March 30, 2022

### City of Bellevue Emergency Water Supply Master Plan

**Survey Report** 



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### Introduction



### Purpose

The City of Bellevue Utilities Department is responsible for providing the high-quality drinking water that residential and business customers rely on every day. We take pride in making sure our water service is dependable, a good value, and delivered with the customer in mind.

After a severe earthquake, Bellevue's water supply may be completely unavailable for 3 weeks, followed by a long recovery period with only partial local service for several months. To prepare for this threat, the City is developing an Emergency Water Supply Master Plan. The Master Plan will guide how we improve our system over the coming decades, to shorten recovery time and reduce earthquake impacts to the community.

As the City develops the Master Plan, we wanted to hear from the community. It is important that the City's plan matches our community's priorities. The City of Bellevue hired PRR to conduct a survey to hear the community's thoughts and concerns to help inform how we move forward.

### What will the Master Plan accomplish?

To prepare for these threats to Bellevue's water system and supply, the Master Plan will help the City accomplish the following objectives:

- Identify water system risks and potential impacts to the community
- Establish long-term goals for improved water system performance, and minimum levels of service after an event
- Propose mitigation actions and investment levels to improve resiliency over the next 50-years

Potential improvements may include adding more emergency groundwater wells, constructing a resilient "backbone" of more resilient pipes, adjusting the City's existing program to replace aging water mains, and other potential improvements.

For more information about the Emergency Water Supply Master Plan, go to: <a href="https://bellevuewa.gov/city-government/departments/utilities/utilities-projects-plans-standards/capital-projects/emergency">https://bellevuewa.gov/city-government/departments/utilities/utilities-projects-plans-standards/capital-projects/emergency</a>

### **Data Collection**

### **Recruitment and Fielding**

A random sample of 5,000 residents received two postcard invitations, arriving about one week apart, to take the online survey. The City of Bellevue also advertised the survey on social media, in their newsletter, with flyers, with online ads, through Community Based Organizations, and on the City website. The survey was available online in English, Chinese (simplified), Russian, Korean, Spanish, and Vietnamese, and invitations included all six languages.



<sup>\*</sup> Note: 41 people who are not a City of Bellevue water customer (includes residents of Hilltop, Trail's End and Beaux Arts) responded to the survey. We included their responses with the residential customers as they did not significantly influence the results.

### **Data Analysis**

#### Charts

Quantitative data in this report is mostly presented in charts. Percentage totals in some charts may add up to more or less than 100% due to rounding or if respondents were able to provide multiple responses. Additionally, the total number of respondents varies from chart to chart based on how many people answered each question. As part of the survey design, respondents may skip questions or see different questions based on their previous responses.

#### Quotes

This report includes summaries and exemplary quotes for open-ended responses. Quotes provide a mix of responses that are examples of a category and show the range of opinions shared. All quotes include demographic information provided by the respondents to better contextualize their comments.

### Demographic analysis

This demographics section compares respondents to the whole City of Bellevue water service, including Clyde Hill, Hunts Point, Medina, and Yarrow Point).

### PRR used analysis of variance (ANOVA) to examine relationships.

To examine relationships between survey responses and to compare differences by demographic background, PRR used analysis of variance (ANOVA), which allows for statistical comparisons across multiple groups.

### This report only describes relationships that are statistically significant.

When something is statistically significant, it means it is highly unlikely to be the result of random chance. To achieve the cut-off for statistical significance, estimates must have a 0.05 significance level (a 95 percent confidence level), and a coefficient of +/- 0.15, indicating a relatively strong association.



### **Key Findings**

### **Key Findings from Residential Customers**

- Few people are prepared for an emergency.
  - Only 20% of Bellevue residential customers have at least one week of emergency drinking water prepared at home.
- Most respondents (77%) said it is very important that the City of Bellevue increase its ability to provide drinking water in the event of a major disaster.
- Most residents would be reliant on the City of Bellevue or other agencies for water within days of a major disaster.
- Most respondents prefer to pay just \$3 or \$5 per month for emergency water supply infrastructure improvements.
  - More than a third of respondents have concerns about the cost or affordability of paying more to improve the infrastructure.
  - Some residents are happy to pay more.

### **Key Findings from Residential and Commercial Customers**

There is consensus that the priority order for emergency service restoration is:

- 1 First responders
- 2 Community recovery centers
- 3 Essential businesses
- 4 Commercial and multifamily residential neighborhoods
- 5 Low-density, single-family neighborhoods

### **Key Findings from Commercial Customers**

- Most would be reliant on the City or other agencies for water soon after a major disaster.
- Most commercial customers would need to reduce services or close without water after a major disaster.

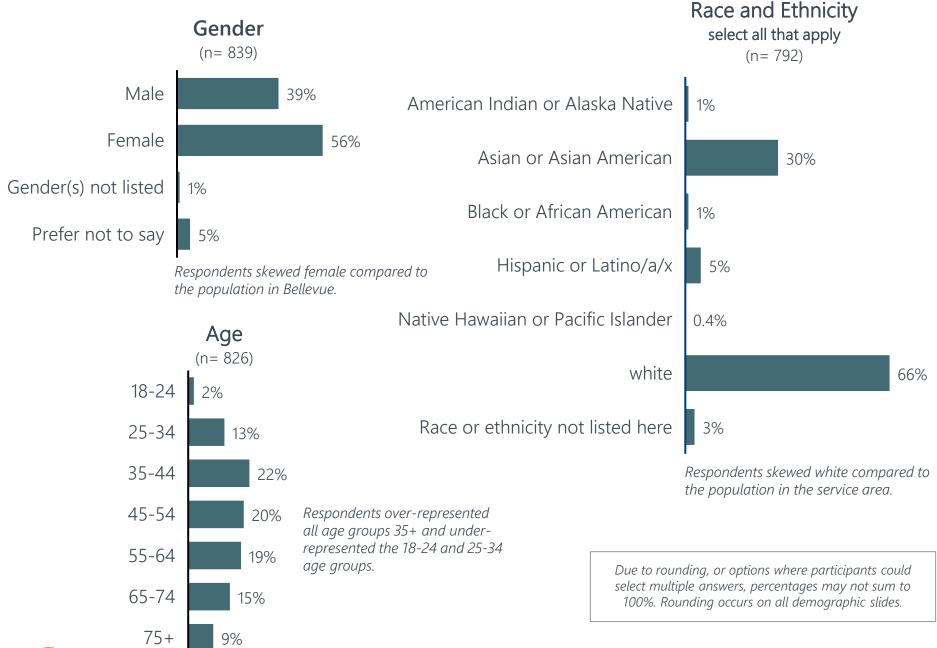


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### Residential Customer Demographic Profile

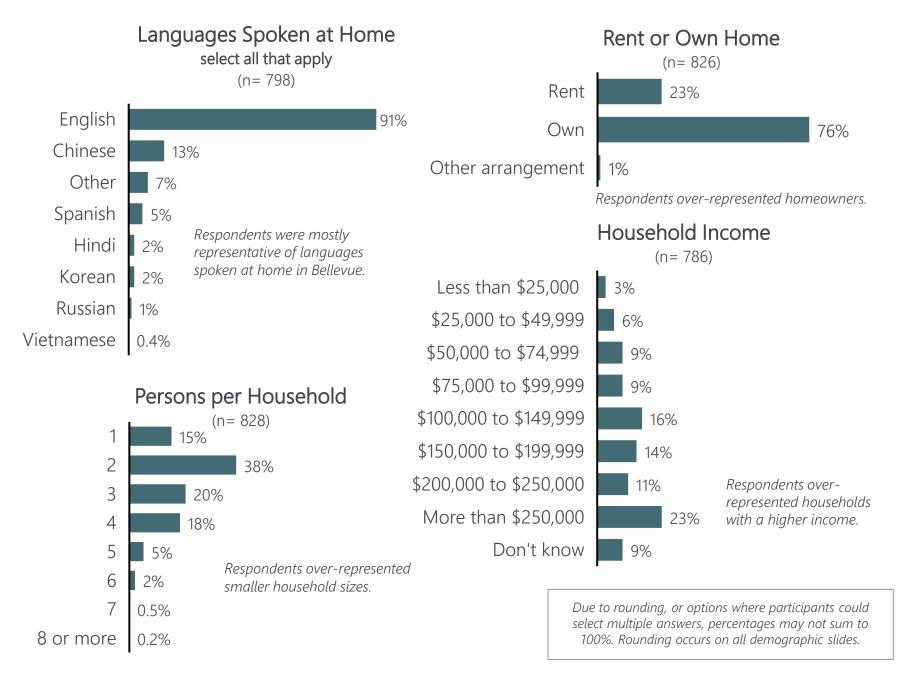


### Residential Customer Demographic Profile – Part 1





### Residential Customer Demographic Profile – Part 2



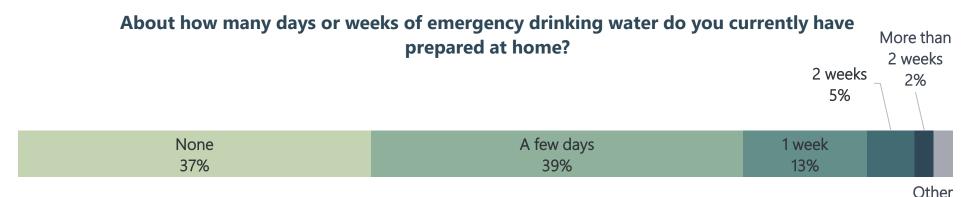


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# Residential Customer Findings



### Only 20% of Bellevue residential customers have at least one week of emergency drinking water prepared at home.



Overall, the level of preparedness among residential customers is low. While many respondents said they have at least a few days of emergency drinking water at home, few were prepared for a longer emergency.

- 37% said they have no emergency drinking water
- Only 20% of residential customers said their supplies would last at least one week.
- Only 5% were prepared for 2 weeks and only 2% were prepared for more than 2 weeks.

Additionally, 6% of respondents said they have a special need for water or know someone else who does. These needs included CPAP machines, dialysis, medical devices, infant formula, and caring for children or elderly persons.

Respondents who selected "other" said they hoped to get drinking water from other sources.

"We have a fishpond that could supply us with water to boil."

"Two days and 580 gallons in storage on external tanks with life straws for each household member"

"Unless we have water in our hot water tank available"

"We have a day or two of bottled water. We also have a 'waterBOB' to store water in our bathtub if we have advanced warning."

"We have a small seasonal stream nearby that we could filter water from"

"We have a portable filtration system for each family member. As long as we have access to water, we can filter it for weeks for each person."

Some mentioned having very limited supplies.

"One or two days only"

"Only have a bit of sparkling water and soda to drink"



2%

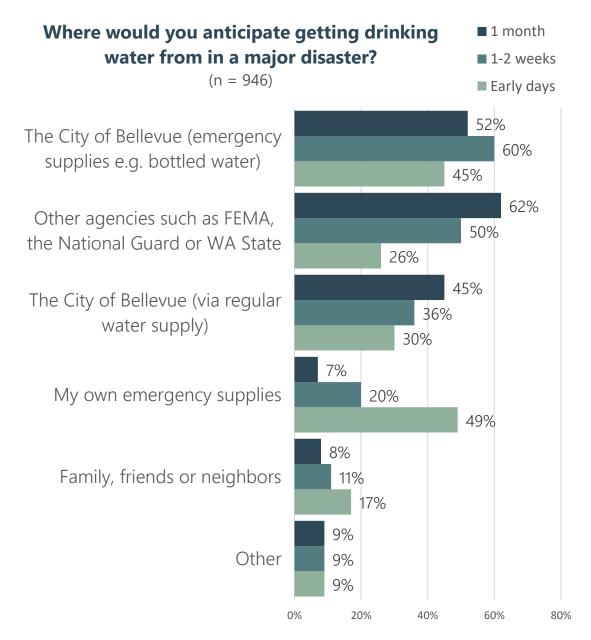
### Most respondents expect the City of Bellevue to provide drinking water throughout a major disaster.

While almost half of respondents anticipate using their own emergency drinking water supply in the early days of a major disaster, by 1-2 weeks in, 60% of respondents expect the City of Bellevue to provide emergency supplies.

Half of the respondents expect other agencies to provide water by 1-2 weeks into a major disaster, and 62% expect that support from other agencies by a month into a major disaster.

Respondents who selected "other" listed these examples for where they would get drinking water after a major disaster:

- Boiling water from Coal Creek or Lake Sammamish
- Bottled water from the grocery store
- Use their own camping water filters (e.g., LifeStraw)
- Use water from household hot water tank, toilet, swimming pool, etc.
- Collect rainwater on their property





### Most would be willing to pay an extra \$3 or \$5 per month to make emergency water preparedness improvements.

There was no consensus on how much residents were willing to pay for these improvements.

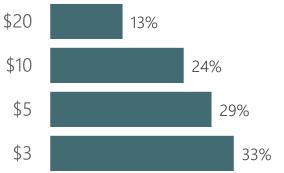
- The most popular option was a third of respondents would be willing to pay \$3 per month. However, when asked for more information about why they chose that option, 31 of the 288 respondents who chose the \$3 option said they would prefer to not pay for improvements.
- The \$5 option was a close second place and followed by the \$10 option in third place, selected by about a quarter of the respondents..

Responses to a question about why they chose each option revealed:

- Some said that knowing more about how the additional funding would be spent and how fast these improvements could happen would impact how much they are willing to pay.
- Respondents who have high utility bills, especially those who identified themselves as low-income or retired, were concerned about the additional costs.
- Some respondents wanted more information about the city's current water budget.
- A few respondents suggested the additional fees be proportionate to household incomes.

## How much are you willing to pay (monthly) to make these improvements?

(n = 829)



What people were willing to pay varied somewhat based on household income. For example, respondents with households below \$50k per year were willing to pay about \$5 per month on average. However, respondents in households with incomes greater than \$50k per year were willing to pay about \$8 per month on average.



## Of the 456 people who responded to an open-ended question about why they would pay that much, most selected an amount they said was affordable or reasonable (44%) or not a concern (13%). They tended to choose \$5 or more.

Common themes included:

- Willing to pay an amount that felt reasonable
- Can afford to pay more

\$20 "I can afford it and believe in proactive emergency planning."

- female, 45-54, \$100k to \$149k

\$10 "Hard to say without timeline vs cost, but with water being essential, I think we need to be prepared." – female, white, 65-74, \$75k to \$99k

\$5 "All I can afford" – did not answer demographic questions

\$10 "Our infrastructure needs as much help as it can get." – gender(s) not listed, Asian or Asian American, 25-34, \$100k to \$149k

 Interested in making the investment because this is so important

\$20 "Advance planning for critical infrastructure is a necessity" - male, white, 65-74, \$75k to \$199k

\$5 "We could afford more but I'm basing it on a more affordable number for all." – female, 45-54

\$10 "I'm seriously concerned about the threat of a major earthquake." – male, white, 35-44,. \$250k+

\$20 "I want faster recovery for all of us.." – female, Asian or Asian American, 45-54, \$100k to \$149k

\$20 "If 100% will go to the improvements we are willing to pay more." – female, Asian or Asian American, 35-44, \$250k+



## More than a third (37%) who responded to the open-ended question had concerns about cost or affordability. Most of these respondents chose the \$3 option.

Common themes included:

- Already paying a lot for water
- Wondering why there aren't existing funds sufficient to cover the cost
- The cost of living in Bellevue is high, so any additional costs are a financial burden
- Concerns about the impact on low-income residents

Many of these themes were echoed in the social media post responses in the Appendix.

\$3 "\$0/month. Those costs should already be taken into account." – male, white, 35-44, \$50k to \$74k

\$3 "Minimal as I think current funds could be better utilized and allocated." – male, white, 65-74, \$75k to \$99k

\$3 "too old to be around much longer." – male, white, 75+, \$150k to \$199k

\$3 "We are a low-income family so it's hard to add extra costs in the budget." – female, Hispanic or Latino/a/x, 25-34, <\$25k

\$3 "Any additional amount will be financially difficult at this time, but this is critical." – female, white, 55-64, \$100k to \$149k

\$3 "Water bill is extraordinarily high already in Bellevue." — male, race(s) not listed, 65-74, \$100k to \$149k

\$3 "I pay a lot as it is being on limited income." – female, white, 65-74, \$25k to \$50k

\$3 "The question assumes we must increase rates. And if it must be so, I'd start low, but I would hope that other sources (grants, federal funds earmarked for infrastructure, reallocation of existing city funds) have been explored first." – male, white, 45-54, \$150k to \$199k



## Some (12%) who responded to the open-ended question requested more details before committing to spending more. Most of these respondents mostly were willing to pay \$3 or \$5, but some would pay more.

Respondents' opinions highlight the importance of transparency and communication when planning improvements to the water system.

Most respondents are willing to pay extra for emergency preparedness if they know how the money will be spent, and how quickly they can expect the infrastructure improvements to be made.

\$3 "Our bills are already astronomical. What improvements are you planning? People need to know before answering this question." – female, 65-74

\$3 "I already pay a ridiculously high bill for water/sewer/runoff, and the nation just passed a major infrastructure bill. The choices above are useless without knowing context: what would each level of additional charges buy us?" – male, Asian or Asian American and white, 65-74, \$100k to \$149k

\$5 "Since I don't know your current budget and how you spend our current tax dollars, it's hard to answer. Also worry about low- and fixed-income residents. " – female, white, 65-74

\$3 "I would prefer a complete plan outlook and detail funding report to support fully with the amount requested."

— female, Asian or Asian American, 45-54, \$50k to \$74k

\$3 "I would like to see a plan if I have to pay more. What kind of improvements can we expect and how quickly?" – female, Asian or Asian American, 65-74, >\$250k

\$20 "It's important - but I also wonder how the money would be spent." - female, white, 65-74, \$150k to \$199k

\$5 "I need to see the plan and what the additional funds would buy before committing more." – female, white, 65-74, \$200k to \$250k



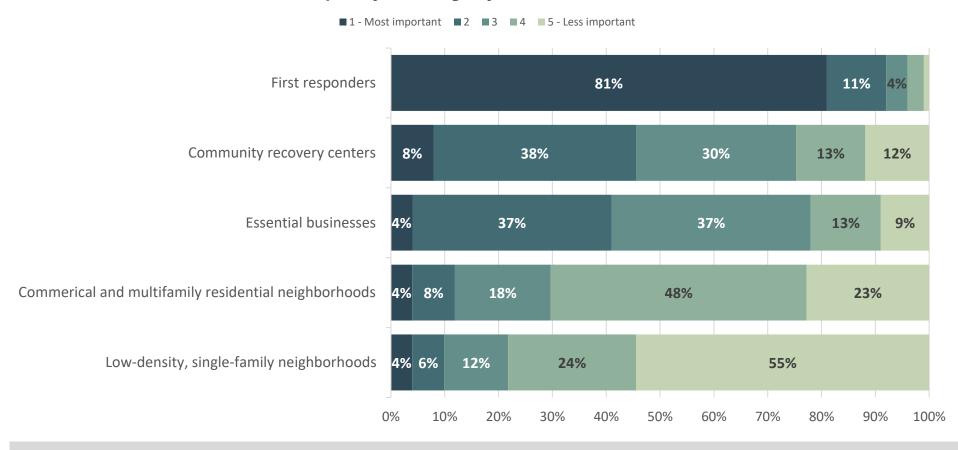
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# Residential and Commercial Customer Findings



There is general agreement among both residential and commercial customers that first responders should have the highest priority for emergency service restoration in the event of a major disaster.

Please rank importance from 1 (most important) to 5 (less important) which customers should have priority for emergency service restoration.

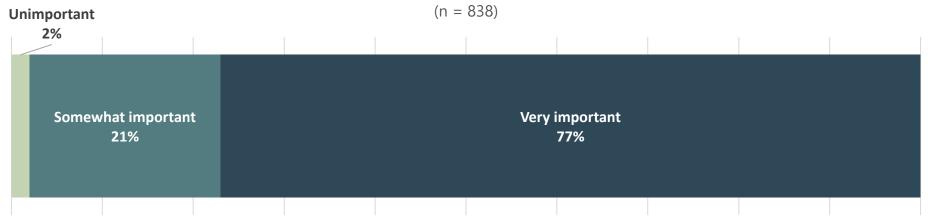


We asked this questions of both residential and commercial customers. Since there was consensus across both customer communities, we reported the responses together.



The overwhelming majority (77%) of respondents believe it is very important the City increase its ability to provide drinking water in the event of a major disaster





We asked this questions of both residential and commercial customers. Since there was consensus across both customer communities, we reported the responses together.



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# Commercial Customer Findings

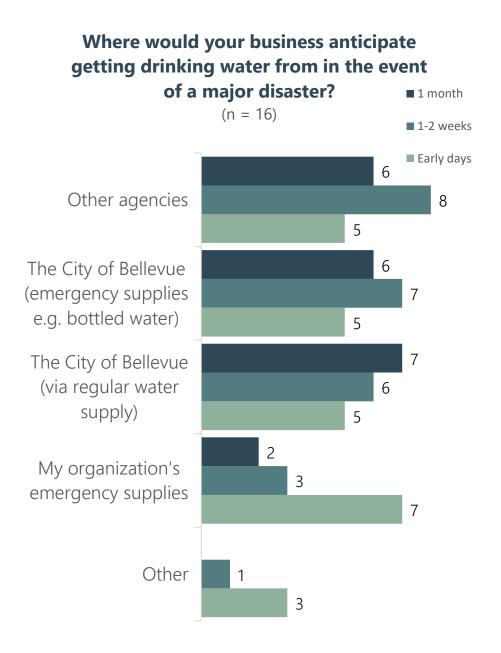


### Many commercial customers would anticipate receiving water from the City of Bellevue throughout a major disaster.

Most commercial respondents did not have emergency supplies that they expected to rely on for drinking water.

Of commercial customers with some emergency water supply, most only expect that that their own supply will cover them through the early days of a major disaster.

Expectations for support for the duration of a major disaster were fairly evenly divided among the City of Bellevue's emergency supplies, the City's regular water supply, and other agencies like the State and FEMA.





All the commercial customers who responded shared that they would need to close or reduce services during the water shortage. Many were unsure if they would be able to operate with reduced services or need to close entirely.

#### Close

Pk-8<sup>th</sup> grade school Use: Drinking, restrooms

### **Close or Reduce Services**

### Technology company

**Use:** Cooking, cleaning, restrooms, potable water fountains, landscaping

Sensitivity: Restroom availability and

sanitization would be key factor in level of

closure

#### Restaurant

Use: Cooking, dishwashing, restrooms

#### Dr office

**Use:** Safety equipment, needed for routine medical procedures, cleaning, maintenance

Anonymous

#### **Reduce Services**

Independent Senior Living and Skilled Nursing Community

Use: Cooking, drinking, bathing, hygiene
Sensitivity: Water is essential for operation

Health Care Use: Drinking Sensitivity: Only in residential facility

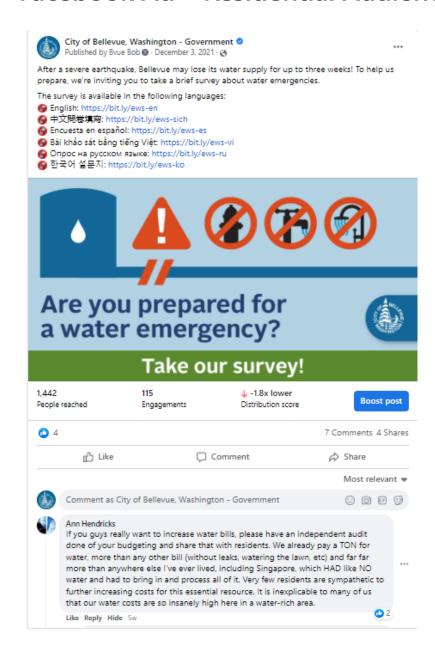
**Anonymous** 



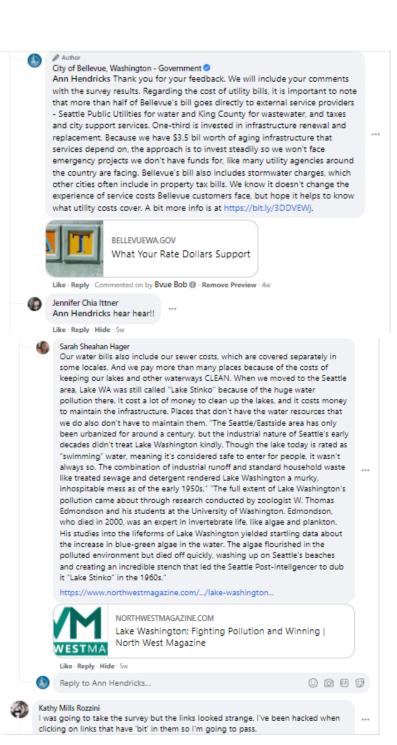
# **Appendix: Social Media Comments**



### Facebook Ad – Residential Audience







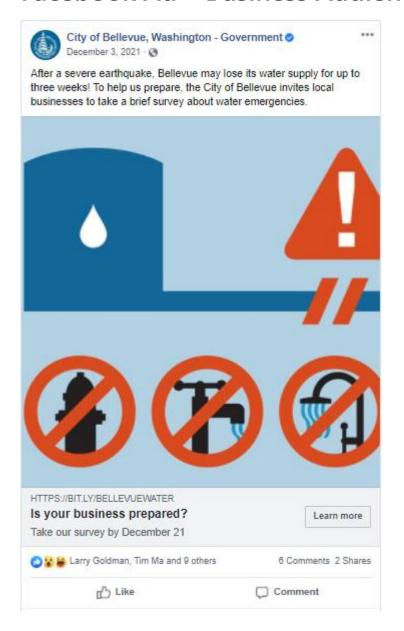
### Facebook Ad – Residential Audience (continued)

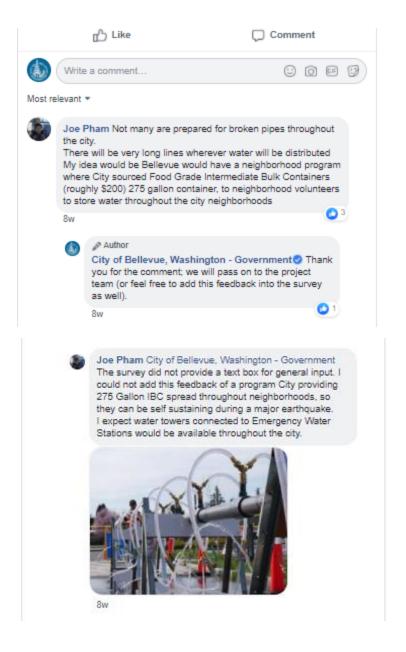






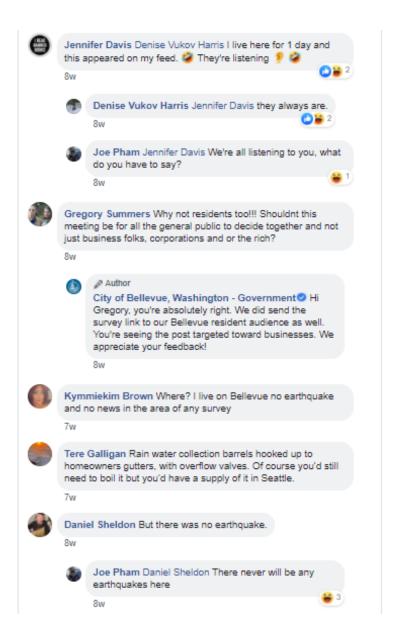
### Facebook Ad – Business Audience







### Facebook Ad – Business Audience (continued)







### Facebook Ad – Residential Audience, English







### Facebook Ad – Residential Audience, English (continued)





### Facebook Ad – Residential Audience, Chinese





