater Study, monitor the operation of the municipal well field on a monthly basis to ensure that production does not exceed the recharge rates quantified in the study so as to result in a substantial lowering of groundwater levels in the vicinity of the Urban Growth Boundary.
- PF-11A Develop a monthly municipal wellfield monitoring program that (i) identifies points of compliance; (ii) establishes the factors to be considered in determining when production which exceeds the recharge rates will result in a substantial lowering of groundwater levels ("thresholds"); and (iii) includes any other information necessary to implement PF 11.
- PF-11B In the event that the monthly municipal wellfield monitoring program concludes that a substantial lowering of groundwater levels in the vicinity of the Urban Growth Boundary will occur because development proposed in the area outside the existing City limits as of July 1, 2000 requires production that exceeds the appropriate recharge rates, the City shall either disapprove such development or deny such development connection to the water system until such time that the program concludes that the City is in compliance with the standard established in PF-11.

- PF-12 Work with the Sonoma County Water Agency and other water contractors who rely on the Petaluma Aqueduct System to ensure adequate water deliveries for all the contractors' needs.

Purchasing additional SCWA water supply can be considered an alternative, after execution of the Memorandum of Understanding, until the increased entitlement is implemented. An additional 1.8 mgd (annual average) of water is necessary to accommodate buildout. Because provision of the 15.0 mgd entitlement may be delayed by litigation, purchase of additional water may be necessary in the interim. Purchasing water from SCWA is less expensive than building and operating wells.

- PF-13 Continue to collect and analyze monthly groundwater level data to assist in management and operation of Rohnert Park's municipal wellfield. Coordinate with other agencies on regional drawdown impacts.

- PF-14 Require developers to dedicate new well sites in locations identified by the City and to pay for the cost of new wells, water lines, and other water supply infrastructure needed to accommodate new development.

Water mains may need to be expanded and new wells may be required in order to accommodate new development. Sites dedicated to the City will need to be returned to the dedicatees if not needed for the purpose, unless the City's Subdivision Regulations seek multi-purpose dedications.

Developers should be required not only to install onsite water supply lines, but also to contribute to the cost of offsite improvements. Chapter 2: Land Use and Growth Management includes specific policies for assessing costs and prioritizing and implementing infrastructure improvements through a Capital Improvement Program.

Conservation

- PF-15 Continue to require water-conserving devices for all new development.

Devices include low-flush toilets and low-flow showers and faucets.

- PF-16 Require non-residential uses to implement water conservation practices as a condition of development.

SCWA's Water Conservation Section currently consists of five full-time staff members who assist Rohnert Park and other SCWA members. The City imposes the following requirements on new development:

- *All new construction is reviewed for water and wastewater conservation; and*

- *City Ordinance No. 76 requires the City to monitor for water leaks and to notify customers of identified leaks. Water service may be discontinued if the leak is not repaired within five days of receipt of notice.*

The City can consider imposing additional requirements, such as water-efficient landscaping and use of treated wastewater during construction.

PF-17 Develop a comprehensive wastewater flow reduction program for existing and new non-residential uses.

Non-residential uses are already required to install low flush toilets and low flow faucets. The program would also include best management practices, rebates, and water audits, as called for in Policies PF-18 through PF-20 in this section.

PF-18 Work with SCWA to offer rebates on water bills for non-residential uses that reduce water usage.

This policy would be an effective use of water meters, which track the amount of water used. By way of comparison, the City of Santa Rosa offers rebates of \$100 to industrial users for every 1,000 gallons of reduced wastewater flow. The same principle can be used to reduce water intake in Rohnert Park.

PF-19 In cooperation with the business community, develop best management practices for water conservation for Rohnert Park business, and then make the information available to the public.

Best management practices are intended as guidelines, not requirements, for water conservation. For example, restaurants can conserve water by giving drinking water to customers only upon demand. SCWA's Urban Water Management Plan includes best management practices that Rohnert Park can consider adopting.

PF-20 At the request of businesses, conduct water audits and work with them to develop plans for reducing wastewater and discharge.

PF-21 Continue to use reclaimed wastewater to irrigate parks, recreational facilities, and landscaping.

Landscaping includes trees and vegetation planted along streets, as well as private business facilities.

PF-22 Adopt and implement a comprehensive water conservation program to encourage efficient water use by City employees and other users of City facilities.

The City should consider the following measures for inclusion in the program:

- *Develop a leak detection and repair program for City facilities;*

- *Reduce washing streets and flushing water mains and storm drains to the level necessary to maintain health and safety standards;*
- *Use water-efficient landscaping, in accordance with the City's established landscaping guidelines;*
- *Cover community pools when not in use in order to reduce evaporation;*
- *Install automatic turn-off fixtures in City facilities;*
- *Use treated wastewater in City construction projects; and*
- *Install flow restricters on hoses and faucets.*

PF-23 Commit to implement Best Management Practices (BMPs) of water conservation. Such measures include:

- Requiring meters for all new connections and billing by volume;
- Establishing a program for retrofitting existing un-metered connections and billing by volume;
- Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed-use commercial accounts with dedicated landscape meters; and
- Conducting a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters.

PF-24 Implement applicable large landscape conservation programs and incentives, as identified in the proposed MOU Regarding Water Transmission System Capacity Allocation During Temporary Impairment (4/24/00).

PF-25 Adopt a water conservation rate schedule that: increases as the quantity of water used increases (i.e., a tiered rate schedule); and/or provides seasonal rates or excess-use surcharges to reduce peak demands during summer months.