

4.12.2 RECYCLED WATER - PUBLIC UTILITIES

4.12.2.1 INTRODUCTION

Information for the recycled water analysis is based upon information within the following documents:

- *South Placer Regional Wastewater and Recycled Water Systems Evaluation Systems Evaluation*, June 2007, and all supporting Technical Memoranda (as updated in February 2008)
- *West Roseville Specific Plan Final EIR*, February 2004
- *Sierra Vista Recycled Water Master Plan*, HydroScience Engineers, June 2009 and as amended July 2009
- *Sierra Vista Specific Plan Water Conservation Plan*, HydroScience Engineers, Inc. , July 2009

All of the above listed documents are available for review during normal business hours at:

City of Roseville Permit Center

311 Vernon Street
Roseville, California

No comments regarding recycled water were received in response to the NOP.

4.12.2.2 ENVIRONMENTAL SETTING

Water Treatment and Recycled Water Distribution System

The City of Roseville, the South Placer Municipal Utility District, and Placer County are regional partners in the South Placer Wastewater Authority (SPWA). The SPWA was created in 2000 to oversee policy for funding regional wastewater and recycled water infrastructure. The City owns and operates two regional wastewater treatment facilities on behalf of the regional partners. These treatment facilities are the Dry Creek Wastewater Treatment Plant (Dry Creek WWTP or DCWWTP) and the Pleasant Grove wastewater treatment plant (Pleasant Grove WWTP or

PGWWTP). Both plants produce a Title 22 quality effluent that meets the requirements for “full unrestricted reuse” that is available for recycled water applications. Recycled water for this project will be provided from the Pleasant Grove WWTP.

The City has prepared the South Placer Regional Wastewater and Recycled Water Systems Evaluation (Systems Evaluation, June 2007), which delineates the 2005 regional wastewater service area boundary (2005 SAB) and provides baseline and projected characterizations of its regional wastewater and recycled water systems. Chapter 6, Recycled Water Systems Evaluation, of the Systems Evaluation report was conducted to assist in the ongoing expansion of a regional water recycling system. The goal of utilizing recycled water supplies is to promote responsible water supply management by beneficially reusing available tertiary treated recycled water for irrigation use in order to free up surface water and groundwater supplies for potable uses. Since its initial publication, the June 2007 Recycled Systems Evaluation Report has been updated with new information regarding urban growth areas. Tech Memos 5a and 5b (Market Assessment for Recycled Water Systems and Alternatives Development and Evaluation for Recycled Water Distribution System, respectively) were updated February 11, 2008.

The City’s recycled water distribution system operates under a Master Water Reclamation Permit (Order No.97-147) issued by the Regional Water Quality Control Board (RWQCB). This permit outlines specific prohibitions on the use of recycled water by the City and places stringent water quality, treatment and disinfection standards on the City's recycled water. Recycled water is distributed to customers via recycled water pipelines, storage tanks and pump stations. Recycled water pipelines originate at the two regional treatment plants and range in size from 6- to-30-inch diameter. The City operates three recycled water storage tanks on two sites totaling 3.5 million gallons (mg) of capacity. Each storage tank site has an associated pumping station to boost system pressures as required to meet customer service needs. Recycled water is used to supplement City water supply needs and is used as irrigation water for parks, golf courses, landscape medians and corridors and for industrial cooling at the Roseville Energy Park.

Recycled Water Demand

The City’s recycled water system currently delivers approximately 3,000 AFY of recycled water to parks, streetscapes, and golf course customers within and outside of the City limits. Of this amount, approximately 2,040 AFY are for non-industrial customers located within the City of

Roseville. System expansion is planned for more intensive use of recycled water in the western portion of the City as new development is built. Recycled water demands within the City are expected to increase by approximately 1,785 AFY for a total recycled water demand of 3,825 AFY at buildout of the City's existing General Plan (RMC TM 5a, Market Assessment for Recycled Water Distribution System, updated February 11, 2008).

The Systems Evaluation considered future Urban Growth Areas (UGAs) to determine an ultimate SPWA service area boundary and estimated recycled water demands. The UGAs consist of recently approved and pending specific plans and other development proposals, and thus include areas that have not yet been approved for development. Specifically, the UGAs considered are:

- Curry Creek;
- Regional University;
- Placer Ranch;
- Placer Vineyards;
- Creekview, including the panhandle area;
- Sierra Vista and Urban Reserve; and
- Brookfield.

These projects are discussed in detail in Chapter 5, CEQA Considerations. Annual recycled water demands of these UGAs were estimated at 7,762 AFY. As shown in Table 4.12.2-1 of this amount, 1,074 AFY recycled water demand was estimated for the Sierra Vista Specific Plan area (RMC TM 5a, updated February 11, 2008 and included within the Systems Evaluation document).

Recycled Water Supply Policy

It is the policy of the City to provide a UGA with a maximum supply of recycled water equal to the amount of wastewater that is generated by the UGA during July average dry weather flow (ADWF) conditions. This supply is henceforth referred to as the "committed [recycled water] supply." In order to provide capability for serving demands that may exceed the committed supply to meet peak day demands, UGAs accepting recycled water are required to provide storage facilities capable of storing 120% of one July day demand (i.e., the total volume of water required to meet demands over a 24-hour period in July). If a UGA's July day demand (or storage volume) exceeds the committed supply, the difference may be met with supplemental supplies, which may include additional available recycled water, untreated groundwater, or potable water supplies.

**TABLE 4.12.2-1
URBAN GROWTH AREA
RECYCLED WATER CUSTOMERS AND DEMANDS**

Urban Growth Area	Acres	Acres Served by RW	Annual Demand (afy)	Peak Day (July) Demand (mgd)	Committed Supply (Assumed ADWF) (mgd)	Probable Source
Brookfield	683	211	420	0.94	0.73	PGWWTP
Creekview & Panhandle	749	250	562	1.25	1.06	PGWWTP
Curry Creek	3,212	728	1,860	4.11	2.69	PGWWTP
Regional University	1,140	543	772	1.72	1.17	PGWWTP
Placer Ranch	2,213	398	1,494	3.34	2.17	PGWWTP
Placer Vineyards	5,148	386	1,580	3.5	2.81	DCWWTP
Sierra Vista	1,785	280	1,074	2.46	2.10	PGWWTP
Total	14,930	2,796	7,762	17.32	12.76	

4.12.2.3 REGULATORY SETTING

Federal

There are no federal regulations with regard to recycled water.

State

Department of Public Health

California Department of Public Health regulations require that recycled water must be conveyed in a totally separate distribution system from the potable water supply. The City's Water Utility is responsible for implementing a cross-connection program to ensure that future potable services are not accidentally connected to the recycled water system. Additionally, a public information program (including signage) is in place to notify the public of the use and location of recycled water application. Regulatory considerations pertaining to the treatment of wastewater for reclamation purposes are described in Section 4.9, Hazardous Materials and Public Safety.

Regional Water Quality Control Board - Recycled Water Master Reclamation Permit

The recycled water distribution system operates under a Master Water Reclamation Permit (Order No. 97-147) issued by the Regional Water Quality Control Board (RWQCB). This permit contains specific prohibitions on the use of recycled water by the City, and places stringent water quality and treatment and disinfection standards on the City's recycled water. The permit prohibits the following: ponding of recycled water, recycled water seeping off the site where it is being applied, and/or entering waters of the state, unless expressly allowed by the permit.

Local

City of Roseville Municipal Code

Chapter 14.17 of the City's Municipal Code contains regulations pertaining to recycled water use. It is the policy of the City of Roseville that where the use of recycled water is feasible, appropriate, and acceptable to all applicable regulatory agencies, the City will require an owner or customer to use recycled water in lieu of potable water where appropriate. The Recycled

Water Division of the Environmental Utilities Department manages recycled water use in the City of Roseville.

City of Roseville General Plan

The City of Roseville General Plan contains goals and policies that relate to the use of recycled water:

Goal 1: Participate in a cooperative regional approach to wastewater treatment and discharge in order to maintain a system that adequate services planned growth within the City.

Goal 2: Provide wastewater services to all existing and future Roseville development through the City's wastewater utility. The provision of services by another provider may be considered when it is determined that such service is beneficial to the City and its utility customers or the provision of City services is not feasible.

Goal 3: Actively pursue the use of recycled water where appropriate and expand recycled water distribution system to deliver and meet estimated demands of 4,500 acre-feet/year.

Goal 4: Meet State of California and EPA water quality standards for the discharge of treated wastewater, as well as meet State of California quality standards for the production of recycled water.

City of Roseville Improvement Standards

Section 14 of the City's Improvement Standards (Recycled Water Infrastructure Design) provides criteria for design of recycled water systems. Compliance with these standards reduces impacts related to recycled water distribution by ensuring these systems are properly sized for anticipated demands.

Applicable Sierra Vista Specific Plan Measures

The SVSP includes water savings measures with the goal of reducing the project's overall water demands for both potable and/or recycled water to the best extent feasible and practicable. The

following recycled water conservation measures will be implemented in the SVSP in an effort to reach the City's water conservation goals:

- **Turf Reductions in Parks, Paseos, and Landscape Corridors** – This involves limiting the use of turf on non-residential parcels within the SVSP, with a focus on water efficiencies at parks, paseos, and landscape corridors. For these areas, landscape design will reduce the area of turf and increase the area of low-water-use plant species, as compared to the design of these features in other specific plan areas. To achieve the desired water conservation, the following criteria will be implemented:
 - **Parks** – It is assumed that approximately 80% of a typical park's square footage consists of turf. The SVSP's parks will have a maximum cumulative total of all parks planned within this specific plan area turf area of 60%, with the remaining 20% area comprised of low water use plant species. Less than 60% is acceptable provided it is compatible with the amenities planned for the park.
 - **Paseos and Landscape Corridors** – It is assumed that paseos and landscape corridors are typically comprised of 80% turf area. The SVSP's paseos and landscape corridors will have a maximum of 30% turf area, with the remaining 50% of the area comprised of low water use plant species.
- **Smart/Centrally Controlled Irrigation Controllers** – Smart and centrally controlled irrigation controllers restrict irrigation to only the times and water application rates that are necessary to maintain landscaping. They account for changes in the demand for water, which varies with weather patterns and seasonal influences. For the SVSP, smart irrigation controllers will be required for small commercial and quasi-public parcels subject to turf reduction measures and centrally controlled irrigation controllers for larger commercial and publicly maintained parcels.

With full implementation of these measures throughout the Plan Area, it is estimated the recycled water conservation measures outlined above will reduce the SVSP's overall recycled water demand by approximately 303 AFY.

4.12.2.4 IMPACTS

Analysis Methodology

For purposes of this analysis, the Project area is the entire annexation area with the proposed land uses shown on Figure 2-4, *Land Use Plan*. This includes the program-level parcels, with the designation of Urban Reserve.

As discussed above, recycled water from the Pleasant Grove WWTP is an assured source that would be available to serve the Project area. In accordance with the recycled water supply policy and as described in Section 4.12.3, a total of 1.37 ADWF of tertiary treated wastewater is available as recycled water for the Project area. This is considered the “committed supply”. The analysis compares the committed supply available for the Project area to the recycled water demand estimates, and evaluates the need for additional supplies to meet a peak day demand that is in excess of the committed supply.

Recycled Water Supply

As discussed above, recycled water from the PGWWTP is an assured source of supply that would be available to serve the project. In accord with the recycled water supply policy and as described in Section 4.12.3, a total of 1.37 ADWF of tertiary treated wastewater is available to service recycled water for the SVSP. This is considered the “committed supply”. The analysis then compares the committed supply available for the project, to the recycled water demand estimates and evaluates the need for additional supplemental supplies to meet a peak day demand that is in excess of the committed supply.

Recycled Water Distribution

A recycled water master plan was developed for the SVSP. The recycled water master plan includes an analysis of the recycled water distribution system includes an evaluation of various methods to convey recycled water from the PGWWTP and then distribute it within the plan area. The study considers pumping and operational storage needs required to meet hourly peak recycled water flow rates. The recycled water master plan, prepared by HydroScience, Inc dated June 2009 and as amended July 2009, is included in Attachment 4 of Appendix H-2.

The analysis of the recycled water distribution system was performed using a hydraulic computer model. Pipeline alignments in the model corresponding to the SVSP roadway network provide a backbone distribution system. The recommended alternative for servicing recycled water to the SVSP assumes connection to facilities located within the WRSP and expansion of both the storage and pumping capacity of the existing WRSP recycled water facility located adjacent to the Roseville Energy Park. Impacts of this expansion are evaluated in this EIR. The analysis of recycled water storage, pumping and distribution assumed the demands of both the WRSP Area and the SVSP Area and does not assume a reduction in demand from water conservation measures. This allows for a more conservative approach in sizing required infrastructure facilities. The hydraulic model was run under peak hourly flow conditions. Minimum pipeline diameters were selected to achieve required pressure and velocity criteria.

Thresholds of Significance

For the purposes of this EIR, a significant impact would occur if the development proposed for the project would do the following:

- Result in or require the construction or expansion of recycled water distribution and storage facilities that would create significant environmental effects.

IMPACT 4.12.2-1	AVAILABILITY OF RECYCLED WATER TO MEET DEMAND AND INSTALLATION OF RECYCLED WATER INFRASTRUCTURE	
Applicable Policies and Regulations	City of Roseville Municipal Code Regional Water Quality Control Board Reclamation Permit	
	SVSP	Urban Reserve
Significance with Policies and Regulations	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

SIERRA VISTA SPECIFIC PLAN

Recycled water is a part of the overall water supply strategy for the Project area. Recycled water supplied from the PGWWTP would be used for landscape irrigation of parks, schools, publicly - landscaped areas (i.e., roadway medians, paseos), and other landscaped areas in commercial, and high-density residential uses within the SVSP. The Master Reclamation Permit and the City of Roseville Municipal Code contain specific requirements and standards associated with the use of recycled water.

Demand

Irrigation demands vary by month; therefore, supply needs are estimated on a monthly basis with the peak demands occurring in July. The peak demands are compared against the committed recycled water supply, which is equivalent to the average dry weather wastewater flow. Where the committed recycled water supply exceeds the recycled water demand in any given month, supplemental water is required. The committed supply available to serve the SVSP from the PGWWTP is 1.37 mgd, which equates to an available recycled water supply of up to 128 AF per month.

As documented in the Sierra Vista Recycled Water Master Plan (Attachment 4 of Appendix H-2), total recycled water demand for the SVSP would be 866 AFY. This demand, minus 303 AFY due to reduced demand from significant water conservation measures built into the SVSP is 866 AFY. Using this demand, less the reduction in demands of 303 AFY from significant water conservation measures being employed by the SVSP, results in a net recycled water demand of 563 AFY. This is shown in Chapter 8, Utilities section of the Specific Plan and Technical Memo TM #1, Sierra Vista Specific Plan Water Conservation Plan, dated July 7, 2009 by HydroScience Engineers, Inc (Attachment 3 of Appendix H-2), which contains the calculations of estimated water and recycled water savings resulting from the implementation of the conservation measures identified for inclusion in the SVSP.

In all months, the committed recycled water supply for the SVSP is sufficient to meet projected recycled water demands. Table 4.12.2-2 shows irrigation demands and available recycled water supply on a per month basis.

**TABLE 4.12.2-2
IRRIGATION DEMANDS VERSUS RECYCLED WATER SUPPLY**

Month	Irrigation Demand (AF)	Committed Recycled Water Supply (AF)	Supplemental Supply Required (Y/N)	Resultant Supplemental Demand (AF)
January	0	0	N	0
February	0	0	N	0
March	6	6	N	0
April	42	42	N	0
May	75	75	N	0
June	104	104	N	0
July	120	120	N	0
August	104	104	N	0
September	75	75	N	0
October	37	37	N	0
November	0	0	N	0
December	0	0	N	0
Total (AFY)	563	563		0

As shown in Table 4.12.2-2, no supplemental water supply would be required to serve the SVSP. However to provide a reliable supply, a supplemental irrigation well would be needed for backup to the recycled water supply or for emergency purposes only (e.g., if the wastewater treatment facility were to experience mechanical difficulties affecting its ability to provide recycled water).

Infrastructure

Recycled water infrastructure required to serve the SVSP would consist of a storage reservoir, pumping facilities, a supplemental groundwater irrigation supply well, and onsite piping. As described in the Sierra Vista Recycled Water Master Plan (Attachment 4 of Appendix H-2), the existing West Roseville Specific Plan recycled water tank and pumping facility (located north of the

PGWWTP) would be expanded to serve the SVSP area. A preliminary site plan of the expanded tank and pumping facilities is shown on Figure 4.12.2-2.

As shown on Figure 4.12.2-2, a new 2.9 million gallon recycled water storage tank would be constructed and the existing WRSP recycled water pump station would be expanded to pump up to 14,000 gallons per minute (gpm) during peak hour deliveries as part of the SVSP. The current pump station is sized to supply 7,200 gpm. The proposed new tank and expanded pump station have been sized based upon full recycled water demands, without a reduction due to water conservation efforts, in order to ensure sufficient infrastructure capacities are constructed. A backup irrigation well to supplement recycled water supplies during emergency conditions also would be constructed. This well would be capable of producing up to 1,000 gpm, which slightly exceeds the committed recycled water supply for the SVSP of 1.37 mgd. The system would be designed such that the supplemental water would be pumped through an air gap directly into the recycled water storage tank.

Recycled water to the SVSP area would be delivered through both existing and planned recycled water infrastructure in the WRSP, and then connected to a new backbone of dedicated recycled water pipelines ranging from 6-inches to 24-inches in diameter within the SVSP. These pipelines would be constructed within street rights-of-way of the SVSP as shown on Figure 2-13 in Section 2, Project Description. The recycled water pipelines would be designed to provide capacity to supply development in the Urban Reserve areas.

Potential environmental effects that could occur as result of recycled water supply from the PGWWTP, installation of the storage tank and emergency irrigation well, expansion of the WRSP recycled water pumping station and construction of distribution system improvements are addressed in Section 4.4 (Air Quality), Section 4.6 (Noise), Section 4.8 (Vegetation and Wildlife), Section 4.12 (Public Utilities), Section 4.13 (Hydrology, Water Quality and Groundwater), Section 4.9 (Cultural Resources), Section 4.14 (Aesthetics and Visual Resources), and Chapter 5, (CEQA Considerations). Therefore, impacts of constructing the recycled water system in the WRSP Area are considered **less than significant**.

For a discussion of the potential health effects related to the use of recycled water in areas accessible to the public, refer to Impact 4.10-6 in Section 4.10 (*Hazardous Materials and Public Safety*).

URBAN RESERVE

Future development of the Urban Reserve are would require recycled water and recycled water distribution infrastructure, as described for the SVSP, as part of the overall water supply strategy. The Urban Reserve would require an estimated 117 AF of recycled water assuming water conservation measures are employed to the level within the SVSP. The results of the analysis indicate that there would be sufficient recycled water available for the development of the Urban Reserve¹. This would be a **less than significant** impact.

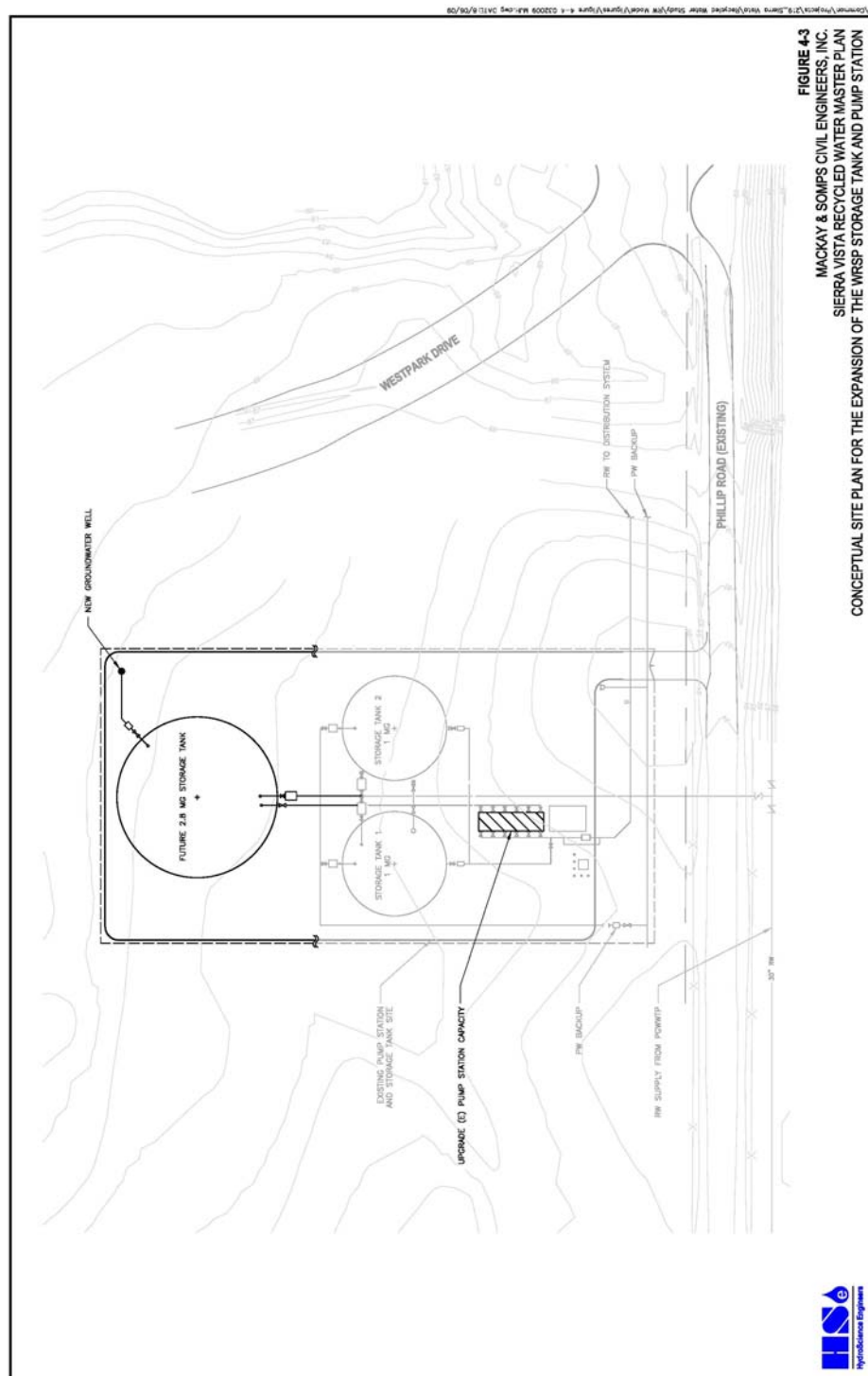
Similar to the SVSP, a recycled water distribution system would need to be installed in the Urban Reserve area and connected to the SVSP and WRSP system and storage tank. The hydraulic analysis for recycled water estimated the need for an additional 0.5 MG of recycled water storage and 1,100 gpm peak hour pumping capacity above that needed for the SVSP. As noted, the storage tank to be constructed for the SVSP is planned to include sufficient storage for the Urban Reserve area. This is being done to eliminate the need for construction of an additional recycled water storage tank. As indicated above the existing recycled water booster pump station located in the WRSP would be expanded to accommodate the SVSP.

Should the Urban Reserve develop in the future, this pumping facility could be further expanded to accommodate recycled water demands within the Urban Reserve. As explained above in the discussion of the Sierra Vista Plan, the impacts related to construction of new recycled water infrastructure are discussed in other sections and chapters of this EIR. Impacts related to recycled water storage and distribution is, therefore, considered **less than significant**.

¹ Art O'Brien, Environmental Utilities Department, October 2009.

FIGURE 4.12.2-1

LOCATION OF TANK, PUMP STATION, AND WELL FACILITY



4.12.2.5 MITIGATION MEASURES

None Required

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