



Boil Water Notice Customer Survey

Scott Bradway

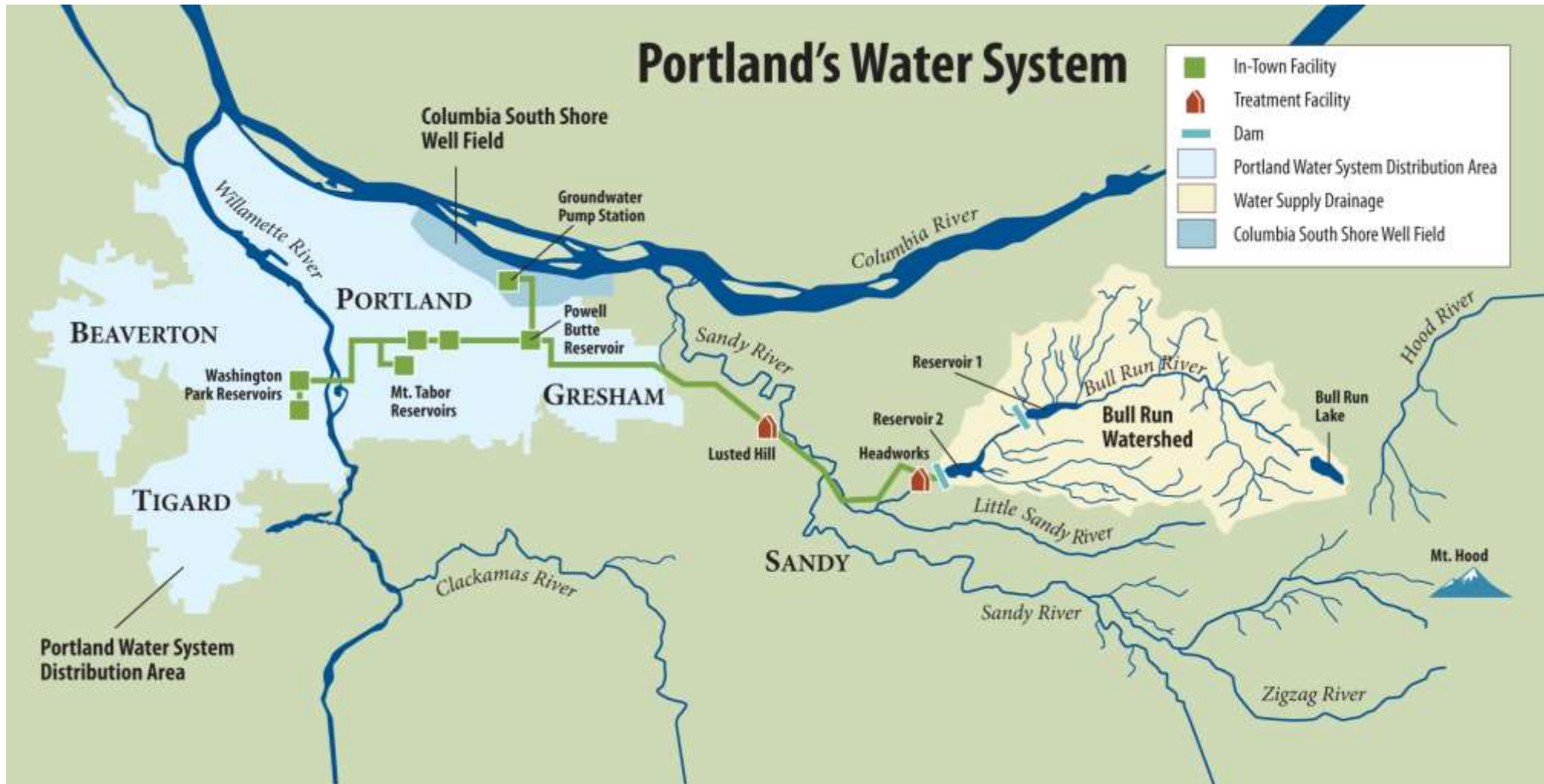
Water Quality Information Manager



Presentation Outline

- Portland's Water System
- May 2014 Boil Water Notice
- Customer Survey
- Lessons Learned/Challenges

Portland Water Bureau



Portland Boil Water Notice Customer Survey

Service Population & System



- Total service population of 957,000
- 585,000 retail
- 372,000 wholesale
- 20 wholesale customers

- 100 Million Gallons per Day average demand
- 70 tanks
- 39 pump stations
- 180 pressure zones
- 5 open finished water reservoirs

May 2014 *E. coli* detections

3 consecutive *E. coli* positives in distribution system,

May 21st :

Outlet Reservoir 1

May 22nd :

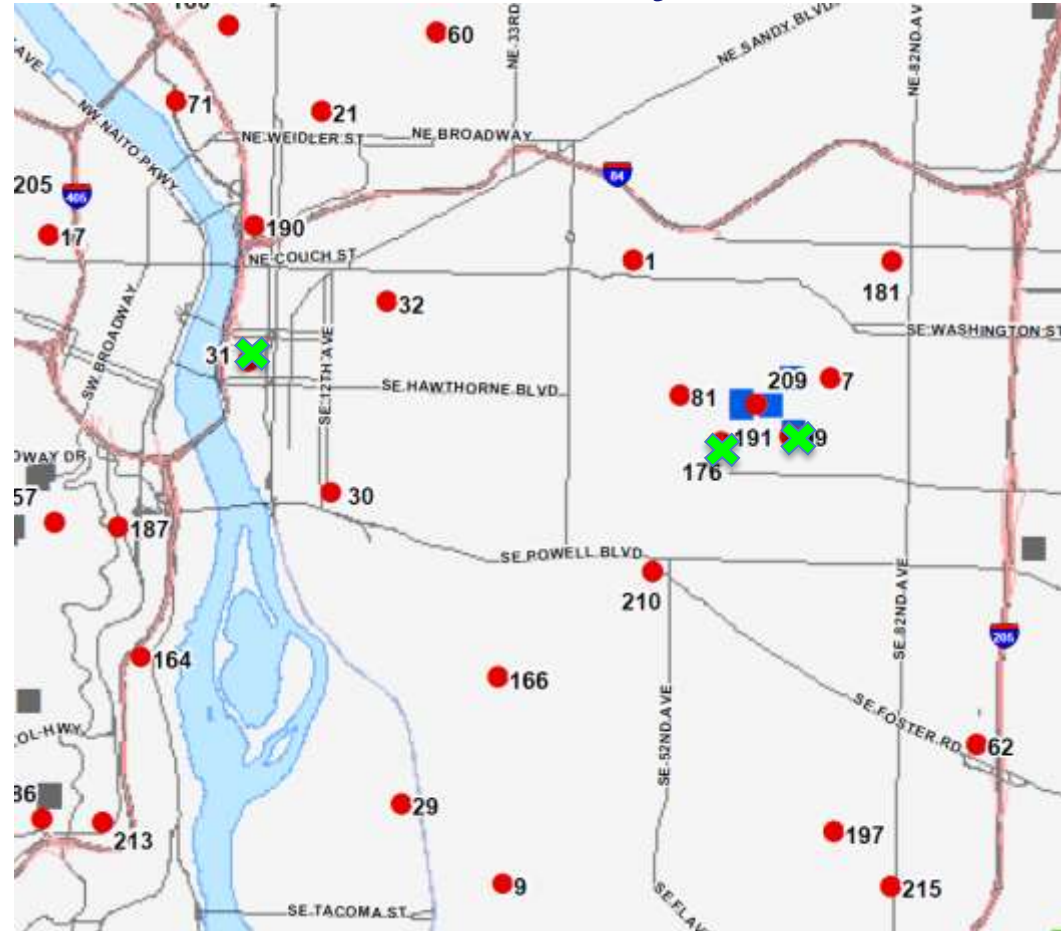
SE 2nd and Salmon

May 23rd :

Outlet Res. 5

10:00 Am May 23rd:

OHA requests Boil Water Advisory be issued .



Drinking Water Advisory

11:00 AM Friday May 23:

Approximately 1 hour after consultation with OHA,
Boil Water Alert Issued by:

- Press release issued to all local media.
- Posted on Water Bureau and City website.
- Press conference aired live on all major TV outlets.
- Social Media-Public Alerts.
- County and State Agriculture contacted licensees.
- PWB directly contacted vulnerable populations – Hospitals, schools, venues, clinics etc...

Drinking Water Advisory

At 11:00 am the following day after 63 clean samples the Boil Water Advisory was lifted:

- Rescind notice issued by same methods used to issue.

In total:

Twitter – 7,800 followers (1,200 new followers)

Facebook – 6 posts read by ~20,000 people

Public Alerts:

>460,000 phone calls initiated Friday and Saturday

Completed 4.5 hrs (done by 4pm Friday)

Approx. 7,000 emails and 4,000 texts each day

Customer Survey

19 Questions

- Demographics
- Resident or Business
- How they heard
- Actions they took

Based on survey developed by CDC Drinking Water Advisory Toolbox

Delivery and Response

Survey was open for about 3 weeks

- Received 2,983 responses

On Aug 14, 2014 Sent to all PWB e-Bill customers

- Approximately 13,120 emails sent
- Received almost 2,000 responses in first 48 hours after email sent

Posted on PWB Blog, Facebook, and Twitter

Sent to all Portland Neighborhood Associations

Did not see a significant increase in responses as a result of the emails sent to Neighborhood Associations

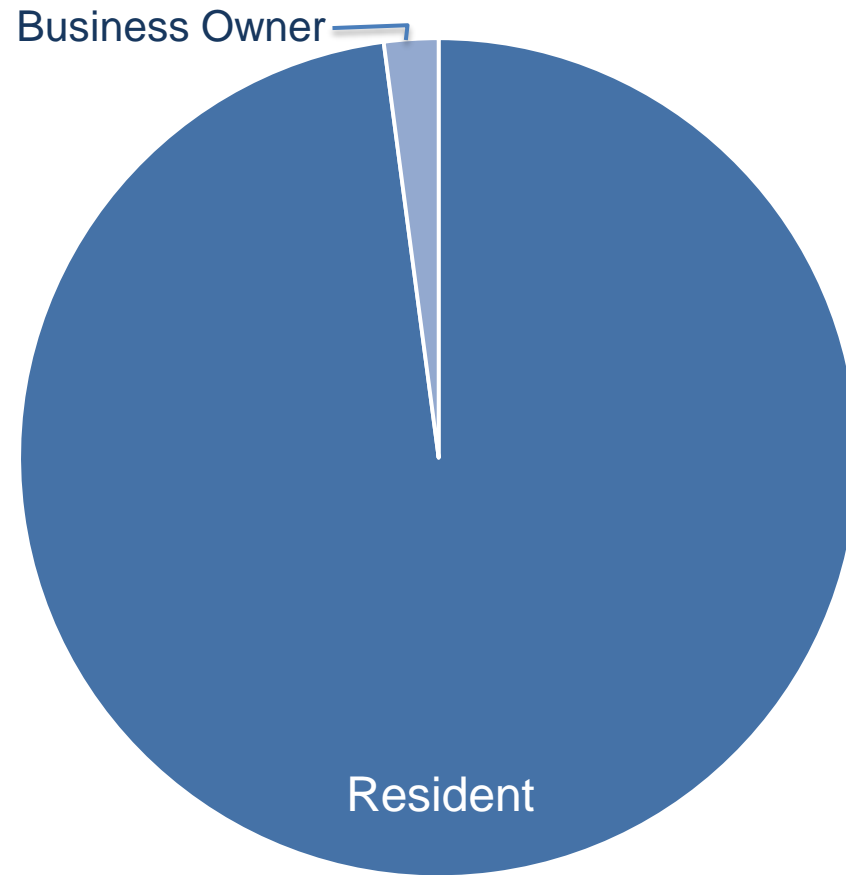
Disclaimer

Survey was not scientific

- Questions were not reviewed for bias
- Assuming most respondents were bill customers – very little low income, non bill paying customer responses
- English only
- Portland only

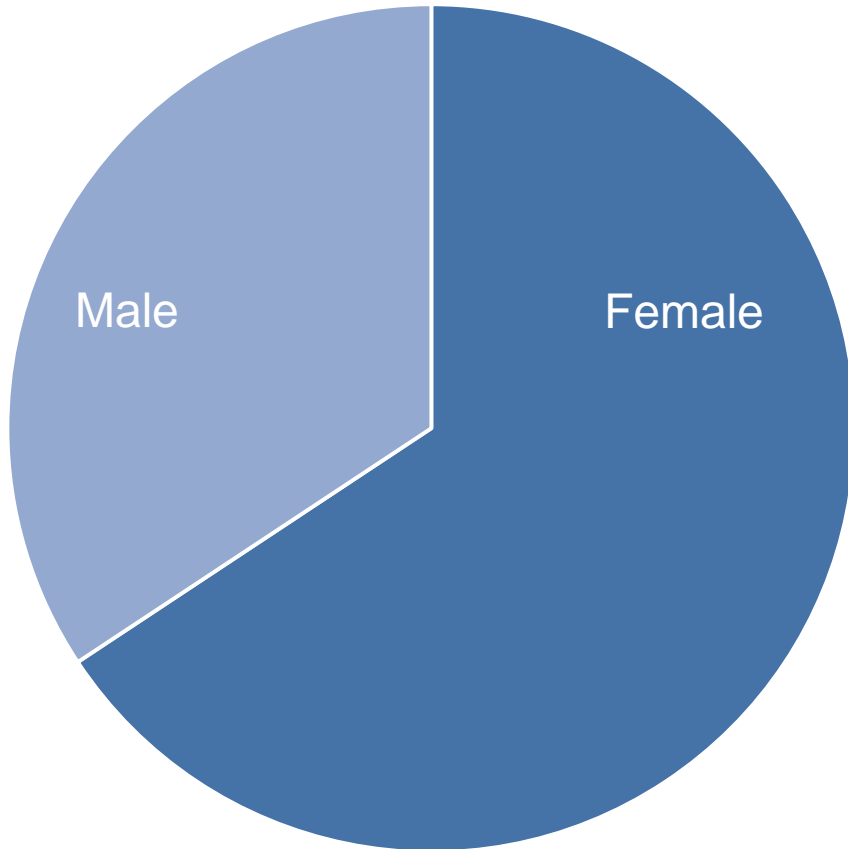
Demographics

Resident or Business Owner

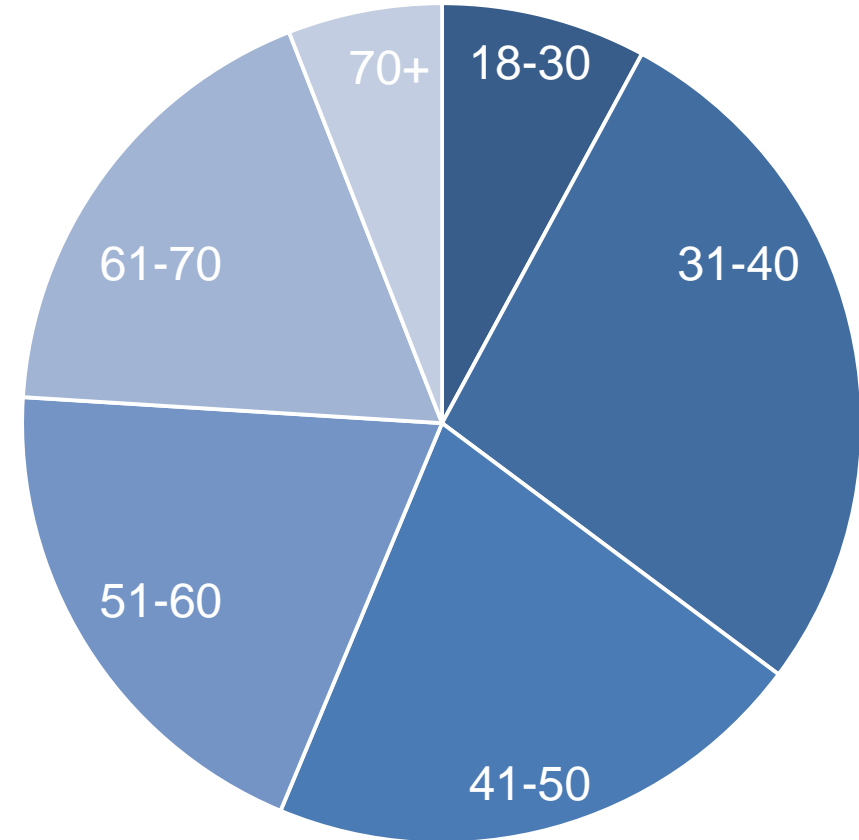


Demographics

Gender

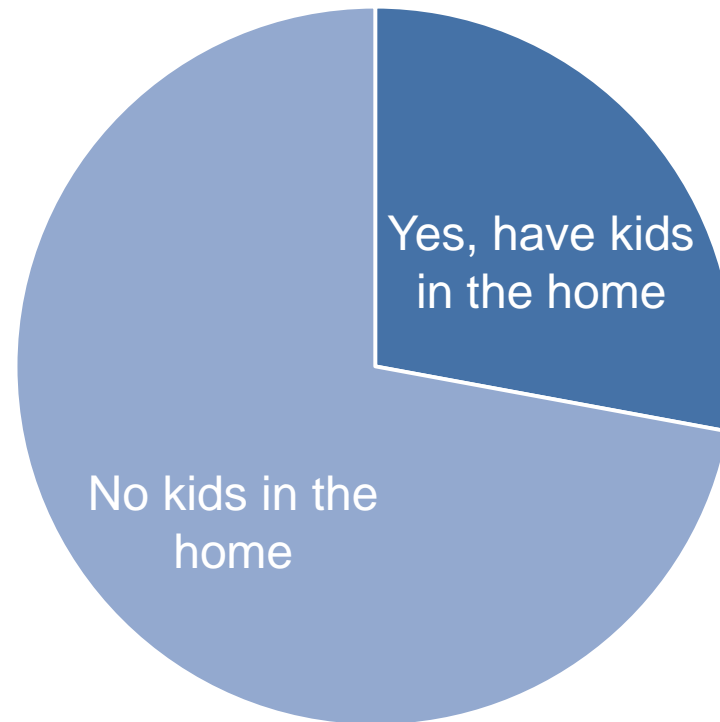


Age

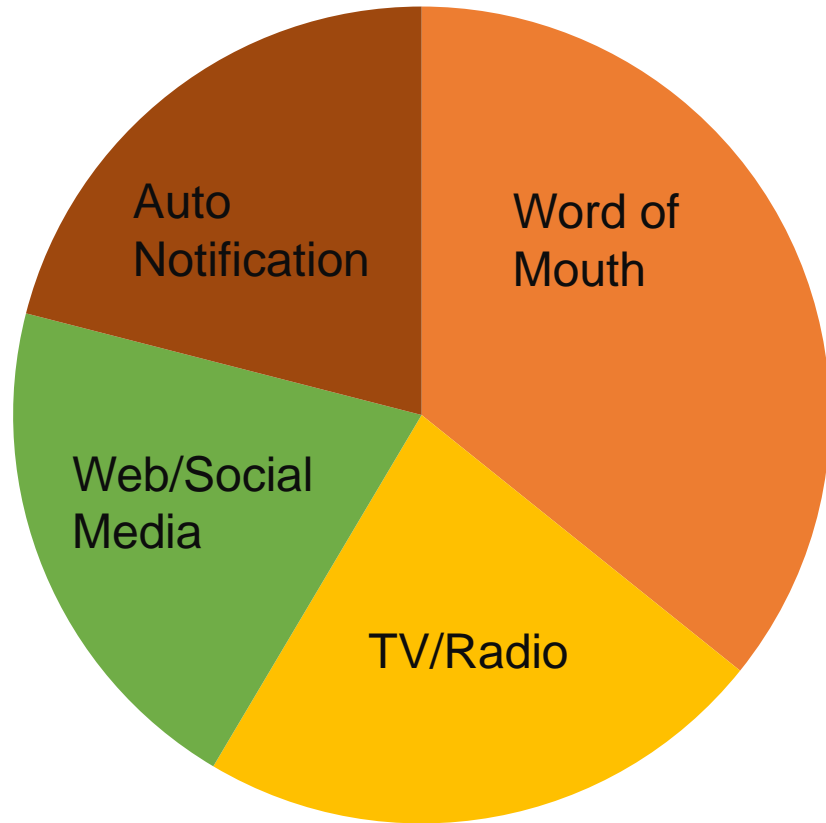


Demographics

Children under 18 in
the home?



Start of Event: How were you notified?



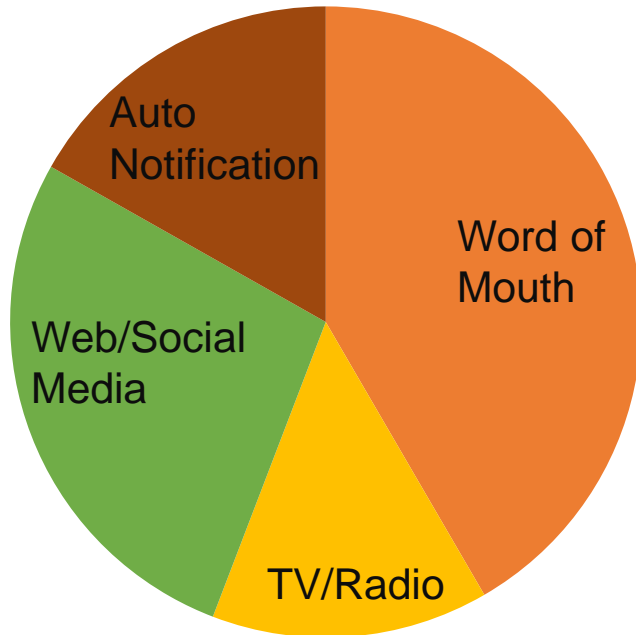
Radio/TV		
Source	Number	Percent
OPB (NPR)	197	40%
KGW (NBC)	87	17%
KATU (ABC)	46	9%

Web / Social Media		
Source	Number	Percent
Facebook	86	65%
Twitter	34	26%
Reddit	13	10%

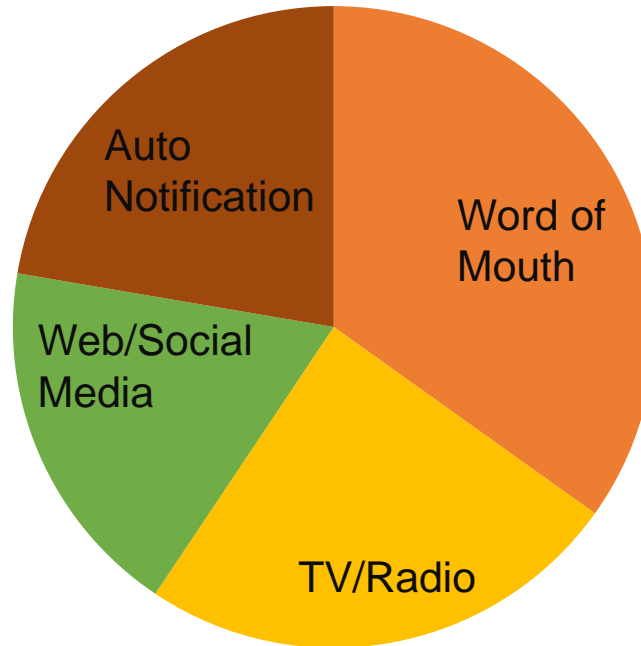
Auto Notification		
Source	Number	Percent
Phone-based notification (call or text)	242	76%
Other Alert system (work, school, etc)	72	23%

Start of Event: How were you notified?

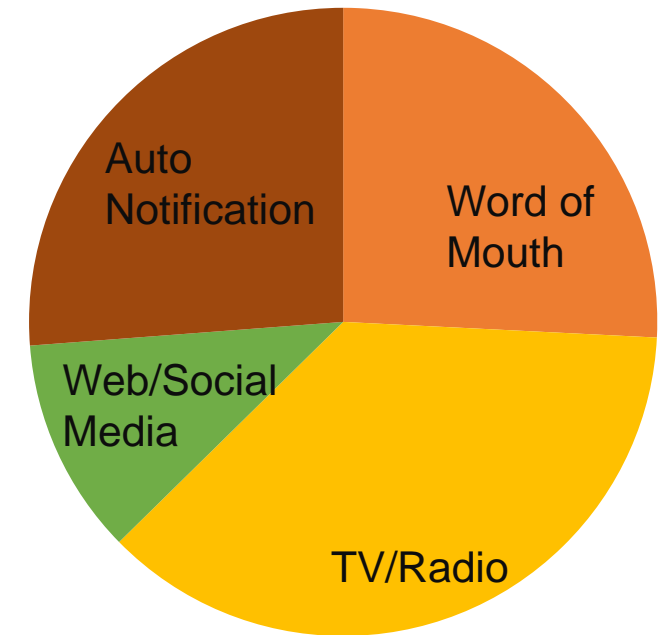
18-40 Age Group



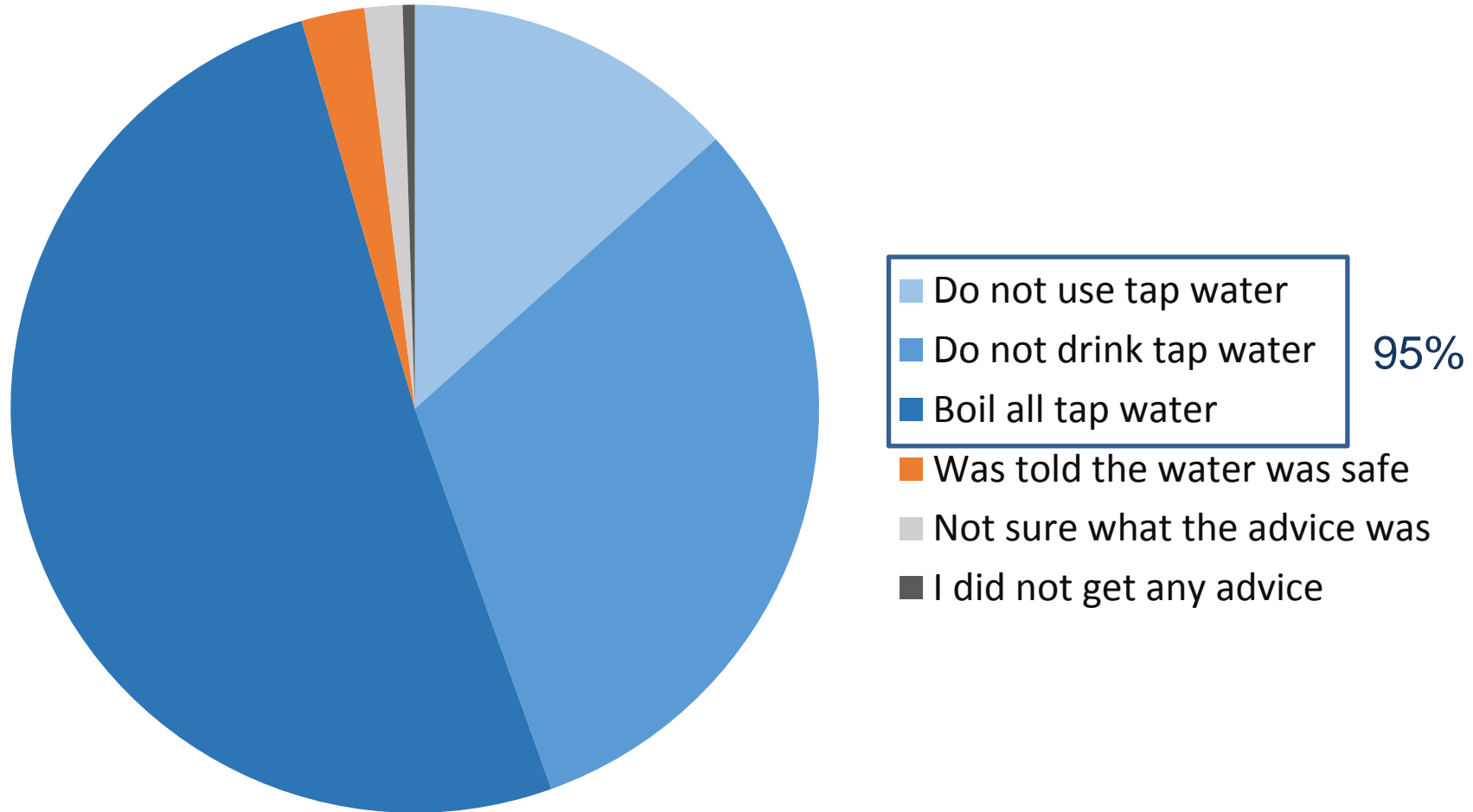
41-60 Age Group



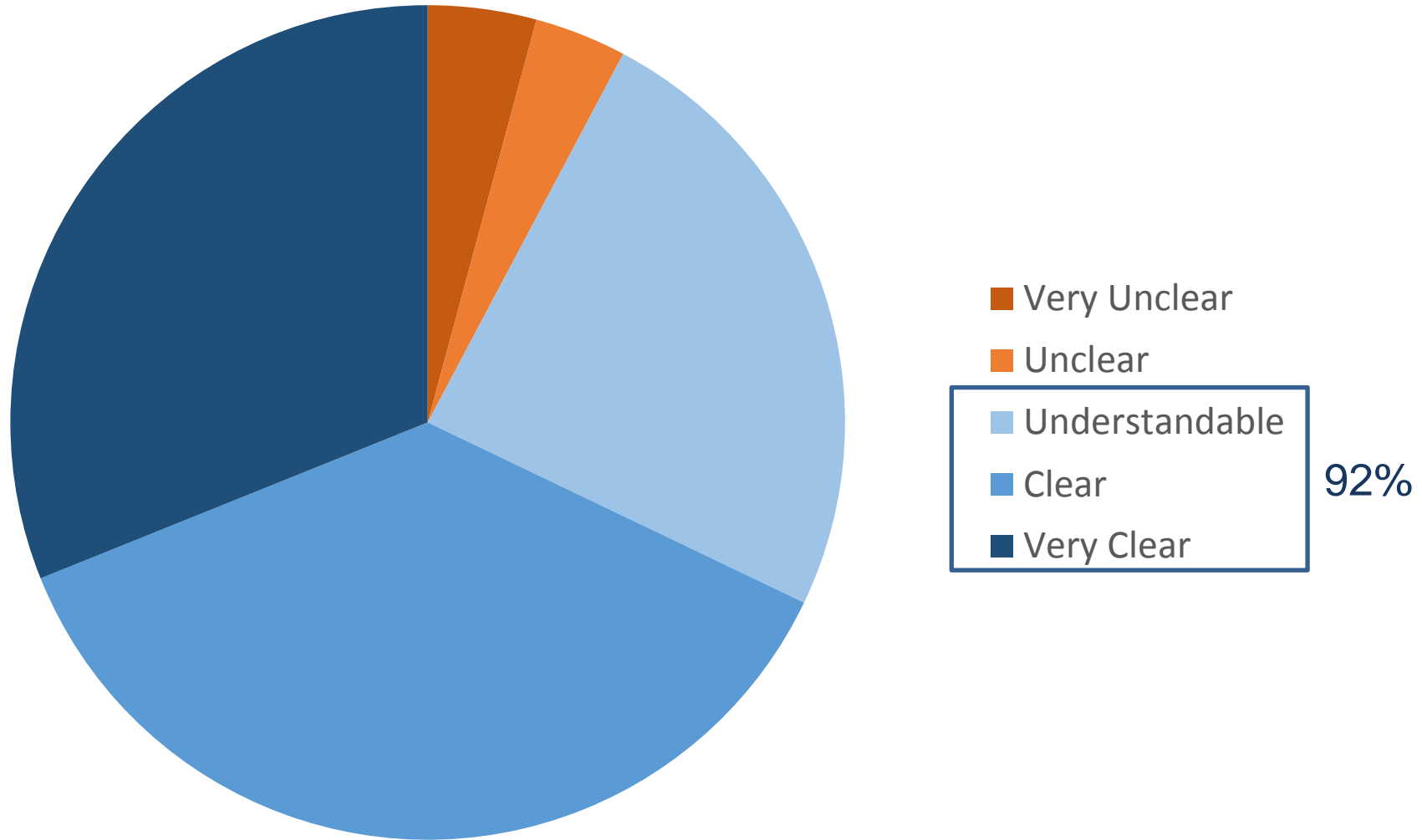
60+ Age Group



Start of Event: What advice did you get?

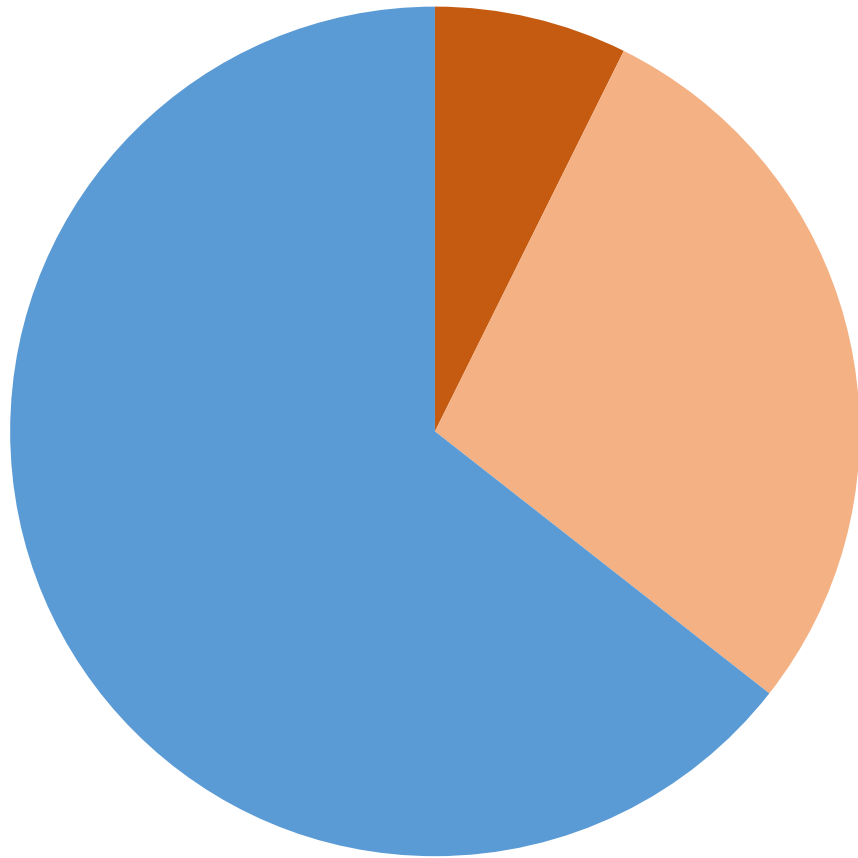


How clear was the advice about your tap water?

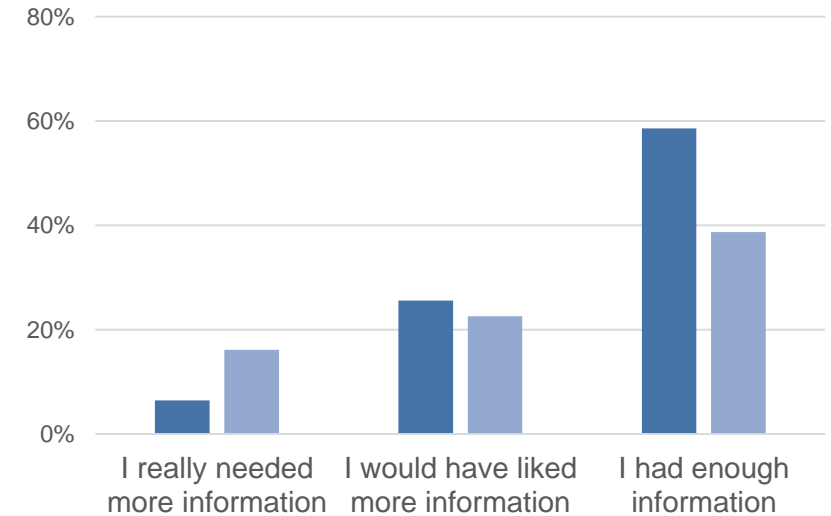


Portland Boil Water Notice Customer Survey

Did you want more information during the advisory?



- I really needed more information
- I would have liked more information
- I had enough information



- Home/Individual Resident
- Business Owner/Manager

Did you want more information during the advisory?

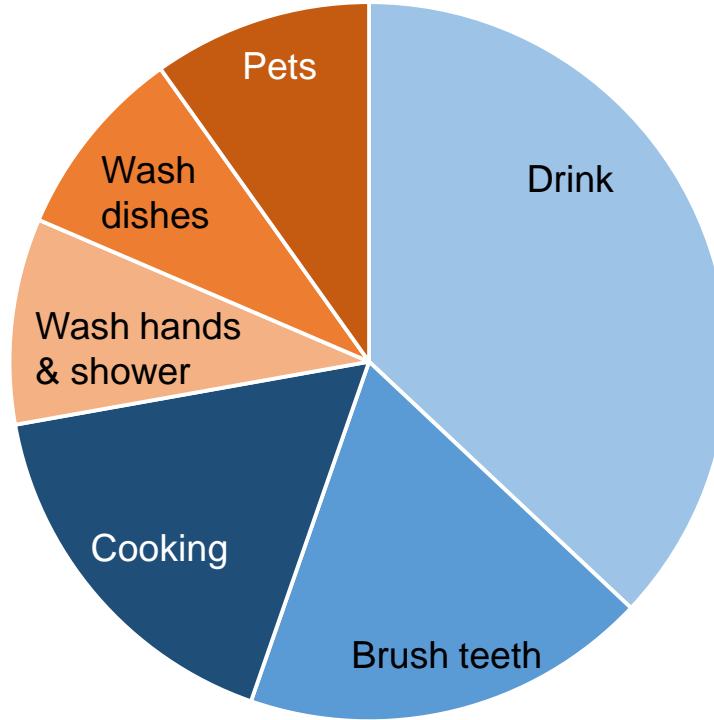
Topic	Count	Percent of total comments (806)
What to do	149	18%
Timely notification of BWN	139	17%
What happened	119	15%
Timely notification (general)	89	11%
Risk assessment/estimation	85	11%
Timely notification of contamination	75	9%
When ended and what to do	71	9%
Cause	64	8%
Testing/sampling schedule, dates, and details	59	7%
All information/accurate information	45	6%
Estimated length	44	5%
Location/affected area	37	5%
Preventative measures taken by PWB	31	4%
Regular updates	29	4%
Type of E. coli/contaminants	25	3%

Water Use

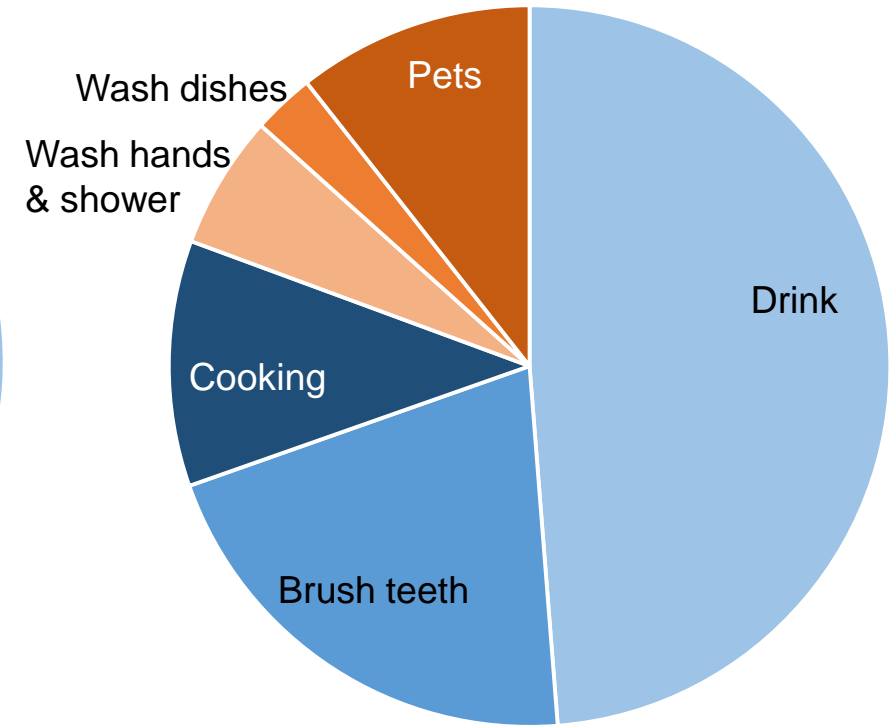
Tap Water Use



Boiled Water Use

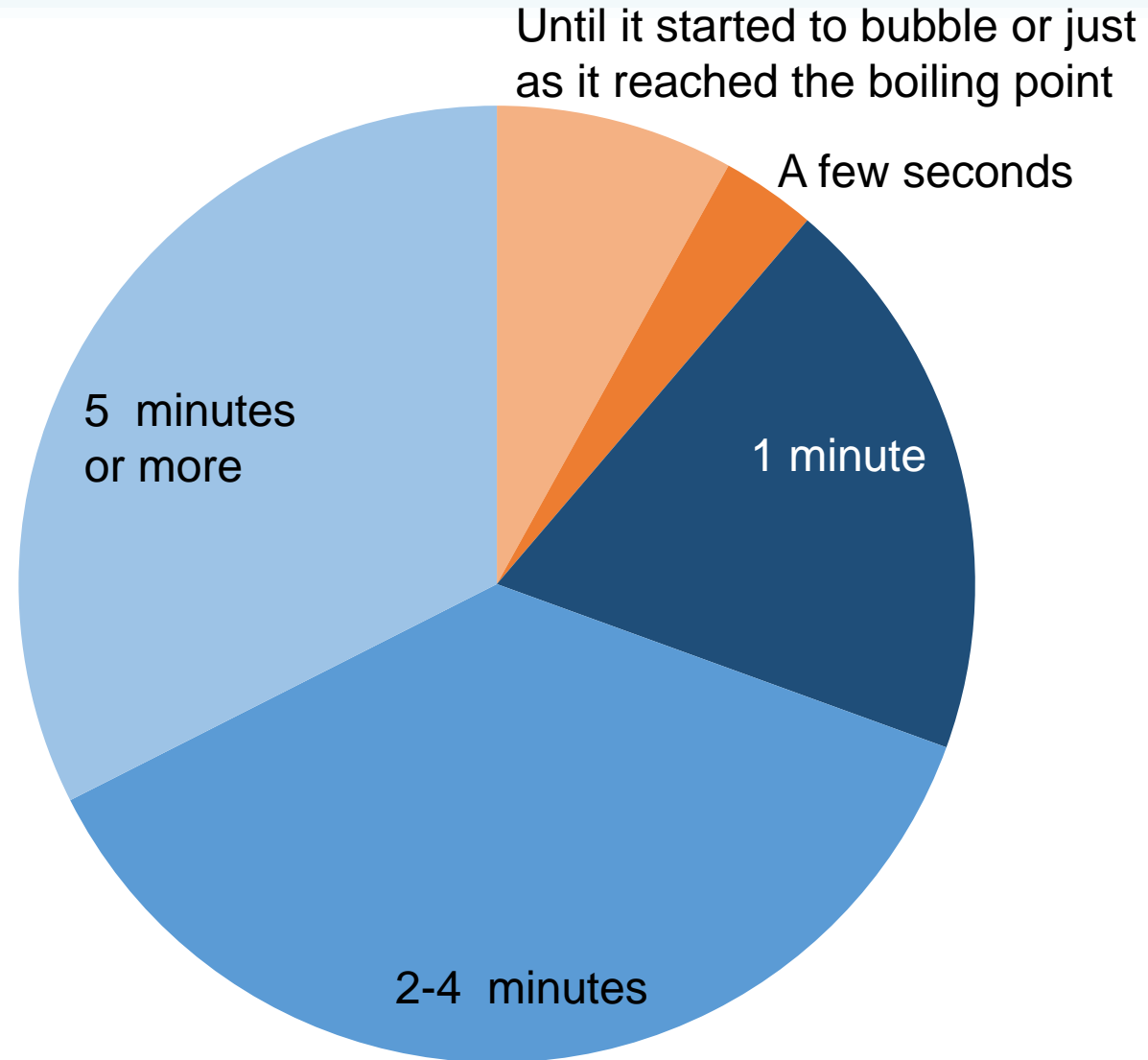


Bottled Water Use



Blue = compliance with instructions (good)
Orange = non-compliance (bad)

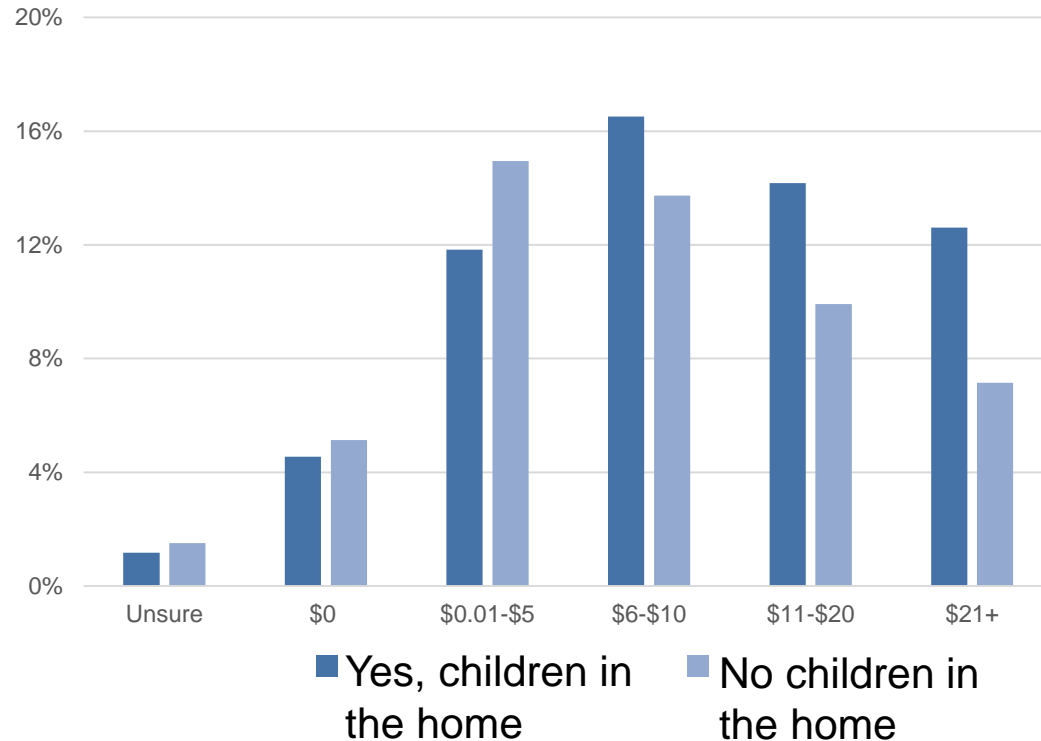
How long did you boil your water?



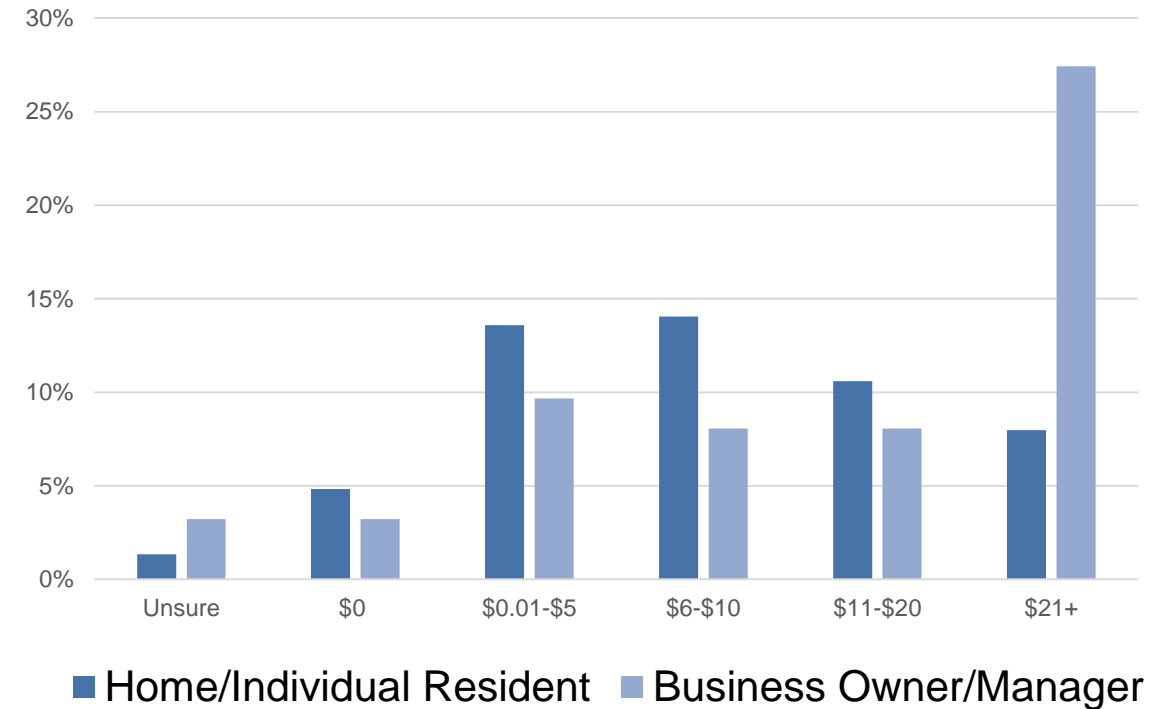
How much money did you spend on bottled water?

Average: \$20.22 spent on bottled water

Kids/No Kids in the Home



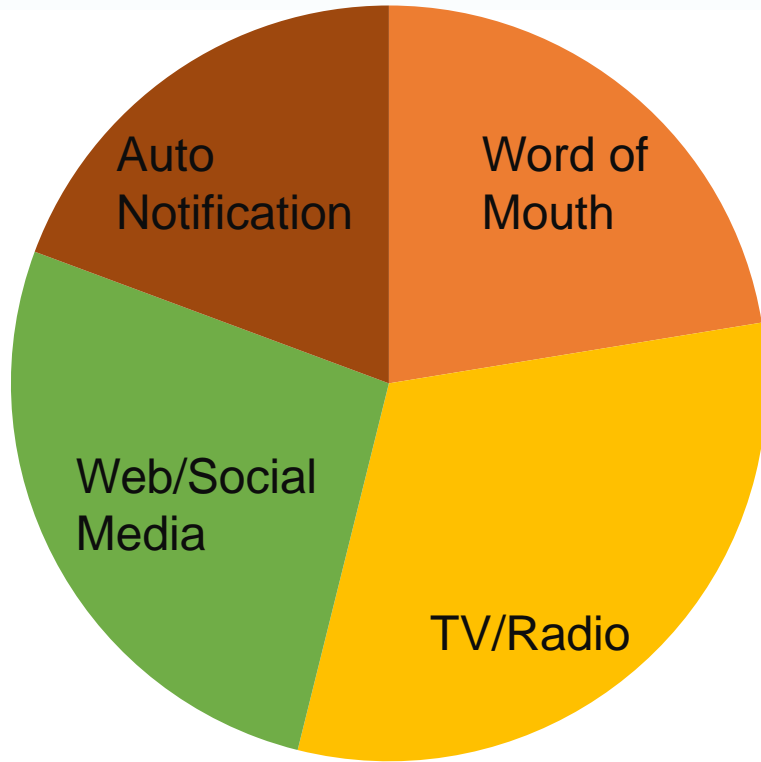
Resident/Business



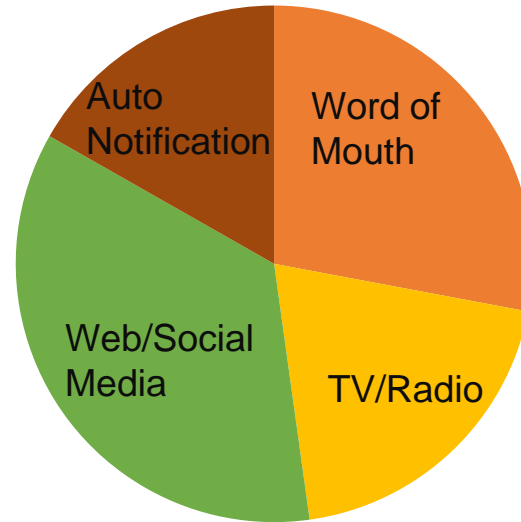
If you did not use boiled or bottled water, please explain why.

Comment	Count	Percent of Comments
Already using contaminated water and no effects and/or Did not think was a health threat	187	29%
Didn't know/forgot	71	11%
For non-consumption uses	51	8%
Does not trust PWB	47	7%
Had stored water	41	6%
Used camping water filter/another method	37	6%
Stores out of bottled water	27	4%
Buying bottled is waste of resources	23	4%
Other Comments	21	3%
Cost	17	3%

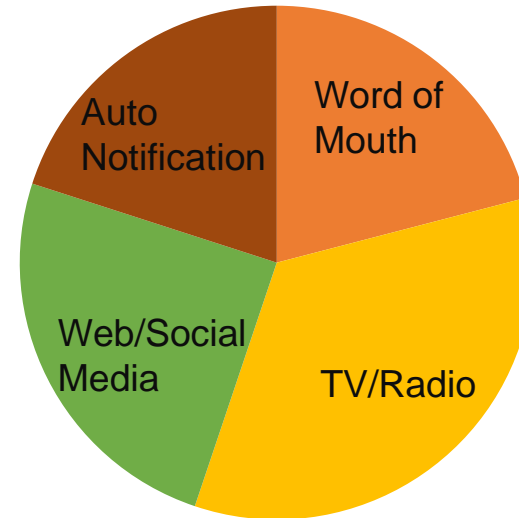
End of Event: How were you notified?



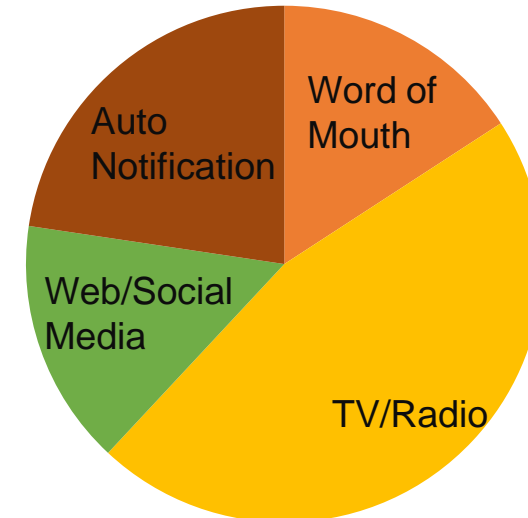
18-40 Age Group



41-60 Age Group

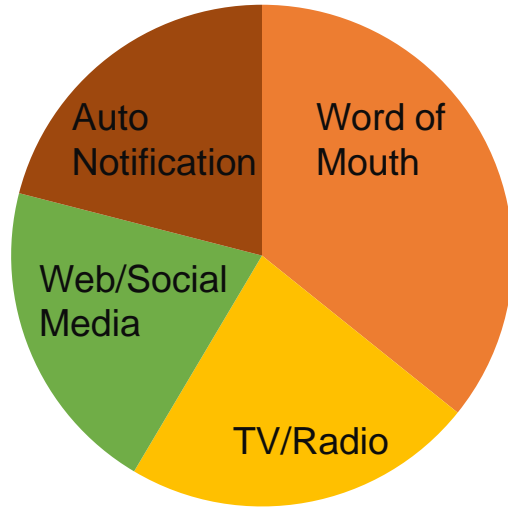


60+ Age Group

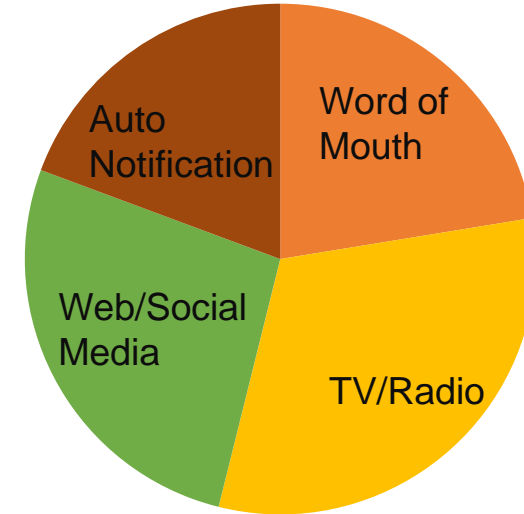


Start/End Comparison: How were you notified?

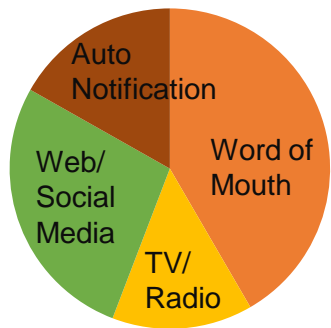
Start of Event



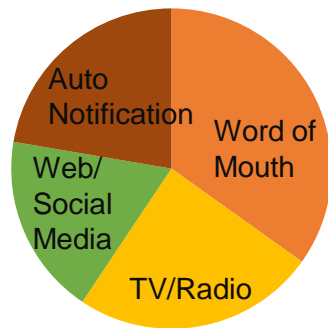
End of Event



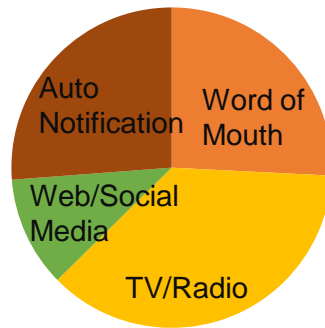
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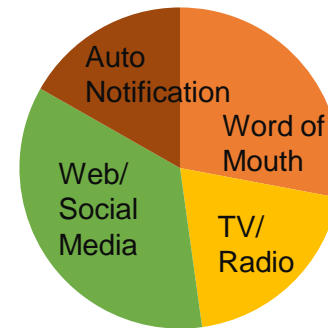
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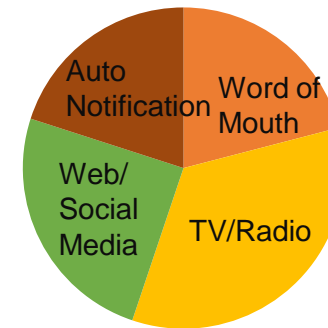
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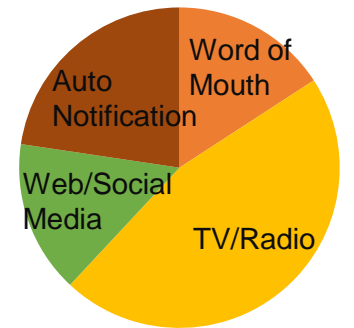
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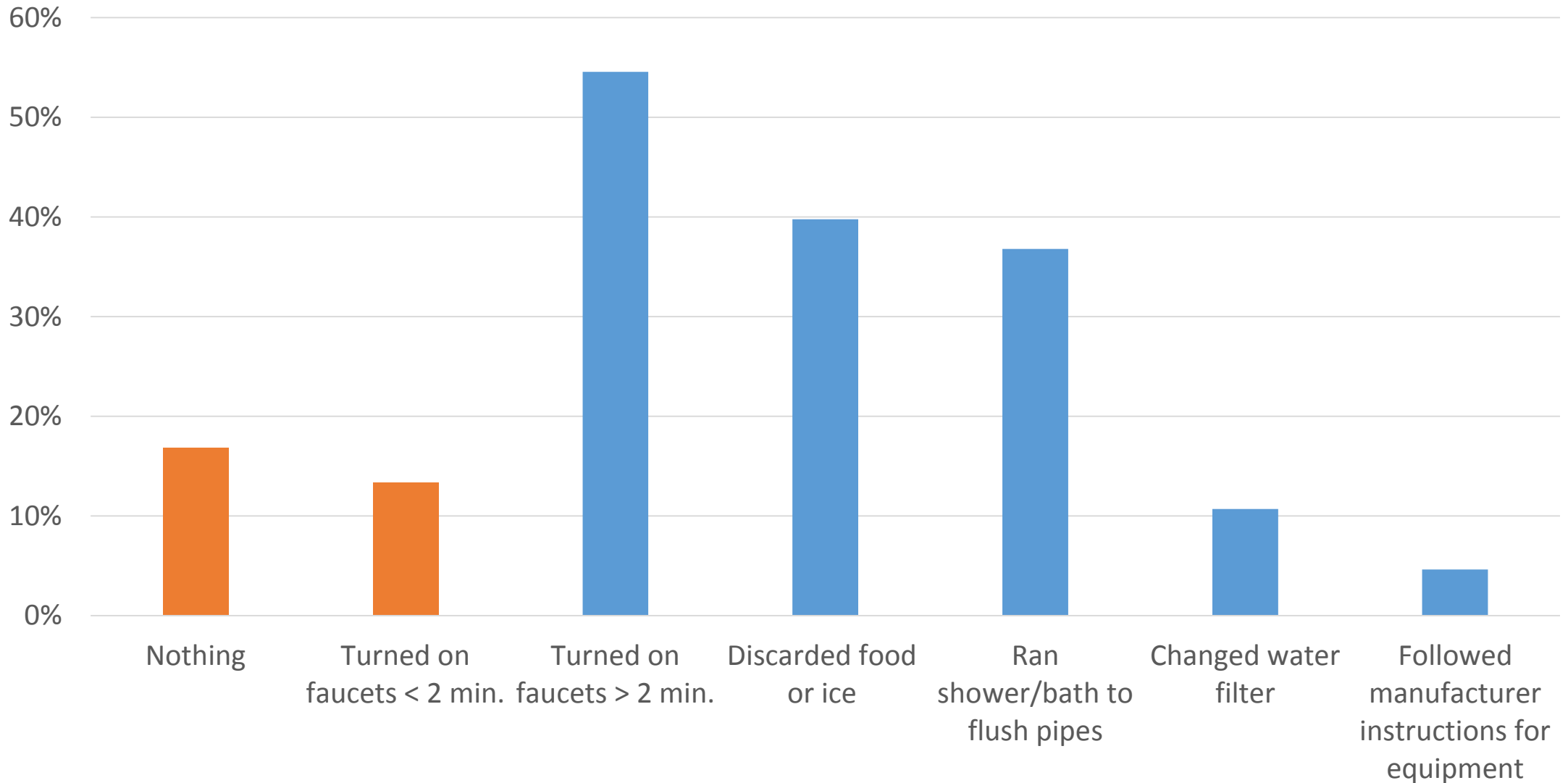
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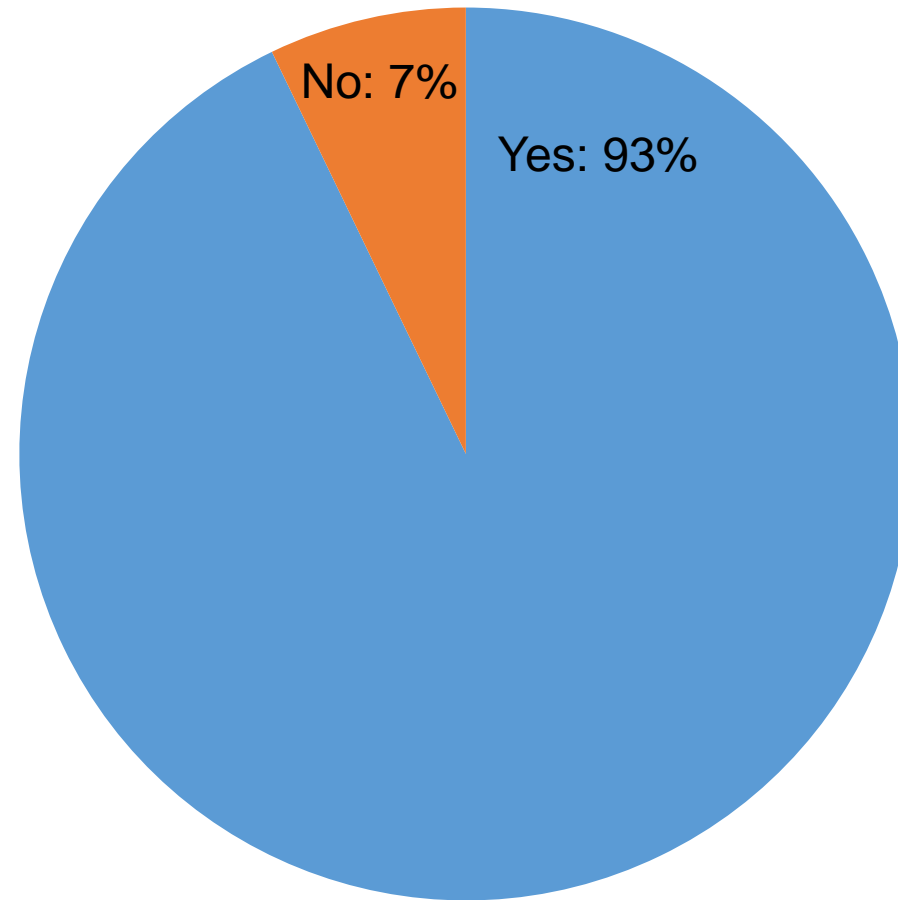
60+ Age Group



What actions did you take after the event?



After the event, did you resume normal water use?



Summary

Multiple outlets for messaging

Compliance was good

- Improve explanation of risk could improve compliance

Direct notification is not as effective as hoped –has disadvantages? Consider WEA and other new technology

Reduced customer confidence

Questions?



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