Q. **Reference: Application, Upgrade Water and Fire Suppression Systems (2023–2024) – Bishop's Falls, page 3**

It is stated "In addition to the physical condition of the lines, their ductile iron construction has rendered the domestic water not suitable for human consumption, and the firewater system does not have sufficient pressure to provide protection to the main building." For how long has this been a problem?

A. The Bishop's Falls Complex was constructed in the 1980s at the site of an old military base. The town's main water supply line is connected to the onsite distribution system that is all original to the military base.

The use of this old system for domestic water purposes has been an issue since 1996 when it was realized the use of cast iron piping is not permitted in domestic water distribution lines per the *National Plumbing Code of Canada*[1] in effect at that time. Newfoundland and Labrador Hydro ("Hydro") has since been using bottled water on site for potable water requirements.

Hydro was made aware of the fire protection deficiency in the fall of 2009 when Hydro's insurance provider completed an assessment recommending further fire protection expansion at the complex. The issues included fluctuation in the water supply pressure and design flaws within the system. It was also noted that having combined distribution systems for domestic and firewater systems is not desirable; having the lines combined causes supply issues for the fire suppression system, and this in turn, causes water quality issues in the domestic system. When the pressure required for the firewater system is unavailable it causes the firewater pumps to engage, recirculating resting water and debris from the firewater lines into the domestic line.

Hydro was unable to appropriately address the concern of inadequate supply for the fire suppression system until the town of Bishop's Falls upgraded the water main that supplies the complex in 2016–2017. Other options were explored; however, they were too costly when

[1] NPC(2015) 2.2.6.1.

compared to the risk of waiting for the line to be upgraded. When the line upgrade was completed, Hydro commissioned a fire flow assessment to assist in determining the appropriate course of action. The assessment, completed in 2018, recommended that Hydro construct a second water main from the town supply to the complex, and to separate the domestic and fire water lines. This proposal was originally contemplated for inclusion in the 2019 Capital Budget Application ("CBA"). Upon preparation of the justification, it was determined further analysis was required. In the course of this analysis, a second option was proposed by a third-party consultant to modify the existing system in order to decrease demand instead of increasing supply. This option would see a change in the fire suppression configuration for the warehouse; it would also remove the domestic system from the scope, as this could continue to be addressed with bottled water. This option was then proposed in the 2020 CBA. This scope was approved and awarded in 2020 to an external contractor. When the contractor came to site to complete detailed design of the outlined scope, they determined there was still a requirement for increased supply. This lead to the cancellation of the 2020 project. Hydro has reviewed all information and proposes the 2023 CBA project, based on the 2018 recommendation, along with the replacement of the cast iron piping in the domestic water system.