



Lakewood Water District

A Historical Review and Presentation of our 50-year Replacement & Rehabilitation Program

As presented to...

Lakewood Historical Society

April 15, 2014

Who is the Lakewood Water District?

- ▶ The Lakewood Water District (LWD) is a ground-water purveyor located in Southwest Pierce County, providing water to the City of Lakewood, Town of Steilacoom, and some surrounding areas.
- ▶ LWD is also a regional wholesale provider.
- ▶ LWD is a “Special Purpose District,” governed by RCW Title 57



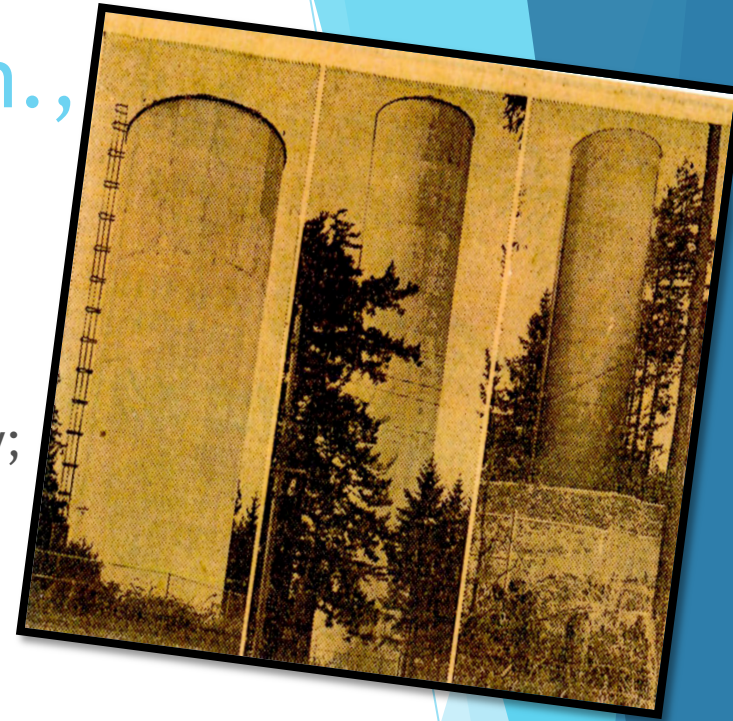
Our mission...

Lakewood Water District will provide its customers with water service that meets or exceeds all water quality standards, maintaining policies and practices that benefit the health and welfare of the community.



Officially formed Tuesday, June 1, 1943, at 8 o'clock p.m., we started with...

- ▶ 40.8 miles of water main,
- ▶ 3 tanks, and
- ▶ 3 wells, acquired from the Federal Water Agency;
- ▶ 369 connections,
- ▶ A population of approximately 7,900
- ▶ 600,000 gallons of storage,
- ▶ 3 elected Commissioners, and
- ▶ An average bi-monthly bill of \$2.58



Our office was first located in the Fire District Building opposite Clover Park High School, Route 8, Box 674 (then Tacoma); the District leased space from the Fire District there until 1952.

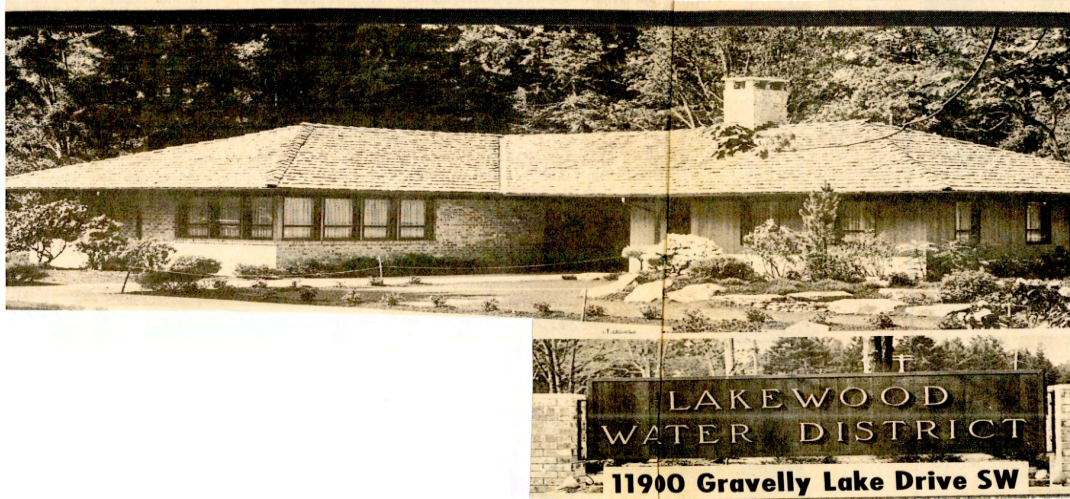
In 1952, we moved to our present location at 11900 Gravelly Lake Drive SW with a staff of 12



In 1956, we added on and remodeled, more than doubling our office space



And then another remodel in 1967...

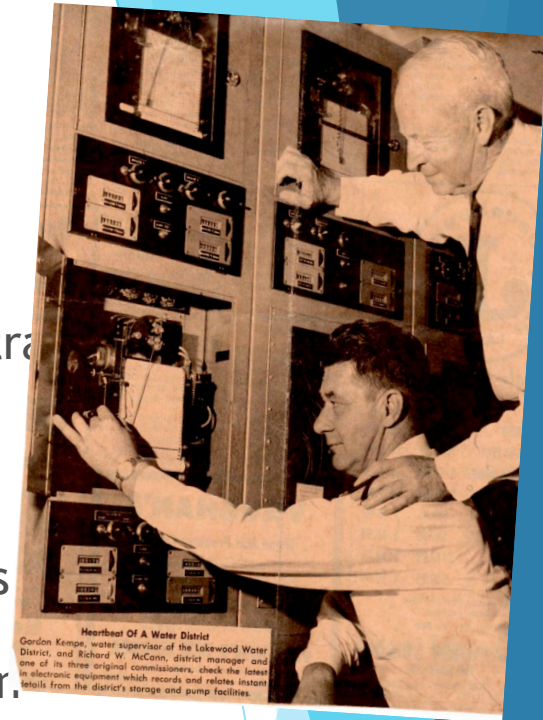


Today...



A few historical highlights...

- ▶ **Automatic controls were added in 1957**, allowing the District's technicians to control water pumps from a central point, improving service to the District and saving the District about \$5,000 a year in labor costs.
- ▶ **Pierce County Sewer Project through LWD**—planning & engineering began in 1978 to install Pierce County sewers throughout the District. Construction began in 1981 and was completed in 1984. It was the largest ULID project in the nation at the time and significantly impacted the life span of the District's infrastructure.
- ▶ **Annexation of American Lake Gardens by LWD**—on October 22, 1985, the Board of Commissioners adopted Resolution No. B-873, annexing the area known as American Lake Gardens into the Lakewood Water District. The United States Air Force paid for the District to install infrastructure and water services to replace private wells in the area that had become contaminated over years of washing planes at McCord Air Force Base. All mains and services were completed by November 7, 1986, and the storage tank went online.



Today we have...

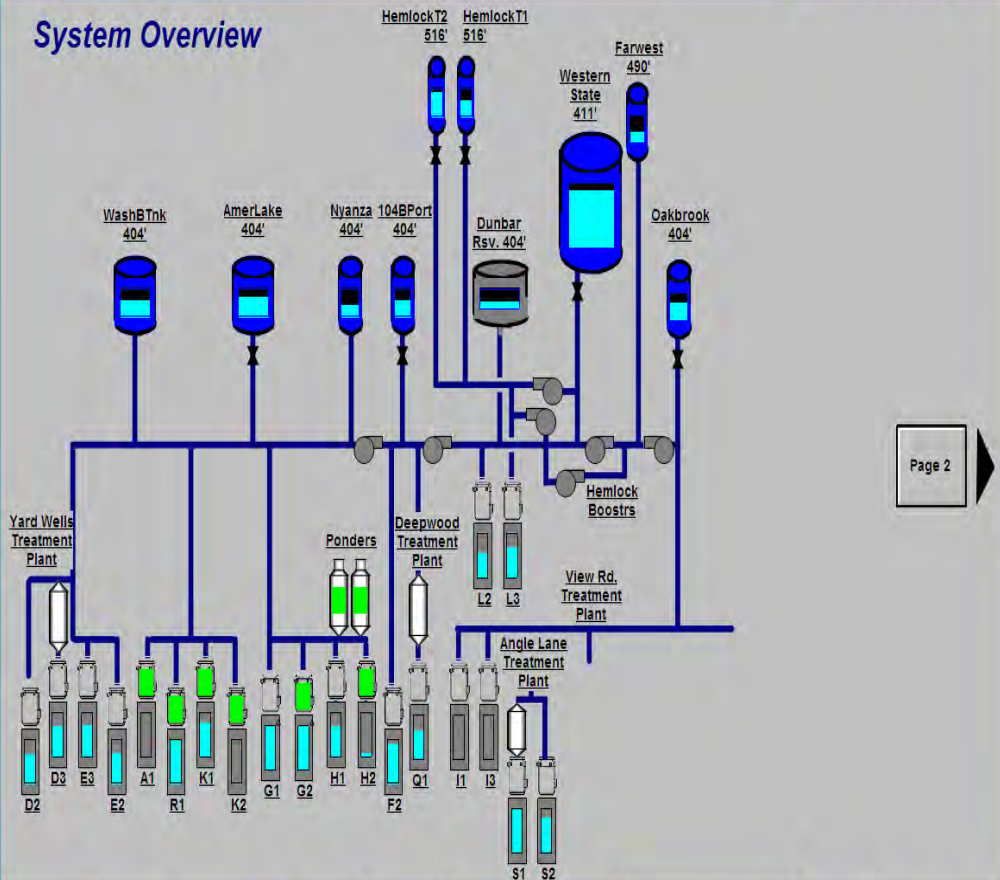
258 miles of water main

16,888 connections

Over 2000 hydrants

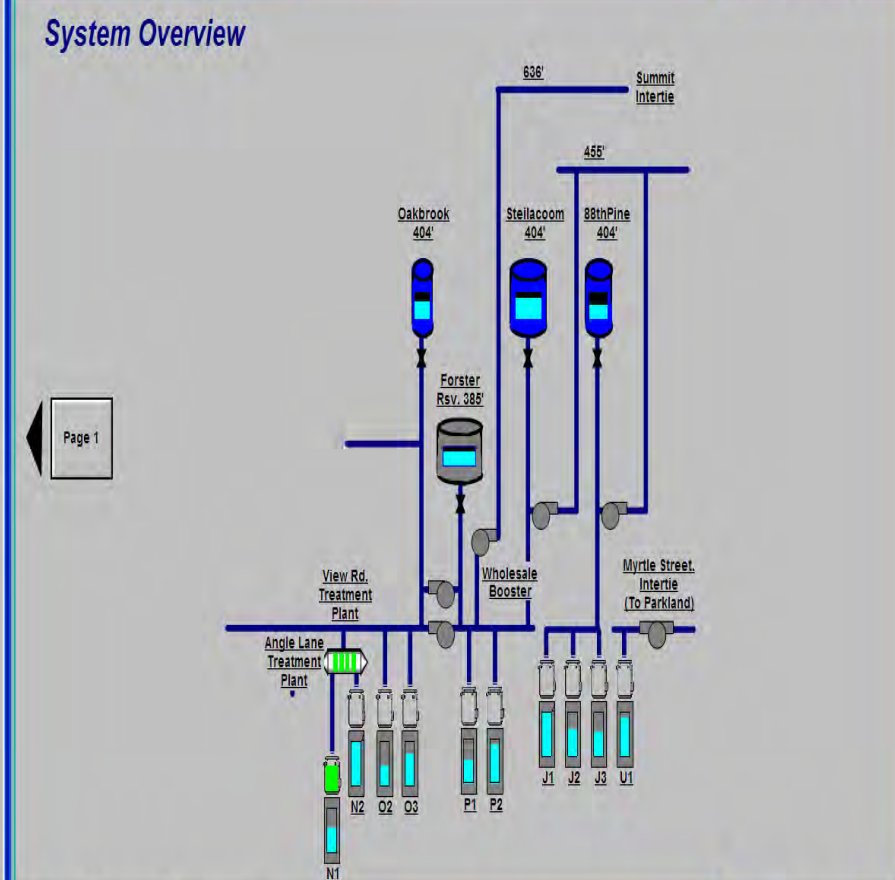
COMPLEX SCADA SYSTEM

System Overview



Page 2

System Overview



Page 1

Wash. Blvd.	Ponders WTP	104&Bridge.	Hipkins Wells	Oakbrook	Forster Res	Nyanza
Yard Wells	Lake St.	Hemlock Wells	Deepwood	Angle Lane	Western St.	Farwest Twr.
Ponders W.	Scotts Wells	Hemlock Bstrs	112th St.	Tillicum	Country Well	American Lk.

Page 1	Overview
Page 2	Level S.P.
	Alrm. Hist. Log On

View Rd WTP	Myrtle Street	Steilacoom	Wholesale
View Rd HCL	104th Booster	88th & Pine	Summit FCF
View Rd W.	View Rd BW	114th Booster	

Page 1	Overview
Page 2	Level S.P.
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Water Storage



13 Water Tanks



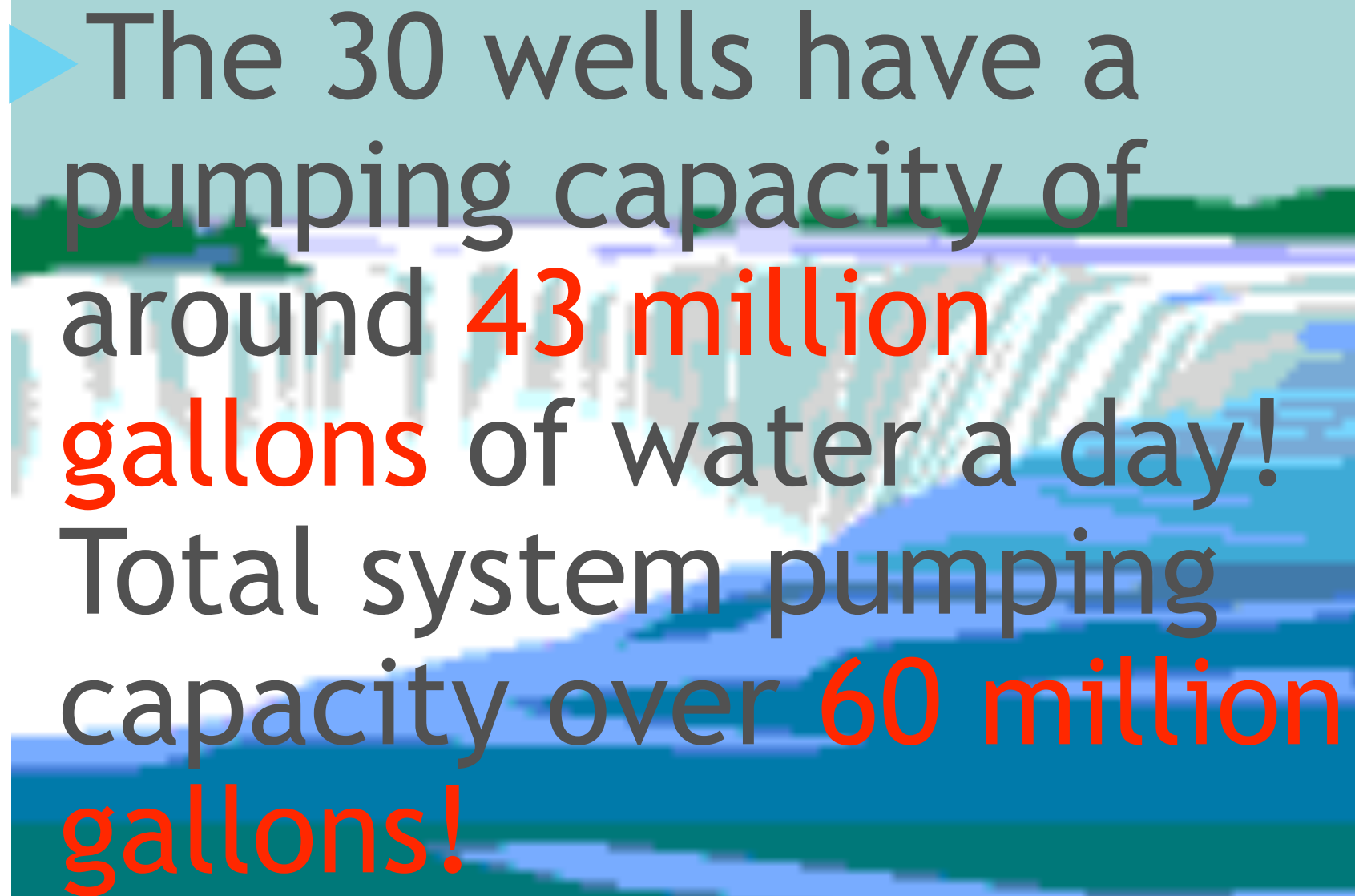
6 PRESSURE ZONES

11 BOOSTER PUMPS STATIONS



30 active wells throughout the District



A background image of a waterfall with white water cascading over rocks into a blue pool. The image is framed by a light blue border with geometric shapes.

▶ The 30 wells have a pumping capacity of around **43 million gallons** of water a day! Total system pumping capacity over **60 million gallons!**

Now we embark on our 50-year R&R Program...

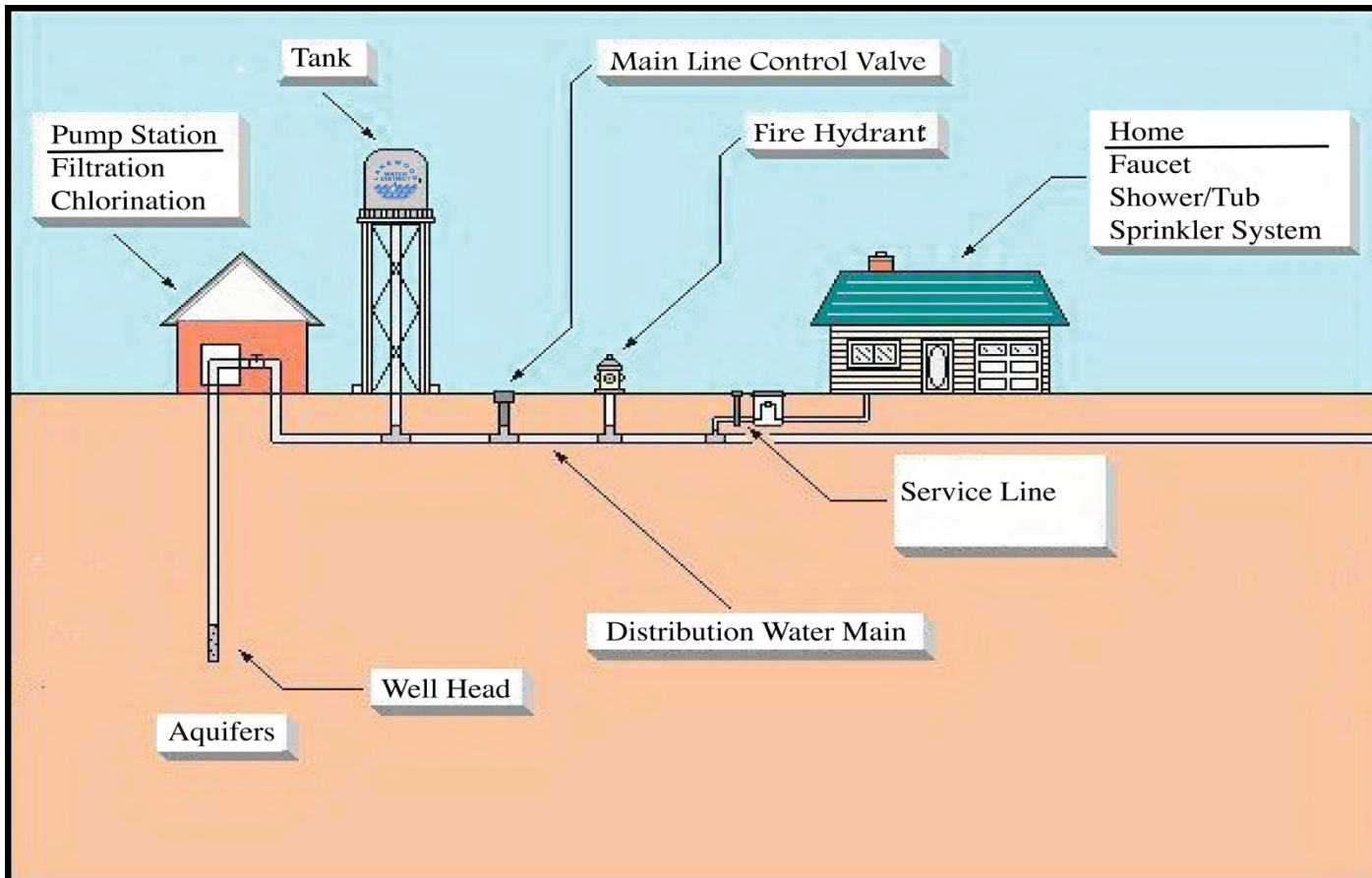
Lakewood Water District Replacement & Rehabilitation Program



Lakewood Water District - Who we are

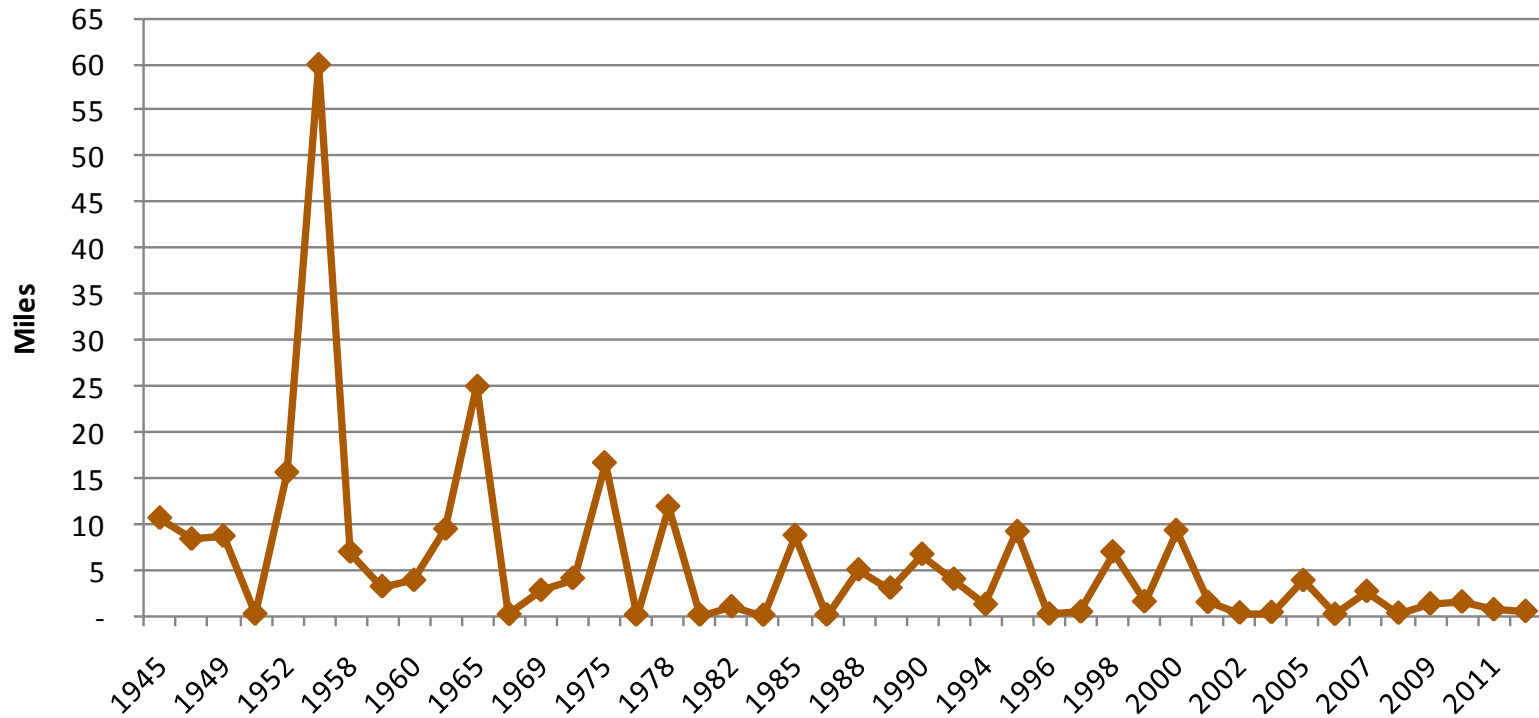
- ▶ A Special Purpose District governed by RCW Title 57
- ▶ Formed in 1943
- ▶ Governed by elected board of three commissioners. Presently:
 - ▶ Larry Ghilarducci
 - ▶ John Korsmo
 - ▶ Greg Rediske
- ▶ We are the thirteenth largest utility in the state
- ▶ The lowest rates in Pierce County, and for utilities of like size we are the lowest in the state
- ▶ Presently the District's major assets include:
 - ▶ 13 tanks with 27.3 million gallons of storage
 - ▶ 30 active wells, with the capacity to pump 34 million gallons a day
 - ▶ 256 miles of transmission main
 - ▶ 2,087 hydrants
 - ▶ 5,857 valves
 - ▶ 16,876 service connections

What is R&R = Replacement and Rehabilitation of System Assets

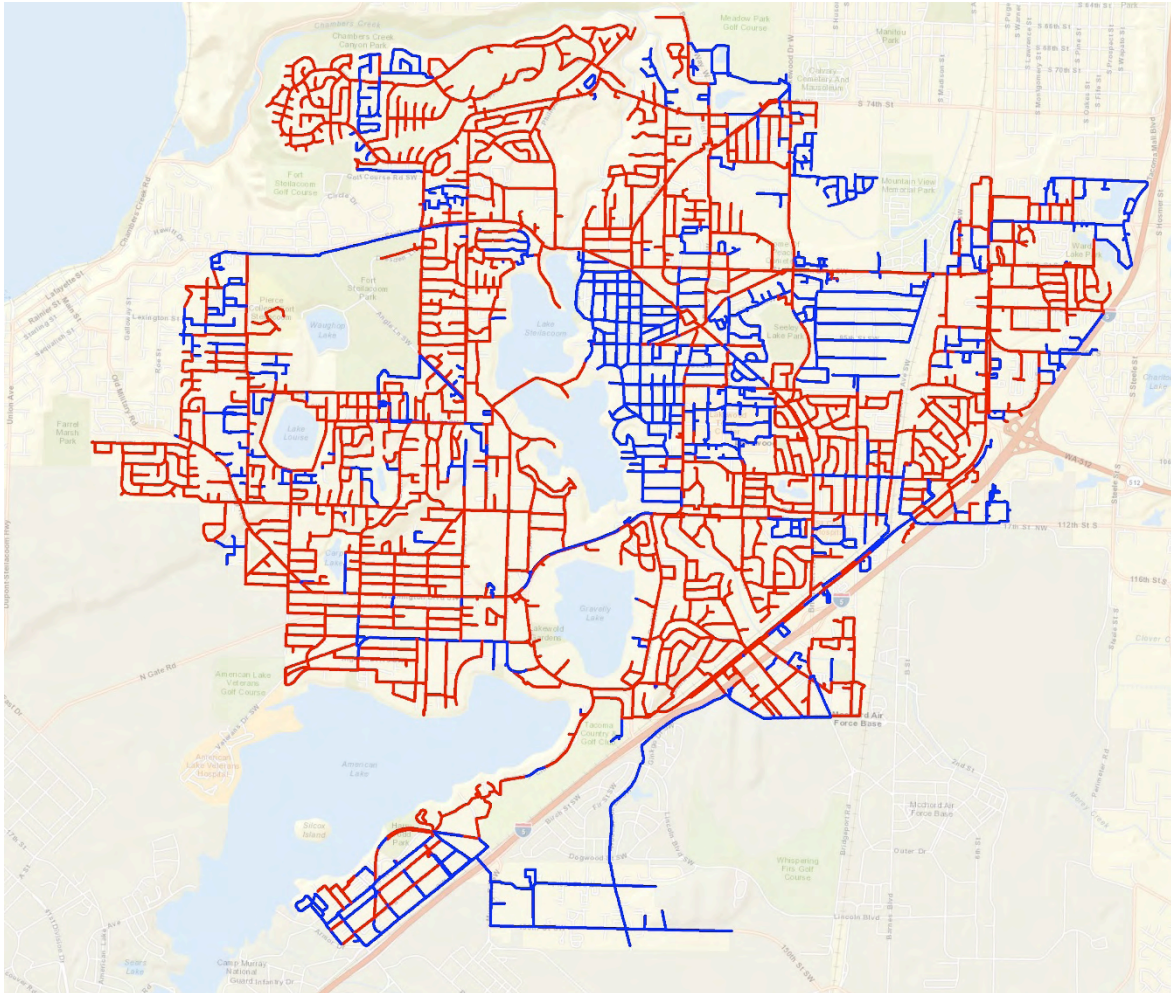


Pipe Installation Summary

LWD Water Mains - Total Miles



Map of Pipe Needing Replaced



RED = Pipe in need of replacement

BLUE = Replaced pipe

R&R issues with water mains

- ▶ Of the District's 256 miles of pipe, over 180 miles are of asbestos cement pipe that is 50-70 years old.
- ▶ The District started a replacement program in 1995 at \$700,000 a year; at this rate, it would take 250 years to replace all the transmission pipe.
- ▶ Water losses have increased since 2007 above the allowable state standard of 10%.
 - ▶ 15.7% losses in 2012
- ▶ During the 1980's the largest sewer ULID in the US was installed in the Lakewood area.
 - ▶ Many of the District pipes were damaged during this sewer period, shortening the expected life of LWD's piping system.
- ▶ Pipe failures - cost and frequency of repairs increasing

Pictures of Recent R&R Projects

Impacts of Sewer Project



Repaired
sewer
service
project



Service
line bent



Service
line leak



Financial Analysis Key Factors

- ▶ Analysis considers initial 20 years of 50-year program
- ▶ Program is scheduled to begin in January 2014
- ▶ Replacement costs \$1 million per mile - Total project cost \$180 million (today's dollars)
- ▶ \$3.7 million annual funding requirement
 - ▶ 3.0% annual escalation factor applied to costs
- ▶ In 2014 and beyond, all R&R program funding to be collected in additional fee



The District sought input on the R&R program from our customers by forming a Citizens Advisory Group (CAG) to develop the best customer communication and education plan possible.

From left to right, Tommy & Fae Crabill, retired long-time owners of AA Meats; Susan Hart, Senior Tax Advisor, H&R BlockPremium; Claudia Thomas, former City of Lakewood Mayor and Council Person; Paul Webb, retired Lakewood Fire Chief; Back row center, Dan Durr of First Western Properties; and Paul Wagemann, a Clover Park School District Board Director, Chairman of the City's Transportation Advisory Committee, and Lakewood YMCA board member. Not shown: Jeff Brown, President of Creoworks in Lakewood.

R&R Program Rate Change

Financing Option

Board approved moving forward with option of a mix of cash funding from rates and debt

- ▶ Reduced impact to rate
- ▶ Existing and future rate payers contribution more aligned
- ▶ More distant future customer will help shoulder the burden

Assumptions:

- ▶ Depreciation funding from rates \$1.7 million to \$3.7 million
- ▶ \$90 million total capital expenditures over a 20-year period
- ▶ \$44 million new debt funding - 49% debt funding
- ▶ \$46 million from proposed R&R fixed fee in rates
- ▶ (Industry standard debt to equity ratio is 40%-60%)

Funding Mechanism

Board approved moving forward with fixed fee by meter size

- ▶ Size of the meter determines the amount of water available to the customer.
- ▶ The more water available to a customer drives increasing costs to serve that customer.

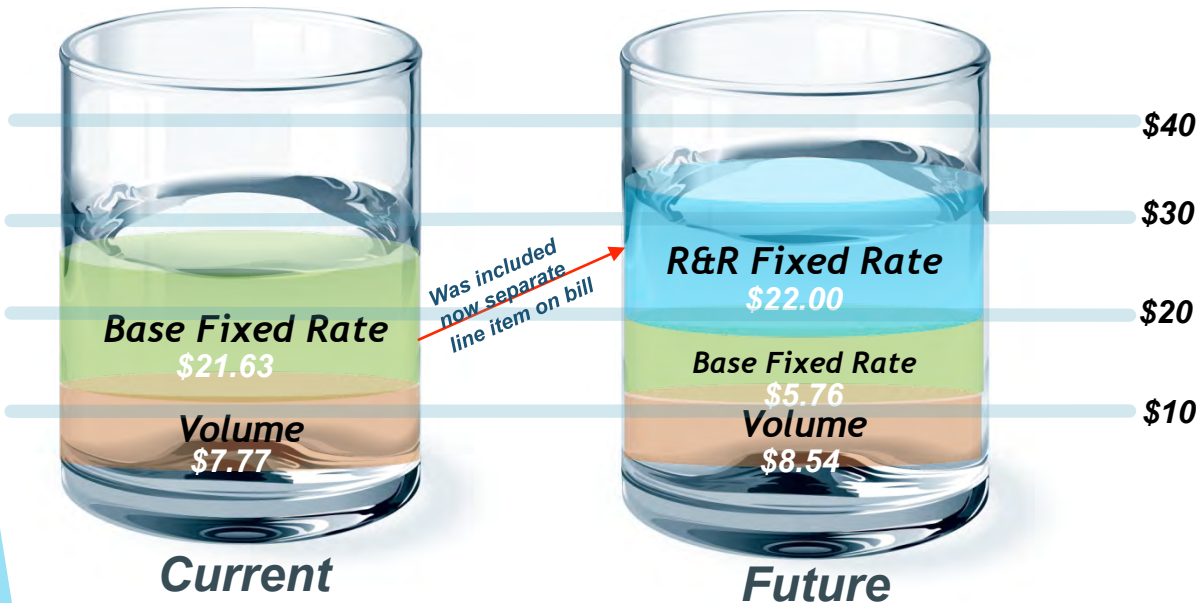
Benefits

- ▶ Revenue stability with increased fixed charges
- ▶ Currently revenue make up is 36.2% from fixed base rate and 63.8% from variable rate
- ▶ Recovers cost more equitably for larger users
- ▶ Lower\smaller user pay less
- ▶ Accountability of the R&R Program, easier to track

Rate Change Example

Based on 5/8" meter and average bimonthly consumption of 1500cf

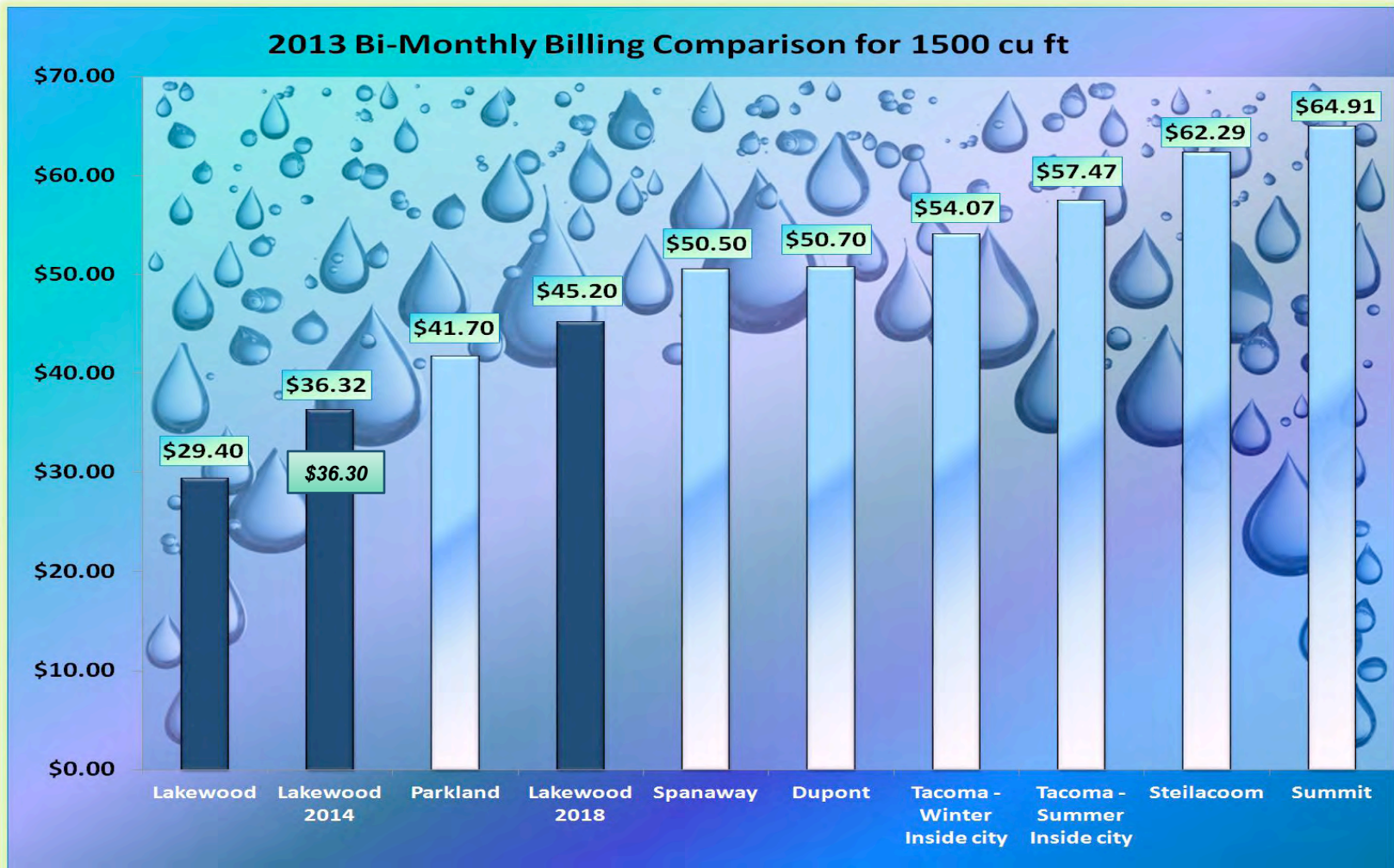
New R&R Fixed rate based on Meter Size



Meter Size	Bi-monthly Rate	Customer Est Meter Count
5/8"	\$22.00	12,158
1"	\$24.20	2462
1.5"	\$30.80	943
2"	\$39.60	307
3"	\$63.80	67
4"	\$242.00	17
6"	\$308.00	4
8"	\$638.00	0
10"	\$836.00	4

** All future rates include a proposed 9% general rate increase.**

Residential Bi-Monthly Bill Comparison



- 5/8" meter @ 1500 cubic feet bi-monthly use
- LWD Current and Other Agencies rates as of January 2013

Lakewood Water District

Renewal and Replacement Program

2014 Bill Calculator

Residential Service Example



INPUT YOUR INFORMATION (IN YELLOW):

Select Meter Size	5/8"
Enter Bi-Monthly Use (cf)	1,500

Charge	2013 Existing	2014 Proposed
Fixed (Bi-Monthly)		
Bi-Monthly	\$ 21.63	\$ 5.76
Volume		
Block 1 (0-8ccf)	\$ -	\$ -
Block 2 (8.01-20ccf)	1.11	1.22
Block 3 (20.1+ccf)	1.51	1.66
Replacement Fee (Bi-Monthly)		
5/8"	n/a	\$ 22.00
1"	n/a	24.20
1.5"	n/a	30.80
2"	n/a	39.60
3"	n/a	63.80
4"	n/a	242.00
6"	n/a	308.00
8"	n/a	638.00
10"	n/a	836.00
12"	n/a	990.00

BI-MONTHLY BILL COMPARISONS - 5/8"



	Existing:	Proposed:
Fixed Bi-Monthly:	\$ 21.63	\$ 5.76
Volume:	7.77	8.54
R&R Fee (5/8") Bi-Monthly	-	22.00
Total	\$ 29.40	\$ 36.30

*Calculations do not include 6% City of Lakewood Franchise Fee

For more information or questions on this project, please visit our website.

www.lakewood-water-dist.org

Follow this logo.



~MISSION STATEMENT~

Lakewood Water District will provide its customers with water service that meets or exceeds all water quality standards, maintaining policies and practices that benefit the health and welfare of the community.

