

# SAN JUAN WATER DISTRICT

## **Wholesale Financial Plan and Water Rate Update Study**

January 5, 2017



**THE REED GROUP, INC.**

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## SECTION I. SUMMARY

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### INTRODUCTION AND BACKGROUND

In early 2016, the San Juan Water District retained The Reed Group, Inc. to update the District's ten-year wholesale and retail financial plans and develop recommendations for annually updating water rates for a five-year period from 2017 through 2021. The purpose of the study was to ensure that the District's wholesale and retail water systems continue to meet financial obligations for ongoing operation and maintenance, debt service, and capital improvements while maintaining prudent reserves. This report contains analyses and recommendations related to the District's wholesale operations. A separate report contains analyses and recommendations related to the District's retail operations.

One focus of this wholesale financial plan is to help ensure adequate funding of the District's wholesale capital improvement program. The wholesale capital improvement program includes about \$64.6 million (in future dollars) in capital improvements over the ten-year planning period extending through FY 25-26. The financial plan presented herein indicates that undertaking this capital program, as planned and scheduled, will require the issuance of an estimated \$29.0 million in new wholesale long-term debt in 2019 in order to fund two of the largest capital improvement projects. Based on financial plan analyses, all other planned capital improvement projects can be funded on a pay-as-you-go basis.

A second focus of this wholesale financial plan is to address the outstanding unfunded wholesale accrued liability (UAL) associated with the District's retirement programs. Based on the most recent actuarial analysis, the wholesale water system has an outstanding UAL of about \$2.3 million as of June 30, 2016. The District is paying interest on this accrued liability of 7.5 percent while its financial reserves are earning about 0.5 percent. The financial plan includes paying off 75 percent of this outstanding liability using available financial reserves, as this is a more economically efficient use of the District's financial resources.

In other respects, the wholesale financial plan provides a strategy and recommendations for annually adjusting water rates in order to meet financial and service obligations while maintaining prudent reserves. While the financial plan covers a ten-year planning period, water rate recommendations cover five years. It is recommended that the District update the financial plan analysis at least once every three to five years, as warranted.

Wholesale water rate calculations were updated based on the revenue needs developed through the financial planning process. The cost allocation methodology used in the rate calculations is generally the same as in past studies. One change, however, is a shift in the overall rate structure to place greater emphasis on fixed service charges with a corresponding reduction in the reliance on water usage charge revenue. The wholesale water rates will continue to include a uniform water usage charge applicable to all wholesale customers and fixed service charges that reflect differences in service requirements for each wholesale customer. Charges related to debt service obligations also

continue to be segregated as separate charges to each wholesale customer based on previously determined allocations for existing debt.

Continuing with current practices, fixed service charges, debt service charges, as well as existing capital facilities charges, will be billed to each wholesale customer on a quarterly basis in advance, and water usage charges will be billed in arrears following the end of each quarter based on the actual water used during the quarter.

During the course of this study, preliminary results and recommendations were presented to the District's Board of Directors in a workshop on June 29 and in a board meeting on November 9. In addition, wholesale customers were provided a 150 period on which to comment on the July 29 draft of this report. This report reflects consideration of comments received from wholesale customers, new information that became available since prior drafts, as well as direction provided by the District's Board of Directors and staff.

This report summarizes the analyses and recommendations of the wholesale financial plan and water rate study. It includes a financial strategy that relies upon ongoing revenues as well as available reserves to meet all financial obligations, including the planned capital improvement program.

#### **FINANCIAL PLAN AND REVENUE NEEDS**

The financial plan model covers the ten-year planning period from FY 16-17 through FY 25-26. The plan reflects estimated operation and maintenance costs, debt service obligations, and capital improvement needs of the wholesale water system. The financial plan is a cash-flow model, and differs from standard accounting income statements and balance sheets. The financial plan also separately reflects ongoing operation and maintenance, debt service payment obligations, and the capital improvement program, with separate revenue sources reflected for each. Financial reserves are also reflected in the financial planning model.

During the past couple of years, the District's operations have been impacted by the sustained drought that has affected all of California. Reduced water sales to wholesale customers (as well as to the District's retail customers) resulted in reduced revenues without a corresponding reduction in costs. As a result, the District cut costs, where possible, deferred capital improvement projects, and relied more heavily on available financial reserves. In addition, property tax revenue normally dedicated to capital improvement projects have been needed to help cover operating, maintenance, and debt service costs. At the present time, the wholesale water system is under more financial stress than it has been in a number of years.

Details of the financial plan assumptions, findings, and recommendations are presented in Section II of this report. However, the analysis indicates that the District needs to increase wholesale water rates each year for the next five years. The District's Board of Directors approved a FY 16-17 wholesale budget without a rate increase, however that budget requires a dramatic use of reserves and leaves the District in greater financial stress. Primary findings and recommendations stemming from the wholesale financial plan analysis include:

- Annual water sales have declined in recent years likely due to the slowdown in the economy, the recent drought, and water conservation efforts by each wholesale customer. The financial plan assumes there will be a modest rebound in water demand beginning in FY 16-17 that then continues and extends over several years.
- Based on the most recent actuarial estimates, the wholesale water system has an outstanding unfunded accrued liability under its Public Employee Retirement System (PERS) retirement programs of about \$2.3 million. It is recommended that the District utilize available financial reserves to pay off 75 percent of this liability in FY 16-17, thereby significantly reducing the 7.5 percent annual interest cost on the UAL.
- The District should anticipate issuing about \$29.0 million in new long-term debt for the wholesale water system in 2019 in order to finance the replacement of the Hinkle reservoir liner and cover, as well as make planned water treatment filter improvements<sup>1</sup>. It is anticipated that all other capital improvement projects can be funded on a pay-as-you-go basis thereby avoiding additional interest expenses.
- The District's financial reserve policies have served and continue to serve the District well. However, changes in certain reserves and reserve policies are recommended in order to provide greater economic efficiency and cost savings. A summary of reserve policy recommendations include:
  - Maintain the 20 percent operating reserve for working capital and emergency purposes
  - Fully utilize the \$1 million rate stabilization reserve to help cover current costs (thereby reducing the proposed rate increase), and replenish the reserve by FY 25-26
  - Eliminate the compensated absence reserve as it is unnecessary
  - Use funds from the PERS stabilization reserve and a portion of the Hinkle reservoir reserve to payoff 75 percent of the \$2.3 million PERS UAL balance
  - Maintain required and restricted debt service reserves
  - Continue to utilize the general CIP reserve to help fund planned capital improvement projects.
- It is recommended that the overall level of wholesale water rates be increased on an annual basis, as follows:
  - January 2017 16%
  - January 2018 9%
  - January 2019 9%
  - January 2020 9%
  - January 2021 5%

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<sup>1</sup> An estimated additional \$12.75 million may be needed to fund planned retail capital improvement projects.

- Previously adopted capital facilities charges should be maintained with reconciliation of revenues and capital project costs occurring at the completion of each project covered by the charges. The capital facilities charge for Fair Oaks Water District (FOWD) related to the Fair Oaks 40 transmission pipeline relining project should be replaced with the cost sharing and payment terms reflected in the recent agreement between the District and FOWD.

As with past practice, the District should monitor financial conditions and needs on an ongoing (annual) basis and update the financial plan model and future estimates at least every three to five years, or when conditions or plans change sufficiently to warrant an update. Actual future conditions, such as water supply conditions, water deliveries, water sales revenue, operating and maintenance expenses, CIP project costs/timing, project financing, etc., may differ from the financial plan assumptions reflected herein. Material differences affecting the overall financial condition of the wholesale water system may warrant closer review and/or an earlier update. The need and magnitude of annual wholesale water rate increases may also be affected by differences between assumed and actual conditions, including the potential refunding of existing debt and the issuance of new debt.

#### PROPOSED WHOLESALE WATER RATES

**Exhibit I-1** presents proposed wholesale water rates to be implemented in January of each year from 2017 through 2021. Fixed service charges, debt service charges, and capital facilities charges are billed quarterly in advance. Water usage charges are billed in arrears at the end of each quarter, based on actual water deliveries. It is recommended that the Board adopt the for the entire five-year rate schedule at this time.

The proposed wholesale water rates include a decrease in the amount of the water usage rate and increases in quarterly fixed service charges effective in January 2017. Thereafter, the water usage rate is maintained and required revenue increases are realized through increases in the quarterly service charges. Debt service charges are maintained consistent with previously approved allocation of debt service costs to wholesale customers, then expected to increase with the issuance of new debt. The water rate structure changes will result in a gradual shift of the water rate revenue mix such that more of the revenue is obtained through the fixed charges. At present, about 45 percent of wholesale water rate revenue is derived from water usage charge. By FY 20-21, portion of revenue from water usage charges will decline to about 32 percent of the total.

Water usage charges, service charges, and debt service charges presented in Exhibit I-1 together are intended to reflect and recover the costs associated with ongoing operation and maintenance, contributions to the ongoing pay-as-you-go capital program, debt service, and maintenance of financial reserves. Capital facilities charges are related to certain capital improvements that benefit some, but not all, wholesale customers and provide an equitable means of cost sharing. The District should update the financial plan and rate analyses every three to five years, or if there is material change to any of the information and/or assumptions reflected in this report.

**Exhibit I-1**  
**San Juan Water District**  
**Current and Proposed Wholesale Water Rates**

	Current	Jan. 2017	Jan. 2018	Jan. 2019	Jan. 2020	Jan. 2021
<b>Overall Composite Water Rate Incr. --&gt;</b>	<b>16%</b>	<b>9%</b>	<b>9%</b>	<b>9%</b>	<b>9%</b>	<b>5%</b>
<b>San Juan Retail District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 126,315	\$ 278,661	\$ 339,915	\$ 408,924	\$ 358,131	\$ 405,397
Qtrly. Capital Facil. Charge (1)	\$ 123,290	\$ 106,665	\$ 8,631	\$ 8,631	\$ 8,631	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 106,297	\$ 106,363	\$ 106,463	\$ 106,463	\$ 106,325	\$ 106,225
2012 Refunding Rev. Bonds	\$ 47,156	\$ 47,075	\$ 46,988	\$ 46,988	\$ 47,113	\$ 47,188
2019 COPs (2)					\$ 134,000	\$ 133,920
<b>Citrus Heights Water District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 132,586	\$ 285,567	\$ 348,338	\$ 419,057	\$ 367,005	\$ 415,442
Qtrly. Capital Facil. Charge (1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 113,161	\$ 113,238	\$ 113,338	\$ 113,338	\$ 113,200	\$ 113,088
2012 Refunding Rev. Bonds	\$ 55,047	\$ 54,963	\$ 54,850	\$ 54,838	\$ 54,988	\$ 55,088
2019 COPs (2)					\$ 125,625	\$ 125,550
<b>Fair Oaks Water District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 102,172	\$ 213,956	\$ 260,987	\$ 313,972	\$ 274,973	\$ 311,264
Qtrly. Capital Facil. Charge (3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 70,427	\$ 70,475	\$ 70,538	\$ 70,538	\$ 70,450	\$ 70,375
2012 Refunding Rev. Bonds	\$ 40,451	\$ 40,388	\$ 40,313	\$ 40,300	\$ 40,400	\$ 40,475
2019 COPs (2)					\$ 96,313	\$ 96,255
<b>Orange Vale Water Company</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 44,801	\$ 98,562	\$ 120,227	\$ 144,635	\$ 126,670	\$ 143,388
Qtrly. Capital Facil. Charge (1)	\$ 54,862	\$ 54,862	\$ 2,294	\$ 2,294	\$ 2,294	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 35,567	\$ 35,588	\$ 35,613	\$ 35,613	\$ 35,575	\$ 35,550
2012 Refunding Rev. Bonds	\$ 12,413	\$ 12,400	\$ 12,375	\$ 12,375	\$ 12,400	\$ 12,425
2019 COPs (2)					\$ 46,063	\$ 46,035
<b>City of Folsom</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Hinkle PS Surcharge (\$/AF) (4)	\$ 68.87	\$ 74.38	\$ 81.07	\$ 88.37	\$ 96.32	\$ 102.10
Qtrly. Serv. Charge (O, M, & R)	\$ 12,869	\$ 28,416	\$ 34,663	\$ 41,700	\$ 36,520	\$ 41,340
Qtrly. Capital Facil. Charge (1)	\$ 17,899	\$ 17,899	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 11,037	\$ 11,038	\$ 11,050	\$ 11,050	\$ 11,038	\$ 11,025
2012 Refunding Rev. Bonds	\$ 3,034	\$ 3,063	\$ 3,050	\$ 3,050	\$ 3,063	\$ 3,075
Direct Portion of 2012 Debt (4)	\$ 21,500	\$ 21,438	\$ 21,388	\$ 21,388	\$ 21,450	\$ 21,488
2019 COPs (2)					\$ 12,563	\$ 12,555

**Notes:**

- (1) Unchanged from 2014 rate study, except to remove charges related to Storage Building (old shop) Replacement, and to remove FOWD Fair Oaks 40" component (per new agreement).
- (2) Estimates based on estimated debt service obligations and cost allocations associated with anticipated new debt.
- (3) Actual cost sharing and payments from FOWD to be based on the recent agreement between the District and FOWD related to the Fair Oaks 40" transmission pipeline relining project.
- (4) Unique charges to City of Folsom and revenue to the retail water system.

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## SECTION II. WHOLESALE FINANCIAL PLAN

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This section of the report describes the financial plan for the District's wholesale water system. The ten-year financial plan is used to determine annual wholesale water rate revenue requirements. The annual rate revenue requirement is the amount of revenue needed from water rates to cover planned operating, maintenance, debt service, and capital program costs with consideration of other revenues and financial reserves.

### FUND STRUCTURE AND CASH FLOWS

The financial plan is an annual cash flow model. As a cash flow model, it differs from standard accounting income statements, and balance sheets. The financial plan models sources and uses of funds into, out of, and between the various funds and reserves of the wholesale water system.

The financial plan model is based on a fund, reserve, and account structure that separately addresses operating, debt service, and capital program needs, with three funds for these three purposes. This presentation helps provide transparency as to the sources and uses of funds for each type of obligation. The District recently replaced and upgraded its financial accounting system. This financial plan was developed based on the new account structure reflected in the District's financial accounting software.

An understanding of the fund/reserve structure is helpful in understanding the financial plan worksheets that model annual cash flows through the wholesale water system from one year to the next. The fund/reserve structure is comprised of:

- ***Wholesale Operating Fund*** – The wholesale operating fund is the primary fund within the wholesale water system. Most wholesale revenues, including water rate revenues, flow into the operating fund and all operating and maintenance costs are paid out of this fund. Funds are also transferred from the operating fund to the wholesale capital fund to help pay for capital projects intended to rehabilitate and upgrade facilities, and to a separate debt service fund used to make debt service payments and maintained required debt service reserves. Five separate reserves are currently reflected within the operating fund.
  - ***Operating Reserve*** – The District maintains an operating reserve within the operating fund equal to 20 percent of annual wholesale operating and maintenance costs. The purpose of the operating reserve is to provide working capital and funds for unplanned operating and maintenance expenditures. At the end of FY 15-16, the target balance of the wholesale operating reserve was about \$1,520,000 based on budgeted operating and maintenance costs for FY 16-17.
  - ***Rate Stabilization Reserve*** – The District also seeks to maintain a \$1 million rate stabilization reserve. The rate stabilization reserve provides a buffer against variable revenues that may result from abnormal (e.g., water shortage) fluctuations in water demand. The reserve could also be used as a tool to mitigate unexpected (and unacceptably high) water rate increases due to changing circumstances. Even though drought

conditions and reduced water sales revenue have placed financial stress on the wholesale water system, the District has chosen to maintain the rate stabilization reserve at its \$1 million target amount through the end FY 15-16. This was achieved, however, by transferring a portion of capital fund reserves to the operating fund in FY 15-16.

- *Compensated Absence Reserve* – The District has maintained a separate reserve to fund its liability for compensated absences. At the end of FY 15-16 this reserve had an estimated balance of about \$194,000. The need to maintain the reserve has been under review by District staff and Board. A policy recommendation to eliminate this reserve is supported by staff and incorporated in the financial plan analyses.
- *PERS Stabilization Reserve* – A separate Public Employee Retirement System (PERS) stabilization reserve is shown as a part of the operating fund, and reflects the balance of funds set aside to meet PERS UAL obligations. At the end of FY 15-16, the PERS stabilization reserve had an estimated balance of about \$416,000. At present, the wholesale water system is responsible for about \$2.3 million of the UAL obligation. Because this obligation is carried with a 7.5 percent interest rate, and the District only earns about 0.5 percent on its total investment pool, it would be advantageous to use this reserve to reduce the UAL obligation. This matter is discussed in greater detail later in this section.
- *Delta/Water Rights Reserve* – The District created and began funding this reserve to provide funds for the defense of the District's water rights. This reserve ended FY 15-16 with about \$103,000.
- *Uncommitted Fund Balance* – The balance in the operating fund in excess of the target amount for the operating reserve and other operating fund reserves, is shown in the financial plan as uncommitted fund balance. After all other obligations are met the uncommitted fund balance is available to offset rate increases, and the financial plan model generally seeks to reduce any uncommitted fund balance over time. Negative amounts for the uncommitted fund balance indicate the degree to which the desired operating reserve is not met. To prevent a negative uncommitted balance at the end of FY 15-16 the financial plan model includes a \$555,000 transfer from the capital fund to the operating fund.
- *Wholesale Capital Fund* – The wholesale capital fund is used to account for capital project expenditures and related funding sources. The District applies 50 percent of property tax revenues (the 1 percent increment taxes) to the capital program, and connection fee revenue also directly accrue to the capital fund. In addition, a portion of revenues from the wholesale water rates is transferred annually to the capital fund, in support of the long-term capital program. Capital projects funded from this fund are intended to rehabilitate, upgrade, and expand the wholesale water system to meet current and future needs of the District for its wholesale customers. The financial plan model generally seeks to maintain a positive balance in the capital fund while also covering the costs of planned capital improvement projects. The capital fund is comprised of four separate reserves.

- *General CIP Reserve* – This reserve reflects the capital fund balance that is generally available for capital improvement purposes. At the end of FY 15-16, this reserve had a balance of about \$6.44 million. All money in the capital fund that has not been designated to the reserves listed below is included in the general CIP reserve.
- *Vehicle/Equipment Reserve* – This reserve provides funds for the replacement of vehicles and major equipment. At the end of FY 15-16 the reserve had an estimated balance of about \$77,000. District staff and the Board of Directors are currently reviewing the need to maintain this as a separate reserve, and it may be rolled into the general CIP reserve.
- *Hinkle Reservoir Reserve* – The District has maintained a sinking fund for the eventual replacement and upgrade of Hinkle reservoir. The sinking fund had an estimated balance of about \$2.67 million at the end of FY 15-16. The District currently adds \$50,000 annually to this reserve. The cover and liner for Hinkle reservoir is planned to be replaced in FY 20-21, along with other improvements to the reservoir, for an estimated cost of about \$23.8 million (in future dollars). The Hinkle reservoir reserve will only cover a small fraction of the total cost of this major project.
- *Project Fund* – The financial plan includes the issuance of new long-term debt in 2019 to finance two major capital projects (Hinkle reservoir and treatment plant filter improvements). The financial plan model includes a project fund as part of the capital fund as a means of accounting for the use of debt proceeds.
- ***Debt Service Fund*** – The financial plan model also includes a debt service fund as the mechanism for tracking debt service obligations as well as payments made by wholesale customers in support of debt service payments. Outstanding debt was issued in 2009 and in 2012. Restricted debt service reserves are required under the terms of the 2009 COPs, and it is anticipated that similar reserve may be required as part of the anticipated 2019 debt issue.
  - *2009 COP Debt Service Reserves* – The 2009 certificates of participation (COPs) requires the District to maintain certain debt service reserves. These reserves are shown as part of the overall debt service fund balance. Wholesale 2009 COP debt service reserves total about \$1.86 million as of the end of FY 15-16. Money in this reserve is restricted and can only be used for specific purposes related to the 2009 COPs.
  - *2019 Debt Service Reserves* – Estimated costs for the 2019 debt issue include providing money from the issuance to fund a debt service reserve. Such a reserve has been included in the financial plan model.

#### FINANCIAL PLAN ASSUMPTIONS

The financial plan was created to reflect the FY 15-16 estimated actual revenues, expenses, and year-end financial position, as well as the FY 16-17 budget, ten-year capital improvement program, and existing debt service schedules. The financial plan also reflects estimates of future operating and maintenance costs, revenues, potential future debt service obligations, and information provided by the District.

The process used to develop the financial plan involved estimating future revenues and expenditures based on inflation and interest rates, water supply and demand projections, anticipated capital improvement needs, and other information. The District does not have formal estimates of future operating and maintenance costs, and capital improvement needs are defined at a planning level. The financial plan is based on the best available information and assumptions are believed to be reasonable; however, no assurance can be provided as to the accuracy and completeness of the estimates.

Primary assumptions reflected in financial plan analyses are summarized below:

- *Interest Rates* – The District invests most of its available funds in the Local Agency Investment Fund (LAIF), which has been earning less than 0.5 percent for the past several years. A small portion of the District's available assets is invested in other securities that have recently yielded about 1.5 percent. In aggregate, in FY 14-15 the District's invested funds returned about 0.5 percent. The financial plan model incorporates an assumed 0.5 percent rate of return on all funds. This interest rate is assumed to gradually increase to 1.0 percent by the end of the ten-year planning period. Interest calculations are based on beginning-of-year balances and interest accrues to each of the funds. The District also pays interest on outstanding long-term debt obligations. The interest payments on outstanding debt are those contained in existing contracts and repayment schedules.
- *Inflation Rates* – Annual inflation rates for general operating and maintenance costs is 3.0 percent per year throughout the planning period. Inflation for chemical and energy costs is assumed 5.0 percent per year. Inflation on retiree medical costs and other post-employment benefit (OPEB) obligations is assumed at 6.0 percent per year. Finally, construction costs are assumed to increase 3.0 percent annually.
- *Retail Customer Base and Water Deliveries* – Modest growth in the customer base of each wholesale customer is incorporated for financial planning purposes based on data received by the District from each wholesale customer. Annual growth of the total retail customer base ranges between 0.6 and 0.8 percent during the planning period. Water deliveries are estimated to rebound toward historic levels over the next several years, based on the assumed return to normal water supplies in 2016 and demand rebound over several years reaching normal demand by 2020. Water demand in 2020 is based on estimates included in the 2015 Urban Water Management Plan. **Exhibit II-1** summarizes historic and estimated future annual water deliveries during the planning period. While the District wheels water to the Sacramento Suburban Water District (SSWD) in most years, the financial plan conservatively assumes no deliveries to SSWD during the planning period.

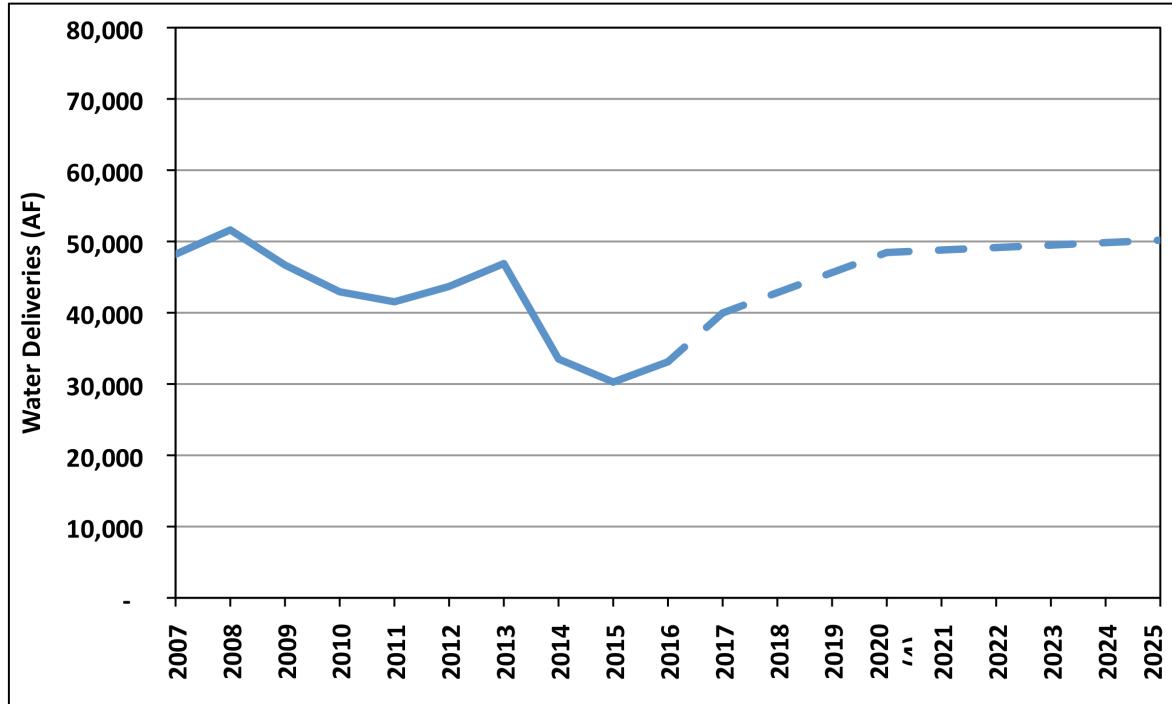
**Exhibit II-1**  
**San Juan Water District**  
**Summary of Past and Estimated Future Wholesale Water Deliveries**

	Annual Water Deliveries (AF) (1)						
	San Juan RSA	Citrus Heights WD	Fair Oaks WD	Orange Vale WC	City of Folsom	SSWD (2)	Total
2007	15,133	16,559	11,178	3,642	1,695	4,144	52,351
2008	16,659	17,153	11,537	4,452	1,820	12,206	63,827
2009	17,064	12,783	10,534	4,703	1,608	8,210	54,902
2010	13,569	12,165	11,072	4,486	1,647	15,514	58,453
2011	12,651	12,292	10,606	4,657	1,331	14,728	56,265
2012	13,936	13,583	9,987	4,657	1,529	2,995	46,687
2013	14,945	14,416	10,939	5,139	1,462	409	47,310
2014	11,077	10,008	7,262	3,932	1,230	-	33,509
2015	9,666	9,133	7,257	3,257	963	-	30,276
2016	11,275	9,673	7,703	3,407	1,060	11,261	44,379
2017	13,530	11,833	9,244	4,088	1,272	-	39,967
2018	14,321	13,245	9,702	4,251	1,305	-	42,824
2019	15,088	14,656	10,146	4,410	1,338	-	45,638
2020 (4)	<b>15,855</b>	<b>16,070</b>	<b>10,591</b>	<b>4,568</b>	<b>1,370</b>	-	48,454
2021	16,039	16,153	10,647	4,592	1,370	-	48,800
2022	16,222	16,235	10,703	4,615	1,370	-	49,146
2023	16,406	16,318	10,760	4,639	1,370	-	49,492
2024	16,589	16,400	10,816	4,662	1,370	-	49,838
2025 (4)	<b>16,773</b>	<b>16,483</b>	<b>10,872</b>	<b>4,686</b>	<b>1,370</b>	-	50,184

**Notes:**

- (1) Historical data through 2016 from District's water delivery records (Excel file).
- (2) Wholesale financial plan analysis assumes no water deliveries to SSWD beyond 2016.
- (3) Deliveries for 2017 adjusted to reflect estimated demand rebound with consideration of 2016 deliveries.
- (4) Values for 2020 and 2025 from District's Draft 2015 UWMP. Delivery estimates are a straight line interpolations from 2017 to 2020 and from 2020 to 2025.

Graph below shows historical and estimated future water deliveries to wholesale customers, excluding SSWD.



- *Cost of Water Supplies* – The cost of water supplies depends on the mix of water from each of the District's water supply sources, however the mix of supplies is expected to remain relatively static. The District first utilizes water under its existing water rights then uses a combination of water under PCWA and USBR contracts. Temporary supplies are sometimes available, but not included in the analyses contained herein. Unit water supply costs are assumed to increase at the general inflation rate.

The District currently owes Citrus Heights Water District (CHWD) and Fair Oaks Water District (FOWD) a combined \$1,981,500 for treated water purchase costs related to groundwater used during the recent drought. The financial plan model assumes that this obligation will be repaid or credited as follows, based on information provided by the District:

○ FY 16-17	\$866,900
○ FY 17-18	\$371,520
○ FY 18-19	\$371,520
○ FY 19-20	\$371,520

- *Operation and Maintenance Costs* – The financial plan model is based on current operating and maintenance costs as reflected in the FY 16-17 operating budget. Future operating and maintenance costs are estimated based on assumed inflation rates. Supply and other variable costs are also assumed to increase in proportion to changes in the total amount of water deliveries.
- *Staff Additions* – The wholesale financial plan incorporates estimated salaries and benefits for the following new staff positions, based on needs identified by District staff.
  - Water Treatment Plant Operator – This position is added mid-year in FY 16-17 at a total annual wholesale cost of \$130,000. It has been included in the District's FY 16-17 budget.
  - Human Resources Specialist – This position is added mid-year in FY 16-17 at a total annual cost of \$125,000. The position has been split equally between the wholesale and retail water systems, and has been included in the District's FY 16-17 budget.
  - Administrative Assistant - This position is added in FY 17-18 at a total annual cost of \$80,000. The position has been split equally between the wholesale and retail water systems.
- *Large Non-Capital Projects* – Large non-capital projects, such as studies, assessments, and large maintenance items had previously been included in the District's capital improvement program. Beginning in FY 16-17 these items are being included in the operating budget, and treated as operating and maintenance expenses (rather than capitalized and expensed over time). The wholesale financial plan includes FY 16-17 budgeted items totaling about \$24,000, and this cost is escalated at the pace of inflation in future years. One additional item has also been explicitly added to the wholesale financial plan.
  - Wholesale master plan at an estimated cost of \$299,000 in FY 20-21

These estimates reasonably reflect future non-capital project needs.

- *Debt Obligations* – The District's wholesale debt obligations are currently limited to repayment of 2009 COPs and 2012 refunding revenue bonds. The wholesale portion of annual debt service on the 2009 COPs total about \$1.35 million. The wholesale portion of annual debt service on the 2012 refunding revenue bonds total about \$630,000.

The financial plan model includes estimates related to the issuance of additional long-term debt in 2019 in order to fund major capital improvement projects. The 2019 new debt issue is estimated with a total par amount of \$41.75 million (\$29.0 million for wholesale projects and \$12.75 million for retail projects). Estimated terms include a 4.0 percent interest rate, 30-year repayment term, issuance costs of 2.0 percent of the par amount, funding of a debt service reserve, and approximately equal annual principal and interest payments throughout the repayment period. Actual terms would be determined at the time of debt issuance and will reflect market conditions at that time. The actual allocation of debt service obligations to each wholesale customer will also be determined at the time of issuance. At this time, estimated debt repayment obligations of each wholesale customer are based on average annual water deliveries to each wholesale customer over the period from 2012 through 2016.

**Exhibit II-2** provides details on current actual and estimated future debt service obligations, including the distribution of debt service costs to each wholesale customer. The District is currently meeting debt service coverage obligations, and financial plan analyses consider this requirement in developing estimates for future annual water rate adjustments.

The District is considering refunding the 2009 COPs in order to take advantage of current low interest rates. However, because of pre-payment penalties, financial advisors have indicated that it may be more feasible to refund the COPs in a few years when pre-payment penalties no longer apply. Financial plan analyses do not reflect any potential cost savings associated with refunding of the 2009 COPs. With changing interest rates, this issue should be monitored closely.

- *Capital Improvement Program* – The District's wholesale 10-year capital improvement program includes about 50 projects totaling about \$64.6 million in future dollars, averaging about \$6.5 million annually. **Exhibit II-3** lists the planned projects, as well as estimated cost and timing. Costs in Exhibit II-3 have been escalated to the year of expenditure based on a 3.0 percent annual construction inflation factor.

The capital improvement program has a concentration of project expenditures in FY 16-17, as well as in the FY 19-20 and FY 20-21 period. The concentration in FY 16-17 is primarily associated with pre-treatment improvements, with construction contracts already in place. These improvements will be funded from available general CIP reserves. The concentration in FY 19-20 and FY 20-21 primarily includes treatment plant filter improvements and upgrades to Hinkle reservoir, which together total about \$28.4 million. Because of the size of these two projects, it would be virtually impossible to undertake these projects without issuing new long-term debt.

**Exhibit II-2**  
**San Juan Water District**

**Summary of Wholesale and Retail Debt Service Obligations**

	Alloc. %	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
<b>2009 Certificates of Participation</b>												
Principal	430,000	450,000	475,000	500,000	525,000	550,000	580,000	615,000	650,000	690,000	725,000	725,000
Interest	1,672,400	1,653,050	1,630,550	1,606,800	1,580,550	1,551,675	1,521,425	1,488,075	1,452,713	1,415,338	1,379,113	1,379,113
Total Payment	2,102,400	2,103,050	2,105,550	2,106,800	2,105,550	2,101,675	2,101,425	2,103,075	2,102,713	2,105,338	2,104,113	2,104,113
Outstanding Balance	28,825,000	28,375,000	27,900,000	27,400,000	26,875,000	26,325,000	25,745,000	25,130,000	24,480,000	23,790,000	23,065,000	23,065,000
Retail Share	36%	756,900	757,100	758,000	758,400	756,000	756,500	757,100	757,000	757,900	757,500	757,500
Wholesale Share	64%	1,345,500	1,346,000	1,347,600	1,348,400	1,347,600	1,345,100	1,344,900	1,346,000	1,347,400	1,346,600	1,346,600
SJWD-RSA	31.59%	425,000	425,200	425,700	426,000	425,700	424,900	425,200	425,100	425,600	425,400	425,400
Citrus Heights WD	33.63%	452,500	452,700	453,200	453,500	453,200	452,400	452,300	452,700	453,100	452,900	452,900
Fair Oaks WD	20.93%	281,600	281,700	282,100	282,200	282,100	281,500	281,500	281,700	282,000	281,800	281,800
Orange Vale WC	10.57%	142,200	142,300	142,400	142,500	142,400	142,200	142,300	142,200	142,400	142,300	142,300
City of Folsom	3.28%	44,100	44,100	44,200	44,200	44,200	44,100	44,100	44,100	44,200	44,200	44,200
Total	100.00%	1,345,400	1,346,000	1,347,600	1,348,400	1,347,600	1,345,100	1,345,000	1,346,000	1,345,700	1,346,600	1,346,600
<b>2012 Refunding Revenue Bonds</b>												
Principal	440,000	450,000	465,000	485,000	500,000	530,000	555,000	580,000	610,000	630,000	650,000	650,000
Interest	539,200	526,000	508,000	487,075	472,525	447,525	421,025	393,275	364,275	345,975	327,075	327,075
Total Payment	979,200	976,000	973,000	972,075	972,525	977,525	976,025	973,275	974,275	975,975	977,075	977,075
Outstanding Balance	11,285,000	10,835,000	10,370,000	9,885,000	9,385,000	8,855,000	8,300,000	7,720,000	7,110,000	6,480,900	5,830,000	5,830,000
Retail Share	26.39%	258,400	257,600	256,800	256,600	256,700	258,000	257,600	256,900	257,100	257,600	257,900
Folsom Share	8.80%	86,100	85,900	85,600	85,500	85,600	86,000	85,900	85,700	85,900	86,000	86,000
Wholesale Share	64.81%	634,600	632,500	630,600	630,300	630,300	633,500	632,600	630,800	631,400	632,500	633,200
SJWD-RSA	29.82%	189,200	188,600	188,000	187,900	188,000	188,900	188,600	188,100	188,300	188,800	188,800
Citrus Heights WD	34.81%	220,900	220,200	219,500	219,300	219,400	220,500	220,200	219,600	219,800	220,200	220,400
Fair Oaks WD	25.58%	162,300	161,800	161,300	161,200	161,200	162,000	161,800	161,400	161,500	161,800	162,000
Orange Vale WC	7.85%	49,800	49,700	49,500	49,500	49,500	49,700	49,500	49,500	49,700	49,700	49,700
City of Folsom	1.94%	12,300	12,300	12,200	12,200	12,200	12,300	12,300	12,300	12,200	12,300	12,300
Total	100.00%	634,500	632,600	630,500	630,100	630,300	633,400	632,600	630,800	631,400	632,600	633,200
<b>2019 New Debt Issue - Wholesale</b>												
Principal					515,000	535,000	555,000	580,000	600,000	625,000	650,000	650,000
Interest					1,160,000	1,139,000	1,118,000	1,096,000	1,073,000	1,049,000	1,024,000	1,024,000
Total Payment					29,000,000	28,485,000	27,950,000	27,395,000	26,815,000	26,215,000	25,590,000	24,940,000
Outstanding Balance												
SJWD-RSA	32.5%				544,375	544,050	543,725	544,700	543,725	544,050	544,050	544,050
Citrus Heights WD	30.3%				507,525	507,222	506,919	507,828	506,919	507,222	507,222	507,222
Fair Oaks WD	23.0%				385,250	385,020	384,790	385,480	384,790	385,020	385,020	385,020
Orange Vale WC	10.9%				182,575	182,466	182,357	182,684	182,357	182,466	182,466	182,466
City of Folsom	3.3%				55,275	55,242	55,209	55,308	55,209	55,242	55,242	55,242
Total	100.0%				1,675,000	1,674,000	1,673,000	1,676,000	1,673,000	1,674,000	1,674,000	1,674,000
<b>2019 New Debt Issue - Retail</b>												
Principal					225,000	235,000	245,000	255,000	265,000	275,000	285,000	285,000
Interest					510,000	501,000	492,000	482,000	472,000	461,000	450,000	450,000
Total Payment					735,000	736,000	737,000	737,000	736,000	736,000	735,000	735,000
Outstanding Balance					12,750,000	12,525,000	12,290,000	12,045,000	11,790,000	11,250,000	10,965,000	10,965,000

Exhibit II-3

SAN JUAN WATER DISTRICT  
TEN-YEAR WHOLESALE CAPITAL IMPROVEMENT PROGRAM - SUMMARY TABLE

Line	Project Name	Construction Inflation Factor -->	Cost Est. <sup>1</sup>	Total Cost <sup>2</sup>	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26
					1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34	1.38
<b>Pre-Treatment</b>															
1	Flume/Sed Basin & Settled Water Channel Improvements <sup>30</sup>	\$ 7,500,000	\$ 7,470,000	\$ 1,098,000	\$ 6,372,000										
2	Washdown Piping Improvements	\$ 22,000	\$ 26,000												\$ 26,000
3	Settling tube Cleaning System	\$ 210,000	\$ 243,000												\$ 243,000
4	Existing SWIC Resurface, Joint Repair, and Caulk <sup>31</sup>	\$ 240,000	\$ 278,000												\$ 278,000
<b>Filters</b>															
5	Filter Floor Repairs and Media/Nozzle Replacement <sup>32</sup>	\$ 3,500,000	\$ 4,046,000												
6	Resurface Filter Basin Walls	\$ 325,000	\$ 376,000												\$ 339,000
7	Backwash Hood Jumps	\$ 50,000	\$ 50,000	\$ 50,000											\$ 580,000
8	Filter Valve Actuators: Replacement	\$ 180,000	\$ 219,000												\$ 249,000
9	ELM Electric Actuator Replacement	\$ 5,500	\$ 6,000	\$ 6,000											
10	Polymer System Improvements in Control Bldg. <sup>33</sup>	\$ 60,000	\$ 64,000												
11	CL2 Piping Project - 10yr replacement	\$ 50,000	\$ 58,000												
12	Lime System Control & Feeder System Improvements	\$ 25,000	\$ 27,000												
13	Lime Grit Containment (Curbing & Cover)	\$ 94,000	\$ 103,000												
14	Lime Tower Asmmt./design & Replnt <sup>34</sup>	\$ 24,000	\$ 25,000	\$ 25,000											
15	Alum Feed Pump Replacement & VFD's	\$ 406,000													
16	Polymer System Improvements in Control Bldg. <sup>35</sup>	\$ 200,000	\$ 221,400												
<b>Solids Handling Facilities</b>															
17	Clarifier Wall Lining & Leakage Repairs	\$ 450,000	\$ 506,000												
18	Solids Containment Area & Handing Imprint's	\$ 295,000	\$ 341,000												
<b>Hinkle Reservoir</b>															
19	Hinkle Res. Monitoring Wells level Probes	\$ 56,000	\$ 59,000												
20	Hinkle Res. Outlet Actuator (Equip & Power)	\$ 65,000	\$ 73,000												
21	Hinkle Reservoir Overflow Apron Drains	\$ 15,000	\$ 15,000	\$ 15,000											
22	Hinkle Overflow Channel Lining East of AFR	\$ 109,000	\$ 109,000												
23	Replace cover & liner, bifurcate add 2nd inlet/outlet <sup>36</sup>	\$20,000,000	\$23,811,400												
<b>Plant Piping</b>															
24	Hinkle Res. 48" Bypass Pipe Cleaning/Repair	\$ 60,000	\$ 70,000												\$ 70,000
25	Re-line 60" Pipe from Filters to Inlet Structure	\$ 1,750,000	\$ 2,352,000												\$ 2,352,000
<b>Transmission Pipelines</b>															
26	FO-40 Transmission Pipeline Re-Lining <sup>37</sup>	\$ 2,000,000	\$ 2,185,000												
<b>Water Supply Reliability Projects</b>															
27	SSWD/SSWD Pump Back Project <sup>38</sup>	\$ 2,400,000	\$ 2,205,000												
28	Control Valve Stations <sup>39</sup>	\$ 700,000	\$ 700,000												
<b>Vehicle Replacement &amp; Reserves</b>															
29	Vehicles (roll-up from detail below)	\$ 264,000	\$ 31,500	\$ 87,000											
	Articulating boom lift, 40' Service Vehicle	\$ 30,000	\$ 32,000												
	Whis Operations - Vehicle #7 (F150)	\$ 35,000	\$ 42,000												\$ 42,000
	Whis Operations - Vehicle #20 (Ram)	\$ 35,000	\$ 37,000												\$ 37,000
	Whis Operations - Vehicle #25 (Dump Truck)	\$ 55,000	\$ 87,000												\$ 87,000
	Whis Operations - Vehicle #29 (Dakota)	\$ 30,000	\$ 34,000												
	Whis Operations - GEM	\$ 25,000	\$ 29,000												
	Whis Operations - Share of Vehicle #30	\$ 12,500	\$ 30,000												
	Vehicle #10 - Whis Share General Mgr. Assigned Car	\$ 31,500	\$ 75,500												
	Vehicle #44 - Whis Share General Mgr. Assigned Car	\$ 44,000													

Exhibit II-3 -- Continued

SAN JUAN WATER DISTRICT

TEN-YEAR WHOLESALE CAPITAL IMPROVEMENT PROGRAM - SUMMARY TABLE

Line	Project Name	Construction Inflation Factor -->	Cost Est. 1	Total Cost <sup>2</sup>	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26
<i>Miscellaneous CIP Items</i>															
30	Solar Site Access Culvert Replacement	\$ 200,000	\$ 225,000	\$ 50,000	\$ 150,000	\$ 69,000	\$ 69,000	\$ 55,000	\$ 225,000						
31	ARIC Flash Assessment and Improvements	\$ 200,000	\$ 200,000												
32	In-Plant Pump Station Improvements	\$ 65,000	\$ 69,000												
33	Electrical Equip. R&R	\$ 100,000	\$ 118,000												
34	SBW Pump Station Rehab & BW EQ Basin	\$ 175,000	\$ 228,000												
35	WTP Generator Replacement	\$ 350,000	\$ 484,000												
36	Administration Building Impmt/Repmt	\$ 1,875,000	\$ 2,232,000												
37	Storage Building / Old Shop Replacement	\$ 448,000	\$ 500,000												
38	SCADA Improvements/Replacements	\$ 1,000,000	\$ 1,305,000												
39	WTP Streaming Current Detector Upgrade	\$ 30,000	\$ 39,000												
40	Security Improvements (WTP)	\$ 150,000	\$ 184,000												
41	Corp Site Perimeter Fencing Replacements	\$ 125,000	\$ 141,000												
42	Corp Site Paving, Slurry Seal & Restripe	\$ 200,000	\$ 225,000												
43	Perimeter Fencing for Barton Rd Parcel	\$ 15,000	\$ 17,000												
44	Unspecified Rehab/Upgrade Projects	\$ 2,500,000	\$ 16,465,800												
45	Solar Facility Improvements (NEVA)	\$ 106,700	\$ 106,700												
46	Truck Mounted Actuator	\$ 2,500	\$ 2,500												
<i>Information Technology</i>															
47	New Servers	\$ 12,500	\$ 30,000												
48	New Switches	\$ 8,000	\$ 9,000												
49	Baracuda Backup Appliance	\$ 7,250	\$ 8,000												
50	New Appliances	\$ 5,000	\$ 13,000												
51	Whsi Share of Tyler Financial Software System	\$ 9,500	\$ 9,500												
52	VNNWare Server	\$ 5,500	\$ 5,500												
53	Whsi Share of Engineering Copier	\$ 4,375	\$ 5,000												
54	Boardroom Projector	\$ 2,500	\$ 2,500												
<b>Capital Improvement Program Totals <sup>1</sup></b>															
		<b>\$48,887,325</b>	<b>\$88,928,400</b>	<b>\$ 4,322,200</b>	<b>\$ 6,835,500</b>	<b>\$ 2,506,300</b>	<b>\$ 1,902,100</b>	<b>\$ 8,562,500</b>	<b>\$ 3,075,000</b>	<b>\$ 3,230,000</b>	<b>\$ 4,850,000</b>	<b>\$ 5,799,000</b>	<b>\$ 4,266,000</b>	<b>\$ 5,799,000</b>	<b>\$ 4,266,000</b>

Notes:

1. All estimated costs are shown in Feb 2014 dollars, ENR Index 9681.
2. Total costs include construction inflation factors applied in year of project implementation.
3. Work on the existing settled water channel cannot be completed until the new settled water channel is constructed which allows the existing settled water channel to be taken off-line for this service repair project.
4. The scope, cost and implementation year of the Hinkle replacement project is currently unknown and will be identified during the cover assessment project.
5. The cost of this project will be reimbursed to SJWWD-W in the percentages approximated in the May 2011 FO-40 Rehabilitation Project Report: FOWD 91%, OVWC 2.6%, and SJWWD-R 6.4%.
6. A portion of this project was completed in FY14-15. \$2,400,000 is 80% of total project cost (SJWWD-W \$564,000. Cost to SJWWD-R \$1.12M, OVWC \$520,000, City of Folsom \$175,000).
7. This project not needed if Admin. Bldg. improvements are completed. If old shop is replaced, 70% of the project cost should be reimbursed to Wholesale by SJWWD-R.
8. GIS project will be done concurrently for wholesale and retail. Needs assessment split 60/40, implementation split 25/75 W/R.
9. Where appropriate, IT costs split between wholesale and retail.

Financial plan analyses suggest that with the exception of the two large projects referenced above, the entire capital improvement program can be financed on a pay-as-you-go basis using capital program revenue, transfers from the operating fund, and available reserves.

Annual transfers from the operating fund to the capital fund range from zero dollars initially (due to inadequacy of water rate revenues) to \$3.5 million annually toward the end of the planning period. By establishing rates sufficient to support a portion of the capital program the District may be able to reduce or avoid the need for additional long-term debt beyond 2019. This has been an objective of the financial plan, and the proposed rates help to achieve this cost-saving objective.

- *New Administration Building* – An estimated cost of nearly \$4.5 million (in future dollars) for a new administration building is included in financial plan analyses, and equally split between the wholesale and retail capital improvement programs with construction in FY 20-21. Financial plan analyses indicate that this project can be funded at that time on a pay-as-you-go basis from available capital program revenues and reserves. Prior to completion of a new administration building the financial plan assumes the District will add temporary trailers to provide additional space from FY 17-18 through FY 20-21.
- *PERS UAL Obligations* – Based on the most recent actuarial analysis (completed in 2015) the District has a total estimated unfunded accrued liability (UAL) associated with its retirement programs of about \$5.477 million. The wholesale water system is responsible for about \$2.3 million of this amount; \$3.177 million is the responsibility of the retail water system. Interest accrues on the UAL at a rate of 7.5 percent annually, which is significantly greater than the 0.5 percent the District earns of its investments. The current practice of holding reserves while this liability grows is economically inefficient and costly to the District. District staff suggests it is advantageous for the wholesale water system to pay off \$1,725,000 (75 percent) of its UAL obligation from existing reserves. This will result in net annual cost savings to the District. The financial plan assumes that the wholesale portion of the current UAL will be reduced with funds from the following reserves:

○ PERS stabilization reserve	\$416,000
○ Hinkle reservoir reserve	\$1,309,000

While the District has been gradually accumulating the Hinkle reservoir reserve to help fund major improvements to that facility in a few years, it will only provide a modest amount toward the total project cost, and the District will be required to fund most of the project in new long-term debt. It is economically more efficient to use the available reserve funds to reduce the UAL than to hold it for the Hinkle reservoir project. The District's Board of Directors generally supported the use of reserve funds due reduce the UAL during the workshop held on June 29.

## FINANCIAL PLAN RESULTS

Details of the wholesale financial plan analyses are presented in **Exhibits II-4, II-5, and II-6** reflecting the operating fund, capital fund, and debt service fund, respectively. The financial plan is also presented graphically in **Exhibit II-7**. The colored bands in Exhibit II-7 show wholesale operating and maintenance costs, debt service payments, and pay-as-you-go capital program expenditures. Debt-financed capital expenditures are not reflected, although the associated debt service is. The dashed line in the exhibit shows minimum target reserves, and the solid black line shows estimated total year-end reserves. The financial plan analysis seeks to keep the solid line above the dashed line throughout the planning period.

Results of the financial plan analyses are summarized below.

- The recent multi-year drought has created financial stress for the wholesale water system resulting in a significant decline in total financial reserves over the past two years.
- Current wholesale water rate revenues are insufficient to fully cover ongoing operating and maintenance costs and debt service payment obligations. As a result, a portion of capital fund revenues and reserves are being used for operating purposes. The current net operating loss and existing capital program revenues do not adequately support the capital improvement program. Because of the costs and timing of planned projects, the District will need to issue new long-term debt. It is not practical to avoid new debt unless the Hinkle reservoir project is postponed for a significant period of time.
- The District should fully utilize the \$1 million rate stabilization reserve in FY 16-17, and then gradually replenish it during the planning period. Doing so would help enable the District to more gradually implement the required and recommended water rate increases, and avoid a larger spike in water rates in 2017. Using the reserve in this manner is consistent with its intended purpose (i.e., smoothing out required rate increases over time).
- The pace and extent of rebound in water demands from wholesale customers is uncertain and will have an impact on annual water rate revenues. The rebound trajectory (see Exhibit II-1) has been reviewed with staff and is believed to be reasonable. Nevertheless it is an area of potential financial risk, which should be monitored. This risk is at least partially offset by the assumption of no water sales to SSWD during the planning period.
- The District is meeting debt service coverage obligations, and is expected to continue to meet this requirement throughout the planning period even with new debt issued in 2019.

**Exhibit II-4**

San Juan Water District											
Wholesale Financial Plan -- Operating Fund											
	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
<b>WHOLESALE OPERATIONS</b>											
<b>Beginning Balance</b>	3,271,500	3,229,900	1,676,000	1,796,780	2,516,760	2,291,540	2,224,140	2,525,940	2,616,640	2,840,640	3,095,240
<b>Sources of Funds</b>											
OM&R Fixed Charges	1,568,000	2,647,000	4,018,000	4,864,000	4,974,000	4,943,000	5,769,000	6,850,000	8,020,000	9,121,000	10,164,000
OM&R Usage Charges	2,904,000	3,324,000	3,433,000	3,670,000	3,905,000	4,057,000	4,086,000	4,115,000	4,143,000	4,172,000	4,189,000
Debt Service Charges	1,979,000	1,978,400	1,978,300	2,815,700	3,652,600	3,651,100	3,651,600	3,652,300	3,652,700	3,653,500	
Wholesale Rate Revenue	6,451,000	7,949,400	9,429,400	10,512,300	11,694,700	12,652,600	13,506,100	14,616,600	15,815,300	16,945,700	18,006,500
Sacramento Suburban WD	605,000	900,000	-	-	-	-	-	-	-	-	
Granite Bay Golf Course	12,600	31,300	24,300	24,300	24,300	24,300	24,300	26,200	28,300	30,000	31,800
Misc. Operating Revenue	110,900	112,500	116,000	119,000	123,000	127,000	131,000	135,000	139,000	143,000	147,000
Interest Earnings	14,700	9,900	18,000	18,000	22,000	44,000	43,000	45,000	62,000	64,000	66,000
<b>Total Sources of Funds</b>	7,194,200	9,003,100	9,587,700	10,673,600	11,864,000	12,847,900	13,704,400	14,822,800	16,044,600	17,182,700	18,251,300
<b>Uses of Funds</b>											
Source of Supply	574,500	1,078,900	1,131,300	1,265,500	1,436,800	1,569,100	1,633,600	1,700,300	1,769,900	1,842,000	1,908,800
Treated GW Purchase Costs	-	866,900	371,520	371,520	371,520	371,520	371,520	2,127,000	2,191,000	2,257,000	2,325,000
Water Treatment & Operations	1,620,300	1,827,600	1,947,000	2,005,000	2,065,000	2,065,000	2,065,000	2,002,000	1,948,000	1,948,000	1,948,000
Energy, Chemicals, Maint.	514,500	575,900	693,000	778,000	869,000	956,000	956,000	956,000	956,000	1,060,000	1,121,000
Executive & Board of Directors	783,200	875,200	901,000	928,000	928,000	928,000	928,000	905,000	905,000	1,015,000	1,045,000
Administration & Info. Tech.	581,500	789,000	903,000	903,000	903,000	903,000	903,000	932,000	932,000	962,000	991,000
Finance	487,800	389,800	401,000	413,000	425,000	438,000	451,000	465,000	479,000	493,000	508,000
Human Resources	105,400	99,800	224,000	231,000	238,000	245,000	252,000	260,000	268,000	276,000	284,000
Retiree Medical and OPEB	325,000	206,600	219,000	232,100	246,000	260,700	276,400	293,000	310,600	329,200	348,900
PERS UAL Req'd Payment	132,300	148,300	30,000	55,000	82,000	92,000	105,000	118,000	133,000	149,000	166,000
PERS UAL Reduction	317,000	1,725,000	368,900	380,000	391,000	403,000	415,000	427,000	440,000	453,000	467,000
Engineering	368,900	376,500	388,000	400,000	412,000	424,000	437,000	450,000	464,000	478,000	492,000
Wholesale Master Plan											
Conservation & Outreach											
Transfers to Debt Service											
2009 C Ops	1,345,400	1,346,000	1,347,600	1,348,400	1,347,600	1,345,100	1,345,000	1,346,000	1,345,700	1,347,300	1,346,600
2012 Refunding Rev. Bonds	634,500	632,600	630,100	630,300	633,400	632,600	630,800	631,400	632,600	632,600	632,200
(555,000)	(750,000)	(100,000)	-	-	1,675,000	1,674,000	1,673,000	1,676,000	1,673,000	1,674,000	1,674,000
Transfer to Capital Fund								500,000	1,000,000	2,000,000	2,750,000
<b>Total Uses of Funds</b>	7,235,800	10,557,000	9,466,920	9,953,620	12,089,220	12,915,300	13,402,600	14,732,100	15,820,600	16,928,100	17,283,500
<b>Ending Balance</b>	<b>3,229,900</b>	<b>1,676,000</b>	<b>1,796,780</b>	<b>2,516,760</b>	<b>2,291,540</b>	<b>2,224,140</b>	<b>2,525,940</b>	<b>2,616,640</b>	<b>2,840,640</b>	<b>3,095,240</b>	<b>4,063,040</b>
Operating Reserve (20%)	1,520,000	1,518,000	1,595,000	1,687,000	1,753,000	1,750,000	1,816,000	1,884,000	1,955,000	2,026,000	2,100,000
Rate Stabilization Reserve	1,000,000	-	-	-	-	-	250,000	-	250,000	500,000	1,000,000
Comp. Absence Reserve	193,555	-	-	-	-	-	-	-	-	-	-
PERS Stabilization Reserve	415,833	-	-	-	-	-	-	-	-	-	-
Delta/Wtr. Rights Reserve	102,666	153,000	203,000	253,000	303,000	353,000	403,000	453,000	503,000	553,000	603,000
Uncommitted Fund Balance	(2,154)	5,000	(1,220)	576,760	235,540	121,140	56,940	132,640	16,240	360,040	

**Exhibit II-5**

**San Juan Water District**

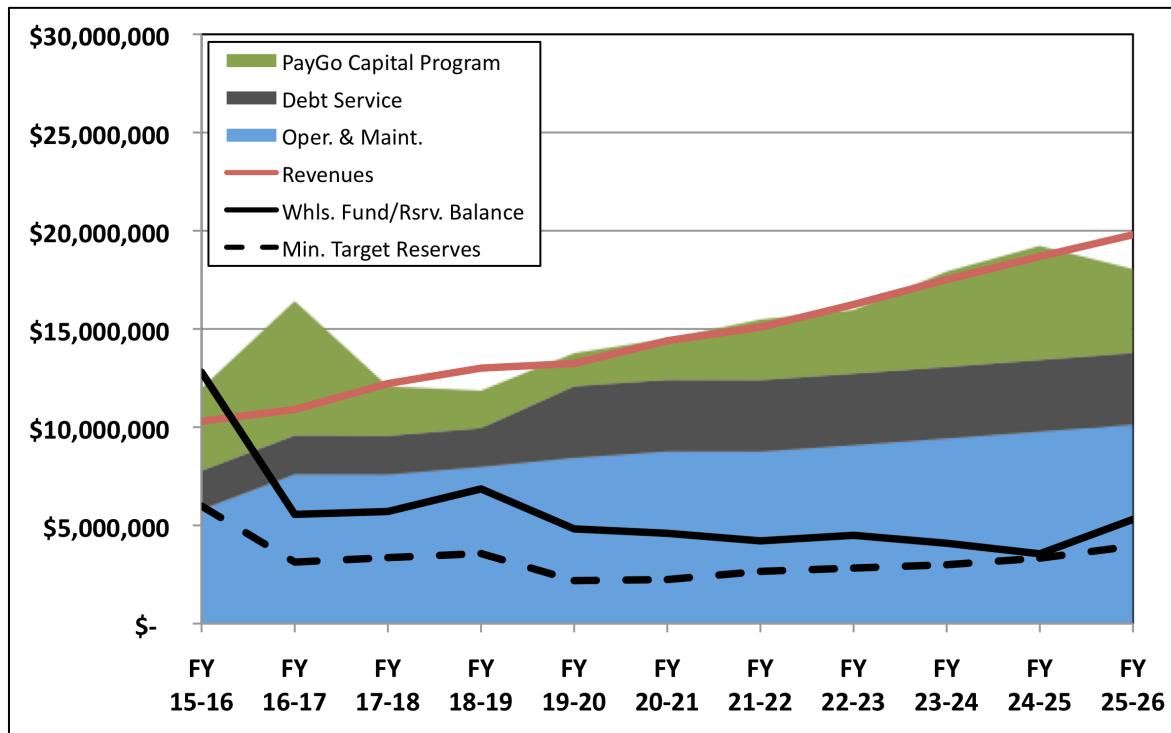
**Wholesale Financial Plan -- Capital Fund**

	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
<b>WHOLESALE CAPITAL PROGRAM FUNDING</b>											
<b>Beginning Balance</b>											
<b>Sources of Funds</b>											
Transfer from Operations	(555,000)	(750,000)	(100,000)	3,883,600	3,909,700	4,340,100	23,899,100	2,372,400	1,685,200	1,878,800	1,249,600
Capital Facilities Charges	889,500	784,200	380,800	-	43,800	43,800	500,000	1,000,000	2,000,000	2,750,000	3,500,000
SJ RSA CFC Rimb. (Stor. Bldg.)	(133,000)	(133,000)	994,200	994,200	1,076,000	1,108,000	1,141,000	1,175,000	1,210,000	1,246,000	1,283,000
FOWD FO40 Cost Share Pmts.	995,000	1,045,000	1,076,000	162,000	167,000	172,000	177,000	177,000	160,000	165,000	169,000
Property Taxes (50% of 1% Incr.)	52,000	75,000	72,000	761,600	55,600	19,400	19,500	21,700	179,200	17,800	12,600
Wholesale Connection Fees	355,000	72,000	761,600	53,400	53,400	2,532,400	2,332,500	28,121,500	2,053,100	2,387,800	3,423,600
CSI Solar Rebate											
Grant Revenue (Ant. Pump Back)											
Interest Earnings											
Debt Proceeds											
<b>Total Sources of Funds</b>	<b>2,551,500</b>	<b>1,148,800</b>	<b>2,532,400</b>	<b>2,332,500</b>	<b>28,121,500</b>	<b>2,053,100</b>	<b>2,387,800</b>	<b>3,423,600</b>	<b>4,220,800</b>	<b>5,007,500</b>	<b>5,045,600</b>
<b>Uses of Funds</b>											
Pre-Treatment Projects	1,098,000	6,372,000	-	-	-	431,000	-	547,000	-	-	-
Filter Projects	50,000	-	130,000	-	-	-	4,571,000	-	-	-	249,000
Chemical Feed System Projects	25,000	64,000	-	-	-	539,000	-	464,000	-	-	-
Solids Handling Facility Projects	-	-	109,000	73,000	73,000	-	308,000	-	-	-	-
Hinkle Reservoir	15,000	59,000	-	-	-	2,185,000	-	2,318,500	21,492,900	-	-
Plant Piping	-	-	-	-	-	-	-	-	-	-	-
Transmission Pipelines	-	-	-	-	-	-	-	-	-	-	-
Water Supply Reliability Projects	2,905,000	-	-	-	-	-	-	-	-	-	-
Vehicle/Equipment Replacements	31,500	82,000	-	34,000	-	805,100	246,000	42,000	-	-	-
Miscellaneous CIP Items	65,000	245,500	82,300	-	20,000	9,000	2,044,900	3,075,000	3,230,000	4,834,000	87,000
Information Technology	-	8,000	-	-	-	-	-	-	-	16,000	3,360,000
<b>Total Uses of Funds</b>	<b>4,189,500</b>	<b>6,830,500</b>	<b>2,506,300</b>	<b>1,902,100</b>	<b>8,562,500</b>	<b>23,579,800</b>	<b>3,075,000</b>	<b>3,230,000</b>	<b>4,850,000</b>	<b>5,799,000</b>	<b>4,262,000</b>
<b>Ending Balance</b>	<b><u>9,565,300</u></b>	<b><u>3,883,600</u></b>	<b><u>3,909,700</u></b>	<b><u>4,340,100</u></b>	<b><u>23,899,100</u></b>	<b><u>2,372,400</u></b>	<b><u>1,685,200</u></b>	<b><u>1,878,800</u></b>	<b><u>1,249,600</u></b>	<b><u>458,100</u></b>	<b><u>1,241,700</u></b>
General CIP Reserve	6,814,300	2,424,100	2,350,200	2,714,600	2,399,100	2,232,900	1,495,700	1,639,300	960,100	205,600	1,000,200
Vehicle/Equip. Reserve	76,506	44,500	94,500	110,500	131,500	139,500	189,500	239,500	289,500	252,500	241,500
Hinkle Reservoir Reserve	2,674,494	1,415,000	1,465,000	1,515,000	-	21,368,500	-	-	-	-	-
Project Fund (Debt Proceeds)	-	-	-	-	-	-	-	-	-	-	-

**Exhibit II-6**  
**San Juan Water District**  
**Wholesale Financial Plan -- Debt Service Fund**

	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
<b>DEBT SERVICE FUND</b>											
<b>Beginning Balance</b>											
<b>Sources of Funds</b>											
2009 Certificate of Participation	1,863,200	1,862,900	1,863,000	1,862,900	1,863,000	3,540,000	3,539,900	3,540,000	3,540,000	3,540,000	3,540,000
San Juan WD - RSA	425,000	425,200	425,700	426,000	425,700	424,900	424,900	425,200	425,100	425,600	425,400
Citrus Heights WD	452,500	452,700	453,200	453,500	453,200	452,400	452,300	452,700	452,600	453,100	452,900
Fair Oaks WD	281,600	281,700	282,100	282,200	282,100	281,500	281,500	281,700	281,700	282,000	281,800
Orangevale WC	142,200	142,300	142,400	142,500	142,400	142,200	142,200	142,300	142,200	142,400	142,300
City of Folsom	44,100	44,100	44,200	44,200	44,200	44,100	44,100	44,100	44,100	44,200	44,200
2012 Refunding Revenue Bond	189,200	188,600	188,000	187,900	188,000	188,900	188,600	188,100	188,300	188,600	188,800
San Juan WD - RSA	220,900	220,200	219,500	219,300	219,400	220,500	220,200	219,600	219,800	220,200	220,400
Citrus Heights WD	162,300	161,800	161,300	161,200	161,200	162,000	161,800	161,400	161,500	161,800	162,000
Fair Oaks WD	49,800	49,700	49,500	49,500	49,500	49,700	49,700	49,700	49,500	49,700	49,700
Orangevale WC	12,300	12,300	12,200	12,200	12,200	12,300	12,300	12,300	12,200	12,300	12,300
2019 New Debt Issue											
San Juan WD - RSA											
Citrus Heights WD											
Fair Oaks WD											
Orangevale WC											
City of Folsom											
<b>Total Sources of Funds</b>	1,979,900	1,978,600	1,978,100	1,978,500	3,652,900	3,652,500	3,650,600	3,652,800	3,650,100	3,653,900	3,653,800
<b>Uses of Funds</b>											
2009 Certificate of Participation	275,200	288,000	304,000	320,000	336,000	352,000	371,200	393,600	416,000	441,600	464,000
Principal Payment	1,070,300	1,058,000	1,043,600	1,028,400	1,011,600	993,100	973,700	952,400	929,700	905,800	882,600
Interest Payment											
2012 Refunding Revenue Bond	285,200	291,600	301,400	314,300	324,100	343,500	359,700	375,900	395,300	408,300	421,300
Principal Payment	349,500	340,900	329,200	315,700	306,200	290,000	272,900	254,900	236,100	224,200	212,000
Interest Payment											
2019 New Debt Issue											
Principal Payment											
Interest Payment											
<b>Total Uses of Funds</b>	1,980,200	1,978,500	1,978,200	1,978,400	3,652,900	3,652,600	3,650,500	3,652,800	3,650,100	3,653,900	3,653,900
<b>Ending Balance</b>	<b>1,862,900</b>	<b>1,863,000</b>	<b>1,862,900</b>	<b>1,863,000</b>	<b>3,540,000</b>	<b>3,539,900</b>	<b>3,540,000</b>	<b>3,540,000</b>	<b>3,540,000</b>	<b>3,540,000</b>	<b>3,539,900</b>
Wholesale 2009 DS Reserve	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200	1,863,200
Wholesale 2019 DS Reserve											
<b>Est. W+R DS Cvrgr. (min.=1.15)</b>	<b>1.33</b>	<b>1.85</b>	<b>2.50</b>	<b>2.82</b>	<b>1.79</b>	<b>2.02</b>	<b>2.21</b>	<b>2.40</b>	<b>2.60</b>	<b>2.78</b>	<b>2.98</b>

**Exhibit II-7**  
**San Juan Water District**  
**Wholesale Financial Plan Summary**



- In 2016, the District's financial advisors suggested that refunding of the 2009 COPs is possible at this time (with certain pre-payment penalty associated costs), but that it may be more advantageous to refund the COPs in 2018 when the pre-payment penalties no longer apply. Because future market conditions cannot be known, financial plan analyses do not reflect any cost savings associated with refunded COPs. The District should closely monitor interest rate trends and consider the refunding of the 2009 COPs at an opportune time.
- The compensated absence reserve does not need to be maintained as a separate reserve, as it is unlikely that it would ever need to be paid out in lump sum. It would be advantageous to the District to eliminate this reserve. Money currently designated to this reserve has been used to help reduce the magnitude of the proposed water rate increase for January 2017. District staff supports this change, and it has been incorporated in the financial plan analyses.
- Maintaining the PERS stabilization and Hinkle reservoir reserves while the \$2.3 million PERS UAL remains outstanding is economically inefficient and results in unnecessary interest costs to the District. The District should pay off a significant portion of this obligation.
- Wholesale water rate increases are required over the next several years in order to meet current and future financial and service obligations, as well as to position the District for issuing new long-term debt in 2019. Estimated annual increases in the overall level of wholesale water rates for each January (beginning in 2017) of the ten-year planning period are 16 percent, 9 percent, 9

percent, 9 percent, 5 percent, 8 percent, 8 percent, 6 percent, and 6 percent, respectively.

- With the exception of the rate stabilization reserve, these annual water rate increases will enable the District to maintain overall reserve levels above minimum target levels throughout the planning period. The target \$1 million rate stabilization reserve would be by the end of the planning period.

The next section of this report includes recommendations for modifying wholesale water rates including increasing the emphasis on fixed charge revenue and reducing the portion of revenue for water usage charges. This change would help reduce the financial risk associated with variable and uncertain water deliveries.

At this point in time, it is recommended that the District adopt the complete five-year wholesale water rate schedule with new rates implemented each January. It is also recommended that the District re-evaluate its financial condition and update the financial plan prior to issuing new long-term debt.

As with past practice, the District should monitor financial conditions and needs on an ongoing (annual) basis and update the financial plan model if conditions or plans change sufficiently to warrant an update. Actual future conditions, such as water deliveries, water sales revenue, operating and maintenance expenses, CIP project costs/timing, project financing, etc., may differ from the financial plan assumptions reflected herein. Material differences affecting the overall financial condition of the wholesale water system may warrant closer review and/or an earlier update. The need for and magnitude of annual wholesale water rate increases may also be affected by differences between assumed and actual conditions.

Debt service charges paid by each wholesale customer are unaffected by these rate recommendations. Debt service charges will be adjusted commensurate with annual debt repayment obligations, including the anticipated issuance of new debt in 2019.

The next section of this report provides details on wholesale water rate calculations for 2017, as well as specific water rate schedules for each year from 2017 through 2021.

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### SECTION III. WHOLESALE WATER RATES

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Proposed wholesale water rates were calculated using the same general rate methodology originally developed by the District in 1998 and updated several times since then. The wholesale water rates include a uniform water usage rate applicable to each acre-foot (AF) of water deliveries, a fixed quarterly service charge, a fixed quarterly debt service charge, and quarterly capital facilities charges (for some wholesale customers and related to specific limited-benefit capital improvement projects). The capital facilities charges provide an equitable and timely reimbursement for capital project costs that have unique cost allocations among wholesale customers, based on benefits received. The process for calculating water rates includes three basic steps.

1. Annual water rate revenue requirement determination. The revenue requirement is the amount of revenue to be generated from water rates to cover operating, debt service, and capital program needs with consideration of other revenues and reserve policies. The financial planning model presented in Section II of this report serves to determine the annual water rate revenue requirement.
2. Cost of service analysis and allocation of costs to each wholesale customer. The annual revenue requirement is allocated to each wholesale customer through cost of service analysis and a cost allocation process. Costs are allocated to each wholesale customer based on (1) the average of recent actual annual water deliveries to each wholesale customer, (2) anticipated current annual water deliveries, and (3) the number of retail customers served. Debt service costs are allocated to each wholesale customer based on previously approved allocations associated with each debt issue. A small number of capital projects benefit some but not all wholesale customers. The allocation of costs for these projects has been incorporated into capital facilities charges that apply to benefiting wholesale customers. Distribution pumping costs within the San Juan RSA necessary to convey water to the City of Folsom are retail costs and removed from the wholesale water rate analysis herein. A special pumping surcharge is added to the water rates for the City of Folsom, and is a source of retail revenue for the District.
3. Water rate design. The rate design process involves determining the fixed service charges and a water usage rate that will generate the required revenues from each customer. The water rates include a separate charge for debt service allocated to each wholesale customer. In addition, for rate simplicity, a single uniform water usage rate is used for all wholesale customers, with any difference in the allocation of costs to wholesale customers reflected in their respective service charges.

#### CURRENT WHOLESALE WATER RATES

Current wholesale water rates are presented in **Exhibit III-1** for reference purposes. The water rates were last adjusted in January 2016 when the District increased the water usage rate and quarterly fixed service charges by about 14.5 percent<sup>2</sup>. Debt service charges

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<sup>2</sup> Because debt service charges were largely unchanged in 2016, the total wholesale water rate revenue was estimated to increase by slightly less than 10 percent under the 2017 water rates (exclusive of the impact of any change in water deliveries).

changed very slightly, based on very slight changes in annual debt service. Capital facilities charges were adjusted based on the previously adopted charge schedule. Capital facilities charges are described separately later in this section, and are not part of the general water rate calculation process due to their limited scope and purpose.

**Exhibit III-1**  
**San Juan Water District**  
**2016 Wholesale Water Rates**

<b>Jan. 2016</b>		
<b>Water Usage Rate (\$/AF)</b>		
All Water Deliveries	\$	102.02
<b>Quarterly O, M, &amp; R Service Charges</b>		
San Juan Water District	\$	126,315
Citrus Heights Water District	\$	132,586
Fair Oaks Water District	\$	102,172
Orangevale Water Company	\$	44,801
City of Folsom	\$	12,869
<b>Quarterly Debt Service Charges</b>		
San Juan Water District	\$	153,453
Citrus Heights Water District	\$	168,208
Fair Oaks Water District	\$	110,878
Orangevale Water Company	\$	47,980
City of Folsom	\$	35,571

**Notes:**

- (1) Folsom pumping surcharge and capital facilities charges are not shown.

#### 2017 WHOLESALE WATER RATE REVENUE REQUIREMENT

The wholesale financial plan includes revenues and expenses for each fiscal year over the ten-year planning period. The District, however, adjusts water rates on a calendar year basis. As a result the financial and rate analyses necessarily involve certain translations back and forth between fiscal and calendar years. On this basis, the wholesale water rate revenue requirement for calendar year 2017 was determined to be \$8,842,000<sup>3</sup>. This amounts to an overall 16 percent increase in the overall amount of water rate revenue, after adjusting for the fact that the anticipated rebound in water demand will also affect rate revenues.

The wholesale water rate revenue requirement for 2017 was determined based on the financial plan analyses presented in Section II of this report. It reflects assumptions regarding operating and maintenance costs, debt service obligations, capital improvement program (including cost sharing), and the availability of financial reserves and non-rate revenues.

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<sup>3</sup> This amount excludes the revenue generated from capital facilities charges, which is related to a limited number of specific capital improvement projects and provides revenue directly to the capital fund.

## COST OF SERVICE ANALYSES

The cost of service analysis for wholesale water rates was performed on each of the District's broad (departmental) cost classifications, including source of supply, water treatment and operations, executive and board of directors, administration and information technology, finance and purchasing, human resources, engineering, water conservation and outreach, debt service transfer, and capital program transfer. Non-rate revenues and changes in the operating fund balance were also factors in determining the annual revenue requirement. **Exhibit III-2** presents the multi-part process of the cost of service analysis. The small table at the top of Exhibit III-2 presents cost allocation metrics for each wholesale customer, including estimated water deliveries for 2017, recent historical average water deliveries, and number of retail customers. Average historical water use from 2012 through 2016 is used in the rate analysis, as this period encompasses the most recent historical record. The estimated water deliveries for 2017 reflect a partial return to normal water demand, and are based on the rescission of state-mandated water conservation efforts. The District obtained information from each wholesale customer to assist in developing these estimates.

The lower portion of Exhibit III-2 shows how the revenue requirement is allocated to various cost categories to arrive at unit costs for supply (variable), treatment (fixed and variable), customer costs (fixed), and debt service (fixed).

**Exhibit III-3** shows how unit costs are then applied to the service metrics for each wholesale customer to arrive a total allocation of costs to each wholesale customer. The far right columns in Exhibit III-3 summarize the total allocation of the wholesale water rate revenue requirement to each wholesale customer, and serves as a check to the rate calculations.

## WATER RATE DESIGN

The wholesale water rates include fixed service charges and a uniform water usage rate for each wholesale customer. The uniform water usage rate is the sum of the unit costs for the variable cost components for water supply and water treatment ( $\$59.31 + \$21.83 = \$81.14/\text{AF}$ ). The annual service charge for operations, maintenance, and replacement (O, M, & R) for each wholesale customer is the sum of the fixed cost components for water treatment and customers allocated to each wholesale customer. For example, the annual service charge for the San Juan RSA is ( $\$1,005,326 + \$109,319 = \$1,114,645$ ). The annual debt service charge for each wholesale customer is based on previously approved allocations of debt service obligations associated with each debt issue. In the case of San Juan RSA, the annual debt service charge is \$613,750.

Each wholesale customer's share of annual debt service costs over the planning period was presented in Exhibit II-2, in Section II of this report. This exhibit also includes estimates related for anticipated new debt to be issued in 2019. The actual debt service charges related to that issue will depend on actual debt repayment obligations as well as decisions related to the allocation of that debt to each wholesale customer.

**Exhibit III-2**  
**San Juan Water District**  
**Wholesale Water Rate Cost Allocation Steps**

**Wholesale Cost Allocation -- Units of Service**

Wholesale Customer	Annual Water Use		No. of Customers (Accts.)
	Estimated for 2017 (AF)	Avg. for 2012-2016 (AF)	
San Juan WD - RSA	13,530	12,180	10,582
Citrus Heights WD	11,833	11,363	19,785
Fair Oaks WD	9,244	8,630	13,894
Orange Vale WC	4,088	4,078	5,577
City of Folsom	1,272	1,249	1,025
<b>Totals</b>	<b>39,967</b>	<b>37,499</b>	<b>50,863</b>

**Wholesale Cost Allocation -- Unit Costs of Service (2017)**

	Total Cost	Supply (Variable)	Water Treatment		Customer (Fixed)	Debt Serv. (Fixed)
			(Variable)	(Fixed)		
Units of Service			39,967 AF	39,967 AF	37,499 AF	50,863 Accts.
Source of Supply						
Total Unit Cost	\$ 1,724,000	\$ 1,724,000				
Water Treatment & Operations						
Total Unit Cost	\$ 2,521,750		\$ 634,450	\$ 1,887,300		
Executive & Board of Directors						
Total Unit Cost	\$ 888,100	\$ 288,800	\$ 106,300	\$ 428,900	\$ 64,000	
Administration & Info. Tech.						
Total Unit Cost	\$ 846,000	\$ 275,100	\$ 101,300	\$ 408,600	\$ 61,000	
Finance & Purchasing						
Total Unit Cost	\$ 395,400	\$ 128,600	\$ 47,300	\$ 191,000	\$ 28,500	
Human Resources						
Total Unit Cost	\$ 463,850	\$ 150,900	\$ 55,500	\$ 224,000	\$ 33,400	
Engineering						
Total Unit Cost	\$ 374,450			\$ 374,450		
Conservation & Outreach						
Total Unit Cost	\$ 382,250				\$ 382,250	
Transfers for Debt Service						
Total Unit Cost	\$ 1,978,350					\$ 1,978,350
Transfer To/(From) Cap. Fund						
Total Unit Cost	\$ (425,000)			\$ (425,000)		
Offsetting Misc. Revenues						
Total Unit Cost	\$ (605,500)	\$ (196,900)	\$ (72,500)	\$ (292,400)	\$ (43,700)	
To/(From) Reserves						
Total Unit Cost	\$ 298,350			\$ 298,350		
<b>Total Revenue Reqmt.</b>	<b>\$8,842,000</b>	\$ 2,370,500	\$ 872,350	\$ 3,095,200	\$ 525,450	\$ 1,978,350
<b>Unit Costs of Service</b>		<b>\$ 59.31 Per AF</b>	<b>\$ 21.83 Per AF</b>	<b>\$ 82.54 Per AF</b>	<b>\$ 10.33 Per Acct.</b>	

**Exhibit III-3**  
**San Juan Water District**  
**Wholesale Water Rate Cost Allocation Steps -- Continued**

**Wholesale Cost Allocation -- Allocation to Wholesale Customers**

<b>Wholesale Customers</b>	<b>Supply</b>		<b>Water Treatment</b>		<b>Customer (Fixed)</b>	<b>Debt Serv. (Fixed)</b>	<b>O,M&amp;R and DS Costs (\$)</b>
	<b>(Variable)</b>	<b>Per AF</b>	<b>(Variable)</b>	<b>Per AF</b>			
<b>Unit Costs of Service --&gt;</b>	<b>\$ 59.31</b>	<b>\$ 21.83</b>					
<b>San Juan WD -RSA</b> Units of Service Allocation of Costs	13,530	13,530	12,180	12,180	10,582		
	\$ 802,484	\$ 295,316	\$ 1,005,326	\$ 1,005,326	\$ 109,319	\$ 613,750	<b>\$ 2,826,195</b>
<b>Citrus Heights WD</b> Units of Service Allocation of Costs	11,833	11,833	11,363	11,363	19,785		
	\$ 701,832	\$ 258,276	\$ 937,874	\$ 937,874	\$ 204,393	\$ 672,800	<b>\$ 2,775,175</b>
<b>Fair Oaks WD</b> Units of Service Allocation of Costs	9,244	9,244	8,630	8,630	13,894		
	\$ 548,251	\$ 201,758	\$ 712,291	\$ 712,291	\$ 143,535	\$ 443,450	<b>\$ 2,049,285</b>
<b>Orange Vale WC</b> Units of Service Allocation of Costs	4,088	4,088	4,078	4,078	5,577		
	\$ 242,489	\$ 89,237	\$ 336,633	\$ 336,633	\$ 57,614	\$ 191,950	<b>\$ 917,923</b>
<b>City of Folsom</b> Units of Service Allocation of Costs	1,272	1,272	1,249	1,249	1,025		
	\$ 75,444	\$ 27,764	\$ 103,076	\$ 103,076	\$ 10,589	\$ 56,400	<b>\$ 273,273</b>
<b>Totals</b>	\$ 2,370,500	\$ 872,350	<b>\$ 3,095,200</b>	<b>\$ 525,450</b>	<b>\$ 1,978,350</b>	<b>\$ 8,841,850</b>	<b>100%</b>

The cost allocations encompassed in Exhibits III-2 and III-3 and the water rate design result in a shift to greater emphasis on the fixed service charge, resulting in a reduction in the water usage rate from the current rate. This allocation is in better alignment with the District's cost structure, and should somewhat lessen the revenue variability associated with fluctuating water demands. In addition, proposed rate schedule for 2018 through 2021 maintain the water usage rate at the 2017 amount; increased revenues are derived from adjustments to the fixed service charges and/or the debt service charges. At present, about 45 percent of wholesale water rate revenue is tied to water deliveries. By 2021, it is estimated that about 32 percent of wholesale water rate revenue will be tied to water deliveries.

#### *Capital Facilities Charges*

In 2015, the District adopted a system of capital facilities charges related to a small number of planned wholesale capital improvement projects that benefit some, but not all, of the wholesale customers. The charges help to ensure equitable and timely cost recovery for these projects, and recover the costs for projects with unique cost sharing attributes. The capital facilities charges recover costs through fixed quarterly charges over a five-year period, beginning 18 months prior to the year of construction of affected projects.

As originally developed, wholesale capital improvement projects incorporated in the capital facilities charges included the following:

- ARC Flash Assessment and Improvements
- SSWD-SJWD Pump Back Project
- Storage Building (Old Shop) Replacement
- Fair Oaks 40" Transmission Pipeline Re-Lining

Two changes have occurred since the capital facilities charges were adopted and implemented. First, the storage building replacement project has been removed from the capital improvement program. Seventy percent of that project had been assigned to the San Juan RSA (with 30 percent incorporated in general wholesale water rates). As a result of this cancellation, the sum paid by the retail system to the wholesale system should be reimbursed or credited. The financial plan analysis assumes that this reimbursement or credit (of \$133,000) will occur in the early months of 2017 (i.e., in FY 16-17).

Second, the FOWD recently negotiated an alternative cost sharing and payment arrangement with the District with regards to the Fair Oaks 40" transmission pipeline re-lining project, Phase 2. As a result, the terms of that agreement should be implemented in-lieu of the capital facilities charge component related to the Fair Oaks 40 project. While the timing of the District's invoicing and FOWD's payments in relation to this project are based on milestones and costs in the design and construction of the project, the financial plan presented herein assumes that FOWD will pay the District a total of \$1,988,350 evenly distributed over FY 17-18 and FY 18-19. This is believed to be a conservative estimate, and actual cost reimbursement may be due sooner.

It is recommended that the District continue to collect capital facilities charges from wholesale customers as originally developed (with the above adjustments). As each included capital project is completed and total actual costs are known, the District should adjust or otherwise reconcile the charges as they relate to actual project costs.

**Exhibit III-4** presents an updated capital facilities charges schedule reflecting the above changes, including the recently negotiated agreement between the District and FOWD regarding an alternative cost sharing and payment arrangement for the Fair Oaks 40" transmission pipeline relining project.

#### PROPOSED WHOLESALE WATER RATES FOR 2017 THROUGH 2021

**Exhibit III-5** summarizes the current and proposed wholesale water rate schedules for January 2017 through January 2021, including each of the rate components. The actual costs to each wholesale customer will depend on actual water deliveries. Three aspects of the proposed five-year rate plan are significant.

1. Rate structure changes (i.e., the shift to reduce emphasis on the water usage charge and increase emphasis on fixed charges) primarily occur with the water rates proposed for January 2017. This is the beginning of a gradual transition in the revenue mix embodied in the rate structure.
2. Beginning in January 2018 increased revenue needs are achieved through increases in fixed service charges, rather than through an increase in the water usage rate. This continues a gradual shift to a higher proportion of fixed revenue.
3. The water rates for January 2020 include a significant increase in the debt service charges based on estimates of annual debt service associated with the 2019 new debt issue. A decrease in the fixed O, M, & R service charges also occurs at this time such that total annual water rate revenues reflect the necessary 9 percent increase. In other years the debt service charges are relatively stable reflecting relatively stable debt service requirements.

**Exhibit III-6** summarizes the change in the annual cost of service to each wholesale customer based on proposed water rates for January 2017, relative to current water rates. Because the annual cost to wholesale customers is a function of both the water rates and water deliveries, the exhibit holds the water deliveries constant in this comparison. That is, annual water costs under both 2016 and 2017 water rates are calculated using estimated water deliveries for 2017. This facilitates the assessment of the impact of the rate structure without the influence of changes in overall water demands. It should be noted that the costs to the City of Folsom shown in Exhibit III-6 also incorporate the pumping surcharge and direct debt service (i.e., the Folsom-specific debt obligation). The inclusion of these two elements contribute to the smaller overall percentage change in water service costs for the City of Folsom. These two elements also result in the higher overall cost of service (per AF) borne by the City of Folsom.

**Exhibit III-4**  
**San Juan Water District**  
**Wholesale Capital Facilities Charges (1)**

Capital Project (Year of Construction)	San Juan RSA	Citrus Heights WD	Fair Oaks WD	Orange Vale WC	City of Folsom	Wholesale Funding Thru Rates/ Rsrvs (FY)	Total Project Cost Recovery
<b>ARC Flash Assessment and Improvements (FY 14-15)</b>							
<b>Cost Assignment --&gt;</b>	<b>50.0%</b>					<b>50.0%</b>	
CY 2015	29,000					87,000	116,000
CY 2016	29,000						29,000
CY 2017	29,000						29,000
<b>Antelope Pump Back Project (FY 14-15)</b>							
<b>Cost Assignment --&gt;</b>	<b>56.3%</b>		<b>32.6%</b>	<b>11.1%</b>		<b>0.0%</b>	
CY 2015	363,135		210,270	71,595		-	645,000
CY 2016	363,135		210,270	71,595			645,000
CY 2017	363,135		210,270	71,595			645,000
<b>FO-40 Transmission Pipeline Re-Lining (FY 17-18)</b>							
<b>Cost Assignment --&gt;</b>	<b>6.4%</b>	<b>91.0%</b>	<b>2.6%</b>			<b>0.0%</b>	
CY 2016	34,523	(2)	9,177			-	43,700
CY 2017	34,523	497,088	9,177				540,788
CY 2018	34,523	994,175	9,177				1,037,875
CY 2019	34,523	497,088	9,177				540,788
CY 2020	34,523		9,177				43,700
<b>Totals</b>	<b>1,349,020</b>	-	<b>1,988,350</b>	<b>676,695</b>	<b>214,785</b>	<b>87,000</b>	<b>4,315,850</b>

**Notes:**

- (1) Based on the capital facilities charge schedule adopted in 2015. The storage building replacement project has been deferred, and charges collected for the project are assumed reimbursed in early 2017.
- (2) Estimates based on terms of agreement between the District and FOWD regarding cost sharing for Fair Oaks 40 transmission pipeline relining project.

It is recommended that the District adopt the entire proposed five-year wholesale water rate schedule with rate adjustments occurring each January from 2017 through 2021. The proposed water rates are reflect the cost of providing water service and are intended to meet the District current and estimated future service and financial obligations, enable the District to fund capital improvement projects as planned and scheduled, help to minimize rate changes in any single year, and position the District for obtaining more favorable terms in issuing new long-term debt (as well as for the potential refunding of existing debt).

**Exhibit III-5**  
**San Juan Water District**  
**Current and Proposed Wholesale Water Rates**

	Current	Jan. 2017	Jan. 2018	Jan. 2019	Jan. 2020	Jan. 2021
Overall Composite Water Rate Incr. -->	16%	9%	9%	9%	9%	5%
<b>San Juan Retail District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 126,315	\$ 278,661	\$ 339,915	\$ 408,924	\$ 356,838	\$ 404,099
Qtrly. Capital Facil. Charge (1)	\$ 123,290	\$ 106,665	\$ 8,631	\$ 8,631	\$ 8,631	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 106,297	\$ 106,363	\$ 106,463	\$ 106,463	\$ 106,325	\$ 106,225
2012 Refunding Rev. Bonds	\$ 47,156	\$ 47,075	\$ 46,988	\$ 46,988	\$ 47,113	\$ 47,188
2019 COPs (2)					\$ 136,094	\$ 136,013
<b>Citrus Heights Water District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 132,586	\$ 285,567	\$ 348,338	\$ 419,057	\$ 365,680	\$ 414,112
Qtrly. Capital Facil. Charge (1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 113,161	\$ 113,238	\$ 113,338	\$ 113,338	\$ 113,200	\$ 113,088
2012 Refunding Rev. Bonds	\$ 55,047	\$ 54,963	\$ 54,850	\$ 54,838	\$ 54,988	\$ 55,088
2019 COPs (2)					\$ 126,881	\$ 126,806
<b>Fair Oaks Water District</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 102,172	\$ 213,956	\$ 260,987	\$ 313,972	\$ 273,980	\$ 310,267
Qtrly. Capital Facil. Charge (3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 70,427	\$ 70,475	\$ 70,538	\$ 70,538	\$ 70,450	\$ 70,375
2012 Refunding Rev. Bonds	\$ 40,451	\$ 40,388	\$ 40,313	\$ 40,300	\$ 40,400	\$ 40,475
2019 COPs (2)					\$ 96,313	\$ 96,255
<b>Orange Vale Water Company</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Qtrly. Serv. Charge (O, M, & R)	\$ 44,801	\$ 98,562	\$ 120,227	\$ 144,635	\$ 126,212	\$ 142,928
Qtrly. Capital Facil. Charge (1)	\$ 54,862	\$ 54,862	\$ 2,294	\$ 2,294	\$ 2,294	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 35,567	\$ 35,588	\$ 35,613	\$ 35,613	\$ 35,575	\$ 35,550
2012 Refunding Rev. Bonds	\$ 12,413	\$ 12,400	\$ 12,375	\$ 12,375	\$ 12,400	\$ 12,425
2019 COPs (2)					\$ 45,644	\$ 45,617
<b>City of Folsom</b>						
Water Usage Rate (\$/AF)	\$ 102.02	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14	\$ 81.14
Hinkle PS Surcharge (\$/AF) (4)	\$ 68.87	\$ 74.38	\$ 81.07	\$ 88.37	\$ 96.32	\$ 102.10
Qtrly. Serv. Charge (O, M, & R)	\$ 12,869	\$ 28,416	\$ 34,663	\$ 41,700	\$ 36,388	\$ 41,207
Qtrly. Capital Facil. Charge (1)	\$ 17,899	\$ 17,899	\$ -	\$ -	\$ -	\$ -
Quarterly Debt Service Charges						
2009 COPs	\$ 11,037	\$ 11,038	\$ 11,050	\$ 11,050	\$ 11,038	\$ 11,025
2012 Refunding Rev. Bonds	\$ 3,034	\$ 3,063	\$ 3,050	\$ 3,050	\$ 3,063	\$ 3,075
Direct Portion of 2012 Debt (4)	\$ 21,500	\$ 21,438	\$ 21,388	\$ 21,388	\$ 21,450	\$ 21,488
2019 COPs (2)					\$ 13,819	\$ 13,811

**Notes:**

- (1) Unchanged from 2014 rate study, except to remove charges related to Storage Building (old shop) Replacement, and to remove FOWD Fair Oaks 40" component (per new agreement).
- (2) Estimates based on estimated debt service obligations and cost allocations associated with anticipated new debt.
- (3) Actual cost sharing and payments from FOWD to be based on the recent agreement between the District and FOWD related to the Fair Oaks 40" transmission pipeline relining project.
- (4) Unique charges to City of Folsom and revenue to the retail water system.

**Exhibit III-6**  
**San Juan Water District**  
**2017 Estimated Costs of Water Service for Wholesale Customers (1)**

	SJWD	CHWD	FOWD	OVWC	Folsom
<b>Est. 2017 Water Deliveries (AF)</b>	13,530	11,833	9,244	4,088	1,272
<b>Estimated Water Service Costs</b>					
Wtr. Usage Chrg. @ \$81.14/AF (2)	\$ 1,097,800	\$ 960,108	\$ 750,041	\$ 331,693	\$ 197,819
OM&R Service Charge	\$ 1,114,645	\$ 1,142,267	\$ 855,826	\$ 394,247	\$ 113,665
Debt Service Charge (3)	\$ 613,750	\$ 672,800	\$ 443,450	\$ 191,950	\$ 142,150
Total Water Service Costs	\$ 2,826,195	\$ 2,775,175	\$ 2,049,317	\$ 917,890	\$ 453,635
% Chng. from 2016 Rates (4)	13.1%	15.1%	14.2%	16.5%	10.3%
Est. 2017 effective cost per AF	\$ 208.88	\$ 234.53	\$ 221.69	\$ 224.53	\$ 356.63

**Notes:**

- (1) Capital facilities charges are not included in this exhibit.
- (2) City of Folsom is also subject to a pumping surcharge of \$74.38 per AF, which is included herein.
- (3) City of Folsom is also subject to an additional debt service charge (direct debt), which is included herein.
- (4) Comparison between 2017 rates and 2016 rates with estimated 2017 water usage.

#### TREAT AND WHEEL WATER RATES FOR SSWD

In October 1994, the District amended an agreement with the Northridge Water District (now Sacramento Suburban Water District, or SSWD) concerning the diversion, treatment, and conveyance of water. Under this agreement, the District agreed to use available surplus capacity to treat and wheel surface water through the wholesale water system to SSWD, upon SSWD's request. The agreement contemplates the delivery of SSWD's own water (or water obtained by SSWD), herein referred to as "SSWD water", or surplus District water, as conditions and circumstances may dictate. Such conditions may include, but are not limited to, Water Forum Agreement conditions. At present, it is generally SSWD water that is moved through the District's wholesale water facilities for delivery to SSWD at the westerly terminus of the cooperative transmission pipeline (CTP) at C-Bar-C Park.

The relevant section of the 1994 agreement provides the following language for charging SSWD for water deliveries:

**4. Payment for Use of Surplus Capacity or Surplus Water.** San Juan's charge to Northridge for use of Surplus Capacity in San Juan's Facilities to deliver Surplus Water or Northridge Water shall be at the same average wholesale water rate it charges to San Juan's Member Districts, plus a charge to cover the pro rata cost of treating water to be delivered to Northridge to the extent treatment costs are not included in the wholesale water rate. The charge for using Surplus Capacity to divert, treat, and deliver Northridge Water shall not include the cost-of-water component of San Juan's wholesale water rate, but may include the cost to San Juan to obtain Surplus Water specifically for the purpose of making it available for delivery to Northridge.

At present, the District charges SSWD \$135.34 per AF for SSWD water treated and wheeled through District facilities and delivered to SSWD. District staff asked that a new water rate, consistent with the terms of the 1994 agreement, be calculated as part of this wholesale water rate update.

While the language from the 1994 agreement is somewhat vague, the following calculation is proposed for determining an appropriate 2017 treat and wheel water rate for SSWD. It is based on information reflected in the wholesale financial plan presented in this report, as well as cost data included in Exhibit III-2.

$$\begin{aligned}\text{SSWD Rate} &= \frac{[\text{SJWD Whls. Rev. Reqmt.} - \text{SJWD Source of Supply Costs}]}{\text{Est. Annual SJWD Water Deliveries}} \\ &= \frac{[\$8,842,000 - \$1,724,000]}{39,967 \text{ AF}} \\ &= \$178.10 \text{ per AF}\end{aligned}$$

Other interpretations of the agreement language are certainly possible. However, this calculation is consistent with the agreement's intent, reasonable, and easily replicated in future years. While the proposed rate is about 32 percent more than the current rate charged to SSWD, it is also significantly lower than the effective per-acre-foot rates paid by wholesale customers (see bottom of Exhibit III-6).

Based on the proposed overall wholesale water rate increases for 2018 through 2021 from the financial plan model, future SSWD treat and wheel water rates would increase as follows:

2018	\$194.13 per AF
2019	\$211.60 per AF
2020	\$230.64 per AF
2021	\$242.17 per AF

If the District were to deliver District water to SSWD, rather than SSWD water, then the cost of that water needs to be added to the rates presented above.