

# The Tap



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## President's Pipeline

What do our customers expect? What do they expect from their water utility day-to-day, and what will they expect when the inevitable earthquake severely disrupts service, somewhere out there in time and space?

These are two different, but equally challenging questions.

My guess is that most of us have a reasonable idea about the answers we might get; particularly with regard to day-to-day service, customers expect a great deal. Largely this is because we have been very successful at delivering nearly uninterrupted service of very high-quality water. But with ever evolving information about the detection of contaminants in the environment, and their possible presence in water, our lack of knowledge about true health implications, and a popular media constantly driving for the dramatic story, understanding and accurately responding to customer concerns is ever more difficult. In some areas, aging infrastructure will continue to slowly degrade the nearly 100% service reliability customers have grown to expect, and the reinvestment costs to continue to meet that expectation will grow significantly.

In a major regional earthquake, many people will expect water to be

interrupted, but likely restored in a matter of days. In some earthquakes and in some places that will be possible. Where major facilities were built on poor soils, some of the potential earthquakes that can hit our region will wreak utter havoc. Again, what do customers expect? How long can people shelter in place without water coming to their homes? How prepared are any of us for a 3-day outage, or a 3 month outage? Or longer?

The recent Cascadia Rising earthquake exercise gave us a small glimpse into areas where we will struggle during the initial stages of an event. Multiple breaks may drain systems quickly, and transportation links will likely

be damaged, while every employee will have a first instinct to care for their families. We in the Regional Co-op have an opportunity to collectively evaluate the likely difficulties, and begin to work together on better understanding what Level of Service our customers truly expect in the wake of a major event, like the Cascadia Subduction Zone earthquake. As we better learn what the people we serve expect, we can lay out in front for all to see what investment we think will be required, and in what time, to move toward meeting those expectations. This will not be a short-term project.

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*Brett Wise*

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## President's Pipeline

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Whether the question is ensuring ongoing, reliable service or asking people to imagine the worst, and invest in reducing the impact of what they imagine, the first step is to understand the current state, followed by collectively setting expectations as accurately as we can—both ours and those of the people we serve.

Finally, we must reinforce the critical importance of individual preparedness, even as we shore up our organizational preparedness.

Chris McMeen  
Deputy Water  
Superintendent/  
Water Quality Manager  
*Tacoma Water*



### New Mailing Address

Regional Water Cooperative of Pierce County  
PO Box 111359  
Tacoma, WA 98411

[www.watercooperativeofpiercecounty.org](http://www.watercooperativeofpiercecounty.org)

## Lead and Copper in Drinking Water—No Flint, Michigan Issues Here!

Due to recent events in Flint Michigan and the growing public concern over the level of lead and copper content in potable water, Lakewood Water District has re-examined its historical data and methodology for complying with the Lead and Copper Rule (LCR) to be sure it is taking all steps to ensure the health and wellbeing of its customers.

The primary issue facing Flint and many east coast cities is the corrosiveness of water and the potential for leaching toxic metals, including lead and copper, into the water system. Corrosion will occur anywhere a galvanic cell or field can be established. To establish the field, all that is needed is two dissimilar metals that are connected directly or indirectly by an electrolyte such as water. The degree of corrosion in a potable water system is determined by the water's chemical make-up. The basic rule of thumb is the lower the pH, the more corrosive or "aggressive" the water. Hardness (as measured by the amount of Calcium Carbonate  $\text{CaCO}_3$ ) and temperature are also possible indicators of the aggressive potential of water.

The District's sole source of water is groundwater from 30 active wells. The District is fortunate to be able to draw from four different aquifers underlying its service boundary area. Therefore, water in any given water storage facility or portion of the distribution system or an individual customer's residence at any given time can be a blend from several different wells from up to four different aquifers. The overall

degree of blending is dependent upon time of day, time of year, system demand, and source availability. The District has installed continuous chlorine and pH analyzers at all storage and treatment facilities as well as several booster station facilities. The analyzers combined with the District's SCADA system provide real-time water quality monitoring capability.

Due to the blended nature of the water, the District calculates the average hardness to be on the low end of the "moderately hard" scale with a system average of 70 mg/L. The District's pH averages between 7.0 and 7.4 which is slightly alkaline. This combination of pH and hardness does not constitute aggressive or highly corrosive water, validating the fact the District's water has not historically had issues with extensive lead or copper corrosion. In fact, evidence from sampling data and the infrastructure Replacement and Rehabilitation (R&R) program suggests the pH and hardness combination stimulates the generation of a biofilm lining of pipes, thereby directly inhibiting any corrosive conductivity of the water.

Since the advent of the LCR, the District has been diligent in following its customer tap lead and copper sampling protocol. Since 2001, the highest lead test result from a customer tap is 0.004 mg/L (parts per million) or 4  $\mu\text{g/L}$  (parts per billion) with the sample average  $<0.002$  mg/L. The present Action Level for lead under the LCR is 0.015 mg/L or 15  $\mu\text{g/L}$ . The highest

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## Lead and Copper in Drinking Water— No Flint, Michigan Issues Here!

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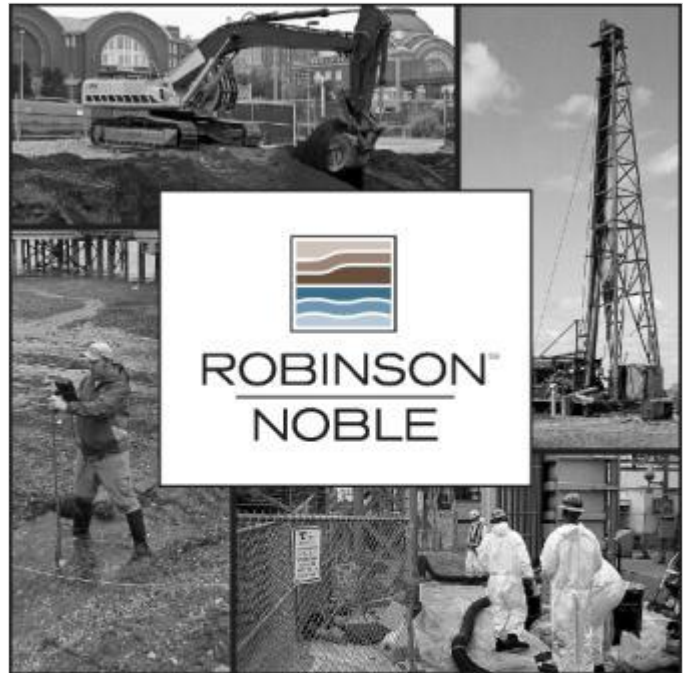
copper test result from a customer tap is 0.72 mg/L. The Action Level for copper is presently set at 1.3 mg/L. June 2014 test results show a copper sample average of 0.16 mg/L. The District employs an independent laboratory (Water Management in Tacoma) to process all its reporting samples. The lab sends the sample results directly to the Washington State Department of Health, thereby eliminating any potential possibility of tampering with or falsifying data by District personnel. Once the District receives the test results, it immediately sends the results to all customers who willingly participated in the program.

The District regularly conducts before-treatment Inorganic Compound (IOC) tests on its source wells. Lead and copper levels in the

raw water are two of the 29 elements sampled for in the IOC test. The average system-wide well source lead test results equal 0.002 mg/L, well below the LCR 0.015 mg/L Action Level. The highest result for copper in the test data equals 0.03 mg/L with the system average of <0.02 mg/L.

Can what happened in Flint happen in Lakewood? We believe it's very unlikely; State law specifically prohibits the District from changing its source water without conducting extensive testing to ensure there are no negative effects on the District's customer base. The District is committed to providing the highest quality water possible.

Dave Hall,  
Pumping, Treatment, and  
Storage Department Head  
*Lakewood Water District*



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**For additional information on lead and drinking water:**

<http://www.tpchd.org/environment/healthy-environment/lead/>

<http://www.mytpu.org/tacomawater/water-quality/new-information-on/>

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## Emergency Preparedness—Build a 3-day Kit

With the recent completion of the Cascadia Rising earthquake response drill, the idea of survivability is fresh on our minds. To that end, I thought I'd share some ideas I've gleaned from past discussions on and off the web about how to set up an emergency supply kit for your home and family. There are plenty of pre-made kits these days, available from Amazon or other on-line retailers. These can range from around \$30 for a 1-person backpack of supplies for your car up to almost a \$1,000 for a huge multi-person, 5-day supply. These kits usually include all the food, first-aid, and accessories you might want to have on hand in case of an emergency (of any kind) that leaves you without power and water. Often the only thing you'll need to add to the kit is supplies of potable water. (Some kits come with pint-size pouches of clean water as individual servings and these do well for consumption but won't supply water you'll need for cooking and sanitation.)

If you have specialized needs or just want to save some money, you can build your own kit. The Washington State Water and Sewer District Association (WASWD) undertook such an effort for its members a number of years ago and came up with this list of supplies:

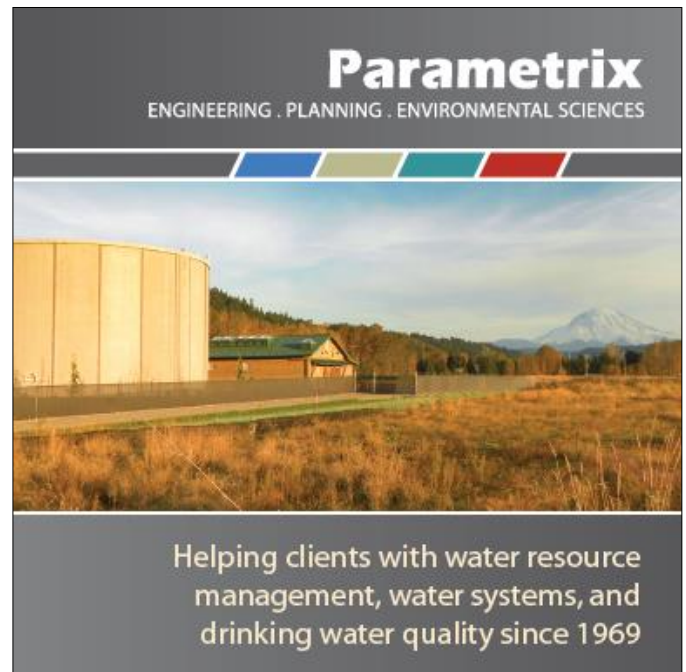
- Style 3024 - Red Duffel Bag
- Hand-cranked Radio

- Hand-cranked Flashlight-w/compass
- 8' Wide Sheeting, 6 mil thick-Clear plastic
- Duct Tape, 60 yard roll
- Gloves, Nitrile, 2 pair
- Dust Mask, 2
- Multi-Purpose Pocket Tool
- Knit Gloves, Large Pair (1)
- Whistle
- Knife
- Can Opener
- Waterproof Matches (2 pack)
- Candles, (2 -50 hour)
- MRE, 3-day Full Meal Pack (1)
- Food Bar, 3,600 calorie - (1 pack = 18 bars)
- Gas & water shut-off Tool
- OSHA First Aid Kit

Adding one gallon of water per person per day for three days then completes the kit. I put mine in a spare ice chest since keeping the bottles out of the light and in as temperature-controlled a condition as possible will help the longevity of the supply. As long as the bottles are unopened, they should be good for years.

Obviously, you should customize your kit to your specific needs. Suggested things to add include: over-the-counter pain killers or allergy medicine; garbage bags; toilet paper; diapers; rope or nylon cord; cards or small games to pass the time; additional food and water; rain gear and spare clothing.

Reviewing the contents of kits



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available on-line can provide a good sense of what to include. The Red Cross also provides a comprehensive list of kit materials here:

[Red Cross - Get a Kit](#)

Make sure your family knows where the kit is and understands what it's for. Check the kit annually and replace supplies that are at or past their expiration date.



Find a safe, accessible location for the kit, ideally somewhere it's not subject to large temperature changes.

Burt Clothier, LHG  
Robinson Noble, Inc.



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RWCPC August Meeting

# JOIN US FOR A BAR-B-Q

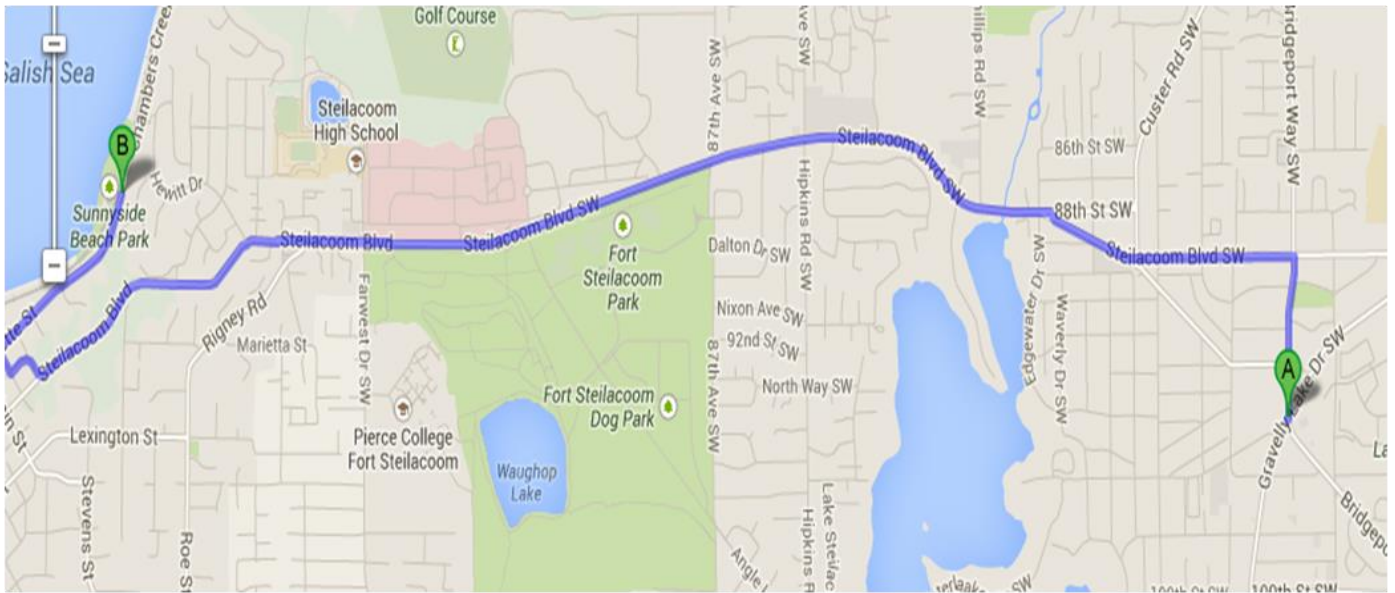
Thursday, August 11  
Noon to 4 pm

Sunnyside Beach Park  
2701 Chambers Creek Road  
Steilacoom, WA 98388

(see driving directions  
on next page)


We'll be drawing  
for door prizes!








RSVP by August 4, 2016  
to Kathy Crawford at  
[katmc@live.com](mailto:katmc@live.com)  
or call 360.431.2475



Parking is free for the Co-op, but please consider carpooling since the parking lot is not very large.

### Driving directions to Sunnyside Beach Park

**A** Lakewood, WA 

1. Head northeast on Gravelly Lake Dr SW toward Bridgeport Way SW 30 ft
-  2. Slight left onto Bridgeport Way SW 0.3 mi
-  3. Turn left onto Steilacoom Blvd SW 0.7 mi
-  4. Turn left to stay on Steilacoom Blvd SW 3.0 mi
-  5. Turn right onto Puyallup St 312 ft
-  6. Slight left onto Rainier St 295 ft
-  7. Take the 1st right onto Balch St 308 ft
-  8. Turn right onto Lafayette St 0.2 mi
9. Continue onto Chambers Creek Rd W  
Destination will be on the left 0.3 mi

**B** Sunnyside Beach Park  
Steilacoom, WA 98388