



ANNUAL REPORT

2011

Saint Paul Regional Water Services



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## Mission

To provide reliable, quality water and services at a reasonable cost.

## Vision

To be a regional and national water industry leader, emphasizing quality product, services and cost containment.

*Photos: Front cover: McCarrons treatment plant main entrance. This page: Water holding pond in front of the utility at the Larpenteur Avenue entrance.*



# Dear Customers:

*Safe, reliable drinking water is essential to every community. SPRWS provides that water to more than 415,000 in Saint Paul and neighboring cities. A staff of 250 employees ensures we are true to SPRWS mission of providing water to its customers at a reasonable cost.*

*Improvements to enhance water quality continue to be a priority at SPRWS. We installed a new oxygenation system in Vadnais Lake that will improve our source water quality before it enters our treatment plant. Our granular activated carbon filtration system continues to exceed expectations by improving the aesthetic quality of our water. Taste and odor events, which were common in the past, have been all but eliminated since these filters have been in service.*

*Investments in our water distribution system include the replacement of water mains, hydrants and valves. Continuing to replace this aging infrastructure will ensure high quality water will continue to be reliably delivered to area homes and businesses for generations to come.*

*We continue to refine our methods of predicting water consumption so we can be confident that our budget process is as accurate as possible. During these times of variable weather patterns and changing patterns of water use, this can be a challenge. We will continue to work towards a system of operations and investment that is supported by a reasonable rate structure for our customers.*

*Our utility operates efficiently with an appropriate staff complement and we take pride in providing excellent customer service to all of our customers.*

*I am proud of our accomplishments and the daily efforts put forth by our employees. I hope you share in that sentiment and I thank you for your interest in SPRWS.*



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***“I am proud of our  
accomplishments and  
the daily efforts put forth  
by our employees.”***

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A handwritten signature in blue ink that reads "Steve Schneider". The signature is fluid and cursive.

Steve Schneider,  
General Manager

# Board of Water Commissioners



**Pat Harris**  
**President**  
Saint Paul City Councilmember,  
representing Ward 3.



**John Zanmiller**  
**Vice President**  
Suburban representative  
from the city of West St. Paul.



**Gregory Kleindl**  
**Commissioner**  
Saint Paul citizen on the Board.



**Lee Helgen**  
**Commissioner**  
Saint Paul City Councilmember,  
representing Ward 5.



**James J. Bykowski**  
**Commissioner**  
Suburban representative from  
the city of Falcon Heights.



**Matt Anfang**  
**Commissioner**  
Saint Paul citizen on the Board.

# SPRWS Division Managers



**Dave Schuler**  
**Engineering Division**  
Includes managing the  
engineering projects and  
permit office, utility-wide  
asset management, and  
capital improvement  
program.



**Jim Graupmann**  
**Production Division**  
Includes McCarrons treatment  
plant, the dewatering and  
wash water recovery plant,  
the laboratory, and Vadnais  
Station.



**Dave Wagner**  
**Distribution Division**  
Includes managing construc-  
tion crews, (water mains,  
temporary mains, boulevard  
reconstruction crews, etc.),  
warehouse, fleet operations,  
and dispatch office.



**Steve Gleason**  
**Business Division**  
Includes customer service,  
financial services, information  
services, meter reading, and  
public information.



# Engineering Division

Engineering includes planning and construction coordination for water main construction, valve replacement, and lead service replacement as well as for water supply and water treatment .

The division made significant progress on a number of large projects that will serve SPRWS and its customers well into the future. Some of these large projects include:

## DALE STREET RESERVOIR

The 30-million-gallon Dale Street reservoir was built in 1918 and was demolished in 2010. The new 10-million-gallon reservoir was constructed including baffle walls, side panels and roof. The reservoir will be finished and operational by fall of 2012.



## HYPOLIMNIC OXYGENATION

The Vadnais Lake oxygenation system was installed in 2011. The system is fully operational and is performing beyond expectations.

At Pleasant Lake, the old aerators were demolished, engineers completed the design of the Pleasant Lake oxygenation system, and installation of a new oxygenation system is scheduled for the summer of 2013.

*Photos: Top: False work on the new 10-million-gallon tank at the Dale Street Reservoir. Left: Oxygenation lines being installed on Vadnais Lake. Opposite: Installing water main on University Avenue in conjunction with light rail transit.*

## LIGHT RAIL TRANSIT

The utility is involved with the Light Rail project relocating our water mains out of the utility-free zone immediately beneath the train tracks. The 4<sup>th</sup> Street portion of the project was completed in 2010 and the Civil East portion, from Cedar Street to Minneapolis, began in 2011 and will continue through 2014. Segment one pipe relocation, from the Minneapolis border to Hamline Avenue, is complete; segment two, from Hamline Avenue to Robert Street along with Cedar Street to University Avenue, is expected to be completed in 2012.

## WATER PROTECTION

The Upper Mississippi River Source Water Protection Initiative (UMRSWPI) moved ahead by developing plans to bring resources to the various watershed groups throughout the upper Mississippi River watershed. The group is also actively pursuing funding to conduct total daily maximum loads (TMDL) on several reaches of the Mississippi River between the city of St. Cloud and the city of Minneapolis' intake. This initiative involves the cooperative agreement with the cities of St. Cloud and Minneapolis and the Minnesota Department of Health, working to develop drinking water protection measures in the upper Mississippi River watershed.

## DISTRIBUTION SYSTEM MODELING

The engineering division adopted and implemented state-of-the-art modeling techniques to model distribution system hydraulics and water quality.

Staff programmed and calibrated the model.

## FUTURE OPERATIONS

The engineering division will continue to focus primarily on three initiatives:

- 1) Leverage the electronic programs and tools that are now available to increase our effectiveness and efficiency.
- 2) Work with the Vadnais Lake Area Watershed Management

Organization and the Upper Mississippi River Source Water Protection Initiative to assist in completing e.coli total maximum daily load programs (TMDL) for the upper Mississippi River and county ditch #14.

- 3) Further enhance our asset management program.



## CAPITAL PLAN

The utility's revenue-funded capital plan included replacement of all existing cast iron pipe within the project areas.

The total pipe replacement for 2011 was about 9 miles. The total pipe replacement will increase dramatically to more than 10 miles in 2012.

Engineering staff plans include a mains rehabilitation program that will reduce the age of our infrastructure. Currently, the mains rehabilitation cycle is about 150 years.

The 10 miles of main replacement will shrink the distribution system pipe rehabilitation cycle to 100 years.

*Photos, next two pages: Page 8: Water hydrant flushing. Page 9: Installing temporary water mains along 5th Street for the light rail transit project.*



*We continue to invest in the future by replacing aging infrastructure.*

# Distribution Division

Work in the distribution division includes capital construction for distribution system piping and maintenance of our existing distribution system, fleet management and warehouse operations.

## CAPITAL PROGRAM

We continued to replace and upgrade an aging infrastructure of hydrants, lead water services, and unlined, cast iron water mains. The utility's water main replacement work was primarily accomplished in coordination with street reconstruction projects.

In addition, much work was done in coordination with Central Corridor Light Rail Transit (Light Rail) Construction. This year, 5.3 miles of main were replaced by utility crews in street project areas and 7 miles of main were replaced in Light Rail project areas using contracted work.

Construction along University Avenue for Light Rail was a large project. Staff performed various work, including a portion of the temporary main installation (a significant amount of the temporary mains were completed by the contractor), service connections, valve operation, and installation.

Work in this area by utility crews in 2011 totaled \$1 million. Temporary water mains were installed to serve customers during construction. This presented a project management coordination issue and a customer service opportunity that was generally well received by customers.

This year, we replaced 617 lead water services. Most of these replacements were done in coordination with street reconstruction projects.

Lead service replacements were also performed in those areas throughout the service area where property owners have previously replaced their portion of the lead service in private property and where old services were leaking and required replacement.

We replaced 225 of the 9,500 system hydrants this year.

## SYSTEM MAINTENANCE

The utility performs both preventative and emergency maintenance on the distribution system.

Preventive maintenance of the system is needed to ensure adequate reliability and improve water quality in the distribution system.

Preventive maintenance work includes hydrant inspection, a uni-directional flushing program (UDF) and valve exercising.

With uni-directional flushing, system valves are operated and the system thoroughly flushed for improved distribution water quality. This work was limited due to resources placed towards Light Rail construction.

We performed uni-directional flushing in about 2 percent of our system area. (This compares with 4 percent completed in 2010.) In addition, our large valve exercising was put on hold in 2011 while resources were put towards Light Rail construction.

In 2011, all public fire hydrants in the system were inspected. This work involved operation of system hydrants and performing minor repair work as necessary.

Emergency maintenance includes repair work of main breaks, service leaks, and related repairs. We also provide water main break repair services to other municipalities outside our service area, responding to main breaks in the city of Oakdale and in White Bear Township. Last year, we repaired 112 main breaks in the SPRWS service area and 25 repairs in communities outside our service area.

## FLEET OPERATIONS

The utility implemented a new work order management system for our fleet. The goals of the project:

- Track timelines of customer service requests
- Keep electronic vehicle maintenance records
- Improve tracking of vehicle maintenance costs
- Improve preventive maintenance scheduling (This is to be done in 2012.)

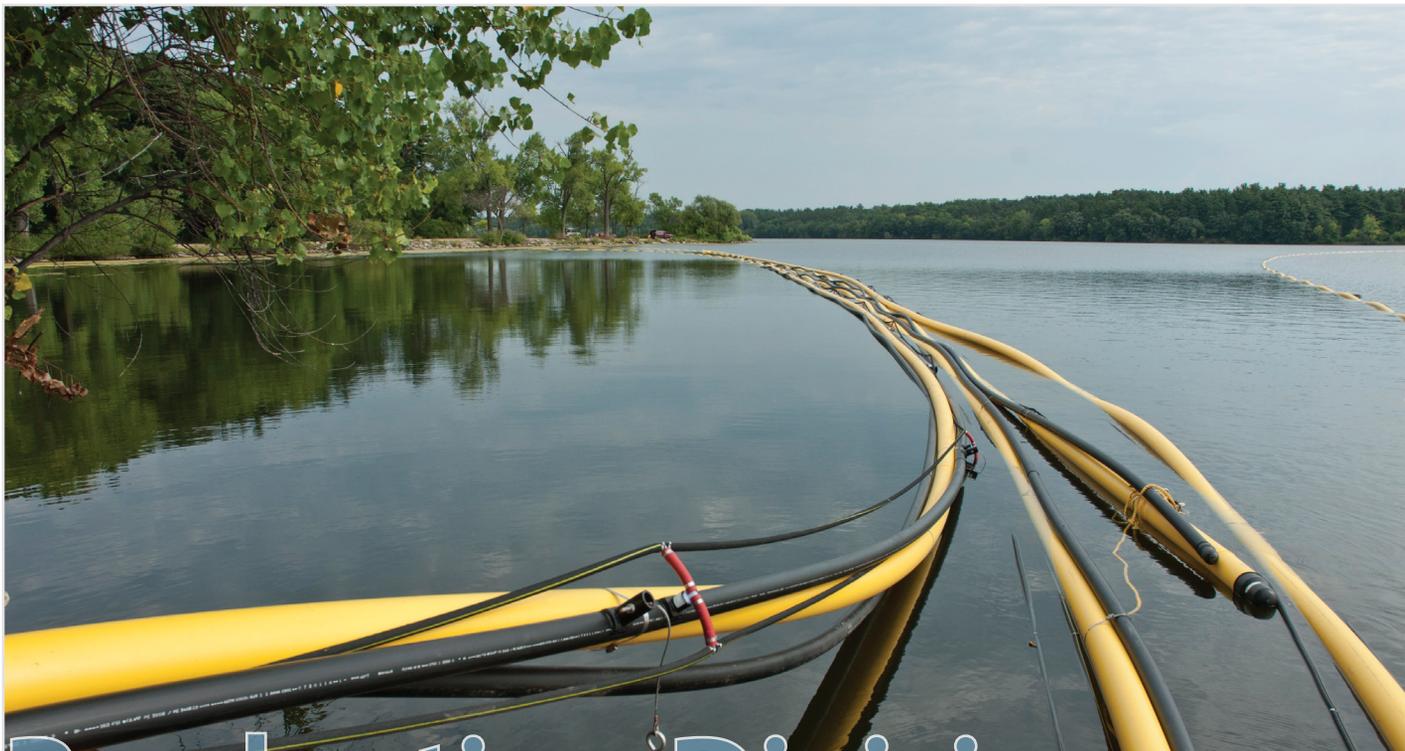
## FUTURE OPERATIONS

In 2012, emphasis will again be placed on construction surrounding the Light Rail project. This project involves construction of new water mains and services along the Light Rail route. Work will take place installing new valves for providing adequate shut offs for construction, installation of temporary water mains and services, and new hydrant installations.

Our infrastructure funding for 2012 will be at higher levels than in 2011. This will allow for 8.5 miles of main replacement in project areas (accompanying 7 additional miles of main in Light Rail). Additional funding in this vital area is needed to ensure proper investment for the future.

We will continue to focus on preventive maintenance work with our UDF and large valve operating program as staffing allows. We will continue to inspect all of the nearly 10,000 hydrants on our system, as we have done in each of the last several years.





# Production Division

The production division brings water from the Mississippi River, through a series of lakes to Lake Vadnais and to the treatment plant. Staff then treat the water to soften it, remove particulates and taste and odor compounds, and then disinfect it. Treated water is then pumped out into the distribution system, including mains, tanks, towers, and reservoirs.

Water use continues to decline, as conservation and cultural changes continue to have a major impact on the sale of water.

We produced an average of 42.7 million gallons per day (MGD), our second lowest total since 1962. (The lowest was last year, 2010.) Once again, lack of sales affected the budget, and many projects were postponed or canceled. The utility again reduced projected sales for 2012 in an effort to balance projected and actual sales.

The year began with abundant snow on the ground, and continued on the wet side through July. Precipitation through July was nearly four inches above normal. In mid-August, precipitation dwindled, and for the year, ended up 2.5 inches below normal.

***Water sales continue to decline, as conservation and cultural changes continue to impact use.***

However, the wet spring and early summer again cut into our pumping totals.

With the period from August through December being nearly 6.5 inches below normal, much of Minnesota was categorized as in drought condition. If the winter remains relatively dry, water demands in the spring of 2012 could be high. Depending on the length of the drought, restrictions on pumping could also come into play. This is in stark contrast to last winter.

## COST CONTAINMENT

With the dry weather in the fall, there were higher demands on the system, and that probably limited the extent of nitrification.

Chemical and electrical costs were relatively stable or lower over the period, and with the lower production numbers, were below projection. This eased some of our budget concerns.

Unit cost for chemicals was nearly 13 percent lower than in 2010, and so even with a little more production, total costs were about \$300,000 less than in 2010.

Continuing stability in the chemical rates will help us anticipate budget needs in the future.

A three-year test to produce water that can pass the lead test without using tin chloride was successful. As a result, use of tin chloride has been discontinued for the foreseeable future.

## PLANT SECURITY

The control room in the plant was made more secure and remodeled to a more functional state.



## FUTURE OPERATIONS

At the end of 2011, with a drought firmly in place, the concerns of flooding from last year were gone, and the prospect of higher demands with potential watering restrictions is there. All of this depends on precipitation in 2012, of course.

Staff anticipates that the GAC filters will continue to perform as they have for the past five years.

Zebra mussels continue to be a nuisance, as staff must manually clean screens, chambers, and portions of the Vadnais conduits. Staff created a set of copper screens for the east gatehouse, which hopefully will deter zebra mussels attachment.

Plans are on the drawing board for a new pump to replace pump No. 5 at Fridley station. Plans are also underway for the pumps and motors for four previously installed wells.

The new Dale Street 10-million-gallon reservoir is expected to be

completed by July, and should be placed on-line shortly after that.

A new oxygenation system for Pleasant Lake, similar to the one installed in Vadnais Lake, is planned.

Ramsey County also has plans for a new bike trail between Vadnais Lake and the west arm of Vadnais. This will replace the current roadway, and vehicles will be prohibited from driving between the two lakes.

This lessens the risk of an accident that may impact water quality, and repairs what has recently been a maintenance problem for the county.

With the new oxygenation systems and lack of vehicles on the lake shore, SPRWS raw water quality will be in better shape than ever.

*Photos: Opposite: Lake Vadnais installation of oxygenation system. Top: Zebra mussels. Left: water entering holding pond.*

# Water Quality

Water quality leaving the treatment plant continued to be excellent. We have approached water quality from both the source water entering the plant and the water treatment process.

From a source water standpoint, we have replaced the old aeration system in Vadnais Lake with a pure oxygenation system to increase the oxygen levels. Two sets of 1,500-foot piping sit at the bottom of the lake, dispersing oxygen into the lake. In the summer, the bottom layer of the lake gradually loses oxygen as organic matter from the top layer falls and decays. If the oxygen runs out, nutrients, particularly phosphorus, emerge from the sediment and go back into the water. The release of nutrients from the sediment feeds the algae in the lakes, including blue-green algae. This algae is a principal contributor to our historic taste and odor issues. Introducing oxygen keeps the nutrients locked up in the sediment, preventing them from becoming a source of food for algae. As long as our source water contains taste and odor characteristics, we will continue to treat the problem at the source.

As part of this two-pronged approach to water quality, we installed Granular Activated Carbon (GAC) filters in 2007. These continue to perform extremely well, as customers reported only 16 taste and odor complaints for the year, nearly identical to the previous year.

This is the fifth year in a row that taste and odor complaints have remained at only a tenth of what they were prior to the installation of the GAC filters.

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*For the fifth year in a row, taste and odor complaints have remained low. They remain at only a tenth of what they were prior to the installation of the granular activated carbon filters.*

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*New oxygen tanks at Vadnais Lake.*



# Business Division

The business division includes financial services, information services, meter operations, billing, and customer service. The business division offers support services to other divisions within the utility as well as direct contact with individual customers and communities at large.

This year was one of becoming expert users with our Customer Information System, CIS Infinity. After operating this system for one year, staff made various business process changes to improve the effectiveness of the system.

We went live with the on-line pay option, *Infinity.Link*. This CIS module provides customers a self-service choice of viewing their personal account and paying their bill on-line. It also provides interested customers with the option to receive an electronic bill (e-Bill) rather than a hard copy bill through the U.S. mail.

Beginning in April 2011, we promoted this pay option to customers via newsletter, bill stuffer, and on our website. By year end, we had 7,155 registered users. Of these, 2,789 elected to receive e-Bills.

***Online billing services began in 2011, allowing customers to access their accounts and pay their bills any time, any place.***

## FINANCIAL SERVICES

Our financial services unit was recognized for its outstanding work preparing the 2010 annual financial report for audit. Preliminary work continued on the implementation of the city of Saint Paul's new Lawson finance system.

## TECHNOLOGY & INFORMATION

The utility has implemented a great deal of technology and information services.

We continued to improve the retrieval and display of asset information in our Geospatial Information System (GIS) and provide this information both in the office and in the field. Professionals in IS worked closely with the production division staff to implement a new Laboratory Information System (LIMS).

Work continued on expanding the use of our Document Management System (DMS). Our CIS, GIS, and Work and Asset Management System now link to supporting documents housed in our DMS. A significant effort was made to index record documents to the asset for efficient retrieval. DMS also houses our standard operating procedures, policies, safety information, and paid invoices for easy access.

## CUSTOMER SERVICE

The customer service call center received 160,678 calls in 2011, of which 80,601 (or 50 percent) were handled by the Interactive Voice Response unit (IVR) and 80,077 by call center staff.

The abandoned call percentage was under 1 percent, substantially lower than our goal of less than 2 percent.

Our IVR offers menu options and responses in both English and Spanish. Approximately 1,419 callers took advantage of the Spanish language alternative.

## WATER METER REPLACEMENT

Through a contract with Northern Water Works Supply, we made great progress with the water meter replacement project that began in late 2010. It includes the installation of about 94,000 replacement water meters.

By year end, about 35,000 new water metering systems were installed. The water meter replacement project will continue to 2013.

The water meter project envisioned installation of a radio meter-reading system for each account.

However, in 2011, some customers expressed a concern with what they perceived to be health effects of the radio waves transmitted by the meter's radio antenna. These concerns, though not borne out by scien-

tific research, were presented to the media and the Board of Water Commissioners through a public hearing process.

To provide the best customer service possible, the Board voted to offer alternate meter reading systems, which provide customers with a non-radio alternative.

This alternate metering system offering facilitated the continuation of the project.

The meter replacement project requires on-going coordination between the contractor, Northern Water Works Supply, and the utility's meter operations, billing, customer service, and dispatch units. We look for the radio-read system to significantly increase

meter-reading efficiency, reduce exposure to injury for meter readers, and reduce the number of estimated reads in the winter months.

To improve public outreach and provide information about the water meter replacement project, we issued several press releases that resulting in significant media coverage by the *Star Tribune*, *Pioneer Press*, *Villager*, and KSTP channel 5 and Fox channel 9 TV news outlets.

We created a website dedicated solely to the project to provide information on the meters, timelines for installation, maps of current work areas, frequently asked questions, contact information, and the alternate metering system choices for customers.

## PUBLIC INFORMATION

In addition to the extensive public outreach on the meter replacement project, we held open houses at the Highland Park Water Tower and the water utility treatment plant. We produced several exter-

nal publications, including *Customer Service Connections* (a quarterly newsletter for customers), the annual water quality report, the 2010 annual report, and several educational bill inserts.

Internally, we continued to provide employees with communication updates by featuring timely articles in our bi-weekly employee newsletter, the *Pipeline Express*.

## FUTURE OPERATIONS

In 2012, we anticipate implementing additional modules to CIS Infinity: by mid-year we plan to implement the Infinity backflow module. This module will help us better manage the testing of backflow preventers as required by the State Plumbing Code.

The city of Saint Paul is implementing a new Lawson finance system. This implementation will significantly impact the utility's information systems and staff.

Finance and information services staff will support

design, configuration and testing required to facilitate our business processes.

Data conversion and testing to implement a new Chart of Accounts (COA) in both CIS Infinity and our Computerized Maintenance Management System (CMMS) will require significant internal resources.

We will continue to examine workflow processes throughout the utility looking for improved efficiency and enhanced delivery of information to our employees.

# Select Financial Information 2011

## Condensed Statement of Net Assets (in thousands)

	Fiscal Year 2011
<b>Assets</b>	
Cash and Investments	\$ 20,910
Other Current Assets	12,107
Capital Assets - net	246,735
Other Noncurrent Assets	7,291
Total Assets	<u>\$ 287,043</u>
<b>Liabilities</b>	
Current Liabilities	\$ 15,380
Noncurrent Liabilities	45,435
Total Liabilities	<u>\$ 60,815</u>
<b>Net Assets</b>	
Invested in Capital Assets Net of Related Debt	\$ 205,624
Restricted for Debt Service	10,772
Unrestricted	9,832
Total Net Assets	<u>\$ 226,228</u>

## Condensed Statement of Revenue, Expenses, and Changes in Net Assets (in thousands)

	Fiscal Year 2011
Operating Revenues	\$ 44,651
Operating Expenses	38,943
Operating Income	<u>\$ 5,708</u>
Nonoperating Expenses	\$ 488
Income (Loss) Before Contributions	<u>\$ 5,220</u>
Capital Contributions	<u>\$ 3,773</u>
Change in Net Assets	\$ 8,993
Net Assets - January 1	<u>\$ 217,235</u>
Net Assets - December 31	<u>\$ 226,228</u>

*The notes to the financial statements are an integral part of these statements.*

The complete financial report for 2011 is available from Saint Paul Regional Water Services. To obtain a copy please visit us at [www.stpaul.gov/water](http://www.stpaul.gov/water) or contact the Financial Services Department at 1900 Rice Street, Saint Paul, MN 55113.



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