

# Protecting Our Water: Water Quality and Management

Project Backgrounder #1

The Comox Valley Regional District (CVRD) is constructing a new water treatment system to deliver Comox Valley residents the modern system they deserve. The new system will eliminate the need for turbidity-related boil water notices, remove the risk of viruses, parasites and bacteria in our drinking water, and provide a secure supply of reliable, high quality drinking water for decades to come.

## The need for a new water treatment plant

The Comox Valley water system draws its water from the Puntledge River. The system, which provides drinking water to 45,000 residents, is not compliant with the provincial surface water treatment objectives guideline.

## Our water source

The area of land that drains into Comox Lake is approximately 461 square kilometres and includes many smaller, sub-watersheds. The Comox Lake watershed's health depends on activities in the area, as well as the natural composition of the land, including vegetation, wildlife and weather patterns. A major challenge for the Comox Lake watershed is that it is largely privately owned. Most of the watershed falls under the Private Managed Forest Land Act, and the lake itself is a reservoir controlled by BC Hydro for hydroelectric power generation, maintaining fish flows and flood mitigation. It is also a popular recreation destination for swimming, boating, fishing and hiking.



## The history of water quality in Comox Lake

The history of water quality issues in the Comox Valley dates back to before 2005, when Island Health (then VIHA) ordered the CVRD to complete a Watershed Risk Assessment, which identified major risks to the Comox Lake water source.

In 2013, after two years of continuous water quality monitoring and sampling, Island Health approved a plan to build a deep-water intake and ultraviolet (UV) treatment, deferring its earlier requirement of installing a filtration system.

That deferral however was withdrawn in 2015 after numerous extreme rain events caused several Comox Lake tributaries to experience high erosion, carrying large amounts of sediment into the Lake, and triggering the need for boil water notices.



## Turbidity and boil water notices

During high rainfall events, runoff from the rivers and tributaries that feed Comox Lake create cloudiness, or turbidity, in the water. Elevated turbidity levels can interfere with the chlorination of the water and increase the risk of bacteria, requiring boil water notices be issued to ensure safe drinking water.

The surface water treatment objectives are applied consistently across BC – meaning the Comox Valley is being held to the same standards as all other communities. All other operators who exceed 1 NTU are put on boil water notices unless they have ultra-violet treatment and/or filtration. The turbidity limit of 1 NTU is consistent across Canada and all countries studied, except for Australia whose requirement is more stringent at 0.2 NTU.

With the installation of the temporary ultra-violet treatment in February 2018, boil water notices are expected to be reduced by up to 80 percent, and will be eliminated completely once the new water treatment system is operational in 2021.

## To learn more about the project

Visit the project website at:

[comoxvalleyrd.ca/watertreatment](http://comoxvalleyrd.ca/watertreatment)

Email the project team at:

[engineeringervices@comoxvalleyrd.ca](mailto:engineeringervices@comoxvalleyrd.ca)

Phone: 250-334-6000

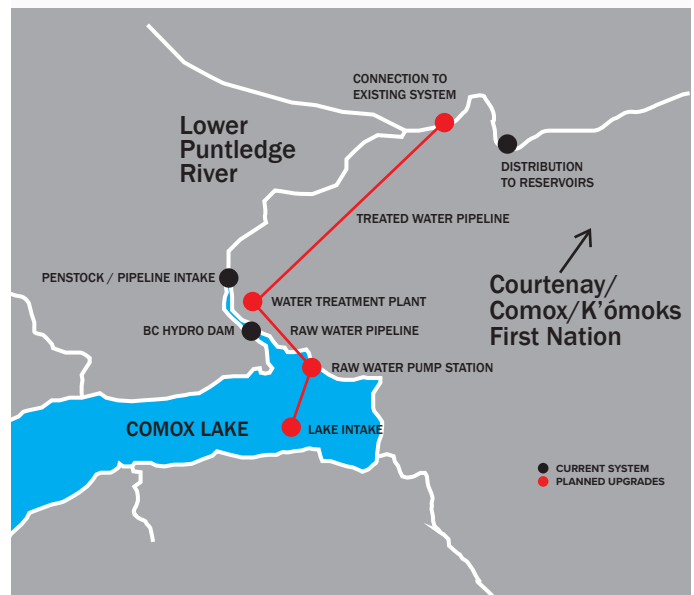
## The proposed system

The new treatment plant will use filtration, ultra-violet treatment and chlorination to remove bacteria, parasites and viruses from the water and eliminate the need for turbidity-related boil water notices.

The new water treatment system will consist of a new lake intake, raw water pump station, raw water pipeline, water treatment plant, and treated water pipeline.

The map below highlights the current system (black dots) and the planned upgrades (red dots).

For more about the proposed project, visit the backgrounder *Providing Safe Water*.



*Components of new system*