Technical Memorandum

Sunnyslope County Water District

Subject: **2014 Annual Salt Management Report**

Prepared For: Regional Water Quality Control Board

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The purpose of this Technical Memorandum (TM) is to meet the Annual Salt Management Report requirements of the Regional Water Quality Control Board (RWQCB) Waste Discharge Requirement (WDR) Order No. R3-2004-0065 (December 3, 2004). Annual Salt Management Reports must be submitted by January 30th every year commencing in 2006. The report shall include, at a minimum:

a. Calculations of annual salt mass discharged to the wastewater treatment system and disposal ponds with an accompanying analysis of contributing sources;

b. Analysis of wastewater evaporation/salt concentration effects;

c. Analysis of groundwater monitoring results related to salt constituents;

d. Analysis of potential impacts of salt loading on the groundwater basin;

e. A summary of existing salt reduction measures; and,

f. Recommendations and time schedules for implementation of any additional salt reduction measures.

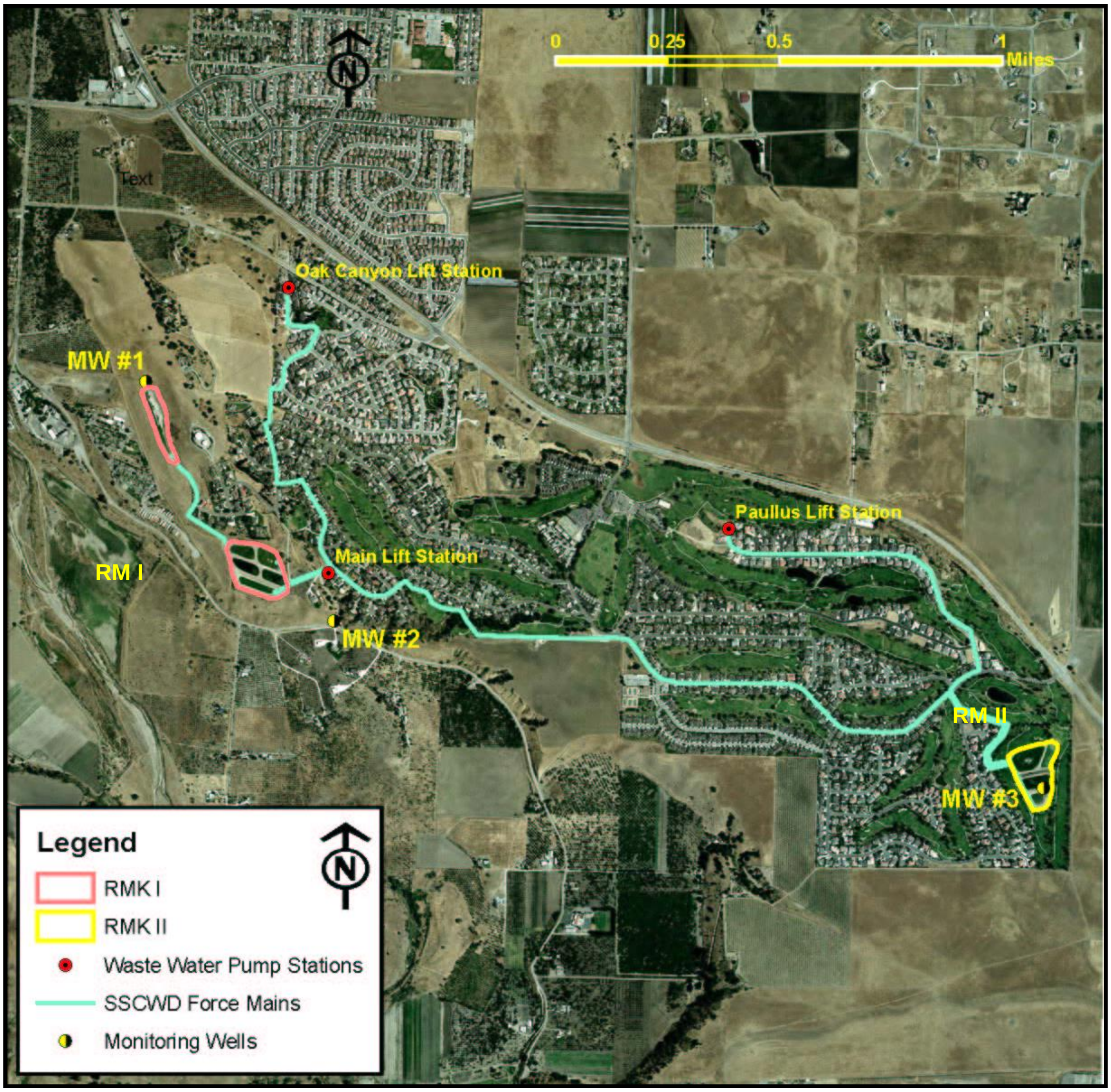
The TM is organized as follows:

1 Background

The Sunnyslope County Water District (SSCWD) in Hollister, California, operates one wastewater treatment plant (WWTP) (See Figure 1-1) that serve the residences and a few commercial businesses near the Ridgemark Golf Course. The facilities is known as Ridgemark I WWTP (RM I). In prior years SSCWD operated a second facility known as Ridgemark II WWTP (RM II). The RM II facility was not in use in 2014 and was decommissioned in the third quarter of 2013 after completion of the new wastewater treatment facilities at RM I.

Wastewater effluent from these WWTP contains relatively high salinity levels. Salinity concentrations in the potable water supply for the service area are already high and are increased through normal municipal use. Salinity is further increased by the widespread use of residential water softeners in the service area which are used to reduce hardness. Salt buildup in the groundwater basin is a concern and salinity management measures are necessary to preserve the long-term beneficial use of groundwater.

Figure 1-1: Ridgemark WWTP and Facilities



The new WDR permit, adopted in December 2004, includes a phased regulatory schedule to meet salinity water quality regulations. Beginning in January 2008, TDS, sodium and chloride concentrations in the WWTP effluent were subject to WDR limits shown in Table 1-1. Stricter limits were phased in two years later to achieve the final concentration limits by January 30, 2010.

Table 1-1: Salinity Waste Discharge Requirements in 2008 and 2010

	30-Day Average Limitations (mg/L)		
Effective Date	Interim	January 30, 2008	January 30, 2010
TDS	No Limit	1,500	1,200
Sodium	No Limit	300	200
Chloride	No Limit	300	200

2014 average influent and effluent wastewater quality (See Table 1-2) exceeds both the January 2008 and January 2010 salinity limits. Therefore, salinity management measures will need to be implemented to meet WDR limits. This report will summarize the salt sources contributing to salinity in the wastewater effluent and will present salt management and reduction measures to address high salinity concentrations.

Table 1-2: Existing 2014 Average Wastewater Quality

Parameter	RM I SBR Influent	RM I SBR Effluent
TDS (mg/L)	1647	1616
Sodium (mg/L)	407	406
Chloride (mg/L)	607	581

Notes:

1) Data consists of 12 monthly sampling events from January 2014 through December 2014.
2) In some cases, effluent averages are lower than influent averages. This is unexpected and may be due to a low frequency of sampling, large storm events that dilute effluent, rounding of results, or other factors.

2 Salinity

The effluent from RM I have high concentrations of TDS, sodium, and chloride relative to the local potable water supply. This section highlights the sources of these salt constituents and summarizes the results of a mass balance analysis that was performed on the system.

2.1 Sources of Salt

High effluent salinity concentrations stem from three factors including 1) concentrations of salinity in the potable supply, 2) normal municipal and industrial (M&I) contributions, and 3) operation of residential water softeners. Finally, effluent salinity concentrations are increased further by evaporation that occurs in the WWTP percolation ponds during warm weather periods. Evaporation does not increase salt load in the wastewater effluent in the percolation ponds. The contributions of each of these sources to concentrations observed in RM I effluent are documented below.

2.1.1 Water Supply

Groundwater from wells and surface water from the Lessalt surface water treatment plant is the source of potable water supply for the sanitary service area served by RM I. Groundwater contains relatively high concentrations of salts and hardness, while treated surface water has low concentrations of salts and hardness as shown in Table 2.1. Since Treated wastewater ultimately percolates to the basin, the groundwater salinity mass load pass through the water and wastewater systems and returns to the basin.

Table 2-1: Existing Potable Water Quality

Constituent	Groundwater Concentration (mg/L)	Lessalt Surface Water Concentration (mg/L)
TDS	776	320
Total Hardness, $CaCO_3$	420	120
Sodium	109	66
Chloride	123	98

Source: SSCWD 2014 Well 5 & 8 Water Quality Data for Groundwater & 2014 LESSALT WTP for Surface Water

2.1.2 Municipal Use and Water Softeners

A large amount of salt is added through customer use. Normal municipal use can add from 150-300 mg/l of TDS. Additionally, because of the high hardness of the water supply, there is widespread utilization of residential water softeners, which is a significant source of salt. Water softeners remove the calcium and magnesium ions that are responsible for hardness. The water softener resin must be regenerated periodically through washing with a concentrate brine solution, most commonly sodium chloride. This wash water is sent to the sewer system during regeneration cycles and adds a significant amount of salinity to the wastewater stream. Estimates of the amount of salinity added by water softener use can vary based on the hardness of the water, water use, the extent of water softener use in the area, and the type and efficiency of the water softeners that are used. Water softener operational settings can also impact the regeneration frequency and result in higher salt loads to the WWTPs.

In 2014, the total TDS contribution from municipal use was approximately 871 mg/l based on the difference between well water quality data and the influent water quality entering the WWTPs. To determine an estimate for the water softener component, an analysis was performed using assumed values for the parameters listed in Table 2-2.

Table 2-2: Assumptions in the Water Softener Analysis

Parameter	Value
Potable Water Hardness	393 mg/l as $CaCO_3$
Assumed Average Water Softener Efficiency of SSCWD Area	2551 grains hardness removed per lb of salt
% of households using water softeners [a]	93%
% of household using KCl	15%
% of households using off site regeneration	4%
Household Indoor Use [b]	168 gpd

Footnotes:

a) Based on results from *Technological and Economic Feasibility Study Alternatives to Limiting or Prohibiting Water Softeners per Section 116786 of the Health and Safety Code*, Bracewell Engineering (November 2007) for SSCWD water service area.

b) Based upon average 2007 wastewater flows of 203,992 gallons per day divided by 1212 accounts = 168 gallons per day per account

Potable water hardness was based on the *SSCWD 2005 Annual Drinking Water Quality Report*. Average water softener efficiency was estimated based on an assumed distribution of water softener types throughout the service area. Older water softeners are typically timer-based which means that they regenerate periodically regardless of the actual water use. Timer-based softeners can have efficiencies as low as 1,500 grains of hardness removed per pound of salt (1 grain = 17.1 mg/l hardness). Demand Initiated Regeneration (DIR) softeners are tied to actual water use and have efficiencies ranging from 2,000-3,350 grains of hardness removed per pound of salt.

Based on the analysis, the estimated contribution to TDS from water softeners for the RM I service area is approximately 744 mg/l for 2012. Table 2-3 summarizes the relative contributions of sodium and chloride to the overall TDS addition using a 100% groundwater supply while Table 2-4 summarizes the relative contributions of sodium and chloride to the overall TDS addition using a 100% surface water supply.

Table 2-3 and 2-4 shows a comparison between estimated and actual total TDS concentrations for both a 100% groundwater supply and a 100% surface water supply. When using 100% groundwater, table 2-3 shows the estimated constituent values are based on the water softener analysis and an assumed M&I normal use TDS contribution of 151 mg/l. Sodium and chloride addition through normal M&I use is estimated to be 33 mg/L and 57 mg/L respectively to resolve the salt balance. Adding these estimates to the initial concentrations, a reasonable agreement with actual influent concentrations at the WWTPs is achieved for a 100% groundwater supply. Table 2-4 shows projected sodium, chloride, and TDS values using a 100% surface water supply, and 0% water softeners. Table 2-4 shows the theoretical best wastewater effluent if 100% surface water is used and 100% of all customers eliminate the use of all water softeners. It is more than likely that it will take time for an exerted education campaign to have all customers discontinue the use of brine discharging water softeners. However, using a substantial surface water supply, combined with the severe reduction of the use of brine discharging water softeners should result in eventual compliance with the RWQCB requirements for sodium, chloride, and TDS.

Table 2-3: Estimated Municipal Use Contributions for Salt Constituents and Comparison to Actual WWTP Influent When Using Groundwater as the Potable Water Supply

Parameter	Potable Water Concentrations (1) Footnote (a)	Est. Water Softener Contribution using Groundwater (2) Footnote (d)	Est. Normal M&I Use Contribution (3) Footnote (b)	Est. Wastewater Concentrations with Groundwater (1)+(2)+(3)	Actual 2014 RM I Average Influent Footnote (c]
TDS (mg/L)	776	744	151	1,671	1,647
Sodium (mg/L)	109	251	33	393	407
Chloride (mg/L)	123	433	57	613	607

Notes:

a) Potable water quality data based on SSCWD biannual monitoring in 2014 of Wells 5 and 8.
b) Sodium and chloride addition from normal M&I use was estimated to be 33 mg/L and 57 mg/L respectively for Ridgemark I wastewater distribution area. TDS addition from normal M&I use was estimated to be 151 mg/L. Based on results from *Technological and Economic Feasibility Study Alternatives to Limiting or Prohibiting Water Softeners per Section 116786 of the Health and Safety Code,* Bracewell Engineering (November 2007) for SSCWD water service area.
c) Actual 2014 WWTP weighted average influent quality based upon RM I influent.
d) Water softener contribution based upon 393 mg/liter hardness, 93% of households using softeners,

Table 2-4: Estimated Municipal Use Contributions for Salt Constituents and Comparison to Actual WWTP Influent When Using Lessalt Surface Water as the Potable Water Supply

Parameter	Potable Water Concentrations (1) Footnote (a)	Est. Water Softener Contribution Using Surface Water (2) Footnote (d)	Est. Normal M&I Use Contribution (3) Footnote (b)	Est. Wastewater Concentrations Using Surface Water (1)+(2)+(3)	Actual 2014 RM I Average Influent Footnote (c]
TDS (mg/L)	320	0	151	471	1,647
Sodium (mg/L)	66	0	33	99	407
Chloride (mg/L)	98	0	57	155	607

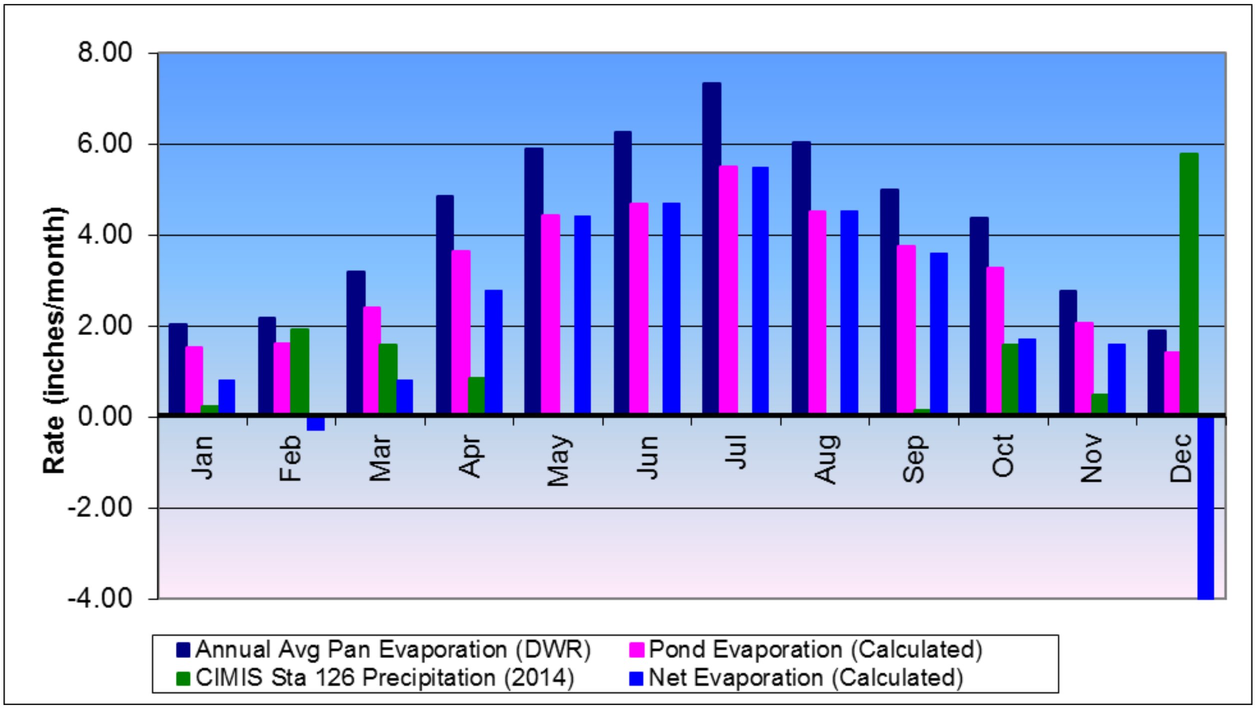
Notes:

a) Potable water quality data based on SSCWD annual monitoring in 2014 of LESSALT WTP.
b) Sodium and chloride addition from normal M&I use was estimated to be 33 mg/L and 57 mg/L respectively for Ridgemark I wastewater distribution area. TDS addition from normal M&I use was estimated to be 151 mg/L. Based on results from *Technological and Economic Feasibility Study Alternatives to Limiting or Prohibiting Water Softeners per Section 116786 of the Health and Safety Code,* Bracewell Engineering (November 2007) for SSCWD water service area.
c) Actual 2014 WWTP weighted average influent quality based upon RM I influent.
d) Water softener contribution based upon 0% of households using softeners,

2.1.3 Evaporation Effects through Wastewater Treatment

Evaporation is a process that increases salt concentrations of the wastewater effluent but it does not impact the salt load. The wastewater disposal system for RM I is a series of ponds that are open to the atmosphere and allow evaporation to occur, raising salinity levels through a concentrating effect. The effect of evaporation is dependent on climate. Historic pan evaporation rates, estimated pond evaporation rates, precipitation rates, and net evaporation are shown in Figure 2-1. Pond evaporation is assumed at 75% of the pan evaporation rates.

Figure 2-1: Evaporation and Precipitation Data



Sources: Pan Evaporation Data from DWR Bulletin 73-79 for the Hollister Costa Station 1962-1966
2014 Precipitation Data from CIMIS Station #126 at SBCWD Office in Hollister, CA

Table 2-3 summarizes the monthly TDS concentrations for the influent to and effluent from the wastewater treatment plant at RM I. Correlating influent and effluent TDS concentrations measured for a given month does not provide a meaningful comparison due to the variations in influent wastewater TDS and the hydraulic detention times of the treatment ponds.

Historically, evaporation was mistakenly thought to be a major contributor to the high salinity concentrations of the wastewater effluent. Since February 2005, RM I influent TDS has been measured using a composite sampler and TDS was general measured in 1,400 to 1,900 mg/l range for 2014. The variation in historic influent TDS levels compared to 2014 measurements by composite sampling is representative of the understanding that water softener regeneration occurs at night (grab samples during the day did not capture water softener discharges).

Table 2-3: 2014 Average Influent and Effluent TDS Concentrations

Month	RM I SBR Influent TDS (mg/L)	RM I SBR Effluent TDS (mg/L)
Jan-14	1500	1500
Feb-14	1600	1600
Mar-14	1600	1600
Apr-14	1670	1600
May-14	1700	1700
Jun-14	1700	1700
Jul-14	1900	1600
Aug-14	1700	1600
Sep-14	1700	1600
Oct-14	1700	1600
Nov-14	1400	1700
Dec-14	1600	1600
Average	**1647**	**1616**

The 2014 influent and effluent TDS data in Table 2-3 shows that with the new treatment plant evaporation is not a contributor to the effluent TDS. From an annual perspective, net evaporation from the percolation ponds was estimated to be 5.25 AF at RM I (*2014 Annual Engineering Technical Report*). The 2014 influent flow was 196 AF to RM I. In 2014, net evaporation is approximately 2.7% of total influent flow. The 2014 TDS average influent of 1647 mg/liter, as shown in Table 2-3, for a final disposal salinity of approximately 1616 mg/liter. This is a 31 mg/liter decrease of from the Ridgemark influent to the pond disposal effluent.

2.1.4 Summary of Salinity Contributions to RM I Final Effluent

TDS concentrations are high in the potable water supply for the service area – approximately 776 mg/l. As this water is utilized in the service area, salinity concentrations increase steadily through normal use and through the regeneration of water softeners. After use, the water is discharged to the sewer collection system. Influent wastewater to RM I has TDS concentrations between 1,400-1,900 mg/l. Evaporation through the treatment process does not increases in the TDS concentration of the wastewater discharged for percolation. However, evaporation is a relatively small element of the salinity concentration issue and does not increase salt mass load to the basin.

2.2 Salt Mass Balance

Salt concentrations from Table 1-2 in conjunction with 2014 average flows from RM I were used to estimate salinity mass loads. The existing groundwater salinity contributes to a baseline salt load in the wastewater effluent of about 206 tons per year which represents salt that passes through from potable water extraction, use and percolation. In 2014, typical M&I use added 40 tons of salt to the basin, while water softeners, added an additional 183 tons of salt to the basin each year. The total salt added to the basin from groundwater salinity, municipal and industrial use, and water softeners is 430 tons of salt in 2014. Evaporation at the treatment ponds did not show an increase to the final TDS concentration and does not increase the mass salt load to the basin.

Table 2-4: 2014 Annual Salt Mass Loads

	RM I
Annual Average Influent Flow (gpd)	**175,108**
Average Effluent TDS Concentration (mg/L)	**1616**
Total Annual Salt to Disposal Ponds (tons)	**430**
Annual Salt from Potable Groundwater[a] (tons)	**206**
Annual Salt Load from Normal M&I Use (tons)	**40**
Annual Salt Load from Water Softeners (tons)	**184**

Footnotes:

a) Salt associated with the groundwater supply is a pass through. Salt in groundwater are returned to groundwater basin.

Notes:

1) Effluent TDS
2) Mass Load = Daily Flow * Concentration * (days/year) * (L/day)/(gal/day) * (ton/mg)
3) 1 mg = 1.102 x 10^{-9} ton
4) 1 gal/day = 3.785 L/day
5) Potable water salt load based on 776 mg/L TDS contribution 2014
6) Normal M&I use salt load based on 151 mg/L TDS contribution

2.3 Groundwater Impacts

SSCWD has six monitoring wells located around the disposal ponds to monitor groundwater conditions. Details on groundwater monitoring well installation and evaluation of groundwater conditions are described in the *Groundwater Monitoring Well Installation Report* by Todd Engineers. A summary of the data collected from these wells in 2014 is included in Table 2-5. Groundwater wells 1, 4, and 5 were dry and were not able to be sampled. Monitoring wells 2 and 6 appear to be monitoring mostly background groundwater. Monitoring well 3 which is located next to Ridgemark II ponds 3 and 4 appears to be monitoring diluted wastewater. Since Ridgemark II has been decommissioned, Monitoring Well 3 may begin to change.

Table 2-5: 2014 Wastewater Monitoring Well (MW) Average Water Quality

	MW 1 (Pond 6)	MW 2 (RM I)	MW 3 (RM II)	MW 4 (Pond 6)	MW 5 (RM I)	MW 6 (RM II)
TDS (mg/L)	ND	643	1850	ND	ND	1325
Chloride (mg/L)	ND	165	758	ND	ND	543
Sodium (mg/L)	ND	91	470	ND	ND	208
pH	ND	7.43	7.37	ND	ND	7.36
Total Nitrogen (mg/L)	ND	7.9	3.3	ND	ND	3.3
Notes	Dry for all 4 sampling rounds	-	-	Dry for all 4 sampling rounds	Dry for all 4 sampling rounds	-

Notes: Average for 2014 quarterly data.

3 Salinity Reduction Measures

SSCWD is involved in a variety of programs and evaluations to reduce salt loading to the groundwater basin. These programs include water softening education activities, a water softening rebate program, evaluation of alternate water supply alternatives such as groundwater desalination and Central Valley Project (CVP) water treatment alternatives. Additionally, there are many regional efforts being conducted by the SSCWD, SBCWD, City of Hollister, and San Benito County that have a goal of reducing salinity throughout the entire groundwater basin. These cooperative efforts are critical towards developing efficient salt management solutions for all purveyors in the region.

3.1 Water Softeners

A major component of SSCWD's program is to reduce the amount of salts added through the use of water softeners in its service area. Sunnyslope, San Benito County Water District, and the City of Hollister have cooperated, through the Water Resources Association, to develop programs to enhance customer knowledge, and change customer behavior about water softeners. The program consists of a water softener rebate program, an education program, and legislation to currently ban timer based water softeners, and eventually ban all salt discharging water softeners.

Water Softener Rebate Program

Residential customers of SSCWD can participate in a water softener rebate program that is administered by the Water Resources Association of San Benito County (WRA). This program was modified in 2014 to provide rebates for water softeners that do not discharge to the sewer system and require a replaceable cartridge that utilizes offsite regeneration. This program offers a $250 rebate for replacement of self-regenerating water softeners with offsite regeneration water softeners and requires a minimum one year contract with an offsite regeneration service. Customers who demolished their water softeners entirely were given a $300 rebate. 36 SSCWD water customers participated in the water softener rebate program in 2014.

Water Softener Education Programs

SSCWD attempts to educate its customers on the impact of water softeners on water quality through its website and in the annual Drinking Water Quality Report. Educational literature provides information on how to operate water softeners to minimize salt loading. The WRA also promotes public education, distributes informational literature and take surveys on water softener use at local events such as the San Benito County Fair.

Water Softener Requirements

SSCWD has a requirement that all wastewater customers have either an "on demand" or "replaceable cartridge" water softener installed by 2005. However, SSCWD does not currently have an enforcement mechanism or inspection program. It is currently unknown if SSCWD customers with water softeners have switched to on-demand systems or replaceable cartridge systems.

Water Softener Ordinance

The Regional Water Quality Control Board recently took action to allow Sunnyslope County Water District, and other local agencies, to restrict the salinity discharge to the wastewater system from brine discharging water softeners. SSCWD will develop a water softener ordinance and a coordinated program with the City of Hollister and San Benito County Water District to limit the salinity discharge from water softeners. This water softener program will be coordinated with the introduction of higher quality potable water to water/wastewater customers.

3.2 LESSALT Water Treatment Plant & Future 2nd Water Treatment Plant

One salt management option is to provide higher quality water as a supply source. SSCWD, in a joint effort with the City of Hollister, and San Bento County Water District treats and delivers treated Central Valley Project (CVP) water from the San Felipe Project from the CVP to customers to lower hardness in the potable drinking water. CVP water has lower salinity levels than local groundwater and is a low hardness supply, which reduces the need for water softening. The higher quality supply reduces the need for water softening, which results in a reduction of salt to the groundwater basin. Historically, less than one third of SSCWD's customers received an intermittent supply of CVP water and none of the customers in the area served by RM I receive this treated surface water.

As part of the Hollister Urban Area Coordinated Water Supply and Treatment Plan, the Lessalt Water Treatment Plant has been upgraded and went into operation in December, 2014. This upgrade included a pump station and associated pipeline from the Lessalt WTP to the Ridgemark area and is now supplying SSCWD's Ridgemark area and wastewater customers with approximately 85% surface water. As part of the Hollister Urban Area Coordinated Water Supply and Treatment Plan, a second treatment plant called the West Hills Water Treatment Plant will be constructed with a capacity of 4.5 million gallons per day. The West Hills Water Treatment Plant has been designed and construction is anticipated to begin in June, 2015 and completion is anticipated in July, 2017. The combination of these two surface water treatment plants will increase the delivery of high quality drinking water to SSCWD and City of Hollister water customers and will result in reduced chlorides and sodium being discharged from the two agencies wastewater treatment plants.

Sunnyslope is beginning an extensive education and outreach program for all the residents of Ridgemark area to diminish the salinity discharge from water softeners. The resulting treated wastewater from Ridgemark I Wastewater Treatment Plant could meet all waste discharge requirements in 2016.

Table 3-1: LESSALT WTP Water Quality

	Average TDS (mg/l)	Sodium (mg/L)	Chloride (mg/L)	Average Hardness, $CaCO_3$ (mg/l)
Delivered Water Quality	260	52	75	100

3.3 Groundwater Desalination & Lime Softening

Groundwater treatment is a potential salt management solution in the distant future after 2024. Sunnyslope may pursue groundwater treatment to lower both hardness and salinity depending on water demands and the costs of expanding surface water use. Groundwater treatment is appealing from a long-term point of view as salt can be removed permanently from the San Benito County groundwater basin.

3.4 Hollister Urban Area Water and Wastewater Master Plan

In 2004, the City of Hollister, SBCWD, and San Benito County signed a Memorandum of Understanding (MOU) to develop the Hollister Urban Area Water and Wastewater Master Plan (HUAWWMP). In December 2007 the Board of SSCWD formally adopted the MOU Amendment, and formally joined the Governance Committee in 2009. The HUAWWMP master plan will ensure that stringent standards for wastewater management will be maintained to protect groundwater resources in the basin. The HUAWWMP study encompasses the SSCWD service area and will develop a comprehensive plan for water supply and wastewater treatment and disposal for the Hollister urban area. An update on HUAWWMP was completed in January 2010 with the publication of the implementation plan. The HUAWWMP master plan identifies programs and projects to achieve the stated objectives of having drinking water with less than 500 mg/l TDS and between 120 to 150 mg/l hardness. Targeted recycled water objectives would be to provide a reclaimed water supply with less than 500 mg/l TDS with a maximum of 700 TDS if such water quality objectives can be achieved at a reasonable cost. The development of the HUAWWMP commenced in November 2005 and is ongoing. In January 2010, the Hollister Urban Area Coordinated Water Supply and Treatment Plan were completed. In January 2012 the Programmatic EIR for the entire Hollister Urban Area Coordinated Water Supply and Treatment Plan was certified. The Hollister Urban Area Coordinated Water Supply and Treatment Plan was accepted by SSCWD, the City of Hollister, San Benito County Water District, and San Benito County.

Sunnyslope County Water District, the City of Hollister, and San Benito County Water District have executed a Water Supply and Treatment Agreement to implement the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan. The three major water supply and treatment components for the Coordinated Water Supply and Treatment Plan are to upgrade the Lessalt Surface Water Treatment Plant to 2.5 mgd, construct of a new 4.5 mgd West Hills Surface Water Treatment Plant, and build a North (San Benito) County Groundwater Bank to supply these two surface water treatment plants in time of drought.

The City of Hollister and Sunnyslope County Water District have both adopted increases in water rates to fund the water supply projects identified in the Water Supply and Treatment Agreement and the projects are underway.
In September 2013, San Benito County Water District executed a contract for the construction of the upgrade to Lessalt Surface Water Treatment Plant. The Lessalt Water Treatment Plant is now substantially complete and was put into service in December, 2014 including a pipeline and pump station to deliver treated surface water to the SSCWD wastewater customers. The final design and environmental review for the West Hills Water Treatment Plant are complete and environmental permitting is underway. The West Hills Water Treatment Plant is scheduled to be under construction in June, 2015 and complete by July, 2017.

3.5 Water Resources Association Groundwater Management Plan

WRA has developed a comprehensive Groundwater Management Plan (GMP) Update that addresses a number of groundwater quality and quantity issues. The GMP Update integrates salinity management into the broader basin plan and identifies a number of recommended programs for addressing salinity on a region wide basis. These programs are summarized in Table 3-2.

Table 3-2: Salinity Management Programs in the Groundwater Management Plan

Program	Description
Salinity Education Program	Salinity education of both agricultural and M&I users.
Water Softener Ordinance	Public education on the impact of water softeners, retrofit ordinance and water softener conversion rebate programs.
Industrial Salt Control	Cooperative reduction efforts with food processors and other industrial dischargers whose operations contribute elevated salt levels
Surface Water Importation and Treatment	Construction of surface water treatment delivery and storage facilities to supply a total of 6 to 9 mgd in a phased program.
Groundwater Treatment and Concentrate Disposal	Construction of demineralization facilities could reduce salt loads up to 2,270 tons per year for the basin. Concentrate disposal options are considered

SSCWD, SBCWD, City of Hollister, and San Benito County are continuing to work toward implementation of these programs and projects. In 2010, the HUAWWMP described in Section 3.4 further evaluated reclaimed wastewater and interim locations for utilizing reclaimed wastewater from the City of Hollister's expanded wastewater treatment plant. A field demonstration project to utilize recycled wastewater on a variety of projects was performed in 2010. The field demonstration project was very successful. SBCWD and the City of Hollister continue to develop future locations to use recycled water for farming and municipal uses.

The WRA also initiated development of a water softener ordinance that has been adopted by the City of Hollister and is planned for adoption by SSCWD in early 2015. In 2012 the Regional Water Quality Control Board granted SSCWD and other local agencies the authority to regulated salinity discharge into its sewerage system. Continued implementation of these salinity control efforts is envisioned in 2015 and beyond.

3.6 Summary of Salt Reduction Options

The salt reduction options available to SSCWD include education programs, water softener ordinances, and potable water supply improvements. Currently, the most immediate method is reduce wastewater salinity is to promote the reduction and/or elimination of use of water softeners in the RM I service area. Elimination of water softener use or replacement of brine discharging water softeners with cartridge type softeners which use of off-site softener regeneration services has the potential of removing 700-800 mg/l TDS if all water softeners were serviced in this manner.

As discussed in Section 3.4, The Lessalt Water Treatment Plant is now substantially complete and was put into service in December, 2014 including a pipeline and pump station to deliver treated surface water to the Sunnyslope wastewater customers. This project eliminates the need for water softeners which discharge salinity into the wastewater system. In 2017 the West Hills Water Treatment Plant is scheduled to be complete, which will increases the surface water delivered to the Hollister Urban Area further reducing the need for water softeners in the City of Hollister and Sunnyslope County Water District's service areas. In conjunction with the additional surface water treatment facilities, an expanded education program will be undertaken to convince Ridgemark customers to reduce and/or eliminate the use of salt discharging water softeners.

4 Next Steps

Sunnyslope County Water District intends to begin meeting the requirements for TDS, sodium, and chloride in 2016 by educating its wastewater customers about the improved water quality and reducing and or eliminating the use of brine discharging water softener use. SSCWD has begun a targeted effort of its wastewater customers to inform them of the improved water quality they began receiving in December, 2014 and to convince customers to quit adding salt to their water softeners or to bypass their water softeners. Efforts to encourage the permanent removal softeners or replacement with cartridge type softeners that are regenerated off site will also continue.

SSCWD intends to continue efforts in partnership with the City of Hollister and San Benito County Water District to increase the use of surface water to reduce the need for salt discharging water softeners and to increase public outreach efforts to educate customers and reduce and/or eliminate the use of water softeners in the Hollister Urban Area.

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