

## **Kincardine Frozen Water Procedure**

### **Purpose:**

The purpose of this procedure is to describe how the Environmental Services Department will respond and implement protocol for any frozen water service. During prolonged periods of cold winter weather some underground infrastructure has been susceptible to freezing within the Municipality.

### **Goals:**

The overall goal of the program is to monitor conditions, ensure a preventative approach to try and ensure all residents can try and maintain potable water through their own drinking water line, and then provide assistance, guidance, and effective response for any frozen services or mains. The program hopes objective is to monitor and minimize the possibility of frozen water services.

### **Monitoring Procedures:**

The initial monitoring procedure within the Municipality will consist of a few different programs to try and attempt to implement a preventative program prior to any freezing of water services.

- a) Effective around December 1<sup>st</sup> of each year, staff will begin to monitor the daily mean temperature as provided through local weather stations. The Municipality will track these temperatures and compare them with historical data to implement a preventative program where staff will ask residents to begin to run a tap to try and prevent frozen lines.
- b) Staff also track the raw water temperature entering the treatment plant daily. This can also be utilized with historical data to monitor possibility of freezing.

**\*\*** Staff believe the most effective way to manage frozen water lines will be the tracking of mean temperature through Environment Canada. While December 1<sup>st</sup> may be a realistic start time, staff could decide to begin the process earlier or later if sub-zero weather arrives. Issues such as snow cover which provides insulation, and long-range forecasts could also influence decisions within the monitoring program.

### **Preventative Procedures:**

The objective of the preventative procedures is to notify residents in areas where historical freezing has occurred, to begin a program to attempt to prevent the freezing of water lines. The historical data can identify and prioritize staff resources to begin implementing procedure. When implementing these procedures staff may also look at consideration of things like the amount of snowfall currently on the ground providing insulation and projected long-range forecasts that may imply a continued trend of cold weather.

Historical data indicates that when the mean temperature reaches -35°C Kincardine may experience its first frozen lines of the season. Should the mean temperature reach these criteria, staff will begin to implement the procedures set out within this procedure. Recognizing that different streets have frozen at different times the procedure will reflect historical data collected and implement various stages for its residents. The Municipality will implement a four-stage program for preventative maintenance.

Stage #1 will occur when mean temperature reaches -35°C  
Stage #2 will occur when mean temperature reaches -48°C  
Stage #3 will occur when mean temperature reaches -60°C  
Stage #4 will occur when mean temperature reaches -68°C

In each case the preventative program will trigger staff to start a door-to-door campaign to inform residents to begin the process of running a tap. Staff will provide a door knocker if they are unable to reach residents in a home, they will contact the department to begin the process.

Staff will ensure that residents understand the importance of continuing to maintain a flow to prevent freezing. The Customer will be responsible to ensure the plumbing and drains will accommodate continuous and unattended running of water. The Environmental Services department will collect a water meter read for reference and resident will be billed up to that point for consumption in the quarter. Any resident asked to run water will be billed the flat rate from that point forward, until a final read is collected, and residents can discontinue running water.

### **Frozen Water Lines & Managing Interruptions:**

The Municipality has historical data on properties in past years that have frozen. However, it is possible these could freeze or new services that haven't previously encountered freezes or interruptions could arise. The guidelines in this procedure will outline how the Municipality plans to deal with these frozen services, implement a plan

of action and prioritization of vulnerable services. It will outline responsibilities for the Municipality, residents, and good-neighbor policies in the event temporary water services are installed.

The Municipality understands that water is an essential service and will make reasonable effort to help its residents when lines freeze. When determining the priority of unthawing services, the following vulnerable sectors will take priority prior to any residential homes being unthawed.

- a) Municipality of Kincardine Water Treatment or Well Site
- b) Hospital/Medical Clinics
- c) Nursing Homes
- d) Recreational Complex or Facilities deemed emergency centre.
- e) Vulnerable Customer
- f) Hotel
- g) Food Handling or Processing Facility
- h) High Volume Industrial Customer

\*\*\* Vulnerable Customer is defined as the following:

A customer who has a water dependent medical condition, provides home daycare, is dependent on water for primary heating source, elderly, or pregnant resident.

Furthermore, the Municipality will prioritize calls via its administration office call logs. Residents who were not provided any initial preventative procedures will be prioritized over those who were or have been unthawed and had their line freeze again.

Once a service has been reported staff will review historical data to determine if any previous data exists and which side the freeze may have previously occurred on. The Municipality will make every effort to contact the customer and provide any historical data they may have. In addition, the Municipality will attempt to give the property owner an estimated time or day as to when staff may be able to look at the problem.

While time can be an essential component in unthawing lines, if customers choose to go ahead and hire someone privately to attempt to unthaw the line prior to Municipality arriving, the customer will be responsible for all associated costs.

The Municipality also has a dedicated full-time locator who may attend properties to look for depth on water lines to determine where the freeze may exist.

If the Municipality suspects the frozen service to be on private property, they will inform residents and recommend customers reach out to local contractors capable of unthawing water lines.

If the water line is difficult to determine exactly where the freeze is the Municipality will work in conjunction with the homeowner to determine a course of action. Options for this could include:

- i) Municipality attempts to isolate curb-stop. If successful a property owner could hire a plumber and determine if the issue is on private property. These costs would be incurred by homeowner.
- j) The Municipality could work with the homeowner and dig down at a spot to expose the waterline and attempt to thaw each direction. If the freeze is on private property, the homeowner would be responsible for associated costs of the work. If it is determined to be on public property, the Municipality would incur those costs. Please find attached form Appendix A which will need to be signed off and agreed to prior to any work commencing for this project.

If historical data or on-site observations lead the Municipality to believe the service is frozen on the Municipal side the department will make reasonable effort to thaw the service. This may include needing access to customers home, and area where water line enters premise.

Additionally, staff may need to dig on the property to expose the water line outdoors and attempt to thaw the line. Staff will make efforts to restore the property to a safe condition should this occur, but restoration efforts may be put off to a further date.

#### Temporary Water Service Program

If all efforts fail to unthaw the water line, the Municipality will work with the effected customer try and provide some form of water.

The Municipality will allow customers to access water fill stations at dedicated locations including the Kincardine Water Treatment Plant located at 155 Durham Street. Customers will be required to provide their own containers for the transport of water. In addition, the Municipality will provide vouchers to those affected by frozen water lines that were unable to be thawed or who are transporting water from bulk stations and request vouchers for potable water. These will be redeemable to local vendors for potable drinking water.

Customers affected by a frozen water service which was unable to be thawed may also reach out to a neighboring property to attempt to get water. The Municipality will aid in this process, with advice and recommendations for both parties, but will note some of the following below for each party:

#### Customers Receiving Water from a Neighbor:

- k) You will be responsible for finding a neighbor willing to allow you to connect to their outside tap to receive water. You will be responsible to install hosing or temporary water line to make the connections. This includes fittings at the residents. It may include the removal of backflow devices to allow flow, and re-installation once flow is restored. You may need to hire a professional to install fittings to ensure necessary requirements.
- l) Receiving customers will be responsible once connected to ensure they maintain flow through the hoses to prevent freezing and possible water damage at the neighboring property in the event of issues.
- m) You will need to ensure that you have a proper functioning main shut-off in the house to close the customers supply to ensure there is no backflow to the Drinking Water System. This again may require professional help to install these services.
- n) It should be noted that the Municipality of Kincardine cannot guarantee a safe potable water that runs through a neighboring home, garden hoses, and is connected to a secondary home. We would recommend that should a temporary line like this exist that residents treat this water as non-potable and purchase potable water for consumption. Municipal staff will be able to provide residents with advice, and paperwork for such an occurrence.

#### Temporary Water Service Providers:

- o) You are responsible for turning outdoor taps and providing a flow needed to a neighbor. It is unlikely but you may need to make plumbing adjustments.
- p) It is important to note that in the event a neighbor were to stop a temporary line from flowing, it is possible the temporary line would freeze very quickly and could possibly cause damage or flooding if it were to break.
- q) The Municipality recognizes that water is essential, and in the event of extreme circumstance such as frozen water the Municipality is willing to offer a good-

neighbor rate in which anyone supplying water to a frozen neighbor would only pay the base rate for water in the quarter/s in which water is supplied.

### **Program Completion**

Once staff feel the program is nearing completion, they will again come door-to-door to inform residents. Once flows are restored through individual water services the customer will inform the Municipality, and staff will come out to collect water meter readings to begin the process of charging once again for usage. Staff will inform residents that often after water lines freeze, damage can occur through the thawing process. This can result in leaks on both public and or private property. In addition, staff could also attempt to locate and get a depth of service should rate-payers want to consider lowering water lines in the event they are not deep enough.

Through regular scheduled Quality Management Meetings staff may be able to review and make recommendations based on the data collected during these occurrences. These may factor into budget considerations when determining possible road construction and opportunities to improve infrastructure. Data collected will also be evaluated to determine if some areas should be re-allocated into different stages within this document for better preventative program in the future.

Information collected will also be transported to the GIS system layer for Frozen Water Services for future tracking.



## **Kincardine Frozen Water Procedure Appendix A**

The Municipality of Kincardine; (Representative from Municipality)

and property owner (Name, Full Street Address)

Date:

acknowledge that the water line is frozen at the above address and cannot determine exactly where it is frozen. The Municipality will work with the property owner to either use a vac truck or contractor to expose the water line and attempt to establish where the water line is frozen. The Municipality will incur the cost of this work to expose the water line. If it is deemed to be frozen on the municipal water line steps will be taken to work within the guidelines of this document to unthaw the water line. If it is deemed to be on the property owners' side, the responsibility to unthaw the water line, and repair the restoration work for the excavation and all associated cost will be at the expense of the property owner.

\*\*\* Please note if you do not own the property or are renting the property the Municipality will need to speak with the property owner prior to the commencement of any work.

## **Kincardine Frozen Water Procedure Appendix B**

Frozen Water Line Property Owner:  
(Name and Full Street Address)

Good-Neighbor and Temporary Water Provider Owner:  
(Name and Full Street Address)

The Municipality of Kincardine Representative:  
(Name of Representative)

Date:

The above property owners agree that The Municipality of Kincardine takes no responsibility for the arrangement between neighbors with the exception of collecting water meter reads and providing credit for invoicing purposes. The Municipality may provide expertise, and guidance in addition to paper handouts to inform each property owner of potential issues.

The property owner with the frozen line will be responsible for the installation of water line to run from property to property to obtain water. They will be required to continuously run water throughout the duration of the event to eliminate the potential for water to freeze, and thus cause damage at neighboring property. The frozen water line property owner recognizes that not all hoses and temporary water lines are suitable for the distribution of drinking water. Therefore, the Municipality would recommend and provide information for a pre-cautionary boil water notice if property owner is going to use for drinking water. The Municipality will continue to provide vouchers, and access to drinking water fill stations for affected property owners as well.

If at any point the property owner with the frozen water line needs to shut off the water, they will inform the temporary water provider owner, and will be responsible for any issues pertaining to temporary water line. It is recommended that only under extreme circumstance would the temporary line be shut off. These lines are exposed to the elements and would freeze very quickly in extreme temperatures. The property owner



with the frozen water line, would be best to shut off the water, and gather the temporary line, and then re-install when circumstances allow.

As a temporary water property owner provider, you are not obligated to have a neighbor connect to your service. You are also not obligated to ensure that the quality of water which runs through the temporary lines is potable water. You understand that there are risks associated with this connection that could include, freezing of the temporary line at the frozen water property owners house or throughout the line, which could in-turn cause damage at your own property. It is highly recommended that you check the temporary connection at least daily, to ensure proper operations. Once this connection is made you are not obligated to continue to provide water throughout the duration of the freeze event and can discontinue the feed at anytime. However, both the frozen water property owner, and the Municipality should be notified prior to discontinuation.

\*\*\* Please note that these arrangements can only be made between the property owners. If you do not own the property or you rent the property, the property owners will have to be notified prior to any work being completed.