

District of Lillooet

Master Water Plan

Prepared by:



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The District of Lillooet currently provides water to 2350 people through approximately 1,100 services. These services are supplied by a water system comprised of four separate service areas (Central-lower, Central-Upper, North Lillooet, East Lillooet Industrial Park). Each of these service areas has its own supply, distribution and storage facilities.

Aging infrastructure and changing regulations has resulted in the need for upgrades and improvements to the District's water system. In addition, the District desires to plan conceptually for infrastructure necessary to service future economic development in East and South Lillooet.

This document reviews existing water supply, treatment, distribution and storage infrastructure. Conclusions and general recommendations of this review are summarized as follows:

- Lillooet's water demands are extremely high. Financial viability of future treatment requirements will require implementation of a demand management program to reduce water usage, likely including universal water metering.
- Compliance with IHA's water treatment objectives will be preferentially achieved by:
 - constructing a water treatment (filtration) plant for one of the existing surface water sources (likely Dickey Creek), and maximize usage of this source.
 - continuing to use wells sources; however, blending with treated creek water will likely be required to maintain arsenic levels below current regulatory limits.
- Additional creek flow and well quality data is a critical component to finalizing future source treatment requirements, prior to proceeding with designs.
- A hydrogeological assessment of the wells and aquifer should be completed to:
 - determine whether the wells are under the influence of surface water (which would affect treatment requirements).
 - review aquifer capacity, well capture zones, and undertake a wellhead protection planning program.
- With regards to existing distribution system infrastructure:
 - priority must be placed on replacement of the current Central-Upper reservoir (wood stave tank), as the structure is failing and funding assistance is in place from senior levels of government.

- watermain upgrading projects should be budgeted for on a yearly basis; these piping upgrades will rectify existing fire flow deficiencies.
- Build out of Central and North Lillooet service area is estimated at an additional 200 lots, realized through both infill and subdivision. Based on population growth rate estimates between 0.9% and 1.4%, this build out will be realized within the next 20 years.

Costs associated with infrastructure upgrades to achieve these recommendations are estimated at approximately \$9,000,000.

Beyond the buildout population (potential 20 year horizon), expansion of water system service areas will be required. It is our understanding that the District would like to focus on providing water service to residential, commercial, and industrial lands in East Lillooet. Costs to construct primary water supply and storage infrastructure to this potential service area are estimated at \$4,200,000. Construction of additional distribution watermain to existing residences is valued at \$1,500,000; portions of this cost could likely be attributed to future development. Based on rural land usage and developable land area, East Lillooet could likely sustain a population growth of approximately 1500 people.

Finally, the report reviews conceptual options for providing water service to the South Lillooet area. This service area would likely service a small number of residences (i.e. 40 homes). Due to servicing costs estimated at \$1,300,000, it is unlikely that this water system construction would become feasible in the near future.