

SARI

SANTA ANA REGIONAL INTERCEPTOR



SARI Business Plan



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Action Plan

- Implement “Fee For Service” Business Model Policy
- Manage capacity to increase salt export
- Use reserves to fund near-term Capital Improvement Program
- Utilize pay-as-you-go funding and debt financing for long-term Capital Improvement Program
- Implement a maintenance management system to reduce replacement and increase reliability
- Provide reasonable and stable long-term rates for dischargers
- Relocate/protect existing pipeline at and below Prado Dam
- Recover all costs in rates and charges
- Track and report key performance indicators
- Market SARI use for potential customers
- Ensure that SARI remains viable for desalter and industrial disposal

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1.0 Executive Summary

1.1 Vision

The Santa Ana Watershed Project Authority (SAWPA) shall assure the long-term future viability and sustainability of the Santa Ana Regional Interceptor (SARI) System by addressing maintenance, capital improvements, and protection/relocation of the SARI System, and by developing stronger partnerships with those benefiting from the line relationships. SAWPA will be planning for future capacity needs in an economically sound manner.

1.2 Plan for the SARI System

While the SARI System business is primarily a utility for non-reclaimable wastewater (NRW), it is also a critical salt management mechanism for the watershed. This utility was built as the fundamental method of salt export from the upper watershed to the Pacific Ocean. Removing salt by means of the SARI System will allow the watershed to reach salt balance -- a key watershed goal and indicator of sustainability. A plan is needed for the SARI to ensure that the limited resources are managed to operate, maintain, and repair the system to realize the vision in the face of rising costs and a changing environment. The physical operation of the System is achieved in two subparts: pipeline or transportation and treatment and disposal. SAWPA member agencies Eastern Municipal Water District (EMWD), Inland Empire Utilities Agency (IEUA), San Bernardino Valley Municipal Water District (SBVMWD), and Western Municipal Water District (WMWD) control pipeline capacity owned in their jurisdictions.

Maintenance Has Been Deferred

Many critical maintenance activities have been deferred. In order for the SARI System to be reliable for users, these activities will be scheduled and completed on the basis of System priorities. An ongoing maintenance program will reduce System risk and, over the long term, reduce operating expenses.

Capital Costs are Challenging

The System was built in various stages by SAWPA with funds from revolving loan financing and the sale of pipeline capacity to repay the loans. The System's current debt is fully covered by capital investments and the capacity purchase loan payment stream. Because no additional capital debt has been needed, the System is essentially debt-free.

However, the System does need ongoing capital for improvements, repairs, refurbishment, and capacity management. Currently, the Capital Improvement Plan (CIP) is estimated at over \$64 million, not including capacity management improvements. This plan funds these costs with revenue that is currently and will continue to be developed from a combination of capital reserves and rate-generated revenue (pay-as-you-go), and, when large expenditures are required, debt financing repaid by the fixed portion of the rates.

Rates and Charges Are at Reasonable Levels

The System's rates shown in the rate model fully cover the cost of operations and routine maintenance, fund some portion of the CIP, and make all planned debt payments. With the rates set at a market rate, a level that encourages brine discharge to the System, revenue is not inadequate to provide sufficient reserves to fund long-term replacement of the pipeline or system expansion. The difference between the current affordable or marketable rate and a rate that would adequately fund reserves is a major challenge for the enterprise because the System has significant fixed costs and is presently used at less than half of its capacity. The System rates range from 5% below to over 20% above local wastewater treatment plant (WWTP) rates and are 5% over the average rates. The long-range financial plan sets steady revenue increases at levels only slightly above expected inflation, 3%-4% for the next 20 years. This plan ensures that the SARI remains a viable option for desalter and industrial disposal. The value of the SARI system to the watershed is significant, as demonstrated during several emergency shutdown situations necessitated by third party damage to the system.

Future Sustainability

Future rates are heavily influenced by Orange County Sanitation District (OCSD) costs, which are expected to rise by about 7-8% per year to achieve full secondary treatment levels. To sustain the System in the near term, the enterprise would benefit from increased flow volume to the extent that the unit costs can be kept as low as possible while salt export from the watershed is maximized. In the more distant future, we will want to reduce low salt discharges in favor of more concentrated brines in order to maximize the salt exported within the existing infrastructure and to minimize future capital costs.

Significant watershed benefits accrue to secondary clients and to the general public that do not pay any costs for the System. These include: 1) avoided salt management costs; 2) industry and economic growth and development opportunities; 3) expanded water supply; 4) basin cleanup and improved management; and 5) protection of the region's ability to use recycled water. One opportunity to ensure sustainability for the System is to better identify, characterize, and charge these clients for the secondary and general benefits.

Plan Implementation will result in predictable rates and fees and adequate funding for the CIP and should maximize discharges

Plan Implementation

This plan will serve as a blueprint that guides the SARI Enterprise. Implementation of this plan requires the following policy or Commission decisions:

- FYE 2007 Budget approval
- FYE 2007 Rate approval and financial plan (rate targets through 2020)
- Fee-for-service contract approvals
- Additional Connection sales (EMWD and WMWD)
- Additional Treatment Capacity sales (EMWD, WMWD, and Yucaipa)
- Continued efforts to ensure protection of the line prompted by Prado Dam raising
- Borrowing for large capital projects (expected about 2011)

Plan implementation will result in planned, predictable rates and fees at the minimum level necessary to sustain the SARI System and fund the CIP and minimum reserves, thereby maximizing discharges to the system and salt exported from the region. Continued salt export will help ensure adequate safe and reliable water supplies for this rapidly growing region.

1.3 Implementation Summary

Implementation of this plan is in accordance with the Commission's Vision Statements and with operational needs and requirements; the following summarizes the significant actions:

- SAWPA will implement the \$64 M CIP through a combination of pay-as-you-go funding and debt financing.
- SAWPA will continue to advocate the completion of the SARI relocation project with the U.S. Army Corps of Engineers (U.S. ACOE) and the Resources & Development Management Department (RDMD). SAWPA staff will apprise the Commission of progress made by the project leads (U.S. ACOE and RDMD) and associated betterment requirements and costs.
- SAWPA will work with OCSD to develop financing options for betterments needed for the protection and relocation of the SARI Line.
- SAWPA will implement changes to the current sampling protocol and allocation of Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) loadings by ratio in order to recover all associated costs with "pass-through rates".
- SAWPA will update the SARI rate model annually and incorporate the approved changes in the budget and report to the SAWPA Commission implications for system sustainability.
- SAWPA will implement and track the specific performance indicators listed in the business plan to document progress and identify successes and areas for improvement.
- SAWPA will report on the specific SARI financial indicators quarterly as part of the regular Quarterly Financial Report to the SAWPA Commission.
- SAWPA will include preventive measures in SARI System maintenance practices.
- No additional work on direct ocean discharge will be completed unless directed by board action of the SAWPA Commission.

- SAWPA will project how long domestic flows will continue from JCSD and assess how the flow, along with other domestic discharges, will impact future sustainability of the SARI line.
- SAWPA will comply with the sanitary sewer system WDR (WDR No. 2006-003) fully implementing its provisions.
- SAWPA will identify hydraulic choke points in the SARI System and suggest corrective measures.
- SAWPA will update SARI capacity planning biennially and incorporate those results into the CIP upon Commission approval.
- SAWPA with its member agencies will develop and implement a SARI marketing program to ensure that potential dischargers, both local and those considering relocation to the Santa Ana Watershed, are aware of opportunities presented by the SARI System.

2.0 Background and Overview

2.1 General Description, History and Construction of the SARI Line

SAWPA owns capacity rights in or owns outright approximately 93 miles of 16" to 84" pipeline referred to as the SARI. This SARI line is connected to OCSD treatment facilities located in Huntington Beach. SAWPA owns pipeline capacity rights in the SARI line below Prado Dam (in Orange County) and owns the SARI pipeline upstream of Prado Dam (Riverside and San Bernardino Counties). SAWPA shares in the cost of maintaining the SARI in Orange County and is solely responsible for operation and maintenance activities in Riverside and San Bernardino Counties.

The SARI System was first envisioned in the early 1970's as a way to remove salt from the watershed and to collect and transport non-reclaimable industrial brine that could not be effectively treated at local treatment facilities. Most of the pipeline was constructed during 20 years in a series of reaches or sections. Reach I, II, and III are owned by OCSD and located in Orange County and parallel the Santa Ana River. In these reaches, parts of the pipeline lie beneath the low flow channel of the River and may be subject to damage because of erosion. OCSD has used grade stabilizers and other methods to protect the SARI. Above the Riverside County line, Reaches IV and V are owned and operated by SAWPA. Reach IV (which is subdivided into Reaches IV-A through IV-E) provides service to areas roughly bounded by the Cities of Riverside, Chino, and San Bernardino. Reach V lies along Temescal Wash and terminates near the City of Lake Elsinore. A map of the SARI System, depicting the major lateral connections, is shown in Figure 2-1.

SARI System was constructed in phases using different materials

SAWPA owns, operates, and maintains the SARI line within Riverside and San Bernardino Counties from the Orange/Riverside County line to the terminus points with each member agency/discharger. In general, these points are defined by the flow meter at the lateral or connection. SAWPA owns, operates, and maintains the flow meters and associated vault. Maintenance of the line above these terminus points is the responsibility of the respective member agency/discharger. IEUA maintains Reach IV-A upstream of the meter under an Operations and Maintenance (O&M) agreement with SAWPA.

The pipe making up the SARI line is of varying ages, with the oldest section of the line more than 60 years old and the newest less than five years old. Most of the upper SARI System above the Riverside County line is less than 35 years old; there are several sections of older pipe in the vicinity of the Prado Dam. A map showing the age of the pipe making up the various SARI reaches is shown in Figure 2-2. Over time, a number of different materials were used for construction. These materials were chosen for both durability and cost. A summary of materials used in construction, age of pipe, and lengths for Reaches IV and V can be found in Table 2-1 (Table 1-1 in the SARI Planning Study).

SAWPA manages the SARI with substantial assistance from the member agencies. Figure 2-3 depicts three main components of SARI management: 1) permitting and pretreatment; 2) O&M; and 3) financial management. Further information is provided in Section 13.

SARI Line Reaches

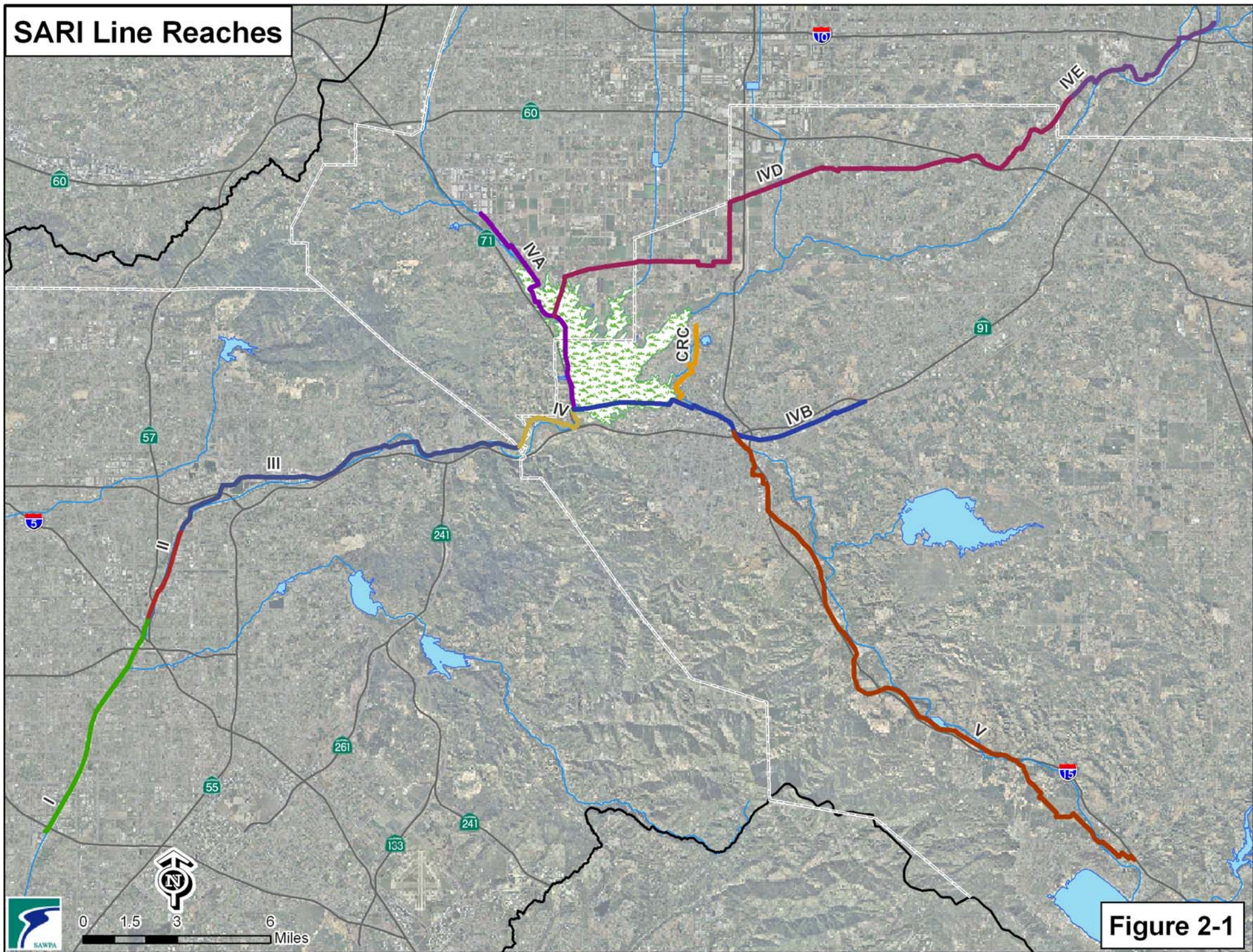


Figure 2-1

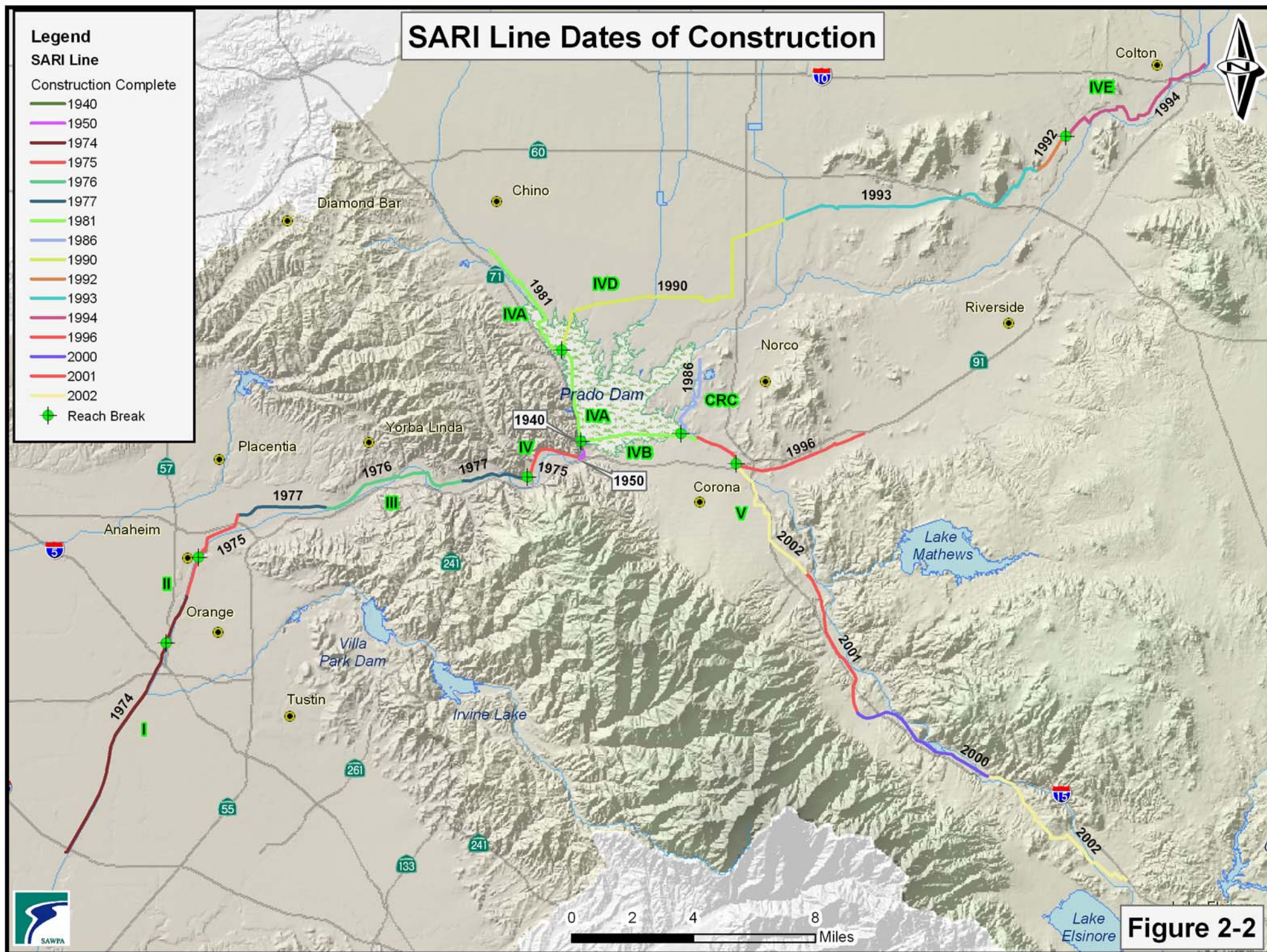


Figure 2-2

SARI Management

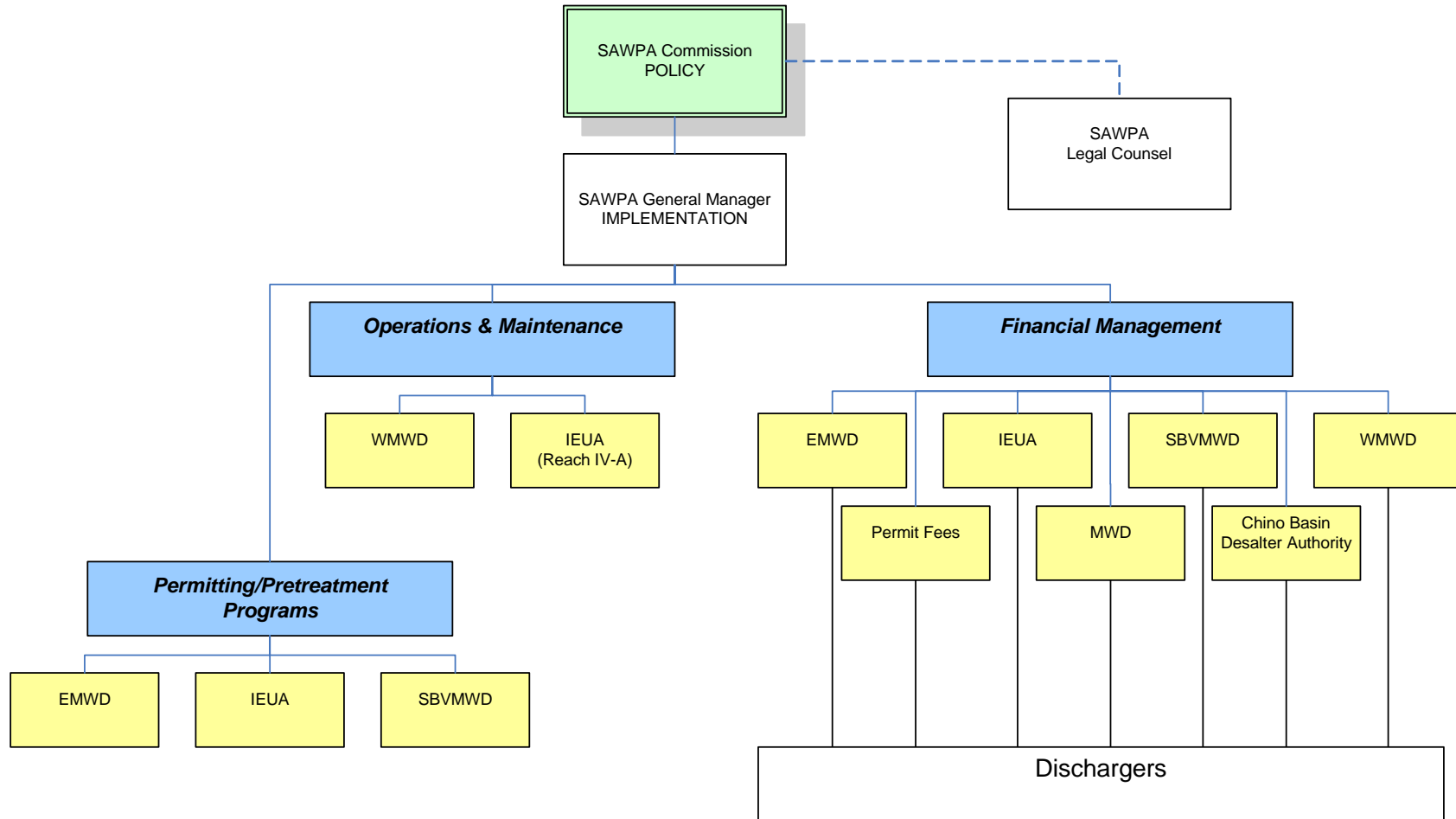


Figure 2-3

Table 2-1 Upper SARI Reaches Summary

Reach	Material	Length (Feet)	Age (Years)
Reach IV (42 to 60-inch)			
	RCP (PVC Lined)	12,500	27
	RCP (Lining Unknown)	2,500	52
	Concrete Encased Steel (lining Unknown)	1,000	62
Total Reach IV		16,000	
Reach IV-A (18 to 42-inch)			
	RCP (PVC Lined)	41,500	21
	CMLC Steel (24 and 18-inch Siphons Only)	150	21
Total Reach IV-A		41,650	
Reach IV-B (16 to 46-inch)			
	RCP (PVC Lined)	16,250	21
	VCP	5,500	21
	PVC	32,000	6
Total Reach IV-B		54,000	
Reach IV-D (39 to 48-inch)			
	RCP (PVC Lined)	62,700	9-12
	VCP	43,800	9-12
	HDPE	2,100	9
Total Reach IV-D		108,600	
Reach IV-E (39 to 48-inch)			
	VCP	4,300	10
	RCP	34,000	8
Total Reach IV-E		38,700	
Reach V (24 to 30 inch)			
	PVC	74,000	<1
	HDPE	47,000	<1
Total Reach V		121,000	
Total		379,950	

2.2 Overview of Agreements and Capacity Ownership

Pipeline/Flow/Volumetric Capacity

In general, capacity in the SARI line is owned by SAWPA and by four of the five SAWPA member agencies. SBVMWD, EMWD, IEUA, and WMWD all own capacity in the line. Orange County Water District (OCWD) is the only SAWPA agency that does not own SARI capacity. The pipeline capacity can be sold by individual member agencies to other entities requiring capacity and having discharges that meet specific SAWPA discharge requirements. The sale of capacity is made by individual agencies, not SAWPA.

Treatment and Disposal Capacity

SAWPA member agencies also own treatment and disposal capacity in the SARI System. Treatment and disposal capacity represents a volume of effluent that may be passed through the OCSD treatment plant at Huntington Beach.

Table 2-2 summarizes SARI capacity and treatment and disposal ownership (in millions of gallons per day or MGD):

Table 2-2 SARI Capacity Ownership

Agency	Pipeline Capacity (MGD)	Treatment Capacity (MGD)
SAWPA	0.000	0.295
SBVMWD	7.198	0.152
EMWD	4.378	1.200
IEUA*	7.800	5.600
WMWD	10.624	5.753
Total	30.000	13.000

*Includes Chino Basin Desalter Authority (CDA)

An agency or business wishing to discharge into the SARI System usually contracts for needed pipeline and treatment and disposal capacity with the appropriate member agency. Permit requirements for discharge are set by SAWPA and may be administered by SAWPA or by the contracting member agency. Upon payment of a connection fee, the discharger may use the System within the bounds established by both contract and appropriate discharge permit. All effluent within the System is ultimately treated at the OCSD facility at Huntington Beach before discharge into the Pacific Ocean. As effluent is ultimately discharged into the Pacific Ocean, discharges from the OCSD plant must conform to standards established for ocean discharge, and acceptable constituents to the SARI System may be limited.

2.3 Current Uses

The SARI System is currently used for: 1) the disposal of high Total Dissolved Solids (TDS) brine from desalter operations within the region; 2) the disposal of industrial wastewater that is unacceptable for discharge into local facilities, usually because of high

SARI System currently accepts:

- ***Desalter brine***
- ***Nonreclaimable industrial waste***
- ***Domestic sewage***

concentrations of TDS, from commercial and industrial facilities; and 3) the disposal of domestic or industrial wastewater that is managed by public agencies and which meets standards of local treatment facilities. Some users of the SARI System have temporary or

emergency needs and connect to the System for a fixed term. Four member agencies also operate truck dump facilities to manage wastewater from operations not requiring a permanent connection to the SARI System. Sections 7.0 and 8.0 contain additional discussion of business areas and existing and planned customers of the SARI line.

3.0 Mission of SARI Enterprise and Long-Term Goals

3.1 *Provide a Sustainable System, Cost Effective for Users*

The SARI System is intended to provide a cost-effective, sustainable means of disposal of NRW for utilities and industry within the Santa Ana Watershed. The highest and best use of the SARI System is the removal of salts from the watershed to keep them from degrading water quality within the watershed, thereby allowing better use of groundwater resources and expanding the ability to reclaim water. The long-term goal of achieving salt balance within the region depends on the ability to remove salts from the watershed via the SARI System. Further use of desalters depends on an economical means of salt disposal and will ultimately depend on an economically viable regional SARI System.

The highest and best use of the SARI system is the management of salt within the Santa Ana Watershed

The SARI System further enhances the economic viability of the region by handling the discharge by industries in the region of NRW high in TDS when that wastewater cannot be treated at a local publicly-owned treatment works (POTW). The SARI System is an incentive for industry to locate near the line. The jobs and economic vitality fostered by these industries are a broad regional benefit. As historic agriculture and dairy businesses leave the watershed and are replaced by residential, commercial, and other land uses, desalting and the export of salts will be increasingly vital to the economic and environmental goals of the watershed.

Also, the System provides a temporary disposal option for industry or sewerage until more cost effective alternatives are developed. Currently, the System allows a number of dairies to meet Regional Water Quality Control Board (RWQCB) requirements while other disposal options are considered. Connections to the SARI are also supplied to others who require wastewater disposal while more permanent solutions are explored.

Finally, the System provides a means for emergency discharge of high TDS waste for agencies within the region, enabling compliance with environmental regulation.

4.0 Key Long-Term Expectations and Enterprise Trends

The SARI System has the following long-term goals:

- Financial viability
 - Viable for SAWPA to maintain and operate;
 - Economically feasible for dischargers, member agencies, and others to use as a means of disposal of NRW;

- Ensure that domestic dischargers pay full costs and that domestic dischargers or dischargers with low TDS do not limit the fulfillment of the SARI line mission;
- Transform the System from one receiving domestic sources to one containing desalter reject and industrial brine waters;
- Update and maintain the System to:
 - Reduce the risk of spills;
 - Minimize the risk of breakage and resulting service outages;
 - Minimize groundwater infiltration to the System (which would cause higher treatment costs for users);
- Improve marketing of the SARI to industrial users, thereby bringing broader economic benefit to the region; and
- Research and develop methods for improving the System, including brine concentration and hydraulic “choke point” reduction.

5.0 Risks and Challenges to SARI System Mission

This section identifies the short-term and long-term risks and challenges and the general approach to addressing each.

5.1 *Short-Term*

5.1.1 Sampling Imbalance (Meter S-01 sampling results for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) versus the sum of individual dischargers).

Currently, the total pounds of BOD and TSS measured at the Orange County line by OCSD (known as the meter S-01 sampling location) is higher than the sum of the pounds measured at the individual dischargers. The difference or “imbalance” results in a revenue shortfall, since SAWPA pays OCSD for treatment based upon the pounds of BOD and TSS measured at meter S-01 and receives revenue from individual dischargers based upon the pounds measured at the points of discharge. This imbalance is greater for TSS but also occurs to a lesser degree for BOD. SAWPA is working with OCSD and member agencies to investigate the potential causes for the sampling imbalance, beginning with an evaluation of the sampling procedures used by WMWD (contracted by SAWPA to perform the SAWPA sampling program) and performing duplicative sampling (OCSD and WMWD). The investigation has started with an evaluation of meter S-01 and will continue with the sampling locations at the individual dischargers.

Expected results of the investigation: (1) changes to the sampling program to reduce the sampling imbalance, and (2) changes to the SARI rates to account for the sampling imbalance and fully capture OCSD pass-through costs calculated at the S-01 meter.

5.1.2 Ongoing Protection of the SARI Located within the Floodplain

These costs may be minimized by accelerating construction of the SARI Protection/ Relocation project (Section 5.1.3). Between the Orange County line and SAVI Ranch, the SARI lies within the floodplain of the Santa Ana River. OCSD has an ongoing program to monitor soil erosion and the remaining soil cover over the pipeline. Over the last several years, OCSD has performed several protection projects, installing “grade stabilizers” and bank protection. This program will continue until a long-term solution to protect the pipeline is selected and implemented. The current U.S. ACOE’s schedule indicates that the raising of Prado Dam (which will allow for greater flows in the Santa Ana River) will be completed in 2008, which requires continuation of the OCSD program for at least the next three years. In 2005, OCSD expended approximately \$3.5M and received nearly \$2M in reimbursements from the Federal Emergency Management Agency (FEMA) and the Natural Resource Conservation Service (NRCS). SAWPA has a financial obligation to pay 76% of the un-reimbursed costs. Over the next three years it is likely that additional work to protect the pipeline will be required. However, it is difficult to estimate the cost of this work, which is greatly affected by the rates of flow released from Prado Dam. This work is essential, since a break in this line caused by a high flow event would result in a disruption of service, large fines, and diminished public support for regional infrastructure projects.

5.1.3 Completion and Financing of Near-Term Capital Projects

There are three near-term pipeline relocation projects, all requiring significant financial resources by 2008: 1) Relocation at Prado; 2) Relocation in Orange County; and 3) Relocation of California Rehabilitation Center (CRC) Lateral Segment and protection of Corona Treatment Plant Lateral. The following is a brief explanation of each:

Relocation at Prado

As a result of the U.S. ACOE Prado Dam improvements, SAWPA is required to move the SARI to avoid a conflict with the relocated low flow channel to the new outlet works. The SARI relocation will be constructed in two phases. The first phase involves installing a dual pipeline through the dam, within the old outlet works. This work will be done by the U.S. ACOE, and SAWPA has already deposited \$3.2M with the County of Orange to pay for this phase. The second phase, to connect the first phase to the existing SARI immediately downstream of the dam, is currently under design. Whether the U.S. ACOE’s contractor or a contractor procured by SAWPA should construct the second phase is being evaluated. These options, along with the associated costs, will be presented to the SAWPA Commission; the current construction estimate is an additional \$2.5M. SAWPA has received two State and Tribal Affairs Grants (STAG) totaling nearly \$718,900 to be allocated to the relocation efforts.

Relocation in Orange County

The U.S. ACOE is evaluating four alternatives to protect or relocate the SARI in Orange County. RDMD is proposing that certain project costs be shared with

OCSD and SAWPA. Development of a three-party agreement is pending; SAWPA's costs are unknown and currently, are not reflected in the CIP.

Protection of Laterals

SAWPA was informed by the U.S. ACOE in March 2006, of their plan to install earthen levees over the lateral pipelines (including several manholes) connecting the SARI line to the CRC and the Corona WWTP as part of the Prado Dam expansion. The risk of pipeline failure during construction is high, and the additional soil overburden from the levees will stress the pipe integrity. SAWPA is in the process of developing a cost and implementation strategy to relocate a short portion of the CRC lateral and strengthen a portion of the Corona WWTP lateral. Relocation will be required by mid 2006 to meet the U.S. ACOE construction schedule. SAWPA is responsible for protecting these laterals and providing service to both facilities for the near term.

5.2 Long-Term

5.2.1 Funding the CIP

A CIP, totaling over \$60M in 2006, dollars has been approved by the SAWPA Commission for planning purposes. The cost of implementing this plan could rise to \$80 million when completed. A complete financing plan must be developed to fund the various projects. The CIP is contained in Appendix C. One of the significant cost elements of the CIP is lining portions of Reach IV-A and IV-B, which were constructed of un-lined reinforced concrete pipe (RCP). Much of this pipe is located upstream of Prado Dam, within the dam inundation area. Project planning must begin early since there are significant environmental and habitat issues that necessitate a high degree of coordination with regulatory agencies.

5.2.2 Watershed Salt Balance

As discussed in Section 3.0, the SARI is one of the primary tools for achieving a theoretical salt balance in the watershed. To be a primary tool, to serve the needs of the watershed and remain a fully functioning system, it must be available and have reasonable rates. This requires development and implementation of the CIP. In addition, SAWPA must work closely with OCSD on the implementation of its CIP for the SARI within Orange County. Existing TDS concentration of flow in the SARI line is between 3,000 and 4,000 mg/L. To reach a theoretical salt balance in the watershed at the existing 30 MGD capacity, the concentration must rise to approximately 10,000 mg/L. Technologies to further concentrate brine are essential to accomplishing salt balance.

5.2.3 Providing for Future Needs and New Technology

As further concentration of brine will be necessary to achieve a salt balance, proven technologies at reasonable costs must be developed. SAWPA will track advances in these technologies to facilitate "technology transfer," will seek grants, and will develop rate concepts to promote further concentration. In addition, as concentrations increase, relative risk to the SARI facilities rises from the corrosive potential of the higher TDS discharges. SAWPA will monitor and

evaluate increased corrosion. Recommended preventative measures will be included in the System maintenance practices and if necessary, corrosion protection will be added to the CIP.

6.0 Goals and Objectives

The following goals and objectives have been established the SAWPA Commission. They have been considered in the development of this document and other associated planning documents such as the CIP. Furthermore, implementation has been included in the Fiscal Year Ending (FYE) 2007 draft budget.

6.1 Goal – OCSD and OC Flood Control (RDMD) Secure Funding and Implement Protection and Relocation of the SARI Line

- Accelerate project design and implementation to reduce risk of failure to the SARI line.
- Determine cost and SAWPA contribution, if any, and develop alternative revenue sources for betterments.
- Work to secure outside funding for the project.

Both OCSD and SAWPA staffs, in cooperation with RDMD and the U.S. ACOE, will work together closely to develop and implement strategies for Federal and State funding. The goal is to provide the supplemental funds RDMD needs to complete the project without any delay caused by a lack of funds. For betterments requested by SAWPA, staff will use the SARI rate model and other financial tools to develop financing options for review and selection of a preferred alternative by the Commission. SAWPA staff will closely monitor the progress and technical content of documents during the completion of California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), design and construction activities to assure the technical viability of the selected alternative at reasonable levels of risk. To minimize the time between completion of the new dam outlet works and the SARI relocation, recommendations to expedite completion of tasks will be offered. This will lower the risk of catastrophic failure induced by erosion from high releases from the Prado Dam.

6.2 Goal – Provide Adequate Short-Term Capacity

- Approve pipeline connection agreements for EMWD and WMWD along with treatment and disposal agreements in the Fee for Service Business Model to provide capacity needed in the current planning horizon.

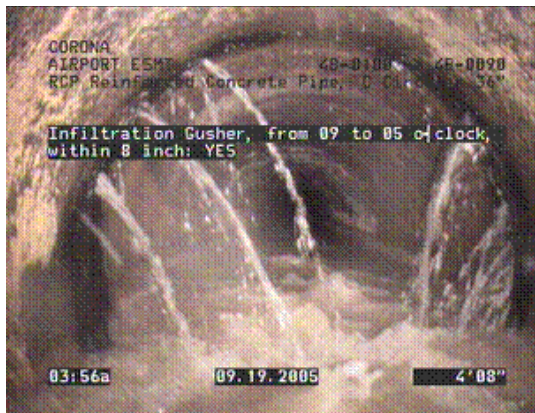
Staff will complete purchase agreements with OCSD and the member agencies for required pipeline connection fee (formerly termed pipeline capacity charge) and additional treatment and disposal capacity. The member agencies will be polled for possible new dischargers within the next five years. This information will be used in rate model updates, the Capacity Management Plan, and CIP updates.

6.3 *Goal – Manage Maintenance of Physical Facilities*

- Develop repair and maintenance requirements in the CIP and prioritize work, including work on choke points and Closed Circuit Television (CCTV), for flow requirements and cost effectiveness.
- Implement an asset/maintenance management program with assistance from the member agencies' staffs as feedback into the CIP.
- Accelerate CCTV of pipeline to provide baseline for long-term financing plan.

These tasks will be executed by the following efforts:

- Employ CCTV results and other data such as “coupon testing,” to assess the pipeline condition and remaining useful life.
- Update the CIP based upon pipeline repair/rehabilitation needs and perform pipeline repair/maintenance based upon observed defects.
- Create an efficient maintenance management program for SARI maintenance activities and identify required work elements.
- Obtain software and training to update the System hydraulic model.
- Obtain additional flow data, including data on peak flows to assess System “peaking factors” and the existence or impact of infiltration and inflow.
- Prepare a capacity management plan estimating future flows, hydraulic choke points, and required facility improvements.



Infiltration at pipe joint (left photo).



Vegetation overgrowth of access road (right photo)

6.4 *Goal – Sound and Appropriate Sampling, Billing and Rates*

- Develop and implement changes to the sampling and monitoring system with OCSD to create a reliable, verifiable basis for rates and billing.
- Review rates and propose changes to maintain revenue requirements.

These tasks will be accomplished with the following efforts:

- Complete review of existing water quality sampling program with assistance from OCSD and the member agencies.
- Implement changes to the sampling protocol and recommend adjustments to the allocation of BOD and TSS loadings for billing purposes.
- Balance expenses and revenues based upon a “pass-through” rate.

- Review the progress and recommend future rate changes, if needed.

Staff will develop and maintain a rate model using current information on discharges (flow, BOD, TSS), associated revenue, expenses, and the latest CIP.

6.5 Goal – Improve System Planning and Operations

- Improve planning and current System operations.
- The Committee recommends postponing additional work on direct ocean discharge at this time, consistent with the July 2005, budget objectives.
- Focus on assisting OCSD to meet Groundwater Replenishment System (GWRS) water needs including issues with the Stringfellow connection.
- Review SARI planning and flow estimates every two years.
- Develop a long-range financial/business plan for the SARI System.

These will be achieved by the following efforts:

- Prepare an Operations Plan detailing current System operations and maintenance and repair activities.
- Continue collection and analysis of operation, maintenance, and repair data through development of a maintenance management program that effectively and efficiently performs these activities.
- Work closely with the member agencies to benefit from their expertise and resources.
- Continue coordination with Department of Toxic Substances Control (DTSC) for future Stringfellow treatment plant upgrades.
- Update the SARI Planning Study during FYE 2008, including an update to member agency flow projections.
- Update the Business Plan in conjunction with the updated planning data.

The timing of task completion is important. Many of the tasks identified to meet objectives also are required by the new sanitary sewer overflow (SSO) waste discharge requirements (WDR). The tasks must be completed in accordance with the WDR mandated schedule.

7.0 Business Area Descriptions

The Santa Ana Watershed region (and in particular, the upper watershed where the SARI line is located) is in transition from predominantly agricultural (dairy, citrus and other farming) and related industries (food processing and transportation) to commercial, residential, and lighter industrial use. At the same time, the water industry has changed to require more reliance on local sources of water, as the imported sources have reached capacity.

In its current configuration/operational model, the SARI line can provide services in the following business areas:

- Desalter (low BOD/TSS brine) discharges;

- Agricultural (primarily associated with dairy operations);
- High BOD/TSS industrial discharges;
- Domestic or mixed domestic and industrial discharges; and
- Other irregular discharges (e.g., occasional or emergency discharges).

These discharges can occur in one of two ways:

- Direct connection to the SARI line through metered lateral connection; and
- Via “truck dump” stations.

Currently, the SARI line will accept discharges from any agency or customer within the watershed that enters into an agreement with SAWPA (or with SAWPA’s member agencies that have a master agreement with SAWPA). Currently, all wastewater comes from processes and activities within the Santa Ana Watershed. The SAWPA Commission has considered whether to authorize or prohibit discharges to the SARI line of wastewater that originates outside the Santa Ana Watershed. Future applications will be considered by the SAWPA Commission on a case-by-case basis considering water quality, quantity, length of time, and costs.

8.0 Clients and Needs

As described in other sections, SAWPA sells volumetric and operational (treatment/disposal) rights and services to its member agencies. These agencies use some of these rights and services, and also re-sell portions of those to other public, commercial and industrial users.

Currently, there are 49 flow meters on the System (which generally correspond to clients). The major categories of clients are as follows:

- **Agencies with desalters (4) (SAWPA member agencies or other authorities)** requiring high nitrogen-TDS wastewater (brine) disposal.
- **Commercial/industrial entities (15)** that generate wastewater from such operations as electrical power generation and food processing.
- **Domestic/industrial discharges (5)** managed by public agencies that dispose of domestic waste (and industrial waste such as wash water) into the SARI, rather than into local WWTPs.

The need for the desalter agencies is twofold. The first is to proactively implement methods to improve groundwater quality in accordance with watershed-wide plans and goals (including the RWQCB’s Basin Plan). The second is to develop new reliable drinking water sources for the region as the population grows.

Commercial/industrial entities usually generate wastewater with certain water quality levels that are not permitted at local WWTPs or in quantities that the local plants cannot manage.

Domestic/industrial discharges are necessary in any populated area, and the domestic clients on the SARI use the line for practical reasons, which are some combination of cost (compared to

other local treatment plants) and practicality (e.g. proximity to SARI line, availability of connections, difficulty of transporting the wastewater to a local treatment plant, etc.).

In addition to these categories, some dischargers have special needs temporarily, rather than for certain types of discharge. There are two main types of dischargers: some acquire rights to discharge for a specified period and some for emergency discharge only.

Table 8-1 shows the customers actively using the SARI line (or having rights to use the SARI line in the case of emergency discharges) as of June, 2006. The “Coordinating Member Agency” refers to the geographic location of these customers. In most cases, SAWPA has an agreement with the coordinating member agency, which in turn has an agreement with the customer.

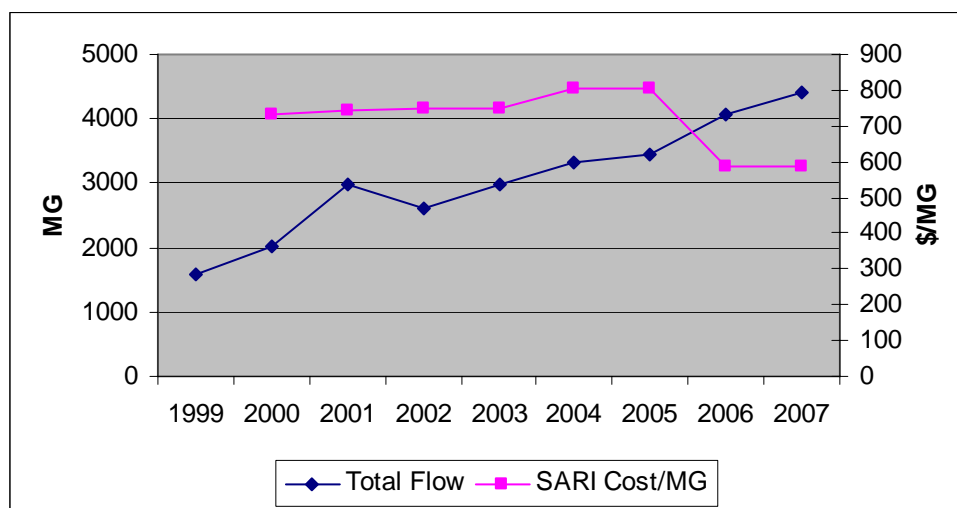
Table 8-1 SARI Line Customers

Customer & Coordinating Member Agency	Facility	Use	2005 Quantity
Chino Basin Desalter Authority (CDA)	Chino Desalter I	Des Brine/treated wastewater (WW)	1.70198
Jurupa Community Services District (WMWD)	10 Discharge Points	Domestic/Industrial	1.60660
Corona, City of (WMWD)	Temescal Desalter	Desalter Brine	1.26915
Golden Cheese (WMWD)	Golden Cheese	High BOD/TSS Industrial/Domestic	1.24549
Western Municipal Water District (WMWD)	Arlington Desalter	Desalter Brine	1.16164
California Rehabilitation Center (WMWD)	California Rehabilitation Center	Domestic/Industrial	0.88455
Inland Empire Utilities Agency (IEUA)	Meter S-05	Domestic/Industrial	0.60921
California Institute for Women (IEUA)	CIW	Domestic/Industrial	0.32128
Eastern Municipal Water District (EMWD)	Perris & Menifee Desalt	Desalter Brine	0.31003
California DTSC (WMWD)	Stringfellow Site	Industrial	0.14894
Waste Haulers (Various) (WMWD)	El Prado Road	Treated Waste (Brine)	0.11811
Corona Energy Partners (WMWD)	Corona Energy Partners (GCC)	Low BOD/TSS Industrial	0.09704
Various Domestic Sources (IEUA)	Bonview Area	Domestic	0.0699
Inland Empire Utilities Agency (IEUA)	IEUA Pond	Special Permit (Occasional Discharge)	0.05947
Dart Container (WMWD)	Dart Container (Clearwater)	Industrial	0.03534
Metropolitan Water District of Southern California (SBVMWD – SAWPA Permit)	Groundwater Discharge	Low BOD/TSS Industrial	0.03161
Green River Golf Course (IEUA)	Green River Golf Course	Domestic/Industrial	0.01490
Dairies (Various) (IEUA)	Dairies	Domestic/Industrial	0.01024
International Food (WMWD)	Unilever Best Foods	Industrial	0.01008
Eastern Municipal Water District (EMWD)	Pond Bypass	Emergency Discharge	0.00875
Agua Mansa Power Plant (SBVMWD – SAWPA Permit)	Agua Mansa Power Plant	Low BOD/TSS Industrial	0.00491
Mountainview Power Plant (SBVMWD)	Mountainview Power Plant	Low BOD/TSS Industrial	0.0023
Rubidoux Community Services District (WMWD)	Wellhead Treatment Discharge Point	Brine	0.00204
ALCOA (WMWD)	ALCOA	Low BOD/TSS Industrial (rare discharges)	0.00003
Chino Basin Desalter Authority (WMWD – JCSD Permit)	Chino Desalter II	Desalter Brine (PENDING)	0
Sunkist (WMWD)	Sunkist Plant (Corona)	Domestic/Industrial (Intermittent industrial to WRCRWA, but connection in place)	0
WRCRWA (WMWD)	WRCRWA	Emergency Connection (Domestic) (Permit under development)	0
Eastern Municipal Water District (EMWD)	Temporary Discharge	Temp/Emergency Disc	
Inland Empire Utilities Agency (IEUA)	Truck Discharge Station	Trucked	
San Bernardino Water Department (SBVMWD)	Truck Discharge Station	Various Trucked Industrial Wastewater	
Corona, City of (WMWD)	1 Discharge Point (Clearwater)	Domestic/Industrial	
Various Domestic Sources (WMWD)	Corona/Green River Area	Domestic (going to City of Corona, connection in place)	
TOTAL			9.72359

9.0 Market Forecast/Economics

The Santa Ana Watershed region covers the western portions of Riverside County, San Bernardino County, northern Orange County and a small sliver of Los Angeles County, and is considered one of the fastest growing regions in the nation. Based on economic forecasts in *Water and Watershed's Economy* prepared by John Husing, Economics & Politics Inc., May 2005, the region's population is expected to increase from 5.6 million people in 2005 to 7.3 million by 2020 (a 30% increase). Forecasts of industrial and commercial water use parallel this growth with a use of 287,000 acre-feet in 2000, to 365,000 acre-feet in 2020, and 402,000 acre-feet in 2030 (a 39.9% increase over the 30-year period). The brine and non-reclaimable flow disposal demands tied to growing industry and commercial development are likely to increase commensurately. Figure 9-1 below shows the increase in the amount of discharge since FYE 1999. Details of the growth in customers and SARI flows are reflected in Table 9-1. The average five-year annual increase in SARI flow is 7.6%. The SAWPA SARI volumetric unit cost increased only slightly until Fiscal Year (FY) 2005/06, when the SARI rate was changed to reflect increased fixed charges.

Figure 9-1 SARI Flow and Unit Flow Cost



As a market for disposal of brine and NRW flow expands, the SARI line is an attractive local disposal option for customers. Currently, there are 37 customers using the SARI line on a frequent ongoing basis. Figure 9-2 shows the SARI flows by customer. The three largest disposal flows coming into the SARI line are the Chino I Desalter at 1.70 MGD, Integrated Protein Technology (IPT) Golden Cheese Company of California (GCCC) at 1.27 MGD, and Temescal Desalter at 1.25 MGD. Figure 9-3 shows the change in the amount of SARI flow by discharger type over the past five years. The desalter brine alone constitutes 45% of the total flow in the SARI and is expected to increase as the Perris Desalter in EMWD, Chino I Desalter Expansion, and Chino II Desalter in IEUA come on line this spring. Planning for future non-reclaimable and brine disposal needs of commercial and industrial development, and keeping the rates competitive, is the key to assuring the sustainability of the SARI asset and local economic

development. Table 9-1 reflects the SARI flow projections by discharger type based on SAWPA member agency data.

Table 9-1
SARI Flow Projections Based on Member Agency Data

Agency	Category	Pipeline Capacity	Treatment Capacity	Preliminary Flow Projections (MGD)			
				2010	2015	(low range) 2025	(high range) 2025
EMWD		4.378	1.2				
	Desalter/Ion Exchange (IX)			2.80	4.40	4.40	4.40
	Recyc. Desal				2.00	2.89	3.20
	Industrial			2.21	2.71	2.71	4.71
	Subtotal			5.01	9.11	10.00	12.31
IEUA		7.8	5.6				
	Desalter/IX			3.90	3.90	3.90	3.90
	Industrial			1.81	1.81	1.81	1.81
	Additional Req						1.51
	Subtotal			5.71	5.71	5.71	7.22
SBVMWD		7.198	0.152				
	Desalter/IX			0	0	0	2.00
	Industrial			1.172	2.722	3.836	9.12
	Subtotal			1.172	2.722	3.836	11.12
WMWD (1)		10.624	5.753				
	Desalter/IX			5.95	6.29	6.62	6.62
	Industrial			2.66	2.67	2.67	2.67
	Additional Req						2.00
	Subtotal			8.61	8.96	9.29	11.29
SAWPA (1)		0	0.295	0	0	0	0
		30.00	13.00				
	Desalter/IX			12.65	14.59	14.92	16.92
	Industrial			7.85	9.91	11.02	18.31
	Additional Req			0.00	2.00	2.89	6.71
	TOTAL			20.50	26.50	28.83	41.94

Notes:

- (1) 1.0 MGD pipeline and treatment capacity has been transferred to WMWD as part of the Arlington Desalter transfer; WMWD flow projections include Arlington Desalter.

The historical SARI treatment and volumetric rates charged to customers are described in Table 9-2 as approved by the SAWPA Commission under Resolution No. 448, dated September 13, 2005.

Table 9-2 SARI Rate History

FYE	Flow/ Million gallons (MG)	BOD/ 1,000 lbs	TSS/ 1,000 lbs.	Fixed Charge Pipeline	Fixed Charge Treatment
2002	\$751.00	\$122.09	\$112.04	\$0	\$2,768.00
2003	\$751.00	\$122.09	\$112.04	\$0	\$2,768.00
2004	\$804.00	\$125.93	\$146.01	\$0	\$2,962.00
2005	\$806.00	\$45.00	\$55.00	\$0	\$3,523.00
2006	\$589.00	\$199.00	\$310.00	\$0	\$8,045.00
2007	\$589.00	\$200.00	\$312.00	\$2,124.00	\$5,310.00

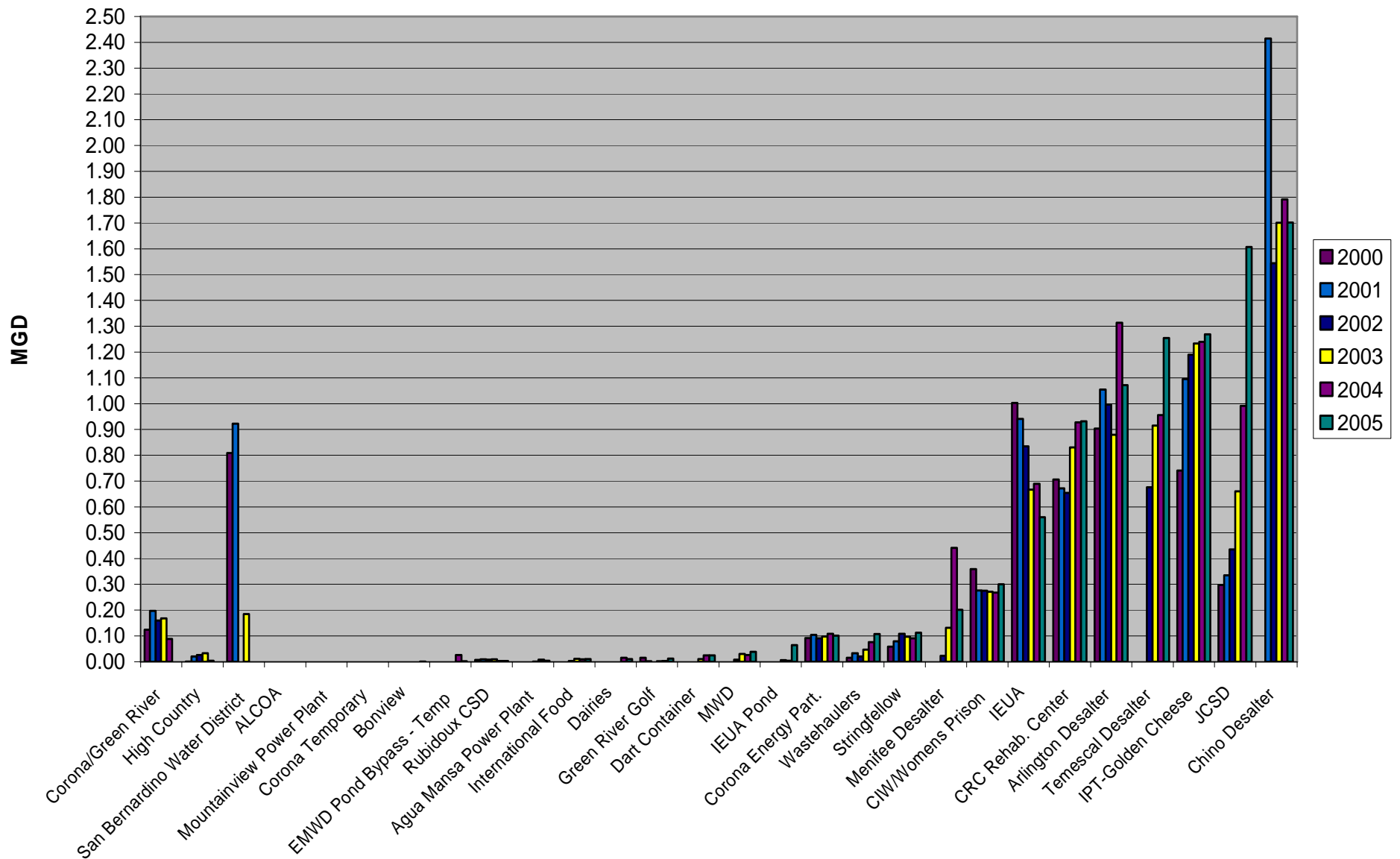
Within the watershed, very few cost competitive alternatives for disposal of brine and NRW exist. However, these disposal rates of the alternative disposal receivers, both within the watershed and outside the watershed, should be tracked and compared with the SARI rates to assure competitive rate structures are used. In the Santa Ana Watershed, the only other brine line besides the SARI is the County Sanitation Districts of Los Angeles County (CSDLAC) NRW brine line serving the Chino Basin area. The historical treatment and volumetric disposal rates for the CSDLAC brine line in IEUA are as follows in Table 9-3:

Table 9-3 CSDLAC Rate History

FY	Carbon Oxygen Demand (COD) Threshold mg/L	TSS Threshold mg/L	COD Rate \$/1000 lbs	TSS Rate \$/1000 lbs	Capital Charge (4Rs) Million	Volumetric \$/MG
2001/02	740	284	\$67.13	\$177.25	\$0.90	\$810.31
2002/03	758	286	\$67.13	\$177.25	\$0.43	\$950.85
2003/04	763	296	\$67.13	\$177.25	\$1.11	\$1,046.20
2004/05	769	319	\$71.76	\$189.48	\$1.49	\$1,138.62
2005/06	796	319	\$71.76	\$189.48	\$1.80	\$1,314.60

Comparing disposal rates is not a straightforward process because of the varying rate structure by treatment agency. For example, the CSDLAC NRW line charges to IEUA are collected by CSDLAC on an annual basis while the SAWPA treatment and volumetric user charges are collected on a monthly basis. Instead of BOD as monitored in the SARI System,

Figure 9-2
SARI Flows by Customer (MGD)



**Figure 9-3
SARI Flows by Type**

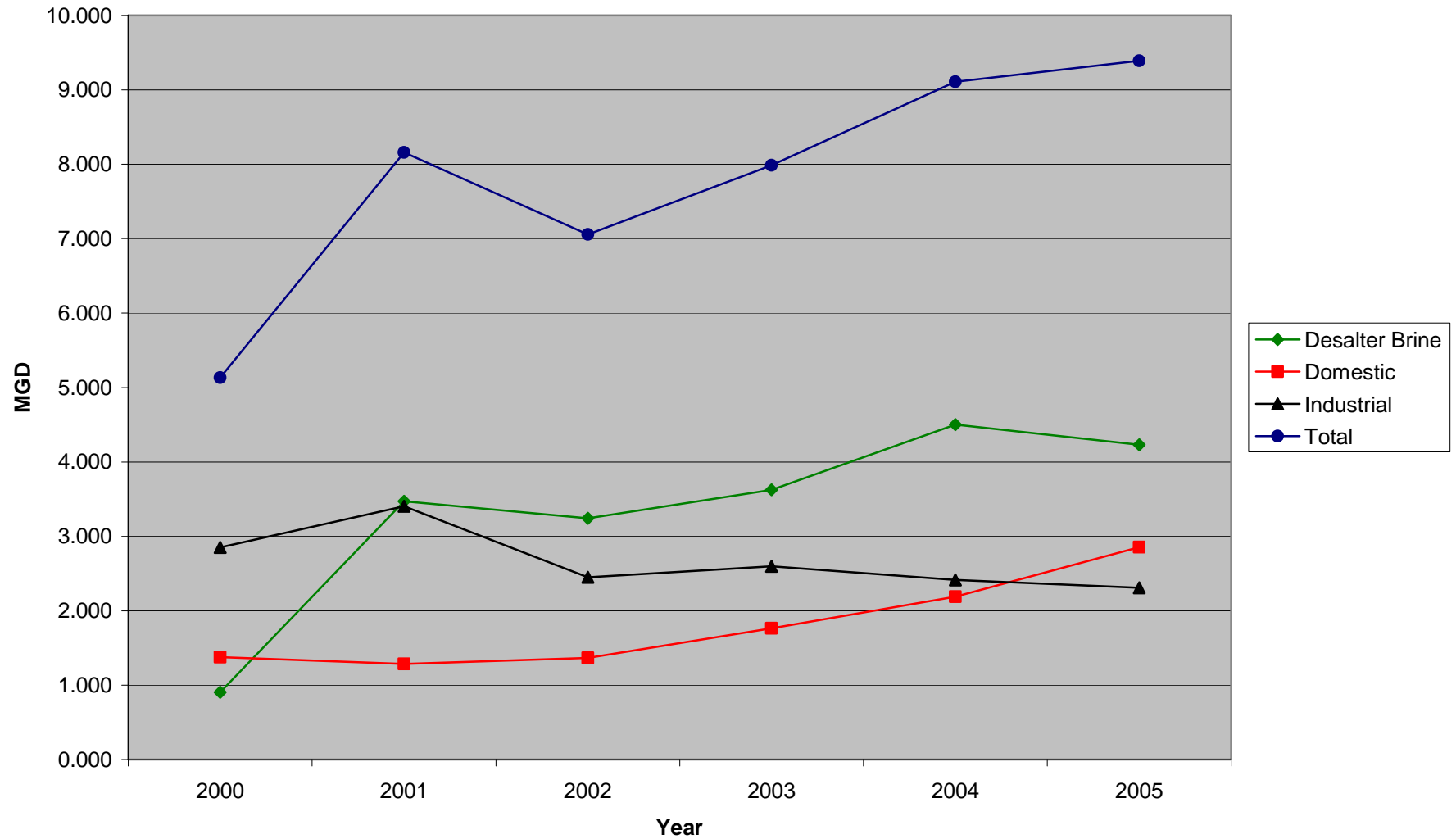


Figure 9-3

COD is monitored and established as part of CSDLAC's rates. The rates shown for the NRW line in the IEUA area are established by IEUA as a uniform rate that reflects pass-through costs from CSDLAC. The SAWPA rates of SARI costs reflect pass-through costs from OCSD, with the exception of the flow charge. For SAWPA's flow charge, the rate reflects the OCSD flow rate of \$133.74 per MG with the remaining \$455.25 per MG reflecting SAWPA's variable flow rate costs covering administration and operation and maintenance costs of the SARI line. For fixed charges for the NRW, an annual charge reflecting reconstruction, rehabilitation, restoration, and repair (4Rs) for CSDLAC improvements is passed on to IEUA in proportion to the NRW pipeline capacity owned by IEUA (approximately 10.13 MGD or about 2.8% of CSDLAC's annual capital improvements).

In Table 9-4, three examples of types of dischargers and their current treatment and volumetric charges are presented for comparison among SAWPA's SARI, IEUA's NRW, and Average WWTP in the region. Based on performance evaluation studies obtained from IEUA a BOD/COD ratio of 0.619 was used. The CSDLAC 4Rs fixed charge reflects the cost distributed over the 470 units of 15 gpm within the IEUA area to obtain a cost per MGD.

Table 9-4 Discharger Cost Comparison by Type

Brine Discharge	Flow 1 MG Average	BOD 18mg/L COD 29mg/L Average	TSS 20 mg/L Average	Fixed 1 MGD Average	Capital Average (360 mo.)	Total Monthly Annual Cost
SARI	\$589.00	\$30.04	\$52.07	\$8,045	\$22,317	\$31,033.11
IEUA NRW	\$1,314.60	\$17.37	\$31.62	\$14,674	\$19,167	\$35,204.59
Average WWTP	\$4,327.00	N/A	N/A	N/A	\$47,314	\$47,314.00
Domestic Discharge	1 MG Average	250 mg/L Average	TSS 300 mg/L Average	Fixed 1 MGD Average	Capital Average (360 mo.)	Total Monthly Annual Cost
SARI	\$589.00	\$415	\$781.09	\$8,045	\$45,375	\$55,205.09
IEUA NRW	N/A	N/A	N/A	N/A	N/A	N/A
Average WWTP	\$4,327.00	N/A	N/A	N/A	\$47,314	\$47,314.00
Industrial Discharge	1 MG Average	BOD 230 mg/L COD 371 mg/L Average	TSS 365 mg/L Average	Fixed 1 MGD Average	Capital Average (360 mo.)	Total Monthly Annual Cost
SARI	\$589.00	\$383.87	\$950.32	\$8,045	\$45,375	\$55,343.19
IEUA NRW	\$1,314.60	\$222.33	\$577.14	\$14,674	\$19,167	\$35,955.07
Average WWTP	\$4327.00	N/A	N/A	N/A	\$47,314	\$47,314.00

To equate monthly charges among the three discharge types, the pipeline and treatment capacity charges were divided over 30 years, or 360 months. The pipeline purchase capacity cost for the SARI line is \$3,750,000 per MGD. The pipeline and purchase capacity cost for the IEUA NRW line reflects IEUA's proposed increase rate effective 1/1/2007 of \$150,000 per 15 gpm, which is equivalent to \$6,900,000 per MGD. The OCSD Treatment Capacity charge to SARI is \$4,284,029 for brine and \$12,585,000 for domestic waste. The current rates were established under Board policy, and do not reflect possible modifications from Fee for Service contracts.

Local Treatment Market

Since the domestic waste discharge is currently a large component of the SARI flow (approximately 30% in Year 2005), separate market forecasts are undertaken for this component of the SARI flow. In SAWPA documents, the domestic waste discharge to the SARI is considered a temporary discharge.

A limited review of rates and connection fees charged by inland WWTPs was conducted to determine the market position of the SARI System. The table above indicates the cost for discharge to the average and highest cost systems when capital costs are included.

- SARI connection costs, including pipeline and treatment capacity charges, are 4% above the average WWTP cost and 9% below the maximum WWTP cost.
- For brine disposal, SARI costs are 13% lower than IEUA NRW but 52% lower than the average WWTP.
- For monthly domestic disposal, including pro-rata capital costs, the SARI rates are 15.4% above the average WWTP cost and 5.0% below the maximum WWTP cost. The IEUA's NRW does not carry domestic waste.
- If the cost of pipeline capital is excluded, the SARI costs are 6-26% less than local treatment plants.
- For discharge of brine only, it is unlikely that local plants could take the discharge and special pricing may be provided; however, based on the WWTP cost per Equivalent Dwelling Unit (EDU), the charges would be 38-58% higher.

Because the majority of the domestic waste discharge to the SARI arises from one main discharger, Jurupa Community Services District (JCSD), a detailed study should be conducted of the domestic waste discharge from JCSD to determine: 1) how long this flow is likely to continue; and 2) future impacts to the SARI line sustainability. Much of the JCSD flow is planned to be diverted to the Western Riverside County Regional Wastewater Authority (WRCRWA) treatment plant after 2011.

In the SARI Business Plan, it is assumed that the demand for the non-reclaimable flow will continue at its current annual growth rate of approximately 4% per year. In seeking a threshold of marketability for SARI line non-reclaimable disposal rates, the IEUA NRW rates can offer a conservative upper limit. This calculation of this threshold could be improved through a detailed market evaluation. Such an evaluation would address industrial and commercial zone development and the distances and associated trucking costs from these areas to the closest non-SARI disposal sites.

10.0 Proposed Business Plan and Other Alternatives

10.1 *Fee for Service Plan*

SAWPA would plan for and maintain sufficient disposal capability for all qualifying dischargers. The member agencies have reviewed the hydraulic flow modeling prepared for the SARI System and have considered the need to use the system to achieve maximum salt export. Given current ownership and utilization for the current planning horizon (five years or more), sufficient capacity exists for the discharges anticipated in the three newest purchase agreements. Staff will identify hydraulic “choke points” and other deficiencies through hydraulic modeling, and include required improvements within the capacity management portion of the CIP. SAWPA also will explore repurchasing capacity from current owners who may wish to sell within the near-term planning horizon. SARI capacity planning will be revisited approximately every two years so that adequate plans to provide capacity and financing are available. Rates and future capacity connection charges will be developed based on the improvements needed to export the salt and accommodate the associated flows, as they are known. Until then, the current rate will be used (\$3,750,000/MGD).

10.2 *Capacity Management*

To achieve the goal of upper watershed salt balance, continued capacity management is critical. This involves planning for future discharges, as well as understanding and controlling peak flows. Currently, the System flows approximately 12 MGD at salt concentration between 3,000 to 4,000 mg/L. A theoretical watershed salt balance could be achieved with 30 MGD pipeline capacity; the resulting salt concentration would rise to approximately 10,000 mg/L. The costs to concentrate will be compared with measures to control peak flows (such as equalization basins), additional pipeline capacity, and additional CIP or other changes as appropriate. Other alternatives will be considered, including concentration of SARI flows or other reduction methods to meet capacity needs.

10.3 *CIP Impacts*

The CIP will be periodically evaluated for required changes related to maintaining operational capability, serving new discharger needs, meeting future capacity requirements, and managing peak flows. These changes would require capital projects such as:

SAWPA will:

- *Implement a fee for service plan*
- *Plan for future capacity needs*
- *Fund the CIP*

- Pipeline repair, lining, or replacement;
- Installation of new or modifying laterals;
- Identification and elimination of hydraulic choke points; and
- Monitoring and control of peak flows through operational changes or installation of equalization basins, etc.

11.0 Long-Range Financial Plan

11.1 History and Analysis Background

11.1.1 Overview of Rate Structure

The goal of the SARI System rate structure, since inception, has been to provide adequate funding to operate, maintain, repair, improve and replace the pipeline. The main components of the rate structure include:

- Charges to be paid to OCSD (volumetric, BOD/TSS, repair and maintenance)
- SAWPA O&M costs
- SAWPA administrative costs
- Funding the CIP

Prior to FYE 2006, the SARI rate structure charged each member agency for its flow into the System, a fixed charge based on owned capacity, and for BOD and TSS concentrations that exceeded the 250 mg/L threshold. The combination of volumetric, fixed, and BOD/TSS charges were enough to cover operational costs and allow for modest contributions to several reserve accounts.

With the increase in development in the watershed within the past few years, and an increase of domestic waste into the line, volumetric flow has increased more than 54% since 2002, while BOD and TSS costs have increased by 182% and 417%, respectively. Since the enterprise could only recover costs for BOD/TSS

SARI generates revenue through:

- *Capacity sales*
- *Connection fees*
- *Rates – fixed and flow based*

when the concentrations were in excess of 250 mg/L, the old rate structure was not allowing recovery of all costs or adequate contributions to reserves.

To help remedy the problem, a new rate model was developed in 2004. The rate model was designed to raise sufficient revenues to cover ongoing operational costs, and to provide funding for capital efforts and for the long-term capital repair and replacement reserve program, thus, addressing the long-term financial needs of the SARI Enterprise System. The rate model allowed for a three year “ramp-in” to full pass-through of OCSD rates and charged BOD and TSS on total concentration with no threshold limit. After the first year of this rate plan, and continued increases of BOD and TSS concentrations, the Enterprise was not able to capture enough revenue to cover its costs. The three-year plan was accelerated by one year to full pass-through of OCSD costs in August 2005.

11.1.2 SARI Rates

Rate Model Update

In 2004, staff worked with Reiter Lowry Consultants to complete a SARI Rate Model and Long-Range Financial Plan. In April 2006, with the help of Glenn Reiter of Reiter Lowry Consultants, a new rate model was developed and updated. The new model focuses on a long-term approach to funding operations, the CIP and reserves. The model uses the FYE 2007 Budget and the 20-year CIP as a base and projects costs into the future using a 3.0% inflation rate for operating costs and a 2.8% inflation rate for construction costs. BOD and TSS charges are assumed to be passed through directly to the dischargers. In the short term, rates will remain as set in Resolution No. 448 through FYE 2010, with small changes in the fixed rate and the BOD and TSS rates set as projected by the OCSD.

The model offers several funding options, including pay-as-you-go, debt financing, or a combination of both. Based on the assumptions used in the model, the use of reserves, rate increases, and borrowing provide the necessary funding for the long-term financial stability of the System.

11.1.3 SAWPA Rates

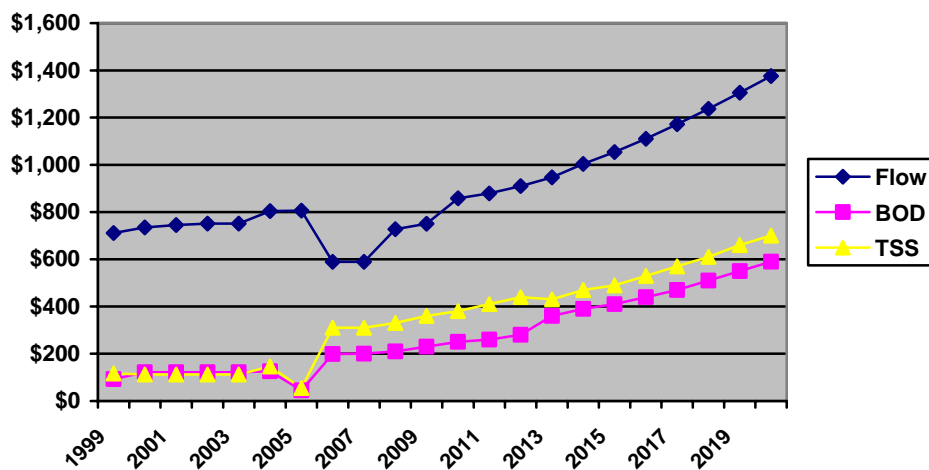
Table 11-1 and Figure 11-1 show the SARI Enterprise rates from 1999 projected through 2020. Beginning in 2006, SAWPA BOD and TSS rates are a pass-through of OCSD rates. The rate model update assumes that rates set by Resolution No. 448 will remain in effect through FYE 2010 and any increase in BOD and TSS will be passed through. Other rates that are derived from the rate model include the truck discharge rate, lease rates, and peaking/emergency discharge rates. The charges for peaking will initially be small, as significant pipeline capacity is available and will rise as the capacity must be closely managed.

Table 11-1 SAWPA Rates

FYE	Flow	BOD (per 1000 lbs)	TSS (per 1000 lbs)	Min Charge	Fixed Charge Treatment	Fixed Charge Pipeline
1999	\$711.11	\$92.50	\$116.50	\$71.00	\$2,768.00	\$0
2000	735.00	122.09	112.04	71.00	2,768.00	0
2001	745.00	122.09	112.04	71.00	2,768.00	0
2002	751.00	122.09	112.04	71.00	2,768.00	0
2003	751.00	122.09	112.04	71.00	2,768.00	0
2004	804.00	125.93	146.01	76.00	2,962.00	0
2005	806.00	45.00	55.00	0	3,523.00	0
2006	589.00	199.00	310.00	0	8,045.00	0
2007	589.00	200.00	312.00	150.00	5,310.00	2,124.00
2008	727.00	210.00	330.00	150.00	5,663.00	2,265.00
2009	750.00	230.00	360.00	150.00	6,044.00	2,417.00
2010	858.00	250.00	380.00	150.00	6,452.00	2,581.00
2011	879.00	260.00	410.00	150.00	6,775.00	2,710.00
2012	910.00	280.00	440.00	150.00	7,114.00	2,845.00
2013	947.00	360.00	430.00	150.00	7,469.00	2,988.00
2014	1,004.00	390.00	470.00	150.00	7,843.00	3,137.00
2015	1,054.00	410.00	490.00	150.00	8,235.00	3,294.00
2016	1,110.00	440.00	530.00	150.00	8,647.00	3,459.00
2017	1,172.00	470.00	570.00	150.00	9,079.00	3,632.00
2018	1,237.00	510.00	610.00	150.00	9,533.00	3,813.00
2019	1,305.00	550.00	660.00	150.00	10,009.00	4,004.00
2020	1,376.00	590.00	700.00	150.00	10,510.00	4,204.00

Prior to FYE 2006, BOD and TSS charges were only calculated when concentrations exceeded 250 m/l. With the development of the rate model in 2004, BOD and TSS charges are passed through to the discharger based on actual concentrations, regardless of limits beginning in FYE 2006.

Figure 11-1 SAWPA Rates



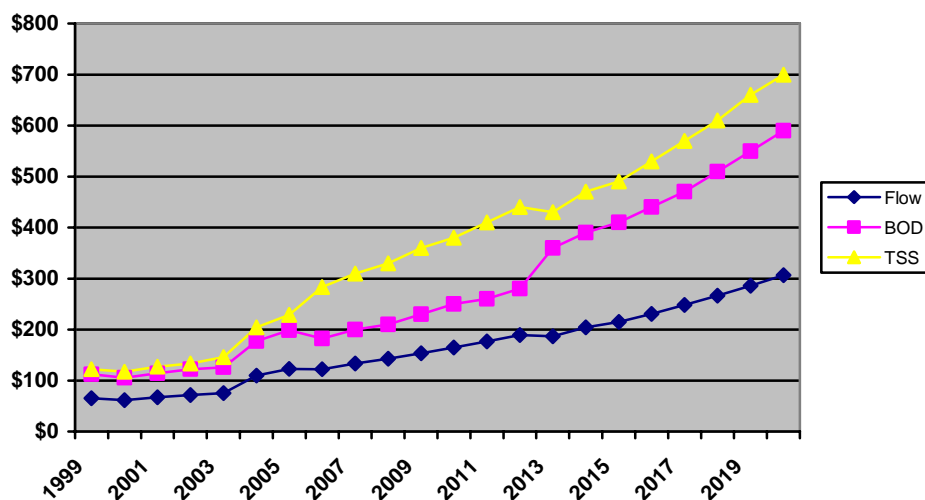
11.1.4 OCSD Rate Schedule

The following Table 11-2 and Figure 11-2 show the rates charged from OCSD for volumetric and treatment costs from 1999 projected through 2020. Since 2002, rates have increased by 71% for flow, 49% for BOD and 112% for TSS and are projected to increase by an average of 12% per year into the future.

Table 11-2 OCSD Rates

FYE	Flow	BOD (per 1000 lbs)	TSS (per 1000 lbs)
1999	\$65.17	\$112.04	\$122.09
2000	61.46	105.33	117.27
2001	66.87	114.22	127.42
2002	71.34	122.34	133.66
2003	75.51	125.93	146.01
2004	109.76	177.61	204.56
2005	122.88	198.83	229.01
2006	122.27	182.18	283.63
2007	133.74	200.00	310.00
2008	143.02	210.00	330.00
2009	153.81	230.00	360.00
2010	164.98	250.00	380.00
2011	177.00	260.00	410.00
2012	189.39	280.00	440.00
2013	186.83	360.00	430.00
2014	204.59	390.00	470.00
2015	215.26	410.00	490.00
2016	230.47	440.00	530.00
2017	248.13	470.00	570.00
2018	266.44	510.00	610.00
2019	286.13	550.00	660.00
2020	306.45	590.00	700.00

Figure 11-2 OCSD Rates



11.1.5 Trends for the Future

An ongoing issue that might affect the rates is the ability to pass-through all BOD and TSS charges to the member agencies. At present, not all of the BOD and TSS costs from OCSD are being recovered through the current sampling and analysis methods and rate structure. In the future, BOD and TSS concentrations will be adjusted by the ratio of the difference between the measurement at the OCSD meter and the measurement at the individual discharger's meter.

Each year, the SARI rate model will be reviewed and updated as needed. As we move forward, the reserve levels for each reserve account and the funding for the CIP will have to be determined. This could have an impact on future rates and changes will be incorporated into the rate model.

11.2 Operations and Asset Management

Operations expenses are divided into recurring and non-recurring expenses. Future recurring expenses are more predictable. Recurring operations expenses consist primarily of OCSD treatment costs for flow, BOD and TSS, contracted O&M services (WMWD), contracted pre-treatment program services (G&G Environmental), manhole lid adjustments and sinkhole repairs, and SAWPA staff time. Non-recurring expenses include CCTV pipeline inspection, special activities (e.g. pipeline cleaning) and repairs, developer requested SARI infringements or relocations, and other unscheduled activities that occur periodically.

Recurring and non-recurring expenses are estimated on the basis of historical data and known activities for the upcoming FY. These costs are then entered into the proposed FY budget and the SARI rate model.

The FY 2006/07 proposed budget includes the costs to establish a more formalized asset management program to track assets, record O&M related information, analyze the information, and schedule future activities. The database will be used to identify areas of the System that require higher levels of activity, which can then be analyzed for possible corrective action, and to ensure that all facilities obtain the appropriate level of activity (e.g. periodic manhole inspection, valve exercising, siphon cleaning, etc.).

11.3 Capital Improvements

Adequately funding the CIP is a major component of the SARI Enterprise rate structure. Staff has calculated that over \$64,611,000 (FYE 2006 dollars) will be spent in the next twenty years for projects which are included in the approved CIP shown in Appendix C. Additional costs will be generated by capacity management initiatives.

11.4 Capacity Management

As SAWPA completes the transition to a "fee for service" business model, continued capacity management efforts will be critical. It is likely that improvements will be necessary to accommodate future flows. Such improvements might include eliminating hydraulic choke points or increasing salt concentrations and thus reducing flows. System improvements would be financed either through future capacity sales or adjustments to future rates and charges.

A new Capacity Management Capital Improvement Plan (CMCIP) is proposed as a segregated component of the SAWPA CIP described above. The projects that will be in the CMCIP include bottleneck or chokepoint elimination as well as various projects identified that could make capacity available such as:

- Concentration of brine at the point of generation
- Expanding pipeline physical capacity or upsizing
- Repurchase of unused capacity
- Flow stabilization and peak discharge elimination
- Reduction or elimination of low salt discharges
- Reduction of salt sources into the watershed
- Concentration of inline flows in the lower SARI
- Other projects that are identified to manage or expand capacity

These projects are needed to make capacity available and manage flows in the SARI System and will be funded from the collection of connection fees and ongoing rates and charges related to peaking and flow monitoring. Also, the CMCIP will probably need additional funding from the rates and charges in order to fund projects adequate to reach these goals. Currently no estimate of these impacts is possible. Impacts will be estimated as part of the CMCIP.

11.5 Reserves and Funding Proceeds

Over time, the SARI Enterprise has built up several reserve accounts. The current rate model allows for funding the following reserves: the Operating Reserve (25% of the total operating expenses), the Self-insurance Reserve (\$100,000 contribution each year), the Pipeline Replacement Reserve (contribution amount specified in the rate model for each year), and the Capacity Management Reserve of up to \$18.75 million from pipeline connection sales. (See Section 11.4 Capacity Management)

Table 11-3 shows the FYE 2006 projected reserve balance, the FYE 2007 projected contribution amount and the amount available to fund the CIP at the end of FYE 2007. In addition to the reserve accounts listed above, the chart also contains the excess funding in the Debt Service Reserve and the SARI Operating Cash account, which is the Enterprise's checking account. The Debt Service Reserve and some of the SARI Operating Cash are available to help fund the CIP. All interest earned on reserves contributes to reserve balances.

Table 11-3 Projected Reserve Balances

Reserve Account	FYE 2006 Balance	FYE 2007 Contribution	Total Reserve Balance
Self-insurance	\$2,783,078	\$40,000	\$2,823,078
Debt Retirement *	10,000,000	0	10,000,000
Pipeline Replacement	4,627,056	557,797	5,184,853
Capacity Management	0	3,375,000	3,375,000
SARI Operating Reserve	645,977	166,790	812,767
SARI Operating Cash	4,774,224	575,317	5,349,542
Total	\$22,830,335	\$4,714,904	\$27,545,240

* Excess portion of debt service reserve

11.6 Funding Alternatives

With the completion of the SARI Rate Model Update, several alternatives have been identified for funding the CIP. The funding options include pay-as-you-go, debt financing, or a combination of both. With the pay-as-you-go funding option, rates would need double digit increases each year to sustain the current CIP, and projects would need to be reevaluated for urgency and timing. By spreading out the current CIP schedule over a longer period of time, it may be possible to fund it through the rates. By doing so, the projects will ultimately cost more. In using debt financing, several borrowings would be needed over a period of time to fund the CIP. Rates would have to be increased to cover the debt service payments. This plan depends on a combination of pay-as-you-go and debt financing to fund the CIP. This allows the use of existing reserves, the borrowing of funds, and a gradual, predictable, and moderate increase in rates to fill gaps in revenue for the CIP.

Funding CIP options:

- *Borrowing*
- *Rates – pay as you go*
- *Combination of rates and borrowing*

By using excess Debt Service funds of \$10 million, Pipeline Capacity funds of \$4,627,056, and SARI Operating Cash of \$3,774,224 (\$1 million to stay in Operations), \$18,401,280 would be available to fund the CIP through FYE 2010. Table 11-4 shows the reserve account balances, contributions, and funding of the CIP through FYE 2010.

Table 11-4 CIP Reserves

FYE	Reserve Balance	Contributions	CIP Funding	Balance
2007	\$18,401,280	\$1,319,857	(\$4,465,306)	\$15,257,487
2008	15,257,487	2,654,899	(3,569,000)	14,343,386
2009	14,343,386	2,339,530	(7,728,000)	8,954,916
2010	8,954,916	2,628,019	(7,859,000)	3,723,935

Need for Debt Financing

Based on the rate model, SAWPA would need to borrow funds in FYE 2010 or whenever the SARI Betterments Project is approved. If it is approved, it would likely be in FYE 2008. This plan proposes a minimum reserve balance be considered as an alternative to exhausting reserves. This plan presumes a minimum of \$2.5 million be kept in the pipeline repair and replacement reserve. Once projects are approved that would reduce reserves below the minimum level, a borrowing would be triggered.

12.0 Regional Role, Opportunities and Information/Marketing Plan

12.1 Regional Role and Importance of the SARI

12.1.1 Regional Role of SARI

The SARI has the primary role of salt export conveyance for the watershed, moving salt out of the watershed to achieve salt balance. However, it serves several other roles, such as handling emergency discharges from local wastewater plants and facilitating the use of recycled water by businesses that discharge it after use to the SARI line. An efficient example of this process is electrical generation using high salt waters for cooling. The power plants concentrate the salts through use and fund salt export from the watershed through the SARI system. Additionally, the SARI has become a critical component in developing local water supply by making it possible to operate brackish groundwater desalters and supporting the increased use of recycled water.

12.1.2 Importance of SARI

The SARI enterprise has become an integral part of drinking water systems by facilitating desalting of water for domestic, industrial, and other uses. A variety of businesses and facilities of

Discharges of waste suitable for POTW treatment are considered temporary

regional and statewide importance take advantage of the SARI line for the discharge of water that cannot be discharged to local WWTPs. Discharges that are low in salt and can be discharged to local WWTPs should be converted to local treatment to allow recycling and to make capacity availability in the SARI.

The SARI is now indispensable for many facilities in meeting the Santa Ana Regional Water Quality Control Board (SARWQCB) discharge requirements. Additionally, several businesses are able to operate in the region and California in an environmentally conscious manner because of the unique opportunities the watershed presents with the SARI line for salt discharge. Salt balance is integral to the long-range sustainability of the Santa Ana Watershed. The SARI line, by preserving water resources and improving water quality, benefits local water basins and Orange County.

12.2 SARI Opportunities

12.2.1 Funding Opportunities

As can be seen in the CIP sections of this business plan, the SARI has significant funding requirements. The cost of capacity will increase in the future, and keeping the SARI affordable will become more and more difficult. There are significant opportunities to acquire funding from Federal appropriations and State grants and through cooperative projects.

SAWPA has historically been successful in gaining low-interest loans, grants and Federal appropriations for construction of various reaches of the SARI line, as well as for improvements, enhancements, and extensions.

The SARI System has had Federal legislative representation for the past three years. This effort has been focused on appropriations related to the raising of Prado Dam and the associated impacts to the SARI line. Several STAG grants and FEMA/NRCS support have offset emergency or one time costs that otherwise would have affected the rates.

The SARI has not applied for significant State grants or loans in recent years; however, significant portions of the line were constructed with State Revolving Loan Program funding. These sources should be available in the future for updates and improvements or expansions. SAWPA is proposing these sources as worthy of review for funding the CIP.

Probably the most significant opportunity for the System is to partner with the member agencies, OCSD, and other organizations to enhance and extend the SARI capabilities to meet its mission. These opportunities will be likely to arise on a case-by-case basis. SAWPA will seek such opportunities to collaborate with agencies and organizations to the benefit of the SARI or the watershed.

Examples of cooperative projects include the projects listed under Capacity Management in Section 11.

These funding alternatives will likely supplement funds generated by rates or borrowing. They will not replace them. Outside funding should be considered as a way to minimize cost while improving service or reliability.

12.2.2 Member Agency Partnerships

SAWPA performs most of its SARI-related efforts in partnership with its member agencies. Indeed, the SARI line capacity is owned by the member agencies with SAWPA for managing salt in the watershed.

The opportunities for SAWPA to work with the member agencies on matters relevant to the SARI line are extensive and go beyond the scope of this document. Incorporating the experience and capabilities of the member agencies can help to keep costs down and maximize SAWPA capabilities.

Some member agencies have also indicated their willingness to provide funding or loans for the projects in the CIP, which could be a significant funding opportunity that should be developed in the near future. A line of credit or rate discount arrangements that could benefit agencies with access to lower cost capital would benefit the Enterprise and the agency.

12.2.3 Enterprise Partnerships

The SARI Enterprise will also review opportunities to partner with other agencies and enterprises in efforts of mutual benefit. Key projects in this area include: brine concentration, flow reduction, and joint facility funding and construction.

12.2.4 Discharger Partnerships

SAWPA will, through its member agencies, work with dischargers to reduce flows and to concentrate salts in the System.

12.2.5 Strategic and Innovative efforts

Efforts with the U.S. Bureau of Reclamation, Salinity Coalition, etc., should be pursued to assist with salt load reduction, and the Capacity Management options listed in Section 11.4.

12.3 Information and Marketing Plan

12.3.1 Marketing and Information Goals

The purpose of Marketing and Information Planning is to inform, gain support for funding and enhancements, prepare dischargers for rate changes, and support project implementation. Unlike traditional marketing, the goal of these efforts is not to gain market share, but to make optimum use of the System for its primary mission and to develop support for funding and projects that further that mission.

SARI information and marketing goals could be met through a variety of methods. SAWPA now relies on its member agencies for most information and contact, and, understandably, the effort needed to communicate with dischargers is minimal compared to marketing to potential dischargers. This status merits further evaluation so that new methods for effectively marketing the Enterprise can be developed.

12.3.2 Audience

The primary audiences for information and marketing include member agency staff and board members, as well as the parties listed in Section 8, primary clients, secondary clients, potential clients, general beneficiaries, elected, business, and community leaders, and communities affected. Each of these audiences has a need for similar information at varying levels of detail. The differing levels of detail and complexity present issues in the methods and materials employed. Careful effort in messages and work in methods, timing, and materials can enhance the effectiveness of outreach to these different audiences.

12.3.3 Primary and Secondary Clients

Primary clients and secondary clients need timely information about rates and charges, impacts to availability, and changes to the System such as annual rate changes and service reductions or shutdowns. They should also be made aware of the long range goals of the System so that they are prepared in concept for what is coming, even if the details are not known. Primary and secondary clients should receive a high level of information on a regular basis, and special meetings and outreach might be worthwhile when changes are contemplated.

12.3.4 Potential Clients and General Beneficiaries

Potential clients and general beneficiaries need to hear about and easily understand the benefits of the SARI, as well as the general future direction of the Enterprise. Because both of these groups could be funding the System in the future, they need to know why the SARI is a good value to them and what they are getting for its costs. Outreach to general beneficiaries would be at a low level most of the time, with higher intensity dictated by the need for funding or other System changes. After they have been identified, potential clients should get a high level of information and feedback.

Considerable effort can be expended to reach potential clients. Most of the potential client information gathering and marketing has been and will be performed by SAWPA's member agencies. One industry segment that may be a good target is electrical power. The needs for power in the area are growing, and the use of recycled water and a financing source for salt discharge support the goal of achieving salt balance.

12.3.5 Elected, Business, and Community Leaders

These leaders need to be aware of the SARI System. The ultimate goal of any program for SARI is that every leader has heard of this innovative and crucial utility. To promote and sustain such awareness, outreach to these leaders would be at a low level most of the time. If changes in the SARI are contemplated, or additional funding or projects are needed, the level of information sharing and contact should be raised. Also, developing residential or expanding business areas will need targeted information and materials to make the best use of the SARI.

Currently the SARI is not easily explained to these audiences. One innovative option is to rename the SARI line to instantly convey its salt exporting and water quality functions. This would also reduce confusion in Orange County.

12.3.6 Messages

Significant effort should be made to refine messages and detail for each audience; however, the following summarizes general messages:

- Salt Management is a critical issue for the Santa Ana Watershed
- The SARI line is an innovative salt management mechanism that provides the opportunity for sustainable watershed resource management;

- The SARI line is primarily a utility for transporting brine to enable groundwater desalting, efficient water recycling, and sustainable economic development;
- The SARI line supports water intensive businesses, especially those that use recycled water for production; and
- The SARI line helps insure the future of our watershed's water supply.

12.3.7 Methods, Materials and Timing

Although methods, materials, and the timing will vary with each audience and effort, general information on the location, availability, rates and charges, and hauler opportunities must be conveniently available for all audiences, especially primary and secondary clients. When staffing is available, a brochure, web-based information, and rate sheet will be produced and maintained to provide basic information on SARI. A certain level of information is currently available on SAWPA's website; this is undergoing continuous expansion and improvement.

Funding- or project-based materials and outreach measures will be needed as changes or improvements to the System are considered. Materials for the commercial real estate market (lease and sales), as well as for planning and permitting agencies in areas that the SARI services, would help SAWPA to reach potential clients. These materials and the methods of delivery, which could include area or individual briefings or direct mail to affected areas, will be planned to achieve the greatest effect.

When staffing or consultant assistance is available, these materials will be produced. Costs will be included in these projects for this effort.

13.0 SARI Operations Plan

SAWPA owns, operates and maintains the SARI within Riverside and San Bernardino Counties beginning at the Orange/Riverside County line up to terminus points with each member agency or discharger. In general, these terminus points are defined by the flow meter at the lateral or connection. SAWPA owns, operates, and maintains the flow meter and vault. The flow meters are typically located near the SARI mainline; however, there are exceptions. Following is a brief description of the limits of SAWPA O&M responsibilities within each member agency's service area:

- EMWD is served by Reach V of the SARI. The pressure sustaining station with flow meter located just southeast of the intersection of Collier and Chaney streets in Lake Elsinore is the terminus of SAWPA's ownership and O&M responsibility. EMWD is responsible for the brine line "upstream" of this location.
- IEUA is served by Reaches IV, IV-A, and IV-D. On Reach IV-A, SAWPA owns, operates, and maintains the pipeline up to the master meter (S-05). "Upstream" of the master meter, SAWPA continues to own the pipeline but has contracted with IEUA

which operates and maintains the pipeline on SAWPA's behalf. The individual dischargers on Reach IV and IV-D maintain the laterals beyond the flow meters [Green River Golf Course, California Institute for Women (CIW), Lewis Homes, Chino I Desalter]. The IEUA truck dump station is located just upstream of the master meter near Regional Plant 2. Currently, WMWD truck haulers also discharge at this location. The site is manned full time by a WMWD employee.

- SBVMWD is served by Reach IV-D/E. SAWPA owns, operates, and maintains the pipeline up to the City of San Bernardino WWTP. The individual dischargers maintain the laterals beyond the flow meters (Mountainview Power Plant, EI Colton Power Plant). The SBVMWD truck dump station is located at the City of San Bernardino WWTP.
- WMWD is served by Reach IV-B and IV-D. SAWPA owns, operates, and maintains the pipeline through the service area. The individual dischargers maintain the laterals beyond the flow meters [Temescal Desalter, GCCC, Corona Energy Partners, JCSD, Rubidoux Community Services District (RCSO), Aluminum Corporation of America (ALCOA), Dart Container, International Foods, Stringfellow, CRC]. WMWD currently operates a truck dump station co-located at the IEUA site.

13.1 General Description of Operations Approach

SAWPA contracts its operation and maintenance responsibilities to WMWD and Pre-Treatment Program responsibilities to G&G Consulting and WMWD. These contracts are managed by SAWPA's Engineering and Operations Department. Other SARI activities conducted by the Department include:

- Handling requests for new or revised service from member agencies;
- Coordination with U.S. ACOE on Prado Dam modifications;
- Developer requested pipeline relocations or protection;
- Maintenance and evaluation of flow and quality data;
- Preparation and coordination of an Emergency Response Plan;
- Maintenance of record drawings and data;
- Conducting a CCTV inspection program;
- Pipeline and manhole repairs (larger efforts);
- Special pipeline cleaning efforts (non-recurring);
- Financial management –tracking of revenues, expenses, rate model updates, etc.; and
- Coordination with OCSD – sampling and flow measurement, billing, operation of SARI in Orange County, SARI protection in Orange County, etc.

WMWD's contract with SAWPA includes the following core tasks:

- General Operations;
- Meter Maintenance;
- Sample Collection and Analysis;
- Line Cleaning (recurring);
- Video Logging (smaller efforts);

- Right of Way Maintenance;
- Pipeline Maintenance;
- Manhole Maintenance;
- Valve Maintenance; and
- Pretreatment Program including Permitting and Inspections.

WMWD uses two contractors, Babcock Laboratories for sampling and laboratory testing, and G&G Consulting for conduct of the pre-treatment program within its service area. WMWD also performs numerous non-recurring activities related to operations, maintenance, and repair. In the future, these activities will be documented with work orders issued by SAWPA.

13.2 Multi-Jurisdictional Pre-Treatment Program

SAWPA conducts a pre-treatment program as required by agreement with OCSD. SAWPA has executed multi-jurisdictional pretreatment agreements with EMWD, IEUA, and SBVMWD for the conduct of pretreatment programs within their respective service areas. A fourth agreement, with WMWD, has been drafted, and the details for implementation are being worked out. The Commission is expected to consider approval during FY 2006/2007.

The major activities for the pre-treatment program include:

- Permits – issue new and revised; monitor compliance
- Facility inspections
- Sampling – conduct and review results
- Enforcement responses in accordance with the approved Enforcement Management System
- Audit member agency programs
- Permit database management including flow and water quality data
- Regulatory reporting – semi-annual and annual reports

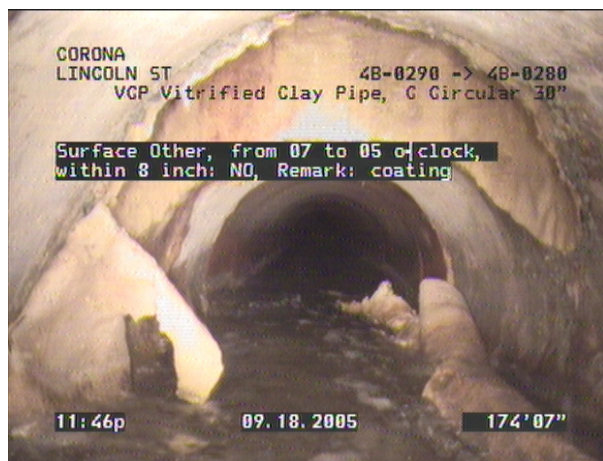
Sampling is performed for verification of permit compliance and for billing purposes. The frequency and constituents sampled for permit compliance differ from those sampled for billing. Samples are obtained by WMWD either directly by its personnel or by contract laboratory personnel.

13.3 Existing Initiatives

A work plan was developed for FY 2005/2006, which includes the items listed below. Work on these items will continue until completed; some, such as the CCTV pipeline inspections, are multi-year efforts.

- Sampling imbalance between SAWPA meters and OCSD “rate determining” meter;
- Flow characterization;
- Inflow and infiltration;
- CCTV pipeline inspection;
- Hydraulic model refinement, capacity/”choke points” evaluation;

- Updates to CIP;
- Permitting of “fail safe” connections;
- Access behind (upstream of) Prado;
- Maintenance management system; and
- Operations plan, maintenance manual.



Failed PVC liner at manhole (left photo)



Deposits in pipe invert Reach IV-B (right photo)

13.4 SSO Initiatives

WDRs for sanitary sewer systems. On May 2, 2006, the State Water Resources Control Board approved Order No. 2006-003. Compliance by SAWPA is required. The purpose of the order is to prevent SSOs. There are numerous requirements such as preparation and maintenance of a sewer system management plan and reporting. The requirements are consistent with ongoing activities and practices. SAWPA will be working to comply with all requirements in accordance with the mandated schedule.

14.0 Strategic Operational Initiatives

The SARI line will require continuous review of its operational requirements and associated funding needs into the future. With that in mind, SAWPA has previously identified several options for business models to support these operations, but it still appears that operating as a joint powers authority will continue to meet SAWPA's current needs.

14.1 Previous Studies

In 1978, a report was prepared for SAWPA by an un-named preparer, the *Review and Analysis of Dairy Waste Management Organizational Alternatives*. This report includes an analysis of the various types of governance structures that might be used by SAWPA (rather than organization as a joint powers authority), although they are discussed in light of the needs of dairies in the watershed (Chino Basin). This document describes, among other things, the advantages, and disadvantages of transforming SAWPA from a joint powers authority into some other entity, such as:

- A non-profit corporation for bonding purposes;
- A municipality;
- A county sanitation district;
- A county water district;
- A solid waste district;
- A special conservation district;
- A special legislative act conservation district or agency;
- A general corporation;
- A non-profit cooperative;
- An agricultural cooperative;
- A joint improvement district;
- An improvement zone; and
- A special districts joint improvement zone (“county service area”).

Clearly, some of the alternatives have no application to SAWPA. And none of these alternatives appears to be directly applicable to SAWPA’s governance needs concerning SARI line operations and CIP, but a further review of a few of these alternatives by legal counsel might be in order as strategic planning proceeds, especially since this alternatives’ report is almost 30 years old.

In 2002, SAWPA legal counsel (Aklufi & Wysocki) prepared a General Summary of Procedures for Levying a Tax, Assessment, Fee, or Charge in which they laid out options for SAWPA in terms of financing the SARI Line with various mechanisms. In summary, the SAWPA Commission:

- May not levy a general tax;
- May propose a special tax as a ballot measure (subject to approval by voters);
- May form an Assessment District (subject to Proposition 218 requirements) for purposes of levying an assessment; and
- May be able to develop a property-related fee or charge (subject to Proposition 218/AB-1600 requirements), although the process is complex.

In 2006, SAWPA legal counsel (Aklufi & Wysocki) prepared a Comparative Analysis of the Advantages and Disadvantages of Levying Special Tax, Assessment or Fees Memorandum, which is attached as Appendix G.

All of these require, among other things, a vote of either property owners or the electorate, and therefore, may not be attractive revenue sources. However, one or another of these should be further evaluated in the governance changes discussed in the Commission Vision Statements because the development of a regional funding source for SARI and its related water supply and quality projects would serve the region well for years to come.

In 2004, Reiter-Lowry prepared a SARI Rate Model for SAWPA to use in charging rates for treatment and disposal. The rate structure was designed to generate sufficient revenues to cover ongoing operational costs and provide funding for capital efforts and

long-term capital repair and replacement reserve program, thus meeting the long-term financial needs of the SARI Enterprise System.

This rate model also included an assumption of the issuance of bonds to pay for improvement to the System. The SAWPA Commission approved the rate changes proposed in the model, but did not act on issuing bonds. This model was updated in 2005 and is currently being updated for FYE 2007 and beyond.

14.2 Future Strategic Operational Initiatives

As the existing SARI line nears physical capacity the following operational modifications should be considered for implementation:

- **Expanded Service level** (expansion of the current model), wherein SAWPA will provide the level of service, including building and operating improvements (e.g. concentrators, hydraulic choke point improvements) as needed. This would include implementing emerging technologies, reducing the amount of salt that enters the watershed, and strategies that reduce costs of operating and maintaining the SARI line.
- **Revision of acceptable wastewater types/water qualities**, under which SAWPA could no longer allow certain types of wastewater into the System, thereby facilitating implementation of different treatment/disposal options.
- **Revision of acceptable flow patterns/regimes**, with which to reduce discharge peaking, reduce use of the line for emergency discharges, eliminate use of the line for temporary discharges, or tightly control or eliminate specific timed discharges.
- **Reclamation of additional water through additional treatment**, design and implement new facilities in the System (either at selected points of discharge to the SARI line or at an accumulation point downstream) that would perform additional treatment to:
 - Reduce total future flows in the SARI line, allowing existing capacity limits to be maintained without construction of new pipeline;
 - Create new water that may be used for additional potable, non-potable, or industrial uses; and
 - Improve the quality and characteristics of the SARI flows.
- **Also combinations of the above options.**

Numerous factors will need to be considered for these various strategies, including (but not limited to) cost, the type of wastewater included in the stream, interaction of the SARI waste stream with downstream treatment and water reuse alternatives, and future legal and regulatory considerations.

14.3 Future Business Model Initiatives

As discussed in this Plan, the current “Fee for Service” business model will be used to manage the SARI line for the immediate future. As stated in Section 10.0, this will provide up to \$18.375 million for implementing the current CIP including the capacity

management plan. Other funding would have to be produced by rates or additional changes to the business model, such as those shown below.

Other potential business model initiatives could include:

- Using SAWPA's bonding capacity to generate funds to perform CIP projects;
- Increasing member agency fees to cover capital improvement costs (with the member agencies assessing or increasing fees on their users to cover the costs);
- Selling the facility or transferring ownership and future cost responsibilities; and
- Changing SAWPA's governance structure or facilitating regional funding to allow for direct collection of fees from general beneficiaries in the watershed that currently do not pay toward the System.

14.4 Future Planning/Studies

As part of the planning process, the SAWPA Rate Model (which supports specific cost allocation for charging for volumetric, treatment, and disposal charges) will be reviewed and updated annually in accordance with Resolution No. 448.

Strategic operational initiatives will be reviewed by staff and member agencies and presented to the Commission for discussion every two years at a minimum. The Commission may direct staff to perform this analysis more frequently if it is believed that the current status is not sustaining the needs of the SARI CIP or Reserves. Business Model Initiatives will be analyzed in direct response to the Strategic Operational Initiative analysis when appropriate.

15.0 Key Performance Indicators and Reporting

Tracking performance indicators for the SARI is important because they measure the driving forces that contribute to a sustainable enterprise. A good indicator objectively measures an aspect of the System over time and reliably communicates whether the SARI System is progressing, declining, or staying the same in reaching the goals for the System. The following is a list of performance indicators recommended for the SARI System:

- Watershed quality improvement indicator - salt exported;
- Cost indicators - rate comparison to alternative disposal rates;
- Market indicators - number of customers and flow for brine discharge, non-reclaimable, domestic waste flows, and emergency flow discharges;
- Operational indicators - miles of CCTV, maintenance and repair costs, and number and volume of spills; and
- Financial indicators - years of reserves.

After key performance indicators are identified, the reporting frequency should be defined. It is recommended that an annual report be provided to the SAWPA Commission containing data on each of these indicators. In consideration of the importance of System finances to the overall sustainability of the System, tracking of the financial indicators is recommended on a quarterly basis and could be included in the Quarterly Financial Report. A historical level of performance over the past six years is presented along with the next fiscal year goal in Table 15-1.

Table 15-1 Performance Indicators

Indicator	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06 (to date)	FY 06-07 Goal
Salt Export							
(tons)	31,048	33,528	50,946	43,105	39,000	24,640	+8%
TDS conc. (mg/L)	2,498	3,118	4,172	3,107	2,726	1,981	+5%
Groundwater Cleanup							
Salt removed (tons)	27,033	24,805	29,967	41,943	36,178	22,757	+7%
New Water Produced							
MGD	16	22	24	28	26	20	+12%
Rates							
Volumetric \$/MGD	\$745	\$751	\$751	\$804	\$806	\$589	\$589
\$ BOD/1000 lbs.	\$122.09	\$122.09	\$122.09	\$125.93	\$45	\$199	\$200
\$ TSS/1000 lbs.	\$112.04	\$112.04	\$112.04	\$146.01	\$55	\$310	\$310
Fixed - Pipeline Cap.	\$0	\$0	\$0	\$0	\$0	\$0	\$2,124
Fixed – Treatmt. Cap	\$2,768	\$2,768	\$2,768	\$2,962	\$3,523	\$8,045	\$5,310
Market by Number of Customers (no.) & Flow MGD							
Desalter	(2) 2.684	(3) 3.469	(4) 3.626	(4) 4.503	(4) 4.229	(4) 4.411	+4%
Domestic	(4) 1.249	(4) 1.285	(4) 1.765	(4) 2.190	(4) 2.853	(5) 3.154	+4%
Industrial	(9) 2.976	(9) 3.404	(11) 2.597	(16) 2.415	(16) 2.308	(15) 2.557	+4%
Operations							
Miles of CCTV	0	0	0	0	0	10.5	+20%
Maintenance & Repairs (\$)	\$409,000	\$656,012	\$1,762,231	\$448,619	\$398,252	\$785,000	\$1,223,000
Spills (no.) and quantity in gallons	(2) 100K	(1) 200K	(0)	(1) 100K	(2) 200K	(1) 18K	0
Financial							
\$M in Reserve	\$41.220	\$50.779	\$52.431	\$51.349	\$46.016	\$46.561	\$46.830
Marketing – Number of Potential Customer Inquiries							
EMWD							
WMWD							
IEUA							
SBVMWD							

15.1 Indicator Goal Determination

For FY 2006-07, indicator goals have been established to determine how effectively the SARI System is performing. The first three performance indicators are environmental

indicators that are benefits to the region. The salt export indicator reflects the amount in tons of salt removed by the SARI System from the upper watershed to Orange County and, eventually, transported to the ocean. It was chosen as an important environmental indicator since salt removal was the primary reason for construction of the SARI System. The TDS concentration of the SARI is also tracked as a separate unit to define salt export. Based on the average salt removal rate of the SARI System for the past five years, a goal of an 8% increase is proposed for salt exported from the watershed. The groundwater cleanup indicator reflects the amount of salt removed from groundwater basins by the groundwater desalters located in the upper watershed. The 7% goal for next year is based on the average increase over the past five years. The third environmental indicator shows the amount of new water produced as a result of desalting and ion exchange (IX) which has been facilitated by the existence of the SARI System. A goal of 12% increase is proposed again based on the average increase over the past five years. Achieving this goal is dependent on desalting facility completion.

Cost indicators are important in evaluating System effectiveness. Since the rates established by SAWPA will have a direct financial impact on customers and could determine whether a customer continues to use the SARI System, these indicators are considered some of the most important. The rates are established by the SAWPA Commission as part of the annual budgeting process. The goals indicate the anticipated percentage change from the previous year rates. The FY 2006-07 rates for the treatment capacity fixed charge reflects a new rate addition that will assure that those customers that have purchased pipeline capacity, but do not currently use the System, will help pay for the maintenance and repair to ensure the system is viable when they want to use it.

Another performance indicator is identification of the number and type of connections. Over the long term, as the SARI System approaches its full capacity, the rate structure will need to track the number and type of customer connections so that SARI rates provide incentives or disincentives to maximize the removal of salt and domestic discharges. For now, greater flows of all discharger types helps to assure that sufficient revenue is collected to maintain and repair the System. The goals for FY 2006-07 reflect a 4% increase in all three types of dischargers based on expected flow growth as defined in the rate model. Compared to the average annual increase over the past six years of 7.5%, this estimate is conservative.

Indicators of the operational parameters of the SARI System assist staff in improving the System's efficiency and in reducing long-term costs. The parameter described as miles of CCTV indicates the length of SARI pipeline that is inspected by CCTV, which will allow staff to determine where future replacement and repair might be needed and budget for the work. Since the CCTV is scheduled to occur over a five-year time frame beginning in FYE 2006, a goal of 20% over the previous years CCTV efforts is proposed. The actual cost for maintenance and repair is another indicator in this category and historically includes the SARI operating costs, operations labor, maintenance labor, and Facility Repair and Maintenance conducted by WMWD or SAWPA. A goal for this has been established in the SAWPA FY 2006-07 budget based on anticipated maintenance and repairs needs.

The next to the last performance indicator that may be helpful to decision makers is the tracking of the SARI Reserves. These reserve values include all components of the SARI Reserves: self-insurance, future construction, debt service, pipeline replacement, OCSD future capacity, SARI operating cash, and SARI operating reserve. It is recognized that several of these components have been merged for future fiscal year accounting. A goal has not been established for this indicator but will reflect the results of the long rang financial plan which uses reserves in the short term and builds them over the duration of CIP implementation.

The last performance indicator is the number of potential SARI customer inquiries by area. This information is currently not tracked but would be an important parameter in discerning the effectiveness of SARI marketing efforts to new customers as discussed under Section 12.3. Tracking of this indicator would need to be instituted in coordination with the staffs of those SAWPA member districts that are providing SARI service to new customers in the upper watershed. Gathering this information would support SARI planning efforts, for example, by helping staff to estimate future connections, and could be of great value to measure efforts to attract new customers. In the future, additional indicators of marketing performance may be defined through customer feedback or survey forms on use of the SARI System.

Appendix A
Physical Facilities Description

Appendices

A - Physical Facilities Description

SAWPA owns either capacity rights in, or owns outright approximately 93 miles of 16" to 84" pipeline referred to as the SARI. The SARI reaches upstream of OCSD's service area are referred to as Reaches IV, IV-A, IV-B, IV-D, IV-E, and V. The total length of these upstream reaches is approximately 72 miles and ranges in pipeline size from 16" to 60".

Pipeline materials include polyvinyl chloride (PVC) pipe, RCP (unlined), RCP with PVC lining, vitrified clay (VCP) pipe, high-density polyethylene (HDPE) pipe, PVC lined reinforced concrete pressure pipe (RCPP), concrete encased steel pipe, and cement mortar lined and coated (CMLC) steel pipe. Reach V is a low-pressure force main approximately 23 miles long and is constructed of PVC and HDPE pipeline ranging in diameter from 24" to 30".

Table A-1 Upper SARI Reaches Summary			
Reach	Material	Length (Feet)	Age (Years) (2005)
<i>Reach IV (42 to 60-inch)</i>			
	RCP (PVC Lined)	12,500	30
	RCP (Lining Unknown)	2,500	55
	Concrete Encased Steel (Lining Unknown)	1,000	65
<i>Total Reach IV</i>		<i>16,000</i>	
<i>Reach IV-A (18 to 42-inch)</i>			
	RCP (mostly unlined)	41,500	24
	CMLC Steel (24 and 18 inch Siphons Only)	150	24
<i>Total Reach IV-A</i>		<i>41,650</i>	
<i>Reach IV-B (16 to 36-inch)</i>			
	RCP (unlined)	16,250	24
	VCP	5,500	24
	PVC	32,000	9
<i>Total Reach IV-B</i>		<i>54,000</i>	
<i>Reach IV-D (39 to 48-inch)</i>			
	RCP (PVC Lined)	62,700	12-14
	VCP	43,800	12-14
	HDPE	2,100	12
<i>Total Reach IV-D</i>		<i>108,600</i>	
<i>Reach IV-E (39 to 48-inch)</i>			
	VCP	4,300	13
	RCP	34,000	11
<i>Total Reach IV-E</i>		<i>38,700</i>	
<i>Reach V (24 to 30-inch)</i>			
	PVC	74,000	4
	HDPE	47,000	4
<i>Total Reach V</i>		<i>121,000</i>	
Total		<i>379,950</i>	

(Source: SARI Planning Study, SAWPA, December 2002)

CURRENT DISCHARGERS AND FLOWS

Discharges to the SARI within the Upper Reach include a combination of brines from desalination facilities, industrial wastewater, and domestic wastewater. As additional desalination facilities and power plants within the service area come on line, new dischargers will be added to the System, and the quality and quantity of future flows may change significantly.

During FY 2005, the SARI averaged 9.39 MGD of flow into the OCSD portion of the System (measured at meter S-01 at the Orange County line). The flow components were as follows:

Discharger Type	2005 Average Daily Flow
Desalters, Ion Exchange	4.229 MGD
Industry, Power Plants	2.307 MGD
Domestic	2.853 MGD
Total FY 2005 Average Daily Flow	9.390 MGD
Total Calendar Year 2005 Average Daily Flow	10.123 MGD

Desalters and some industries typically discharge brine at a constant rate. Since desalters and industry comprise approximately half of the total flow, the SARI does not experience the typical daily diurnal flow pattern of a domestic wastewater system. However, there is some daily flow fluctuation and weekend flows can be lower due to reduced industrial flow. (Reference: flow monitoring performed by ADS Environmental Services for SAWPA, February 2, 2004, to March 28, 2004).

Most flow meters located at the dischargers are simple totalizing meters which are read weekly. Continuous flow measurement is performed by OCSD at meter S-01.

CURRENT PIPELINE AND TREATMENT CAPACITY OWNERSHIP

Within the upper watershed, the SARI has nominal 30 MGD of capacity. In addition, a total of 13 MGD of treatment capacity has been purchased by SAWPA and in turn sold to the member agencies. This capacity is owned by the member agencies as follows:

Agency	Pipeline Capacity (MGD)	Treatment Capacity (MGD)
EMWD	4.378	1.200
IEUA	7.800	5.600
OCWD	0.000	0.000
SBVMWD	7.198	0.152
WMWD	10.624	5.753
SAWPA	0.000	0.295
Totals	30.000	13.000

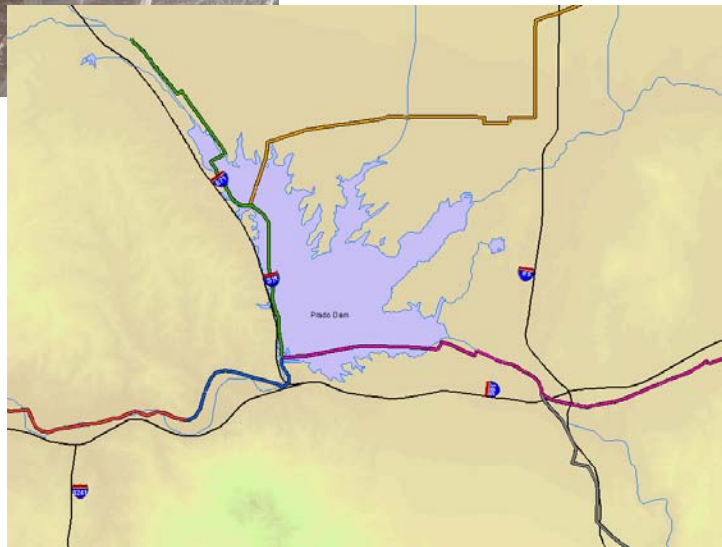
NEAR-TERM CHANGES TO DISCHARGES INTO THE SARI

There are several planned projects that will add or reduce flow into the SARI. JCSD will be diverting some of its domestic flows currently discharged into the SARI to the WRCRWA in late 2006/early 2007. In approximately 2011, the expansion of the WRCRWA plant will be completed and the majority of remaining JCSD flows diverted from the SARI to the WRCRWA plant. These changes include:

Project	Agency	Year	Brine Flow (MGD)
ADDITIONS			
Inland Empire Energy Center (Power plant)	EMWD	2007	1.2
REDUCTIONS			
Various Existing Connections	JCSD	2006	1.0 (Domestic)
Various Existing Connections	JCSD	2011	(TBD) (Domestic)

Appendix B
Executive Summary
Hydraulic Model
and
Capacity Assessment Report

Santa Ana Regional Interceptor Hydraulic Model and Capacity Assessment



January 2006
K/J 0585012*00

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Santa Ana Regional Interceptor

Hydraulic Model and Capacity

Assessment

16 January 2006

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Executive Summary

In its entirety, the Santa Ana Regional Interceptor (SARI) comprises approximately 92 miles of pipeline running through Orange, Riverside, and San Bernardino Counties. The interceptor was initially constructed to provide for disposal of highly saline brine discharges by conveying these discharges out of the Upper Santa Ana River Watershed and to treatment and outfall facilities.

Two developments in the Upper SARI system have required SAWPA to develop more detailed information on the capacity and predicted future flows in the Upper SARI system. The first of these developments is the possible high-volume flushing of Reach V for improved operations and maintenance. The second development is the future capacity needs of the Upper SARI system member agencies.

A hydraulic model was developed to determine flows and capacity in the Upper SARI system under a variety of scenarios. These scenarios are described in further detail in Section 5. The results and implications of these scenarios are presented and discussed in detail in Section 6 – Section 9.

The hydraulic model's accuracy is constrained by the following factors:

- The inflow and infiltration factors (I&I) applied to the model represent the best information known by SAWPA staff, but they are untested and uncalibrated by field values.
- The diurnal peak factors developed for the model do not represent the maximum values allowed by contract with the dischargers.
- The diurnal peak factors developed for the model are based upon best available monitored data, but they underestimate the true peak discharges seen in the Upper SARI system.
- Horizontal and vertical curves in the Upper SARI system's pipelines are not captured in the model data, but these curves will affect hydraulic performance.

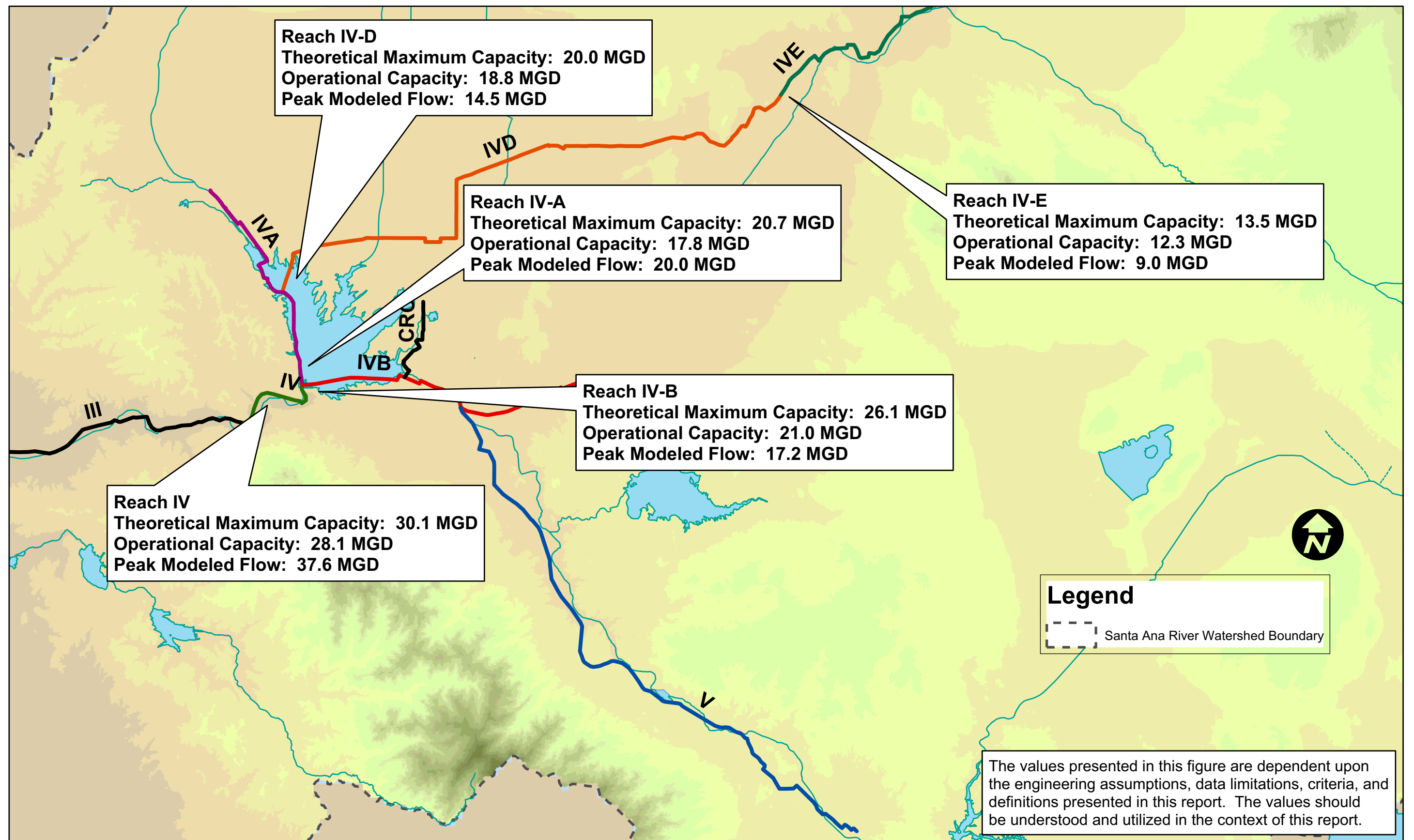
- Lateral lines jutting into a pipe and other such imperfections affect system performance in ways that cannot be captured by the hydraulic model.
- Hydrodynamic phenomena, such as air bubbles trapped due to poor blow-off valve performance, affect system performance in ways that cannot be captured by the hydraulic model.
- Average condition values relating to Manning's n values were used.
- Unknown defects may exist and cannot be captured by the hydraulic model.
- Unknown maintenance issues may exist and cannot be captured by the model.

The model results, subject to the above-described constraints, are given in detail in Section 6. The results from three scenarios given by reach are summarized in Figure 1. The theoretical maximum capacity listed in the figure is the full-pipe capacity of the capacity-constraining pipe for each reach. The operational capacity listed for each reach is the capacity of the constraining pipe for each at a depth-to-diameter (d/D) ratio of 0.75. Finally, the maximum modeled flow is the maximum flow passing through the constraining pipe for each reach under the "30 MGD Peaked + 3 MGD" scenario (see Chapter 5). These results, in conjunction with SAWPA staff discussions, led to the development of the following recommendations about the future study and management of the Upper SARI system:

- Inflow and infiltration (I&I) should be quantified.
- Video analysis of the pipes and visual inspection of the manhole structures should focus on identifying areas of deterioration that would lead to exfiltration. Areas of the Upper SARI system that demonstrate high I&I values should be subjected to pipe joint inspection to identify ways to prevent both I&I and exfiltration.
- As the system nears capacity, flow equalization basins should be placed on each private lateral from an industrial user or municipal corporation sewer collection system to trim peaking of discharge to a rate of flow that is as near to constant as possible.
- Flow characteristics of desalters should be confirmed.
- Flow meters with data loggers should be installed on private service laterals that enter the SARI. These meters will establish flow patterns and provide the data necessary for

SAWPA to work proactively with industrial users and municipalities to maintain acceptable flow levels and reduce peaking.

- The installation of flow control devices (principally weirs) should be considered on private service laterals to help ensure a consistent flow rate. These devices are normally installed as detention basin outlet structures. If such a device is placed on a desalter line that has a reasonably constant flow rate, then some capacity to store flow above the flow control point would be needed. This minor amount of detention could mitigate the effects of unusual operational circumstances that could create limited-duration flow spikes.
- The various reaches of the Upper SARI system should be evaluated for low points and points of diversion and bypass.



Appendix C

Capital Improvements

C - Capital Improvements

The SAWPA draft CIP has been updated from comments received at the February 7, 2006, Technical Committee of General Managers meeting and from information provided by OCSD at the February 23, 2006, OCSD/SAWPA General Managers meeting.

The following changes have been incorporated into the draft CIP:

- SARI Protection/Relocation (Fund No. 320): placeholder amounts in FYE 2007 and 2008 for SAWPA funded betterments have been removed pending three-party discussions between RDMD, OCSD, and SAWPA.
- OCSD Meter S-01 Modification: OCSD has determined the existing meter must be replaced in conjunction with additional treatment capacity purchases. A new project has been added for FYE 2007 totaling \$105,000 (\$80,000 for the meter, \$25,000 for OCSD staff time).
- Ten- and fifteen-year subtotals have been corrected.

OCSD CIP Update: During the February 23, 2006, OCSD/SAWPA General Managers meeting, OCSD Chief Financial Officer Lorenzo Tyner indicated OCSD is in the process of updating its CIP including the SARI CIP. The primary change is expected to be an adjustment to project timing; some projects may be delayed. There should be minimal or no near term changes to the OCSD SARI CIP since there is only one project related to SARI Protection.

BACKGROUND

One of the key elements of the SAWPA annual budget and the SARI rate model is the SARI CIP. The draft CIP includes OCSD's SARI CIP projects, of which SAWPA will be expected to pay its fair share. Through 2020, it is estimated that SAWPA's fair share of OCSD's SARI CIP projects could be on the order of \$32M.

The draft CIP consists of the following main elements:

1. SAWPA CIP Projects.
 - a. Capital Repairs (annual).
 - b. SARI Reach IV-A and IV-B Repairs (Re-lining of unlined reinforced concrete pipe) (complete by FY 2010).
 - c. SARI Optimization Projects (included in current FY budget but zero thereafter).
 - d. Modify Meter S-01 to accommodate increased SAWPA flows in the SARI. Includes cost for meter replacement and OCSD staff costs.
2. SAWPA actions related to the raising of Prado Dam by the U.S. ACOE.
 - a. Relocate SARI at Prado because of conflicts with the new dam facilities (complete by FY 2008).
3. OCSD actions related to the raising of Prado Dam and Reach 9 improvements by the U.S. ACOE (complete by FY 2008).
 - a. Interim capital repairs to the existing SARI within the floodplain (ongoing through at least the next three years).
 - b. Staff, consultant costs to participate in EIR/EIS process, design, construction (complete by FY 2008).

- c. Relocation design “betterments” requested by OCSD and SAWPA (complete by FY 2008).
- 4. OCSD Capital Improvement Program projects on the SARI through FY 2020 (variable SAWPA cost share).
 - a. SARI Relief Sewer (complete FY 2014).
 - b. SARI Realignment/Protection (complete FY 2008).
 - c. Abandonment of existing SARI in Santa Ana River (complete FY 2015).
 - d. SARI and South Anaheim Interceptor Manhole Rehabilitation (complete FY 2015).
 - e. Green River Meter Station (complete FY 2010).

Appendix D
OCSD Rate Projections
(Pass through O&M and Treatment Capacity Rates)

6/1/2006

Appendix D
Estimated SAWPA Plant O&M Rates

Fiscal Year Ended	Total Plant O&M Projection	MGD	Annual Flow in MG	Annual BOD in Pounds @ 228 mg/L	Annual SS in Pounds @ 232 mg/L	Flow	BOD	SS	Annual Flow Costs	Annual BOD Costs	Annual SS Costs	Total Annual Costs	Cost per MG of Flow	Cost per Pound of BOD	Cost per Pound of SS
2006	94,833,920	250	91,250	173,513,700	177,318,825	12%	34%	54%	11,380,070	32,243,533	51,210,317	94,833,920	124.71	0.19	0.29
2007	101,699,090	250	91,250	173,513,700	177,318,825	12%	34%	54%	12,203,891	34,577,691	54,917,509	101,699,090	133.74	0.20	0.31
2008	109,925,000	252	92,232	175,380,993	179,227,067	12%	34%	54%	13,191,000	37,374,500	59,359,500	109,925,000	143.02	0.21	0.33
2009	118,832,000	254	92,710	176,289,919	180,155,926	12%	34%	54%	14,259,840	40,402,880	64,169,280	118,832,000	153.81	0.23	0.36
2010	128,963,000	257	93,805	178,372,084	182,283,752	12%	34%	54%	15,475,560	43,847,420	69,640,020	128,963,000	164.98	0.25	0.38
2011	139,439,000	259	94,535	179,760,193	183,702,303	12%	34%	54%	16,732,680	47,409,260	75,297,060	139,439,000	177.00	0.26	0.41
2012	151,345,000	262	95,892	182,340,556	186,339,252	12%	34%	54%	18,161,400	51,457,300	81,726,300	151,345,000	189.39	0.28	0.44
2013	163,663,000	264	96,360	183,230,467	187,248,679	11%	40%	49%	18,002,930	65,465,200	80,194,870	163,663,000	186.83	0.36	0.43
2014	180,579,000	266	97,090	184,618,577	188,667,230	11%	40%	49%	19,863,690	72,231,600	88,483,710	180,579,000	204.59	0.39	0.47
2015	191,428,000	268	97,820	186,006,686	190,085,780	11%	40%	49%	21,057,080	76,571,200	93,799,720	191,428,000	215.26	0.41	0.49
2016	207,047,000	270	98,820	187,908,206	192,029,000	11%	40%	49%	22,775,170	82,818,800	101,453,030	207,047,000	230.47	0.44	0.53
2017	223,950,000	272	99,280	188,782,906	192,922,882	11%	40%	49%	24,634,500	89,580,000	109,735,500	223,950,000	248.13	0.47	0.57
2018	242,243,000	274	100,010	190,171,015	194,341,432	11%	40%	49%	26,646,730	96,897,200	118,699,070	242,243,000	266.44	0.51	0.61
2019	262,039,000	276	100,740	191,559,125	195,759,983	11%	40%	49%	28,824,290	104,815,600	128,399,110	262,039,000	286.13	0.55	0.66
2020	283,460,000	278	101,748	193,475,857	197,718,749	11%	40%	49%	31,180,600	113,384,000	138,895,400	283,460,000	306.45	0.59	0.70
2,599,446,010															
calculate percents with addl secondary:									18,161,400 11.0%	65,712,808 39.7%	81,726,300 49.4%	165,600,508			

Appendix E
Current and Projected SARI Dischargers

E - Current and Projected SARI Dischargers

Appendix E Current and Projected SARI Dischargers (11/08/05)							
Permit #	Site Name	Member Agency	Preliminary Flow Projections (MGD)				
			2010	2015	2025 (low range)	2025 (high range)	
Desalters/Ion Exchange							
S-41	Menifee Desalter	EMWD	1.2	1.2	1.2	1.2	
Online 2005	Perris Desalter	EMWD	1.6	1.6	1.6	1.6	
Future (2015)	Perris Desalter II	EMWD	0	1.6	1.6	1.6	
S-34	Chino Desalter I	IEUA	2.05	2.05	2.05	2.05	
Online 2005	Chino Desalter II	IEUA	1.62	1.62	1.62	1.62	
Future	Chino Desalter III (see WMWD)	IEUA	0	0	0	0	
N/A	California Institution for Men	IEUA	0.19	0.19	0.19	0.19	
Future	City of Chino Hills	IEUA	0.04	0.04	0.04	0.04	
Future	Desalter Expansion	IEUA	0	0	0	0	
Future	Riverside-Colton Ion Exchange	SBVMWD	0	0	0	2	
S-29	RCSD, Anita Smith Ion Exchange	WMWD	0.03	0.03	0.03	0.03	
S-32	Temescal Desalter	WMWD	1.5	1.5	1.5	1.5	
Future	Elsinore Desalter	WMWD	0.33	0.67	1	1	
Future	JCSD Ion Exchange	WMWD	0.59	0.59	0.59	0.59	
Future	Chino Desalter Expansion	WMWD	1.5	1.5	1.5	1.5	
S-22	Arlington Desalter Facility	WMWD	2	2	2	2	
Desalters/Ion Exchange Subtotals			12.7	14.6	14.9	16.9	
Industrial							
N/A	Hexfet	EMWD	0.01	0.01	0.01	0.01	
Future	Inland Empire Energy Center (2007)	EMWD	1.20	1.2	1.2	1.2	
Future	Future Power Plant	EMWD	1.00	1	0	1	
Future	Industrial (EMWD)	EMWD	0.00	0.5	1.5	2.5	
N/A	Mission Uniform and Linen Service	IEUA	0.71	0.71	0.71	0.71	
N/A	Future Uniform and Linen Service (Aramark)	IEUA	0.20	0.20	0.20	0.20	
N/A	OLS Energy	IEUA	0.13	0.13	0.13	0.13	
	RP-5 Renewable Energy	IEUA	0.10	0.10	0.10	0.10	
N/A	Co-Composting (closing in 2006)	IEUA					
N/A	RP-2/RP-5	IEUA					
N/A	Industrial (IEUA)	IEUA	0	0	0	0	
N/A	Manure Digestion	IEUA					
S-35	Mountainview Power Company, LLC (Operational 2006)	SBVMWD	0.432	0.432	0.432	0.432	
S-39	Lockheed Corp,Tippecanoe Regional Treatment Facility	SBVMWD					
S-53	City of Colton (El Colton, formerly Agua Mansa Power Plt)	SBVMWD	0.04	0.04	0.04	0.04	
N/A	SBVMWD (formerly SCE Highgrove PP) No Current Permit	SBVMWD	0.00	0	0.08	0.08	
Future	SBVMWD (YVWD or future industrial)	SBVMWD	0.00	0.25	0.284	1.068	
N/A	City of San Bernardino No Current Permit	SBVMWD	0.50	1	1.25	2.5	
N/A	City of Colton No Current Permit	SBVMWD	0.10	0.5	1	2	
N/A	City of Rialto No Current Permit	SBVMWD	0.10	0.5	0.75	1	
N/A	YVWD, includes future Ion Exchange No Current Permit	SBVMWD	0.00	0	0	2	
S-13 (A)	Golden Cheese Company of California (A)	WMWD	1.1	1.1	1.1	1.1	
S-13 (B)	Golden Cheese Company of California (B)	WMWD					
S-20	Corona Energy Partners	WMWD	0.1	0.1	0.1	0.1	
S-33	Hi Country - Corona, Inc. (closed)	WMWD					
S-38	Lynhart Company (no discharge)	WMWD					
4E-01-SP42	Metropolitan Water District	WMWD	0.05	0.05	0.05	0.05	
T-01-46	Unilever FoodSolutions International Food Solutions	WMWD	0.01	0.02	0.02	0.02	
S-50	Dart Container		0.03	0.03	0.03	0.03	
S-52	Alcoa	WMWD	0.01	0.01	0.01	0.01	
S-101	Stringfellow Pretreatment Facility	WMWD	0.26	0.26	0.26	0.26	
Future	JCSD Industrial	WMWD	1.1	1.1	1.1	1.1	
DAIRIES							
S-45	H&C Miersma Dairy (WMWD Area)	WMWD	0.1	0.1	0	0.1	
S-37	Kasbergen Dairy (WMWD Area) No Longer in Operation	WMWD					
SP015	Legend 1 Loyola Dairy	IEUA					
S-43	Newhouse Dairy Closed Permit	WMWD					
SP016	- Legend 2 Stueve-Gold Dairy	IEUA					
S-44	Van Ryn Dairy (WMWD Area) No longer in Operation	WMWD					
SP017	Marquez Dairy	IEUA					
Industrial Subtotals			7.3	9.3	10.4	17.7	
Page 1 of 2							

E – Current and Projected SARI Dischargers (cont'd)

Appendix E (Cont'd) Current and Projected SARI Dischargers (11/08/05)						
Permit #	Site Name	Member Agency	Preliminary Flow Projections (MGD)			
			2010	2015	2025 (low range)	2025 (high range)
Failsafe Connections						
4D-97-1	Chino Pond	IEUA	N/A	N/A	N/A	N/A
S-31	RIX No Current Permit	SBVMWD	N/A	N/A	N/A	N/A
N/A	Regional Plant-2/Regional Plant-5	IEUA	N/A	N/A	N/A	N/A
N/A	Carbon Canyon	IEUA	N/A	N/A	N/A	N/A
	Regional Plant-2/Regional Plant-5 Filtrate	IEUA	0	0	0	0
Treatment Plants Subtotals			0	0	0	0
Domestic						
??	Lewis Homes	IEUA	0	0	0	0
S-25	Green River Golf Club	IEUA	0.01	0	0	0
S-26	California Institution for Women	IEUA	0.27	0	0	0
S-12	City of Corona, Green River Sewer Connection	WMWD	0	0	0	0
S-19	California Rehabilitation Center	WMWD	0.93	0	0	0
S-40	JCSD, 58th Street	WMWD	0.07	0	0	0
S-36	JCSD, Chandler	WMWD	2.06	0	0	0
S-21	JCSD, Cleveland	WMWD				
S-28	JCSD, Etiwanda	WMWD				
S-24	JCSD, Hamner	WMWD				
S-23	JCSD, Wineville	WMWD				
S-55	JCSD, Archibald	WMWD				
S-48	JCSD, Harrison	WMWD				
S-49	JCSD, Hamner LS	WMWD				
S-54	JCSD, Celebration	WMWD				
	Domestic Subtotal		3.3	0.0	0.0	0.0
Indirect Dischargers						
DS-039	Access Business Group - Nutrilite Division					
DS-041	Arrowhead Regional Medical Center					
DS-013	Aztec Uniform & Towel Rental					
DS-021	Bredero Price Company					
DS-010	California School for the Deaf					
DS-002	Corona Regional Medical Center					
DS-014	Dart Container Corporation of California					
DS-003	Gene Belk Fruit Packers					
DS-012	International Rectifier, Hexfet America					
DS-024	Kaiser Permanente					
DS-004	La Sierra University					
DS-028	Loma Linda University Comm. Medical Cntr.					
DS-020	Loma Linda University Power Plant					
DS-011	Luxfer Gas Cylinders					
DS-027	Marko Foam Products					
DS-017	Patton State Hospital					
DS-016	Prudential Overall Supply					
DS-045	Qualified Mobile, Inc.					
DS-043	Rancho Springs Medical Center					
DS-019	Rayne Water Conditioning					
DS-032	San Bernardino Sheriffs Dept. Rehab. Cntr.					
DS-001	Sierra Aluminum Company					
DS-015	Tasman Roofing, Inc.					
DS-026	V. A. Medical Center					
N/A	Waste Haulers (Sum of Indirect Dischargers)		0.3	0.3	0.3	0.3
Indirect Dischargers Subtotal			0.3	0.3	0.3	0.3

¹ Based upon Jan 2004 through Jul 2005 data

² Projected flow values were provided by the SAWPA member agencies in the summer of 2005. It was interpreted that all flows provided are maximum daily flow projections based on permitted capacities. No I & I factor is included in the projections.

³ Since these flows are very near term, estimates are provided as current flows.

⁴ Assumes owned capacity, but no current flows. Large flow volumes have been realized for some of these dischargers under temporary emergency permits.

IEUA = Inland Empire Utilities Agency

SBVMWD = San Bernardino Valley Municipal Water District

WMWD = Western Municipal Water District

N/A = Data not available

(-) = Future, no data to date

Appendix F
Status of 2002
SARI Planning Study Recommendations

F – Status of 2002 SARI Planning Study Recommendations

The following summarizes several recommendations identified in the 2002 SARI Planning Study prepared by CDM, Inc. The recommendations are divided into technical recommendations and suggested policy considerations. The current status of the recommendation is also provided.

Technical Recommendations

1. Conduct CCTV inspection of the entire upper SARI System. This can be accomplished in a 5-year program. Initial inspections should begin in FY 2002/2003. If physical problems are identified, immediate action may be required. The segments of the SARI over 50 years old which are located under and adjacent to the Padre Dam, the Schleisman Siphon, Corona outfall crossing, and submerged segments of Reach IV-B should be included in the initial CCTV inspection activities. A system-wide manhole inspection program should be conducted concurrent with the CCTV inspection.

Status: SAWPA initiated CCTV inspection of upper SARI segments in the immediate vicinity of the Prado Dam in 2002. Initial inspection raised concern about the condition of approximately 34,000 feet of Reaches IV-A and IV-B unlined RCP. As a consequence, coupon samples were taken and an estimate of remaining useful life calculated. In 2003, CDM was contracted to prepare a CCTV program; the result was a five year program to CCTV the entire System. The first phase of CCTV was contracted and performed in 2005. The FYE 2007 draft budget includes program acceleration (complete the last 4 years in 2 years time)

2. Conduct field assessment of each metering site and design and construct facilities that enable automated collection of flow meter readings. The data collected should enable determination of diurnal flow patterns for each SARI discharger and assist in the proactive management of existing and future System flows. The information should enable development of a calibrated hydraulic model of the upper SARI. The data will also enable determination of the impacts of infiltration and inflow. If possible, the ability to automatically collect the required flow data should be available by the end of FY 2002/2003 to assist in defining System needs.

Status: In 2003, CDM was contracted to assess each meter location. Key meters have had strip charts installed. In addition, SAWPA purchased and installed five portable flow meters during 2005. A preliminary I/I evaluation was performed during the winter 2004/2005; results were inconclusive (some rain events seemed to have a direct correlation to SARI flow while some appeared to have no impact). Further evaluation is required. The FYE 2007 draft budget includes continuation of a program to install data loggers at all higher flow volume discharge locations. This is a two year program.

3. Prepare a comprehensive hydraulic model of the upper SARI by the end of FY 2002/2003. A hydraulic model is needed to predict the impacts of potential dischargers on each reach of the upper SARI. Field verification of manhole invert elevations may also be required develop confidence that the model is accurately predicting flow impacts.

Status: A hydraulic model was prepared in 2005 by Kennedy/Jenks Consultants. Data collection in #2 will be used to validate the peaking factor used in the model. The FYE 2007 proposed budget includes software purchase and training.

4. Further evaluate information management tools (Computerized Maintenance Management Systems, Computerized Operation and Maintenance Manual, System Atlas Maps) to define and implement a system that enables SAWPA to retain and retrieve important system related data. Establish a central library for important system information (FY 2002/2003).

Status: SARI documents are maintained in a central library (paper and electronic). Drawings are available “on-line” from a password protected web page, saving substantial staff time. SAWPA has automated its data storage, retrieval and analysis. WMWD currently maintains a manual database of maintenance activities and data. The proposed FYE 2007 budget includes implementation of a simple, computer based maintenance management system.

5. Calibrate Meter S-01 to determine if improvements are required (FY 2002/2003).

Status: OCSD regularly calibrates meter S-01. OCSD has a CIP project programmed to replace the entire meter structure.

6. Establish a regular flow meter calibration program for all flumes and magnetic meters (FY 2002/2003).

Status: WMWD regularly calibrates all the discharger meters except S-05 which is calibrated by IEUA.

7. Conduct additional corrosion potential assessment following identification and review of appropriate geotechnical information (FY 2002/2003).

Status: Ongoing as part of the CCTV program and evaluation of the unlined RCP. Corrosion was found to exist in the 60” steel pipe through Prado Dam; this pipe is scheduled for replacement in 2007 as part of the U.S. ACOE project.

8. Request further characterization of wastewater from industrial dischargers (FY 2002/2003).

Status: SAWPA modified the sampling program in 2005 increasing frequency of sampling for dischargers with higher BOD and TSS.

Policy Issue Considerations

1. Document that desalter and brine elimination from the Santa Ana River watershed is a priority for the SARI System ownership and use. Also, determine whether “high salinity” dischargers (e.g. desalters) should have first priority for discharge into the SARI, and whether known future capacity should be reserved for this purpose, possibly at the loss of revenues from industrial dischargers.

Status: Documented in numerous locations including Resolution No. 461 (Fee for Service), IWRMP and draft SARI Business Plan.

2. Since industrial dischargers could make up over 25% of the future flow, consider the following actions for future industrial dischargers:
 - a. Routinely assess the projected quantity, quality, and timing of future industrial discharges.
 - b. Consider requiring industrial dischargers to desalinate and accept only highly saline concentrate.
 - c. Consider limiting the amount of industrial discharge and the daily discharge period. This policy may require industrial dischargers to construct holding facilities.
 - d. Consider limiting available industrial capacity to match remaining available SARI capacity after desalter concentrate capacity is reserved.

Status: Good ideas for the future when flows are substantially higher. Will be considered as part of the Capacity Management Plan to be developed.

3. Confirm SAWPA's position and timing regarding the elimination of domestic dischargers. The timing of such a program would need to consider the actual number and type of dischargers connected to the SARI, the peak flows associated with these dischargers, and the actual capacities of the associated reaches of the SARI.

Status: This will occur over time now that BOD and TSS "pass through rates" have been established and as local POTWs become available (e.g. WRCRWA). It is expected that much of the JCSD flow from its ten connections will be diverted to the WRCRWA plant when expansion is complete sometime after 2010.

4. Determine how projected demands for discharge into the SARI (initially projected in excess of the SARI's capacity) should be handled in the future.

Status: Resolution No. 461 (Fee for Service) has established the Capacity Management Program to address System capacity issues and peak flow requirements. The Commission has determined the System capacity will not be expanded beyond the current facilities, except to eliminate hydraulic "choke points". Further salt removal will be achieved through additional brine concentration (currently at approximately 3,500 mg/l TDS); a concentration of 10,000 mg/l is required to achieve theoretical salt balance at 30 MGD of brine flow in the SARI.

5. Consider implementation of "peak" or "maximum instantaneous" flow rate limits on new and existing permits (in gallons per minute). This issue will require careful consideration by SAWPA. Initially, setting the maximum instantaneous flow limit equal to the current discharge permit level is suggested; however, this may be problematic for existing

dischargers who currently rely on the ability to release instantaneous discharges in excess of their permit capacity. Note that if the Board chooses to consider the current permit capacities as “average daily discharge flows,” then permittees will likely discharge at peak rates substantially higher than the permitted capacities on a daily basis, which may adversely impact SARI operations. It can be expected that some time will be required to educate the currently permitted dischargers on the issues associated with peak flows and discharge capacity limits, as well as revise permit contracts to reflect flow limitations. A related policy might outline a “buy-back process” to allow short-term discharges at higher levels or capacity leasing, which may also require accumulation and use of reserve funds in the short-term.

Status: Current contracts allow for a 50% peak flow which the existing System facilities may or may not be able to accommodate in the future. Resolution No 461 (Fee for Service) establishes a “peaking charge”. SAWPA will continue to evaluate the need to implement such a charge as part of the Capacity Management Program, also established by Resolution No. 461.

6. Develop the future SARI rate philosophy, methodology, and structure to incentivize users toward a salinity balance in the upper Santa Ana River watershed. The developed rate methodology must be justifiable on this basis and documented such that the associated rate structure will be defensible against future challenges.
 - a. Determine if it is appropriate in the future to add a “TDS charge” element to the rate structure for those entities which discharge to the SARI and do not meet a “minimum TDS level,” and therefore may not be using the SARI to its “best and highest use” for improving the salt balance in the watershed.
 - b. Consider further reducing future BOD and TSS surcharge levels, thereby increasing BOD and TSS charges for dischargers with higher BOD and TSS discharges, in order to incentivize domestic and industrial dischargers to reduce their reliance on the SARI for future non-saline discharges.

Status: A “pass through” rate has been implemented, eliminating the subsidy of BOD and TSS charges by the flow rate component. Incentives for higher TDS concentrations will be considered as part of the Capacity Management Plan and may be suggested in future rate models.

7. Consider setting a comprehensive “Reserve Account” policy for the SARI enterprise, and establish the level of Reserve Balance to be carried in the future, based on the following factors:
 - historical constraints for ‘restricted assets’
 - intended purpose or use of reserve account(s)
 - typical bond requirements related to O&M reserves, rate stabilization reserves, insurance reserves, and repair/replacement reserves

- anticipated cost of maximum emergency repair and response
- potential liability for System failure, and service redundancy capabilities/alternatives
- potential liability for failure to provide service
- magnitude of current capital program
- current asset value
- ability to assess and respond to credit markets

Status A reserve policy is in place. The rate models adopted by the Commission in 2004 and 2005, and the draft model in 2006, all include a reasonable reserve component based upon known CIP requirements. The CIP and associated financing will be re-evaluated as new information is obtained from the CCTV inspection program, preventative maintenance program, etc.

8. Continue to work with OCSD towards segregating SARI flows to Regional Plant 2 with the current understanding that the Department of Health Services has some concern related to SARI discharges to the future Groundwater Replenishment System.

Status: SARI flows are diverted around RP-1 to RP-2. SAWPA will monitor DTSC planed upgrades to the existing water treatment facility.

Appendix G
**Comparative Analysis of the
Advantages and Disadvantages of
Levying Special Tax, Assessment or Fees
Memorandum**

G – Comparative Analysis of the Advantages and Disadvantages of Levying Special Tax, Assessment or Fees Memorandum

MEMORANDUM

FROM: DAVID L. WYSOCKI, AKLUFU AND WYSOCKI

SUBJECT: COMPARATIVE ANALYSIS OF THE ADVANTAGES AND
DISADVANTAGES OF LEVYING SPECIAL TAX, ASSESSMENT OR FEES

DATED: MAY 25, 2006

The following is a general comparative analysis of the more significant issues for each of these alternatives.

1. Special Tax: this is a tax levied to fund a specific governmental project or program. The California Supreme Court has observed that “every tax levied by a ‘special purpose’ district or agency is deemed a ‘special tax.’” SAWPA’s Commission would have to adopt an ordinance or resolution after a noticed public hearing directing that a special tax be placed before the electorate. The ordinance or resolution must state the type of tax, its rate, the method of collection, the date upon which the election on the tax will be held and the purpose for which the special tax will be used. The proposed special tax may state a range of rate or amounts and if a range of rates is approved by the voters, the Commission may impose up to that maximum amount. The proposed special tax may also provide for inflationary adjustments to the rate or amount.
 - (a) Advantages:
 - i. A special tax can be used to generate revenue for broad governmental purposes or programs.
 - ii. A special tax can be imposed and collected through water or wastewater bills.
 - iii. Unlike assessments and property-related user fees, the special tax does not have to provide a specific benefit to specific property owners.
 - iv. Unlike assessments and property-related user fees, no nexus or other analysis need be performed to establish that the special tax bears a reasonable relationship to the cost of the purpose or program for which the tax revenues are going to be used. In other words, if the special tax arguably exceeds the cost of providing the program contemplated by the special tax such an argument is not a legal basis for challenging the special tax.

(b) Disadvantages:

- i. The special tax requires a two-thirds vote of the registered voters.
- ii. The joint exercise of powers agreement must be amended to include the power to levy such a tax.

2. Assessments: assessments are commonly used to finance the construction, reconstruction, acquisition or maintenance of specific public improvements. They are charges assessed to pay for such specific improvements and may be imposed upon land or business within a predetermined area that is to specifically benefit from the specific improvement.

(a) Advantages:

- i. Assessments do not require an election and do not require a two-thirds vote.
- ii. Assessments are collected as a charge to real property along with the real property taxes and are therefore relatively easy to collect.
- iii. Assessment districts can be created establishing defined areas where real property owners specially benefit by certain public improvements within which the special assessments are apportioned and levied according to a benefit formula approved by the Commission.

(b) Disadvantages:

- i. Assessments generally can only be charged against real property for specific public improvements that will specifically benefit the assessed real property.
- ii. Assessments can only be charged where there is some authorizing state legislation such as the Improvement Act of 1911 (Streets and Highways) the Municipal Improvement Act of 1913 (Streets and Highways) the Improvement Bond Act of 1915 (Streets and Highways) and the Benefit Assessment Act of 1982. The latter act authorizes assessments for the operation and maintenance of drainage, flood control, street lighting and street maintenance services and for the construction of such facilities.
- iii. Assessments require an engineers report describing the improvements to be financed, cost estimate for them, an assessment diagram depicting the boundaries of the assessment district, a description of the method for spreading the assessments and an assessment roll. The report must demonstrate a nexus between the assessments charged and the cost of the improvement constructed and services provided.
- iv. A public hearing must be conducted with a notice mailed to all property owners proposed to be assessed.

- v. Protest by ballot - affected property owners must be provided ballots by mail. No assessment may be imposed if a majority protest exists. The vote of the property owners is weighted according to the proportional financial obligations of the affected property (i.e., the amount of the assessment).
 - vi. In any legal challenge to an assessment, the burden of proof as to the validity, need, nexus and benefits provided is on the public agency.
 - vii. Assessments cannot be used for general benefits provided to real property; only special benefits are assessable.
 - viii. The joint exercise of powers agreement must be amended to include the power to assess.
3. Real Property-Related Fees and Charges: these are fees or charges imposed upon a parcel or upon a person as an incident of real property ownership, including a user fee or charge for a property-related service. These are sometimes referred to as Proposition 218 fees and charges.
- (a) Advantages:
- i. The fee or charge is collected by and through property tax bills making collection of the fee relatively easy.
 - ii. After notice and a public hearing, the property-related fee or charge must be submitted to a vote, and the public agency has two options as follows:
 - A property-owner vote which only requires a majority vote of approval of the property owners of all properties that would be subject to the fee or charge, with one vote per legal parcel; or
 - A two-thirds vote of the electorate residing in the affected area.

(b) Disadvantages:

- i. Revenue derived from the fee or charge must not exceed the cost to provide the property-related service. A nexus analysis is required.
- ii. Revenue from the fee or charge must not be used for any purpose other than that for which the fee or charge was imposed. A specific service or improvement is required.
- iii. The amount of the fee or charge must not exceed the cost of the service attributable to that parcel.
- iv. The fee or charge must not be levied unless the service is actually used by, or immediately available to the owner of the property.
- v. In any legal action challenging the validity of a fee or charge, the burden is on the public agency to prove all of the foregoing elements.
- vi. Prior to the vote on the fee, the proposed fee may also be stopped by a majority protest of the affected property owners.
- vii. The joint exercise of powers agreement must be amended to include the power to charge a fee.

4. Development Fees: these are fees exacted in return for permits or other governmental privileges for the purpose of construction or expansion of facilities to accommodate the new development.

(a) Advantages:

- i. Development fees are exempt from the requirements of Proposition 218.
- ii. Development fees are collected by and through the primary permitting agency, usually a city or county, making collection of the fee relatively easy.

(b) Disadvantages:

- i. The revenues generated from development fees are generally not permitted for purposes of just fixing existing capital improvement.
- ii. BIA and developers look very closely at all development fees, and will challenge them in court if the fees are improper and not intended to provide new or expanded facilities to accommodate new development.
- iii. Development fees cannot ordinarily be collected on projects outside of the boundaries of SAWPA's member agencies absent enabling legislation or

the creation of another joint powers authority involving SAWPA and other agencies outside of SAWPA's existing territory.

- iv. The joint exercise of powers agreement must be amended to include the power to charge development fees.

Acronyms and Abbreviations

4Rs	Reconstruction, Rehabilitation, Restoration and Repair
ALCOA	Aluminum Corporation of America
BOD	Biochemical Oxygen Demand
CCTV	Closed Circuit Television
CDA	Chino Basin Desalter Authority
CEQA	California Environmental Quality Act
CIP	Capital Improvement Plan
CIW	California Institute for Women
CMCIP	Capacity Management Capital Improvement Plan
CMLC	Cement Mortar Lined and Coated
COD	Chemical Oxygen Demand
CRC	California Rehabilitation Center
CSDLAC	County Sanitation Districts of Los Angeles County
DTSC	Department of Toxic Substances Control
EDU	Equivalent Dwelling Unit
EMWD	Eastern Municipal Water District
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
FYE	Fiscal Year Ending
GCCC	Golden Cheese Company of California
GWRS	Groundwater Replenishment System
HDPE	High-density Polyethylene
IEUA	Inland Empire Utilities Agency
IPT	Integrated Protein Technology
IX	Ion Exchange
JCSD	Jurupa Community Services District
MG	Million Gallons
MGD	Million Gallons per Day
MWD	Metropolitan Water District of Southern California
NEPA	National Environmental Policy Act

NRCS	Natural Resource Conservation Service
NRW	Non-Reclaimable Wastewater
O&M	Operations and Maintenance
OCSD	Orange County Sanitation District
OCWD	Orange County Water District
POTW	Publicly Owned Treatment Works
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
RCPP	Reinforced Concrete Pressure Pipe
RCSD	Rubidoux Community Services District
RDMD	Resources & Development Management Department
RWQCB	Regional Water Quality Control Board
SARI	Santa Ana Regional Interceptor
SARWQCB	Santa Ana Regional Water Quality Control Board
SAWPA	Santa Ana Watershed Project Authority
SBVMWD	San Bernardino Valley Municipal Water District
SSO	Sanitary Sewer Overflow
STAG	State and Tribal Affairs Grant
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
U.S. ACOE	U.S. Army Corps of Engineers
VCP	Vitrified Clay Pipe
WDR	Waste Discharge Requirements
WMWD	Western Municipal Water District
WRCRWA	Western Riverside County Regional Wastewater Authority
WW	Wastewater
WWTP	Wastewater Treatment Plant

SAWPA Member Agencies



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SARI Business Plan

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