

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	
<input type="checkbox"/>	Identify key customers (i.e. fire stations, hospitals) with specific and/or unique water or wastewater needs
<input type="checkbox"/>	Prioritize essential services and functions. Prioritize essential services and functions, if suspension of some services becomes necessary.
<input type="checkbox"/>	Identify non-essential functions you can suspend that will free resources to maintain essential services and functions.
<input type="checkbox"/>	Review and/or update emergency response plans
<input type="checkbox"/>	Review business functions to assess if which ones can be conducted remotely. Use telephone, internet, video conferencing or internet-based seminar options where possible.

<input type="checkbox"/>	Be prepared to make decisions about when to stay open, modify hours of operation, and/or restrict access (i.e. close to visitors, or to close a site or service completely)
<input type="checkbox"/>	Be sure you have planned that core business activities can be sustainable over several months and that recovery may not be able to start immediately in a localized short-term event.
<input type="checkbox"/>	Make sure that everyone knows their roles – managers, employees, union, health and safety committees, pandemic manager, etc. to avoid confusion.

□ 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

<input type="checkbox"/>	Identify critical inputs. Critical inputs include chemicals (coagulants, pH adjustors, disinfectant), lap 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.
<input type="checkbox"/>	Prioritize essential material and supplies necessary to operate equipment and sustain essential functions
<input type="checkbox"/>	Identify options to reduce demand for essential supplies and materials
<input type="checkbox"/>	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)?
<input type="checkbox"/>	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?
<input type="checkbox"/>	Explore options (e.g. regional stockpile for chemicals) that might reduce the need to stockpile high-cost or hazardous materials on-site
<input type="checkbox"/>	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

<input type="checkbox"/>	Assess costs to procure, stock, and/or ensure delivery of essential materials
<input type="checkbox"/>	Is maintenance up-to-date on critical infrastructure (back-up generators, fuel levels, pumps, etc.)?
<input type="checkbox"/>	Is calibration and maintenance up-to-date for critical monitoring equipment (online instrumentation, SCADA, call outs etc.)?
<input type="checkbox"/>	Identify physical or safety limitations in stocking sufficient critical supplies locally
<input type="checkbox"/>	Identify a formal chain of command to ensure someone is available to authorize major emergency procurements
<input type="checkbox"/>	Identify additional security needs for increased high-value material on-site storage
<input type="checkbox"/>	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	
<input type="checkbox"/>	Identify essential workers based on ability to sustain essential equipment and functions and their impact by extended absenteeism
<input type="checkbox"/>	Define the roles and responsibilities of employees, labor organizations, staff, supervisors, and managers during a pandemic
<input type="checkbox"/>	Assess requirements based on operational demands for essential workers (24-hour manual vs. SCADA)
<input type="checkbox"/>	What kind of monitoring capability do you have – alarms only or remote process control.
<input type="checkbox"/>	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?
<input type="checkbox"/>	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.
<input type="checkbox"/>	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?
<input type="checkbox"/>	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	
<input type="checkbox"/>	Reduce demands on front line essential workers in order to focus staff on maintaining & restoring a community's utilities
<input type="checkbox"/>	Coordinate with provincial officials on using non-certified workers during a pandemic
<input type="checkbox"/>	Communicate risks, provide signage, and PPE barriers to utility operators regarding the potential transmission of coronaviruses and precautionary sanitation practices
<input type="checkbox"/>	Emphasize worker and workplace disease control and protection
<input type="checkbox"/>	Determine which types of PPE are best for your various worker types
<input type="checkbox"/>	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
<input type="checkbox"/>	Consider implementing a process to screen employees and visitors at the entrances to your critical facilities
<input type="checkbox"/>	Review and update complaint follow up procedure to meet current health guidelines

ACTION: Identify Human Resource (HR) and protective actions to sustain essential workforce

<input type="checkbox"/>	Assess standard water and wastewater utility HR policies and procedures
<input type="checkbox"/>	Postpone face-to-face meetings, and unnecessary travel. Try telephone or videoconferences instead
<input type="checkbox"/>	Create small work units to minimize overall contact (i.e. break between shifts to allow time to clean workplace surfaces – door knobs, phones)
<input type="checkbox"/>	Increase social -distancing distance between customers & staff (installing protective barriers, modify distribution monitoring points, installing additional online chlorine analysers to reduce contact at public sites, consider alternative payment methods)
<input type="checkbox"/>	Review flexible work options -set up infrastructure to handle working from home - job duties via the internet or telephone. Ensure IT system can support action
<input type="checkbox"/>	Cross train employees so they can effectively cover other duties
<input type="checkbox"/>	Be aware of health & safety, employment or compensation legislation, and any emergency measure acts, and how it may apply in a pandemic situation
<input type="checkbox"/>	Develop additional HR policies specific to pandemic response
<input type="checkbox"/>	Identify likely legal considerations that may arise from these new HR actions
<input type="checkbox"/>	Develop plans and procedures that provide support and assistance to employees' families
<input type="checkbox"/>	Provide regular communication to all staff on the latest health advisories and pandemic-related recommendations

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

<input type="checkbox"/>	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?
<input type="checkbox"/>	Assess capability of formal and informal mutual aid / assistance networks in order to reduce vulnerabilities
<input type="checkbox"/>	Collaborate with external partners, such as Alberta Health Services and first responders, who both support and rely on you
<input type="checkbox"/>	Consider developing joint operational plans with service providers, suppliers, and customers
<input type="checkbox"/>	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.

ACTION: Identify Federal, Provincial and local regulatory requirements that may affect utility operations	
<input type="checkbox"/>	Identify regulations that, if temporarily modified, would reduce impacts on critical functions, resources & workers
<input type="checkbox"/>	Coordinate possible regulatory constraints and relief options with provincial regulators
<input type="checkbox"/>	Communicate potential relief actions in advance to workers, supporting businesses, and customers

□ 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.

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

Resources

[Alberta's Pandemic Influenza Plan \(March 2014\)](#) – Government of Alberta (GOA)

[Business Continuity Planning - Infectious Diseases](#) - Canadian Centre for Occupational Health and Safety (CCOHS)

Alberta government website COVID-19 info for Albertans <https://www.alberta.ca/coronavirus-info-for-albertans.aspx#top>

This document is an adaptation from Alberta Environment and Parks' *Water and Wastewater Sector Pandemic Influenza Planning Guidelines, Alberta* (2011). (credit to Dr. Jeff Charrois and Dr. Donald Reid, formerly AEP)