
RECOMMENDED PROJECT SUMMARY

7.1 INTRODUCTION

As described in Section 6, an extensive alternatives analysis was completed to identify a recommended project that meets project objectives including compliance with the State-mandated Santa Clara River Chloride Total Maximum Daily Load (Chloride TMDL). This process resulted in identification of a recommended project, which consists of Alternative 4 and a backup Alternative 2. The purposes of this section are to describe the recommended project, including an implementation schedule and costs, and to describe methods of financing, including use of State Revolving Fund (SRF) loans.

Section 7 is organized into the following major sections:

- Summary of the recommended project
- Revenue program and rate impacts

7.2 DESCRIPTION OF RECOMMENDED PROJECT

7.2.1 Alternative 4 – Phased AWRM

Alternative 4 has two phases. Based on predictions of future water supply chloride levels, Phase I elements should be sufficient to meet a chloride limit of 117 mg/L at Reach 4B of the Santa Clara River (SCR). Phase II represents a formal backup plan in case Phase I facilities cannot consistently provide water quality in the SCR that complies with the modified chloride limits. The specific conditions that would constitute lack of compliance and trigger Phase II are under negotiation with stakeholders and the Regional Water Quality Control Board-Los Angeles (RWQCB-LA). To minimize the time to implement Phase II if Phase II is ever triggered, the SCVSD would complete certain Phase II studies and design tasks concurrent with design of Phase I. This alternative requires RWQCB-LA approval to be implemented.

Alternative 4 consists of the following components, which are described below and depicted on Figure 7-1.

Phase I

- Ultraviolet light (UV) disinfection facilities at the Valencia Water Reclamation Plant (VWRP) and Saugus Water Reclamation Plant (SWRP)
- Supplemental water system

- Salt management facilities in Ventura County

Phase II

- Microfiltration/reverse osmosis (MF/RO) facilities at VWRP
- Second-pass RO facilities at VWRP
- Brine disposal facilities via deep well injection (DWI)
- RO product water conveyance system to Ventura County

7.2.1.1 Project Description – Phase I

UV Disinfection Facilities

Currently, disinfection at the VWRP and SWRP is accomplished by chlorination, which adds chloride to the effluent of both water reclamation plants (WRPs). As part of Phase I of Alternative 4, the existing chlorination system at the VWRP and SWRP would be replaced with UV disinfection facilities that would minimize the addition of chloride during wastewater (sewage) treatment and produce effluent with improved water quality.

The UV disinfection facilities would be constructed within the boundaries of the VWRP and SWRP. At the VWRP, UV disinfection facilities would be located north of the chlorine contact tanks adjacent to the existing disinfection systems (Figure 7-2). At the SWRP, UV disinfection facilities would be located on top of the existing chlorine contact tanks (Figure 7-3). Structural modifications of the chlorine contact tanks would be required to support the UV disinfection facilities. During design, an alternative location west of Aeration Tank No. 4 would be evaluated.

The UV disinfection facilities would include construction of UV reactors (concrete channels) containing lamps and appurtenant electrical, mechanical, and control systems. Design criteria for the UV disinfection facilities are summarized in Table 7-1.

Table 7-1. Design Criteria for the UV Disinfection Facilities

Criteria	VWRP	SWRP
Average Flow	21.6 mgd	6.5 mgd
UV Dose ^a	50 mJ/cm ²	50 mJ/cm ²
Standby Capacity	Yes	Yes

^a Required dose to meet NPDES coliform requirements is being evaluated through ongoing research.

Supplemental Water System

The supplemental water system would consist of a new 24-inch diameter pipeline less than 1 mile long and two or three existing or new groundwater wells. The low chloride water provided by these wells would be added to the VWRP discharge when needed to meet the chloride limit at Reach 4B of the SCR during drought conditions. To replace this water and ensure no net loss of water supply to the Santa Clarita Valley (SCV), additional water would be imported by the Castaic Lake Water Agency (CLWA) on the Santa Clarita Valley Sanitation District's (SCVSD's) behalf. This replacement water would be obtained from the Buena Vista-Rosedale (BV-R) project in the Central Valley of California under existing agreements between CLWA and the BV-R operator and would be conveyed using existing infrastructure. It is estimated that, initially, approximately 4,300 acre-feet per year (afy) (3.8 mgd) of supplemental water would be

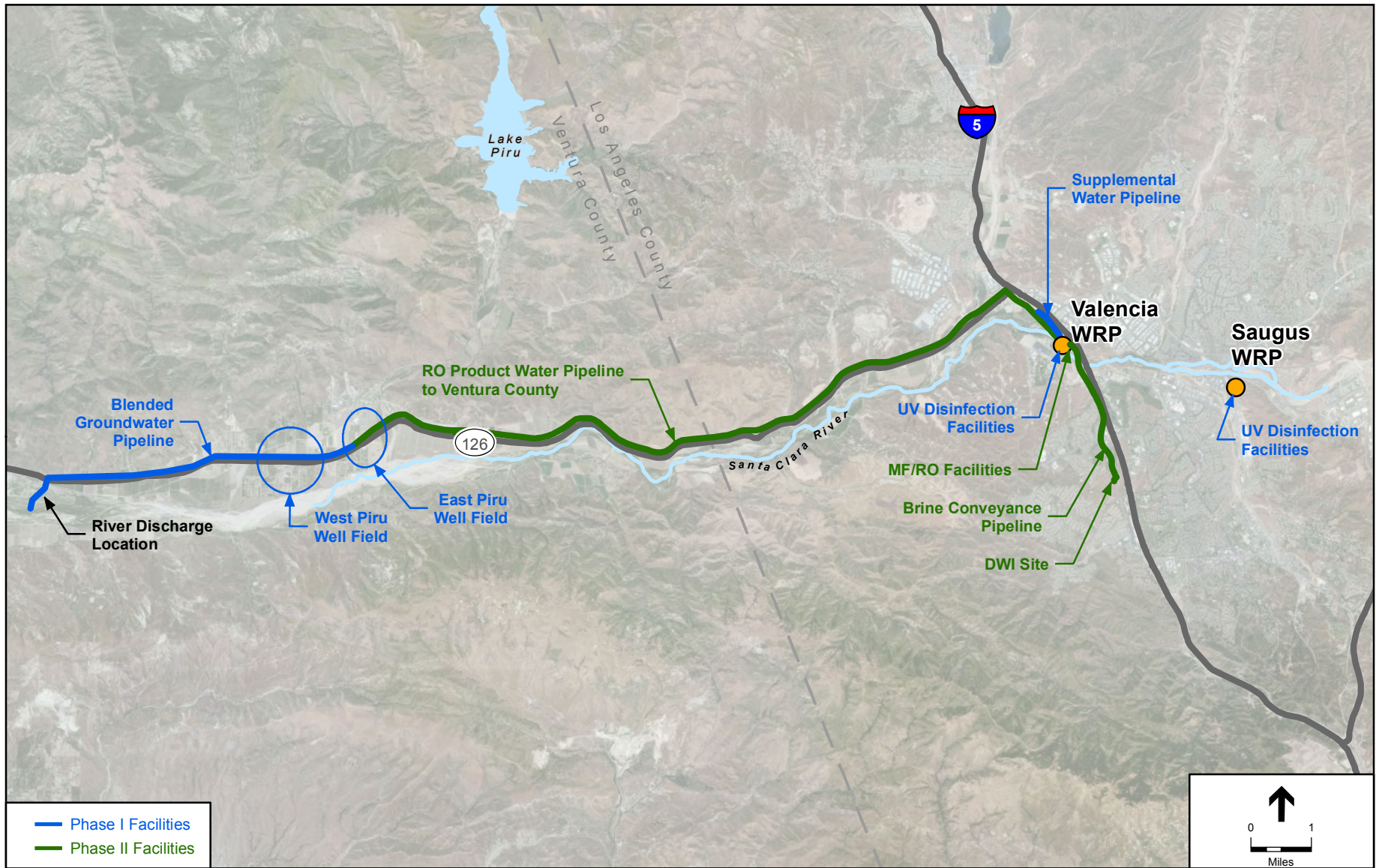


Figure 7-1
Phased AWRM Facilities



Figure 7-2
Valencia WRP Improvements



needed during drought years and 1,500 afy (1.3 mgd) would be needed on average. When the VWRP and SWRP reach design flow, the supplemental water need would increase to 5,600 afy (5.0 mgd) and 1,900 afy (1.7 mgd) during peak and average conditions, respectively.

Salt Management Facilities

Salt management facilities would be constructed to export salt from the Piru Subbasin located in Ventura County near the Los Angeles-Ventura County line. These facilities would consist of two well fields, at least one pump station at each well field, and a pipeline to connect the well fields and discharge the blended water to a point in the SCR with perennial flow (near the Fillmore Fish Hatchery). One well field would be located in the eastern portion of the Piru Subbasin (just west of Piru Creek) and consist of approximately five wells. The other well field would be located in the western portion of the Piru Subbasin and consist of approximately six wells. These facilities would have the capability to extract up to 22,000 gallons per minute (gpm) (36,000 acre-feet per year (afy) or 32 mgd). However, the western field would only be operated as needed to produce a blend having a chloride level of 95 milligrams per liter (mg/L). In order to operate the East Piru well field at maximum capacity (10,000 gpm or 14 mgd), the West Piru well field would need to operate at 5,500 gpm or 8 mgd on average to produce blend water with 95 mg/L of chloride. Furthermore, well field operation may be constrained to limit impacts to neighboring groundwater pumpers and biological resources in the SCR. In addition, if the system can meet its objectives operating at less than full capacity, the average amount pumped would be less. The pipeline would be 36 inches in diameter and approximately 6 miles long. Negotiations with Ventura County stakeholders on the scope of these facilities are ongoing in an effort to reduce the cost of these facilities. If the scope of these facilities changes in the future, the SCVSD will conduct appropriate environmental review as needed to comply with CEQA. The salt management facilities are shown conceptually on Figure 7-1.

Support for Municipal Reuse of Recycled Water

CLWA provides recycled water to the Santa Clarita Valley (SCV). In their most recent Recycled Water Master Plan drafted in 2002, CLWA projected an increasing need for recycled water that will reach 17,400 afy by the year 2030. In 2010, CLWA along with three SCV retail water purveyors adopted an Urban Water Management Plan that refined the recycled water needs to 22,800 afy by the year 2050. Using recycled water reduces the use of potable water and eases concerns of a water shortage during drought. The California Legislature declared its intent that the state undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the state. Consistent with this policy and the third project objective in Section 1.4, the SCVSD would make recycled water available in quantities needed to support CLWA's Master Plan. Currently, the VWRP and SWRP produce tertiary-treated water that has suitable quality to meet CLWA needs. Depending on how quickly demand for recycled water increases relative to growth in wastewater flow due to population growth, discharge of treated wastewater from the WRPs to the SCR could decrease. However, the combined WRP discharges would not be lower than the minimum flow of 13 mgd identified to sustain the river's biological resources. The basis for these minimum discharges is summarized in Section 11 and described in greater detail in Appendix 6-A.

7.2.1.2 Project Description – Phase II

MF/RO Facilities

MF/RO facilities would be constructed at the VWRP to remove chloride and would be sized such that the blend of the RO product water and non-RO treated water would meet the chloride limit under worst case conditions (drought). The MF/RO facility would be constructed in the northern part of the VWRP across from the chlorine contact tanks in the area previously allocated for Stage VI expansion (see Figure 7-2). During design, an alternative location at the south end of the VWRP would be evaluated. This alternative area is disturbed but not in use. Even though this location would require additional pumping, substantial yard piping, and extension of access roads and utilities, it would preserve the entire Stage VI expansion area, which is likely to make the future Stage VI construction less costly.

Under worst-case conditions, approximately 2.6 mgd of VWRP tertiary-treated water would be diverted to the MF/RO facilities, which would produce 2.0 mgd of RO product water, 0.2 mgd of MF backwash, and 0.4 mgd of brine. The RO product water would be blended with the remaining VWRP tertiary-treated water to meet the Chloride TMDL. MF backwash would be returned to the VWRP for treatment. Brine would be minimized (concentrated) by use of second-pass RO facilities and then disposed as described below.

MF membranes are typically housed in 8- to 10-foot long, 12-inch diameter plastic tubes that are arranged vertically or horizontally. The RO membranes are mounted in smaller tubes that are bundled in stacks. MF and RO tubes along with supporting pumps and other ancillary equipment would be constructed on a concrete slab under a metal canopy or within a block wall building. To provide the routine chemical cleanings required by MF and RO membranes, a small chemical storage station consisting of storage tanks and injection pumps would be constructed near the MF/RO facilities. A decarbonator for pH adjustment would also be constructed near the MF/RO facilities. Design criteria for the MF/RO facilities are shown in Table 7-2.

Table 7-2. Design Criteria for Alternative 4 MF/RO Facilities

Unit Process	Design Criteria	MF	RO
Facility Flows	Feed Water Source	Tertiary Effluent	MF
	Feed Water Recovery	92%	85%
	Feed Water Flow	2.6 mgd	2.4 mgd
	Product Water Flow	2.4 mgd	2.0 mgd
	Reject (Brine) Flow	0.2 mgd	0.4 mgd

Second-Pass RO Facilities

Brine produced by the primary MF/RO system would be treated by a second-pass RO system located adjacent to the primary MF/RO facilities (see Figure 7-2). The second-pass RO system would treat the 0.4 mgd of brine from the primary MF/RO facilities and produce 0.2 mgd of RO product water and 0.2 mgd of brine. The product water from second-pass RO system would be combined with the product water from the primary MF/RO system and blended with tertiary-treated wastewater to meet discharge limits. Second-pass RO membranes would be similar to the membranes used in the primary RO system. Design criteria for the second-pass RO facilities are shown in Table 7-3.

Table 7-3. Design Criteria for Alternative 4 Second-Pass RO Facilities

Unit Process	Design Criteria	Second-Pass RO
Facility Flows	Feed Water Source	Brine from Primary RO
	Feed Water Recovery	50%
	Feed Water Flow	0.4 mgd
	Product Water Flow	0.2 mgd
	Reject (Brine) Flow	0.2 mgd

Brine Disposal via DWI

The 0.2 mgd of brine produced as a byproduct of the RO process would be conveyed to DWI Site A via a pump station located at the VWRP and a 6-inch diameter, 2.5-mile long force main. Three injection wells would be constructed at Site A along with appurtenant facilities such as injection pumps, chemicals storage tanks, and electrical switchgear. The locations of DWI Site A and the pipeline from VWRP to the site are shown on Figure 7-4. If there is a need to use Site B as a second or alternate injection site, the SCVSD would conduct appropriate environmental review as needed to comply with CEQA.

DWI provides a safe and proven way to dispose of brine. This technology has been successfully used for decades by the oil and natural gas industry throughout California and the U.S. There are over 47,000 injection wells in California alone. The entire design and operation is closely regulated by the U.S. Environmental Protection Agency under its Underground Injection Control Program to ensure that potential drinking water sources are not affected. Injection wells installed by the SCVSD would be permitted as Class I non-hazardous injection wells. These wells would inject brine into a geologic layer over 1-mile deep that already contains water that is too salty to drink and is isolated from potential drinking water sources by low-permeability geologic layers. A test well is needed to verify the suitability of the subsurface properties.

RO Product Water Conveyance System to Ventura County

The RO product water conveyance system to Ventura County may be needed to supply low-chloride water for users of river water if SCR chloride levels are expected to exceed 117 mg/L during drought after implementation of MF/RO facilities. The conveyance system would consist of a 24-inch diameter, 12-mile pipeline from the VWRP to the eastern portion of the Piru Subbasin. The preliminary alignment is shown on Figure 7-1. This system may be eliminated if levels above 117 mg/L are not expected or an alternative source of low chloride water is identified.

7.2.2 Implementation Schedule

To implement the project in as short a time as practicable, the project would be divided into a number of construction projects all designed and later constructed concurrently. This division would include concurrent construction of UV disinfection facilities, supplemental water facilities, and salt management facilities. Due to the magnitude of the recommended project, none of the alternatives can be completed by the current Chloride TMDL deadline of May 4, 2015. The SCVSD will request that the RWQCB-LA extend the Chloride TMDL compliance deadline to July 2019 to provide the needed time for permitting, design, construction, and start-up. The implementation schedule for Phase I of Alternative 4 is shown on Figure 7-5 and includes the extended compliance deadline that will be requested by the SCVSD. Although not expected to be needed, Phase II is also shown on Figure 7-5 with an assumed decision to proceed in the middle of 2020 (about one year after commencing Phase I operations). While concluding negotiations

regarding the Phased AWRM, it is recommended that efforts to obtain a permit from the EPA and install a test well for brine injection be started to allow timely implementation of the backup alternative in case the necessary regulatory approvals for the Phased AWRM are not obtained. The test well effort is a lengthy process and is needed to verify the geologic suitability for injection.

7.2.3 Project Cost

The capital, operations and maintenance (O&M), and equivalent annual costs for Alternative 4 are presented in Table 7-4. Although the project costs would be incurred over multiple years in the future, all amounts shown in Table 7-4 are in 2012 dollars and include design, construction, and project management. The agency responsible for the O&M costs related to the salt management facilities has not been determined. There is also a potential to share capital, operations and maintenance costs for supplemental water facilities between the SCVSD and SCV water suppliers. However, no cost allocation has been agreed to, and all costs presented herein assume SCVSD pays the entire cost. In Table 7-4, such costs are assumed to be borne by the SCVSD.

Table 7-4. Equivalent Annual Cost of Alternative 4^{a,b}

Project Component	Phase I Cost	Phases I & II Cost
UV Disinfection Facilities	\$30,000,000	\$30,000,000
Salt Management Facilities	\$73,000,000	\$73,000,000
Supplemental Water System	\$6,000,000	\$6,000,000
MF/RO Facilities	-	\$32,000,000
Second-Pass RO Facilities	-	\$1,000,000
RO Product Water Conveyance System to Ventura County ^c	-	\$53,000,000
Brine Disposal	-	\$29,000,000
Total Capital Cost	\$109,000,000	\$225,000,000
Annualized Capital Cost ^d	\$7,200,000	\$14,800,000
Annual O&M Cost	\$3,800,000	\$5,500,000
Equivalent Annual Cost (20 Years)	\$11,000,000	\$20,400,000

^a 2012 dollars.

^b All costs include design, construction, and project management.

^c This component would not be needed if other facilities could maintain chloride levels below 117 mg/L.

^d Amortized at the projected SRF interest rate of 2.8 percent for 20 years.

7.2.4 Backup Alternative 2 – MF/RO With Brine Disposal via DWI

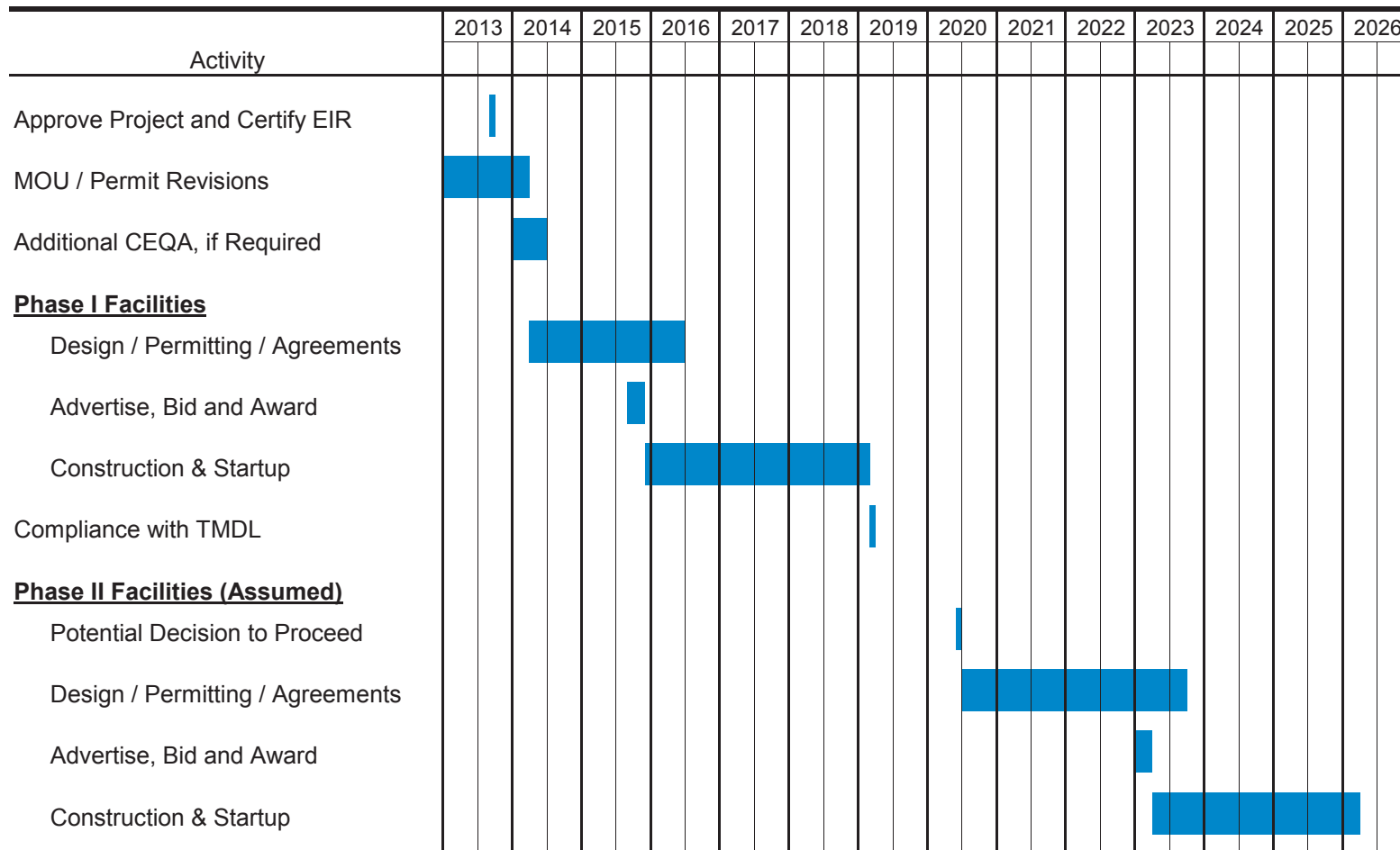
7.2.4.1 Project Description

Alternative 2 would be the backup alternative if the RWQCB-LA does not modify the Chloride TMDL to allow implementation of Alternative 4 or if the final negotiated Phase II triggers are unacceptable to the SCVSD. Alternative 2 consists of the following components, which are described below:

- UV disinfection facilities at VWRP and SWRP
- MF/RO facilities at VWRP
- Second-pass RO facilities at VWRP



Figure 7-4
Deep Well Injection Facilities



- RO product water conveyance system to SWRP
- Brine disposal system via DWI

UV Disinfection Facilities

UV disinfection facilities would be the same as described in Section 7.2.1.1.

MF/RO Facilities

The MF/RO facilities would be the same as those described in Section 7.2.1.2 except that larger facilities would be needed to comply with a 100 mg/L chloride limit. Under worst-case conditions, approximately 7.1 mgd of VWRP tertiary-treated water would be diverted to the MF/RO facilities, which would produce 5.6 mgd of RO product water, 0.5 mgd of MF backwash, and 1.0 mgd of brine. Approximately 1.8 mgd of RO product water would be conveyed to the SWRP for blending with SWRP tertiary-treated water to comply with the Chloride TMDL. The rest of the RO product water would be blended with the remaining VWRP tertiary-treated water to comply with the Chloride TMDL. MF backwash would be returned to the VWRP for treatment. Brine would be minimized (concentrated) by use of second-pass RO facilities and then disposed via DWI as described below. Design criteria for the MF/RO facilities are shown in Table 7-5.

Table 7-5. Design Criteria for Alternative 2 MF/RO Facilities

Unit Process	Design Criteria	MF	RO
Facility Flows	Feed Water Source	Tertiary Effluent	MF
	Feed Water Recovery	92%	85%
	Feed Water Flow	7.1 mgd	6.6 mgd
	Product Water Flow	6.6 mgd	5.6 mgd
	Reject (Brine) Flow	0.5 mgd	1.0 mgd

Second-Pass RO Facilities

The second-pass RO facilities would be the same as described in Section 7.2.1.2 except that larger facilities would be needed to comply with a 100 mg/L chloride limit. The second-pass RO system would treat 1.0 mgd of brine from the primary MF/RO facilities and produce 0.5 mgd of RO product water and 0.5 mgd of brine. Design criteria for the second-pass RO facilities are shown in Table 7-6.

Table 7-6. Design Criteria for Alternative 2 Second-Pass RO Facilities

Unit Process	Design Criteria	Second-Pass RO
Facility Flows	Feed Water Source	Brine from Primary RO
	Feed Water Recovery	50%
	Feed Water Flow	1.0 mgd
	Product Water Flow	0.5 mgd
	Reject (Brine) Flow	0.5 mgd

RO Product Water Conveyance System to SWRP

As mentioned above in the discussion of MF/RO facilities, approximately 1.8 mgd of the RO product water would be conveyed to the SWRP for blending with SWRP tertiary-treated water to comply with the Chloride TMDL. Conveyance would be accomplished via construction of a pump station at the VWRP and a 14-inch diameter, 3.5-mile long pipeline. The RO product

water pipeline would be constructed within public right-of-way to the extent practicable. The preliminary alignment is shown on Figure 7-6. The SCVSD has requested that the RWQCB-LA modify discharge requirements in a way that would eliminate the need for the RO product water conveyance system. At the time of this writing, no decision had been made by the RWQCB-LA on this request.

Brine Disposal via DWI

The average brine flow of 0.5 mgd would require five injection wells and an 8-inch diameter conveyance pipeline from the VWRP to the DWI site. The rest of the DWI system would be the same as described in Section 7.2.1.2. The location of DWI Site A is shown on Figure 7-4 along with the pipeline from VWRP to the site. If there is a need to use Site B as a second or alternate injection site, the SCVSD would conduct appropriate environmental review as needed to comply with CEQA.

Support for Municipal Reuse of Recycled Water

Support for municipal reuse would be the same as described in Section 7.2.1.1.

7.2.4.2 Implementation Schedule

To implement the project in as short a time as practicable, the project would be divided into a number of construction projects all designed and later constructed concurrently. This division would include concurrent construction of UV disinfection facilities, MF/RO facilities, the RO product water pipeline, and the deep well injection site. Due to the magnitude of the recommended project, none of the alternatives can be completed by the current Chloride TMDL deadline of May 4, 2015. The SCVSD will request that the RWQCB-LA extend the Chloride TMDL compliance deadline to July 2019 to provide the needed time for permitting, design, construction, and start-up. The implementation schedule for Alternative 2 is shown on Figure 7-7 and includes the extended compliance deadline that will be requested by the SCVSD.

7.2.4.3 Project Cost

The capital, O&M, and equivalent annual costs for Alternative 2 are presented in Table 7-7. Although the project costs would be incurred over multiple years in the future, all amounts shown in Table 7-7 are in 2012 dollars and include design, construction, and project management.

Table 7-7. Equivalent Annual Cost of Alternative 2^{a,b}

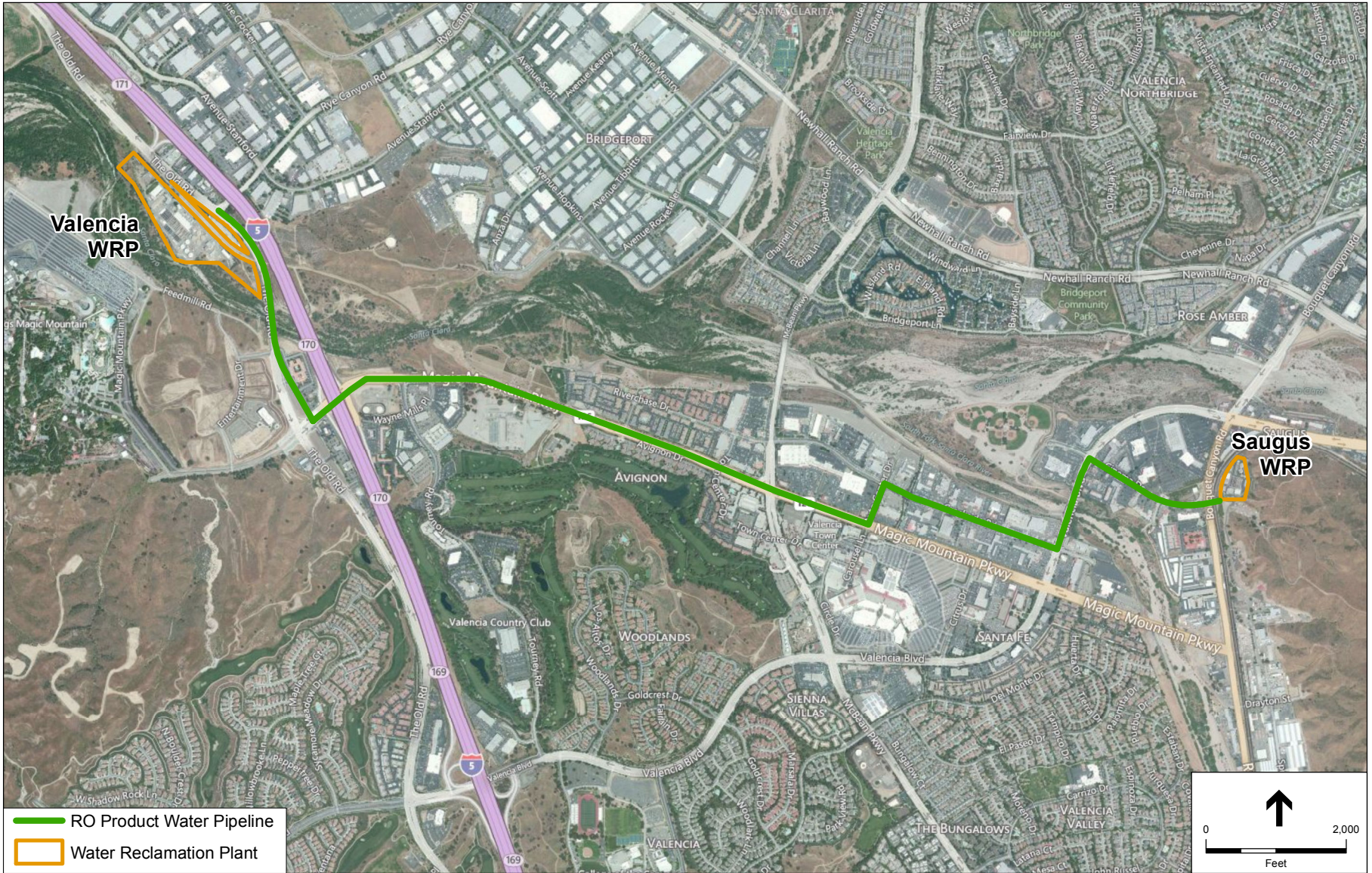
Project Component	Cost
UV Disinfection Facilities	\$30,000,000
MF/RO Facilities	\$45,000,000
Second-Pass RO Facilities	\$2,000,000
RO Product Water Conveyance System to SWRP ^c	\$11,000,000
Brine Disposal	\$42,000,000
Total Capital Cost	\$130,000,000
Annualized Capital Cost ^d	\$8,500,000
Annual O&M Cost	\$4,200,000
Equivalent Annual Cost (20 Years)	\$12,700,000

^a 2012 dollars.

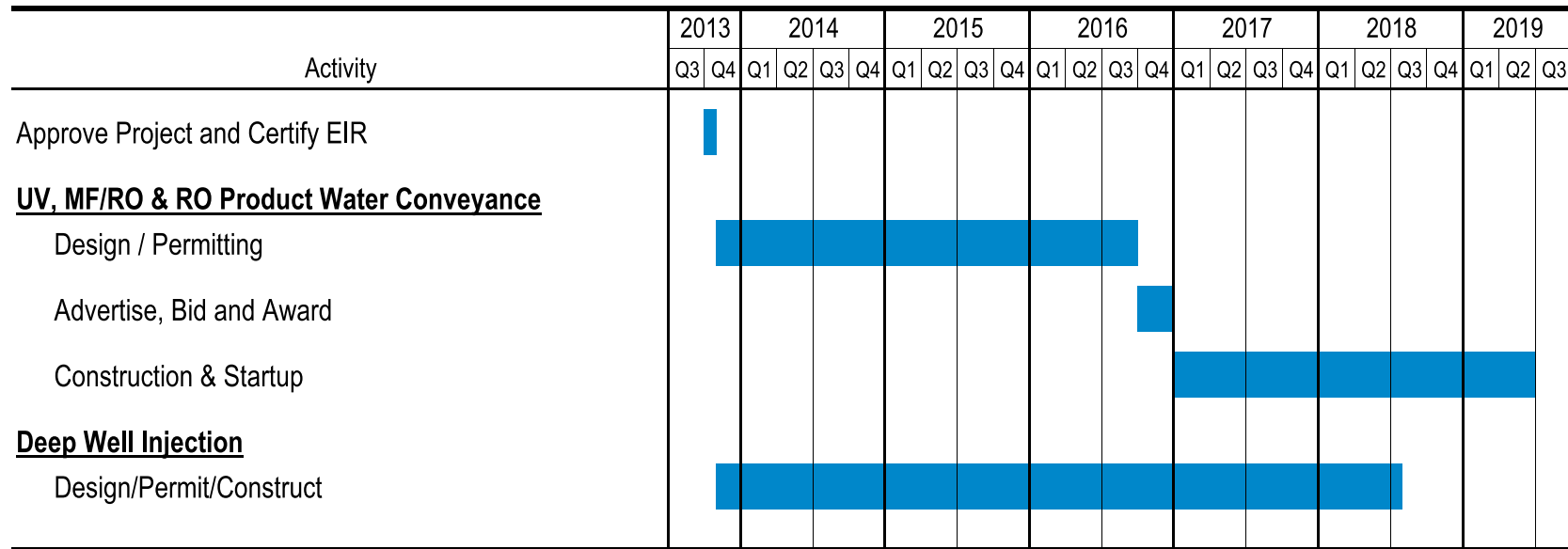
^b All costs include design, construction, and project management.

^c This component may be eliminated if the RWQCB-LA modifies discharge requirements as requested by the SCVSD.

^d Amortized at the projected SRF interest rate of 2.8 percent for 20 years.



Santa Clarita Valley Sanitation District Chloride Compliance Facilities Plan and EIR
Figure 7-6
 RO Product Water Pipeline



7.3 ENVIRONMENTAL IMPACTS

The environmental impacts associated with the recommended project are described from Section 8 onward within this document.

7.4 UPGRADE AND EXPANSION COSTS

For funding purposes, the capital costs of a project are split into two subcategories: upgrade and expansion. Upgrade portions of the project benefit existing users by providing a higher level of treatment without providing additional capacity. Expansion portions of the project benefit new users by providing capacity to accommodate their wastewater discharge. Upgrade costs are paid by existing users in their annual service charge while expansion costs are paid by new users via a one-time connection fee. All costs for the recommended project are upgrade costs since all new facilities will be sized for the existing capacities of the VWRP and SWRP.

7.5 REVENUE PROGRAM

A major consideration in proposing any capital construction program is the cost and impact it would have on both existing and future users. The Sanitation Districts of Los Angeles County (Sanitation Districts) consist of 23 member districts, one of which is the SCVSD. The Sanitation Districts have developed a comprehensive revenue program to address these issues. In general, this means a program, including appropriate ordinances, to allocate costs and collect revenues as needed from the users of the wastewater management system to ensure sufficient revenues for the construction and subsequent operation of facilities. Specifically, a revenue program should demonstrate that the proposed system of user charges is fair, equitable, and based on both the flow and the strength of the users' wastewater discharge. The term strength refers to the amount of organic matter in the wastewater that will be removed at the wastewater treatment plant. A revenue program should also provide that, following completion of construction, there would be a sufficient revenue stream to continue to operate and maintain each facility throughout its useful life. Lastly, a revenue program should provide for the repayment of any long-term financing used to fund the construction of facilities.

7.5.1 Service Charge Program

The underlying premise of the Service Charge Program is one of fairness and equity. Every user of the sewerage system, whether they are an existing long-time discharger or a new user connecting to the system, should pay the cost incurred on their behalf for treating their wastewater. No user should be obligated to subsidize another user for either the capital facilities necessary to treat their wastewater or the cost of operating those facilities. With that premise, the Service Charge Program was developed from two basic perspectives: charge structure and method of collection. During development of the Service Charge Program, the key factors stressed by the public were a low administrative cost, a low delinquency factor, and equity for all users. With respect to equity, a point repeatedly voiced by the public was that existing users of the sewerage system should not be required to subsidize new growth. From this latter point came the development of the Connection Fee Program (see Section 7.5.2).

The Service Charge Program, as developed, includes the following provisions:

- Existing users are charged for operations, maintenance, and upgrade capital costs
- Charges are based on the estimated usage of the sewerage system (i.e., based on user category with estimated loadings per unit of usage and facility size)
- Charges are based on a combination of flow rate and strength. Both factors affect the chemicals and energy required to treat the wastewater
- Dischargers may receive a rebate based on demonstrated water usage below the estimated loading of their particular user category
- Charges are shown as specific liens on property tax bills which provides a low-cost method of collection with virtually no delinquency

Rates are expressed on a per sewage unit basis where one sewage unit represents the sewage from a typical single-family home. The adopted annual service charge rates per sewage unit (equivalent single-family home) are provided in Table 7-8.

Table 7-8. SCVSD Annual Service Charge Rates per Sewage Unit

Fiscal Year	Annual Service Charge
2011-12	\$215
2012-13	\$231
2013-14	\$247

7.5.2 Connection Fee Program

An underlying premise of the Service Charge Program is that existing users would not subsidize new growth. Because expansion-related capital facilities are only undertaken for the benefit of new users, that cost should be borne solely by the new users. This is accomplished through the Connection Fee Program wherein new users and existing users who significantly increase the flow rate or strength of their wastewater discharge are charged a fee based on the incremental cost to expand treatment facilities to accommodate their discharge. The connection fees are collected and deposited into a restricted fund designated as the Capital Improvement Fund. As expansion-related projects are constructed, the necessary funds are withdrawn from this account and used to cover the cost of expansion. This program includes the following provisions:

- New users, or existing users who significantly increase the flow rate or strength of their discharge, are charged a one-time fee for the incremental cost of expanding capital facilities to accommodate the new or significantly increased discharge. Examples of capital facilities include new concrete tanks, piping and pumps.
- Charges are based on the anticipated usage of the system (i.e., based on user category and facility size).
- Charges are based on a combination of flow rate and strength, which both affect the chemicals and energy required to treat the wastewater.

Similar to service charges, connection fees are expressed on a per capacity unit basis where one capacity unit represents the sewage from a typical single-family home. The adopted connection fee rates per capacity unit (equivalent single-family home) are provided in Table 7-9.

Table 7-9. SCVSD Connection Fee Rates per Capacity Unit

Fiscal Year	Connection Fee
2011-12	\$4,400
2012-13	\$5,000
2013-14	\$5,500

7.5.3 Additional Sources of Wastewater Treatment Revenue

In addition to the Service Charge and Connection Fee Programs, the SCVSD relies on five revenue sources to support wastewater management services in the SCV.

Ad Valorem Taxes

The SCVSD receives a pro rata share of the 1-percent ad valorem property tax levy pursuant to Proposition 13. The pro rata share is based on the percentage of the total tax levy the SCVSD received prior to the implementation of Proposition 13 in fiscal year 1978–79. All ad valorem taxes are deposited into the SCVSD’s operating fund and are used to help offset bonded indebtedness, operation expenses, and capital expenses. The average annual ad valorem taxes collected in the SCVSD equates to approximately \$60 per single-family home.

Contracts

The SCVSD generates revenue through disposal contracts to certain facilities located outside of the SCVSD boundaries. The SCVSD’s largest contract is with Peter Pitchess Honor Rancho, a jail complex located just outside the SCVSD boundaries. The contracts are structured to recover the total cost of services rendered to these facilities.

Industrial Waste Surcharge

In 1972, the Sanitation Districts instituted a surcharge program for industrial dischargers. It requires industrial dischargers to pay a fair share of O&M and upgrade capital costs according to their usage of the sewerage system. Usage is measured in terms of flow and two parameters related to strength – chemical oxygen demand (COD) and suspended solids (SS). In addition, dischargers with excessive peak flows must pay a supplemental peak flow charge. The method for determining the surcharge rates is similar to that for determining the service charge rate.

Investment Income

Investment income refers to interest received during the fiscal year. This source of revenue is variable and depends on the cash balance maintained by the SCVSD as well as the prevailing interest rates. The SCVSD’s funds are invested in various instruments in conformance with the Investment Policy that is adopted by the SCVSD Board of Directors on an annual basis.

Annexation Fees

Annexation fees are paid by each property owner annexing territory into a sanitation district. The annexation fee program is in conformance with Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. The revenue received from annexation fees varies considerably and unpredictably. Since each annexation fee solely covers the cost of processing that annexation request, this revenue source is not relied on during budget preparation.

7.6 PROJECT FINANCING

As discussed in Section 7.4, all project costs are considered upgrade costs because they would benefit existing users by providing a higher level of treatment without providing additional capacity. As such, payment of project costs would be the responsibility of existing users. Capital costs represent a one-time charge to users, while O&M costs are an annual cost that would be incurred every year. To ensure the lowest possible annual cost to ratepayers, the capital costs need to be spread over a number of years similar to buying a home with a mortgage.

7.6.1 Available Financing Sources

There are generally two sources of long-term financing available for wastewater agencies: (1) SRF loans and (2) revenue bonds. In many respects, these two sources are very similar in that they both provide project funding with an extended repayment period at a fixed interest rate.

SRF loans are administered by the State Water Resources Control Board and are available only to wastewater agencies for the construction of new facilities. The loans are repaid over 20 years, beginning one year after the completion of construction. The interest rate is set to one-half of the most current State of California general obligation bond rate. Interest is capitalized during the construction period and calculated into the principal amount of the loan that must be repaid. Currently, there is an annual cap of \$50 million reimbursable per year per agency on SRF loans, although this cap is negotiable on a case-by-case basis.

In the case of revenue bonds, all of the proceeds are received by the wastewater agency at the time the bond sale closes. The repayment period is typically 30 years, beginning as soon as the bonds are issued. Interest rates are dependent on market conditions on the date the bonds are issued and the financial strength (credit rating) of the agency issuing the bonds. There are ways to structure revenue bonds (including capitalizing interest) so that the beginning of the repayment period can effectively be pushed back until construction is complete.

To secure either SRF loans or bonds, the borrowing agency will be required to enter into a legal agreement with specific requirements that must be met during the life of the loan/bond. Key requirements include adopting and implementing appropriate service charge rates and meeting debt coverage standards (i.e., demonstrating sufficient income to pay debt service in addition to O&M expenses).

The SCVSD will also pursue state and federal grants once a project is approved. Examples include state grants funded through the Integrated Regional Water Management Plan such as Proposition 84 and federal Water Resources Development Act funds.

7.6.2 Financing Analysis

Depending on the specific project and the availability of SRF loans, the funding for the selected project may be a combination of SRF loans and revenue bonds. Based on current conditions, it is recommended that SRF loans be used to the maximum extent possible since bonds generally have higher interest rates than SRF loans. Therefore, a 20-year SRF loan at 2.8-percent interest is assumed for project funding.

Service charges have been estimated for each recommended project based on the best available financing assumptions along with projected inflation of construction costs and projected inflation

of O&M costs. Key assumptions include a multi-year ramp-up in service charges through fiscal year 2019-20 (when the selected project is expected to be operational) and that interest is capitalized (i.e., interest that accrues prior to the first loan payments is added to the loan amount). These estimated service charges are shown in Table 7-10 for all types of use. The ramp-up in rates would reduce the percentage of the project cost that must be financed by collecting some monies prior to spending on construction. The rates in Table 7-10 can be used to estimate a particular user's future service charge. For example, office building owners can estimate their future service charge by dividing their actual unit of usage (square footage) by the Table 7-10 unit of usage (1,000 square feet) and multiplying the result by the service charges for the particular alternative (e.g., \$308 per year for Alternative 2). Please note that the estimates presented in Table 7-10 include the rates for both existing and additional facilities. As such, the difference between a particular alternative's service charge and the "No Chloride Treatment Project" service charge represents the increase in service charge rate for the particular alternative. Although Alternatives 1 and 3 are not part of the recommended project, projected annual service charge rates and connection fees for these alternatives are included in the following tables for comparison purposes.

Table 7-10. Comparison of Projected Annual Service Charge Rates for Fiscal Year 2019-20 When Project Is Completed^a

Type of Use	Unit of Measure	Sewage Units per Unit of Measure	No Chloride Treatment Project	Alt. 1 (Pipeline)	Alt. 2 (DWI)	Alt. 3 (Trucking)	Alt. 4 (Phased AWRM)	
							Phase I Only	Phases I & II
Single-Family Home	Parcel	1.00	\$270	\$430	\$410	\$430	\$395	\$535
Condominium	No. of Units	0.75	\$203	\$323	\$308	\$323	\$296	\$401
Multi-Unit Residential	No. of Units	0.60	\$162	\$258	\$246	\$258	\$237	\$321
Mobile Home Park	Spaces	0.60	\$162	\$258	\$246	\$258	\$237	\$321
Hotel/Motel/Rooming House	Rooms	0.47	\$127	\$202	\$193	\$202	\$186	\$251
Store	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Supermarket	1,000 ft ²	1.36	\$367	\$585	\$558	\$585	\$537	\$728
Shopping Center	1,000 ft ²	1.93	\$521	\$830	\$791	\$830	\$762	\$1,033
Regional Mall	1,000 ft ²	1.24	\$335	\$533	\$508	\$533	\$490	\$663
Office Building	1,000 ft ²	0.75	\$203	\$323	\$308	\$323	\$296	\$401
Medical, Dental, Veterinary Clinic	1,000 ft ²	1.12	\$302	\$481	\$459	\$482	\$442	\$599
Restaurant	1,000 ft ²	8.86	\$2,392	\$3,810	\$3,633	\$3,810	\$3,500	\$4,740
Indoor Theatre	1,000 ft ²	0.47	\$127	\$202	\$193	\$202	\$186	\$251
Car Wash – Tunnel, No Recycling	1,000 ft ²	13.79	\$3,723	\$5,930	\$5,654	\$5,930	\$5,447	\$7,378
Car Wash – Tunnel, Recycling	1,000 ft ²	10.16	\$2,743	\$4,369	\$4,166	\$4,369	\$4,013	\$5,436
Car Wash – Wand	1,000 ft ²	2.61	\$705	\$1,122	\$1,070	\$1,122	\$1,031	\$1,396
Bank, Credit Union	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Service Shop, Auto Maint./Repair	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Animal Kennel	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Gas Station	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Auto Sales	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Wholesale Outlet	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Nursery/Greenery	1,000 ft ²	0.10	\$27	\$43	\$41	\$43	\$40	\$54
Manufacturing	1,000 ft ²	1.18	\$319	\$507	\$484	\$507	\$466	\$631
Light Manufacturing	1,000 ft ²	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Lumber Yard	1,000 ft ²	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Warehousing	1,000 ft ²	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Open Storage	1,000 ft ²	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Drive-In Theatre	1,000 ft ²	0.08	\$22	\$34	\$33	\$34	\$32	\$43
Night Club	1,000 ft ²	1.31	\$354	\$563	\$537	\$563	\$517	\$701
Bowling/Skating	1,000 ft ²	1.00	\$270	\$430	\$410	\$430	\$395	\$535
Club & Lodge Halls	1,000 ft ²	0.46	\$124	\$198	\$189	\$198	\$182	\$246
Auditorium/Amusement	1,000 ft ²	1.31	\$354	\$563	\$537	\$563	\$517	\$701

Table 7-10 (cont.)

Type of Use	Unit of Measure	Sewage Units per Unit of Measure	No Chloride Treatment Project	Alt. 1 (Pipeline)	Alt. 2 (DWI)	Alt. 3 (Trucking)	Alt. 4 (Phased AWRM)	
							Phase I Only	Phases I & II
Golf Course & Park	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Campground, Marina, RV Park	Spaces	0.24	\$65	\$103	\$98	\$103	\$95	\$128
Convalescent Home	Beds	0.47	\$127	\$202	\$193	\$202	\$186	\$251
Horse Stable	Stall	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Laundromat	1,000 ft ²	14.25	\$3,848	\$6,128	\$5,843	\$6,128	\$5,629	\$7,624
Mortuary/Funeral Home	1,000 ft ²	0.91	\$246	\$391	\$373	\$391	\$359	\$487
Health Spa without Showers	1,000 ft ²	1.12	\$302	\$482	\$459	\$482	\$442	\$599
Health Spa with Showers	1,000 ft ²	2.24	\$605	\$963	\$918	\$963	\$885	\$1,198
Special Event Center	Attendance	0.03	\$8	\$13	\$12	\$13	\$12	\$16
College/University	Students	0.08	\$22	\$34	\$33	\$34	\$32	\$43
Private School	1,000 ft ²	0.75	\$203	\$323	\$308	\$323	\$296	\$401
Library/Museum	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Post Office (Local)	1,000 ft ²	0.38	\$103	\$163	\$156	\$163	\$150	\$203
Post Office (Regional)	1,000 ft ²	0.15	\$41	\$65	\$62	\$65	\$59	\$80
Church	1,000 ft ²	0.18	\$49	\$74	\$74	\$77	\$71	\$96

^a These projections are based on best estimates of construction costs, interest rates, inflation and ramp-up in rates.

To provide examples of projected annual service charges for typically sized uses, Table 7-11 was prepared. While Table 7-10 presents the service charge for all user categories, Table 7-11 presents the service charge using typical square footage for the particular user type; for example, a typical office building is 5,000 square feet.

Table 7-11. Comparison of Projected Annual Service Charges (Fiscal Year 2019-20) Assuming Typically Sized Uses^{a,b}

Type of Use	No Chloride Treatment Project	Alternative 1 (Pipeline)	Alternative 2 (DWI)	Alternative 3 (Trucking)	Alternative 4 (Phased AWRM)	
					Phase I	Phases I & II
Single-Family Home	\$270	\$430	\$410	\$430	\$395	\$535
Condominium	\$203	\$323	\$308	\$323	\$296	\$401
Store/Wholesale 5,000 ft ²	\$515	\$815	\$780	\$815	\$750	\$1,015
Office Building 5,000 ft ²	\$1,015	\$1,615	\$1,540	\$1,615	\$1,480	\$2,005
Warehouse 20,000 ft ²	\$820	\$1,300	\$1,240	\$1,300	\$1,180	\$1,600
Restaurant (Stand-alone on separate parcel) 3,000 ft ²	\$7,176	\$11,430	\$10,899	\$11,430	\$10,500	\$14,220
Shopping Center 15,000 ft ²	\$7,815	\$12,450	\$11,865	\$12,450	\$11,430	\$15,495
Laundromat 1,000 ft ²	\$3,848	\$6,128	\$5,843	\$6,128	\$5,629	\$7,624

^a These examples are based on standard charges and do not reflect special conditions that could reduce charges for a specific property such as very low water usage.

^b These projections are based on best estimates of construction costs, interest rates, inflation and ramp-up in rates.

Table 7-12 shows the projected increase in the annual service charge due to each recommended project. This increase is split between the portion due to capital repayment and the portion due to O&M of the facilities for the particular alternative. Note that the capital repayment portion of the

service charge would stop after loans are repaid, while O&M costs would continue into the future. Adding the increase due to a particular alternative to the projected service charge with the “No Chloride Treatment Project” yields the total projected service charge shown in Table 7-11.

Table 7-12. Comparison of Projected Service Charge Increases (Fiscal Year 2019-20) Assuming Typically Sized Uses^{a,b}

Type of Use	Service Charge With No Chloride Treatment Project	Estimated Service Charge * INCREASE * With Chloride Project									
		Alternative 1 (Pipeline)		Alternative 2 (DWI)		Alternative 3 (Trucking)		Alternative 4 (Phased AWRM)			
		Capital	O&M	Capital	O&M	Capital	O&M	Phase I		Phases I & II	
								Capital	O&M	Capital	O&M
Single-Family Home	\$270	\$101	\$59	\$90	\$50	\$63	\$97	\$78	\$47	\$192	\$73
Condominium	\$203	\$76	\$44	\$67	\$37	\$47	\$73	\$58	\$35	\$144	\$54
Store/Wholesale 5,000 ft ²	\$515	\$189	\$111	\$171	\$94	\$117	\$183	\$146	\$89	\$363	\$137
Office Building 5,000 ft ²	\$1,015	\$378	\$222	\$338	\$187	\$235	\$365	\$289	\$176	\$718	\$272
Warehouse 20,000 ft ²	\$820	\$302	\$178	\$271	\$149	\$188	\$292	\$224	\$136	\$567	\$213
Restaurant (Stand-alone on separate parcel) 3,000 ft ²	\$7,176	\$2,680	\$1,574	\$2,399	\$1,324	\$1,665	\$2,589	\$2,065	\$1,259	\$5,105	\$1,939
Shopping Center 15,000 ft ²	\$7,815	\$2,920	\$1,715	\$2,610	\$1,440	\$1,815	\$2,820	\$2,246	\$1,369	\$5,568	\$2,112
Laundromat 1,000 ft ²	\$3,848	\$1,436	\$844	\$1,286	\$709	\$893	\$1,387	\$1,107	\$674	\$2,737	\$1,039

^a These examples are based on standard charges and do not reflect special conditions that could reduce charges for a specific property such as very low water usage.

^b These projections are based on best estimates of construction costs, interest rates, inflation and ramp-up in rates.

7.6.3 Rate Increase Process

Approval of the Facilities Plan and EIR is required to secure SRF loans and to start design work on the selected project. However, approval of the Facilities Plan and EIR would not provide legal authority to increase rates. A separate process would be used for setting rates that would involve multiple opportunities for public input. At a minimum, the SCVSD must comply with Proposition 218, which would entail mailing public notices to approximately 70,000 property owners at least 45 days before the SCVSD Board of Directors holds a public hearing in the City of Santa Clarita. Each public notice, in addition to providing information about the public hearing, must include the actual charges to be imposed on a given parcel and the basis for those charges.

In practice, the SCVSD typically goes much further than what is required by law. The public notices explain what projects are being undertaken, the cost of these projects, and the anticipated future rates. The notices also include a series of commonly asked questions and provide answers to those questions. Last, the notices reference an internet site where, in addition to supplementary information, Spanish language translations are provided. Prior to the public hearing, the SCVSD also conducts a series of information meetings, usually consisting of a brief presentation followed by a question and answer period.

After identifying a funding source and adopting appropriate service charge rates to ensure that repayment can be made, long-term financing can be undertaken.

7.6.4 Rationale for Connection Fees

As discussed earlier, existing users will pay for the facilities they need through the Service Charge Program. New users that connect to the sewerage system or existing users that significantly increase their discharge would pay for the facilities they utilize through a one-time connection fee. As soon as they connect to the system, they would become existing users and would pay for on-going expenses through the Service Charge Program. Table 7-13 provides existing connection fees (fiscal year 2013-14) for all types of use.

Under the proposed financing discussed above, the majority of the capital cost of the selected project would be spread over 20 years in the form of annual debt service and would be paid through service charges. If the incremental cost of the selected project were to be included in the connection fee at this time, the new and expanding users would be double charged for the same facilities because they would pay one time through the Connection Fee Program and then again as they paid their future service charges.

Table 7-13. Sewer Connection Fee Rates for Fiscal Year 2013-14

Category	Unit Of Usage	Capacity Units Per Unit of Measure	Connection Fee Rate Per Capacity Unit	Connection Fee Per Unit of Usage
Single-Family Home	Parcel	1.00	\$5,500	\$5,500
Condominium	No. of Units	0.75	\$5,500	\$4,125
Multi-Unit Residential	No. of Units	0.60	\$5,500	\$3,300
Mobile Home Park	Spaces	0.60	\$5,500	\$3,300
Drive-In Theatre	1,000 ft ²	0.08	\$5,500	\$440
Nursery/Greenery	1,000 ft ²	0.10	\$5,500	\$550
Light Manufacturing	1,000 ft ²	0.13	\$5,500	\$715
Lumber Yard	1,000 ft ²	0.13	\$5,500	\$715
Warehousing	1,000 ft ²	0.13	\$5,500	\$715
Open Storage	1,000 ft ²	0.13	\$5,500	\$715
Store	1,000 ft ²	0.38	\$5,500	\$2,090
Bank, Credit Union	1,000 ft ²	0.38	\$5,500	\$2,090
Service Shop, Auto Maint./Repair	1,000 ft ²	0.38	\$5,500	\$2,090
Animal Kennel	1,000 ft ²	0.38	\$5,500	\$2,090
Gas Station	1,000 ft ²	0.38	\$5,500	\$2,090
Auto Sales	1,000 ft ²	0.38	\$5,500	\$2,090
Wholesale Outlet	1,000 ft ²	0.38	\$5,500	\$2,090
Golf Course & Park	1,000 ft ²	0.38	\$5,500	\$2,090
Indoor Theatre	1,000 ft ²	0.47	\$5,500	\$2,585
Club & Lodge Halls	1,000 ft ²	0.47	\$5,500	\$2,585
Mortuary/Funeral Home	1,000 ft ²	0.71	\$5,500	\$3,905
Office Building	1,000 ft ²	0.76	\$5,500	\$4,180
Bowling/Skating Regional	1,000 ft ²	0.83	\$5,500	\$4,565
Mall	1,000 ft ²	0.98	\$5,500	\$5,390
Supermarket	1,000 ft ²	1.07	\$5,500	\$5,885
Medical, Dental, Veterinary Clinic	1,000 ft ²	1.14	\$5,500	\$6,270
Health Spa without Showers	1,000 ft ²	1.14	\$5,500	\$6,270
Night Club	1,000 ft ²	1.32	\$5,500	\$7,260
Auditorium/Amusement	1,000 ft ²	1.32	\$5,500	\$7,260

Table 7-13 (cont.)

Category	Unit Of Usage	Capacity Units Per Unit of Measure	Connection Fee Rate Per Capacity Unit	Connection Fee Per Unit of Usage
Shopping Center	1,000 ft ²	1.67	\$5,500	\$9,185
Health Spa with Showers	1,000 ft ²	2.27	\$5,500	\$12,485
Car Wash - Wand	1,000 ft ²	2.65	\$5,500	\$14,575
Restaurant	1,000 ft ²	6.89	\$5,500	\$37,895
Car Wash - Tunnel, Recycling	1,000 ft ²	10.26	\$5,500	\$56,430
Car Wash - Tunnel, No Recycling	1,000 ft ²	13.97	\$5,500	\$76,835
Laundromat	1,000 ft ²	14.45	\$5,500	\$79,475
Special Event Center*	1,000 ft ²	0.04	\$5,500	\$220
Convalescent Home	Beds	0.47	\$5,500	\$2,585
Hotel/Motel/Rooming House	Rooms	0.47	\$5,500	\$2,585
Campground, Marina, RV Park	Spaces	0.23	\$5,500	\$1,265
Private School	1,000 ft ²	0.76	\$5,500	\$4,180
Library/Museum	1,000 ft ²	0.38	\$5,500	\$2,090
Post Office (Local)	1,000 ft ²	0.38	\$5,500	\$2,090
Post Office (Regional)	1,000 ft ²	0.13	\$5,500	\$715
Church	1,000 ft ²	0.19	\$5,500	\$1,045

To avoid this issue, it is recommended that increases to the connection fee be handled in phases. The first phase is from the present to fiscal year 2019-20 (when the selected project would become operational). The connection fee would not increase during this period, except perhaps for inflation or other unexpected events. The second phase would be in fiscal year 2019-20 when the connection fee would increase based upon the amount of the project costs that were paid through earlier service charge collections. The last phase would be during the loan repayment period (20 years for SRF loans). During this phase, the connection fee would increase over time as the loan for the selected project is paid off. In this way, new and expanding users would only pay once for the facilities they need. New users who connect before construction is complete would see no increase in their connection fee and would pay for their share of the project entirely through future service charges. New users who connect at the end of the 20-year repayment period would pay for their share of the project entirely through their connection fee. Users who connect during the 20-year period would pay their share through connection fees equivalent to the amount paid by existing users to that point and the remainder through future service charges. For example, a user who connects at year 5 would pay for one-quarter of their share of the project capital costs via connection fees and three-quarters through future service charges.

7.6.5 Recommended Connection Fees

Assuming no unexpected events occur, it is recommended that the adopted connection fee for fiscal year 2013-14 not be increased for costs related to the recommended project until fiscal year 2019-20. At that time, the project is expected to be operational, and the connection fee would increase by approximately \$200 per capacity unit. However, the increase could be more or less depending upon the alternative ultimately implemented, the final cost of the implemented alternative, and the percentage of the costs financed. The connection fee would continue to increase over time as the loan for the project is paid off. When the loan is paid off, the connection fee would have increased to fully reflect the capital cost of the project. Projected connection fees for common user categories are shown in Table 7-14.

Table 7-14. Comparison of Projected Sewer Connection Fee Rates

Type of Use	Unit of Measure	Capacity Units per Unit of Measure	Connection Fee Rate per Capacity Unit	Current Charge per Unit of Measure (2013-14 through 2018-19)	Initial Increase in FY 2019-20 (for any alternative)	Remaining Increase Over Subsequent 20-30 Years in 2013 dollars				
						Alt. 1 (Pipeline)	Alt. 2 (DWI)	Alt. 3 (Trucking)	Alt. 4 (Phased AWRM)	
									Phase I Only	Phases I & II
Single-Family Home	Parcel	1.00	\$5,500	\$5,500	\$200	\$1,450	\$1,300	\$1,100	\$1,060	\$2,225
Condominium	No. of Units	0.75	\$5,500	\$4,125	\$150	\$1,088	\$975	\$825	\$795	\$1,669
Hotel/Motel/Rooming House	Rooms	0.47	\$5,500	\$2,585	\$94	\$682	\$611	\$517	\$498	\$1,046
Store	1,000 ft ²	0.38	\$5,500	\$2,090	\$76	\$551	\$494	\$418	\$403	\$846
Shopping Center	1,000 ft ²	1.67	\$5,500	\$9,185	\$334	\$2,422	\$2,171	\$1,837	\$1,770	\$3,718
Office Building	1,000 ft ²	0.76	\$5,500	\$4,180	\$152	\$1,102	\$988	\$836	\$806	\$1,691
Medical, Dental, Veterinary Clinic	1,000 ft ²	1.14	\$5,500	\$6,270	\$228	\$1,653	\$1,482	\$1,254	\$1,208	\$2,537
Restaurant	1,000 ft ²	6.89	\$5,500	\$37,895	\$1,378	\$9,991	\$8,957	\$7,579	\$7,303	\$15,330
Light Manufacturing	1,000 ft ²	0.13	\$5,500	\$715	\$32	\$189	\$169	\$143	\$139	\$289
Warehousing	1,000 ft ²	0.13	\$5,500	\$715	\$32	\$189	\$169	\$143	\$138	\$289

^a These projections are based on best estimates of construction costs, interest rates, inflation and ramp-up in rates.