COVID-19 Pandemic Planning for the Water and Wastewater Sector

Business Continuity Planning for Water & Wastewater Systems

Purpose
This guide will assist water and wastewater utilities in planning for and operating during the COVID-19 pandemic. Each utility will be in varying stages of preparation for a pandemic. Utilities that fail to prepare for any prolonged pandemic or catastrophic event may find themselves without the staff, equipment, or supplies necessary to continue providing safe drinking water or treating wastewater for their community.

Business Continuity Actions
Operators, supervisors and administrators can use this guide to develop a practical response plan to minimize risk. The following six checklists guide you in preparing your system for the COVID-19 pandemic. As you prepare, you should consider your essential Services, Functions & Processes, Raw Materials & Supplies, Workers and Interdependencies. Finally, you should also consider Regulatory Issues and the Impacts from Community Mitigation Strategies.

☐ Essential Services, Functions & Processes
Industries in every sector of the Alberta economy will experience pandemic impacts. The Water and Wastewater sector will play a key role in keeping one of Alberta’s most critical and life-saving services operational. Shortages and disruptions to basic services, functions, and national infrastructure may cause localized challenges for communities. Effective coordination with public safety officials and community leaders will facilitate the integration of water and wastewater utilities into community emergency operations planning. The sector’s essential functions include producing potable water and treating wastewater. The sector’s essential processes include both water treatment, storage and distribution, as well as wastewater collection, treatment and discharge of treated effluent.

ACTION: Identify and assess your system’s essential services, functions and processes
☐ Identify key customers (i.e. fire stations, hospitals) with specific and/or unique water or wastewater needs
☐ Prioritize essential services and functions. Prioritize essential services and functions, if suspension of some services becomes necessary.
☐ Identify non-essential functions you can suspend that will free resources to maintain essential services and functions.
☐ Review and/or update emergency response plans
☐ Review business functions to assess if which ones can be conducted remotely. Use telephone, internet, video conferencing or internet-based seminar options where possible.
Essential Raw Materials & Supplies

A pandemic “wave” may linger in a community for weeks to months. The negative impacts on individuals, businesses, and the nation from the illness and disease mitigation strategies will have an effect over a much greater duration than other typical disaster scenarios. A severe pandemic may disrupt access to your essential materials and supplies necessary to function. Utilities should explore their supply chains, beginning with internal storage capacity and tracking along the network to the source of the materials. Given an increased reliance on “just-in-time” delivery and the potential impacts that could affect your supply chain, systems may need to increase access to supplies. This could include on site storage, local suppliers, or ensuring availability by making other contingency plans.

**ACTION:** Identify materials and supplies essential functions and equipment up to 12 weeks

- Identify critical inputs.
  - Critical inputs include chemicals (coagulants, pH adjustors, disinfectant), lab supplies, reagents, fuels, lubricants, filters, repair parts, and Personal Protective Equipment (PPE) such as masks, gloves, plentiful sanitation supplies including hand sanitizer, hygiene products, tissues and receptacles for their disposal.
- Prioritize essential material and supplies necessary to operate equipment and sustain essential functions
- Identify options to reduce demand for essential supplies and materials
- Update the Standard Operating Procedures (SOPs) for critical equipment. Do you need to change your SOPs to address pandemic conditions (i.e. social distancing strategies)?
- Is your equipment clearly mapped and marked for mutual aid and assistance teams to locate in the case of emergency repair or replacement by others?
- Explore options (e.g. regional stockpile for chemicals) that might reduce the need to stockpile high-cost or hazardous materials on-site
- Assess all internal and external supply-chain support operations and contracts

**ACTION:** Determine the most effective ways to ensure an adequate supply of essential materials

- Assess costs to procure, stock, and/or ensure delivery of essential materials
- Is maintenance up-to-date on critical infrastructure (back-up generators, fuel levels, pumps, etc.)?
- Is calibration and maintenance up-to-date for critical monitoring equipment (online instrumentation, SCADA, call outs etc.)?
- Identify physical or safety limitations in stocking sufficient critical supplies locally
- Identify a formal chain of command to ensure someone is available to authorize major emergency procurements
- Identify additional security needs for increased high-value material on-site storage
- Coordinate and communicate with all supply-chain vendors any changes that need to be made in terms of timing, quantity or payment methods.

Essential Workers

A severe pandemic may generate extended absences for essential workers that might affect you and your supply chain. During a pandemic, the level of workforce absenteeism could be significant. Small systems with 1 to 6
employees may face disproportionate impact as compared to larger systems. Operators in small systems usually work together in close quarters and are often connected socially. Implementing social distancing within these operations becomes a very critical strategy, along with rigorous personal hygiene and the strategic use of PPE. Proactively arranging for external backups provides an additional level of redundancy if internal arrangements failed. These measures in the workplace may alleviate potential worker-related crises during COVID-19. A list of your essential workers will likely include, but not limited to; certified water and wastewater utility operators (treatment, distribution & collection); maintenance/repair specialists, laboratory technicians; electrical and SCADA technicians; business support; and supervisors.

**ACTION:** Identify the types and numbers of workers critical to sustain essential functions

- Identify essential workers based on ability to sustain essential equipment and functions and their impact by extended absenteeism.
- Define the roles and responsibilities of employees, labor organizations, staff, supervisors, and managers during a pandemic.
- Assess requirements based on operational demands for essential workers (24-hour manual vs. SCADA).
- What kind of monitoring capability do you have – alarms only or remote process control.
- Do you have continuous monitoring & performance of drinking water disinfection processes for system(s)? Do key staff have access to SCADA? Can you maximize the use of equipment/process that can function via remote access?
- Do you have appropriate certified operators for back-up support? How quickly backup operators be called in to a help? Be familiar with Operator Attendance Guidelines especially as they relate to using remote monitoring and supervising operators.
- Do you have a trained “reserve” workforce? Are there recent retirees that can assist, or can you train individuals to serve on a contract basis?
- Can suppliers ensure priority delivery of replacement parts for assets during an extended pandemic wave? How will you ensure priority delivery?

**ACTION:** Identify policies and procedures to protect and sustain workers during pandemic

- Reduce demands on front line essential workers in order to focus staff on maintaining & restoring a community’s utilities.
- Coordinate with provincial officials on using non-certified workers during a pandemic.
- Communicate risks, provide signage, and PPE barriers to utility operators regarding the potential transmission of coronaviruses and precautionary sanitation practices.
- Emphasize worker and workplace disease control and protection.
- Determine which types of PPE are best for your various worker types.
- Develop a protocol (seek medical attention, isolate at home, notify supervisor) for employees to follow if they contract the virus, show symptoms, or have ill family members.
- Consider implementing a process to screen employees and visitors at the entrances to your critical facilities.
- Review and update complaint follow up procedure to meet current health guidelines.
### Essential Interdependencies

When a pandemic strikes, it will affect nearly every sector of our society, not just health care, but energy, transportation systems, workplaces, schools, public safety, etc. Successful preparedness and response will require a coordinated nation-wide effort, including Federal, Provincial, local governments and most importantly the private sector. To facilitate a swift response and recovery to a pandemic outbreak, the water and wastewater sector must identify and be able to sustain its essentials interdependencies within and across sectors. Interdependencies requiring advanced coordination include support from other utilities, businesses, government agencies, as well as essential goods and services, including, but not limited to, electricity, fuel, telecommunications and transportation.

### ACTION: Identify the interdependent relationships and take actions to sustain this essential support

- Assess the external supports that all the essential services in your community require. What other sectors (communications, energy, transportation, food services, etc.) are you most reliant on to sustain your critical operations?
- Assess capability of formal and informal mutual aid / assistance networks in order to reduce vulnerabilities
- Collaborate with external partners, such as Alberta Health Services and first responders, who both support and rely on you
- Consider developing joint operational plans with service providers, suppliers, and customers
- Assess capability for ensuring microbiological samples will be transported to the ProvLab within time requirements. Do you have an alternative courier in case of courier disruption?
**Regulatory Issues**

In response to pandemic, the government may provide direct support in the form of vaccines, antiviral medications, and personal protection supplies for essential workers; priority and clearances for a business’ supply deliveries; on-site public safety and physical security augmentation. Utilities should consider all possible options to meet regulatory requirements in their pandemic planning. Proactive and ongoing discussions with your regulatory officials can help with early identification of issues that may arise during a pandemic.

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<thead>
<tr>
<th>ACTION: Identify Federal, Provincial and local regulatory requirements that may affect utility operations</th>
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<tbody>
<tr>
<td>☐ Identify regulations that, if temporarily modified, would reduce impacts on critical functions, resources &amp; workers</td>
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<td>☐ Coordinate possible regulatory constraints and relief options with provincial regulators</td>
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<td>☐ Communicate potential relief actions in advance to workers, supporting businesses, and customers</td>
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**Impacts from Community Mitigation Strategies**

To reduce impacts from a pandemic outbreak, Federal, Provincial, First Nations and local government authorities, in addition to private entities, may implement a variety of strategies including; voluntary isolation; voluntary home quarantine; school closures; and social distancing of adults in the community and workplace. The public health and social distancing strategies may ultimately contain the disease and may reduce the risk of infection and loss of life, but they also will have significant consequences for utilities and private sector businesses and need to be managed carefully.

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<thead>
<tr>
<th>ACTION: Identify effects from mitigation strategies; take actions to reduce negative impacts</th>
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<tbody>
<tr>
<td>☐ Estimate effects of mitigation strategies on your utility</td>
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<td>☐ Consider the need to separate the workforce, establish independent locations, and/or preserve a clean work site</td>
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<td>☐ Determine the strategies that your community may/can employ</td>
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<td>☐ Discuss with workers the potential impacts from strategies</td>
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<td>☐ Familiarize yourself with your community’s pandemic planning trigger points and determine the timing and use of mitigation interventions</td>
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<tr>
<td>☐ Ensure that all access to sites requiring third-party participation will remain viable</td>
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<tr>
<td>☐ Ensure that access to facilities by third parties is agreed and appropriately controlled</td>
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**Resources**


This document is an adaptation from Alberta Environment and Park’s [Water and Wastewater Sector Pandemic Influenza Planning Guidelines, Alberta (2011).](https://www.gov.ab.ca/dohw/dhln/crisis/2014/pandemicplan/plan.htm) (credit to Dr. Jeff Charrois and Dr. Donald Reid, formerly AEP)