



2014

WATER QUALITY & ANNUAL BUSINESS REPORT

Our Water. Our Community. Our Future.





Your Board of Commissioners...
Larry Ghilarducci, President; John Korsmo, Vice President; and Greg Rediske, Secretary

The good news is that we can now provide you with instantaneous information as to your individual usage which can lead to fast determination of expensive leaks on your property.

The bad news is that whereas the old meters in some cases failed to measure as much as 20 percent of the water to you, that percentage has been reduced substantially meaning, folks, that you are getting less free water. Sorry 'bout that.

DEAR LAKEWOOD WATER DISTRICT CUSTOMERS,

It's our pleasure to prepare and present to our loyal customers the enclosed **Water Quality & Annual Business Report of the Lakewood Water District** (of course, you have little choice but to be loyal, since we are your only substantial source of water). In our quarterly "Pipeline" messages, we have commented on most everything meaningful which has occurred during the past year. So in this one, rather than a wordy reiteration of those comments, we offer a few scattered bits of information you might find of interest.

The unusually light snowfall this past winter has substantially reduced the mountains' snow packs. Some areas (Seattle and Everett, for example) rely upon melting snow to fill and maintain their reservoirs. Here's some good news that won't cost you anything. **The Lakewood Water District does not depend upon melting snow for its water.** Ours comes from underground aquifers fed primarily by precipitation. So despite the low snowfall, our wells are full and, to all appearances due to the past several years of higher than normal precipitation (rain), our wells will stay that way for the foreseeable future.

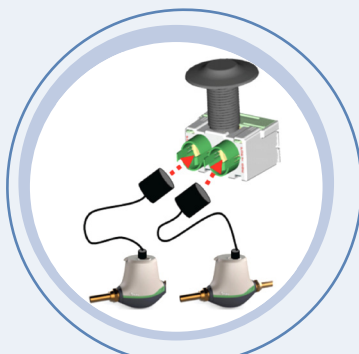


Despite an unusually dry and sunny year, total water usage in the District slightly declined. Go figure! We're guessing for economic reasons, people simply conserved, pouring less water on lawns and driving dustier vehicles.



A pat on the back to our **General Manager, Randy Black**. He has been elected **Chair of the Pacific Northwest Section of the American Water Works Association**, a significant honor in the industry. The Pacific Northwest Section has over 2,600 members and represents Washington, Oregon, and Idaho.

With the now completed installation of new water meters (over 16,500 of them) and the technology to "read" them from our offices, we are now able to measure much more accurately individual water usage even on a daily basis. Depending on your viewpoint, yours or ours, there is good news and bad news resulting from this.



iPerl 5/8" meter with AMI radio

Your Board of Commissioners thanks you for your interest in the District and for allowing us to serve you. **Have a wonderful summer.**

OUR TECHNOLOGICAL REVOLUTION CONTINUES...TO SERVE YOU BETTER

GIS—Geographic Information Systems consulting and solutions specialists, Critigen, will be able to populate the District's GIS system, making it fully functional throughout the District in 2015, providing digital mapping of all of the components of the District's water system. This program was on hold during the installation of the AMI system, during which the contractor collected GPS coordinates for the meters as they installed them.

SCADA—Supervisory Control and Data Acquisition... simply translated, a means to operate a water system using distributed command and control technologies while receiving real-time information demonstrating what is occurring at every well, booster, tank, and pressure station. The District successfully completed two of three phases in 2014, upgrading the individual site computers and communications modems. The final phase of the SCADA Upgrade Project was completed in May.

Tablets for Field Staff—Once the AMI Meter system is running and we see how it "talks" with our SCADA and GIS systems, the District will be moving toward mobile computing tools such as tablets for our field staff to be able to receive and transmit information electronically, making their response time to your needs more expedient and effective.

AMI Meter Replacement Program—Our AMI Meter Replacement Program started August 4, 2014 and was completed in May, with the installation of 14,500 residential and 2,500 retail meters. We had anticipated the installation would be complete by the end of 2014, but the contractor was not able to keep pace with what they had anticipated. The new, more efficient meters, complete with state-of-the-art AMI technology, can wirelessly communicate meter reads and water usage information to the District on a scheduled daily basis and allow for on-demand reads.

Our Customer Service Reps are ready to give you instant water usage information on your account.



This new AMI system will provide much timelier leak detection notification than ever possible before, as well as improved customer service with real-time information and even a customer service portal, so customers who sign up can review their usage and account status online. There

will be cost savings to the District and thus the customer, generated by a reduced number of service orders that we need to roll trucks out to accomplish, because many of these questions can now be answered by a customer service representative without leaving the office. Another direct savings is the elimination of the need for manual meter reading, as the meters wirelessly send in their data daily. We'll now be able to redirect the services of our Meter Reader to maintenance and operations.

The AMI system is already starting to help the District account for some of its unaccounted-for water. Last year's unaccounted-for water was down 1.5 percent with less than 30 percent of the meters installed and reading a full billing cycle. The new iPerl meters, used in the 5/8-inch and 1-inch applications throughout the District, will be able to capture the lowest flows down to 7 teaspoons of water a minute versus one-half gallon per minute.

New iPerl meter with AMI radio



The iPerl meters have a series of other features that will help the District conduct its business more efficiently, such as the "Empty Pipe Alarm" when a meter has no water, and a backflow indicator alarm. The meters can be set in a Virtual Meter or non-consumption mode that would allow the District to set the meter as inactive; but if water was used by that connection, the alarm would be sent to the District, thus helping us identify potential theft of water or a potential leak at the customer's residence if they were on vacation, etc. With these tools and many others, we are excited about being able to provide an even higher level of service to our customers.

50-year R&R Program—Our 50-year plan to replace approximately 180 miles of our 256-mile system launched early in 2014. Several projects were completed in 2014, and additional projects were designed and bid for work in 2015. This year will be one of our biggest years for Replacement & Rehabilitation work, with over \$4.2 million budgeted for R&R projects. We will continue to update our projects and their progress on our website, so please click on our 50-year R&R Program logo on our website to see the progress.



DISTRICT R&R PROJECTS 2014:

Lakeholme Road SW Water Main Replacement Project

Pape & Sons Construction, Inc. began construction May 19, 2014 to install approximately 2,396 linear feet of 8-inch diameter and 93 linear feet of 4-inch diameter ductile iron (DI) pipe, fire hydrants, valves, appurtenances, replacement and reconnection of water services, connections to the existing water main, and restoration. RH2 Engineers provided design and engineering, with an Engineer's Estimate of \$373,417. Pape & Sons bid the job at \$356,048. The project was completed in May 2014 under budget.



Bridgeport 75th to 83rd Water Main Replacement Project

This project was in conjunction with a City of Lakewood project, utilizing City designers and limiting the cost to the District on restorations. Marshbank Construction was awarded the project for the City, began work in November of 2014, and completed the work in May of 2015. This project included the installation of 3,675 linear feet of new 12-inch main, upsizing the main and realigning it further out on the shoulder. The Engineer's Estimate for the District's portion of the project was \$602K. Marshbank bid the Schedule B work for the District mains at \$648K.

Sylvan Park Water Main Replacement Project Phase 1

This project ran east and west from the District's 88th and Pine Tank Site replacing the existing AC (Asbestos Concrete) main with 1,112 linear feet of new 12-inch PVC pipe east to Gayle Street and west to tie in at Lorraine Avenue. Going south on both Lorraine and Carol to 92nd Street, we replaced the existing AC mains with 3,210 linear feet of new 8-inch PVC main and changed the hydrants and services along all portions of the project. Parametrix provided design and engineering, with an Engineer's Estimate of \$904K. The project was awarded to Pape & Sons Construction, Inc. on May 30 at \$725,240.50. Construction began in July 2014 and concluded in early September.



DISTRICT R&R PROJECTS 2015:

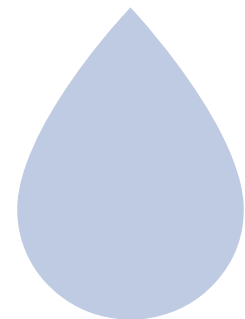
Sound Transit Rail Relocation Phase 3, Point Defiance Bypass

Pape & Sons started work on this project on January 20, 2015, installing 185 feet of new steel casing at or near the edge of the right-of-way through the Sound Transit corridor at three different locations and replacing the existing mains with newer, larger mains to meet the future demands of the District. CHS Engineers provided design and engineering. Pape & Sons bid the project at \$321,200.59. The work was completed March 3, 2015, several weeks ahead of schedule and slightly over budget due to changes made by Sound Transit.



Seattle Avenue Crossing at I-5

This project will utilize an existing Pierce County pipeline casing, saving the cost of boring another. The existing lines will be removed, and the sewer line will be reinstalled with a welded line. Two new 12-inch water mains will be installed, connecting with the main installed in the Springbrook area in 2012; this project will also tie in to the City/LWD Bridgeport Way project. The 8-inch AC main under I-5 will be replaced with new 16-inch ductile iron main on Pacific Highway from Seattle Avenue to Bridgeport. In total, the project will install 1,700 linear feet of 16-inch ductile iron pipe, 660 linear feet of 12-inch main, and upsize the Pierce County sewer line crossing under I-5. CHS Engineers provided design and engineering, with an Engineer's Estimate of \$1.2M. Construction is scheduled to begin the fall of 2015 and conclude in early 2016.



Wisteria 20-inch Transmission Main Extension

This project was designed and engineered in 2014 by Parametrix Engineers, with an Engineer's Estimate of \$350K. This project consisted of extending the 20-inch transmission main by 1,115 linear feet from the end of the Orient Street Crossing under I-5 to the wholesale transmission main in South Tacoma Way. Waunch Construction & Trucking was awarded the project for \$276K at the December 18 Commissioners' meeting. Construction started February 3 and was completed March 3, 2015.



Steilacoom Boulevard Replacement and Rehabilitation Project

This project includes abandoning in place the AC mains and upsizing the existing main with 3,363 linear feet of new 16-inch ductile iron main. This will increase the flow in our 455 Pressure Zone and increase the fire flows throughout this area and a great deal of the District to the east of Gravelly Lake Drive. RH2 Engineering designed the project, with an Engineer's Estimate of \$660K. Pape & Sons Inc. was awarded the contract at \$646K. Work began March 2 and was completed by the end of April.



South Tacoma Way Project from 512 to 96th Street

This project will be done in conjunction with the City of Lakewood in a continuing joint effort to minimize the impacts of projects on our roads and customers and provide cost-savings for our ratepayers. The District's portion of this project will include replacing the existing 8-inch AC mains with 12-inch DI pipe on both sides of South Tacoma Way. Design is being completed with the assistance of the City of Lakewood Design Engineers and the District's Engineering Consultant. The work was anticipated to go to bid in July after the Chambers Bay PGA Tournament but may be delayed or postponed due to City permitting and funding issues.

Veterans Drive Phase IV

This project will focus on the area between Vernon and Nottingham Avenue SW, including replacement of mains on American and Edgewood Avenues SW. The project will replace the existing AC mains with 1,610 linear feet of new 8-inch DI main and 1,550 linear feet of 12-inch DI main. This will complete the Veterans Drive upgrades for the time being; additional work will be assessed in the future. BHC Engineers is the design engineer for the project, with an Engineer's Estimate of \$751K. We anticipate this project going out to bid in late 2015 with construction starting in early 2016.

Bridgeport Way I-5 to San Francisco Street

This project is being designed by City of Lakewood engineers in conjunction with the District's Consulting Engineer. This will connect to the Springbrook Project completed in 2012, as well as connect in to the I-5 crossing at the Seattle Avenue Project. Estimated construction costs are not finalized; however, we are estimating a construction cost for the District of approximately \$300K. This project was anticipated to go to bid in June or July but may be delayed or postponed due to City permitting and funding issues.

2014 DEVELOPER PROJECTS:

- **LASA**—Gravelly Lake Drive SW; relocated 60 feet of main, replaced existing 6-inch AC pipe with new PVC pipe; 1 fire hydrant; 1 4-inch fire service connection.
- **Grosso Investments**—South 32nd Avenue Court; 1 6-inch fire service connection.
- **HOB Bakery**—Gravelly Lake Drive SW; 1 4-inch fire service connection.
- **Moose Auto Tech**—off Union Avenue SW; 1 4-inch fire service connection.
- *71 Water Services were installed by District staff in 2014.*

FEMA MITIGATION GRANT

In 2014, the District was awarded a \$1,000,000 Hazard Mitigation Grant from FEMA to conduct an engineering study to determine the potential survivability of the District's storage tanks in case of a catastrophic seismic event. The focus of the study is to identify what improvements or additions to specific tanks must be made to insure they meet current seismic building code standards, enhance ride-through capability during a major earthquake, and determine which of the improvements can be accomplished within the scope of the \$1,000,000 grant. The engineering study started in the fall of 2014 with most of the actual structural improvement work scheduled for fall and winter of 2015/2016. The District is committed to continually improving its system in order to provide as much service as possible, even during a natural disaster.

WATER USE EFFICIENCY RULE

The District far exceeded its goal of saving one-quarter of 1 percent of water over the 2014 reporting period with an annual decrease of 1.5 percent. The District continues to be compliant with all facets of the Water Use Efficiency Rule except unaccounted-for water and only since 2010. The Rule requires municipal water suppliers to maintain a standard of having no more than 10 percent of water loss (the difference between water pumped and water sold). Once as high as 15 percent in 2012, the District's lost water was down to 11 percent in 2014.

The continued success of our AMI Meter Replacement, 50-year R&R, and Leak Detection Programs should allow us to meet our WUE goals per the State Department of Health within the next reporting period.



FOR YOUR HEALTH

Important Information from the Environmental Protection Agency (EPA)

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate the water poses a health risk.

Some may be more vulnerable to contaminants in drinking water than the general population. The following can be particularly at risk of infection: the immuno-compromised, such as those with cancer undergoing chemotherapy; those having had organ transplants, HIV/AIDS, or other immune system disorders; and some elderly, and infants. These should seek advice about drinking water from their healthcare providers.

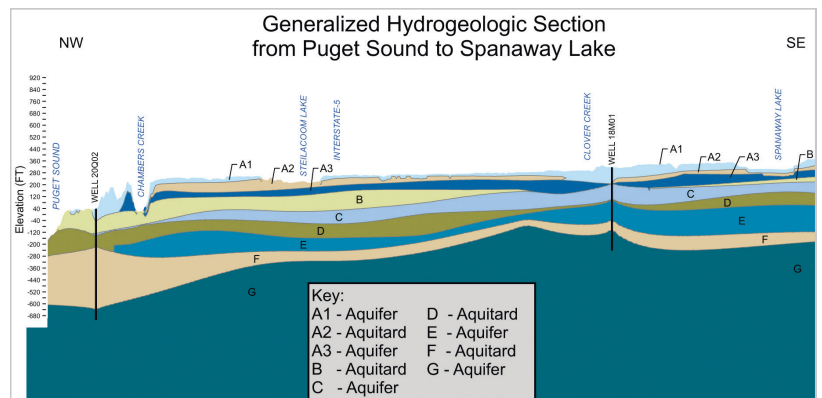
More information about contaminants and potential health effects, and EPA/CDC guidelines on appropriate means to lessen the risk for infections by cryptosporidium and microbial contaminants is available from the Safe Drinking Water Hotline at 1-800-426-4791.

THE SOURCE OF YOUR WATER

The District's sole source of water is from underground aquifers. No surface water, desalinated water, or recycled water is used. The District has a total of 30 active wells, which together provide a maximum production capacity of approximately 30 million gallons per day (mgd), with a total water right capacity to pump up to over 60+ mgd.

Aquifer Zones are designated as layers A, C, E, and G from shallowest to deepest, as displayed on the accompanying chart. Aquifer Zones are generally of glacial origin and tend to be coarse-grained and highly permeable. Aquitards B, D, and F, which are usually of interglacial origin, represent finer-grained and less permeable layers whose sediments were deposited by the ancestral Nisqually and Puyallup rivers. Historical sedimentation is not unlike the alluvium presently being deposited by these rivers today.

Recharge (replenishing) of the aquifers comes from local rainfall in the Clover/Chambers drainage basin. The E and G level aquifers will most likely receive some additional deep underflow ranging from the south Puyallup/Graham area westward to Puget Sound.



MONITORING OUR LAKES AND STREAMS

We consistently keep an eye on the levels of select lakes and streams in our service area. The lake levels are indicators of the water table level in the Steilacoom Gravel deposited by the receding Vashon Glacier. Water in the gravel also leaks through the Vashon till or springs out above the till, adding to the flows of the area's major springs such as Ponce de Leon, Chambers, Garrison, and Sequelichew. The District collects monthly data from gauges on Ponce de Leon and on five lakes (American, Gravelly, Hidden, Louise, and Waughop). This information, together with the data collected from the Pierce County Stream Team, is vital to the District's aquifer management program as well as the Tacoma-Pierce County Health Department's long-term groundwater monitoring program.

Jacob measures levels and flow in Ponce de Leon



2014 CCR WATER QUALITY MONITORING REPORT

Your water meets all federal, state, and local quality standards, ensuring that you enjoy safe, clean, potable water. Not listed are 63 volatile organic chemicals for which we tested, all resulting in either Not Detected (ND) or well below the MCL.

Sample type	Samples taken per year	Last sample year	Next sample year	EPA/DOH MCL (max level allowed)	LWD highest level detected	LWD lowest level detected	Number of samples over MCL	MCLG	Typical sources
Arsenic ¹	DOH WQMR List	2011	TBD	10 ppb	--	--	--	--	Erosion of natural deposits
Asbestos	3 every 4 yrs	2011	2015	--	--	--	--	--	Friable fiber
Copper	30 every 3 yrs	2014	2017	1.3 ppm	0.72 ppm	<.02 ppm	0	1.3 ppm	Household plumbing
Fecal Coliform	840 per yr	2014	2015	0	ND	ND	0	0	Human and animal fecal waste
Total Coliform	840 per yr	2014	2015	<5% positive	ND	ND	0	0	Found throughout the environment
Haloacetic Acids	16 per yr ²	2014	2015	60 ppb	9.9 ppb	0.0 ppb	0	0	Disinfectant by-product
Lead ³	30 every 3 yrs	2014	2017	15 ppb	.005 ppb	<.001 ppb	0	0	Household plumbing
Nitrates	22 per yr	2014	2015	10 ppm	2.1 ppm	<0.2 ppm	0	0	Erosion of natural deposits
Total Trihalomethanes	16 per yr ²	2014	2015	80 ppb	12.0 ppb	0.0 ppb	0	0	Disinfectant by-product

OUR TESTING RESULTED IN NO VIOLATIONS

The chart above only reflects a portion of the testing LWD performs. Complete Source Water Assessment (testing result information) is available at the District office. Table Definitions:

- **MCL**—Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible, using the best treatment technology available.
- **MCLG**—Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **ND**—Not Detected
- **ppm**—parts per million, or milligrams per liter (mg/L)
- **ppb**—parts per billion, or micrograms per liter (ug/L)

One part per million corresponds to one minute in two years or a single penny in \$10,000.

One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

1 Your drinking water currently meets EPA's revised drinking water standard for arsenic. However, it does contain low levels of arsenic. There is a small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory diseases are due to factors other than exposure to arsenic. EPA's standard balances the current understanding of arsenic's health effects against the costs of removing arsenic from drinking water.






2 The Disinfectant Byproduct Rule went into effect September 1, 2012, requiring 4 samples taken per quarter versus 4 per year.

3 If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Lakewood Water District is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.



Our staff, here to serve you!

If you would like to learn more about our water, or have questions regarding water quality or what you can do to help keep our water supply clean and safe, please contact us at Lakewood Water District, or any of the following:

- 
Lakewood Water District
 11900 Gravelly Lake Drive SW
 Lakewood, WA 98499
www.lakewood-water-dist.org, 253.588.4423
- 
Randall M. Black, General Manager
 Email: rblack@lakewood-water-dist.org
- 
Washington State Department of Health (WDOH)
www.doh.wa.gov/ehp/dw
- 
Environmental Protection Agency (EPA)
www.epa.gov/safewater
- 
Safe Drinking Water Hotline
 800.426.4791, email: hotline-sdwa@epa.gov

To request additional copies of this year's Water Quality & Annual Business Report, please contact the District office at 253.588.4423 or csweb@lakewood-water-dist.org. You can also access this report on our website at www.lakewood-water-dist.org.

A CLEAN AUDIT...19 YEARS & COUNTING

For the 19th year in a row, the State Auditor's Office (SAO) completed its annual review and again awarded the District a clean audit. The SAO's official Accountability Audit and Financial Statement Audit Reports noted no deficiencies and complimented the District on its strong financial policies, precise accounting internal controls, and competent and cooperative staff.

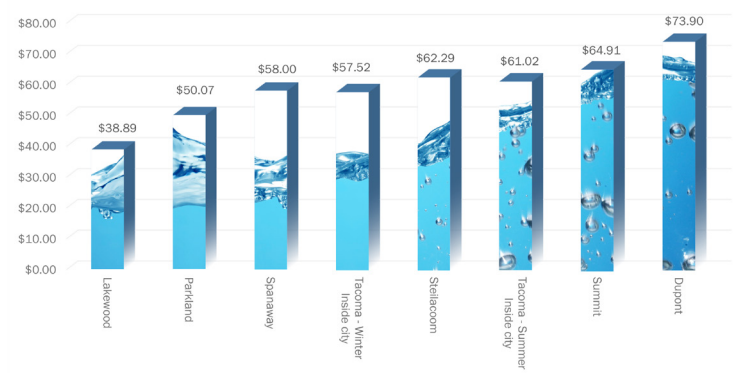
We do work hard each day to deliver the highest level of integrity, accuracy, and regulatory compliance through exceptional financial and compliance practices. The District Commissioners and staff are proud of our record of consistently clean audits and are committed to continuing our efforts to maintain our financial stability, so we can serve you most efficiently.



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COMPARISONS OF LAKEWOOD WATER DISTRICT RATES WITH SURROUNDING UTILITIES



LAKEWOOD WATER DISTRICT BALANCE SHEET YEAR ENDED DECEMBER 31, 2014 (unaudited)

Assets

Total Net Utility Plant	\$ 60,934,461
Cash	8,883,990
Other Current Accrued Assets	1,158,717
Total Current Assets	\$ 10,042,707
Total Assets	\$ 70,977,168

Current Liabilities

Current Liabilities	\$ 2,582,067
Deferred Credits	4,917
Contributions in Aid of Construction	-
Bonds Payable	\$ 21,288,938
Unappropriated Retained Earnings	\$ 47,101,246
Total Liabilities & Equity	\$ 70,977,168



Our Finance Department staff watch over every penny of our rate-payers' money