

## **PART II: PLAN IMPLEMENTATION**

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Part I of the *2013 Water System Plan* presents SPU's water system business "roadmap" for the next six years and beyond. The first chapter of Part II details the anticipated costs of implementing that roadmap through 2040, with a particular focus on the next six years. The second chapter of Part II presents SPU's plan for financing identified operations and capital facilities improvements and priorities in addition to supporting the existing and ongoing costs of SPU's water utility operations.



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## Chapter 1 Budget

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### **Seattle City Council**

Part I described SPU's drinking water CIP projects and O&M programs and identified a number of needs, gaps, and issues facing SPU in each of its business areas. This chapter focuses on the budget required to implement capital programs and operations and maintenance (O&M) activities to meet SPU's regulatory and customer service objectives, including addressing the needs and gaps identified in Part I of this plan. The first part of the chapter begins by describing SPU's process for developing a capital improvement budget for the water system. Later, the chapter identifies a draft budget for the six-year capital improvement plan (CIP) and capital facilities plan (CFP) and O&M budget outlook through 2040 for the water line of business.

### **1.1 CAPITAL IMPROVEMENT BUDGETING**

***SPU has made a major commitment to using an asset management approach in selecting which capital improvement projects go forward.***

Since the *2007 Water System Plan* was prepared, SPU has been implementing an asset management approach in selecting which capital improvement projects go forward. Asset management is a method of meeting established and well-defined service levels at a cost that represents the highest life cycle value to the utility's ratepayers. This may lead to new capital projects or shifts in O&M activities. By adopting an asset management approach, SPU is better able to ensure cost effectiveness in service delivery in the long-run.

Elements of SPU's asset management approach were described in the *2007 Water System Plan*. One key element is development of a business case for each project (formerly known as a Project Development Plan) that includes a clearly define problem, an analysis of alternative solutions, and a benefit-cost analysis to inform a preferred alternative decision. Business cases for projects or programs that are projected to cost \$1,000,000 or more over their life, considering both capital and O&M costs, must be reviewed by SPU's Asset Management Committee (AMC), which is composed of SPU's Executive Team. Water CIP projects that are estimated to cost less than \$1,000,000 must be reviewed by the AMC for the water line of business. Such approvals support asset



management by making deliberate decisions about projects and programs in a transparent manner, fully informed by financial, environmental, and social impact life-cycle costs and benefits of the business case.

Many of the projects that are included here have not yet gone through a final business case evaluation and review by the AMC. The project descriptions, scope, budget and timing are based on best current planning.

## 1.2 BUSINESS AREA ACTIONS AND COSTS

Part I of this *2013 Water System Plan* identifies key actions for each water utility business area over the next six years. Those key actions related to capital projects are recapped below for each business area. An overview of the 2013-2018 CIP budget, summarized according to business areas, is presented in Table 1-1. The detailed draft CIP is provided with the Capital Facilities Plan as an appendix. CIP cost estimates presented in this plan are preliminary and subject to change as the projects are further developed and analyzed. CIP projects are subject to AMC approval and budget adoption by the Seattle City Council.

**Table 1-1. Capital Improvement Program Budget 2013-2018  
(2012-2017 Adopted CIP, plus 2018 Estimate, in thousands of 2011 dollars)**

Business Area	2013	2014	2015	2016	2017	2018	Total
Water Resources	5,359	8,239	8,076	11,070	9,147	3,245	45,135
Water Quality and Treatment	5,088	1,458	187	190	700	1,600	9,223
Transmission	2,910	2,898	2,898	2,894	3,013	3,013	17,626
Distribution	26,098	24,257	25,270	25,237	25,455	25,019	151,335
Other	22,016	23,945	21,238	19,807	22,636	16,890	126,533
<b>Total</b>	<b>61,471</b>	<b>60,797</b>	<b>57,668</b>	<b>59,199</b>	<b>60,951</b>	<b>49,767</b>	<b>349,853</b>

### 1.2.1 Water Resources

Major CIP projects for the Water Resources business area include the following:

- Implement the 2013-2018 Water Use Efficiency program for the Saving Water Partnership, which is budgeted at \$1.7 million per year.
- Implement the Seattle-only low income conservation assistance program at a cost of \$650K per year.
- Design and construct flood passage improvements at Landsburg Diversion Dam on the Cedar River. The

improvements include replacement of two existing spillway gates with one larger, radial gate and installation of a trash rake system for debris handling. The CIP includes a cost estimate of \$1.7 million in 2013-2016 to complete this work.

- Complete the Overflow Dike Improvements. The CIP includes \$3.6 million in 2013-2014 for this work.
- Implement any capital improvements resulting from regular inspections by Ecology and FERC of SPU's dams and related infrastructure, such as spillway gates and dam failure warning systems. The Dam Safety program CIP totals to almost \$700K in 2013-2018, and also includes costs in future years for work anticipated after planned inspections.
- Design and construct the Morse Lake Pump Plant, which involves installation of axial flow floating pumps and improvements to the discharge channel. The CIP includes a cost estimate of \$23.2 million in 2013-2017 to complete this work, but this estimate may increase as further engineering and design are completed.

### 1.2.2 Water Quality and Treatment

Completion of the open reservoir covering/burying program comprises the bulk of the CIP projects in the Water Quality and Treatment business area:

- The Maple Leaf Reservoir Replacement Project is estimated to cost \$47 million and is scheduled to be on-line in 2012.
- The existing open Volunteer Reservoir may be decommissioned rather than constructing a new buried reservoir replacement at the site, but additional analysis is required to confirm this action. The CFP assumes that the reservoir will be buried by 2021 at a cost of \$22.8 million.
- Roosevelt reservoir is planned to be taken out of service following the return to service and completion of Maple Leaf Reservoir and is targeted for decommissioning in 2015.
- The CIP includes \$1.8 million in 2013-2015 to replace the gas chlorination facilities at Landsburg with liquid chlorination (hypochlorite) facilities to improve safety and security.
- The CIP includes approximately \$100K per year for various smaller scale water quality and treatment facility rehabilitation



and improvement projects that relate to public health protection and drinking water regulatory compliance.

### 1.2.3 Transmission

- The major CIP projects identified for the transmission system include the following: Implement cathodic protection for transmission pipelines, where cost-effective. This is estimated to cost \$1.6 million per year in 2013-2022.
- The CIP includes \$1 million per year for Transmission Pipeline Rehabilitation, including any additional work to mitigate the risk of pipe failure in the Tolt Slide area.
- The CIP includes approximately \$100K per year each for air valve chamber replacements and system dewatering.
- Purveyor Meter Replacements are estimated to cost approximately \$90K per year through 2016 and \$200K thereafter.

### 1.2.4 Distribution

Several ongoing improvement programs for the distribution system are contained in the CIP. These and other major CIP projects identified for the distribution system include the following:

- Where cost-effective, reline or replace aging watermains, provide seismic upgrades to the backbone system, and improve pressures and fire flows. The draft six-year CIP includes more than \$4.5 to 10 million per year for these Distribution System Improvements and Watermain Rehabilitation projects.
- Extend watermains and install new taps to new developments. The draft six-year CIP includes approximately \$650,000 to \$750,000 per year for watermain extensions and \$4 million per year for customer-reimbursed new taps.
- Relocate, rehabilitate or replace water mains and appurtenances impacted by other projects, primarily transportation-related projects. This work includes water system improvements and enhancements required for major projects by other agencies, such as the Alaskan Way Viaduct and Seawall. The draft six-year CIP includes \$25.3 million for these types of projects.

- Replace leaking or substandard service connections, primarily plastic. The draft six-year CIP includes approximately \$5.5 to 5.9 million per year for this ongoing work.
- Replace meters. The draft six-year CIP includes approximately \$600,000 per year for this ongoing work.
- Upgrade or replace hydrants, valves, chambers and pump stations. The draft six-year CIP includes approximately \$1 to \$1.3 million per year for this ongoing work.

**1.2.5 Other Water Utility Capital Projects**

In addition to the major projects discussed in this water system plan and summarized above, SPU has identified a number of other water system capital projects to be implemented over the next six years. These projects include those in the Major Watersheds business area, such as those related to the Cedar River Watershed Habitat Conservation Plan and watershed stewardship in both watersheds. Projects involving more than one business area yet important for achieving the overall goals of the drinking water utility are also included here. These other projects and their costs are listed in Table 1-2.

**Table 1-2. Other Capital Projects and Six-Year CIP Costs  
(2012-2017 Adopted CIP, plus 2018 Estimate, in thousands of 2011 dollars)**

Capital Improvement Program Projects	2013	2014	2015	2016	2017	2018	Total
Cedar River Watershed Habitat Conservation Plan	3,241	3,439	2,721	2,254	1,606	1,756	15,016
Watershed Stewardship	995	687	554	543	533	100	3,412
Technology	7,410	8,184	5,964	5,358	5,327	6,000	38,242
SCADA	466	457	443	408	355	400	2,529
Security	1,922	1,884	1,847	1,811	1,793	1,000	10,258
Heavy Equipment Purchases	2,951	1,934	2,979	2,156	1,931	2,500	14,451
In-Town Facilities	1,514	3,775	2,225	2,547	2,387	2,550	14,998
Regional Facilities	3,296	3,315	4,227	4,494	8,480	2,450	26,262
Emergency Storm Response	48	47	46	45	0	0	187
1% for Art	174	224	231	191	224	134	1,177
<b>Total</b>	<b>22,016</b>	<b>23,945</b>	<b>21,238</b>	<b>19,807</b>	<b>22,636</b>	<b>16,890</b>	<b>126,532</b>

**1.3 LONG-RANGE CAPITAL FACILITIES PLAN BUDGET**

In addition to developing the six-year capital improvement program summarized above, SPU has developed its best estimate of a Capital Facilities Plan (CFP) budget through 2040, given what is known and anticipated at this time, including our understanding



of future regulations. Beyond 2018, the range of uncertainty in project costs and timing is greater. While projections are shown through 2040, experience has shown that new requirements emerge and projections change over time. In particular, many programs are shown with uniform expenditures in each future year even though it is likely that the costs will be concentrated into some years as specific projects are identified and scheduled. In particular, this CFP does not address any potential major emergency or disaster which could lead to the need for a new major project. SPU would most likely attempt to smooth out expenditures, but this is not always possible.

The CFP budget estimate is provided as an appendix and summarized in Table 1-3. SPU's CFP totals to \$1.4 billion for 2013 through 2040, which is 64 percent of what was spent in the previous 28-year period, in 2011 dollars. Approximately one-half of the current CFP is for improvement to and rehabilitation of the distribution system.

**Table 1-3. Capital Facilities Plan Budget through 2040**  
(2012-2017 Adopted CIP, plus 2018-2040 Estimate, in thousands of 2011 dollars)

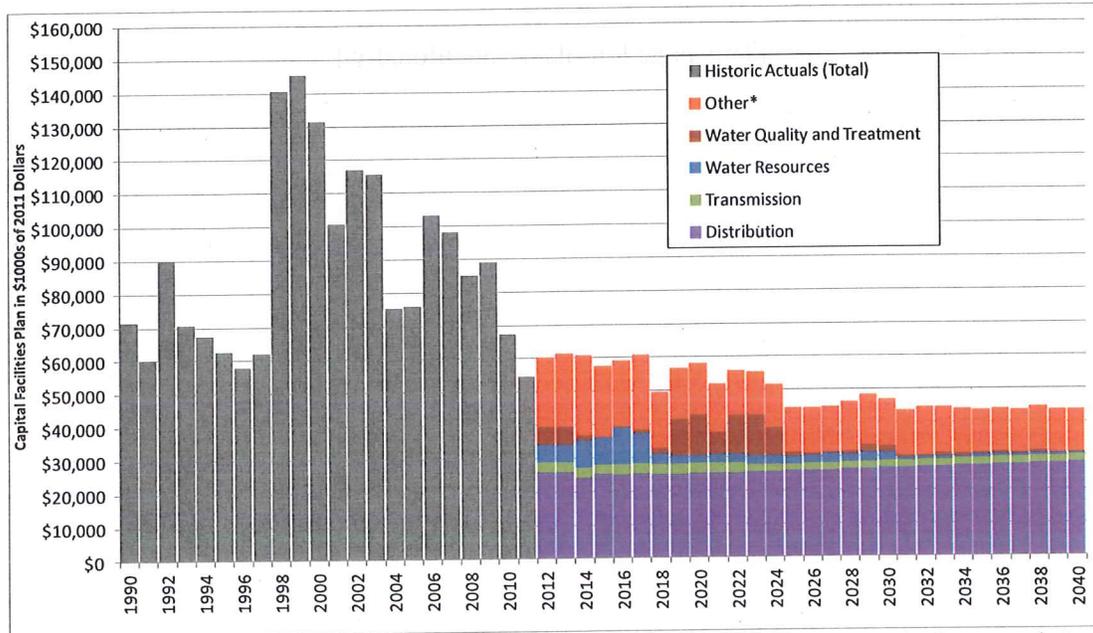
Business Area	2013-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Water Resources	50,410	13,079	13,229	4,634	4,454	85,806
Water Quality and Treatment	31,723	39,400	5,800	3,450	2,250	82,623
Transmission	23,652	12,065	10,065	10,065	10,065	65,912
Distribution	201,712	128,029	131,247	134,778	138,630	734,395
Other*	157,318	67,018	71,071	67,699	64,407	427,513
<b>Total</b>	<b>464,815</b>	<b>259,591</b>	<b>231,412</b>	<b>220,626</b>	<b>219,805</b>	<b>1,396,249</b>

\*See Appendix for additional detail.

Figure 1-1 graphically represents SPU's long-range CFP budget for the water utility. Capital spending is expected to be highest in the earlier years, but much lower than historical peak expenditures that occurred from 1998 to 2009. The first major new project is the Morse Lake Pump Plant Project (Water Resources). This is followed by increased expenditures in 2018-2025 to recover Lake Forest Park Reservoir and bury Volunteer and Bitter Lake Reservoirs (Water Quality and Treatment). Additional increases around 2030 are for improvements at the Tolt and Cedar water treatment facilities (Water Quality and Treatment). The long-range CFP also includes increasing costs in Distribution for an increasing need for watermain rehabilitation as the system ages.

SPU's 2007 *Water System Plan* included a long-range capital facilities plan for the water utility. That plan covered the period 2007 through 2030. Table 1-4 compares the CFP budget for the

2007 plan with the CFP budget presented in Table 1-3 and Figure 1-1.



\* Other includes Major Watersheds, Fleets, Facilities, Security, Information Technology, SCADA and other miscellaneous projects.

**Figure 1-1. Historic and Proposed Capital Facilities Plan Spending through 2040**

As Table 1-4 shows, SPU has increased its capital spending projections for the 2013-2020 period relative to that provided in its 2007 *Water Systems Plan* primarily due to delays in large projects, such as the Morse Lake Pump Plant project, and increased expenditures for the distribution system.

**Table 1-4. Comparison of Capital Facilities Plan Budget Estimates from 2007 and 2013 *Water System Plans* (in total millions of dollars for the year range shown)**

Water System Plan	2013-2020	2021-2025	2026-2030	2031-2035	2036-2040
2007 (in 2006 \$s)	290	165	178	N/A	N/A
2013 (in 2011 \$s)	465	260	231	221	220
Increase	175	95	53	N/A	N/A



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## Chapter 2 Financial Program

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This chapter describes the likely methods of financing the estimated cost of operating SPU's water system and investing in the capital projects described in Chapter 1 of Part II.

### 2.1 FINANCIAL POLICIES

Financial management of the water system is directed by formal financial policies adopted by the City Council and by informal guidelines that have evolved over time in response to specific issues. These policies and guidelines are used to decide how to finance water system operations and capital projects. They are intended to ensure that the water system finances its costs in such a manner that specific policy goals are achieved. These goals are:

- To ensure the financial integrity of the water utility.
- To moderate rate increases for water system customers over the near and medium term.
- To ensure an equitable allocation of capital costs between current and future ratepayers.

In 2005, the City Council adopted new water system financial policies that reflect changes and additions to the financial policies adopted in 1992. The new financial policies are more appropriate for the current financial environment and capital financing requirements, and also reflect changes made in 2005 to the conditions for activity in the Revenue Stabilization Subfund. The financial policies are as follows:

1. Maintenance of Capital Assets. For the benefit of both current and future ratepayers, the municipal water system intends to maintain its assets in sound working condition. Future revenue requirement analyses will include provision for maintenance and rehabilitation of facilities at a level intended to minimize total cost while continuing to provide reliable, high quality service.
2. Debt Service Coverage. Debt service coverage on first-lien debt should be at least 1.7 times debt service cost in each year on a planning basis.
3. Net Income. Net income should generally be positive.



4. Cash Funding of the Capital Improvement Program. Current revenues should be used to finance no less than 15 percent of the municipal water system's adopted CIP in any year, and not less than 20 percent of the CIP over the period of each rate proposal. Cash in excess of working capital requirements may be used to help fund the CIP.
5. Eligibility for Debt Financing. Unless otherwise authorized by the City Council, the following criteria must be met before project expenditures are eligible for debt financing:
  - Project is included in the CIP.
  - Total project cost exceeds \$50,000.
  - Project has expected useful life of more than two years (more than five years for information technology projects).
  - Resulting asset will be owned or controlled by SPU, is part of the regional utility infrastructure, or represents a long-term investment for water conservation.
  - Consistent with generally accepted accounting practices, project costs include those indirect costs, such as administrative overhead and program management, that can be reasonably attributed to the individual CIP project.
6. Revenue Stabilization Subfund. A target balance of \$9 million will be maintained in the Revenue Stabilization Subfund, except when withdrawals resulting in balances below this amount are needed to offset shortfalls in metered water sales revenues or to meet financial policy requirements. Funds in excess of the minimum balance may be used to meet operating expenses, pay CIP expenditures, or meet financial policy requirements.

SPU may also make discretionary deposits to the Revenue Stabilization Subfund, provided that these discretionary deposits are in excess of the amounts required to meet the financial policy requirements. Should the balance in the Subfund fall below the target balance, SPU must submit within one year a water rate proposal that rebuilds the balance in the Subfund.
7. Cash Target. The target for the year-end operating fund cash balance is one-twelfth of the current year's operating expenditures.
8. Variable Rate Debt. Variable rate debt should not exceed 15 percent of total outstanding debt. Annual principal payments

***Revenue Stabilization Subfund is available to offset shortfalls in metered water sales revenues or to meet financial policies.***

shall be made on variable rate debt in a manner consistent with fixed rate debt.

The financial policies help determine how much revenue the utility must collect from its customers each year to meet the cost of operations, maintenance and repair, and capital improvements. Because of this, rate impacts stemming from specific courses of action recommended in this water system plan cannot be determined without also considering what financial policies are to be followed. If an action's rate impacts are unacceptable, the action can be scaled back to reduce costs or alternative financial approaches can be considered to spread costs over a longer period.

## 2.2 FINANCIAL HEALTH

Financially healthy organizations have the flexibility to respond to unexpected circumstances. Such circumstances may include new, unexpected-but-essential tasks or a shortfall in earnings. Flexibility can mean redirecting expenditures, borrowing money to meet an unexpected need, or other approaches.

***The use of debt to finance a significant amount of new and replacement infrastructure has kept rates low but increased the amount of revenue used to repay loans.***

In the past, the water system financed a significant amount of new and replacement infrastructure through the use of debt. While it helped keep rates low at that time, it has also greatly increased the portion of revenue that is used to pay off the debt. In 1990, 20 cents of every revenue dollar was used to repay loans. In 2010, 37 cents of every revenue dollar was used to repay loans. This means that SPU has less flexibility in how it spends its revenues. Current revenues that are used for new facilities are the most flexible resource for meeting unexpected needs.

The increasing commitment of each revenue dollar to pay off debt makes sources of financial instability more risky because SPU has less flexibility to adjust to revenue shortfalls and unanticipated needs. One cause of revenue fluctuation for SPU is seasonal rates, which are used to discourage water use in the summer when water is most scarce. Variations in summer weather can cause annual water use to vary from an average year by as much as 5 percent. Since this variation happens in the summer, when rates are higher than the winter, summer weather variation can result in annual water sale revenue shortfalls of up to 8 percent. The Revenue Stabilization Subfund can be used to offset revenue shortfalls beyond these levels.

Reducing this weather-related revenue risk could also be accomplished by reducing the difference between winter and summer rates. Higher winter rates or increasing the base service



charge would provide more annual revenue and therefore more of a “cushion” against revenue shortfalls. However, changing the seasonal rate structure would reduce incentives to conserve water in the summertime.

There are two key indicators used by the financial community that provide a measure of how well SPU is doing in the areas identified above. The first, debt-service coverage, is an annual measure of the revenue an organization has available to repay debt, divided by debt payments. Debt-service coverage is calculated after operational expenses and some taxes have been paid. While the legal requirement in bond covenants is 1.25, SPU’s debt-service coverage policy target is 1.70. The higher target provides SPU flexibility when actual revenues are lower than projected. This flexibility enabled SPU to collect the necessary revenue to stay above the legal requirements, but below the policy target, when demand in the late 2000’s and early 2010’s was lower than originally projected and variable rate debt was refunded into fixed rate debt when market conditions changed. A commitment was made for the 2012-2014 rate study to meet the 1.70 target by 2014.

***SPU’s water utility is rated Aa1 by Moody’s and AA+ by Standard and Poors.***

The second key indicator is the debt-to-assets ratio. The debt-to-assets ratio is the outstanding debt of the utility divided by the sum total of its assets. The debt-to-assets ratio shows how reliant the utility is on debt to finance its infrastructure and how much flexibility it has to respond to unexpected circumstances. SPU’s debt-to-assets ratio for the water system is currently higher than comparable utilities and is at a level that could be a concern to the financial community, which could result in higher debt financing costs if investors view SPU as overextended. To counteract this concern, SPU has generally decreased the levels of debt financing and has forecasted continuation of this trend in the future. As a result, in recent years, SPU has had excellent bond ratings.

While SPU has been generally decreasing the levels of debt financing of the capital improvement program, exceptions occurred in 2008 and 2009 when revenues fell to the point where cash available to fund the capital program was less than 20 percent of total spending, forcing more reliance on debt. Revenue financing of capital projects is expected to increase going forward because the binding financial policy has switched from cash-to-CIP to debt service. In order to meet debt service coverage targets, revenue requirements will generate more cash than needed to cover operating expenses and other financial policy targets. The excess cash will be put towards the capital program. By investing more current revenue in infrastructure, SPU will reduce its reliance on debt and thereby reduce its debt-to-assets ratio. The necessity of

meeting the debt service coverage targets will drive rate increases in the coming years.

A summary of SPU's financial results for its water utility over the past six years is shown in Table 2-1.

**Table 2-1. Financial Revenues and Expenditures, 2005–2010**  
(in millions of dollars)

	2005	2006	2007	2008	2009	2010
<b>Revenues</b>						
Water Sales	136	142	144	149	179	184
Other (tap fees, interest income, operational grants, reimbursements, etc.)	11	17	26	16	24	16
<b>Total</b>	<b>147</b>	<b>159</b>	<b>170</b>	<b>165</b>	<b>203</b>	<b>200</b>
<b>Expenditures</b>						
Operations and Maintenance	60	62	77	81	84	79
Taxes	20	24	24	25	34	36
Debt Service	59	59	59	63	71	74
Revenue-Financed Construction	4	13	18	14	8	12
<b>Total</b>	<b>144</b>	<b>158</b>	<b>178</b>	<b>183</b>	<b>197</b>	<b>201</b>
Net of Revenues and Expenditures	3	1	(8)	(18)	6	(1)

### 2.3 FUNDING SOURCES

***The primary source of funding for SPU's water utility is revenues derived from the wholesale and retail sales of treated drinking water.***

The primary source of funding for SPU's water utility is revenue derived from wholesale and retail sales of treated drinking water. To finance capital facilities, SPU relies primarily on borrowing. SPU also receives contributions from developers, but that funding source plays a much smaller role in capital financing. The water system is in a period of declining capital expenditure as it emerges from a period of unprecedented investment in important capital projects, such as the water treatment facilities and buried reservoir program.

As stated earlier, debt service coverage is the binding financial policy moving forward. With debt service as the binding constraint, revenues will be in excess of operating expenses, leaving excess cash to fund the CIP. As a result, from 2012 through 2040, SPU plans to meet or exceed its financial policy of financing 20 percent of its capital facilities plan with revenues. However, because of the large size of the CIP in the next six years, SPU will still rely heavily on borrowing. This will result in larger rate increases in the near term but will increase future flexibility to respond to unexpected events and will help maintain or improve current bond ratings.



### 2.3.1 Water Rates

In 2010, water sales made up 95 percent of operating revenues. Rates must provide sufficient revenue to operate the water system. Rate-design objectives include:

- Provide financial soundness.
- Advance economic efficiency.
- Promote customer equity.
- Encourage customer conservation.
- Contribute to transparency and customer understanding.
- Reduce impacts on low-income customers.

The affordability of rates to retail customers is also an issue considered by City Council during rate setting.

In recent years, City Council has set rates for 3-year periods. Water rates were last set in 2011 and cover 2012 through 2014. These rate schedules are provided in the appendices.

Rates are set by customer class. The major customer groupings are wholesale and retail. Wholesale rates are set as described in their contracts with SPU. Retail customers are further categorized into residential and commercial classes. The rate structure for each of the customer classes includes a fixed monthly charge, which is graduated by the size of the service, and a seasonally-differentiated commodity charge. The combination of fixed and commodity charges can be fine tuned to meet the rate objectives identified above. For example, the fixed charge can be set to recover costs that are unrelated to the amount of water used, such as billing and meter reading. Similarly, seasonal commodity rates can be set to reflect the cost differentials that exist between winter, when streamflows are high and demand is low, and summer, when streamflows are low and demand is high. Setting rates so that the bills of individual customers reflect the cost of serving them is especially important in achieving customer equity because the most commonly used definition of equity is that bills reflect costs.

To encourage conservation in the summer period, the residential commodity rate is structured with three tiers. The first tier, up to five hundred cubic feet (CCF), is designed as a “lifeline” to meet basic needs. The second tier, from 5 to 18 CCF, is billed at a

***If we use less water, shouldn't it cost less?***

*Most of the utility's costs are the same whether we sell a lot of water or a little. These fixed costs include debt service (principle and interest paid for past capital projects) and the labor needed to operate the system, treat the water, and respond to problems 24 / 7.*

*When we sell less water, we need to charge more per gallon to be sure that SPU makes enough revenue to operate and maintain the water system while meeting financial policies set by the City Council.*

higher rate than the first. The third tier<sup>1</sup>, above 18 CCF, is set at an even higher rate to discourage the use of very large volumes of water, often for irrigation.

System-wide average rates<sup>2</sup> are likely to increase faster than the rate of inflation, particularly in the near-term. A significant portion of current and near-term rates are due to debt service on prior capital investments, such as the Tolt and Cedar Water Treatment Facilities. Going forward, those effects are still felt as future CIP and O&M spending will put pressure on debt service coverage requirements, thereby requiring increasing rates. Additionally, future rate levels depend on revenue requirements as well as the amount of water sold. With demand for water forecasted to generally decline through 2040, there will be no growth in water sales to absorb any increases in revenue requirements.

While the above discussion applies to the system as a whole, there is a categorical difference between the rates paid by wholesale customers and the rates paid by retail service customers.

Wholesale customers do not pay for SPU's distribution system, since they are not served by these facilities. They pay only for their share of water supply, treatment, and transmission. Going forward, the CIP contains fewer regional projects in the areas of supply, treatment, and transmission. The rates charged by SPU's wholesale customers to *their* customers include the cost of the wholesale customer distribution systems, and would be different than what SPU charges its retail customers.

### 2.3.2 Debt Financing

From 2012 through 2040, an average of 69 percent of the Capital Facilities Plan (CFP) is expected to be financed with debt, as shown in Figure 2-1, below. Debt is expected to be used to finance 64 percent of CIP through 2029 and 78 percent thereafter. Until 2030, debt service coverage is expected to alter the way capital projects are financed. Because of the large debt incurred since 1999, a larger portion of revenue must go to finance capital facilities in order to meet bond covenant requirements and financial policy targets. In order to maintain debt service coverage requirements, revenue is higher than otherwise would be required.

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<sup>1</sup> The third tier was instituted in 2001 in response to Ordinance 120532, the Initiative 63 Settlement Ordinance.

<sup>2</sup> System-wide average rates are defined as the average rate paid by all customers of the utility. It is computed by taking the total water sales revenue divided by total system water use by all customers.



The additional revenue will then be utilized to fund the current capital program, reducing debt issuance and future debt service requirements.

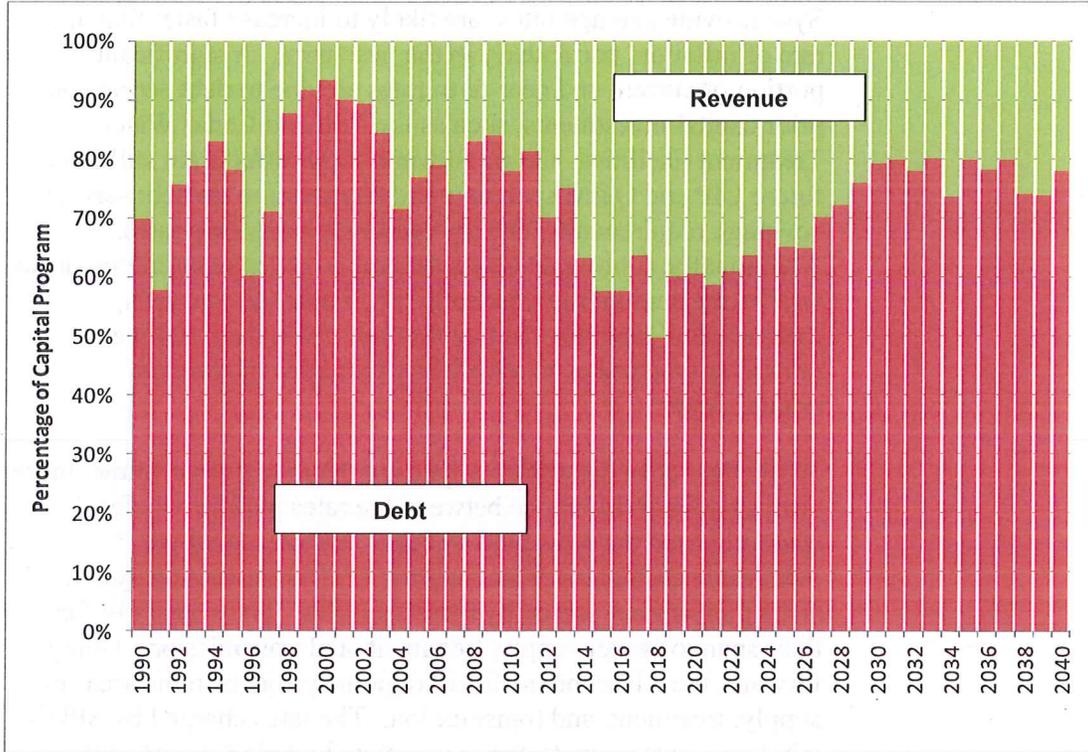


Figure 2-1. Past and Planned Debt Financing

### 2.3.3 Debt-to-Assets Ratio

Over the past 20 years, SPU has been borrowing extensively in order to finance the capital program and the building of new assets. This level of borrowing has increased the debt-to-asset ratio 40 percent over the past 15 years, peaking at 75 percent in 2012, as shown in Figure 2-2. However, as the utility enters a new phase of the asset life cycle, and generational asset construction slows, borrowing levels will decrease. Along with increased revenue financing of capital projects, this decreased borrowing will lower the debt-to-asset ratio in the future.

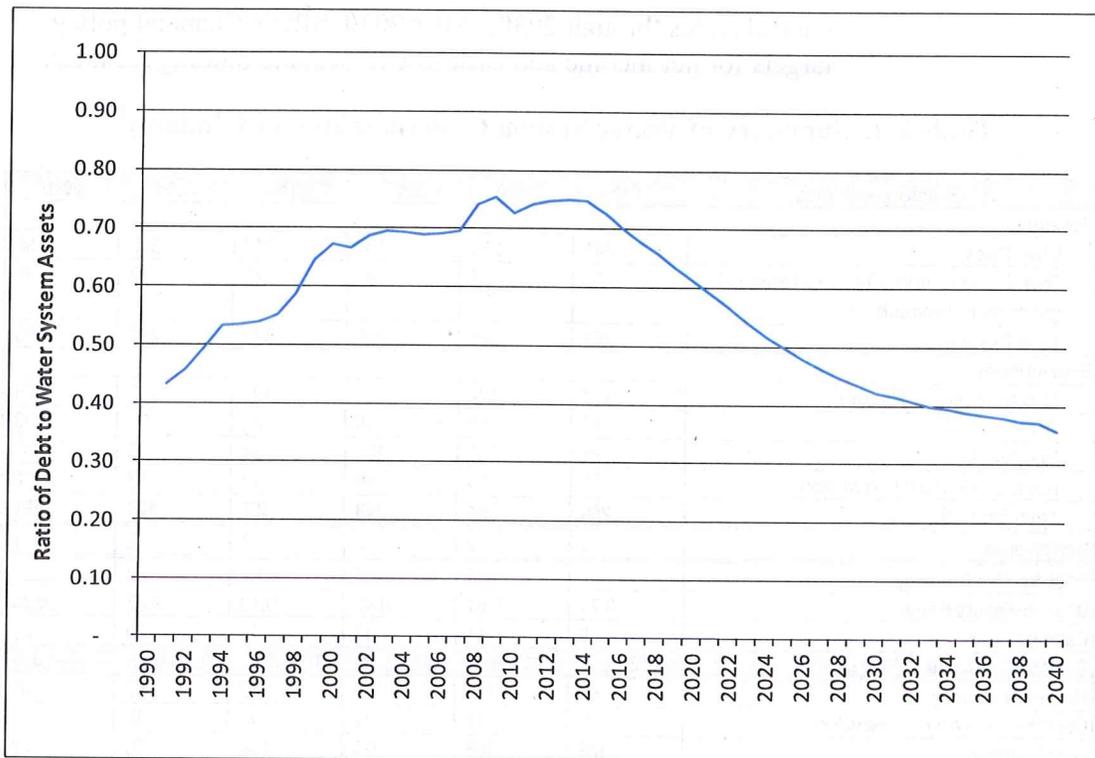


Figure 2-2. Past and Projected Debt-to-Assets Ratio

### 2.3.4 Alternative Financing Paths

A lower debt-to-assets ratio could be achieved more quickly by higher rate increases in the near-term, coupled with deferral of part of the capital program. This would allow a greater portion of the capital program to be financed out of revenues over time.

However, it would also result in higher near-term rates, and deferring projects could prevent the water system from complying with regulatory agreements made with state and federal agencies. The current approach strikes a balance between short-term debt service needs and long-term financing that will provide the utility stability and address important capital needs and operating requirements.

## 2.4 FINANCIAL MODEL CASH FLOW ANALYSIS

The capital improvements summarized in the Part II, Chapter 1, together with projected operating expenses through 2040, were incorporated into the water system's financial model in order to develop a long-term picture of rate requirements and financial performance. The anticipated cash flows and financial performance generated by the financial model are summarized at five-year intervals in Table 2-2. The debt service coverage of 1.7



controls rates through 2030. After 2030, SPU's financial policy targets for net income and cash-to-CIP become binding for rates.

**Table 2-2. Summary of Water System Cash (in millions of dollars)<sup>1</sup>**

Revenue/Expenditures	2015	2020	2025	2030	2035	2040
<b>Revenues</b>						
Water Sales	241	283	318	342	398	458
Other (tap fees, interest income, operational grants, reimbursements, etc.)	21	24	26	28	32	35
<b>Total Revenues</b>	<b>261</b>	<b>307</b>	<b>345</b>	<b>370</b>	<b>430</b>	<b>493</b>
<b>Expenditures</b>						
Operations and Maintenance	102	127	158	197	243	289
Taxes	42	50	58	64	76	89
Debt Service	91	101	107	94	95	97
Revenue-Financed Construction	25	26	19	13	13	16
<b>Total Expenditures</b>	<b>260</b>	<b>304</b>	<b>343</b>	<b>367</b>	<b>428</b>	<b>491</b>
Net Revenue	1	2	2	3	2	1
<b>Debt Service Coverage</b>	<b>1.7</b>	<b>1.7</b>	<b>1.7</b>	<b>1.7</b>	<b>1.9</b>	<b>2.0</b>
<b>Debt-to-Assets Ratio</b>	<b>0.71</b>	<b>0.61</b>	<b>0.48</b>	<b>0.43</b>	<b>0.38</b>	<b>0.36</b>
<b>Cash Balance</b>	<b>8</b>	<b>11</b>	<b>13</b>	<b>16</b>	<b>20</b>	<b>24</b>
<b>Capital Improvement Program</b>						
	<b>2013-2015</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>2031-2035</b>	<b>2036-2040</b>
Revenue Financing	66	129	116	82	67	82
Contributions in Aid of Construction	6	11	12	14	15	17
Debt Financing	135	198	220	256	296	327
<b>Total CIP Financing</b>	<b>206</b>	<b>338</b>	<b>348</b>	<b>352</b>	<b>378</b>	<b>426</b>

<sup>1</sup>Notes and Assumptions:

- Actual dollars spent or received in any given year; revenues and expenditures are inflated to off-set the erosion of purchasing power over time due to inflation.
- Revenues and expenditures do not net zero in this summary because of rounding errors, contributions to cash balances, and lags between when revenues are billed and when they are received.
- Operations and Maintenance assumed to increase by 72 percent from 2011 through 2040 in real terms, or 1.8% compounded annual growth per year. For comparison, from 1990 to 2011, O&M costs have grown at an annual rate of 2.5% in real terms.
- The forecast assumes bond issues every other year at 5% interest and 30-year terms.
- The forecast assumes inflation of 2.5% per year.

Cash expenditure growth fluctuates throughout the plan. From 2013-2025, cash expenditure grows quickly as capital expense is larger than revenue. A historically large portion of the CIP during this period is to be funded by revenue-generated cash. The largest of these include capital programs such as Distribution System Improvements, Service Renewals and Watermain Rehabilitation and large projects such as Morse Lake Pump Plant and Bitter Lake Reservoir Burying/Floating Cover Replacement. From 2025-2030, expenditures slow as a result of decreased debt service and revenue-financed construction. After 2030, expenditure growth returns to earlier levels as operations and maintenance are the primary drivers of spending.

## **2.5 CONCLUSION**

SPU has been making, and continues to make, significant investments to protect public health, comply with federal and state regulations, and replace aging infrastructure. While SPU has invested in major regional facilities in the past decades, the need is now shifting to significant capital investments to rehabilitate and improve the distribution system. Implementation of this water system plan will help to ensure that SPU meets its mission to provide reliable, efficient and environmentally conscious water utility services to enhance the quality of life and livability in all communities we serve.



