



## **House of Commons Committee on Transport, Infrastructure and Communities**

### **Introduction**

The Canadian Water and Wastewater Association represents the interests of municipal water and wastewater services in respect to federal or national legislation, policies and programs. More than 24 million Canadians receive drinking water from municipal services and discharge wastewater to those services. The services are provided on a not-for-profit, public service basis. Revenues derived from these services are in most instances, intended to fully pay and maintain the service and the infrastructure although there has developed an infrastructure gap. These services are subject primarily to Provincial or Territorial legislation which sets standards for the quality of water delivered to consumers and the quality of effluents discharged to the environment, and requirements and conditions for the operation of all related facilities and infrastructures.

### **General comments**

CWWA understands that this is enabling legislation and that the impact of the legislation will be determined through the provisions of the regulations to be promulgated under the Act as amended.

CWWA understands that there is both a public perception and a public expectation that situations potentially hazardous to the general public and society should be subjected to higher levels of security than has been the case in other periods, and that accordingly existing governing legislation may require amendment in order to achieve this.

Therefore CWWA, on behalf of municipal water and wastewater services, supports in principle, the provisions of the Bill as proposed.

CWWA believes though that the Committee should be aware in general and in particular, of the dependence of these municipal services on the reliable, prompt and economic transport of chemicals essential for the treatment of water, wastewater or for other operational processes. Changing the security aspects of the transportation of dangerous goods is likely to result in increased costs and possibly stretching supply chains and times. In most cases, the chemical supply chains servicing the municipal water and wastewater services operate on the “just-in-time” approach. As a result, there is little

spare capacity in the supply chain, including the transportation element to respond to initiatives that may slow down, or make more complicated the delivery of chemicals and the return of “empty” containers.

## **Use of Chemicals**

In order to ensure that source waters for drinking water systems (surface water or ground water under the direct influence of surface waters) are properly treated and the finished water is safe to drink, water services use a variety of chemicals in their flocculation, sedimentation and disinfection processes, and may well re-disinfect treated water at various points in extended distribution systems to ensure that no microbiological hazards re-occur. The most common chemical used for this disinfection process is chlorine gas shipped in “one-ton” containers or in bulk tanks on trucks or in rail tank cars. Other disinfecting chemicals are used, although they are not so effective in their chemical oxidation processes, and although some non-chemical disinfection processes exist (UV radiation), chlorine or chlorine compounds remain necessary for disinfection prior to distribution or within the distribution systems.

Within the processes used to treat wastewater, similar disinfection requirements exist to ensure that treated effluents discharged into receiving bodies of water are microbiologically safe. Safe means not containing active human pathogens or toxins, and viruses.

Again, chlorine is a favoured disinfectant, although other disinfection chemicals and processes are being used, and some of the processes are becoming non-chemical (e.g., UV radiation). However, chemical disinfection will continue and will be significant for the foreseeable future.

## **Handling of Chemicals in Treatment Plants**

### **Unloading and Loading activities**

Chemicals may arrive at treatment plants in a variety of containment systems, ranging from drums, through pressurized gas cylinders, to bulk pressurized cylinders or tanks mounted on trucks or rail cars. Members of the Committee will recall that the Mississauga Derailment Accident in 1979 resulting in the evacuation of hundreds of thousands of Mississauga residents, involved propane tank cars and a chlorine tank car. The latter being breached through impacts suffered in the derailment with the total loss of the contents. The chlorine loss was later determined to have not actually presented an immediate hazard in the area, although the burning and exploding propane tank cars did.

The various containment systems are off-loaded within the treatment plants and either placed in storage until used or, where they are bulk shipments, the bulk trucks or railcars

are connected to stationary tanks on-site and the contents are transferred to the on-site tank or containment system.

Emptied containers and smaller cylinders (often not “empty” but containing residual quantities) have to be prepared for shipment and re-loaded onto transport vehicles for return to the original shipper for refilling. Empty tank trucks and tank cars are also retuned for refilling.

In most cases, municipal treatment plant employees will be the ones undertaking the transfer and storage operations. Under the current TDG Act they are required to be trained in the safe handling requirements of the Act.

### **On-site Storage of Chemicals**

Under provincial or territorial legislation, all chemicals stored on-site have to be stored in special storage areas to meet occupational health and safety and fire codes. These may be separated or secured storage areas or buildings to prevent unauthorized persons entering the areas, and are posted with appropriate warnings even for authorized staff who are introducing the chemicals into the treatment processes. Municipal emergency responders are also familiar with these sites as they may be involved in responding to an emergency situation at the site.

### **Security Issues**

In recent years, water and wastewater services have been recognized as “critical infrastructure” and, as a result, additional security requirements have been developed and imposed on the owners and operators of these services to ensure support for society in times of emergency. A city without a potable water supply or without a functioning wastewater treatment plant would suffer immediate public health and environmental problems.

These requirements have often involved the provision of additional **physical** security measures (strengthened barriers to unauthorized entry, alarms and remote monitoring equipment), additional **electronic** security on the SCADA systems (electronic information management and control systems), and enhanced **personnel** security checks on employees or other persons having authorized access to the sites.

The emergency plans of the water and wastewater services have also been modified in recent years to consider and take into account non-accidental situations and hazards. Some of these were developed in particular reference for example, to the fear of an influenza pandemic reducing labour forces and interrupting chemical supply chains.

CWWA operates a national committee of municipal managers and senior professionals to share information on best practices and incidents faced and managed. This committee is connected to a broader network of sector managers or supervisors, and is connected internationally with counterparts in other countries, particularly in the United States.

Canada through CWWA is an active participant in an ISO Committee which is examining best practices from around the world and developing a Guideline on Crisis Management for Water and Wastewater Services that considers all stages of crisis management from assessment through planning, preparation, testing, response, and restoration to recovery operations. In fact, this group will be meeting in Canada at the end of May and will participate in an International Workshop on Crisis Management in Calgary. It involves experts from Europe, Asia and the United States.

### **Emergency response plans**

Under provincial legislation, all treatment plants are required to have emergency response plans regarding the release of chemicals outside the normal operational parameters. These plans are to be kept up-to-date, regularly exercised and tested, and often involve other municipal emergency response forces.

In the case of some chemicals, water and wastewater treatment plant staff maybe the closest experts to any transportation accident in the vicinity involving these sector chemicals and can be called out to assist until the shipper can send a response team. Municipal treatment plant personnel have the training and the response equipment to safely participate in response situations outside their plant.

### **Closing Comment**

CWWA would like Members of the Committee to understand that there are many well-thought out and tested security provisions in place within the municipal sector with respect to the few highly dangerous chemicals that they have to use, and that these provisions include the concurrence and input of the chemical industry that supplies the products to the sector and the transportation industry that services their needs.

Consideration should be given to ensuring that any additional requirements that might be suggested for development under the amended Act should respect existing arrangements and practices unless these can be demonstrated to require strengthening, and not simply add an additional or duplicative requirement.

The managers and employees of the water and wastewater services are fully cognizant of their public health, public safety and environmental responsibilities both under legislation and under the social code of due diligence.

Respectfully submitted

T. D. Ellison  
Executive Director  
Canadian Water and Wastewater Association  
Unit 11, 1010 Polytek Street  
Ottawa, ON K1J 9H9

Tel: (613) 747-0524  
Email: [tdellison@cwwa.ca](mailto:tdellison@cwwa.ca)