4.12.2 PUBLIC UTILITIES - RECYCLED WATER

4.12.2.1 INTRODUCTION

This section evaluates the potential impacts from development of the Amoruso Ranch Specific Plan (ARSP or Proposed Project) and associated increased demand for recycled water on recycled water infrastructure and supply. The existing recycled water setting such as current recycled water supply, demand, and infrastructure is described. Information for the recycled water analysis is based on information within the following documents:

- *ARSP Area Recycled Water Master Plan*, Kimley-Horn, April 2016 (Kimley-Horn, 2016d; Included as **Appendix F**)
- *ARSP Area Water Master Plan*, Kimley-Horn, February 2015 (Kimley-Horn, 2016b; Included as **Appendix H**)
- *ARSP Area Water Conservation Plan*, Kimley-Horn, April 2016 (Kimley-Horn, 2016c; Included as **Appendix G**)
- *South Placer Regional Wastewater and Recycled Water Systems Evaluation*, RMC, updated December 2009
- *City of Roseville General Plan 2025*, as amended June 2015 (City of Roseville, 2015a)
- *Creekview Specific Plan (CSP) Final EIR*, April 2011 (City of Roseville, 2011a)

All of the above listed documents are available for review during normal business hours (Monday through Friday, 8 a.m. to 5 p.m.) at:

City of Roseville Permit Center
311 Vernon Street
Roseville, CA 95678

In response to the Notice of Preparation (NOP; **Appendix C**), the City did not receive any comments pertaining to recycled water. Refer to **Appendix C** of this Environmental Impact Report (EIR) to view the comments received on the Proposed Project in response to the NOP.

4.12.2.2 ENVIRONMENTAL SETTING

Wastewater Treatment and Recycled Water Distribution System

The City of Roseville (City), the South Placer Municipal Utility District, and Placer County (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 (DCWWTP) and the Pleasant Grove Wastewater Treatment Plant (PGWWTP). Both plants produce Title 22 quality effluent that meets the requirements for “full unrestricted reuse” that is available for recycled water applications. Recycled water for the Proposed Project would be provided from the PGWWTP.

The City has prepared the South Placer Regional Wastewater and Recycled Water Systems Evaluation (Systems Evaluation, updated December 2009), 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. This goal is achieved by beneficially reusing available tertiary treated recycled water for irrigation in order to make surface water and groundwater supplies available for potable uses. Since its initial publication in June 2007, the Systems Evaluation Report has been updated with new information regarding urban growth areas (UGAs). 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 and incorporated into the December 2009 updated Final Report.

The City's recycled water distribution system operates under a Master Water Reclamation Permit (Order No.97-147) issued by the Central Valley Regional Water Quality Control Board (CVRWQCB). 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 through a system of 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-inches in 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 Demand

The City's recycled water system currently delivers recycled water to parks, streetscapes, and golf course customers within and outside of the City limits. According to the City of Roseville General Plan 2025 (General Plan), recycled water use inside City limits, not including industrial use, totals approximately 1,709 acre-feet per year (AFY). The City also supplies recycled water for cooling purposes to the Roseville Energy Park (REP). Expansion of the system is planned to allow 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 to a total recycled water demand of 4,500 AFY at buildout of the City's General Plan (City of Roseville, 2015a).

The Systems Evaluation considered future 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 were:

- Curry Creek;
- Regional University;
- Placer Ranch area;
- Placer Vineyards;
- Sierra Vista;
- Creekview, including the Reason Farms panhandle area (Off-Site Improvement Area); and
- Brookfield (project site).

These projects are discussed in detail in **Section 5.0**, **CEQA Considerations**. The annual recycled water demands of these UGAs were estimated at 7,762 AFY. As shown in **Table 4.12.2-1**, of this amount, 420 AFY was estimated for the project site recycled water demand. This volume of recycled water is documented within Table 6-3 of the December 2009 *Updated Systems Evaluation* document.

TABLE 4.12.2-1
URBAN GROWTH AREAS SYSTEMS EVALUATION (2009):
ASSUMED RECYCLED WATER CUSTOMERS AND DEMANDS

Urban Growth Boundary	Acres	Acres Served by Recycled Water	Annual Demand (AFY)	Peak Day (July) Demand (MGD)	Committed Supply (Assumed ADWF) (mgd)	Probable Source
ARSP	683	211	420	0.94	0.73	PGWWTP
Creekview and Panhandle[1]	749	250	562	1.25	1.06	PGWWTP
Curry Creek	3,212	798	1,860	4.11	2.69	PGWWTP
Regional University	1,140	543	779	1.79	1.17	PGWWTP
Placer Ranch area	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**	

1 - The UGA includes both the 501-acre Creekview Specific Plan Area and a portion of Reason Farms site known as the Panhandle.
Source: RMC, 2009.

Recycled Water Supply Policy

It is the practice of the City to provide a UGA with a maximum supply of recycled water that is 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 capacity to serve demand that may exceed the committed supply, UGAs accepting recycled water are required to provide storage facilities capable of storing 100 percent of one July day demand (i.e., the total volume of water required to meet demands over a 24-hour period in July) plus an additional 20 percent for operational storage. 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.

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 completely 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.

Regional Water Quality Control Board (RWQCB) – 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.

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. Recycled Water staff of the Environmental Utilities Department manage recycled water use throughout the regional service area.

City of Roseville General Plan

The City's General Plan contains goals and policies that relate to the use of recycled water as detailed below:

Public Facilities Element – Wastewater and Recycled Water Systems Goals

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 AFY.

Goal 4 Meet State of California and Environmental Protection Agency (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.

Public Facilities Element – Wastewater and Recycled Water Systems Policies

Policy 1 Expand recycled water distribution system to deliver and meet estimated irrigation demands.

Policy 2 Develop, plan, and provide incentives for use of recycled water by the public and private sectors.

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 that these systems are properly sized for anticipated demands.

Applicable ARSP Measures

The proposed ARSP includes water-saving measures aimed at reducing overall water demands for potable and/or recycled water to the greatest extent feasible. The following water conservation measures would be implemented in the ARSP in an effort to meet the City's water conservation goal of 20 percent overall reduction in potable and irrigation water usage:

Turf Reductions in Residential Areas: This involves limiting the amount of turf in the front yards of residential properties and using a higher percentage of low water use plant species in lieu of turf. Typically, about 75 to 85 percent of a total residential front yard is assumed to consist of irrigated landscaping, with 70 percent of a typical front yard being turf. For the ARSP, limitations would be placed on the landscaped portion of each front yard, allowing up to 42 percent of the total landscaped area to be turf (instead of the typical 70 percent), with the remaining landscaped area comprised of low water use plant species. It is anticipated that these measures would result in approximately 27.4 percent total irrigation water demand reduction.

Turf Reductions in Non-Residential Areas (Parks, Paseos, and Landscape Corridors): This involves limiting the use of turf on non-residential parcels, with a focus on water efficiencies at parks, paseos, and landscape corridors. For these areas, landscape design would reduce the area of turf and increase the area of low water use plant species. It is anticipated that these measures could result in approximately 17.5 percent total irrigation demand reduction in non-residential areas.

Smart Irrigation Controllers: Smart and centrally located irrigation controllers restrict irrigation to times and rates necessary to maintain landscaping. They account for changes in the demand for water, which varies with weather patterns and seasonal influences. In the project site, smart irrigation controllers would be required for residential, commercial, and quasi-public parcels subject to turf reduction measures, and centrally controlled irrigation controllers for larger commercial and publicly maintained parcels. It is anticipated that these controllers could result in approximately 20 percent total irrigation water demand reduction.

Recycled water demand would be reduced by 18.2 percent, or approximately 49.5 AFY with implementation of the water conservation measures outlined above.

4.12.2.4 IMPACTS

Method of Analysis

For purposes of this analysis, the project site is the entire annexation area with the proposed land uses shown on **Figure 2-4**, Land Use Map.

Recycled Water Supply

As discussed above, recycled water from the PGWWTP is an assured source of recycled water that would be available to serve the Proposed Project. In accordance with the recycled water supply policy and as described in **Section 4.12.3**, a total of 0.554 million gallons per day (mgd) ADWF, or 51.8 acre-feet (AF) per month, of tertiary treated wastewater is available to service recycled water for the ARSP. This is considered the "committed supply". The committed supply is derived from the ADWF of

wastewater that would be produced during operation of the ARSP. This analysis compares the committed supply available for the Proposed Project to the estimated recycled water demand 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 ARSP, which includes an analysis of the recycled water distribution system required within the project site and an evaluation of conveyance of recycled water from the point of connection within the CSP Area to the project site. The study considers pumping and operational storage needs required to meet hourly peak recycled water flow rates. The ARSP *Recycled Water Master Plan*, prepared by Kimley-Horn, dated April 2016 is included as **Appendix F**.

The analysis of the recycled water distribution system was performed using a hydraulic computer model. Pipeline alignments in the model corresponding to the ARSP roadway network provide a backbone distribution system. The recommended alternative for providing recycled water to the project site assumes connection to facilities located within the CSP Area and expansion of both the storage and pumping capacity of the existing West Roseville Specific Plan (WRSP) recycled water facility located adjacent to the REP. The analysis of recycled water storage, pumping and distribution assumed the demands of the CSP Area and the project site, and does not assume a reduction in demand from water conservation measures for the project site. This allows for a more conservative approach in sizing required infrastructure facilities. The hydraulic model was run under steady-state 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.

Impacts Found to Be Less Than Significant

There are no potential health effects related to the use of recycled water in areas accessible to the public anticipated for the Proposed Project as recycled water would be used in accordance with the City's Master Reclamation Permit, Roseville Municipal Code Chapter 14.17, and the City's "Rules and Regulations for the Use of Recycled Water," which include provisions to ensure public safety.

Impacts

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
Significance with Policies and Regulations	Less than Significant
Mitigation Measures	None Required
Significance After Mitigation	Less than Significant

Recycled water is a part of the overall water supply strategy for the project site. 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 project site. 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 to the committed recycled water supply, which is equivalent to the average dry weather wastewater flow. Where the committed recycled water supply does not satisfy the recycled water demand in any given month, supplemental water would be required. The committed supply available to serve the project site from the PGWWTP is 0.554 mgd, which is equivalent to an available recycled water supply of up to 51.8 AF per month or 621 AFY (Kimley-Horn, 2016d; **Appendix F**).

As documented in Table 10 of the *Recycled Water Master Plan* (**Appendix F**), the annual recycled water demand for the ARSP would be 272 AFY. This demand, minus approximately 49 AFY due to reduced demand from water conservation measures built into the ARSP results in a project irrigation demand of 223 AFY, which is less than the committed supply of 621 AFY (Kimley-Horn, 2016d). Water conservation savings are described in Chapter 9, Utilities Plan section of the Specific Plan and in the *Water Conservation Plan*, dated April 2016 by Kimley-Horn (**Appendix G**).

In all months except July, the committed recycled water supply for the ARSP is sufficient to meet projected recycled water demands without conservation measures. However, with implementation of conservation measures, the committed recycled water supply for the ARSP 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, with and without water conservation measures.

TABLE 4.12.2-2
IRRIGATION DEMANDS VERSUS RECYCLED WATER SUPPLY

0.62	Committed Recycled Water Supply (AF)	Irrigation Demand (AF)	Surplus Supply (AF)	Irrigation Demand (AF) w/ Conservation Measures	Surplus Supply (AF) w/ Conservation Measures
January	51.8	0.0	51.8	0.0	51.8
February	51.8	0.0	51.8	0.0	51.8
March	51.8	3.0	48.8	2.5	49.4
April	51.8	20.3	31.5	16.6	35.4
May	51.8	36.1	15.7	29.6	22.6
June	51.8	50.3	1.5	41.3	11.1
July	51.8	57.9	-6.1	47.4	5.0
August	51.8	50.3	1.5	41.3	11.1
September	51.8	36.1	15.7	29.6	22.6
October	51.8	18.0	33.8	14.8	37.2
November	51.8	0.0	51.8	0.0	51.8
December	51.8	0.0	51.8	0.0	51.8
Total (AFY)	-	**272**	-	**223**	-

Source: Kimley-Horn, 2016d.

As shown in **Table 4.12.2-2**, supplemental water supply would be required in the month of July if conservation methods are not implemented, while no supplemental water supply would be required to serve the recycled water demands of the ARSP with implementation of water conservation methods. In order to ensure a reliable recycled water supply, the ARSP includes provisions to meet recycled water demands with potable water in months where recycled water demand exceeds the committed water supply or in case the recycled water system is temporarily not operational. These back-up potable water supplies would be provided by connection through the CSP Area and to an onsite groundwater well.

Infrastructure

Recycled water infrastructure required to serve the ARSP would consist of a storage reservoir, pumping facilities, and onsite piping. However, the construction of a storage reservoir, pumping facilities, and extension of infrastructure up to the southern boundary was analyzed within the *CSP Final EIR* (City of Roseville, 2011a). The water storage and pumping facilities are located south of the ARSP and immediately east of the REP, and are slated for expansion to meet the needs of the region, including ARSP, CSP, and Sierra Vista Communities. The previously proposed expansion included the development of a 4-million-gallon recycled water storage tank, which included the operational demand of 1,296 gpm for the project site. The recycled water demands identified above for ARSP (1,726 gpm) are greater than the demand identified in the Creekview Master Plan and Final EIR (a variation of 430 gpm), and would require an additional 0.2 mg of tank capacity. A minimum tank size of 4.5 mg is currently anticipated. Thus the proposed capacity of the tank and pump station will need to be updated in order to provide sufficient storage capacity for the ARSP to meet City requirements. However, the development footprint for the storage tank and pumping facilities analyzed within the *CSP Final EIR* is of sufficient size

to accommodate the additional 0.2 mg of tank capacity as a result of the ARSP recycled water demands; therefore, no additional impacts beyond those previously analyzed would occur.

As described in the *Recycled Water Master Plan* included as **Appendix F**, recycled water would be supplied to the ARSP through connection to the CSP recycled water infrastructure within Westbrook Boulevard at the point of transition between the CSP and the ARSP. In accordance with the City's design criteria, the on-site recycled water transmission pipelines were designed to ensure the system is capable of operating with adequate flows and pressures to serve the recycled water customers of ARSP on a daily basis. As shown in **Figure 2-16** in **Section 2.0**, **Project Description**, a looped backbone system of dedicated non-potable water lines ranging in size from 6 inches to 12 inches would be constructed running parallel to the collector and arterial roadway system, south of the future Placer Parkway. Recycled water pipelines heading to the east from Westbrook Boulevard are located within Roads "B" and "D." These pipes are currently oversized for the ARSP recycled water demands and are sized for the future connections into Placer Ranch Area consistent with the regional system identified in previous studies completed for the City. In the event that the recycled water system becomes temporarily non-operational, recycled water demands would be met by potable water supply infrastructure. The potable water demands calculated in the ARSP *Water Master Plan* (**Appendix H**) included provisions to supply the recycled water demands with potable water in case the recycled water system is temporarily out of service (Kimley-Horn, 2016c).

Potential environmental effects that could occur as result of constructing recycled water distribution pipelines are addressed in this EIR, including **Section 4.4**, **Air Quality**; **Section 4.6**, **Noise**; **Section 4.8**, **Vegetation and Wildlife**; **Section 4.9**, **Cultural and Paleontological Resources**; **Section 4.12**, **Public Utilities**; **Section 4.13**, **Hydrology and Water Quality**; and **Section 5**, **CEQA Considerations**. The recycled water system that is planned would provide adequate recycled water to meet the demands of the Proposed Project; therefore, the impact of the ARSP on the capacity of the recycled water system to serve new development is considered **less than significant**.

IMPACT 4.12.2-2	**CUMULATIVE RECYCLED WATER IMPACTS**
Applicable Policies and Regulations	City of Roseville Municipal Code Regional Water Quality Control Board Reclamation Permit ARSP Design Guidelines
Significance with Policies and Regulations	Less than Significant
Mitigation Measures	None Required
Significance After Mitigation	Less than Significant

Currently, recycled water is produced at both the existing DCWWTP and PGWWTP, and distributed to locations within the City and County. Additional extensions of the recycled water system are proposed to

supply additional development in the County including Placer Vineyards, Riolo Vineyards, and Regional University. Sutter Pointe and Elverta Specific Plans are outside the service area.

The distribution system to convey the recycled water would be expanded, and additional storage tanks and pumping facilities would be needed. The extension of the system to areas outside the City of Roseville, where such facilities do not exist could result in potentially significant environmental effects, in part, related to construction activities and indirect effects of growth (eg., traffic, air quality, loss of habitat, and noise). These impacts have been identified in the Placer Vineyards, Riolo Vineyards, and Regional University EIRs previously approved by the County. Because, as described above, recycled water facilities for the ARSP would be provided through planned improvements, and mitigation measures have been incorporated to reduce the environmental impacts of construction of the infrastructure improvements, the Proposed Project's contribution to these cumulative impacts is not cumulatively considerable and would be **less than significant**.

4.12.2.5 Mitigation Measures

None Required.