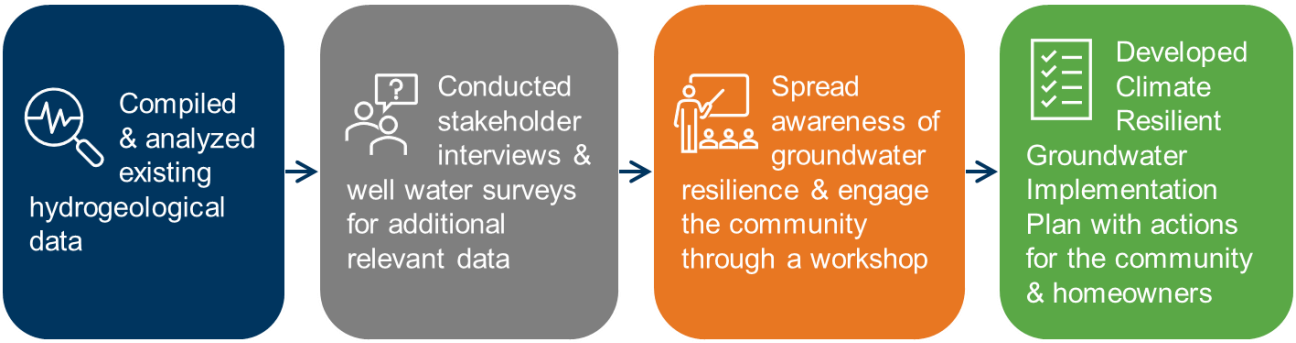
Summer Village of Ghost Lake Climate Resilient Groundwater Assessment & Implementation Plan

Project Purpose

This project was completed as a recommendation from the Summer Village Climate Change Risk Assessment completed in 2022. This project specifically addresses groundwater resilience and provides a pragmatic plan for the community and homeowners to ensure they have access to good quantity and quality of drinking water in the face of climate change. The project had three main components:

1. Conduct further research on the groundwater (hydrogeology) of the area
2. Engage and build awareness around groundwater with residents
3. Develop the Climate Resilient Groundwater Implementation Plan

Process – Project Steps



Key Learnings

- Overall, the groundwater tends to be more climate change resilient than surface water sources. The water supply currently meets SVGL needs, but the community should work together to keep it that way.
- The community density is quite high for onsite water and wastewater services, and the community should be realistic about options for increasing development/redevelopment.
- Well water quantity is affected by the Ghost Lake reservoir levels, with shallower wells closer to the lake being more susceptible. However, the reservoir also helps mitigate water levels by stabilizing water levels within a regulated range.
- The community is engaged and raised concerns over impacts of new development density on groundwater.
- Many wells and septic systems are old and may not meet modern guidelines. Wells may be completed below ground (in well pits) and therefore more at risk of surface contamination.
- To better protect the groundwater, more information should be collected on well locations, well details and septic system locations.

Scope of the Implementation Plan

The Climate Resilient Groundwater Implementation Plan focuses on actions the community and individual homeowners can do because on-site wells and septic systems on private property are the responsibility of the owner. The following page provides an overview of plan elements that should be undertaken to ensure the SVGL maintains good drinking water for everyone in the face of climate change.

Climate Resilient Groundwater Implementation Plan Overview

	Community Actions	Homeowner Actions
Information Gathering 	1→Obtain and review 2016 inventory. 2→Build inventory of community's water wells. 3→Build inventory of community's septic systems. 4→Update hydrogeological assessment.	1→Contribute to water well knowledge in the Village. 2→Contribute location your septic system to community inventory.
Surface & Groundwater Monitoring 	1→Encourage homeowners to test water quality regularly. 2→Communicate and encourage residents to sample wells after significant events with localized flooding. 3→Communicate with TransAlta annually about anticipated low water levels. 4→Consider coordinating an annual water well sampling events. 5→Develop a water quality database.	1→Inspect well head after a weather event. 2→Conduct biannual bacteria testing. 3→Sample water for chemical and trace metal testing.
Community Education 	1→Build community awareness of the Climate Resilient Groundwater Implementation Plan. 2→Develop a webpage of resources. 3→Host a *Working Well* community workshop.	1→Read the Plan. 2→Visit resources on the *Working Well* website. 3→Talk to your neighbor about working together to protect groundwater. 4→Participate in community education events.