

EPA COVID-19 Water Sector Survey

Self-administered questionnaire to be fielded September-November 2020

Cover email:

From: EPA COVID-19 Water Sector Survey <COVID-19survey@qualtrics-survey.com>

Subject: EPA COVID-19 Water Sector Survey (survey ID [survey ID])

Dear Valued Member of the Water and Wastewater Systems Sector,

Thank you for the work you do every day to protect the public health and safety of our nation's citizens during these challenging times. Ensuring that drinking water and wastewater services are fully operational is critical to combating the Novel Coronavirus Disease (COVID-19) and protecting Americans from other public health risks. The United States Environmental Protection Agency (EPA) stands with you in our shared mission of protecting all Americans.

In response to this unprecedented pandemic, EPA is conducting a voluntary survey to learn how COVID-19 has affected and, looking forward, could affect water and wastewater services across the country. You are among the community water systems and wastewater treatment facilities selected to participate.

Your response to the survey will ensure that EPA and other key decision makers from the local to the federal level have accurate information about operational and financial challenges resulting from the pandemic. This information will enable us to better tailor technical assistance that could be valuable to water and wastewater systems over the coming months. EPA recognizes that not all utilities have been similarly affected and so we appreciate the information you can provide no matter what COVID-19's impact has been or could be on your system.

Published results of the survey will not include any information that can be used to identify your specific water or wastewater system. Depending on the level of impact of COVID-19 on your system, the survey should take approximately 45 to 90 minutes to complete.

We ask that you **please complete and submit the survey by [Due Date]**. If you wish to confirm the legitimacy of this survey, please contact Dawn Ison of EPA's Office of Water at ison.dawn@epa.gov. Survey-specific questions should be directed to **[Helpdesk Email Address]**. (Please do not reply to this email.) Please include the survey ID number, which is found in the subject line of this email, in any correspondence. Both the helpdesk address and the survey ID number can also be found in the instructions once you open the survey. For more information on the survey, visit: www.epa.gov/placeholder.

Please click on the following link to proceed to the survey. This link is unique to your organization:

Follow this link to the Survey:
[customized link with text "Take the Survey"]

Or copy and paste the URL below into your internet browser:
[customized link as hyperlinked URL]

Thank you for your efforts to sustain the critical community lifeline that is the Water and Wastewater System Sector amidst COVID-19 and for providing the requested information.

Landing page with first (required) question:

Prelim.

EPA's 2020 COVID-19 Water Sector Survey

Before you begin--this survey is meant to be filled out for the following organization:

Organization name and (if applicable) identifier: [Organization Name, followed by PWSID or NPDES number if applicable]

Organization type: [ORG TYPE: either community water system, wastewater facility, or American Indian or Alaska Native Village utility]

Is this your organization?

Note: if you select "No," you will exit the survey. If you are unsure about your answer, please contact EPA's survey contractor at [Helpdesk Email Address] and reference **survey ID [survey ID]**.

☐ Yes

☐ Yes, but there is a problem with the organization name and/or identifier. Correction: [TEXT ENTRY BOX]

☐ No

[Text on terminate page, which appears if the org name or type is incorrect:] It appears the contact information we had on file (email address [Email Address], associated with [Organization Name], a [ORG TYPE]) is incorrect. Please do not complete the survey at this time, but contact us at [Helpdesk Email Address] to let us know what information is incorrect. Be sure to reference the survey ID number, which is [survey ID].

SURVEY INSTRUCTIONS

Org. Survey ID: [Survey ID]

Survey recipient: [Organization Name]

Organization type: [ORG TYPE: either community water system, wastewater facility, or American Indian or Alaska Native Village utility]

Email address on file: [Email Address]

OMB Approval Number: XXXXX

OMB Approval Date: XXXXX

Introduction.

Dear Valued Member of the Water and Wastewater System Sector,

Thank you for the work you do every day to protect the public health and safety of our nation's citizens during these challenging times. Ensuring that drinking water and wastewater services are fully operational is critical to combating the Novel Coronavirus Disease (COVID-19) and protecting Americans from other public health risks. The United States Environmental Protection Agency (EPA) stands with you in our shared mission of protecting all Americans.

In response to this unprecedented pandemic, EPA is conducting a voluntary survey to learn how COVID-19 has affected and, looking forward, could affect water and wastewater services across the country. You are among the community water systems and wastewater treatment facilities selected to participate.

Your response to the survey will ensure that EPA and other key decision makers from the local to the federal level have accurate information about the operational and financial challenges that you are facing or could face as a result of the pandemic. This information will enable us to better tailor technical assistance that could be valuable to water and wastewater systems over the coming year. EPA recognizes that not all utilities have been similarly affected and so we appreciate the information you can provide no matter what COVID-19's impact has been or could be on your system.

Published results of the survey will not include any information that can be used to identify your specific water or wastewater system. Depending on the level of impact of COVID-19 on your system, the survey should take approximately 45 to 90 minutes to complete.

We ask that you please complete and submit the survey by [Due Date]. If you wish to confirm the legitimacy of this survey, please contact Dawn Ison of EPA's Office of Water at ison.dawn@epa.gov. For more information on the survey, visit: www.epa.gov/placeholder.

Thank you for your efforts to contain and minimize the spread of COVID-19 and for providing the requested information.

Survey Instructions:

1. You were selected to participate in the survey to provide information about [Organization Name]. If you received this survey in error, please contact us at [Helpdesk Email Address] and reference your survey ID number, which is at the top of this page. It is important that we redirect the survey to the correct organization.

2. If you have any questions on the survey, please contact us at [\[Helpdesk Email Address\]](#) and reference your survey ID number.
3. If your organization manages multiple drinking water and/or wastewater systems or facilities, **please respond only on behalf of the [Organization Type] identified at the top of the page.**
4. Every participant in the survey has a unique link. **You may share the link with other members of your organization.** For example: you might fill out some sections of the survey yourself and ask a colleague to fill out other sections. Please do not share the survey link outside your organization. At the end of the survey, we will ask you to identify a primary contact to whom EPA or its survey contractor can reach out if questions arise regarding your responses.
5. To navigate forward and backward through the survey, you can use the buttons at the bottom of the page. You can also use the Table of Contents function (open it up using the icon with three horizontal lines at the top left of the screen) to jump from section to section.
6. You do not need to complete the survey in one session. Your responses will be saved as long as you press the “next” button at the bottom of the page. In addition, you can change your answers as many times as you need to before clicking the “submit” button at the end. **However, once you hit “submit,” the survey will end and you will no longer be able to change your answers.**

This collection of information is approved by the Office of Management and Budget under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0301). Responses to this collection of information are voluntary. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to range from 45 to 90 minutes per response. Send comments on the Agency’s need of this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques, to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any such correspondence. Do not send the completed survey itself to this address.

A. DEMOGRAPHICS

A. Please start by providing some basic demographic information.

Organization name and (if applicable) identifier: [\[Organization Name\]](#)

Organization type: [\[ORG TYPE: either community water system, wastewater system, or American Indian or Alaska Native Village utility\]](#)

- A1.** Please select the primary location of your operations. [drop-down menu of states and territories]
- A2.** Please tell us the approximate number of customers your [Organization Type] serves (the number of people, not the number of connections). [The next sentence to be inserted only for surveys going to community water systems (not wastewater facilities or AI/ANV utilities)] Include both those you serve directly and (if applicable) those who receive treated drinking water produced by you and resold by other systems. (Enter a number) [FIELD FOR NUMERICAL ANSWER]

B. SUPPLY CHAIN ISSUES

B. In this section of the survey, we'd like to know about your experiences and concerns involving COVID-19-related shortages and supply chain disruptions.

- B1.** What kinds of shortages or supply chain disruptions did your [Organization Type] experience from **January 2020 through present day**? (Select all that apply)

☐	Treatment chemicals (e.g., sodium hypochlorite, lime)
☐	Personal protective equipment (e.g., masks, gloves)
☐	Durable goods, other critical equipment and supplies (e.g., pipes, fuel, filter media), and other items
☐	None

- B1.1.1** [If "Treatment chemicals" was selected in B1] How severe were the treatment chemical shortages or supply chain disruptions that you experienced from January 2020 through present day?

Item	No impact from COVID-19	Slight (did not compromise operations)	Moderate (required operational changes to maintain a constant level of service)	Severe (affected service delivery)
Carbon dioxide	☐	☐	☐	☐
Ferric chloride	☐	☐	☐	☐
Fluoride	☐	☐	☐	☐
Gaseous chlorine	☐	☐	☐	☐
Liquid oxygen	☐	☐	☐	☐
Lime	☐	☐	☐	☐
Orthophosphate	☐	☐	☐	☐
Polymers	☐	☐	☐	☐

Potassium permanganate	☐	☐	☐	☐
Sodium hydroxide	☐	☐	☐	☐
Sodium hypochlorite	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B1.1.2. [If at least one positive answer was given in B1.1.1] What contributed to each shortage or supply chain disruption? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B1.1.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.1.3. [If at least one positive answer was given in B1.1.1] How did you address each shortage or supply chain disruption? (select all that apply)

Item	Found alternative supplier	Drew down existing inventory	Switched chemicals, procedures, or technologies	Sought help from neighboring utilities or mutual aid network (e.g., WARN)	Coordinated with local or state emergency management agency	Other (please specify)
[options based on answers given to B1.1.1]	☐	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.1.4. [If “Switch chemicals, procedures, or technologies” selected in B1.1.3] What did you switch to?

	Switched to:
[options based on answers given to B1.1.3]	[TEXT ENTRY BOX]

B1.2.1 [If “Personal protective equipment” was selected in B1] How severe were the personal protective equipment shortages or supply chain disruptions that you experienced from January 2020 through present day?

Item	No impact from COVID-19	Slight (did not compromise operations)	Moderate (required operational changes to maintain a constant level of service)	Severe (affected service delivery)
N95 masks and/or elastomeric respirators	☐	☐	☐	☐
Alternative mask options (surgical, cloth, etc.)	☐	☐	☐	☐
Face shield and/or protective eye wear	☐	☐	☐	☐
Nitrile and/or latex gloves	☐	☐	☐	☐
Tyvek suite and/or disposable coveralls	☐	☐	☐	☐
Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B1.2.2 [If at least one positive answer was given in B1.2.1] What contributed to each shortage or supply chain disruption? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B1.2.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.2.3. [If at least one positive answer was given in B1.2.1] How did you address each shortage or supply chain disruption? (select all that apply)

Item	Found alternative supplier	Drew down existing inventory	Switched chemicals, procedures, or technologies	Sought help from neighboring utilities or mutual aid network (e.g., WARN)	Coordinated with local or state emergency management agency	Other (please specify)
[options based on answers given to B1.2.1]	☐	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.2.4. [If “Switch chemicals, procedures, or technologies” selected in B1.1.3] What did you switch to?

	Switched to:
[options based on answers given to B1.2.3]	[TEXT ENTRY BOX]

B1.3.1 [If “Durable goods...” was selected in B1] How severe were the shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc. that you experienced from January 2020 through present day?

Item	No impact from COVID-19	Slight (did not compromise operations)	Moderate (required operational changes to maintain a constant level of service)	Severe (affected service delivery)
Filter media	☐	☐	☐	☐
Granular / Powdered Activated Carbon (GAC / PAC)	☐	☐	☐	☐
Membrane modules	☐	☐	☐	☐
Pumps	☐	☐	☐	☐
Motors	☐	☐	☐	☐
Pipes	☐	☐	☐	☐
Valves	☐	☐	☐	☐

Fuel	☐	☐	☐	☐
Vehicles	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B1.3.2 [If at least one positive answer was given in B1.3.1] What contributed to each shortage or supply chain disruption? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B1.3.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.3.3. [If at least one positive answer was given in B1.3.1] How did you address each shortage or supply chain disruption? (select all that apply)

Item	Found alternative supplier	Drew down existing inventory	Switched chemicals, procedures, or technologies	Sought help from neighboring utilities or mutual aid network (e.g., WARN)	Coordinated with local or state emergency management agency	Other (please specify)
[options based on answers given to B1.3.1]	☐	☐	☐	☐	☐	[TEXT ENTRY BOX]

B1.3.4. [If “Switch chemicals, procedures, or technologies” selected in B1.3.3] What did you switch to?

	Switched to:
[options based on answers given to B1.3.3]	[TEXT ENTRY BOX]

B2. What kinds of potential shortages or supply chain disruptions is your [Organization Type] most concerned about from **present day through December 2020**? (Select all that apply)

☐	Treatment chemical shortages (e.g., sodium hypochlorite, lime)
☐	Personal protective equipment shortages (e.g., masks, gloves)
☐	Durable goods, other critical equipment and supplies (e.g., pipes, fuel, filter media), and other items
☐	None

B2.1.1. [If "Treatment chemicals" was selected in B2] How severe are your concerns about treatment chemical shortages or supply chain disruptions from **present day to December 2020**?

Item	No impact from COVID-19	Slight (not likely to compromise operations)	Moderate (could require operational changes to maintain a constant level of service)	Severe (could affect service delivery)
Carbon dioxide	☐	☐	☐	☐
Ferric chloride	☐	☐	☐	☐
Fluoride	☐	☐	☐	☐
Gaseous chlorine	☐	☐	☐	☐
Liquid oxygen	☐	☐	☐	☐
Lime	☐	☐	☐	☐
Orthophosphate	☐	☐	☐	☐
Polymers	☐	☐	☐	☐
Potassium permanganate	☐	☐	☐	☐
Sodium hydroxide	☐	☐	☐	☐
Sodium hypochlorite	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B2.1.2. [If at least one positive answer was given in B2.1.1] For each item, what are you most concerned about from **present day to December 2020**? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B2.1.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.1.3. [If at least one positive answer was given in B2.1.1] What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

Item	Seek alternative suppliers	Increase purchasing / maintain a larger than typical inventory	Switch chemicals, procedures, or technologies	Make arrangements with neighboring utilities or mutual aid networks (e.g., WARN)	Other (please specify)
[options based on answers given to B2.1.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.1.4. [If “Switch chemicals, procedures, or technologies” selected in B2.1.3] What are you switching to?

	Switching to:
[options based on answers given to B2.1.3]	[TEXT ENTRY BOX]

B2.2.1. [If “Personal protective equipment” was selected in B2] How severe are your concerns about personal protective equipment shortages or supply chain disruptions from **present day to December 2020**?

Item	No impact from COVID-19	Slight (not likely to compromise operations)	Moderate (could require operational changes to maintain a constant level of service)	Severe (could affect service delivery)
N95 masks and/or elastomeric respirators	☐	☐	☐	☐
Alternative mask options (surgical, cloth, etc.)	☐	☐	☐	☐
Face shield and/or protective eye wear	☐	☐	☐	☐
Nitrile and/or latex gloves	☐	☐	☐	☐
Tyvek suite and/or disposable coveralls	☐	☐	☐	☐
Sanitizing wipes, sprays for cleaning work offices, or gels for hand sanitizing	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B2.2.2. [If at least one positive answer was given in B2.2.1] For each item, what are you most concerned about from **present day to December 2020**? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B2.2.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.2.3. [If at least one positive answer was given in B2.2.1] What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

Item	Seek alternative suppliers	Increase purchasing / maintain a larger than typical inventory	Switch chemicals, procedures, or technologies	Make arrangements with neighboring utilities or mutual aid networks (e.g., WARN)	Other (please specify)
[options based on answers given to B2.2.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.2.4. [If “Switch chemicals, procedures, or technologies” selected in B2.1.3] What are you switching to?

Item	Switching to:
[options based on answers given to B2.2.3]	[TEXT ENTRY BOX]

B2.3.1. [If “Durable goods...” was selected in B2] How severe are your concerns about shortages or supply chain disruptions involving durable goods and other critical equipment and supplies, etc. from **present day to December 2020?**

Item	No impact from COVID-19	Slight (not likely to compromise operations)	Moderate (could require operational changes to maintain a constant level of service)	Severe (could affect service delivery)
Filter media	☐	☐	☐	☐
Granular Activated Carbon (GAC)/ Powdered Activated Carbon (PAC)	☐	☐	☐	☐
Membrane modules	☐	☐	☐	☐
Pumps	☐	☐	☐	☐
Motors	☐	☐	☐	☐

Pipes	☐	☐	☐	☐
Valves	☐	☐	☐	☐
Fuel	☐	☐	☐	☐
Vehicles	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 3 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 4 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 5 [TEXT ENTRY BOX]	☐	☐	☐	☐

B2.3.2. [If at least one positive answer was given in B2.3.1] For each item, what are you most concerned about from **present day to December 2020**? (select all that apply)

Item	Unavailable from supplier(s)	Delayed / backordered from supplier(s)	Transportation / distribution difficulties	Price	Other (please specify)
[options based on answers given to B2.3.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.3.3. [If at least one positive answer was given in B2.3.1] What steps have you taken or are you taking to prepare for potential shortages and supply chain disruptions? (select all that apply)

Item	Seek alternative suppliers	Increase purchasing / maintain a larger than typical inventory	Switch chemicals, procedures, or technologies	Make arrangements with neighboring utilities or mutual aid networks (e.g., WARN)	Other (please specify)
[options based on answers given to B2.3.1]	☐	☐	☐	☐	[TEXT ENTRY BOX]

B2.3.4. [If “Switch chemicals, procedures, or technologies” selected in B2.3.3] What are you switching to?

Item	Switched to:
[options based on answers given to B2.3.3]	[TEXT ENTRY BOX]

B3. Has your [Organization Type] made any requests for personnel, supplies, or equipment to your tribal, local, or state emergency operations center (EOC), primacy agency, or similar organization?

1. Yes, and the request was entirely fulfilled.
2. Yes, and the request was partly fulfilled.
3. Yes, but the request was overlooked or not fulfilled.
4. No, support was not needed.
5. No, but we would have made a request for support if the option had been available to us or if we had known about it in time
6. Do not know

B4. Is there anything else you would like to add about supply chain issues, or to explain how you developed your answers? [TEXT ENTRY BOX]

C. WORKFORCE ISSUES

C. Next, we would like to identify and understand concerns about COVID-19-related workforce issues.

- C1.** To what extent did your [Organization Type] experience shortages of key personnel, including contractors performing critical functions to maintain operations, from **January 2020 through present day**? (Depending on your browser, you may need to scroll to the right to see all options.)

Personnel type	No shortage at all	Slight shortage (did not compromise operations)	Moderate shortage (required operational changes to maintain a constant level of service)	Severe shortage (affected service delivery)	Do not know
Licensed or certified drinking water and/or wastewater operators	☐	☐	☐	☐	☐
Laboratory technicians / sample analysts	☐	☐	☐	☐	☐
Field workers (meter reading, sampling, maintenance, etc.)	☐	☐	☐	☐	☐
Engineering / design / construction personnel	☐	☐	☐	☐	☐
Critical equipment repair	☐	☐	☐	☐	☐
Administrative	☐	☐	☐	☐	☐
Customer service	☐	☐	☐	☐	☐
Other [TEXT ENTRY BOX]	☐	☐	☐	☐	☐

C2. 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?** (Depending on your browser, you may need to scroll to the right to see all options.)

Personnel type	No shortage at all	Slight shortage (not likely to compromise operations)	Moderate shortage (could require operational changes to maintain a constant level of service)	Severe shortage (could affect service delivery)	Do not know
Licensed or certified drinking water and/or wastewater operators	☐	☐	☐	☐	☐
Laboratory technicians / sample analysts	☐	☐	☐	☐	☐
Field workers (meter reading, sampling, maintenance, etc.)	☐	☐	☐	☐	☐
Engineering / design / construction personnel	☐	☐	☐	☐	☐
Critical equipment repair	☐	☐	☐	☐	☐
Administrative	☐	☐	☐	☐	☐
Customer service	☐	☐	☐	☐	☐
Other [TEXT ENTRY BOX]	☐	☐	☐	☐	☐

C3. [To be asked if respondents select slight, moderate, or severe for any personnel type in questions C1 or C2.] What factors contribute to personnel shortages you identified on the previous page? (Check all that apply)

	Does not contribute	Contributes somewhat	Contributes significantly	Do not know
Absenteeism (illness, care of family members, daycare closure, virtual schooling, etc.)	☐	☐	☐	☐
Layoffs or furloughs	☐	☐	☐	☐
Reduced work hours of current staff	☐	☐	☐	☐
Delayed or canceled plans to hire staff	☐	☐	☐	☐
Lack of backup certified personnel	☐	☐	☐	☐
Operators unable to obtain or maintain needed certification due to lack of in-person training	☐	☐	☐	☐
Restrictions on travel	☐	☐	☐	☐
Lack of I.T. infrastructure (e.g., equipment, network capacity)	☐	☐	☐	☐
Other (please specify) [TEXT ENTRY BOX]	☐	☐	☐	☐

C4. What strategies or resources has your [Organization Type] used to address potential shortages of certified operators, laboratory staff, or other trained personnel during the COVID-19 pandemic? (Select all that apply)

☐	Used technology (e.g., live video feeds) to allow some operational tasks to be performed remotely
☐	Used telework for job functions that could be performed remotely
☐	Decreased staffing/changed shift work while maintaining core operations
☐	Delayed non-critical work
☐	Increased use of contractors
☐	Accessed operators from nearby utilities, including via WARN or other mutual aid networks
☐	Utilized backup laboratory services
☐	Other (please specify) [TEXT ENTRY BOX]

C4.1. [If one or more options was selected in response to C4] Did the strategies you implemented help mitigate staffing shortages?

	Yes	Not sure	No
[options based on answers given to C4]	☐	☐	☐

C5. What is the greatest concern your [Organization Type] has associated with maintaining staffing during the pandemic? (Select one)

1. Availability of testing for illness
2. Availability of PPE
3. Ability to house personnel on site
4. Cross-training personnel
5. Protecting high-risk employees
6. Adhering to changing local and state requirements
7. Other (please specify): [TEXT ENTRY BOX]

C6. Is there anything else you would like to add about workforce issues, or to explain how you developed your answers? [TEXT ENTRY BOX]

D. FINANCIAL ISSUES

D. Next, please identify any financial impacts that your [Organization Type] has experienced due to the COVID-19 pandemic. As a reminder, you are answering on behalf of [Organization Name].

[This paragraph to be inserted only for surveys going to wastewater facilities (not community water systems or AI/ANV utilities).] (We understand that in some cases a wastewater facility may belong to a larger organization such as a municipality that manages multiple facilities. Please answer specifically for the wastewater facility identified above. If that is not possible, please explain how you are answering the financial questions in your response to question D6, at the end of this section.)

D1.1.1. Let's start with your [Organization Type]'s operational budget from **January 2020 to the present**. Since different organizations have different accounting periods, please tell us the cutoff date you will be using for "the present" when filling out the following table. For example, your cutoff date could be the last day of your most recent accounting month. (Please enter as mm/dd/yyyy) [DATE FIELD]

D1.1.2. Please indicate the state of your [Organization Type]'s operating budget from January 2020 to the present.

	Value (in dollars)	This number is:		Don't know the value
		Exact	Estimate	
Budgeted operating revenue (January 2020 - present)	[NUMERICAL ENTRY FIELD]	☐	☐	☐
Actual operating revenue (January 2020 - present)	[NUMERICAL ENTRY FIELD]	☐	☐	☐
Budgeted operating expenses (January 2020 - present)	[NUMERICAL ENTRY FIELD]	☐	☐	☐
Actual operating expenses (January 2020 - present)	[NUMERICAL ENTRY FIELD]	☐	☐	☐

present)				
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- D1.2. [To be asked if the January to present anticipated revenue is lower than the January to present budgeted revenue] 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?

Factors	Not a contributor	Contributor	Significant contributor	Do not know
Nonpayment of bills	☐	☐	☐	☐
Decreased use (decreased demand for service)	☐	☐	☐	☐
Reduction in rates and/or fees	☐	☐	☐	☐
Other - 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other - 2 [TEXT ENTRY BOX]	☐	☐	☐	☐

- D1.3. [To be asked if the January to present anticipated expenses are higher than the January to present budgeted expenses] Your answers indicate that actual operating expenses were higher than budgeted during the January to present period. What COVID-19-related factors contributed?

Factors	Not a contributor	Contributor	Significant contributor	Do not know
Personnel costs (e.g., overtime, increased hours)	☐	☐	☐	☐
Consumables (e.g., higher cost for chemicals, more sanitation/cleaning, higher inventories)	☐	☐	☐	☐
Utilities costs (e.g., higher power, fuel, etc. costs)	☐	☐	☐	☐
PPE (e.g., cloth masks)	☐	☐	☐	☐
Other - 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other - 2 [TEXT ENTRY BOX]	☐	☐	☐	☐

- D2.1. We would like your assessment of your [Organization Type]'s financial situation for the rest of 2020. We recognize that projections for the rest of the year are uncertain, but 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?

	Financial outlook for the remainder of 2020			
	Improve	Stay about the same	Worsen	Do Not Know
Operating revenue	☐	☐	☐	☐
Operating expense	☐	☐	☐	☐

D2.2. [To be asked IF the response above indicates that the operating revenue situation is expected to “worsen.”] To what COVID-19-related factors do you attribute the worsening outlook for operating revenue in the remainder of 2020?

Factors	Not a contributor	Contributor	Significant contributor	Do not know
Nonpayment of bills	☐	☐	☐	☐
Decreased use (decreased demand for service)	☐	☐	☐	☐
Reduction in rates and/or fees	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐

D2.3. [To be asked IF the response above indicates that the operating expense situation is expected to “worsen.”] To what COVID-19-related factors do you attribute the worsening outlook for operating expenses in the remainder of 2020?

Factors	Not a contributor	Contributor	Significant contributor	Do not know
Personnel costs (e.g., overtime, increased hours)	☐	☐	☐	☐
Consumables (e.g., higher cost for chemicals, more sanitation/cleaning, higher inventories)	☐	☐	☐	☐
Utilities costs (e.g., higher power, fuel, etc. costs)	☐	☐	☐	☐
PPE (e.g., cloth masks)	☐	☐	☐	☐
Other – 1 [TEXT ENTRY BOX]	☐	☐	☐	☐
Other – 2 [TEXT ENTRY BOX]	☐	☐	☐	☐

D3.1. If your [Organization Type] 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)

☐	Drawing down days cash on hand
☐	Drawing on reserve funds
☐	Delaying maintenance
☐	Reducing staff hours
☐	Reducing staff pay and/or benefits
☐	Laying off staff
☐	Incurring additional debt
☐	Refinancing debt and/or deferring debt payments
☐	Delaying/canceling capital improvement projects
☐	Adjusting rates higher than originally planned
☐	Other - 1 [TEXT ENTRY BOX]
☐	Other - 2 [TEXT ENTRY BOX]
☐	Not applicable (no decrease in cash flow)

D3.2. [To be asked if a positive answer is given to D3.1] What type of impact do you think these actions are making or will make in mitigating the decrease in your [Organization Type]'s cash flow?

	Have made / will make a small impact	Have made / will make a large impact	Do not know
[options based on answers given to D3.1]	☐	☐	☐

D4. Which of the following is your [Organization Type] considering regarding capital infrastructure projects due to COVID-19? (Select all that apply)

☐	Not applicable (no projects planned)
☐	No change to current or planned projects
☐	Pausing/slowing a project for which construction has begun
☐	Delaying starting a project that was planned to start soon
☐	Accelerating starting a project
☐	Reducing the scope or funding for a project for which construction has begun
☐	Increasing the scope or funding for a project (current or planned)
☐	Delaying applying for a subsidized loan/grant by at least six months
☐	Accelerating interest in applying for a subsidized loan/grant for a shovel-ready project
☐	Other (please specify) [TEXT ENTRY BOX]
☐	Do not know

D5. In response to COVID-19, what actions has your [Organization Type] taken to help alleviate economic impacts on customers? (Select all that apply)

☐	Suspended service shutoffs
☐	Waived late payment fees
☐	Provided extensions on bill payment
☐	Expanded customer assistance programs
☐	Expanded water conservation programs
☐	Delayed or eliminated planned rate adjustment
☐	Lowered rates
☐	Other (please specify) [TEXT ENTRY BOX]
☐	None (no actions taken to alleviate economic impact on customers)
☐	Do not know

D6. Is there anything else you would like to add about financial issues, or to explain how you developed your answers? [TEXT ENTRY BOX]

E. ANALYTICAL SUPPORT ISSUES

E. Next, we'd like to know if the COVID-19 pandemic has affected your ability to complete required sampling and laboratory analyses.

E1. What COVID-19-related conditions have interfered with your [Organization Type]'s ability to complete the required sampling needed to operate your system and to determine compliance with regulations? (Select all that apply)

☐	Lack of available personnel for sample collection
☐	Lack of available supplies for sampling and/or shipping
☐	Lack of available personal protective equipment
☐	Lack of access to approved monitoring locations (e.g., for pre-treatment sampling or coliform sampling)
☐	Other (please specify): [TEXT ENTRY BOX]
☐	None (no COVID-19-related hindrances to completion of required sampling)
☐	Do not know

E2. What COVID-19-related conditions have interfered with your [Organization Type]'s ability to complete required laboratory analyses needed to operate your system and to determine compliance with regulations? (Select all that apply)

☐	Lack of available laboratory personnel
☐	Lack of available supplies for sampling and/or shipping
☐	Lack of available personal protective equipment
☐	Internal laboratory capacity shortages that delay timely analysis
☐	Decreased access to external laboratory services
☐	Delays in external laboratory services
☐	Sample transport delays
☐	Travel restrictions
☐	Revenue interruption
☐	Other (please specify): [TEXT ENTRY BOX]
☐	None (no COVID-19-related hindrances to completion of required laboratory analysis)
☐	Do not know

E3. Is there anything else you would like to add about analytical support issues, including how you addressed them (e.g., using primacy-agency-approved alternate sampling sites), or to explain how you developed your answers? [TEXT ENTRY BOX]

F. CYBERSECURITY ISSUES

F. Please tell us about any cybersecurity issues or concerns.

F1. Has your [Organization Type] experienced any issues or concerns related to cybersecurity during the pandemic? [Yes/No]

F1.1. [appears if answer to F1 is "Yes"] Please describe the issues or concerns. [TEXT ENTRY BOX]

G. CLOSING

G. Finally, we'd like to ask you where you think the greatest challenges lie.

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

Issue	No concern	Mild concern	Serious concern	Don't know
Supply Chain	☐	☐	☐	☐
Workforce	☐	☐	☐	☐
Financial	☐	☐	☐	☐
Analytical Support	☐	☐	☐	☐
Cybersecurity	☐	☐	☐	☐

G2. Thank you for participating in this survey. Is there anything else you would like to tell us? **[TEXT ENTRY BOX]**

G3. To whom should any questions regarding your responses to the survey be directed?

1. Name **[TEXT ENTRY BOX]**
2. Title **[TEXT ENTRY BOX]**
3. Email address **[FIELD FOR EMAIL ADDRESS]**
4. Phone number **[FIELD FOR PHONE NUMBER]**

Submittal. Please double-check that you have answered all questions in the survey. (A “check” mark in the Table of Contents indicates that you have reached end of each section of the survey, but not that you have answered all questions in the section. We recommend that you go back to the beginning and page through to ensure all questions are answered.) When you press “Submit,” you will no longer be able to change your answers.

[SUBMIT BUTTON]