

EPA 2020 COVID-19 WATER SECTOR SURVEY

Appendix G: Data Tables for All Utility Types

June 2021



810-R-21-001

Notes on Appendix G

Appendices C-G present tables with detailed findings from the EPA 2020 COVID-19 Water Sector Survey. This appendix, Appendix G, presents total findings for all utility types. Each table includes findings for subgroups based on size (population served).

The order of presentation in this appendix follows the order of questions in the survey (see Appendix B). The title of each table generally includes the applicable survey question number and the text of the question itself (or a close paraphrase). EPA used financial data from Part D of the survey to generate some derived measures. The tables presenting these measures are labeled as “calculated” rather than labelled with a question number.

Some questions asked survey participants specifically about experiences from January 2020 to the present day, or from present day to December 2020. For these questions, “January to the Present” or “Present to December” is listed above each table to show the time period covered by the table.

In most cases, findings are presented as point estimates and 95 percent confidence intervals. For an explanation of confidence intervals, see the discussion of methodology in Appendix A.

Several questions asked respondents to provide responses on a scale. For example, questions B1.1.1 and B2.1.1 asked respondents to rank the severity of their treatment chemical shortages as “no impact,” “slight impact,” “moderate impact,” or “severe impact.” EPA calculated a mean score for each such question by assigning numeric values to the responses (for example, 0 for no impact, 1 for slight impact, 2 for moderate impact, and 3 for severe impact) and averaging the results.

Each table lists the number of observations, which is the number of responses received from survey participants to a given question or response option. The quantitative findings presented in the tables are weighted to provide national estimates, using weightings calculated and assigned to each utility type and size subgroup. For more information on the weightings, see the discussion of methodology in Appendix A.

Blank cells indicate that no applicable responses were received. “N/A” indicates that a confidence interval cannot be calculated because there was no variance in responses.

Table G.1. Question B1.1: What kinds of shortages or supply chain disruptions did your organization experience from January 2020 through present day?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Treatment Chemicals	4.1% 2.7% - 6.0%	5.5% 4.0% - 7.5%	4.2% 3.0% - 5.9%
PPE	27.5% 24.5% - 30.8%	60.9% 55.7% - 65.8%	31.8% 29.1% - 34.8%
Durable Goods and Other Equipment and Supplies	9.5% 7.7% - 11.7%	19.1% 15.5% - 23.3%	10.7% 9.1% - 12.7%
None	68.6% 65.2% - 71.8%	34.7% 29.9% - 39.8%	64.2% 61.2% - 67.1%
Observations	939	843	1,782

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Mean score (0 to 3)	0.006 0.000 - 0.012	0.013 0.007 - 0.019	0.007 0.002 - 0.012
	No impact (0)	99.4% 98.4% - 99.8%	99.1% 98.7% - 99.4%	99.4% 98.6% - 99.7%
	Slight (1)	0.6% 0.2% - 1.6%	0.5% 0.3% - 0.8%	0.6% 0.2% - 1.4%
	Moderate (2)	0.0% 0.0% - 0.1%	0.4% 0.2% - 0.8%	0.1% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780
Ferric chloride	Mean score (0 to 3)	0.002 0.000 - 0.004	0.006 0.002 - 0.009	0.003 0.001 - 0.005
	No impact (0)	99.8% 99.4% - 99.9%	99.5% 99.1% - 99.7%	99.8% 99.5% - 99.9%
	Slight (1)	0.2% 0.1% - 0.6%	0.4% 0.2% - 0.8%	0.2% 0.1% - 0.5%
	Moderate (2)	0.0% 0.0% - 0.1%	0.1% 0.0% - 0.3%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Mean score (0 to 3)	0.001 0.000 - 0.003	0.008 0.000 - 0.017	0.002 0.000 - 0.004
	No impact (0)	99.9% 99.6% - 100.0%	99.3% 97.9% - 99.8%	99.8% 99.5% - 99.9%
	Slight (1)	0.1% 0.0% - 0.5%	0.5% 0.1% - 2.2%	0.1% 0.0% - 0.4%
	Moderate (2)	0.0% 0.0% - 0.1%	0.1% 0.0% - 0.5%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780
Gaseous chlorine	Mean score (0 to 3)	0.008 0.002 - 0.015	0.020 0.005 - 0.035	0.010 0.004 - 0.016
	No impact (0)	99.2% 98.2% - 99.6%	98.0% 95.8% - 99.1%	99.0% 98.2% - 99.5%
	Slight (1)	0.8% 0.4% - 1.8%	1.9% 0.9% - 4.2%	1.0% 0.5% - 1.8%
	Moderate (2)	0.0% 0.0% - 0.1%	0.0% 0.0% - 0.1%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Mean score (0 to 3)	0.001 0.000 - 0.003	0.001 0.000 - 0.002	0.001 0.000 - 0.003
	No impact (0)	99.9% 99.6% - 100.0%	99.9% 99.7% - 100.0%	99.9% 99.6% - 100.0%
	Slight (1)	0.1% 0.0% - 0.5%	0.1% 0.0% - 0.3%	0.1% 0.0% - 0.4%
	Moderate (2)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Severe (3)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Observations	939	841	1,780
Lime	Mean score (0 to 3)	0.003 0.000 - 0.006	0.003 0.001 - 0.005	0.003 0.001 - 0.005
	No impact (0)	99.8% 99.3% - 99.9%	99.8% 99.5% - 99.9%	99.8% 99.4% - 99.9%
	Slight (1)	0.2% 0.1% - 0.7%	0.2% 0.1% - 0.4%	0.2% 0.1% - 0.6%
	Moderate (2)	0.0% 0.0% - 0.1%	0.0% 0.0% - 0.2%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Mean score (0 to 3)	0.002 0.000 - 0.004	0.007 -0.001 - 0.015	0.002 0.000 - 0.004
	No impact (0)	99.8% 99.5% - 100.0%	99.3% 97.8% - 99.8%	99.8% 99.5% - 99.9%
	Slight (1)	0.1% 0.0% - 0.5%	0.6% 0.2% - 2.2%	0.2% 0.1% - 0.5%
	Moderate (2)	0.0% 0.0% - 0.1%	0.0% 0.0% - 0.2%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780
Polymers	Mean score (0 to 3)	0.002 0.000 - 0.003	0.021 0.010 - 0.033	0.004 0.002 - 0.006
	No impact (0)	99.8% 99.6% - 99.9%	98.3% 97.0% - 99.0%	99.6% 99.4% - 99.8%
	Slight (1)	0.1% 0.0% - 0.4%	1.2% 0.6% - 2.5%	0.3% 0.1% - 0.5%
	Moderate (2)	0.0% 0.0% - 0.1%	0.5% 0.2% - 1.0%	0.1% 0.0% - 0.2%
	Severe (3)			
	Observations	939	841	1,780

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Mean score (0 to 3)	0.003 0.001 - 0.006	0.009 0.000 - 0.018	0.004 0.002 - 0.006
	No impact (0)	99.7% 99.3% - 99.9%	99.3% 97.8% - 99.8%	99.6% 99.3% - 99.8%
	Slight (1)	0.3% 0.1% - 0.7%	0.5% 0.1% - 2.3%	0.3% 0.1% - 0.7%
	Moderate (2)	0.0% 0.0% - 0.1%	0.2% 0.1% - 0.7%	0.0% 0.0% - 0.1%
	Severe (3)			
	Observations	939	841	1,780
Sodium hydroxide	Mean score (0 to 3)	0.002 0.000 - 0.003	0.005 0.001 - 0.009	0.002 0.001 - 0.004
	No impact (0)	99.9% 99.6% - 100.0%	99.6% 99.1% - 99.8%	99.8% 99.6% - 99.9%
	Slight (1)	0.1% 0.0% - 0.5%	0.3% 0.1% - 0.8%	0.1% 0.0% - 0.4%
	Moderate (2)	0.0% 0.0% - 0.1%	0.1% 0.0% - 0.6%	0.0% 0.0% - 0.1%
	Severe (3)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Observations	939	841	1,780

Table G.2. Question B1.1.1: How severe were the treatment chemical shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Mean score (0 to 3)	0.030 0.007 - 0.053	0.014 0.005 - 0.024	0.028 0.008 - 0.048
	No impact (0)	98.2% 96.6% - 99.1%	98.7% 97.5% - 99.4%	98.3% 96.9% - 99.1%
	Slight (1)	0.8% 0.3% - 2.0%	1.1% 0.5% - 2.4%	0.8% 0.4% - 1.8%
	Moderate (2)	0.7% 0.3% - 2.1%	0.2% 0.1% - 0.7%	0.7% 0.2% - 1.8%
	Severe (3)	0.3% 0.0% - 1.8%	0.0% N/A - N/A	0.2% 0.0% - 1.6%
	Observations	939	841	1,780

N/A: confidence interval could not be calculated.

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Unavailable from supplier(s)	43.6% 43.6% - 43.6%	68.4% 43.9% - 85.7%	48.1% 44.1% - 52.1%
	Delayed / backordered from supplier(s)	30.4% 10.8% - 61.3%	21.0% 7.3% - 47.3%	28.7% 11.8% - 54.9%
	Transportation / distribution difficulties	3.3% 3.3% - 3.3%	47.3% 25.6% - 70.1%	11.3% 7.6% - 16.4%
	Price	0.0% N/A - N/A	10.5% 2.4% - 36.4%	1.9% 0.5% - 7.6%
	Other	0.0% N/A - N/A	47.3% 27.2% - 68.3%	8.6% 5.3% - 13.5%
	Observations	7	18	25
Ferric chloride	Unavailable from supplier(s)	0.0% N/A - N/A	9.3% 0.7% - 59.3%	2.6% 0.2% - 22.8%
	Delayed / backordered from supplier(s)	38.8% 1.3% - 96.8%	44.6% 12.2% - 82.4%	40.4% 3.9% - 91.9%
	Transportation / distribution difficulties	22.5% 12.1% - 37.9%	46.0% 10.7% - 85.9%	28.9% 16.6% - 45.4%
	Price	7.1% 0.7% - 44.8%	0.0% N/A - N/A	5.2% 0.4% - 39.6%
	Other	0.0% N/A - N/A	8.6% 0.7% - 56.4%	2.4% 0.2% - 21.2%
	Observations	6	9	15

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Unavailable from supplier(s)	8.1% 0.3% - 72.9%	0.0% N/A - N/A	4.1% 0.2% - 53.4%
	Delayed / backordered from supplier(s)	81.2% 45.0% - 95.8%	86.1% 31.4% - 98.8%	83.6% 54.2% - 95.6%
	Transportation / distribution difficulties	26.9% 26.9% - 26.9%	20.8% 6.4% - 50.1%	23.9% 14.8% - 36.3%
	Price	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	4	6	10
Gaseous chlorine	Unavailable from supplier(s)	7.0% 0.8% - 40.9%	0.0% N/A - N/A	5.2% 0.5% - 35.2%
	Delayed / backordered from supplier(s)	75.7% 37.4% - 94.2%	51.6% 13.5% - 87.9%	69.4% 40.7% - 88.2%
	Transportation / distribution difficulties	57.3% 28.3% - 82.1%	49.2% 12.3% - 87.0%	55.2% 30.5% - 77.6%
	Price	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	2.4% 0.2% - 19.5%	0.6% 0.1% - 5.3%
	Observations	13	11	24

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Unavailable from supplier(s)	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Delayed / backordered from supplier(s)	69.4% 69.4% - 69.4%	50.0% 0.0% - 100.0%	67.3% 7.6% - 98.1%
	Transportation / distribution difficulties	17.9% 17.9% - 17.9%	0.0% N/A - N/A	15.9% 15.9% - 15.9%
	Price	0.0% N/A - N/A	50.0% 0.0% - 100.0%	5.6% 0.0% - 100.0%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	4	2	6
Lime	Unavailable from supplier(s)	5.7% 0.4% - 48.1%	0.0% N/A - N/A	5.0% 0.4% - 44.1%
	Delayed / backordered from supplier(s)	85.5% 85.5% - 85.5%	40.0% 3.1% - 93.2%	79.9% 69.4% - 87.4%
	Transportation / distribution difficulties	17.2% 6.9% - 36.9%	60.0% 6.8% - 96.9%	22.5% 10.6% - 41.7%
	Price	3.0% 3.0% - 3.0%	0.0% N/A - N/A	2.6% 2.6% - 2.6%
	Other	3.5% 0.3% - 33.2%	0.0% N/A - N/A	3.0% 0.2% - 30.0%
	Observations	8	5	13

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Unavailable from supplier(s)	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Delayed / backordered from supplier(s)	87.3% 51.6% - 97.8%	86.0% 1.9% - 100.0%	86.8% 45.5% - 98.1%
	Transportation / distribution difficulties	12.7% 2.2% - 48.4%	20.9% 0.2% - 97.0%	16.0% 3.1% - 52.6%
	Price	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	4	5	9
	Polymers	Unavailable from supplier(s)	0.0% N/A - N/A	11.1% 2.5% - 37.9%
Delayed / backordered from supplier(s)		59.0% 51.0% - 66.6%	78.0% 54.2% - 91.4%	70.8% 57.7% - 81.2%
Transportation / distribution difficulties		30.8% 19.6% - 44.8%	33.3% 16.7% - 55.4%	32.4% 20.4% - 47.2%
Price		10.2% 3.1% - 28.6%	0.0% N/A - N/A	3.9% 1.3% - 11.3%
Other		0.0% N/A - N/A	2.5% 0.3% - 18.4%	1.6% 0.2% - 11.9%
Observations		9	18	27

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Unavailable from supplier(s)	19.7% 1.3% - 81.6%	26.1% 3.0% - 80.3%	21.4% 3.0% - 70.2%
	Delayed / backordered from supplier(s)	48.8% 13.1% - 85.7%	73.9% 19.7% - 97.0%	55.4% 18.7% - 87.0%
	Transportation / distribution difficulties	29.1% 4.4% - 78.7%	13.1% 0.6% - 78.7%	24.9% 4.5% - 69.8%
	Price	2.4% 1.5% - 3.9%	0.0% N/A - N/A	1.8% 1.8% - 1.8%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	9	5	14
Sodium hydroxide	Unavailable from supplier(s)	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Delayed / backordered from supplier(s)	60.8% 41.4% - 77.3%	33.6% 3.5% - 87.6%	51.8% 32.0% - 71.1%
	Transportation / distribution difficulties	22.3% 16.2% - 30.0%	77.5% 10.4% - 99.0%	40.6% 20.3% - 64.8%
	Price	5.7% 4.2% - 7.8%	0.0% N/A - N/A	3.8% 3.8% - 3.8%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	6	6	12

Table G.3. Question B1.1.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Unavailable from supplier(s)	34.1% 8.3% - 74.6%	14.2% 3.2% - 45.2%	32.1% 8.6% - 70.4%
	Delayed / backordered from supplier(s)	68.1% 27.0% - 92.5%	32.7% 10.5% - 66.8%	64.6% 28.4% - 89.4%
	Transportation / distribution difficulties	47.6% 16.5% - 80.7%	71.0% 36.5% - 91.2%	49.9% 19.8% - 80.1%
	Price	6.0% 5.6% - 6.4%	0.0% N/A - N/A	5.4% 5.4% - 5.4%
	Other	14.8% 1.5% - 66.9%	3.4% 0.4% - 25.1%	13.7% 1.5% - 62.8%
	Observations	17	13	30

N/A: confidence interval could not be calculated.

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Found alternative supplier	0.0% N/A - N/A	58.0% 35.2% - 77.7%	10.5% 5.8% - 18.4%
	Drew down existing inventory	74.1% 38.5% - 92.9%	68.4% 48.0% - 83.5%	73.0% 44.4% - 90.2%
	Switched chemicals, procedures, or technologies	1.4% 0.2% - 10.1%	10.5% 2.4% - 35.9%	3.1% 0.9% - 9.9%
	Sought help from other utilities or mutual aid network (e.g., WARN)	1.9% 1.2% - 3.1%	0.0% N/A - N/A	1.5% 1.0% - 2.3%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	1.6% 0.2% - 11.5%	0.5% 0.1% - 3.5%
	Other	0.0% N/A - N/A	26.3% 11.0% - 50.7%	4.8% 1.9% - 11.5%
	Observations	15	26	41
Ferric chloride	Found alternative supplier	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Drew down existing inventory	51.3% 7.9% - 92.8%	72.7% 40.6% - 91.2%	57.1% 16.8% - 89.8%
	Switched chemicals, procedures, or technologies	4.3% 0.5% - 29.6%	35.9% 13.0% - 67.6%	12.9% 4.4% - 32.7%
	Sought help from other utilities or mutual aid network (e.g., WARN)	5.7% 2.1% - 14.5%	0.0% N/A - N/A	4.1% 2.0% - 8.4%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	9.3% 1.1% - 47.7%	2.6% 0.3% - 18.5%
	Observations	16	28	44

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Found alternative supplier	0.0% N/A - N/A	27.9% 6.2% - 69.5%	13.6% 4.2% - 36.3%
	Drew down existing inventory	81.2% 34.8% - 97.2%	93.0% 55.2% - 99.3%	87.0% 61.9% - 96.5%
	Switched chemicals, procedures, or technologies	8.1% 0.6% - 56.3%	0.0% N/A - N/A	4.1% 0.4% - 30.0%
	Sought help from other utilities or mutual aid network (e.g., WARN)	10.7% 2.3% - 38.4%	0.0% N/A - N/A	5.5% 2.1% - 13.7%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	18	38	56
Gaseous chlorine	Found alternative supplier	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Drew down existing inventory	53.7% 17.5% - 86.4%	98.4% 96.6% - 99.3%	65.4% 28.2% - 90.1%
	Switched chemicals, procedures, or technologies	1.0% 0.1% - 7.8%	0.0% N/A - N/A	0.8% 0.1% - 5.6%
	Sought help from other utilities or mutual aid network (e.g., WARN)	14.0% 2.0% - 56.6%	0.0% N/A - N/A	10.3% 1.6% - 45.3%
	Coordinated with local or state emergency management agency	0.6% 0.1% - 4.4%	0.0% N/A - N/A	0.4% 0.1% - 2.7%
	Other	31.3% 5.3% - 78.7%	2.4% 0.3% - 16.8%	23.8% 4.1% - 69.7%
	Observations	35	55	90

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Found alternative supplier	0.0% N/A - N/A	50.0% 2.2% - 97.8%	5.6% 0.4% - 46.4%
	Drew down existing inventory	69.4% 19.0% - 95.6%	50.0% 2.2% - 97.8%	67.3% 19.7% - 94.5%
	Switched chemicals, procedures, or technologies	7.7% 0.5% - 56.1%	0.0% N/A - N/A	6.8% 0.5% - 50.2%
	Sought help from other utilities or mutual aid network (e.g., WARN)	10.2% 2.0% - 38.6%	0.0% N/A - N/A	9.1% 2.2% - 31.0%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	10	7	17
Lime	Found alternative supplier	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Drew down existing inventory	89.0% 66.7% - 97.0%	80.0% 27.9% - 97.6%	87.9% 66.6% - 96.3%
	Switched chemicals, procedures, or technologies	3.5% 0.3% - 27.3%	20.0% 2.4% - 72.1%	5.5% 1.0% - 25.9%
	Sought help from other utilities or mutual aid network (e.g., WARN)	7.5% 2.5% - 20.7%	0.0% N/A - N/A	6.6% 2.5% - 16.3%
	Coordinated with local or state emergency management agency	1.5% 0.2% - 10.8%	0.0% N/A - N/A	1.0% 0.1% - 7.4%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	18	27	45

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Found alternative supplier	37.7% 4.4% - 88.8%	0.0% N/A - N/A	22.9% 3.0% - 74.3%
	Drew down existing inventory	49.6% 7.3% - 92.4%	100.0% N/A - N/A	69.4% 25.1% - 93.9%
	Switched chemicals, procedures, or technologies	5.5% 0.5% - 38.7%	6.9% 0.7% - 44.7%	6.1% 1.2% - 26.0%
	Sought help from other utilities or mutual aid network (e.g., WARN)	7.3% 2.0% - 23.3%	0.0% N/A - N/A	4.4% 1.8% - 10.5%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	16	35	51
Polymers	Found alternative supplier	0.0% N/A - N/A	2.8% 0.4% - 17.9%	1.7% 0.2% - 11.7%
	Drew down existing inventory	77.0% 43.1% - 93.6%	91.9% 69.0% - 98.3%	86.2% 71.6% - 94.0%
	Switched chemicals, procedures, or technologies	5.5% 0.6% - 36.3%	7.6% 2.4% - 21.8%	6.8% 2.4% - 18.1%
	Sought help from other utilities or mutual aid network (e.g., WARN)	12.0% 4.1% - 30.3%	5.6% 0.7% - 32.1%	8.0% 3.0% - 19.7%
	Coordinated with local or state emergency management agency	0.4% 0.1% - 3.0%	0.0% N/A - N/A	0.3% 0.0% - 1.8%
	Other	0.0% N/A - N/A	2.7% 0.4% - 17.9%	1.7% 0.2% - 11.7%
	Observations	39	79	118

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Found alternative supplier	19.7% 2.3% - 71.4%	19.6% 2.7% - 68.3%	19.6% 3.8% - 60.0%
	Drew down existing inventory	68.0% 26.6% - 92.6%	93.5% 57.6% - 99.3%	74.8% 39.1% - 93.2%
	Switched chemicals, procedures, or technologies	2.9% 0.3% - 21.4%	0.0% N/A - N/A	2.1% 0.2% - 15.5%
	Sought help from other utilities or mutual aid network (e.g., WARN)	9.5% 4.1% - 20.5%	0.0% N/A - N/A	7.0% 3.7% - 12.9%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	18	21	39
Sodium hydroxide	Found alternative supplier	0.0% N/A - N/A	22.5% 2.8% - 74.6%	7.4% 0.8% - 43.5%
	Drew down existing inventory	67.5% 21.4% - 94.1%	88.8% 47.5% - 98.6%	74.6% 41.2% - 92.5%
	Switched chemicals, procedures, or technologies	6.7% 0.6% - 47.2%	43.9% 11.6% - 82.4%	19.0% 4.7% - 52.8%
	Sought help from other utilities or mutual aid network (e.g., WARN)	14.7% 3.8% - 42.5%	0.0% N/A - N/A	9.8% 4.0% - 22.1%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	17	34	51

Table G.4. Question B1.1.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Found alternative supplier	29.7% 7.5% - 68.7%	10.8% 2.1% - 40.1%	27.9% 7.6% - 64.6%
	Drew down existing inventory	47.7% 18.3% - 78.8%	96.6% 78.1% - 99.6%	52.5% 23.4% - 80.0%
	Switched chemicals, procedures, or technologies	30.2% 7.8% - 68.8%	7.4% 0.9% - 40.5%	28.0% 7.6% - 64.6%
	Sought help from other utilities or mutual aid network (e.g., WARN)	1.3% 0.4% - 4.4%	0.0% N/A - N/A	1.2% 0.3% - 3.9%
	Coordinated with local or state emergency management agency	0.2% 0.0% - 1.7%	0.0% N/A - N/A	0.2% 0.0% - 1.4%
	Other	10.4% 2.4% - 35.2%	0.0% N/A - N/A	9.3% 2.2% - 32.1%
	Observations	67	78	145

N/A: confidence interval could not be calculated.

Table G.5. Question B1.2.1: How severe were the personal protective equipment shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Mean score (0 to 3)	0.316 0.267 - 0.366	0.734 0.639 - 0.829	0.371 0.326 - 0.415
	No impact (0)	79.8% 76.9% - 82.5%	54.5% 49.2% - 59.7%	76.5% 73.9% - 78.9%
	Slight (1)	12.7% 10.5% - 15.3%	24.0% 20.0% - 28.5%	14.2% 12.2% - 16.5%
	Moderate (2)	3.4% 2.5% - 4.7%	15.2% 12.0% - 19.1%	5.0% 4.0% - 6.1%
	Severe (3)	4.0% 2.9% - 5.6%	6.3% 4.5% - 8.9%	4.3% 3.2% - 5.7%
	Observations	937	837	1,774
	Alternative mask options (surgical, cloth, etc.)	Mean score (0 to 3)	0.247 0.206 - 0.288	0.643 0.553 - 0.733
No impact (0)		83.1% 80.3% - 85.5%	54.6% 49.1% - 59.9%	79.4% 76.9% - 81.7%
Slight (1)		9.8% 7.9% - 12.1%	28.3% 23.6% - 33.5%	12.2% 10.4% - 14.3%
Moderate (2)		6.3% 4.9% - 8.1%	15.3% 11.3% - 20.4%	7.5% 6.1% - 9.2%
Severe (3)		0.7% 0.3% - 1.7%	1.8% 0.9% - 3.4%	0.9% 0.5% - 1.6%
Observations		937	837	1,774

Table G.5. Question B1.2.1: How severe were the personal protective equipment shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Mean score (0 to 3)	0.164 0.131 - 0.197	0.374 0.304 - 0.443	0.191 0.161 - 0.221
	No impact (0)	88.9% 86.6% - 90.8%	72.0% 66.3% - 77.0%	86.7% 84.5% - 88.5%
	Slight (1)	6.4% 5.0% - 8.2%	19.7% 15.0% - 25.5%	8.1% 6.7% - 9.9%
	Moderate (2)	4.3% 3.1% - 5.9%	7.2% 5.0% - 10.3%	4.7% 3.6% - 6.1%
	Severe (3)	0.5% 0.2% - 1.0%	1.0% 0.5% - 2.4%	0.6% 0.3% - 1.0%
	Observations	937	837	1,774
	Nitrile and/or latex gloves	Mean score (0 to 3)	0.313 0.267 - 0.360	0.645 0.557 - 0.732
No impact (0)		80.0% 77.1% - 82.6%	57.2% 51.9% - 62.4%	77.1% 74.5% - 79.5%
Slight (1)		11.3% 9.2% - 13.8%	25.1% 20.7% - 30.0%	13.1% 11.1% - 15.3%
Moderate (2)		6.0% 4.7% - 7.7%	13.7% 10.5% - 17.8%	7.0% 5.8% - 8.5%
Severe (3)		2.7% 1.8% - 4.0%	4.0% 2.6% - 6.2%	2.8% 2.0% - 4.0%
Observations		937	837	1,774

Table G.5. Question B1.2.1: How severe were the personal protective equipment shortages or supply chain disruptions that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Mean score (0 to 3)	0.139 0.104 - 0.174	0.241 0.185 - 0.296	0.152 0.121 - 0.184
	No impact (0)	91.9% 90.0% - 93.5%	83.2% 79.3% - 86.5%	90.8% 89.1% - 92.3%
	Slight (1)	4.1% 3.0% - 5.6%	11.3% 8.6% - 14.6%	5.0% 4.0% - 6.4%
	Moderate (2)	2.1% 1.4% - 3.1%	3.8% 2.2% - 6.5%	2.3% 1.6% - 3.3%
	Severe (3)	1.9% 1.1% - 3.1%	1.7% 1.0% - 2.8%	1.9% 1.2% - 2.9%
	Observations	937	837	1,774
	Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	Mean score (0 to 3)	0.407 0.352 - 0.462	0.938 0.827 - 1.050
No impact (0)		76.6% 73.6% - 79.4%	46.3% 41.0% - 51.7%	72.7% 70.0% - 75.2%
Slight (1)		10.5% 8.5% - 12.9%	22.0% 18.3% - 26.2%	12.0% 10.1% - 14.1%
Moderate (2)		8.5% 6.9% - 10.5%	23.3% 18.8% - 28.5%	10.5% 8.9% - 12.3%
Severe (3)		4.4% 3.2% - 6.0%	8.4% 6.0% - 11.8%	4.9% 3.8% - 6.3%
Observations		937	837	1,774

Table G.6. Question B1.2.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Unavailable from supplier(s)	56.1% 48.4% - 63.6%	53.1% 45.9% - 60.1%	55.4% 49.3% - 61.2%
	Delayed / backordered from supplier(s)	60.4% 52.5% - 67.8%	68.2% 61.0% - 74.7%	62.4% 56.2% - 68.2%
	Transportation / distribution difficulties	8.5% 4.9% - 14.2%	5.1% 3.7% - 6.8%	7.6% 4.9% - 11.8%
	Price	11.1% 6.9% - 17.5%	9.3% 6.3% - 13.6%	10.7% 7.3% - 15.4%
	Other	7.6% 4.2% - 13.4%	3.8% 2.3% - 6.3%	6.7% 4.0% - 10.9%
	Observations	268	441	709
	Alternative mask options (surgical, cloth, etc.)	Unavailable from supplier(s)	20.3% 14.4% - 27.9%	27.0% 20.7% - 34.5%
Delayed / backordered from supplier(s)		74.6% 66.8% - 81.0%	79.7% 72.5% - 85.4%	76.0% 70.2% - 81.0%
Transportation / distribution difficulties		11.0% 6.7% - 17.7%	8.1% 4.9% - 13.2%	10.2% 6.8% - 15.0%
Price		4.7% 2.5% - 8.6%	4.8% 2.7% - 8.3%	4.7% 3.0% - 7.5%
Other		7.7% 4.0% - 14.3%	4.3% 2.3% - 7.7%	6.7% 3.9% - 11.4%
Observations		228	403	631

Table G.6. Question B1.2.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Unavailable from supplier(s)	26.3% 18.5% - 35.9%	27.4% 19.2% - 37.6%	26.6% 20.4% - 33.9%
	Delayed / backordered from supplier(s)	85.2% 78.9% - 89.9%	67.3% 53.4% - 78.7%	80.3% 73.9% - 85.5%
	Transportation / distribution difficulties	3.3% 1.4% - 7.4%	4.3% 1.3% - 13.1%	3.6% 1.8% - 6.9%
	Price	5.5% 2.1% - 14.1%	2.4% 1.3% - 4.5%	4.7% 2.0% - 10.6%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	169	245	414
Nitrile and/or latex gloves	Unavailable from supplier(s)	36.0% 28.9% - 43.8%	29.6% 23.3% - 36.8%	34.4% 28.8% - 40.6%
	Delayed / backordered from supplier(s)	72.2% 64.7% - 78.6%	85.8% 79.2% - 90.6%	75.5% 69.6% - 80.5%
	Transportation / distribution difficulties	4.2% 2.3% - 7.6%	5.6% 2.7% - 11.5%	4.5% 2.8% - 7.3%
	Price	12.9% 8.4% - 19.4%	9.3% 6.5% - 13.1%	12.1% 8.4% - 17.0%
	Other	0.8% 0.2% - 3.0%	0.5% 0.2% - 1.7%	0.7% 0.2% - 2.2%
	Observations	274	393	667

Table G.6. Question B1.2.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Unavailable from supplier(s)	39.4% 28.3% - 51.7%	26.9% 18.2% - 37.7%	36.4% 27.6% - 46.2%
	Delayed / backordered from supplier(s)	71.0% 60.0% - 80.0%	77.6% 65.4% - 86.4%	72.6% 63.8% - 79.9%
	Transportation / distribution difficulties	21.3% 12.7% - 33.5%	15.6% 8.5% - 26.8%	20.0% 13.0% - 29.4%
	Price	18.5% 10.5% - 30.6%	11.9% 7.4% - 18.7%	16.9% 10.5% - 26.2%
	Other	1.7% 0.4% - 6.6%	0.6% 0.1% - 3.9%	1.4% 0.4% - 5.0%
	Observations	129	178	307
Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	Unavailable from supplier(s)	52.3% 45.2% - 59.3%	52.5% 45.3% - 59.6%	52.4% 46.8% - 57.9%
	Delayed / backordered from supplier(s)	55.7% 48.5% - 62.6%	67.7% 59.9% - 74.6%	58.8% 53.1% - 64.2%
	Transportation / distribution difficulties	2.0% 0.9% - 4.2%	4.0% 1.9% - 8.4%	2.5% 1.5% - 4.3%
	Price	4.9% 2.9% - 8.2%	7.6% 4.8% - 11.7%	5.6% 3.8% - 8.1%
	Other	6.3% 3.4% - 11.3%	2.5% 1.8% - 3.6%	5.3% 3.1% - 9.0%
	Observations	313	492	805

N/A: confidence interval could not be calculated.

Table G.7. Question B1.2.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Found alternative supplier	35.1% 28.3% - 42.6%	45.3% 38.3% - 52.4%	37.7% 32.2% - 43.5%
	Drew down existing inventory	42.2% 34.7% - 50.1%	57.6% 50.4% - 64.4%	46.1% 40.1% - 52.2%
	Switched chemicals, procedures, or technologies	12.2% 7.6% - 18.9%	6.9% 4.6% - 10.2%	10.9% 7.3% - 15.9%
	Sought help from other utilities or mutual aid network (e.g., WARN)	7.6% 4.6% - 12.5%	10.6% 7.1% - 15.4%	8.4% 5.8% - 12.0%
	Coordinated with local or state emergency management agency	18.6% 13.5% - 25.1%	21.3% 16.0% - 27.8%	19.3% 15.1% - 24.3%
	Other	10.7% 6.5% - 17.1%	5.2% 3.1% - 8.7%	9.3% 6.1% - 14.1%
	Observations	268	441	709
Alternative mask options (surgical, cloth, etc.)	Found alternative supplier	48.3% 40.1% - 56.6%	58.8% 49.8% - 67.3%	51.3% 44.8% - 57.7%
	Drew down existing inventory	34.8% 27.1% - 43.5%	35.0% 26.8% - 44.2%	34.9% 28.8% - 41.5%
	Switched chemicals, procedures, or technologies	12.7% 8.0% - 19.5%	3.8% 2.7% - 5.4%	10.1% 6.7% - 15.1%
	Sought help from other utilities or mutual aid network (e.g., WARN)	9.2% 6.1% - 13.5%	17.2% 12.3% - 23.5%	11.5% 8.8% - 14.8%
	Coordinated with local or state emergency management agency	23.8% 17.5% - 31.4%	29.2% 21.5% - 38.3%	25.3% 20.2% - 31.2%
	Other	2.1% 0.8% - 5.5%	5.7% 3.1% - 10.3%	3.1% 1.8% - 5.5%
	Observations	228	403	631

Table G.7. Question B1.2.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Found alternative supplier	40.6% 31.7% - 50.3%	51.9% 39.5% - 64.1%	43.7% 36.3% - 51.5%
	Drew down existing inventory	39.3% 29.8% - 49.7%	37.7% 27.8% - 48.8%	38.8% 31.2% - 47.0%
	Switched chemicals, procedures, or technologies	2.5% 0.9% - 6.8%	2.8% 1.0% - 7.9%	2.6% 1.2% - 5.6%
	Sought help from other utilities or mutual aid network (e.g., WARN)	4.1% 1.9% - 8.4%	3.7% 1.6% - 8.4%	4.0% 2.2% - 7.1%
	Coordinated with local or state emergency management agency	15.4% 9.5% - 23.9%	7.7% 4.3% - 13.6%	13.3% 8.8% - 19.6%
	Other	3.6% 0.9% - 13.4%	2.7% 0.9% - 7.9%	3.4% 1.1% - 9.8%
	Observations	169	245	414
Nitrile and/or latex gloves	Found alternative supplier	43.0% 35.8% - 50.6%	56.7% 48.6% - 64.5%	46.4% 40.4% - 52.4%
	Drew down existing inventory	57.5% 49.7% - 64.9%	63.3% 54.7% - 71.2%	58.9% 52.7% - 64.9%
	Switched chemicals, procedures, or technologies	9.3% 5.4% - 15.6%	6.1% 4.1% - 9.0%	8.5% 5.4% - 13.2%
	Sought help from other utilities or mutual aid network (e.g., WARN)	4.2% 2.4% - 7.4%	5.7% 3.0% - 10.5%	4.6% 3.0% - 7.1%
	Coordinated with local or state emergency management agency	8.0% 4.6% - 13.7%	8.8% 5.4% - 13.9%	8.2% 5.3% - 12.4%
	Other	3.4% 1.3% - 8.5%	2.7% 1.7% - 4.4%	3.2% 1.5% - 6.8%
	Observations	274	393	667

Table G.7. Question B1.2.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Found alternative supplier	43.7% 32.7% - 55.3%	51.9% 40.2% - 63.3%	45.6% 36.7% - 54.9%
	Drew down existing inventory	36.5% 25.9% - 48.5%	52.2% 40.6% - 63.5%	40.2% 31.5% - 49.6%
	Switched chemicals, procedures, or technologies	21.2% 12.6% - 33.4%	18.1% 10.3% - 29.9%	20.5% 13.4% - 29.9%
	Sought help from other utilities or mutual aid network (e.g., WARN)	5.4% 2.6% - 11.0%	4.5% 1.5% - 12.7%	5.2% 2.8% - 9.5%
	Coordinated with local or state emergency management agency	13.8% 7.2% - 24.9%	2.5% 1.1% - 5.6%	11.1% 6.0% - 19.7%
	Other	19.0% 10.8% - 31.3%	7.7% 5.2% - 11.2%	16.3% 9.9% - 25.8%
	Observations	129	178	307
Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	Found alternative supplier	54.1% 47.0% - 61.1%	56.9% 49.3% - 64.2%	54.8% 49.2% - 60.4%
	Drew down existing inventory	40.0% 33.2% - 47.1%	52.2% 44.9% - 59.4%	43.1% 37.7% - 48.7%
	Switched chemicals, procedures, or technologies	19.8% 14.6% - 26.3%	24.6% 18.3% - 32.2%	21.0% 16.7% - 26.1%
	Sought help from other utilities or mutual aid network (e.g., WARN)	5.9% 3.8% - 9.1%	8.6% 5.3% - 13.7%	6.6% 4.7% - 9.2%
	Coordinated with local or state emergency management agency	10.7% 7.2% - 15.7%	11.1% 8.0% - 15.2%	10.8% 7.9% - 14.6%
	Other	7.7% 4.5% - 12.9%	8.9% 4.2% - 17.7%	8.0% 5.2% - 12.2%
	Observations	313	492	805

Table G.8. Question B1.3.1: How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Mean score (0 to 3)	0.009 0.003 - 0.016	0.026 0.007 - 0.045	0.012 0.005 - 0.018
	No impact (0)	99.2% 98.3% - 99.6%	98.1% 96.2% - 99.1%	99.1% 98.3% - 99.5%
	Slight (1)	0.7% 0.3% - 1.6%	1.2% 0.5% - 2.9%	0.7% 0.3% - 1.5%
	Moderate (2)	0.1% 0.0% - 0.4%	0.7% 0.2% - 2.2%	0.2% 0.1% - 0.5%
	Severe (3)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Observations	937	842	1,779
Granular/ Powdered Activated Carbon (GAC/ PAC)	Mean score (0 to 3)	0.007 0.001 - 0.012	0.015 0.003 - 0.026	0.008 0.002 - 0.013
	No impact (0)	99.6% 99.1% - 99.8%	98.7% 97.0% - 99.5%	99.5% 99.1% - 99.7%
	Slight (1)	0.2% 0.1% - 0.6%	1.1% 0.4% - 2.9%	0.3% 0.2% - 0.7%
	Moderate (2)	0.1% 0.0% - 0.5%	0.2% 0.1% - 0.5%	0.1% 0.0% - 0.4%
	Severe (3)	0.1% 0.0% - 0.5%	0.0% N/A - N/A	0.1% 0.0% - 0.5%
	Observations	937	842	1,779

Table G.8. Question B1.3.1: How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Mean score (0 to 3)	0.007 0.001 - 0.012	0.016 0.003 - 0.029	0.008 0.003 - 0.013
	No impact (0)	99.6% 99.1% - 99.8%	98.7% 97.0% - 99.5%	99.5% 99.1% - 99.7%
	Slight (1)	0.2% 0.1% - 0.6%	1.0% 0.4% - 2.9%	0.3% 0.1% - 0.6%
	Moderate (2)	0.2% 0.1% - 0.5%	0.1% 0.0% - 0.5%	0.2% 0.1% - 0.5%
	Severe (3)	0.1% 0.0% - 0.4%	0.1% 0.0% - 0.6%	0.1% 0.0% - 0.3%
	Observations	937	842	1,779
Pumps	Mean score (0 to 3)	0.068 0.048 - 0.089	0.134 0.097 - 0.172	0.077 0.058 - 0.095
	No impact (0)	95.1% 93.2% - 96.4%	89.9% 86.9% - 92.4%	94.4% 92.8% - 95.7%
	Slight (1)	3.3% 2.1% - 5.1%	7.1% 5.1% - 9.8%	3.8% 2.7% - 5.3%
	Moderate (2)	1.4% 0.9% - 2.1%	2.5% 1.4% - 4.4%	1.5% 1.0% - 2.2%
	Severe (3)	0.3% 0.1% - 0.8%	0.4% 0.2% - 0.9%	0.3% 0.1% - 0.7%
	Observations	937	842	1,779

Table G.8. Question B1.3.1: How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Mean score (0 to 3)	0.042 0.026 - 0.059	0.115 0.079 - 0.152	0.052 0.037 - 0.067
	No impact (0)	97.0% 95.5% - 98.0%	91.1% 87.9% - 93.4%	96.2% 94.9% - 97.2%
	Slight (1)	2.0% 1.1% - 3.5%	6.7% 4.6% - 9.5%	2.6% 1.7% - 3.8%
	Moderate (2)	0.9% 0.5% - 1.5%	2.0% 1.0% - 3.9%	1.0% 0.6% - 1.6%
	Severe (3)	0.2% 0.0% - 0.7%	0.3% 0.1% - 0.7%	0.2% 0.1% - 0.6%
	Observations	937	842	1,779
Pipes	Mean score (0 to 3)	0.066 0.043 - 0.089	0.153 0.104 - 0.203	0.077 0.056 - 0.098
	No impact (0)	95.1% 93.2% - 96.5%	88.4% 84.7% - 91.4%	94.2% 92.6% - 95.5%
	Slight (1)	3.4% 2.3% - 5.1%	8.0% 5.7% - 11.1%	4.0% 3.0% - 5.5%
	Moderate (2)	1.3% 0.7% - 2.5%	3.4% 1.8% - 6.3%	1.6% 0.9% - 2.6%
	Severe (3)	0.2% 0.1% - 0.7%	0.2% 0.1% - 0.6%	0.2% 0.1% - 0.6%
	Observations	937	842	1,779

Table G.8. Question B1.3.1: How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Mean score (0 to 3)	0.069 0.043 - 0.096	0.137 0.099 - 0.175	0.078 0.054 - 0.101
	No impact (0)	95.6% 93.9% - 96.8%	89.2% 85.9% - 91.8%	94.8% 93.3% - 95.9%
	Slight (1)	2.5% 1.6% - 3.8%	8.2% 5.9% - 11.2%	3.2% 2.4% - 4.3%
	Moderate (2)	1.4% 0.7% - 2.6%	2.2% 1.2% - 4.1%	1.5% 0.9% - 2.5%
	Severe (3)	0.6% 0.2% - 1.6%	0.4% 0.2% - 0.8%	0.5% 0.2% - 1.4%
	Observations	937	842	1,779
Fuel	Mean score (0 to 3)	0.005 0.002 - 0.009	0.017 0.005 - 0.028	0.007 0.003 - 0.010
	No impact (0)	99.6% 99.1% - 99.8%	98.4% 96.7% - 99.2%	99.4% 99.0% - 99.6%
	Slight (1)	0.3% 0.2% - 0.7%	1.6% 0.7% - 3.3%	0.5% 0.3% - 0.9%
	Moderate (2)	0.1% 0.0% - 0.3%	0.0% 0.0% - 0.2%	0.1% 0.0% - 0.3%
	Severe (3)			
	Observations	937	842	1,779

Table G.8. Question B1.3.1: How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment that you experienced?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Mean score (0 to 3)	0.013 0.004 - 0.021	0.083 0.046 - 0.120	0.022 0.013 - 0.030
	No impact (0)	99.0% 98.1% - 99.5%	93.8% 90.4% - 96.0%	98.4% 97.5% - 98.9%
	Slight (1)	0.7% 0.3% - 1.6%	4.2% 2.4% - 7.2%	1.1% 0.7% - 1.9%
	Moderate (2)	0.3% 0.1% - 0.8%	2.1% 1.0% - 4.3%	0.5% 0.3% - 0.9%
	Severe (3)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Observations	937	842	1,779

N/A: confidence interval could not be calculated.

Table G.9. Question B1.3.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Unavailable from supplier(s)	20.0% 4.1% - 59.2%	11.9% 3.5% - 33.2%	17.8% 5.0% - 47.2%
	Delayed / backordered from supplier(s)	45.4% 20.2% - 73.2%	73.4% 51.2% - 87.9%	52.8% 32.8% - 72.0%
	Transportation / distribution difficulties	48.9% 38.7% - 59.1%	6.8% 2.8% - 15.6%	37.8% 33.7% - 41.9%
	Price	0.0% N/A - N/A	9.8% 5.6% - 16.3%	2.6% 2.6% - 2.6%
	Other	2.8% 0.9% - 9.0%	0.0% N/A - N/A	2.1% 0.6% - 6.6%
	Observations	19	16	35
Granular/ Powdered Activated Carbon (GAC/ PAC)	Unavailable from supplier(s)	20.7% 2.2% - 75.5%	14.1% 3.2% - 44.4%	18.6% 3.5% - 59.0%
	Delayed / backordered from supplier(s)	51.7% 35.3% - 67.7%	78.6% 52.4% - 92.5%	60.2% 54.5% - 65.7%
	Transportation / distribution difficulties	4.8% 1.0% - 20.1%	17.4% 5.0% - 45.9%	8.8% 3.7% - 19.7%
	Price	2.7% 0.3% - 19.9%	0.0% N/A - N/A	1.9% 0.2% - 13.9%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	14	11	25

Table G.9. Question B1.3.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Unavailable from supplier(s)	3.2% 0.8% - 12.6%	3.4% 0.3% - 27.0%	3.3% 1.0% - 10.0%
	Delayed / backordered from supplier(s)	55.5% 29.8% - 78.5%	75.3% 43.0% - 92.4%	61.8% 38.6% - 80.6%
	Transportation / distribution difficulties	24.7% 15.0% - 38.0%	48.5% 9.0% - 90.0%	32.3% 14.6% - 57.1%
	Price	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	0.0% N/A - N/A	3.4% 0.3% - 27.0%	1.1% 0.1% - 8.7%
	Observations	15	10	25
Pumps	Unavailable from supplier(s)	6.4% 2.5% - 15.2%	6.3% 3.2% - 12.0%	6.4% 3.1% - 12.7%
	Delayed / backordered from supplier(s)	89.1% 71.4% - 96.4%	95.9% 91.0% - 98.2%	90.7% 77.3% - 96.6%
	Transportation / distribution difficulties	13.3% 5.1% - 30.4%	15.4% 8.4% - 26.7%	13.8% 6.7% - 26.2%
	Price	3.5% 1.0% - 11.2%	2.3% 0.8% - 6.4%	3.2% 1.1% - 8.6%
	Other	0.5% 0.1% - 2.0%	0.9% 0.2% - 3.5%	0.6% 0.2% - 1.7%
	Observations	69	108	177

Table G.9. Question B1.3.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Unavailable from supplier(s)	5.0% 1.7% - 13.8%	11.4% 4.7% - 25.0%	7.0% 3.5% - 13.4%
	Delayed / backordered from supplier(s)	92.2% 82.0% - 96.8%	95.3% 89.4% - 98.0%	93.1% 86.4% - 96.7%
	Transportation / distribution difficulties	8.2% 3.5% - 18.2%	22.3% 12.0% - 37.5%	12.5% 7.6% - 20.1%
	Price	0.5% 0.1% - 3.3%	1.0% 0.2% - 4.0%	0.6% 0.2% - 2.1%
	Other	0.4% 0.1% - 2.5%	0.5% 0.1% - 3.6%	0.4% 0.1% - 1.7%
	Observations	47	89	136
Pipes	Unavailable from supplier(s)	12.3% 4.4% - 30.1%	13.6% 5.8% - 28.7%	12.6% 5.8% - 25.3%
	Delayed / backordered from supplier(s)	82.4% 65.4% - 92.0%	84.1% 65.2% - 93.7%	82.8% 70.1% - 90.8%
	Transportation / distribution difficulties	10.0% 3.0% - 28.6%	18.9% 8.6% - 36.6%	12.3% 5.6% - 25.0%
	Price	7.3% 2.8% - 17.8%	5.4% 1.4% - 18.0%	6.8% 3.0% - 14.6%
	Other	0.2% 0.0% - 1.5%	0.0% N/A - N/A	0.2% 0.0% - 1.1%
	Observations	66	99	165

Table G.9. Question B1.3.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Unavailable from supplier(s)	13.4% 4.6% - 33.1%	7.7% 2.8% - 19.7%	11.9% 4.9% - 26.1%
	Delayed / backordered from supplier(s)	83.4% 64.4% - 93.3%	97.8% 93.1% - 99.3%	87.3% 72.9% - 94.6%
	Transportation / distribution difficulties	8.5% 3.7% - 18.3%	16.9% 8.7% - 30.1%	10.7% 6.2% - 17.9%
	Price	6.6% 2.2% - 18.4%	4.9% 1.1% - 19.3%	6.1% 2.4% - 14.8%
	Other	0.3% 0.0% - 1.7%	0.4% 0.1% - 2.9%	0.3% 0.1% - 1.2%
	Observations	63	110	173
	Fuel	Unavailable from supplier(s)	2.2% 0.3% - 15.9%	0.0% N/A - N/A
Delayed / backordered from supplier(s)		22.0% 3.0% - 71.9%	41.7% 10.6% - 81.2%	29.0% 8.5% - 64.3%
Transportation / distribution difficulties		53.7% 15.5% - 88.0%	49.9% 14.7% - 85.1%	52.3% 22.3% - 80.8%
Price		0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
Other		5.8% 1.3% - 22.8%	0.0% N/A - N/A	3.7% 0.8% - 15.3%
Observations		16	13	29

Table G.9. Question B1.3.2: What contributed to each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Unavailable from supplier(s)	1.0% 0.1% - 7.2%	20.9% 7.4% - 46.6%	10.9% 4.1% - 25.6%
	Delayed / backordered from supplier(s)	75.1% 46.9% - 91.1%	88.8% 67.7% - 96.7%	81.9% 63.5% - 92.1%
	Transportation / distribution difficulties	2.4% 0.9% - 6.6%	10.7% 2.9% - 32.5%	6.5% 2.3% - 17.3%
	Price	11.0% 1.4% - 51.7%	0.0% N/A - N/A	5.5% 0.7% - 33.0%
	Other	2.2% 0.5% - 8.9%	1.4% 0.3% - 5.9%	1.8% 0.6% - 5.0%
	Observations	19	41	60

N/A: confidence interval could not be calculated.

Table G.10. Question B1.3.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Found alternative supplier	10.2% 2.2% - 36.1%	24.3% 10.8% - 46.0%	13.9% 5.6% - 30.4%
	Drew down existing inventory	43.3% 34.2% - 52.8%	73.2% 52.1% - 87.3%	51.2% 37.0% - 65.1%
	Switched chemicals, procedures, or technologies	0.0% N/A - N/A	2.4% 0.3% - 18.3%	0.6% 0.1% - 4.9%
	Sought help from other utilities or mutual aid network (e.g., WARN)	5.5% 2.1% - 13.5%	0.0% N/A - N/A	4.0% 1.6% - 10.0%
	Coordinated with local or state emergency management agency	1.1% 0.1% - 7.7%	0.0% N/A - N/A	0.8% 0.1% - 5.7%
	Other	44.1% 31.9% - 57.0%	2.3% 0.3% - 16.9%	33.0% 22.6% - 45.5%
	Observations	19	16	35
Granular/ Powdered Activated Carbon (GAC/ PAC)	Found alternative supplier	2.7% 0.3% - 19.9%	14.3% 3.1% - 46.5%	6.4% 2.0% - 18.4%
	Drew down existing inventory	73.3% 44.5% - 90.3%	89.6% 67.2% - 97.3%	78.5% 49.6% - 93.1%
	Switched chemicals, procedures, or technologies	1.6% 0.2% - 11.9%	0.0% N/A - N/A	1.1% 0.1% - 8.4%
	Sought help from other utilities or mutual aid network (e.g., WARN)	2.7% 0.3% - 19.9%	0.0% N/A - N/A	1.9% 0.2% - 13.9%
	Coordinated with local or state emergency management agency	2.1% 0.2% - 15.5%	0.0% N/A - N/A	1.4% 0.2% - 10.7%
	Other	14.2% 1.9% - 58.3%	6.7% 1.5% - 25.1%	11.8% 1.8% - 49.7%
	Observations	14	11	25

Table G.10. Question B1.3.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Found alternative supplier	27.1% 17.2% - 39.9%	6.7% 1.5% - 25.7%	20.6% 16.2% - 25.8%
	Drew down existing inventory	39.6% 25.5% - 55.7%	75.0% 42.3% - 92.5%	50.9% 27.4% - 74.0%
	Switched chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Sought help from other utilities or mutual aid network (e.g., WARN)	2.8% 0.3% - 20.6%	7.3% 0.7% - 47.1%	4.2% 0.9% - 17.8%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	15.4% 2.1% - 61.0%	18.0% 4.5% - 50.8%	16.2% 3.7% - 49.3%
	Observations	15	10	25
Pumps	Found alternative supplier	43.1% 27.9% - 59.6%	26.7% 16.1% - 40.7%	39.2% 27.3% - 52.5%
	Drew down existing inventory	22.0% 13.7% - 33.4%	44.5% 30.6% - 59.3%	27.3% 19.6% - 36.6%
	Switched chemicals, procedures, or technologies	3.0% 0.8% - 10.5%	6.6% 1.9% - 20.4%	3.9% 1.6% - 9.3%
	Sought help from other utilities or mutual aid network (e.g., WARN)	5.8% 2.0% - 16.0%	3.9% 0.5% - 23.1%	5.4% 2.1% - 13.3%
	Coordinated with local or state emergency management agency	0.3% 0.1% - 1.2%	0.0% N/A - N/A	0.2% 0.1% - 0.9%
	Other	28.5% 15.3% - 46.9%	26.4% 18.6% - 36.1%	28.1% 17.3% - 42.1%
	Observations	69	108	177

Table G.10. Question B1.3.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Found alternative supplier	41.0% 23.3% - 61.3%	31.0% 18.5% - 47.1%	37.9% 24.9% - 53.0%
	Drew down existing inventory	23.3% 13.0% - 38.1%	50.6% 35.0% - 66.1%	31.7% 22.2% - 43.1%
	Switched chemicals, procedures, or technologies	0.8% 0.2% - 3.2%	6.4% 1.6% - 23.0%	2.5% 0.8% - 7.6%
	Sought help from other utilities or mutual aid network (e.g., WARN)	4.5% 0.9% - 19.3%	4.3% 0.6% - 25.9%	4.4% 1.2% - 14.6%
	Coordinated with local or state emergency management agency	0.5% 0.2% - 1.5%	0.0% N/A - N/A	0.4% 0.1% - 1.0%
	Other	28.0% 12.0% - 52.5%	20.8% 13.9% - 29.8%	25.8% 13.7% - 43.1%
	Observations	47	89	136
Pipes	Found alternative supplier	25.2% 12.7% - 44.0%	22.7% 11.3% - 40.4%	24.6% 14.3% - 38.9%
	Drew down existing inventory	62.0% 43.7% - 77.5%	64.7% 48.5% - 78.1%	62.7% 48.5% - 75.1%
	Switched chemicals, procedures, or technologies	1.4% 0.2% - 7.3%	3.7% 0.6% - 19.6%	2.0% 0.6% - 6.6%
	Sought help from other utilities or mutual aid network (e.g., WARN)	4.2% 1.3% - 12.8%	5.0% 1.2% - 18.2%	4.4% 1.7% - 10.7%
	Coordinated with local or state emergency management agency	0.1% 0.0% - 1.0%	0.0% N/A - N/A	0.1% 0.0% - 0.7%
	Other	19.4% 9.2% - 36.4%	17.1% 10.1% - 27.5%	18.8% 10.6% - 31.3%
	Observations	66	99	165

Table G.10. Question B1.3.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Found alternative supplier	32.0% 18.4% - 49.6%	26.1% 15.7% - 40.2%	30.4% 19.7% - 43.8%
	Drew down existing inventory	65.7% 49.0% - 79.2%	65.1% 51.4% - 76.7%	65.5% 53.0% - 76.2%
	Switched chemicals, procedures, or technologies	1.3% 0.2% - 8.9%	0.9% 0.1% - 6.0%	1.2% 0.2% - 6.0%
	Sought help from other utilities or mutual aid network (e.g., WARN)	6.0% 2.2% - 15.4%	4.5% 0.9% - 19.8%	5.6% 2.4% - 12.7%
	Coordinated with local or state emergency management agency	0.2% 0.0% - 1.1%	0.0% N/A - N/A	0.1% 0.0% - 0.8%
	Other	19.9% 11.5% - 32.2%	22.7% 14.5% - 33.7%	20.7% 13.8% - 29.8%
	Observations	63	110	173
Fuel	Found alternative supplier	34.8% 6.8% - 79.5%	11.6% 2.4% - 41.3%	26.6% 7.1% - 63.2%
	Drew down existing inventory	38.3% 16.3% - 66.5%	77.2% 47.9% - 92.6%	52.1% 33.4% - 70.3%
	Switched chemicals, procedures, or technologies	2.2% 0.3% - 15.9%	0.0% N/A - N/A	1.4% 0.2% - 10.3%
	Sought help from other utilities or mutual aid network (e.g., WARN)	4.8% 1.0% - 19.6%	0.0% N/A - N/A	3.1% 0.7% - 12.6%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	5.8% 1.3% - 22.8%	11.2% 2.7% - 36.0%	7.7% 3.0% - 18.2%
	Observations	16	13	29

Table G.10. Question B1.3.3: How did you address each shortage or supply chain disruption? (select all that apply)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Found alternative supplier	19.0% 4.1% - 56.4%	20.1% 6.9% - 46.0%	19.5% 7.6% - 41.7%
	Drew down existing inventory	20.8% 6.1% - 51.7%	53.8% 31.4% - 74.7%	37.1% 22.5% - 54.6%
	Switched chemicals, procedures, or technologies	1.0% 0.1% - 7.2%	8.2% 4.0% - 15.9%	4.6% 2.5% - 8.2%
	Sought help from other utilities or mutual aid network (e.g., WARN)	1.2% 0.2% - 8.4%	0.0% N/A - N/A	0.6% 0.1% - 4.2%
	Coordinated with local or state emergency management agency	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Other	44.3% 24.2% - 66.5%	26.5% 12.3% - 47.9%	35.5% 23.6% - 49.4%
	Observations	19	40	59

N/A: confidence interval could not be calculated.

Table G.11. Question B2.1: What kinds of shortages or supply chain disruptions are you most concerned about from present day through December 2020?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Treatment Chemicals	10.3% 8.2% - 12.9%	21.2% 17.4% - 25.5%	11.7% 9.8% - 13.9%
PPE	17.1% 14.5% - 20.0%	33.6% 29.1% - 38.5%	19.2% 16.9% - 21.8%
Durable Goods and Other Equipment and Supplies	16.8% 14.1% - 19.9%	25.1% 20.9% - 29.8%	17.9% 15.4% - 20.6%
None	70.2% 66.6% - 73.6%	47.5% 42.3% - 52.8%	67.3% 64.1% - 70.4%
Observations	925	830	1,755

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Mean score (0 to 3)	0.012 0.005 - 0.020	0.051 0.019 - 0.082	0.017 0.010 - 0.025
	None (0)	99.0% 98.0% - 99.5%	97.0% 94.7% - 98.3%	98.7% 97.9% - 99.2%
	Slight (1)	0.8% 0.4% - 1.8%	1.5% 0.6% - 3.7%	0.9% 0.5% - 1.7%
	Moderate (2)	0.2% 0.1% - 0.5%	0.8% 0.3% - 2.2%	0.3% 0.1% - 0.6%
	Severe (3)	0.0% 0.0% - 0.1%	0.6% 0.2% - 2.2%	0.1% 0.0% - 0.3%
	Observations	924	829	1,753
	Ferric chloride	Mean score (0 to 3)	0.011 0.005 - 0.017	0.041 0.020 - 0.062
None (0)		99.2% 98.6% - 99.6%	97.5% 95.9% - 98.5%	99.0% 98.5% - 99.4%
Slight (1)		0.5% 0.3% - 1.1%	1.2% 0.6% - 2.5%	0.6% 0.4% - 1.1%
Moderate (2)		0.1% 0.0% - 0.4%	0.9% 0.3% - 2.3%	0.2% 0.1% - 0.5%
Severe (3)		0.1% 0.0% - 0.3%	0.4% 0.2% - 0.8%	0.1% 0.0% - 0.3%
Observations		924	829	1,753

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Mean score (0 to 3)	0.016 0.007 - 0.025	0.074 0.040 - 0.108	0.024 0.015 - 0.033
	None (0)	98.6% 97.6% - 99.2%	94.2% 91.1% - 96.2%	98.1% 97.2% - 98.7%
	Slight (1)	1.2% 0.6% - 2.2%	4.2% 2.5% - 7.0%	1.5% 1.0% - 2.4%
	Moderate (2)	0.1% 0.0% - 0.5%	1.6% 0.7% - 3.7%	0.3% 0.2% - 0.7%
	Severe (3)	0.1% 0.0% - 0.4%	0.0% N/A - N/A	0.1% 0.0% - 0.4%
	Observations	924	829	1,753
Gaseous chlorine	Mean score (0 to 3)	0.029 0.017 - 0.042	0.203 0.128 - 0.278	0.052 0.037 - 0.066
	None (0)	97.7% 96.5% - 98.5%	90.5% 86.8% - 93.2%	96.8% 95.7% - 97.6%
	Slight (1)	1.8% 1.0% - 3.0%	3.4% 1.9% - 5.9%	2.0% 1.3% - 3.0%
	Moderate (2)	0.4% 0.2% - 0.9%	1.5% 0.6% - 3.7%	0.5% 0.3% - 1.0%
	Severe (3)	0.1% 0.0% - 0.5%	4.6% 2.8% - 7.5%	0.7% 0.4% - 1.1%
	Observations	924	829	1,753

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Mean score (0 to 3)	0.006 0.002 - 0.011	0.006 0.002 - 0.010	0.006 0.002 - 0.010
	None (0)	99.5% 99.0% - 99.8%	99.7% 99.4% - 99.8%	99.5% 99.1% - 99.8%
	Slight (1)	0.3% 0.1% - 0.9%	0.1% 0.0% - 0.3%	0.3% 0.1% - 0.8%
	Moderate (2)	0.1% 0.0% - 0.5%	0.2% 0.1% - 0.4%	0.1% 0.0% - 0.4%
	Severe (3)	0.0% 0.0% - 0.0%	0.0% 0.0% - 0.3%	0.0% 0.0% - 0.0%
	Observations	924	829	1,753
Lime	Mean score (0 to 3)	0.012 0.005 - 0.018	0.069 0.026 - 0.111	0.019 0.011 - 0.027
	None (0)	99.1% 98.4% - 99.5%	96.9% 94.6% - 98.2%	98.8% 98.2% - 99.2%
	Slight (1)	0.7% 0.4% - 1.2%	0.5% 0.3% - 0.9%	0.6% 0.4% - 1.1%
	Moderate (2)	0.2% 0.1% - 0.7%	1.6% 0.7% - 3.7%	0.4% 0.2% - 0.8%
	Severe (3)	0.0% 0.0% - 0.1%	1.1% 0.4% - 3.0%	0.1% 0.1% - 0.4%
	Observations	924	829	1,753

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Mean score (0 to 3)	0.014 0.005 - 0.023	0.078 0.039 - 0.118	0.022 0.013 - 0.031
	None (0)	98.9% 97.9% - 99.4%	94.8% 91.8% - 96.7%	98.4% 97.5% - 98.9%
	Slight (1)	0.8% 0.4% - 1.8%	3.1% 1.7% - 5.7%	1.1% 0.7% - 1.9%
	Moderate (2)	0.2% 0.1% - 0.7%	1.6% 0.7% - 3.7%	0.4% 0.2% - 0.8%
	Severe (3)	0.1% 0.0% - 0.4%	0.5% 0.1% - 2.4%	0.1% 0.0% - 0.4%
	Observations	924	829	1,753
	Polymers	Mean score (0 to 3)	0.027 0.016 - 0.037	0.163 0.111 - 0.216
None (0)		98.1% 97.0% - 98.8%	90.8% 87.6% - 93.2%	97.1% 96.2% - 97.8%
Slight (1)		1.4% 0.8% - 2.4%	4.1% 2.6% - 6.4%	1.7% 1.1% - 2.6%
Moderate (2)		0.4% 0.2% - 0.9%	3.1% 1.8% - 5.5%	0.8% 0.5% - 1.2%
Severe (3)		0.1% 0.0% - 0.4%	2.0% 1.1% - 3.6%	0.4% 0.2% - 0.7%
Observations		924	829	1,753

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Mean score (0 to 3)	0.014 0.006 - 0.021	0.025 0.011 - 0.038	0.015 0.008 - 0.022
	None (0)	98.9% 98.2% - 99.4%	98.2% 96.6% - 99.1%	98.8% 98.2% - 99.2%
	Slight (1)	0.8% 0.4% - 1.5%	1.3% 0.6% - 3.1%	0.9% 0.5% - 1.5%
	Moderate (2)	0.3% 0.1% - 0.8%	0.3% 0.1% - 0.6%	0.3% 0.1% - 0.7%
	Severe (3)	0.0% N/A - N/A	0.2% 0.1% - 0.6%	0.0% 0.0% - 0.1%
	Observations	924	829	1,753
	Sodium hydroxide	Mean score (0 to 3)	0.012 0.004 - 0.020	0.068 0.034 - 0.101
None (0)		99.0% 98.1% - 99.5%	95.8% 93.3% - 97.4%	98.6% 97.8% - 99.1%
Slight (1)		0.8% 0.4% - 1.8%	2.2% 1.1% - 4.5%	1.0% 0.5% - 1.8%
Moderate (2)		0.1% 0.0% - 0.3%	1.4% 0.7% - 2.7%	0.3% 0.1% - 0.5%
Severe (3)		0.1% 0.0% - 0.4%	0.6% 0.2% - 2.2%	0.1% 0.0% - 0.4%
Observations		924	829	1,753

Table G.12. Question B2.1.1: How severe are your concerns about treatment chemical shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Mean score (0 to 3)	0.086 0.058 - 0.115	0.134 0.090 - 0.178	0.092 0.067 - 0.118
	None (0)	94.0% 91.8% - 95.6%	91.7% 88.8% - 94.0%	93.7% 91.8% - 95.1%
	Slight (1)	3.8% 2.5% - 5.5%	4.8% 3.1% - 7.4%	3.9% 2.8% - 5.4%
	Moderate (2)	2.0% 1.1% - 3.6%	1.8% 1.1% - 3.0%	2.0% 1.2% - 3.3%
	Severe (3)	0.3% 0.1% - 0.8%	1.6% 0.8% - 3.3%	0.5% 0.2% - 0.9%
	Observations	924	829	1,753

N/A: confidence interval could not be calculated.

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Unavailable from supplier(s)	16.1% 3.2% - 53.1%	59.1% 27.6% - 84.6%	29.0% 13.2% - 52.3%
	Delayed / backordered from supplier(s)	33.7% 15.9% - 57.8%	18.9% 9.8% - 33.4%	29.3% 15.0% - 49.3%
	Transportation / distribution difficulties	7.4% 1.5% - 29.7%	39.4% 14.4% - 71.5%	17.0% 7.6% - 33.9%
	Price	7.6% 0.9% - 43.0%	31.4% 9.3% - 67.0%	14.7% 4.8% - 37.3%
	Other	0.0% N/A - N/A	19.2% 2.0% - 73.5%	17.2% 2.1% - 66.6%
	Observations	15	25	40
	Ferric chloride	Unavailable from supplier(s)	29.1% 14.3% - 50.2%	40.8% 17.2% - 69.6%
Delayed / backordered from supplier(s)		64.5% 37.2% - 84.7%	45.2% 24.4% - 67.8%	58.3% 37.2% - 76.7%
Transportation / distribution difficulties		9.9% 2.0% - 37.5%	40.6% 17.0% - 69.5%	19.8% 9.1% - 37.9%
Price		17.7% 3.6% - 55.1%	1.8% 0.2% - 12.6%	12.6% 2.9% - 41.3%
Other		0.0% N/A - N/A	100.0% N/A - N/A	61.2% 11.9% - 94.9%
Observations		16	30	46

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Unavailable from supplier(s)	22.2% 7.3% - 50.7%	30.4% 13.7% - 54.6%	25.3% 12.8% - 44.0%
	Delayed / backordered from supplier(s)	54.4% 30.8% - 76.2%	54.3% 31.2% - 75.7%	54.4% 36.9% - 70.8%
	Transportation / distribution difficulties	22.0% 8.1% - 47.4%	26.8% 12.3% - 49.0%	23.9% 12.5% - 40.8%
	Price	14.4% 4.4% - 37.9%	22.2% 7.7% - 49.3%	17.4% 8.0% - 33.6%
	Other	0.0% N/A - N/A	100.0% N/A - N/A	87.3% 29.0% - 99.1%
	Observations	18	40	58
	Gaseous chlorine	Unavailable from supplier(s)	32.6% 12.1% - 62.9%	38.4% 22.5% - 57.2%
Delayed / backordered from supplier(s)		53.4% 26.9% - 78.1%	57.5% 39.1% - 74.1%	55.0% 36.3% - 72.3%
Transportation / distribution difficulties		17.3% 7.3% - 35.6%	42.8% 26.4% - 61.1%	27.0% 17.4% - 39.4%
Price		3.7% 0.6% - 20.5%	13.0% 4.4% - 32.9%	7.2% 2.8% - 17.6%
Other		0.0% N/A - N/A	10.6% 0.7% - 66.2%	9.4% 0.7% - 59.3%
Observations		34	55	89

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Unavailable from supplier(s)	34.9% 13.4% - 64.9%	27.9% 5.1% - 73.5%	34.2% 14.2% - 62.2%
	Delayed / backordered from supplier(s)	43.7% 10.5% - 83.7%	41.9% 11.8% - 79.5%	43.5% 12.0% - 81.3%
	Transportation / distribution difficulties	3.6% 3.5% - 3.7%	27.9% 5.1% - 73.5%	5.8% 3.2% - 10.3%
	Price	17.9% 1.7% - 73.2%	14.0% 1.1% - 69.5%	17.5% 2.0% - 69.0%
	Other	0.0% N/A - N/A	100.0% N/A - N/A	45.0% 8.0% - 88.5%
	Observations	10	7	17
	Lime	Unavailable from supplier(s)	27.8% 7.2% - 65.7%	40.7% 16.2% - 70.9%
Delayed / backordered from supplier(s)		55.3% 23.9% - 83.0%	45.1% 19.2% - 73.9%	51.9% 28.3% - 74.6%
Transportation / distribution difficulties		7.4% 1.2% - 34.7%	61.0% 30.2% - 85.0%	25.5% 13.4% - 43.2%
Price		8.5% 1.0% - 46.6%	14.2% 2.1% - 55.4%	10.4% 2.4% - 35.4%
Other		100.0% N/A - N/A	10.6% 0.7% - 67.5%	20.9% 2.2% - 76.0%
Observations		17	28	45

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Unavailable from supplier(s)	25.0% 15.8% - 37.1%	42.7% 20.8% - 67.9%	32.3% 20.8% - 46.5%
	Delayed / backordered from supplier(s)	54.1% 33.9% - 73.1%	35.6% 16.5% - 60.7%	46.4% 31.3% - 62.2%
	Transportation / distribution difficulties	12.4% 3.8% - 33.9%	51.9% 27.9% - 75.0%	28.8% 17.3% - 43.9%
	Price	12.6% 2.8% - 42.1%	24.7% 8.6% - 53.4%	17.6% 7.4% - 36.5%
	Other	0.0% N/A - N/A	10.6% 0.7% - 67.1%	9.4% 0.7% - 60.2%
	Observations	16	36	52
	Polymers	Unavailable from supplier(s)	49.0% 30.7% - 67.5%	29.4% 17.2% - 45.6%
Delayed / backordered from supplier(s)		57.9% 39.7% - 74.2%	63.5% 46.5% - 77.7%	60.2% 47.4% - 71.8%
Transportation / distribution difficulties		16.1% 6.0% - 36.4%	38.7% 25.3% - 54.1%	25.4% 16.3% - 37.3%
Price		8.5% 2.3% - 26.6%	12.2% 4.4% - 29.6%	10.0% 4.4% - 21.3%
Other		0.0% N/A - N/A	18.6% 2.0% - 71.9%	14.2% 2.1% - 55.6%
Observations		39	81	120

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Unavailable from supplier(s)	9.8% 1.1% - 51.4%	15.8% 5.7% - 36.6%	11.0% 2.3% - 39.5%
	Delayed / backordered from supplier(s)	64.9% 33.5% - 87.1%	86.9% 68.6% - 95.3%	69.2% 42.2% - 87.4%
	Transportation / distribution difficulties	11.4% 1.7% - 48.6%	29.1% 11.9% - 55.5%	14.9% 4.6% - 39.0%
	Price	17.0% 3.4% - 54.6%	2.5% 0.3% - 18.2%	14.1% 3.1% - 46.1%
	Other	62.4% 8.6% - 96.7%		62.4% 8.6% - 96.7%
	Observations	18	21	39
	Sodium hydroxide	Unavailable from supplier(s)	25.1% 10.4% - 49.2%	39.4% 18.7% - 64.9%
Delayed / backordered from supplier(s)		65.6% 42.2% - 83.2%	66.3% 39.5% - 85.6%	65.9% 48.3% - 80.0%
Transportation / distribution difficulties		16.6% 4.5% - 45.7%	52.5% 27.9% - 75.9%	30.6% 17.0% - 48.8%
Price		8.0% 0.9% - 44.2%	17.4% 5.1% - 45.4%	11.7% 3.7% - 31.2%
Other		62.4% 8.9% - 96.6%	100.0% N/A - N/A	71.2% 16.9% - 96.8%
Observations		17	36	53

Table G.13. Question B2.1.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Unavailable from supplier(s)	31.8% 18.4% - 49.0%	32.9% 19.5% - 49.9%	32.0% 20.3% - 46.4%
	Delayed / backordered from supplier(s)	72.7% 56.4% - 84.6%	67.5% 49.7% - 81.4%	71.9% 58.2% - 82.4%
	Transportation / distribution difficulties	19.9% 9.6% - 36.9%	42.9% 27.6% - 59.6%	23.8% 14.0% - 37.3%
	Price	15.9% 6.7% - 33.3%	8.2% 2.4% - 24.8%	14.6% 6.6% - 29.1%
	Other	0.0% N/A - N/A	100.0% N/A - N/A	37.3% 7.5% - 81.2%
	Observations	66	80	146

N/A: confidence interval could not be calculated.

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Carbon dioxide	Seek alternative supplier	30.3% 9.5% - 64.1%	48.8% 20.7% - 77.7%	35.8% 17.0% - 60.3%
	Increase purchasing / maintain a larger than typical inventory	19.3% 7.7% - 40.7%	60.6% 28.5% - 85.6%	31.7% 19.2% - 47.5%
	Switch chemicals, procedures, or technologies	5.8% 0.7% - 33.6%	0.0% N/A - N/A	4.0% 0.5% - 26.1%
	Make arrangements with neighboring utilities or mutual aid network	9.5% 1.7% - 39.4%	18.1% 3.7% - 56.3%	12.1% 3.7% - 33.3%
	Other	100.0% N/A - N/A	26.3% 3.4% - 78.1%	68.3% 13.0% - 96.9%
	Observations	15	25	40
Ferric chloride	Seek alternative supplier	42.6% 18.9% - 70.4%	42.4% 18.4% - 70.7%	42.6% 23.5% - 64.2%
	Increase purchasing / maintain a larger than typical inventory	44.0% 21.1% - 69.7%	53.8% 26.7% - 78.9%	47.2% 28.5% - 66.6%
	Switch chemicals, procedures, or technologies	7.7% 1.0% - 41.6%	3.6% 0.8% - 13.7%	6.3% 1.1% - 28.9%
	Make arrangements with neighboring utilities or mutual aid network	12.6% 2.2% - 48.5%	17.9% 3.0% - 60.6%	14.3% 3.9% - 41.0%
	Other		100.0% N/A - N/A	100.0% N/A - N/A
	Observations	16	30	46

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Fluoride	Seek alternative supplier	22.8% 7.7% - 51.1%	45.7% 24.3% - 68.8%	31.6% 17.7% - 49.9%
	Increase purchasing / maintain a larger than typical inventory	58.6% 34.0% - 79.5%	46.5% 25.0% - 69.4%	53.9% 36.5% - 70.4%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.8% 0.1% - 5.9%	0.3% 0.0% - 2.3%
	Make arrangements with neighboring utilities or mutual aid network	15.0% 3.6% - 45.2%	17.8% 5.8% - 43.4%	16.1% 6.3% - 35.2%
	Other		55.3% 7.9% - 94.7%	55.3% 7.9% - 94.7%
	Observations	18	40	58
Gaseous chlorine	Seek alternative supplier	28.2% 15.1% - 46.5%	40.9% 24.6% - 59.4%	33.0% 22.1% - 46.1%
	Increase purchasing / maintain a larger than typical inventory	60.6% 33.3% - 82.5%	50.2% 32.5% - 67.9%	56.6% 38.4% - 73.2%
	Switch chemicals, procedures, or technologies	0.4% 0.4% - 0.5%	1.0% 0.1% - 7.1%	0.6% 0.2% - 2.1%
	Make arrangements with neighboring utilities or mutual aid network	14.4% 5.4% - 33.2%	15.6% 6.2% - 34.1%	14.9% 7.5% - 27.4%
	Other		42.5% 9.0% - 84.7%	42.5% 9.0% - 84.7%
	Observations	34	55	89

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Liquid oxygen	Seek alternative supplier	54.5% 15.4% - 88.7%	27.9% 5.1% - 73.5%	52.1% 16.4% - 85.8%
	Increase purchasing / maintain a larger than typical inventory	26.7% 7.8% - 60.9%	41.9% 11.8% - 79.5%	28.1% 9.7% - 58.7%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	18.8% 2.0% - 72.4%	0.0% N/A - N/A	17.1% 1.9% - 69.0%
	Other		100.0% N/A - N/A	100.0% N/A - N/A
	Observations	10	7	17
Lime	Seek alternative supplier	46.0% 24.3% - 69.3%	46.7% 20.4% - 75.0%	46.2% 28.6% - 64.8%
	Increase purchasing / maintain a larger than typical inventory	45.3% 23.1% - 69.7%	72.1% 42.0% - 90.2%	54.4% 35.6% - 72.0%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	10.7% 1.9% - 43.1%	18.8% 4.4% - 54.2%	13.5% 4.2% - 35.3%
	Other		19.2% 2.0% - 73.2%	19.2% 2.0% - 73.2%
	Observations	17	28	45

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Orthophosphate	Seek alternative supplier	27.8% 8.7% - 60.7%	41.4% 20.1% - 66.5%	33.4% 17.3% - 54.6%
	Increase purchasing / maintain a larger than typical inventory	46.7% 32.4% - 61.6%	58.5% 33.4% - 79.9%	51.6% 38.3% - 64.8%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.9% 0.1% - 6.6%	0.4% 0.1% - 2.8%
	Make arrangements with neighboring utilities or mutual aid network	18.7% 4.3% - 54.1%	17.1% 4.7% - 46.3%	18.1% 6.6% - 40.7%
	Other		52.8% 6.4% - 94.8%	52.8% 6.4% - 94.8%
	Observations	16	36	52
Polymers	Seek alternative supplier	27.7% 13.7% - 48.1%	34.6% 21.1% - 51.3%	30.6% 19.9% - 43.9%
	Increase purchasing / maintain a larger than typical inventory	65.7% 45.3% - 81.6%	65.0% 47.8% - 79.0%	65.4% 51.6% - 77.1%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	1.5% 0.5% - 4.5%	0.6% 0.2% - 1.9%
	Make arrangements with neighboring utilities or mutual aid network	5.0% 1.0% - 22.0%	13.3% 5.2% - 30.1%	8.5% 3.6% - 18.4%
	Other	88.2% 31.4% - 99.2%	28.4% 7.6% - 65.9%	52.9% 15.4% - 87.3%
	Observations	39	81	120

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Potassium permanganate	Seek alternative supplier	29.6% 9.7% - 62.2%	76.2% 50.5% - 91.0%	38.7% 18.2% - 64.3%
	Increase purchasing / maintain a larger than typical inventory	52.0% 23.4% - 79.4%	36.9% 16.0% - 64.3%	49.0% 25.0% - 73.5%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	18.8% 4.3% - 54.4%	10.7% 2.6% - 35.1%	17.2% 4.8% - 46.1%
	Other	100.0% N/A - N/A	100.0% N/A - N/A	100.0% N/A - N/A
	Observations	18	21	39
Sodium hydroxide	Seek alternative supplier	33.1% 16.6% - 55.1%	35.9% 16.0% - 62.3%	34.2% 20.6% - 51.0%
	Increase purchasing / maintain a larger than typical inventory	64.6% 41.4% - 82.5%	45.0% 22.8% - 69.3%	56.9% 40.0% - 72.3%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	1.1% 0.1% - 8.2%	0.4% 0.1% - 3.2%
	Make arrangements with neighboring utilities or mutual aid network	10.1% 1.8% - 40.7%	4.6% 1.2% - 15.4%	7.9% 2.1% - 25.8%
	Other	100.0% N/A - N/A	100.0% N/A - N/A	100.0% N/A - N/A
	Observations	17	36	53

Table G.14. Question B2.1.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Sodium hypochlorite	Seek alternative supplier	25.8% 14.2% - 42.3%	46.6% 30.7% - 63.2%	29.3% 18.7% - 42.7%
	Increase purchasing / maintain a larger than typical inventory	69.6% 52.3% - 82.7%	65.4% 48.6% - 79.1%	68.9% 54.5% - 80.4%
	Switch chemicals, procedures, or technologies	4.3% 0.6% - 26.4%	0.6% 0.1% - 4.0%	3.7% 0.5% - 22.2%
	Make arrangements with neighboring utilities or mutual aid network	14.6% 5.8% - 32.0%	14.8% 5.9% - 32.7%	14.6% 6.8% - 28.9%
	Other	93.7% 57.9% - 99.4%	94.3% 63.6% - 99.4%	93.9% 72.3% - 98.9%
	Observations	66	80	146

N/A: confidence interval could not be calculated.

Table G.15. Question B2.2.1: How severe are your concerns about personal protective equipment shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Mean score (0 to 3)	0.185 0.145 - 0.225	0.369 0.303 - 0.435	0.209 0.173 - 0.245
	None (0)	88.3% 85.7% - 90.4%	75.0% 70.5% - 79.0%	86.6% 84.3% - 88.6%
	Slight (1)	7.1% 5.4% - 9.4%	15.9% 12.5% - 19.9%	8.2% 6.6% - 10.3%
	Moderate (2)	2.4% 1.6% - 3.6%	6.5% 4.5% - 9.2%	2.9% 2.2% - 4.0%
	Severe (3)	2.2% 1.4% - 3.5%	2.7% 1.7% - 4.3%	2.2% 1.5% - 3.3%
	Observations	924	830	1,754
	Alternative mask options (surgical, cloth, etc.)	Mean score (0 to 3)	0.161 0.127 - 0.194	0.314 0.250 - 0.379
None (0)		88.8% 86.2% - 90.9%	77.3% 72.9% - 81.1%	87.3% 85.0% - 89.3%
Slight (1)		6.9% 5.1% - 9.2%	14.7% 11.7% - 18.3%	7.9% 6.3% - 9.9%
Moderate (2)		3.8% 2.7% - 5.4%	7.4% 5.1% - 10.6%	4.3% 3.3% - 5.6%
Severe (3)		0.5% 0.2% - 1.1%	0.6% 0.2% - 2.3%	0.5% 0.3% - 1.0%
Observations		924	830	1,754

Table G.15. Question B2.2.1: How severe are your concerns about personal protective equipment shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Mean score (0 to 3)	0.122 0.094 - 0.150	0.210 0.162 - 0.258	0.133 0.108 - 0.158
	None (0)	90.5% 88.1% - 92.5%	82.7% 78.7% - 86.1%	89.5% 87.4% - 91.3%
	Slight (1)	7.2% 5.4% - 9.5%	13.8% 10.7% - 17.5%	8.0% 6.4% - 10.0%
	Moderate (2)	1.9% 1.2% - 3.0%	3.4% 2.0% - 5.7%	2.1% 1.5% - 3.0%
	Severe (3)	0.4% 0.2% - 1.0%	0.1% 0.0% - 0.5%	0.4% 0.2% - 0.8%
	Observations	924	830	1,754
	Nitrile and/or latex gloves	Mean score (0 to 3)	0.208 0.170 - 0.247	0.398 0.323 - 0.472
None (0)		86.1% 83.4% - 88.4%	73.7% 69.2% - 77.8%	84.5% 82.1% - 86.6%
Slight (1)		7.8% 6.0% - 10.1%	14.2% 11.3% - 17.7%	8.7% 7.0% - 10.6%
Moderate (2)		5.3% 3.9% - 7.0%	10.8% 8.0% - 14.4%	6.0% 4.7% - 7.5%
Severe (3)		0.8% 0.5% - 1.5%	1.3% 0.6% - 3.1%	0.9% 0.5% - 1.4%
Observations		924	830	1,754

Table G.15. Question B2.2.1: How severe are your concerns about personal protective equipment shortages or supply chain disruptions?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Mean score (0 to 3)	0.102 0.075 - 0.130	0.196 0.149 - 0.244	0.114 0.090 - 0.139
	None (0)	93.4% 91.5% - 94.9%	85.1% 81.2% - 88.4%	92.4% 90.7% - 93.8%
	Slight (1)	3.5% 2.4% - 5.1%	10.1% 7.3% - 13.7%	4.4% 3.3% - 5.7%
	Moderate (2)	2.5% 1.6% - 3.8%	4.8% 3.2% - 7.0%	2.8% 2.0% - 3.9%
	Severe (3)	0.6% 0.3% - 1.2%	0.0% N/A - N/A	0.5% 0.3% - 1.0%
	Observations	924	830	1,754
	Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	Mean score (0 to 3)	0.205 0.164 - 0.246	0.403 0.330 - 0.476
None (0)		86.1% 83.4% - 88.4%	72.5% 67.9% - 76.7%	84.3% 81.9% - 86.5%
Slight (1)		8.7% 6.9% - 11.1%	16.5% 13.3% - 20.2%	9.7% 8.0% - 11.8%
Moderate (2)		3.7% 2.6% - 5.2%	9.3% 6.7% - 12.8%	4.4% 3.4% - 5.8%
Severe (3)		1.5% 0.8% - 2.7%	1.8% 0.9% - 3.5%	1.5% 0.9% - 2.6%
Observations		924	830	1,754

N/A: confidence interval could not be calculated.

Table G.16. Question B2.2.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Unavailable from supplier(s)	54.2% 43.2% - 64.7%	50.8% 41.1% - 60.4%	53.4% 44.7% - 61.8%
	Delayed / backordered from supplier(s)	58.4% 47.3% - 68.8%	72.3% 62.7% - 80.2%	61.8% 52.9% - 69.9%
	Transportation / distribution difficulties	15.9% 9.5% - 25.2%	17.7% 11.7% - 25.7%	16.3% 11.0% - 23.4%
	Price	18.4% 11.2% - 28.7%	15.0% 9.3% - 23.3%	17.6% 11.8% - 25.5%
	Other	13.7% 7.7% - 23.1%	5.1% 3.5% - 7.4%	11.6% 7.0% - 18.8%
	Observations	150	232	382
	Alternative mask options (surgical, cloth, etc.)	Unavailable from supplier(s)	27.1% 18.6% - 37.7%	31.2% 22.7% - 41.2%
Delayed / backordered from supplier(s)		69.6% 58.5% - 78.8%	81.9% 73.5% - 88.1%	72.4% 63.6% - 79.8%
Transportation / distribution difficulties		17.2% 10.5% - 26.9%	21.5% 14.5% - 30.6%	18.2% 12.5% - 25.6%
Price		20.1% 12.1% - 31.4%	11.0% 6.6% - 17.9%	18.0% 11.6% - 26.8%
Other		12.7% 6.8% - 22.4%	5.2% 3.6% - 7.5%	10.9% 6.3% - 18.4%
Observations		144	212	356

Table G.16. Question B2.2.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Unavailable from supplier(s)	39.3% 28.0% - 51.9%	37.1% 26.9% - 48.6%	38.8% 29.5% - 49.1%
	Delayed / backordered from supplier(s)	62.2% 49.4% - 73.5%	71.7% 60.2% - 81.0%	64.2% 53.8% - 73.4%
	Transportation / distribution difficulties	7.5% 3.0% - 17.5%	15.3% 8.4% - 26.3%	9.2% 4.9% - 16.5%
	Price	16.1% 8.4% - 28.5%	9.3% 5.0% - 16.6%	14.6% 8.4% - 24.4%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	120	159	279
	Nitrile and/or latex gloves	Unavailable from supplier(s)	47.7% 38.1% - 57.5%	44.2% 35.1% - 53.6%
Delayed / backordered from supplier(s)		70.2% 60.3% - 78.4%	77.3% 67.6% - 84.8%	71.7% 63.8% - 78.5%
Transportation / distribution difficulties		15.9% 9.8% - 24.7%	22.4% 15.2% - 31.7%	17.3% 12.1% - 24.2%
Price		22.3% 15.1% - 31.7%	21.3% 15.3% - 28.7%	22.1% 16.1% - 29.5%
Other		0.6% 0.1% - 3.9%	0.9% 0.3% - 2.9%	0.6% 0.2% - 2.5%
Observations		181	240	421

Table G.16. Question B2.2.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Unavailable from supplier(s)	45.9% 33.0% - 59.4%	43.5% 31.2% - 56.7%	45.3% 34.9% - 56.1%
	Delayed / backordered from supplier(s)	61.8% 47.6% - 74.1%	62.8% 48.6% - 75.1%	62.0% 50.9% - 72.0%
	Transportation / distribution difficulties	1.3% 0.3% - 5.1%	15.9% 8.2% - 28.6%	5.0% 2.7% - 8.8%
	Price	9.1% 4.5% - 17.4%	10.0% 5.2% - 18.5%	9.3% 5.4% - 15.5%
	Other	1.6% 0.2% - 10.8%	0.3% 0.0% - 2.0%	1.3% 0.2% - 7.9%
	Observations	95	130	225
Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	Unavailable from supplier(s)	48.4% 38.6% - 58.3%	54.1% 44.7% - 63.2%	49.7% 41.7% - 57.6%
	Delayed / backordered from supplier(s)	64.9% 54.9% - 73.8%	77.8% 69.5% - 84.3%	67.8% 59.8% - 74.9%
	Transportation / distribution difficulties	4.6% 2.3% - 8.8%	12.3% 7.3% - 20.0%	6.3% 4.0% - 9.7%
	Price	19.5% 12.4% - 29.4%	16.8% 11.0% - 24.9%	18.9% 13.1% - 26.6%
	Other	9.6% 5.0% - 17.7%	4.0% 2.7% - 5.8%	8.3% 4.6% - 14.5%
	Observations	177	252	429

N/A: confidence interval could not be calculated.

Table G.17. Question B2.2.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
N95 masks and/or elastomeric respirators	Seek alternative supplier	54.6% 43.6% - 65.2%	64.1% 54.3% - 72.8%	56.9% 48.1% - 65.2%
	Increase purchasing / maintain a larger than typical inventory	56.2% 45.1% - 66.7%	71.3% 61.8% - 79.1%	59.8% 51.0% - 68.0%
	Switch chemicals, procedures, or technologies	13.8% 7.9% - 23.2%	8.8% 5.6% - 13.6%	12.6% 7.9% - 19.7%
	Make arrangements w/ neighboring utilities or mutual aid network	13.6% 7.8% - 22.8%	15.2% 8.6% - 25.4%	14.0% 9.0% - 21.1%
	Other	3.0% 0.6% - 13.1%	2.3% 1.1% - 4.7%	2.8% 0.8% - 9.5%
	Observations	150	232	382
Alternative mask options (surgical, cloth, etc.)	Seek alternative supplier	54.0% 42.6% - 64.9%	59.4% 48.6% - 69.3%	55.2% 46.1% - 64.0%
	Increase purchasing / maintain a larger than typical inventory	67.3% 55.8% - 77.1%	81.2% 72.7% - 87.5%	70.5% 61.4% - 78.2%
	Switch chemicals, procedures, or technologies	0.2% 0.0% - 0.6%	1.2% 0.4% - 3.5%	0.4% 0.2% - 0.9%
	Make arrangements w/ neighboring utilities or mutual aid network	10.6% 5.7% - 18.9%	10.5% 5.7% - 18.4%	10.5% 6.4% - 16.9%
	Other	0.9% 0.1% - 6.5%	0.4% 0.1% - 1.6%	0.8% 0.1% - 4.6%
	Observations	144	212	356

Table G.17. Question B2.2.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Face shield and/or protective eye wear	Seek alternative supplier	62.8% 51.1% - 73.3%	57.1% 45.1% - 68.3%	61.6% 52.1% - 70.3%
	Increase purchasing / maintain a larger than typical inventory	40.0% 28.9% - 52.3%	60.0% 48.0% - 70.9%	44.3% 34.9% - 54.0%
	Switch chemicals, procedures, or technologies	0.2% 0.0% - 0.7%	2.2% 0.9% - 5.4%	0.6% 0.3% - 1.3%
	Make arrangements w/ neighboring utilities or mutual aid network	11.1% 5.6% - 20.8%	7.9% 3.4% - 17.6%	10.4% 5.8% - 18.1%
	Other	0.1% 0.0% - 0.6%	1.1% 0.3% - 4.3%	0.3% 0.1% - 1.0%
	Observations	120	159	279
Nitrile and/or latex gloves	Seek alternative supplier	58.5% 48.5% - 67.8%	61.6% 51.7% - 70.5%	59.1% 51.1% - 66.7%
	Increase purchasing / maintain a larger than typical inventory	57.1% 47.2% - 66.5%	75.4% 66.3% - 82.7%	61.1% 53.0% - 68.7%
	Switch chemicals, procedures, or technologies	10.6% 5.8% - 18.7%	8.9% 5.4% - 14.4%	10.2% 6.2% - 16.5%
	Make arrangements w/ neighboring utilities or mutual aid network	9.5% 5.4% - 16.3%	7.2% 3.7% - 13.3%	9.0% 5.6% - 14.3%
	Other	1.6% 0.4% - 5.8%	0.9% 0.3% - 2.9%	1.4% 0.5% - 4.5%
	Observations	181	240	421

Table G.17. Question B2.2.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Tyvek suite and/or disposable coveralls	Seek alternative supplier	63.9% 49.6% - 76.1%	66.1% 52.3% - 77.6%	64.4% 53.2% - 74.3%
	Increase purchasing / maintain a larger than typical inventory	38.0% 25.5% - 52.2%	57.7% 44.4% - 70.0%	42.9% 32.6% - 53.8%
	Switch chemicals, procedures, or technologies	19.8% 10.3% - 34.6%	9.0% 6.2% - 12.8%	17.1% 9.7% - 28.2%
	Make arrangements w/ neighboring utilities or mutual aid network	8.7% 4.4% - 16.6%	8.3% 3.2% - 19.7%	8.6% 4.9% - 14.8%
	Other	1.3% 0.2% - 7.5%	0.9% 0.2% - 4.1%	1.2% 0.3% - 5.1%
	Observations	95	130	225
Sanitizing wipes, sprays for cleaning work offices, or gels for hand	Seek alternative supplier	54.8% 44.8% - 64.4%	60.9% 51.3% - 69.7%	56.2% 48.1% - 63.9%
	Increase purchasing / maintain a larger than typical inventory	61.7% 51.6% - 70.9%	77.1% 69.1% - 83.4%	65.2% 57.1% - 72.5%
	Switch chemicals, procedures, or technologies	2.9% 0.7% - 10.6%	8.4% 4.8% - 14.2%	4.1% 1.9% - 8.8%
	Make arrangements w/ neighboring utilities or mutual aid network	8.1% 5.0% - 12.9%	8.3% 4.4% - 15.0%	8.2% 5.5% - 12.0%
	Other	4.0% 1.3% - 11.6%	1.7% 0.8% - 3.5%	3.5% 1.3% - 9.1%
	Observations	177	252	429

Table G.18. Question B2.3.1: How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc.?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Mean score (0 to 3)	0.051 0.027 - 0.074	0.048 0.025 - 0.072	0.051 0.030 - 0.071
	None (0)	96.6% 94.7% - 97.8%	95.9% 93.5% - 97.4%	96.5% 94.9% - 97.6%
	Slight (1)	2.0% 1.1% - 3.5%	3.4% 2.0% - 5.7%	2.2% 1.4% - 3.5%
	Moderate (2)	1.1% 0.5% - 2.6%	0.6% 0.2% - 2.2%	1.1% 0.5% - 2.3%
	Severe (3)	0.3% 0.1% - 0.9%	0.0% 0.0% - 0.3%	0.3% 0.1% - 0.7%
	Observations	921	827	1,748
Granular/ Powdered Activated Carbon (GAC/ PAC)	Mean score (0 to 3)	0.025 0.011 - 0.040	0.040 0.017 - 0.063	0.027 0.014 - 0.040
	None (0)	98.2% 96.9% - 98.9%	97.0% 94.7% - 98.3%	98.0% 96.9% - 98.7%
	Slight (1)	1.2% 0.7% - 2.2%	2.2% 1.1% - 4.4%	1.4% 0.8% - 2.2%
	Moderate (2)	0.5% 0.2% - 1.6%	0.7% 0.2% - 2.2%	0.5% 0.2% - 1.4%
	Severe (3)	0.1% 0.0% - 0.5%	0.1% 0.0% - 0.6%	0.1% 0.0% - 0.4%
	Observations	921	827	1,748

Table G.18. Question B2.3.1: How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc.?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Mean score (0 to 3)	0.021 0.008 - 0.035	0.022 0.007 - 0.038	0.022 0.009 - 0.034
	None (0)	98.3% 96.9% - 99.1%	97.8% 95.6% - 99.0%	98.2% 97.1% - 98.9%
	Slight (1)	1.3% 0.7% - 2.5%	2.1% 1.0% - 4.3%	1.4% 0.8% - 2.4%
	Moderate (2)	0.4% 0.1% - 1.5%	0.1% 0.0% - 0.3%	0.4% 0.1% - 1.3%
	Severe (3)	0.0% 0.0% - 0.1%	0.0% N/A - N/A	0.0% 0.0% - 0.1%
	Observations	921	827	1,748
Pumps	Mean score (0 to 3)	0.159 0.118 - 0.201	0.263 0.194 - 0.331	0.173 0.136 - 0.210
	None (0)	89.7% 87.1% - 91.9%	82.6% 78.4% - 86.2%	88.8% 86.5% - 90.8%
	Slight (1)	6.2% 4.6% - 8.3%	10.5% 7.8% - 13.9%	6.7% 5.2% - 8.6%
	Moderate (2)	2.5% 1.6% - 4.1%	4.9% 3.0% - 7.7%	2.8% 1.9% - 4.2%
	Severe (3)	1.6% 0.8% - 3.0%	2.0% 0.9% - 4.3%	1.6% 0.9% - 2.8%
	Observations	921	827	1,748

Table G.18. Question B2.3.1: How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc.?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Mean score (0 to 3)	0.136 0.098 - 0.174	0.262 0.194 - 0.330	0.152 0.118 - 0.186
	None (0)	91.3% 88.9% - 93.2%	82.2% 77.9% - 85.9%	90.1% 88.0% - 91.9%
	Slight (1)	5.1% 3.7% - 7.0%	11.3% 8.4% - 15.1%	5.9% 4.5% - 7.5%
	Moderate (2)	2.4% 1.5% - 4.0%	4.4% 2.7% - 7.1%	2.7% 1.8% - 4.0%
	Severe (3)	1.2% 0.6% - 2.4%	2.1% 1.0% - 4.3%	1.3% 0.8% - 2.4%
	Observations	921	827	1,748
Pipes	Mean score (0 to 3)	0.138 0.101 - 0.175	0.236 0.173 - 0.299	0.151 0.117 - 0.184
	None (0)	90.3% 87.8% - 92.3%	82.3% 77.9% - 86.1%	89.3% 87.1% - 91.1%
	Slight (1)	6.6% 5.0% - 8.7%	13.5% 10.2% - 17.7%	7.5% 6.0% - 9.4%
	Moderate (2)	2.0% 1.1% - 3.6%	2.4% 1.3% - 4.3%	2.1% 1.3% - 3.4%
	Severe (3)	1.0% 0.5% - 2.3%	1.8% 0.7% - 4.2%	1.1% 0.6% - 2.2%
	Observations	921	827	1,748

Table G.18. Question B2.3.1: How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc.?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Mean score (0 to 3)	0.133 0.096 - 0.170	0.258 0.192 - 0.325	0.149 0.116 - 0.182
	None (0)	91.0% 88.6% - 92.9%	81.5% 77.0% - 85.3%	89.8% 87.7% - 91.6%
	Slight (1)	5.7% 4.2% - 7.6%	13.1% 9.9% - 17.0%	6.6% 5.2% - 8.3%
	Moderate (2)	2.4% 1.4% - 3.9%	3.5% 2.0% - 6.2%	2.5% 1.6% - 3.8%
	Severe (3)	1.0% 0.4% - 2.2%	1.9% 0.9% - 4.3%	1.1% 0.6% - 2.1%
	Observations	921	827	1,748
Fuel	Mean score (0 to 3)	0.066 0.037 - 0.095	0.136 0.082 - 0.190	0.075 0.049 - 0.101
	None (0)	96.3% 94.6% - 97.5%	90.9% 87.2% - 93.7%	95.6% 94.1% - 96.7%
	Slight (1)	1.4% 0.9% - 2.2%	5.8% 3.6% - 9.1%	1.9% 1.4% - 2.7%
	Moderate (2)	1.7% 0.9% - 3.3%	2.0% 1.0% - 4.0%	1.8% 1.0% - 3.1%
	Severe (3)	0.6% 0.2% - 1.6%	1.3% 0.5% - 3.6%	0.7% 0.3% - 1.5%
	Observations	921	827	1,748

Table G.18. Question B2.3.1: How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc.?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Mean score (0 to 3)	0.037 0.020 - 0.054	0.134 0.078 - 0.189	0.050 0.033 - 0.066
	None (0)	97.7% 96.6% - 98.5%	90.5% 86.3% - 93.5%	96.8% 95.7% - 97.6%
	Slight (1)	1.1% 0.7% - 1.9%	6.8% 4.3% - 10.6%	1.8% 1.3% - 2.6%
	Moderate (2)	0.9% 0.4% - 1.8%	1.5% 0.6% - 3.7%	1.0% 0.5% - 1.8%
	Severe (3)	0.3% 0.1% - 0.9%	1.2% 0.4% - 3.6%	0.4% 0.2% - 0.9%
	Observations	921	827	1,748

N/A: confidence interval could not be calculated.

Table G.19. Question B2.3.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Unavailable from supplier(s)	27.6% 11.3% - 53.3%	21.9% 7.1% - 50.7%	26.8% 12.2% - 49.0%
	Delayed / backordered from supplier(s)	55.5% 32.3% - 76.5%	62.7% 36.2% - 83.3%	56.6% 36.1% - 75.1%
	Transportation / distribution difficulties	9.7% 1.7% - 39.5%	20.1% 6.9% - 46.3%	11.3% 3.1% - 33.4%
	Price	15.5% 4.6% - 41.2%	14.3% 3.5% - 43.8%	15.3% 5.3% - 36.9%
	Other	3.1% 0.4% - 20.2%	0.0% N/A - N/A	2.6% 0.3% - 17.4%
	Observations	39	40	79
	Granular/ Powdered Activated Carbon (GAC/ PAC)	Unavailable from supplier(s)	40.3% 13.9% - 73.7%	49.8% 22.6% - 77.2%
Delayed / backordered from supplier(s)		44.2% 16.4% - 76.2%	59.1% 27.7% - 84.5%	47.1% 22.1% - 73.7%
Transportation / distribution difficulties		0.5% 0.1% - 3.4%	27.2% 9.0% - 58.5%	5.7% 2.1% - 14.2%
Price		18.9% 3.2% - 62.3%	32.5% 11.0% - 65.2%	21.6% 5.9% - 54.8%
Other		0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
Observations		28	27	55

Table G.19. Question B2.3.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Unavailable from supplier(s)	47.7% 17.5% - 79.6%	31.0% 6.8% - 73.3%	45.1% 18.9% - 74.3%
	Delayed / backordered from supplier(s)	58.0% 23.7% - 86.0%	40.5% 12.5% - 76.4%	55.3% 25.7% - 81.6%
	Transportation / distribution difficulties	0.5% 0.1% - 3.8%	26.8% 5.8% - 68.4%	4.6% 1.2% - 16.4%
	Price	20.5% 3.3% - 66.4%	4.3% 0.8% - 19.5%	18.0% 3.2% - 59.4%
	Other	0.0% N/A - N/A	2.2% 0.2% - 17.3%	0.3% 0.0% - 2.7%
	Observations	24	16	40
	Pumps	Unavailable from supplier(s)	31.3% 20.9% - 43.9%	28.8% 18.9% - 41.3%
Delayed / backordered from supplier(s)		72.4% 59.6% - 82.3%	82.1% 67.9% - 90.8%	74.3% 63.8% - 82.6%
Transportation / distribution difficulties		10.4% 5.3% - 19.3%	21.5% 12.5% - 34.4%	12.6% 7.8% - 19.7%
Price		18.5% 10.6% - 30.2%	13.7% 6.5% - 26.6%	17.5% 10.9% - 27.0%
Other		1.0% 0.1% - 7.1%	0.0% N/A - N/A	0.8% 0.1% - 5.7%
Observations		116	141	257

Table G.19. Question B2.3.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Unavailable from supplier(s)	30.7% 19.9% - 44.2%	28.2% 18.3% - 40.7%	30.1% 21.2% - 40.8%
	Delayed / backordered from supplier(s)	76.0% 62.0% - 86.0%	86.5% 74.5% - 93.4%	78.4% 67.4% - 86.4%
	Transportation / distribution difficulties	9.9% 4.7% - 19.8%	16.4% 9.3% - 27.3%	11.4% 6.7% - 18.8%
	Price	20.4% 11.5% - 33.5%	11.6% 5.8% - 21.9%	18.3% 11.2% - 28.6%
	Other	1.2% 0.2% - 8.3%	0.0% N/A - N/A	0.9% 0.1% - 6.4%
	Observations	104	136	240
	Pipes	Unavailable from supplier(s)	37.9% 27.2% - 49.9%	32.9% 21.9% - 46.1%
Delayed / backordered from supplier(s)		64.6% 51.9% - 75.5%	80.6% 66.2% - 89.9%	68.0% 57.6% - 76.8%
Transportation / distribution difficulties		7.3% 3.9% - 13.4%	25.1% 15.1% - 38.8%	11.1% 7.4% - 16.4%
Price		14.6% 8.4% - 24.2%	9.9% 4.9% - 18.8%	13.6% 8.4% - 21.2%
Other		3.8% 0.8% - 16.0%	0.3% 0.0% - 1.8%	3.1% 0.7% - 12.7%
Observations		111	129	240

Table G.19. Question B2.3.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Unavailable from supplier(s)	35.6% 24.6% - 48.3%	30.1% 19.8% - 42.7%	34.3% 25.4% - 44.5%
	Delayed / backordered from supplier(s)	71.8% 58.3% - 82.3%	81.3% 67.3% - 90.1%	74.0% 63.2% - 82.5%
	Transportation / distribution difficulties	5.5% 2.7% - 10.6%	20.4% 12.2% - 32.0%	8.9% 5.9% - 13.3%
	Price	14.2% 7.8% - 24.5%	14.5% 7.1% - 27.4%	14.3% 8.8% - 22.3%
	Other	1.2% 0.2% - 8.0%	0.0% N/A - N/A	0.9% 0.1% - 6.2%
	Observations	107	137	244
	Fuel	Unavailable from supplier(s)	47.1% 30.2% - 64.6%	39.3% 22.7% - 58.7%
Delayed / backordered from supplier(s)		50.2% 30.3% - 70.0%	34.3% 19.7% - 52.7%	46.0% 30.6% - 62.2%
Transportation / distribution difficulties		17.5% 6.4% - 39.5%	39.8% 23.1% - 59.4%	23.4% 12.8% - 38.8%
Price		41.7% 23.3% - 62.9%	27.8% 14.1% - 47.6%	38.1% 23.6% - 55.0%
Other		0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
Observations		49	54	103

Table G.19. Question B2.3.2: For each item, what are you most concerned about? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Unavailable from supplier(s)	29.6% 17.3% - 45.9%	30.3% 14.5% - 52.8%	29.9% 19.5% - 42.9%
	Delayed / backordered from supplier(s)	60.3% 41.7% - 76.3%	81.5% 61.6% - 92.3%	68.3% 54.1% - 79.8%
	Transportation / distribution difficulties	12.0% 4.7% - 27.2%	19.9% 8.5% - 39.7%	15.0% 8.3% - 25.7%
	Price	47.3% 30.4% - 64.8%	15.7% 6.1% - 34.8%	35.3% 23.7% - 48.9%
	Other	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Observations	37	44	81

N/A: confidence interval could not be calculated.

Table G.20. Question B2.3.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Filter media	Seek alternative supplier	33.1% 18.0% - 52.7%	61.6% 35.4% - 82.5%	37.4% 23.3% - 54.0%
	Increase purchasing / maintain a larger than typical inventory	62.3% 42.7% - 78.6%	35.1% 15.1% - 62.3%	58.2% 41.6% - 73.2%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	6.4% 1.8% - 20.0%	0.0% N/A - N/A	5.4% 1.6% - 17.2%
	Other	6.2% 1.7% - 20.4%	1.2% 0.2% - 8.4%	5.5% 1.6% - 17.4%
	Observations	39	40	79
Granular/ Powdered Activated Carbon (GAC/ PAC)	Seek alternative supplier	61.6% 44.2% - 76.4%	52.8% 23.9% - 79.9%	59.9% 44.8% - 73.2%
	Increase purchasing / maintain a larger than typical inventory	38.4% 13.1% - 72.1%	57.1% 27.9% - 82.1%	42.0% 18.8% - 69.4%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	5.3% 1.0% - 23.5%	0.0% N/A - N/A	4.2% 0.8% - 19.6%
	Other	4.2% 0.5% - 26.2%	0.0% N/A - N/A	3.4% 0.4% - 22.0%
	Observations	28	27	55

Table G.20. Question B2.3.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Membrane modules	Seek alternative supplier	42.0% 15.4% - 74.4%	60.8% 24.1% - 88.4%	45.0% 19.8% - 73.0%
	Increase purchasing / maintain a larger than typical inventory	43.3% 15.9% - 75.5%	39.7% 12.0% - 76.1%	42.7% 18.2% - 71.5%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	5.7% 1.0% - 25.8%	3.9% 1.9% - 7.8%	5.4% 1.2% - 21.5%
	Other	0.0% N/A - N/A	2.2% 0.2% - 17.3%	0.3% 0.0% - 2.7%
	Observations	24	16	40
Pumps	Seek alternative supplier	60.5% 48.0% - 71.7%	54.2% 41.6% - 66.2%	59.2% 49.0% - 68.7%
	Increase purchasing / maintain a larger than typical inventory	29.7% 20.0% - 41.7%	43.9% 32.3% - 56.3%	32.6% 24.2% - 42.2%
	Switch chemicals, procedures, or technologies	1.3% 0.3% - 5.3%	0.0% N/A - N/A	1.1% 0.3% - 4.2%
	Make arrangements with neighboring utilities or mutual aid network	10.5% 5.4% - 19.4%	8.5% 3.8% - 18.0%	10.1% 5.7% - 17.2%
	Other	5.2% 2.4% - 11.0%	13.3% 6.2% - 26.3%	6.8% 3.9% - 11.6%
	Observations	116	141	257

Table G.20. Question B2.3.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Motors	Seek alternative supplier	63.3% 49.7% - 75.1%	57.1% 43.9% - 69.4%	61.9% 51.1% - 71.6%
	Increase purchasing / maintain a larger than typical inventory	29.1% 19.0% - 41.8%	49.7% 37.3% - 62.1%	33.8% 25.1% - 43.8%
	Switch chemicals, procedures, or technologies	1.6% 0.4% - 6.2%	0.0% N/A - N/A	1.2% 0.3% - 4.8%
	Make arrangements with neighboring utilities or mutual aid network	9.5% 4.2% - 19.9%	8.2% 3.6% - 17.6%	9.2% 4.8% - 17.0%
	Other	4.3% 1.7% - 10.5%	11.4% 4.7% - 25.0%	5.9% 3.1% - 11.0%
	Observations	104	136	240
Pipes	Seek alternative supplier	46.0% 34.1% - 58.5%	53.1% 40.0% - 65.7%	47.5% 37.5% - 57.7%
	Increase purchasing / maintain a larger than typical inventory	51.6% 39.3% - 63.7%	49.5% 36.7% - 62.5%	51.2% 41.1% - 61.2%
	Switch chemicals, procedures, or technologies	1.4% 0.3% - 5.6%	3.5% 0.6% - 16.6%	1.8% 0.6% - 5.2%
	Make arrangements with neighboring utilities or mutual aid network	7.6% 4.1% - 13.6%	9.9% 3.9% - 22.9%	8.1% 4.8% - 13.2%
	Other	1.1% 0.2% - 7.5%	6.3% 2.3% - 16.4%	2.2% 0.8% - 5.8%
	Observations	111	128	239

Table G.20. Question B2.3.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Valves	Seek alternative supplier	58.2% 45.2% - 70.1%	57.3% 44.4% - 69.2%	58.0% 47.6% - 67.7%
	Increase purchasing / maintain a larger than typical inventory	41.7% 29.7% - 54.7%	54.4% 41.9% - 66.3%	44.6% 34.8% - 54.9%
	Switch chemicals, procedures, or technologies	0.7% 0.1% - 4.5%	0.0% N/A - N/A	0.5% 0.1% - 3.5%
	Make arrangements with neighboring utilities or mutual aid network	8.1% 4.3% - 14.5%	7.0% 3.4% - 14.0%	7.8% 4.7% - 12.8%
	Other	1.3% 0.2% - 7.6%	8.0% 2.7% - 21.4%	2.8% 1.1% - 7.1%
	Observations	107	137	244
Fuel	Seek alternative supplier	67.3% 47.4% - 82.4%	37.6% 21.1% - 57.6%	59.4% 44.5% - 72.8%
	Increase purchasing / maintain a larger than typical inventory	31.2% 15.1% - 53.7%	45.4% 27.3% - 64.7%	35.0% 21.1% - 52.0%
	Switch chemicals, procedures, or technologies	1.6% 0.2% - 10.7%	0.0% N/A - N/A	1.2% 0.2% - 8.1%
	Make arrangements with neighboring utilities or mutual aid network	7.4% 3.0% - 17.3%	10.9% 3.5% - 29.6%	8.4% 4.1% - 16.1%
	Other	0.0% N/A - N/A	7.1% 1.9% - 23.3%	1.9% 0.5% - 6.7%
	Observations	49	54	103

Table G.20. Question B2.3.3: What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Supply Chain Issue	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Vehicles	Seek alternative supplier	46.2% 29.3% - 63.9%	52.5% 32.1% - 72.0%	48.6% 35.2% - 62.2%
	Increase purchasing / maintain a larger than typical inventory	31.5% 18.6% - 48.0%	32.5% 15.9% - 55.2%	31.9% 20.9% - 45.3%
	Switch chemicals, procedures, or technologies	0.0% N/A - N/A	0.0% N/A - N/A	0.0% N/A - N/A
	Make arrangements with neighboring utilities or mutual aid network	16.0% 6.4% - 34.6%	10.5% 3.2% - 29.2%	13.9% 6.7% - 26.6%
	Other	3.9% 0.7% - 19.9%	19.6% 7.4% - 42.7%	9.9% 4.1% - 22.1%
	Observations	37	44	81

N/A: confidence interval could not be calculated.

Table G.21. Question B3: Has your organization made any requests for personnel, supplies, or equipment to your tribal, local, or state emergency operations center (EOC), primacy agency, or similar organization?

All Utilities

Estimates and 95 Percent Confidence Intervals

Response	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Yes, entirely fulfilled	9.6% 7.7% - 11.8%	20.5% 16.9% - 24.7%	11.0% 9.3% - 12.9%
Yes, partly fulfilled	3.3% 2.2% - 4.8%	7.6% 5.4% - 10.4%	3.8% 2.8% - 5.2%
Yes, not fulfilled	0.3% 0.1% - 0.9%	0.7% 0.2% - 2.2%	0.3% 0.1% - 0.8%
No, support was not needed	77.0% 73.9% - 79.9%	58.3% 53.2% - 63.3%	74.7% 71.9% - 77.2%
No, but we would have used it if it had been available or if we had known of it	3.8% 2.6% - 5.4%	5.0% 2.9% - 8.3%	3.9% 2.8% - 5.4%
Do not know	6.0% 4.5% - 8.0%	7.9% 5.7% - 11.0%	6.3% 4.9% - 8.0%
Observations	917	822	1,739

Table G.22. Question C.1: To what extent did your organization experience shortages of key personnel, including contractors performing critical functions to maintain operations, from January 2020 through present day?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Licensed or certified operators	Mean Score (0-3)	0.15 0.12 - 0.19	0.44 0.36 - 0.52	0.19 0.16 - 0.22
	No Shortage (0)	88.8% 86.3% - 90.9%	68.2% 63.2% - 72.8%	86.1% 83.9% - 88.0%
	Slight Shortage (1)	7.5% 5.8% - 9.6%	20.9% 17.1% - 25.2%	9.3% 7.7% - 11.1%
	Moderate Shortage (2)	3.4% 2.3% - 4.9%	9.3% 6.9% - 12.4%	4.2% 3.1% - 5.5%
	Severe Shortage (3)	0.3% 0.2% - 0.8%	1.7% 0.6% - 4.6%	0.5% 0.3% - 1.0%
Laboratory technicians/sample analysts	Mean Score (0-3)	0.10 0.07 - 0.13	0.25 0.19 - 0.31	0.12 0.09 - 0.15
	No Shortage (0)	93.5% 91.4% - 95.2%	81.4% 77.1% - 85.0%	91.9% 90.1% - 93.4%
	Slight Shortage (1)	3.6% 2.4% - 5.2%	13.6% 10.5% - 17.4%	4.9% 3.8% - 6.3%
	Moderate Shortage (2)	2.3% 1.4% - 3.7%	3.6% 2.4% - 5.5%	2.5% 1.6% - 3.7%
	Severe Shortage (3)	0.6% 0.2% - 1.7%	1.4% 0.5% - 4.2%	0.7% 0.3% - 1.6%

Table G.22. Question C.1: To what extent did your organization experience shortages of key personnel, including contractors performing critical functions to maintain operations, from January 2020 through present day?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Field Workers (meter reading, sampling, maintenance, etc.)	Mean Score (0-3)	0.17 0.14 - 0.20	0.43 0.36 - 0.50	0.20 0.18 - 0.23
	No Shortage (0)	87.5% 85.0% - 89.7%	66.1% 60.9% - 71.0%	84.7% 82.4% - 86.7%
	Slight Shortage (1)	8.8% 6.9% - 11.1%	25.7% 21.4% - 30.7%	11.1% 9.3% - 13.1%
	Moderate Shortage (2)	2.9% 2.1% - 3.9%	6.9% 5.0% - 9.6%	3.4% 2.7% - 4.4%
	Severe Shortage (3)	0.8% 0.4% - 1.8%	1.2% 0.5% - 2.9%	0.8% 0.4% - 1.7%
Engineering/design/construction personnel	Mean Score (0-3)	0.07 0.04 - 0.10	0.25 0.18 - 0.31	0.09 0.07 - 0.12
	No Shortage (0)	94.6% 92.6% - 96.1%	81.4% 77.1% - 85.1%	92.9% 91.1% - 94.3%
	Slight Shortage (1)	4.0% 2.8% - 5.7%	13.6% 10.5% - 17.4%	5.3% 4.1% - 6.8%
	Moderate Shortage (2)	1.1% 0.5% - 2.3%	3.9% 2.5% - 6.1%	1.4% 0.9% - 2.4%
	Severe Shortage (3)	0.3% 0.1% - 1.7%	1.1% 0.3% - 4.4%	0.4% 0.1% - 1.4%

Table G.22. Question C.1: To what extent did your organization experience shortages of key personnel, including contractors performing critical functions to maintain operations, from January 2020 through present day?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Critical equipment repair	Mean Score (0-3)	0.09 0.06 - 0.11	0.30 0.23 - 0.36	0.11 0.09 - 0.14
	No Shortage (0)	93.7% 91.7% - 95.2%	77.4% 72.9% - 81.4%	91.5% 89.8% - 93.0%
	Slight Shortage (1)	4.2% 3.0% - 5.8%	16.9% 13.4% - 21.0%	5.9% 4.7% - 7.3%
	Moderate Shortage (2)	1.9% 1.1% - 3.3%	4.4% 2.9% - 6.6%	2.2% 1.4% - 3.4%
	Severe Shortage (3)	0.2% 0.1% - 0.6%	1.4% 0.5% - 3.5%	0.4% 0.2% - 0.7%
Administrative	Mean Score (0-3)	0.11 0.08 - 0.14	0.30 0.24 - 0.35	0.13 0.11 - 0.16
	No Shortage (0)	92.7% 90.8% - 94.3%	76.3% 71.5% - 80.5%	90.5% 88.8% - 92.1%
	Slight Shortage (1)	4.2% 3.1% - 5.6%	18.9% 15.0% - 23.5%	6.1% 5.0% - 7.5%
	Moderate Shortage (2)	2.6% 1.6% - 4.1%	4.0% 2.7% - 5.8%	2.8% 1.9% - 4.1%
	Severe Shortage (3)	0.5% 0.2% - 1.1%	0.9% 0.3% - 2.9%	0.6% 0.3% - 1.1%

Table G.22. Question C.1: To what extent did your organization experience shortages of key personnel, including contractors performing critical functions to maintain operations, from January 2020 through present day?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Customer Service	Mean Score (0-3)	0.11 0.08 - 0.14	0.30 0.23 - 0.36	0.14 0.11 - 0.16
	No Shortage (0)	92.5% 90.4% - 94.2%	77.1% 72.4% - 81.3%	90.4% 88.6% - 92.1%
	Slight Shortage (1)	4.1% 2.9% - 5.8%	16.7% 13.0% - 21.1%	5.8% 4.6% - 7.3%
	Moderate Shortage (2)	3.1% 2.0% - 4.7%	5.7% 3.8% - 8.4%	3.4% 2.4% - 4.8%
	Severe Shortage (3)	0.3% 0.1% - 0.8%	0.5% 0.1% - 2.2%	0.3% 0.1% - 0.8%
Other	Mean Score (0-3)	0.44 0.06 - 0.81	0.88 0.06 - 1.71	0.51 0.17 - 0.84
	No Shortage (0)	82.4% 63.7% - 92.6%	53.5% 24.5% - 80.2%	77.9% 62.8% - 88.0%
	Slight Shortage (1)	0.3% 0.3% - 0.4%	22.2% 10.2% - 41.8%	3.8% 2.3% - 6.2%
	Moderate Shortage (2)	8.2% 2.5% - 23.4%	6.8% 2.3% - 18.7%	8.0% 2.9% - 20.4%
	Severe Shortage (3)	9.0% 2.5% - 27.6%	17.6% 3.2% - 58.1%	10.4% 3.9% - 24.9%
Observations		917	837	1,751

Table G.23. Question C.2: To what extent do you expect to experience shortages of key personnel, including contractors performing critical functions to maintain operations, from present day through December 2020?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Licensed or certified operators	Mean Score (0-3)	0.14 0.11 - 0.17	0.48 0.40 - 0.56	0.18 0.15 - 0.21
	No Shortage (0)	89.6% 87.3% - 91.6%	65.8% 60.5% - 70.7%	86.4% 84.3% - 88.3%
	Slight Shortage (1)	7.3% 5.7% - 9.4%	22.1% 18.1% - 26.6%	9.3% 7.7% - 11.2%
	Moderate Shortage (2)	2.7% 1.7% - 4.1%	10.6% 7.8% - 14.3%	3.7% 2.8% - 5.0%
	Severe Shortage (3)	0.4% 0.2% - 0.8%	1.5% 0.6% - 3.6%	0.5% 0.3% - 0.9%
Laboratory technicians/sample analysts	Mean Score (0-3)	0.08 0.06 - 0.11	0.27 0.21 - 0.33	0.11 0.08 - 0.13
	No Shortage (0)	93.8% 91.7% - 95.4%	79.7% 75.2% - 83.5%	92.0% 90.1% - 93.5%
	Slight Shortage (1)	4.5% 3.1% - 6.5%	14.7% 11.5% - 18.6%	5.8% 4.5% - 7.6%
	Moderate Shortage (2)	1.4% 0.8% - 2.4%	4.6% 2.8% - 7.3%	1.8% 1.2% - 2.7%
	Severe Shortage (3)	0.3% 0.1% - 0.9%	1.0% 0.3% - 3.0%	0.4% 0.2% - 0.9%

Table G.23. Question C.2: To what extent do you expect to experience shortages of key personnel, including contractors performing critical functions to maintain operations, from present day through December 2020?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Field Workers (meter reading, sampling, maintenance, etc.)	Mean Score (0-3)	0.13 0.10 - 0.16	0.41 0.33 - 0.49	0.17 0.14 - 0.20
	No Shortage (0)	89.9% 87.5% - 91.9%	70.1% 65.0% - 74.7%	87.3% 85.2% - 89.1%
	Slight Shortage (1)	7.4% 5.7% - 9.6%	20.2% 16.4% - 24.6%	9.1% 7.5% - 11.0%
	Moderate Shortage (2)	2.3% 1.4% - 3.5%	8.3% 5.9% - 11.7%	3.1% 2.2% - 4.2%
	Severe Shortage (3)	0.4% 0.2% - 1.0%	1.4% 0.5% - 3.6%	0.6% 0.3% - 1.1%
Engineering/design/construction personnel	Mean Score (0-3)	0.06 0.04 - 0.09	0.24 0.18 - 0.30	0.09 0.07 - 0.11
	No Shortage (0)	95.0% 93.0% - 96.4%	82.4% 78.1% - 86.0%	93.3% 91.6% - 94.7%
	Slight Shortage (1)	3.8% 2.5% - 5.6%	12.7% 9.6% - 16.5%	5.0% 3.8% - 6.5%
	Moderate Shortage (2)	1.1% 0.6% - 2.1%	3.7% 2.3% - 6.0%	1.5% 0.9% - 2.3%
	Severe Shortage (3)	0.1% 0.0% - 0.6%	1.2% 0.4% - 3.5%	0.3% 0.1% - 0.7%

Table G.23. Question C.2: To what extent do you expect to experience shortages of key personnel, including contractors performing critical functions to maintain operations, from present day through December 2020?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Critical equipment repair	Mean Score (0-3)	0.09 0.06 - 0.13	0.32 0.24 - 0.39	0.12 0.10 - 0.15
	No Shortage (0)	93.9% 91.9% - 95.4%	78.6% 74.1% - 82.5%	91.8% 90.1% - 93.3%
	Slight Shortage (1)	3.6% 2.5% - 5.1%	13.0% 10.1% - 16.5%	4.8% 3.8% - 6.1%
	Moderate Shortage (2)	1.9% 1.1% - 3.3%	6.5% 4.3% - 9.7%	2.5% 1.7% - 3.7%
	Severe Shortage (3)	0.7% 0.3% - 1.8%	1.9% 0.9% - 4.2%	0.9% 0.4% - 1.8%
Administrative	Mean Score (0-3)	0.09 0.06 - 0.12	0.26 0.21 - 0.32	0.11 0.09 - 0.14
	No Shortage (0)	93.3% 91.2% - 94.9%	79.3% 74.7% - 83.3%	91.4% 89.5% - 92.9%
	Slight Shortage (1)	4.8% 3.5% - 6.6%	15.4% 12.0% - 19.5%	6.2% 4.9% - 7.8%
	Moderate Shortage (2)	1.6% 0.9% - 3.0%	4.8% 3.1% - 7.5%	2.1% 1.3% - 3.2%
	Severe Shortage (3)	0.3% 0.1% - 0.9%	0.5% 0.1% - 2.3%	0.3% 0.1% - 0.8%

Table G.23. Question C.2: To what extent do you expect to experience shortages of key personnel, including contractors performing critical functions to maintain operations, from present day through December 2020?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Personnel Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Customer Service	Mean Score (0-3)	0.09 0.06 - 0.12	0.25 0.19 - 0.30	0.11 0.09 - 0.14
	No Shortage (0)	93.1% 91.0% - 94.8%	80.9% 76.4% - 84.6%	91.5% 89.6% - 93.0%
	Slight Shortage (1)	4.8% 3.5% - 6.6%	14.1% 10.8% - 18.2%	6.1% 4.8% - 7.7%
	Moderate Shortage (2)	1.7% 0.9% - 3.1%	4.5% 2.9% - 7.0%	2.1% 1.3% - 3.3%
	Severe Shortage (3)	0.3% 0.1% - 0.9%	0.5% 0.1% - 2.3%	0.3% 0.1% - 0.8%
Other	Mean Score (0-3)	0.06 -0.02 - 0.14	0.61 0.19 - 1.04	0.14 0.06 - 0.21
	No Shortage (0)	95.2% 78.7% - 99.1%	64.9% 38.5% - 84.6%	90.8% 80.9% - 95.9%
	Slight Shortage (1)	4.3% 0.7% - 22.7%	16.4% 5.2% - 41.3%	6.0% 1.8% - 18.3%
	Moderate Shortage (2)	0.0% N/A - N/A	10.9% 3.5% - 29.0%	1.6% 0.6% - 3.8%
	Severe Shortage (3)	0.6% 0.5% - 0.6%	7.8% 3.0% - 18.7%	1.6% 1.0% - 2.6%
Observations		894	800	1,693

N/A: confidence interval could not be calculated.

Table G.24. Question C.3: What factors contribute to personnel shortages you identified in questions C.1 and C.2? (check all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Absenteeism (illness, care of family members, daycare closure, virtual schooling, etc.)	Mean Score (0-2)	1.04 0.93 - 1.14	1.30 1.22 - 1.38	1.10 1.02 - 1.18
	Does Not Contribute (0)	25.7% 19.4% - 33.1%	9.3% 6.2% - 13.7%	21.4% 16.7% - 27.0%
	Contributes Somewhat (1)	45.1% 37.8% - 52.7%	51.7% 45.0% - 58.4%	46.9% 41.1% - 52.7%
	Contributes Significantly (2)	29.2% 23.5% - 35.6%	39.0% 32.7% - 45.6%	31.7% 27.1% - 36.7%
Layoffs or furloughs	Mean Score (0-2)	0.16 0.10 - 0.23	0.18 0.11 - 0.25	0.17 0.12 - 0.22
	Does Not Contribute (0)	87.0% 80.6% - 91.5%	86.8% 81.2% - 90.9%	86.9% 82.2% - 90.6%
	Contributes Somewhat (1)	9.7% 5.7% - 16.1%	8.3% 5.1% - 13.2%	9.4% 6.1% - 14.0%
	Contributes Significantly (2)	3.3% 1.8% - 6.0%	4.9% 2.6% - 8.9%	3.7% 2.4% - 5.8%
Reduced work hours of current staff	Mean Score (0-2)	0.44 0.35 - 0.53	0.62 0.52 - 0.73	0.49 0.41 - 0.56
	Does Not Contribute (0)	65.1% 57.2% - 72.2%	53.1% 45.9% - 60.1%	62.0% 55.9% - 67.7%
	Contributes Somewhat (1)	25.7% 19.2% - 33.5%	31.6% 25.2% - 38.9%	27.2% 21.9% - 33.2%
	Contributes Significantly (2)	9.3% 6.4% - 13.2%	15.3% 10.7% - 21.4%	10.8% 8.3% - 14.0%

Table G.24. Question C.3: What factors contribute to personnel shortages you identified in questions C.1 and C.2? (check all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Delayed or cancelled plans to hire staff	Mean Score (0-2)	0.36 0.25 - 0.46	0.62 0.50 - 0.73	0.42 0.34 - 0.51
	Does Not Contribute (0)	74.1% 66.7% - 80.4%	55.5% 48.3% - 62.4%	69.4% 63.7% - 74.5%
	Contributes Somewhat (1)	16.0% 11.2% - 22.3%	27.4% 21.7% - 34.1%	18.9% 14.9% - 23.7%
	Contributes Significantly (2)	9.9% 6.0% - 15.9%	17.1% 12.1% - 23.6%	11.7% 8.3% - 16.2%
Lack of backup certified personnel	Mean Score (0-2)	0.78 0.66 - 0.90	0.68 0.57 - 0.79	0.76 0.66 - 0.85
	Does Not Contribute (0)	43.1% 35.6% - 50.9%	49.2% 42.1% - 56.3%	44.6% 38.6% - 50.7%
	Contributes Somewhat (1)	35.8% 28.7% - 43.5%	34.0% 27.6% - 41.0%	35.4% 29.7% - 41.4%
	Contributes Significantly (2)	21.1% 15.6% - 27.9%	16.8% 11.9% - 23.2%	20.1% 15.6% - 25.4%
Operators unable to obtain or maintain needed certification due to lack of in-person training	Mean Score (0-2)	0.68 0.57 - 0.79	0.62 0.52 - 0.73	0.67 0.58 - 0.75
	Does Not Contribute (0)	51.0% 43.3% - 58.7%	52.2% 45.1% - 59.3%	51.3% 45.2% - 57.4%
	Contributes Somewhat (1)	30.0% 23.2% - 37.7%	33.2% 26.7% - 40.5%	30.8% 25.3% - 36.8%
	Contributes Significantly (2)	19.0% 14.2% - 24.9%	14.5% 10.2% - 20.3%	17.9% 14.1% - 22.5%

Table G.24. Question C.3: What factors contribute to personnel shortages you identified in questions C.1 and C.2? (check all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Restrictions on travel	Mean Score (0-2)	0.41 0.33 - 0.50	0.53 0.43 - 0.63	0.44 0.38 - 0.51
	Does Not Contribute (0)	67.3% 60.3% - 73.6%	58.9% 51.7% - 65.8%	65.2% 59.7% - 70.3%
	Contributes Somewhat (1)	23.9% 18.2% - 30.8%	29.2% 23.0% - 36.2%	25.2% 20.5% - 30.6%
	Contributes Significantly (2)	8.8% 6.0% - 12.7%	11.9% 7.9% - 17.5%	9.6% 7.2% - 12.7%
Lack of I.T. infrastructure (e.g., equipment, network capacity)	Mean Score (0-2)	0.27 0.19 - 0.34	0.37 0.27 - 0.47	0.30 0.23 - 0.36
	Does Not Contribute (0)	79.8% 73.6% - 84.8%	71.0% 63.6% - 77.4%	77.5% 72.7% - 81.7%
	Contributes Somewhat (1)	13.6% 9.3% - 19.4%	20.8% 15.5% - 27.4%	15.4% 11.8% - 19.9%
	Contributes Significantly (2)	6.6% 4.2% - 10.4%	8.2% 4.5% - 14.4%	7.0% 4.9% - 10.1%
Other	Mean Score (0-2)	0.54 0.14 - 0.94	0.35 0.13 - 0.56	0.51 0.17 - 0.84
	Does Not Contribute (0)	65.4% 39.6% - 84.5%	78.7% 63.4% - 88.8%	67.7% 45.7% - 84.0%
	Contributes Somewhat (1)	15.0% 3.6% - 45.3%	7.9% 2.9% - 19.9%	13.8% 3.9% - 38.7%
	Contributes Significantly (2)	19.6% 6.2% - 47.3%	13.3% 6.2% - 26.5%	18.5% 6.8% - 41.4%
Observations		295	482	777

Table G.25. Question C.4: What strategies or resources has your organization used to address potential shortages of certified operators, laboratory staff, or other trained personnel during the COVID-19 pandemic? (select all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Strategy or Resource	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Used technology to allow some operational tasks to be performed remotely	22.7% 19.2% - 26.6%	43.8% 38.5% - 49.3%	26.1% 23.0% - 29.4%
Used telework for job functions that could be performed remotely	20.8% 17.2% - 24.9%	53.3% 47.8% - 58.6%	26.0% 22.8% - 29.6%
Decreased staffing/changed shift work while maintaining core operations	20.6% 17.5% - 24.0%	56.7% 51.1% - 62.1%	26.4% 23.6% - 29.3%
Delayed non-critical work	33.4% 29.4% - 37.7%	61.8% 56.4% - 66.9%	38.0% 34.4% - 41.7%
Increased use of contractors	9.6% 7.2% - 12.6%	9.4% 6.8% - 12.9%	9.6% 7.5% - 12.1%
Accessed operators from nearby utilities, via WARN or other mutual aid networks	7.6% 5.5% - 10.4%	3.2% 1.5% - 6.6%	6.9% 5.1% - 9.3%
Utilized backup laboratory services	5.0% 3.4% - 7.4%	8.2% 5.9% - 11.4%	5.6% 4.1% - 7.5%
Other	29.9% 25.6% - 34.5%	14.5% 10.4% - 19.8%	27.4% 23.8% - 31.4%
Observations	694	770	1,464

Table G.26. Question C.4.1: Did the strategies you implemented help mitigate staffing shortages?

All Utilities

Estimates and 95 Percent Confidence Intervals

Strategy or Resource	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Used technology (e.g., live video feeds) to allow some operational tasks to be performed remotely	Strategy Did Not Help	7.0% 3.6% - 12.9%	2.8% 1.3% - 6.0%	5.8% 3.3% - 10.1%
	Strategy Helped	75.8% 66.8% - 83.0%	85.0% 78.2% - 90.0%	78.3% 71.5% - 83.8%
	Not Sure	17.3% 11.0% - 26.0%	12.1% 7.5% - 18.9%	15.9% 11.0% - 22.4%
Used telework for job functions that could be performed remotely	Strategy Did Not Help	3.1% 1.3% - 7.4%	4.0% 1.9% - 8.1%	3.4% 1.9% - 6.2%
	Strategy Helped	86.0% 77.4% - 91.7%	80.7% 74.0% - 86.1%	84.2% 78.4% - 88.6%
	Not Sure	10.9% 5.9% - 19.4%	15.3% 10.5% - 21.7%	12.4% 8.4% - 18.0%
Decreased staffing/changed shift work while maintaining core operations	Strategy Did Not Help	4.4% 2.3% - 8.0%	4.8% 2.4% - 9.5%	4.5% 2.8% - 7.2%
	Strategy Helped	82.6% 75.1% - 88.1%	82.3% 76.5% - 86.9%	82.5% 77.4% - 86.6%
	Not Sure	13.1% 8.1% - 20.4%	12.9% 9.2% - 17.8%	13.0% 9.4% - 17.8%
Delayed non-critical work	Strategy Did Not Help	6.6% 3.9% - 10.9%	4.3% 2.2% - 8.1%	6.0% 3.9% - 9.2%
	Strategy Helped	72.3% 65.0% - 78.5%	81.0% 75.0% - 85.9%	74.6% 69.0% - 79.4%
	Not Sure	21.1% 15.5% - 28.1%	14.7% 10.5% - 20.2%	19.4% 15.0% - 24.7%

Table G.26. Question C.4.1: Did the strategies you implemented help mitigate staffing shortages?

All Utilities

Estimates and 95 Percent Confidence Intervals

Strategy or Resource	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Increased use of contractors	Strategy Did Not Help	8.7% 2.6% - 25.8%	5.1% 0.9% - 24.2%	8.1% 2.7% - 22.2%
	Strategy Helped	83.2% 68.5% - 91.9%	87.1% 70.1% - 95.1%	83.8% 71.5% - 91.5%
	Not Sure	8.1% 3.7% - 17.0%	7.8% 2.4% - 22.6%	8.0% 4.0% - 15.4%
Accessed operators from nearby utilities, including via WARN or other mutual aid networks	Strategy Did Not Help	11.9% 4.6% - 27.4%	22.9% 4.8% - 63.5%	12.7% 5.5% - 26.9%
	Strategy Helped	77.0% 62.0% - 87.4%	53.6% 20.5% - 83.8%	75.3% 61.2% - 85.5%
	Not Sure	11.0% 5.3% - 21.7%	23.5% 6.4% - 58.2%	12.0% 6.2% - 21.8%
Utilized backup laboratory services	Strategy Did Not Help	2.4% 0.6% - 9.5%	17.8% 5.9% - 42.8%	6.1% 2.4% - 14.8%
	Strategy Helped	85.5% 71.3% - 93.3%	74.6% 53.7% - 88.2%	82.9% 71.3% - 90.5%
	Not Sure	12.0% 5.0% - 26.2%	7.6% 3.7% - 15.0%	11.0% 5.3% - 21.4%
Other	Strategy Did Not Help	21.1% 13.8% - 30.8%	13.7% 4.6% - 34.1%	20.6% 13.8% - 29.8%
	Strategy Helped	53.7% 43.1% - 64.0%	70.3% 52.2% - 83.7%	54.8% 44.7% - 64.5%
	Not Sure	25.1% 16.9% - 35.6%	16.0% 7.6% - 30.7%	24.6% 16.8% - 34.4%
Observations		282	502	784

Table G.27. Question C.5: What is the greatest concern your organization has associated with maintaining staffing during the pandemic? (select one)

All Utilities

Estimates and 95 Percent Confidence Intervals

Concern	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Availability of testing for illness	6.3% 4.5% - 8.8%	10.9% 7.9% - 14.7%	7.0% 5.3% - 9.1%
Availability of PPE	12.1% 9.5% - 15.3%	10.4% 8.1% - 13.4%	11.9% 9.6% - 14.6%
Ability to house personnel on site	1.7% 0.9% - 3.1%	4.7% 2.9% - 7.5%	2.1% 1.4% - 3.3%
Cross-training personnel	9.3% 7.1% - 11.9%	7.6% 5.3% - 10.8%	9.0% 7.1% - 11.3%
Protecting high-risk employees	21.7% 18.3% - 25.6%	27.4% 23.1% - 32.2%	22.6% 19.6% - 25.9%
Adhering to changing local and state	28.6% 24.7% - 32.8%	29.6% 24.6% - 35.1%	28.7% 25.4% - 32.4%
Other	20.4% 16.9% - 24.3%	9.5% 6.9% - 12.9%	18.7% 15.8% - 22.1%
Observations	783	802	1,585

Table G.28. Question D1.1.2: Please indicate the state of your organization's operating budget from January 2020 to the present

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Parameter	Average Operating Budget by Population Served (Dollars)		
	< 10,000	> 10,000	All
Budgeted Revenue	\$376,271 \$262,105 - \$490,437	\$15,033,541 \$11,504,776 - \$18,562,306	\$2,385,643 \$1,905,012 - \$2,866,274
Actual Revenue	\$352,208 \$236,185 - \$468,231	\$14,753,752 \$11,260,528 - \$18,246,976	\$2,326,523 \$1,848,005 - \$2,805,040
Budgeted Expenses	\$312,882 \$239,649 - \$386,115	\$12,095,451 \$9,222,401 - \$14,968,501	\$1,928,160 \$1,538,323 - \$2,317,997
Actual Expenses	\$280,859 \$214,224 - \$347,494	\$10,984,744 \$8,296,954 - \$13,672,534	\$1,748,260 \$1,384,942 - \$2,111,577
Observations	222	319	541

Table G.29. Average Budgeted and Actual Net Revenue (Calculated)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Parameter	Average Net Revenue by Population Served (Dollars)		
	< 10,000	> 10,000	All
Budgeted Net	\$63,389	\$2,938,090	\$457,483
Revenue	\$15,727 - \$111,051	\$1,884,544 - \$3,991,635	\$309,891 - \$605,076
Actual Net	\$71,349	\$3,769,009	\$578,263
Revenue	\$16,458 - \$126,240	\$2,640,039 - \$4,897,978	\$417,111 - \$739,414
Observations	222	319	541

Table G.30. Percentage of Utilities with a Deficit/Loss, and Total Deficit/Loss at Those Utilities (Calculated)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Parameter	Utility Deficits by Population Served (Dollars in Millions)		
	< 10,000	> 10,000	All
Percentage of Utilities with Deficit/Loss	24% 17% - 34%	17% 12% - 24%	23% 17% - 32%
Total Deficit/Loss (Utilities with Deficit/Loss)	\$638.6 \$407.0 - \$870.2	\$1,566.1 \$816.6 - \$2,315.6	\$2,204.7 \$1,442.8 - \$2,966.7
Observations	222	319	541

Table G.31. Average Difference between Actual and Budgeted Net Revenue, Percentage of Utilities with a Shortfall, and Total Shortfall at Those Utilities (Calculated)

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Parameter	Difference between Actual and Budgeted Net Revenue by Population Served		
	< 10,000	> 10,000	All
Average Difference in Net Revenue (Actual Minus Budgeted Net Revenue)	\$7,960 -\$9,021 - \$24,941	\$830,919 \$486,307 - \$1,175,530	\$120,780 \$69,660 - \$171,899
Percentage of Utilities with Shortfall	32% 24% - 42%	31% 23% - 39%	32% 25% - 40%
Total Shortfall in Utilities with Shortfall (Millions of Dollars)	\$1,252.0 \$775.0 - \$1,729.1	\$2,506.2 \$1,538.3 - \$3,474.2	\$3,758.2 \$2,695.9 - \$4,820.6
Observations	222	319	541

Table G.32. Question D.1.2: Your answers indicate that actual operating revenue was lower than budgeted during the January to present period. What COVID-19-related factors contributed to this?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Nonpayment of bills	Mean Score (0 to 2)	0.73 0.54 - 0.92	0.82 0.66 - 0.97	0.74 0.59 - 0.90
	Not a Contributor (0)	48.7% 37.8% - 59.8%	32.3% 22.6% - 43.7%	45.6% 36.5% - 54.9%
	Contributor (1)	26.3% 18.1% - 36.7%	45.0% 33.7% - 56.8%	29.9% 22.6% - 38.4%
	Significant Contributor (2)	22.3% 14.1% - 33.4%	15.2% 9.1% - 24.3%	21.0% 14.1% - 30.0%
	Do Not Know	2.6% 1.0% - 6.8%	7.5% 3.2% - 16.4%	3.6% 1.8% - 6.9%
	Decreased use	Mean Score (0 to 2)	0.36 0.23 - 0.50	0.63 0.45 - 0.81
Not a Contributor (0)		71.2% 61.0% - 79.7%	47.0% 35.7% - 58.6%	66.6% 58.3% - 74.0%
Contributor (1)		15.2% 9.5% - 23.4%	29.4% 20.3% - 40.5%	17.9% 12.8% - 24.5%
Significant Contributor (2)		9.9% 5.2% - 18.0%	13.8% 7.6% - 23.9%	10.6% 6.4% - 17.1%
Do Not Know		3.7% 1.0% - 12.8%	9.8% 4.6% - 19.7%	4.9% 2.1% - 11.0%

Table G.32. Question D.1.2: Your answers indicate that actual operating revenue was lower than budgeted during the January to present period. What COVID-19-related factors contributed to this?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Reduction in rates/fees	Mean Score (0 to 2)	0.09 -0.01 - 0.18	0.24 0.10 - 0.38	0.11 0.03 - 0.20
	Not a Contributor (0)	94.0% 85.9% - 97.6%	76.5% 64.7% - 85.2%	90.7% 84.7% - 94.5%
	Contributor (1)	2.1% 0.7% - 6.4%	8.8% 3.9% - 18.7%	3.3% 1.7% - 6.7%
	Significant Contributor (2)	3.2% 0.7% - 13.0%	6.7% 2.7% - 15.6%	3.9% 1.4% - 10.4%
	Do Not Know	0.7% 0.2% - 2.8%	8.1% 3.3% - 18.4%	2.1% 1.0% - 4.4%
	Observations		128	162

Table G.33. Question D.1.3: Your answers indicate that actual operating expenses were higher than budgeted during the January to present period. What COVID-19-related factors contributed?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Personnel Costs	Mean Score (0 to 2)	0.38 0.18 - 0.59	0.40 0.21 - 0.59	0.39 0.21 - 0.57
	Not a Contributor (0)	68.9% 52.7% - 81.5%	64.3% 45.7% - 79.4%	68.2% 54.3% - 79.5%
	Contributor (1)	22.4% 12.1% - 37.9%	28.0% 14.3% - 47.5%	23.2% 13.8% - 36.4%
	Significant Contributor (2)	7.8% 2.4% - 22.7%	5.8% 2.5% - 12.5%	7.5% 2.6% - 19.8%
	Do Not Know	0.9% 0.1% - 6.3%	2.0% 0.4% - 8.4%	1.1% 0.2% - 4.7%
	Consumables	Mean Score (0 to 2)	0.57 0.35 - 0.79	0.66 0.41 - 0.91
	Not a Contributor (0)	56.1% 40.2% - 70.8%	42.4% 25.2% - 61.6%	54.1% 40.4% - 67.3%
	Contributor (1)	30.7% 18.1% - 46.8%	47.7% 30.1% - 65.9%	33.1% 21.7% - 46.9%
	Significant Contributor (2)	13.3% 6.0% - 26.8%	8.6% 2.3% - 27.4%	12.6% 6.1% - 24.2%
	Do Not Know	0.0% N/A - N/A	1.3% 0.2% - 9.1%	0.2% 0.0% - 1.3%

Table G.33. Question D.1.3: Your answers indicate that actual operating expenses were higher than budgeted during the January to present period. What COVID-19-related factors contributed?

All Utilities

January to the Present

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Utilities Costs	Mean Score (0 to 2)	0.43 0.21 - 0.64	0.23 0.08 - 0.39	0.40 0.21 - 0.58
	Not a Contributor (0)	61.7% 45.2% - 75.8%	78.0% 59.5% - 89.6%	64.0% 49.5% - 76.3%
	Contributor (1)	26.9% 14.8% - 43.7%	20.7% 9.4% - 39.5%	26.0% 15.3% - 40.6%
	Significant Contributor (2)	6.8% 1.8% - 22.6%	1.3% 0.3% - 5.2%	6.0% 1.7% - 19.6%
	Do Not Know	4.6% 1.6% - 12.3%	0.0% N/A - N/A	4.0% 1.4% - 10.6%
	PPE	Mean Score (0 to 2)	0.25 0.12 - 0.39	0.52 0.32 - 0.71
	Not a Contributor (0)	75.2% 60.1% - 86.0%	50.2% 31.9% - 68.4%	71.7% 59.0% - 81.7%
	Contributor (1)	22.8% 12.4% - 38.2%	46.0% 28.3% - 64.8%	26.1% 16.4% - 39.0%
	Significant Contributor (2)	1.0% 0.2% - 5.8%	2.5% 0.8% - 8.0%	1.2% 0.3% - 4.4%
	Do Not Know	0.9% 0.1% - 6.3%	1.3% 0.2% - 9.1%	1.0% 0.2% - 4.8%
Observations		64	59	123

N/A: confidence interval could not be calculated.

Table G.34. Question D.2.1: Do you expect your financial situation for the remainder of the year to improve, to worsen, or to stay about the same, compared with the January to present timeframe?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Value Type	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Operating Revenue	Mean Score (0 to 2)	1.02 0.99 - 1.06	0.99 0.94 - 1.05	1.02 0.99 - 1.05
	Improve (0)	5.8% 4.2% - 8.0%	12.0% 9.0% - 15.8%	6.6% 5.1% - 8.5%
	Stay About the Same (1)	69.4% 65.3% - 73.2%	67.6% 62.5% - 72.4%	69.1% 65.6% - 72.5%
	Worsen (2)	7.6% 5.8% - 9.9%	11.4% 8.3% - 15.5%	8.1% 6.5% - 10.2%
	Do Not Know	17.2% 14.1% - 20.8%	9.0% 6.8% - 12.0%	16.2% 13.4% - 19.3%
	Operating Expenses	Mean Score (0 to 2)	1.02 1.00 - 1.05	1.03 0.99 - 1.07
Operating Expenses	Improve (0)	3.3% 2.1% - 5.2%	5.1% 3.4% - 7.5%	3.5% 2.4% - 5.1%
	Stay About the Same (1)	73.3% 69.4% - 76.9%	79.6% 75.2% - 83.5%	74.1% 70.7% - 77.3%
	Worsen (2)	5.4% 4.0% - 7.1%	8.0% 5.4% - 11.6%	5.7% 4.5% - 7.3%
	Do Not Know	18.0% 14.8% - 21.6%	7.3% 5.2% - 10.1%	16.6% 13.8% - 19.8%
	Observations		824	763

Table G.35. Question D.2.2: To what COVID-19-related factors do you attribute the worsening outlook for operating revenue in the remainder of 2020?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Nonpayment of bills	Mean Score (0 to 2)	1.36 1.18 - 1.55	1.31 1.08 - 1.54	1.35 1.20 - 1.51
	Not a Contributor (0)	11.8% 6.5% - 20.6%	12.6% 5.1% - 27.7%	12.0% 7.1% - 19.3%
	Contributor (1)	35.7% 23.1% - 50.7%	43.0% 27.2% - 60.4%	37.1% 26.1% - 49.6%
	Significant Contributor (2)	45.8% 31.8% - 60.4%	43.6% 27.7% - 60.9%	45.4% 33.5% - 57.8%
	Do Not Know	6.7% 1.8% - 21.9%	0.8% 0.2% - 3.2%	5.6% 1.6% - 18.0%
Decreased use	Mean Score (0 to 2)	0.44 0.26 - 0.62	0.67 0.39 - 0.96	0.49 0.33 - 0.64
	Not a Contributor (0)	58.9% 44.2% - 72.2%	55.1% 38.6% - 70.6%	58.2% 45.9% - 69.6%
	Contributor (1)	21.0% 11.4% - 35.3%	22.0% 12.4% - 36.0%	21.2% 12.9% - 32.8%
	Significant Contributor (2)	9.0% 4.4% - 17.6%	22.5% 11.5% - 39.3%	11.5% 6.9% - 18.7%
	Do Not Know	11.1% 4.5% - 24.9%	0.4% 0.1% - 2.9%	9.1% 3.7% - 20.6%

Table G.35. Question D.2.2: To what COVID-19-related factors do you attribute the worsening outlook for operating revenue in the remainder of 2020?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Reduction in rates/fees	Mean Score (0 to 2)	0.23 0.08 - 0.38	0.70 0.37 - 1.04	0.33 0.19 - 0.47
	Not a Contributor (0)	67.9% 52.7% - 80.0%	57.7% 40.2% - 73.6%	66.0% 53.3% - 76.7%
	Contributor (1)	15.4% 6.8% - 31.0%	13.6% 6.8% - 25.4%	15.0% 7.6% - 27.5%
	Significant Contributor (2)	2.1% 0.6% - 7.7%	28.2% 14.3% - 48.0%	6.9% 3.6% - 12.8%
	Do Not Know	14.6% 7.0% - 28.1%	0.5% 0.1% - 3.2%	12.0% 5.8% - 23.2%
Observations		86	82	168

Table G.36. Question D.2.3: To what COVID-19-related factors do you attribute the worsening outlook for operating expenses in the remainder of 2020?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Personnel Costs	Mean Score (0 to 2)	0.72 0.51 - 0.92	1.19 0.88 - 1.49	0.81 0.64 - 0.98
	Not a Contributor (0)	47.8% 35.9% - 59.9%	16.7% 6.4% - 37.3%	41.9% 32.1% - 52.4%
	Contributor (1)	27.2% 17.1% - 40.5%	47.9% 28.5% - 67.9%	31.1% 21.9% - 42.2%
	Significant Contributor (2)	20.8% 12.0% - 33.4%	35.4% 17.8% - 58.1%	23.5% 15.3% - 34.5%
	Do Not Know	4.2% 1.1% - 15.2%	0.0% N/A - N/A	3.4% 0.9% - 12.5%
	Consumables	Mean Score (0 to 2)	1.18 0.95 - 1.42	1.28 0.97 - 1.58
	Not a Contributor (0)	21.7% 10.2% - 40.3%	14.8% 5.1% - 36.0%	20.3% 10.5% - 35.7%
	Contributor (1)	33.7% 19.9% - 50.9%	38.6% 21.3% - 59.5%	34.6% 22.5% - 49.2%
	Significant Contributor (2)	39.0% 27.3% - 52.1%	41.1% 23.1% - 61.8%	39.4% 29.1% - 50.8%
	Do Not Know	5.7% 1.8% - 16.8%	5.5% 0.7% - 31.3%	5.6% 2.0% - 14.7%

Table G.36. Question D.2.3: To what COVID-19-related factors do you attribute the worsening outlook for operating expenses in the remainder of 2020?

All Utilities

Present to December

Estimates and 95 Percent Confidence Intervals

Factor	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Utilities Costs	Mean Score (0 to 2)	0.93 0.61 - 1.24	0.64 0.30 - 0.97	0.87 0.60 - 1.14
	Not a Contributor (0)	33.6% 19.6% - 51.3%	54.0% 33.8% - 72.9%	37.5% 24.8% - 52.2%
	Contributor (1)	31.8% 21.0% - 45.2%	21.0% 9.4% - 40.5%	29.8% 20.5% - 41.2%
	Significant Contributor (2)	27.0% 14.3% - 44.9%	19.5% 8.3% - 39.5%	25.5% 14.7% - 40.5%
	Do Not Know	7.6% 2.7% - 19.3%	5.5% 0.7% - 31.3%	7.2% 2.9% - 16.8%
	PPE	Mean Score (0 to 2)	0.65 0.43 - 0.87	0.86 0.57 - 1.15
	Not a Contributor (0)	48.0% 31.8% - 64.6%	35.6% 18.9% - 56.8%	45.6% 32.0% - 59.9%
	Contributor (1)	33.8% 19.7% - 51.5%	43.0% 24.4% - 63.8%	35.6% 23.1% - 50.3%
	Significant Contributor (2)	14.2% 7.4% - 25.6%	21.4% 9.7% - 40.8%	15.6% 9.3% - 25.0%
	Do Not Know	4.0% 0.9% - 15.4%	0.0% N/A - N/A	3.2% 0.8% - 12.7%
Observations		65	52	118

N/A: confidence interval could not be calculated.

Table G.37. Question D.3.1: If your organization has experienced or anticipates a decrease in cash flow due to COVID-19, what mitigating actions are you taking or planning? (select all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Response	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Drawing down days cash on hand	7.0% 5.1% - 9.5%	9.4% 6.8% - 12.9%	7.3% 5.6% - 9.5%
Drawing on reserve funds	22.2% 18.8% - 26.0%	38.9% 33.3% - 44.8%	24.5% 21.4% - 27.8%
Delaying maintenance	16.2% 13.5% - 19.5%	26.4% 21.2% - 32.4%	17.6% 15.1% - 20.5%
Reducing staff hours	5.3% 3.7% - 7.5%	5.3% 3.4% - 8.1%	5.3% 3.9% - 7.2%
Reducing staff pay and/or benefits	1.5% 0.7% - 3.2%	4.6% 2.7% - 7.9%	1.9% 1.1% - 3.3%
Laying off staff	2.0% 1.1% - 3.5%	3.3% 1.9% - 5.8%	2.1% 1.3% - 3.4%
Incurring additional debt	5.6% 3.9% - 8.1%	4.2% 2.6% - 6.6%	5.4% 3.9% - 7.6%
Refinancing debt and/or deferring debt payments	2.0% 1.2% - 3.5%	3.5% 2.2% - 5.7%	2.2% 1.4% - 3.5%
Delaying/canceling capital improvement projects	19.2% 16.1% - 22.7%	36.1% 31.0% - 41.6%	21.5% 18.7% - 24.5%
Adjusting rates higher than originally planned	5.9% 4.3% - 8.1%	6.3% 4.3% - 9.1%	5.9% 4.5% - 7.9%
Not applicable (no decrease in cash flow)	55.1% 50.6% - 59.4%	33.2% 28.2% - 38.6%	52.1% 48.2% - 55.9%
Observations	734	707	1,441

Table G.38. Question D.3.2: What type of impact do you think these actions are making or will make in mitigating the decrease in your organization’s cash flow?

All Utilities

Estimates and 95 Percent Confidence Intervals

Action	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Drawing down days cash on hand	Mean Score (1 to 2)	1.26 1.09 - 1.43	1.20 1.02 - 1.38	1.25 1.11 - 1.39
	Small Impact (1)	62.0% 45.6% - 76.1%	67.4% 49.1% - 81.7%	63.0% 49.0% - 75.1%
	Large Impact (2)	21.6% 10.2% - 40.0%	17.0% 6.3% - 38.5%	20.8% 10.9% - 36.2%
	Do Not Know	16.3% 6.8% - 34.2%	15.5% 7.3% - 30.0%	16.2% 7.8% - 30.6%
	Observations	63	87	150
Drawing on reserve funds	Mean Score (1 to 2)	1.30 1.20 - 1.40	1.29 1.17 - 1.41	1.30 1.22 - 1.38
	Small Impact (1)	53.6% 44.4% - 62.6%	55.4% 44.9% - 65.4%	54.0% 46.5% - 61.4%
	Large Impact (2)	23.3% 16.2% - 32.2%	22.7% 14.0% - 34.5%	23.1% 17.2% - 30.4%
	Do Not Know	23.1% 16.1% - 32.0%	22.0% 15.1% - 30.8%	22.9% 17.0% - 30.0%
	Observations	193	253	446
Delaying maintenance	Mean Score (1 to 2)	1.35 1.24 - 1.46	1.24 1.14 - 1.35	1.33 1.24 - 1.41
	Small Impact (1)	47.9% 38.1% - 57.9%	67.8% 55.9% - 77.8%	52.0% 43.5% - 60.4%
	Large Impact (2)	26.1% 18.4% - 35.6%	21.9% 13.8% - 32.9%	25.2% 18.7% - 33.0%
	Do Not Know	26.0% 17.8% - 36.4%	10.3% 5.4% - 18.7%	22.8% 16.0% - 31.4%
	Observations	165	172	337

Table G.38. Question D.3.2: What type of impact do you think these actions are making or will make in mitigating the decrease in your organization’s cash flow?

All Utilities

Estimates and 95 Percent Confidence Intervals

Action	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Reducing staff hours	Mean Score (1 to 2)	1.41 1.21 - 1.60	1.28 1.01 - 1.54	1.39 1.22 - 1.56
	Small Impact (1)	50.1% 33.8% - 66.3%	60.4% 37.1% - 79.8%	51.5% 36.9% - 65.9%
	Large Impact (2)	34.5% 20.0% - 52.6%	23.0% 7.9% - 51.0%	32.9% 20.0% - 49.0%
	Do Not Know	15.4% 8.3% - 26.8%	16.6% 8.9% - 29.0%	15.6% 9.2% - 25.3%
	Observations	57	41	98
Reducing staff pay and/or benefits	Mean Score (1 to 2)	1.30 1.09 - 1.52	1.42 1.23 - 1.62	1.34 1.22 - 1.46
	Small Impact (1)	53.2% 14.0% - 88.9%	44.5% 30.6% - 59.4%	50.3% 21.9% - 78.6%
	Large Impact (2)	23.3% 10.6% - 43.8%	32.5% 14.7% - 57.5%	26.4% 16.6% - 39.2%
	Do Not Know	23.4% 2.3% - 80.0%	22.9% 8.1% - 50.2%	23.3% 4.9% - 64.0%
	Observations	11	28	39
Laying off staff	Mean Score (1 to 2)	1.68 1.14 - 2.22	1.63 1.23 - 2.02	1.67 1.24 - 2.11
	Small Impact (1)	21.8% 3.3% - 69.6%	25.6% 7.6% - 58.8%	22.6% 5.3% - 60.4%
	Large Impact (2)	46.8% 15.0% - 81.5%	43.4% 17.0% - 74.2%	46.1% 18.9% - 75.8%
	Do Not Know	31.4% 15.0% - 54.4%	31.0% 10.7% - 62.9%	31.4% 16.9% - 50.6%
	Observations	19	24	43

Table G.38. Question D.3.2: What type of impact do you think these actions are making or will make in mitigating the decrease in your organization’s cash flow?

All Utilities

Estimates and 95 Percent Confidence Intervals

Action	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Incurring additional debt	Mean Score (1 to 2)	1.59 1.35 - 1.82	1.29 1.03 - 1.56	1.55 1.35 - 1.76
	Small Impact (1)	33.8% 17.6% - 54.9%	58.5% 34.7% - 78.9%	36.4% 21.1% - 55.1%
	Large Impact (2)	47.9% 28.9% - 67.5%	24.3% 8.8% - 51.5%	45.4% 28.4% - 63.6%
	Do Not Know	18.3% 8.1% - 36.4%	17.2% 8.1% - 32.8%	18.2% 8.7% - 34.2%
	Observations	46	36	82
Refinancing debt and/or deferring debt payments	Mean Score (1 to 2)	1.60 1.39 - 1.81	1.57 1.28 - 1.85	1.59 1.42 - 1.76
	Small Impact (1)	24.1% 13.2% - 40.0%	39.3% 18.0% - 65.6%	27.4% 17.3% - 40.5%
	Large Impact (2)	35.6% 10.2% - 72.8%	51.3% 27.1% - 74.8%	39.0% 15.8% - 68.5%
	Do Not Know	40.3% 13.0% - 75.4%	9.5% 3.2% - 25.0%	33.6% 12.4% - 64.6%
	Observations	25	36	61
Delaying/canceling capital improvement projects	Mean Score (1 to 2)	1.48 1.38 - 1.59	1.34 1.24 - 1.43	1.45 1.37 - 1.53
	Small Impact (1)	39.5% 31.3% - 48.2%	56.9% 47.9% - 65.5%	43.5% 36.8% - 50.5%
	Large Impact (2)	37.0% 28.3% - 46.7%	28.9% 21.5% - 37.8%	35.2% 28.2% - 42.8%
	Do Not Know	23.5% 16.1% - 33.0%	14.2% 9.5% - 20.6%	21.3% 15.4% - 28.7%
	Observations	175	276	451

Table G.38. Question D.3.2: What type of impact do you think these actions are making or will make in mitigating the decrease in your organization’s cash flow?

All Utilities

Estimates and 95 Percent Confidence Intervals

Action	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Adjusting rates higher than originally planned	Mean Score (1 to 2)	1.53 1.33 - 1.74	1.56 1.34 - 1.78	1.54 1.36 - 1.72
	Small Impact (1)	38.2% 23.1% - 56.0%	37.0% 20.3% - 57.6%	38.0% 24.6% - 53.6%
	Large Impact (2)	43.7% 27.3% - 61.5%	47.0% 27.8% - 67.0%	44.1% 29.6% - 59.7%
	Do Not Know	18.2% 10.3% - 30.1%	16.0% 5.8% - 37.2%	17.9% 10.7% - 28.2%
	Observations	57	48	105

Table G.39. Question D.4: Which of the following is your organization considering regarding capital infrastructure projects due to COVID-19? (select all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Changes	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Not applicable (no projects planned)	35.9% 31.8% - 40.2%	5.3% 3.4% - 8.3%	31.9% 28.3% - 35.7%
No changes to current or planned projects	34.8% 30.9% - 39.1%	52.4% 46.9% - 57.8%	37.2% 33.6% - 40.9%
Pausing/slowing a project for which construction has begun	4.2% 2.9% - 5.9%	9.1% 6.3% - 13.1%	4.8% 3.7% - 6.4%
Delaying starting a project	9.7% 7.6% - 12.4%	24.8% 20.5% - 29.7%	11.7% 9.7% - 14.0%
Accelerating starting a project	2.5% 1.5% - 4.3%	2.8% 1.4% - 5.5%	2.5% 1.6% - 4.0%
Reducing the scope or funding for a project for which construction has begun	1.1% 0.5% - 2.5%	2.2% 1.4% - 3.6%	1.3% 0.7% - 2.4%
Increasing the scope or funding for a project (current or planned)	0.9% 0.4% - 1.7%	1.9% 0.8% - 4.4%	1.0% 0.6% - 1.7%
Delaying applying for a subsidized loan/grant by at least six months	1.3% 0.7% - 2.5%	1.9% 0.9% - 3.8%	1.4% 0.8% - 2.4%
Accelerating interest in applying for a subsidized loan/grant for a shovel-ready project	0.6% 0.3% - 1.3%	5.5% 3.4% - 8.8%	1.3% 0.8% - 1.9%
Other	2.8% 1.8% - 4.4%	2.7% 1.8% - 4.0%	2.8% 1.8% - 4.2%
Do not know	8.3% 6.2% - 11.1%	5.2% 3.2% - 8.3%	7.9% 6.1% - 10.3%
Observations	800	749	1,549

Table G.40. Question D.5: In response to COVID-19, what actions has your organization taken to help alleviate economic impacts on customers? (select all that apply)

All Utilities

Estimates and 95 Percent Confidence Intervals

Actions	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Suspended service shutoffs	49.4% 45.2% - 53.6%	68.8% 63.9% - 73.4%	51.9% 48.2% - 55.6%
Waived late payment fees	33.3% 29.7% - 37.2%	50.1% 44.7% - 55.6%	35.5% 32.2% - 39.0%
Provided extensions on bill payment	41.9% 37.8% - 46.1%	57.8% 52.5% - 62.9%	44.0% 40.3% - 47.7%
Expanded customer assistance programs	6.0% 4.4% - 8.1%	24.3% 19.5% - 29.8%	8.4% 6.8% - 10.3%
Expanded water conservation programs	1.5% 0.8% - 2.8%	4.6% 2.8% - 7.5%	1.9% 1.2% - 3.0%
Delayed or eliminated planned rate adjustment	5.4% 3.9% - 7.5%	11.7% 8.1% - 16.6%	6.2% 4.8% - 8.1%
Lowered rates	0.1% 0.0% - 0.4%	1.1% 0.4% - 3.1%	0.2% 0.1% - 0.5%
Other	2.2% 1.2% - 3.9%	2.3% 1.3% - 4.1%	2.2% 1.3% - 3.7%
None (no actions taken)	32.2% 28.3% - 36.4%	11.2% 8.6% - 14.5%	29.5% 26.1% - 33.2%
Do not know	4.9% 3.3% - 7.2%	8.3% 5.9% - 11.6%	5.4% 3.9% - 7.3%
Observations	817	759	1,576

Table G.41. Question E1: What COVID-19-related conditions have interfered with your organization’s ability to complete the required sampling needed to operate your system and to determine compliance with regulations?

Response	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Lack of available personnel for sample collection	2.4% 1.3% - 4.3%	5.0% 3.1% - 8.0%	2.7% 1.7% - 4.3%
Lack of available supplies for sampling and/or shipping	1.1% 0.5% - 2.2%	1.5% 0.7% - 3.0%	1.1% 0.6% - 2.1%
Lack of available personal protective equipment	0.7% 0.4% - 1.5%	6.4% 3.2% - 12.3%	1.5% 0.9% - 2.5%
Lack of access to approved monitoring locations	5.1% 3.5% - 7.3%	12.9% 9.0% - 18.0%	6.1% 4.6% - 8.1%
Other	1.5% 0.8% - 3.0%	2.6% 1.5% - 4.3%	1.7% 1.0% - 2.8%
None	88.8% 85.9% - 91.2%	78.6% 73.1% - 83.2%	87.5% 84.8% - 89.7%
Do not know	2.1% 1.1% - 4.1%	0.3% 0.1% - 0.8%	1.9% 1.0% - 3.5%
Observations	798	752	1,550

Table G.42. Question E2: What COVID-19-related conditions have interfered with your organization’s ability to complete required laboratory analyses needed to operate your system and to determine compliance with regulations?

All Utilities

Estimates and 95 Percent Confidence Intervals

Response	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Lack of available laboratory personnel	1.0% 0.5% - 2.2%	4.2% 2.8% - 6.3%	1.4% 0.9% - 2.3%
Lack of available supplies for sampling and/or shipping	0.8% 0.3% - 1.9%	1.7% 0.8% - 3.6%	0.9% 0.4% - 1.8%
Lack of available personal protective equipment	0.6% 0.3% - 1.3%	3.3% 1.7% - 6.0%	1.0% 0.6% - 1.6%
Internal laboratory capacity shortages that delay timely analysis	1.0% 0.4% - 2.8%	1.5% 0.6% - 3.4%	1.1% 0.5% - 2.5%
Decreased access to external laboratory services	3.2% 1.9% - 5.3%	3.2% 1.8% - 5.6%	3.2% 2.0% - 5.0%
Delays in external laboratory services	4.6% 3.0% - 7.0%	6.8% 4.3% - 10.5%	4.9% 3.4% - 7.0%
Sample transport delays	3.0% 1.8% - 4.8%	2.7% 1.5% - 4.9%	2.9% 1.9% - 4.5%
Travel restrictions	0.9% 0.4% - 2.4%	1.4% 0.7% - 2.8%	1.0% 0.5% - 2.1%
Revenue interruption	0.8% 0.3% - 2.4%	0.2% 0.1% - 0.6%	0.7% 0.3% - 2.0%
Other	1.1% 0.4% - 2.9%	2.6% 1.5% - 4.4%	1.3% 0.6% - 2.7%
None	85.1% 81.6% - 88.0%	84.1% 79.9% - 87.5%	85.0% 81.9% - 87.6%
Do not know	3.2% 1.9% - 5.3%	1.3% 0.5% - 3.4%	2.9% 1.8% - 4.7%
Observations	799	750	1,549

Table G.43. Question F1: Has your organization experienced any issues or concerns related to cybersecurity during the pandemic? (Yes/No)

All Utilities

Estimates and 95 Percent Confidence Intervals

Response	Percentage Reporting by Population Served		
	< 10,000	> 10,000	All
Percentage of Systems with Cybersecurity Concerns	0.9% 0.4% - 2.0%	5.2% 3.6% - 7.5%	1.4% 0.9% - 2.3%
Observations	814	753	1,567

Table G.44. G1. Looking ahead to the next several months, please indicate your level of concern about topics covered in this survey.

All Utilities

Estimates and 95 Percent Confidence Intervals

Topics of Concern	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Supply Chain	Mean Score	0.59 0.54 - 0.65	0.89 0.83 - 0.96	0.63 0.59 - 0.68
	No Concern	45.4% 41.1% - 49.8%	22.9% 18.6% - 27.9%	42.4% 38.6% - 46.3%
	Mild Concern	41.8% 37.6% - 46.0%	62.9% 57.4% - 68.0%	44.6% 40.9% - 48.4%
	Serious Concern	6.9% 5.2% - 9.2%	12.3% 9.1% - 16.6%	7.7% 6.0% - 9.7%
	Do Not Know	5.9% 4.1% - 8.4%	1.9% 1.3% - 2.6%	5.3% 3.7% - 7.6%
	Observations	784	733	1,517
Workforce	Mean Score	0.59 0.54 - 0.65	1.07 0.99 - 1.15	0.66 0.61 - 0.71
	No Concern	48.8% 44.5% - 53.2%	20.7% 16.7% - 25.5%	45.0% 41.2% - 48.9%
	Mild Concern	36.4% 32.3% - 40.6%	49.8% 44.3% - 55.3%	38.2% 34.6% - 41.9%
	Serious Concern	10.1% 8.0% - 12.7%	27.9% 22.8% - 33.6%	12.5% 10.5% - 14.9%
	Do Not Know	4.7% 3.2% - 7.0%	1.6% 1.1% - 2.2%	4.3% 2.9% - 6.2%
	Observations	781	747	1,528

Table G.44. G1. Looking ahead to the next several months, please indicate your level of concern about topics covered in this survey.

All Utilities

Estimates and 95 Percent Confidence Intervals

Topics of Concern	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Financial	Mean Score	0.62 0.56 - 0.68	0.83 0.76 - 0.90	0.65 0.59 - 0.70
	No Concern	47.7% 43.3% - 52.1%	31.1% 26.3% - 36.3%	45.5% 41.7% - 49.3%
	Mild Concern	33.6% 29.7% - 37.7%	50.6% 45.1% - 56.2%	35.8% 32.3% - 39.5%
	Serious Concern	12.2% 9.6% - 15.3%	14.8% 11.4% - 19.1%	12.5% 10.2% - 15.3%
	Do Not Know	6.6% 4.6% - 9.3%	3.5% 2.3% - 5.2%	6.2% 4.4% - 8.5%
	Observations	780	734	1,514
Analytical Support	Mean Score	0.28 0.24 - 0.32	0.46 0.40 - 0.52	0.30 0.27 - 0.34
	No Concern	68.0% 63.8% - 71.9%	55.2% 49.6% - 60.7%	66.2% 62.6% - 69.7%
	Mild Concern	23.6% 20.1% - 27.5%	38.9% 33.6% - 44.4%	25.7% 22.6% - 29.1%
	Serious Concern	1.0% 0.5% - 2.2%	2.7% 1.5% - 4.9%	1.3% 0.7% - 2.2%
	Do Not Know	7.4% 5.4% - 10.1%	3.2% 2.0% - 4.9%	6.8% 5.0% - 9.2%
	Observations	770	727	1,497

Table G.44. G1. Looking ahead to the next several months, please indicate your level of concern about topics covered in this survey.

All Utilities

Estimates and 95 Percent Confidence Intervals

Topics of Concern	Response	Percentage Reporting by Population Served		
		< 10,000	> 10,000	All
Cybersecurity	Mean Score	0.23 0.19 - 0.27	0.54 0.47 - 0.61	0.27 0.24 - 0.31
	No Concern	72.6% 68.7% - 76.3%	50.5% 44.9% - 56.1%	69.6% 66.1% - 72.9%
	Mild Concern	18.5% 15.5% - 22.0%	41.1% 35.6% - 46.8%	21.6% 18.8% - 24.6%
	Serious Concern	1.3% 0.8% - 2.2%	5.9% 3.9% - 8.9%	1.9% 1.4% - 2.8%
	Do Not Know	7.5% 5.4% - 10.3%	2.5% 1.9% - 3.4%	6.8% 5.0% - 9.3%
	Observations	769	726	1,495