How AWWU Faired

- System Impact
- Situation Assessment
- Damages Sustained
- Public Response
- Next Steps
Mainline Breaks Impact our System
Remote Monitoring was invaluable in analyzing issues.
The Earthquake Impacted Eklutna Lake
Team AWWU devised tiered backup approach.

- Early Friday – MEA Power out. Eklutna on back-up power.
  - Limited diesel on site.
    - Line up fuel vendor and APD support for fuel delivery.
- Turn on wells to bolster production and meet demand
  - Backup power and disinfectant limitations could be barriers.
    - Engage contractor for assistance with fuel distribution.
    - Truck hypochlorite from Eklutna to critical well sites. (Long haul, limited supply)
- Expedite startup of Ship Creek Water Plant
  - Not quite ready for commissioning, but hypochlorite generation works.
    - Use Ship Creek as source for hypochlorite.
    - Create inventory for trucking.
Start with basic tools for identifying and communicating issues & prioritizing response.
Tracking and communication improved with cooperation through the day.

<table>
<thead>
<tr>
<th>Location</th>
<th>Issue</th>
<th>Status</th>
<th>Time Reported</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>8400 Stacey Circle</td>
<td>Leaking water main, possible hydrant</td>
<td>Crews onsite</td>
<td>5:26 PM</td>
<td>Water Main off - 10 customers without water</td>
</tr>
<tr>
<td>Post &amp; 3rd</td>
<td>Valve 45 flooding</td>
<td>Crews responding</td>
<td>4:30 PM</td>
<td>Water has been restored</td>
</tr>
<tr>
<td>6028 Fairweather</td>
<td>Groundwater</td>
<td>Crews responding</td>
<td></td>
<td>Resolved</td>
</tr>
<tr>
<td>Tudor &amp; New Seward</td>
<td>Main water break</td>
<td>Crews onsite</td>
<td></td>
<td>NO BREAK - FALSE ALARM</td>
</tr>
<tr>
<td>Boom &amp; McClaren</td>
<td>South of Dimond @ 88th LEAK</td>
<td>Herrera responding</td>
<td>5:35 PM</td>
<td>Small Leak - will check - could be ground water</td>
</tr>
<tr>
<td>Northwind &amp; Muldoon</td>
<td>Giant Hole - Lots of water (close to 32nd east end)</td>
<td>Crews Responding</td>
<td>5:19 PM</td>
<td>Engineering was to respond</td>
</tr>
<tr>
<td>Opal &amp; Ruby &amp; Arlene (Strawberry)</td>
<td>Water main break - Street Maint reported</td>
<td>Small Leak - left it on</td>
<td>5:19 PM</td>
<td>left running, small leak</td>
</tr>
<tr>
<td>Arctic &amp; 36th - Trail Court</td>
<td>Water main break</td>
<td>Crews Responding</td>
<td></td>
<td>Private system - pump house</td>
</tr>
<tr>
<td>Lily Pond</td>
<td>Break</td>
<td>Crews Responding</td>
<td></td>
<td>Hydrant almost off</td>
</tr>
<tr>
<td>Happy &amp; Folker</td>
<td>Hydrant is blowing full</td>
<td>Craig is responding</td>
<td>5:19 PM</td>
<td>Repaired and water restored at 2250 hrs, 11/30/18</td>
</tr>
<tr>
<td>forest villag drive, w. northern-lights</td>
<td>Main water break</td>
<td>Crews responded</td>
<td>11:17 AM</td>
<td>Isolated</td>
</tr>
<tr>
<td>Norm Drive</td>
<td>Main water break</td>
<td>Crews Responding</td>
<td>5:19 PM</td>
<td>Throttled and scheduled for dig tomorrow - true outage</td>
</tr>
<tr>
<td>Maplewood</td>
<td>Main water break</td>
<td>Chris says House</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eagle River Loop Bridge (Walmart)</td>
<td>12” ductile iron break - Northside - pipe is suspended from the bridge</td>
<td>Crews responded</td>
<td>11:30 AM</td>
<td>Water has been turned off</td>
</tr>
<tr>
<td>Ship Creek - Ulu Factory</td>
<td>Main water break/Private line ?</td>
<td>Crews onsite</td>
<td></td>
<td>Isolated</td>
</tr>
<tr>
<td>Lang Street - A5&amp;G</td>
<td>Fire line</td>
<td>Crews Responding</td>
<td>5:19 PM</td>
<td>Need to determine status</td>
</tr>
<tr>
<td>Rosehip Circle</td>
<td>Main water break - 31 Customers</td>
<td>Crews onsite</td>
<td>5:19 PM</td>
<td>Throttled down - will dig tomorrow</td>
</tr>
<tr>
<td>Gary Cooper Circle</td>
<td>Main water break</td>
<td>Crews Responding</td>
<td>5:19 PM</td>
<td>Ground Water - no leak</td>
</tr>
<tr>
<td>Elmore Road behind PM&amp;E- bldg</td>
<td>12 inch Main Water Break</td>
<td>Crews are responding</td>
<td>11:30 AM</td>
<td>12pm Under control</td>
</tr>
<tr>
<td>Brittany Circle – FoxHail</td>
<td>Hydrant break</td>
<td>Crews responded</td>
<td>11:43 AM</td>
<td>Hydrant is off</td>
</tr>
<tr>
<td>MLK</td>
<td>Main water break - Hydrant</td>
<td>Crews responded</td>
<td>11:36 AM</td>
<td>Combined with Elmore Issue</td>
</tr>
<tr>
<td>3131 Amber Bay Loop - Bayshore Elementary School</td>
<td>Main water break</td>
<td>Crews responding</td>
<td>5:26 PM</td>
<td>On property issue - Main line vale 34 off.</td>
</tr>
</tbody>
</table>
Better tools for collaboration quickly emerged by AWWU Innovators.
We had Breaks all Over Town!

Almost Everything is Fixed.
Field Service and Engineering confirmed and assessed reports of breaks from all over.
Water line breaks often have consequential damage to other facilities.
Response was rapid with emphasis on documentation.

MOA Bus Barn

- Main that provided Service to MOA Transit Administrative Office
- Needed Back in Service on 12/3
- Frawner worked through night
- 3-inch hole on bottom of pipe
- Building condition prevented service
Emergency Excavation – Aircraft Drive

- 12-inch water main pipe pulled out of joint from ground movement

Anchorage Water & Wastewater Utility Clearly
Emergency Excavation – Aircraft Drive

- Completing Repair & moving on to Nathan Dr., AC pipe break
Emergency Excavation – 2nd Cordova

- Shear break followed by AC pipe erosion
Emergency Excavation – 2nd Cordova

- Completing Repair & moving on to Desiree Lp., hydrant aux valve failure, working around the clock
Emergency Excavation – 1st Ave

- Earthquake caused system surge and subsequent pipe failure
- Removed corroded cast iron pipe and replaced with PVC
Emergency Excavation – Opal Sewer Service

- House settled and damaged the sewer service
- Homeowner hired contractor to repair their portion of sewer service
- We had to coordinate with homeowner and their contractor to connect to and repair our portion of the sewer service
Line breaks can be the source of contamination – We advised caution.

AWWU has issued a boiled water advisory out of precaution; however, there are no known water contamination issues. Our system has remained pressurized except for isolated areas we are in the process of identifying. If you have pressure to your home, you should be fine. We have no plans to shut down the entire water system. We will have isolated outages as we repair broken water mains. We will provide updates as they become available.

AWWU is investing to ensure reliable service and safeguard public health and the environment, long into the future. For more information and construction updates, visit www.AWWU.biz. We are also on Facebook and Twitter.

# # # #

For more Information:
Sandy Baker, Public Outreach Officer .............................................786-5636
Alyssa Farrar, Administrative Services Division Director ....................786-5589
Bacteriological samples need 24 +/- hours for incubation and analysis.

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**Public Service Announcement**

**Anchorage Water & Wastewater Utility**

Clearly Reliable

Aaron Dotson  
AWWU Board Chair  
Ethan Berkowitz  
Mayor, Municipality of Anchorage

December 2, 2018

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**-- AWWU Lifts Precautionary Boil Water Notice --**

The Anchorage Water & Wastewater Utility has completed water quality sampling and bacteriological testing throughout the Anchorage drinking water distribution system. Findings from those tests have confirmed that the water system is operating normally and was not contaminated as a result of the earthquake. As a result, AWWU is lifting the precautionary Boil Water Advisory. Water from your tap is safe for all uses.

Safe and reliable service for drinking water and fire protection is our primary concern. AWWU will continue sampling as a matter of quality control, especially in the areas where mainline breaks have occurred, for water quality assurance.

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**Press release was distributed by 1400**

**Final results came back at 1324 Sunday**

Anchorage Water & Wastewater Utility Clearly
We inspected all of our Facilities
Restricted Use –
• Structural issues exist at isolated locations ranging from concrete cracked, spalled, or failed concrete.
• Structural evaluations and scoping leading to repairs are in progress.

Eklutna Water Treatment Plant fully operational, despite structural issues.
Hyland Crest Booster Station (Eagle River)

- Broken CMU @ corners of structure.
- Roof has shifted.
Restricted Use –
- Overhead crane beam sheared-not connected on one end.
- Tension rods stretched and loose.
- Possible concrete spalling in 1 area. Suspended ceiling damaged.
- Cracks in drywall at seams and corners.
It isn't over ‘til it’s over.
Social media worked in both directions.

Anchorage Police Department @APDInfo · 20h
"Power is up, heat is on, communication lines are opening. For that you can thank your Alaskan neighbors - the highly capable men & women serving us around town as linemen, plumbers, pipefitters, operating engineers" - Municipal Manager Bill Falsey

@AWWU_Info Hello! With regard to boiling water, what is your advice for restaurants and retail food establishments in Anchorage? Thanks!
tweeted at 8:59 PM on Sat, Dec 01, 2018:
"We’re not aware of any actual [water] contamination. Out of an abundance of caution, we’ve issued an advisory that boiling water will provide assurance that the water is free of bacterial contaminants" - Municipal Manager Bill Falsey

Anchorage Police Department @APDInfo · 15h
"There is no water quality concern in Girdwood. There is no need to be boiling water there. In Anchorage & northern communities, the system is up & running."
- Municipal Manager Bill Falsey

Latest update from AWWU: There are no plans to shut down the entire water system but do expect isolated outages as they repair broken water mains. To stay updated, "Like" or "Follow" @AWWU_Info or text AWWU to 888777 to receive Nixle alerts to your cell phone.
tweeted at 5:03 PM on Sat, Dec 01, 2018:
"Everyone stepped up and took care of their community.

@AWWU_Info There's a water break in Pamela Joy Lowry park, water running across the trail

Anchorage Police Department @APDInfo · 1h
"There's a remote chance of some bacterial contamination from soils around the pipeline breaks. We have completed sampling of those waters today; we will have results on those samples tomorrow." - Municipal Manager Bill Falsey

Water & Wastewater Utility Clearly
We would like to thank your employees who were so helpful to us on Monday after the quake. We had leaking inside our house and the water shut off valve was not working so we needed to have the water turned off outside. Once we asked for help, we had help almost immediately at our front door. In the afternoon when we asked to have the water turned back on, the response again was immediate.

We know that your employees were very busy with other calls from people in need, so we really appreciated the quick response from your employees. We will be telling everyone about the great people working at Anchorage Water - you are the very best!!

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The community has shown its gratitude.

The #RedDoorRanch rode out the 7.0 #AlaskaEarthquake2018 with no damage! A huge #ThankYou to the @APDInfo @afdinfo @chugachelectric @ENSTARNatGas @AWWU_Info crews working hard to keep us safe! Look out for each other, check on your #neighbors, #care for your #community.

@APDInfo, @mayorethananc, @AWWU_Info, @AlaskaDOTPF: Thanks for keeping us informed! Extremely appreciated. #AkEarthquake

Hats off to @AWWU_Info crews working through the night to fix the water pipes!

It is an engineering marvel that even half of the bridge is still passable.

Thank you
Lessons Learned

Communications
- Radios – Radios we have a mounted in Trucks…Most work is done outside
- Satellite phones – They don’t work inside buildings
- Phone Bridges – You couldn’t have more than 20-people on
- Calling In Staff – Not all supervisors had phone numbers for direct staff

Training
- Incident Command Structure – New Staff Did not Have Training
- Hazard Response Plan – Needs updated and New Staff Trained
- Drills – We have done desktop exercises, but no “All Hands Type”

Resources
- Staging – Have the right equipment spread throughout town
- Food – What happens when you have something bigger?
- Fuel – Everyone is competing for the same resource

Documentation
- Getting the right stuff in place beforehand
THANKS FOR HAVING US!