

From: Arden Bolton, Manager of Utility Services, Thompson - Nicola Regional District

Subject: Spences Bridge Water System Fire Protection - Dispute Resolution

I have heard all kinds of unfounded accusations coming from Spences Bridge, so here are the facts:

Short answer: Yes, the current system has fire protection flows and exceeds basic requirements for flow and duration.

Fire Protection Standards:

There are many different fire protection standards, and the first question that you should ask is which one are you trying to meet? Fire protection is a combination of several factors: Required flow based on structures, Reservoir size for flow duration, Distribution system capability, Fire hydrant and lead flow capability etc.. The most basic standard for residential housing is 60 l/sec for 2 hours. Many standards go on to say, for Example: that you have to include a 25% reserve capacity + 25% of MDD and it can't include the pumps continuing to supply water to the reservoir during use Etc... Etc... there are also many different fire flows recommended for different housing densities, commercial and industrial businesses etc... the bottom line: there are many variations.

Because this system was designed with the 1st Nations included, a federal standard was applied initially (FUS/IAO). This standard recommended (key word) a fire flow of 100l/sec for the community. Arnie Oram, Fire Chief is actually quoted in the documentation as saying that the fire truck is only capable of pumping 80 l/sec. (Please see the included scanned design notes). Obviously having a higher flow capacity would be pointless if the fire truck could not utilize it. They willingly allowed the system to meet an 80 l/sec for 2 hours design. This is still sufficient and exceeds the basic standard for average density residential housing of 60 l/sec.

Previous / Old system:

The previous system was almost completely dependent on continuous water flow from Murray creek. There was only a 2" line across the old bridge so essentially there was no fire protection on the south shore. There was a 75 cubic meter firefighting reservoir added to the south side for emergency use only. 75 cubic meters would provide 20 minutes of firefighting at 60 l/second. 20 minutes is a long way from the 2 hours required. Also, that water would have immediately contaminated the drinking water system if it had been used. Fire flows from Murray creek would have been variable with the season, however, it would not have met any standards as most require that the supply water not be included and that the calculations are only from the reservoir. In this equation, there was NO fire protection in Spences Bridge before. Also, there was no filtration at all, any debris in the water could plug nozzles at any time. High fire flows would have compounded this problem.

Current System:

The current system has a new 565m³ reservoir (see drawing below), new larger distribution mains connecting both sides of town, a clean water source and maintains an emergency backup connection to Murray Creek.

The new reservoir was designed to meet the fire flows of the fire truck and will supply: 80 l/s for 2 hours OR 60 l/s for 2.5 hours. This exceeds the basic requirements mentioned above.

Also, if you want to include pump flows in the calculations, the pumps flow 16 l/s. with the pumps running you could flow 60l/s for 3.5 hours. The new system does not have Murray creek variability, instability, debris flows, and all the other problems you know to exist there.

System Flows and Fire Hydrant Flows:

While the back bone (water main) of the system has been improved across the river, there are still many distribution problems due to the 4" lines. Generally speaking, long runs of 4" lines cannot flow enough water for modern fire protection requirements. In fact if you run your fire truck at 80 l/s in some areas of town with 4" lines, you run the risk

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