



Bow River – TransAlta agreement

Alberta Environment and Parks and TransAlta Five-Year Water Services Agreement Extension

In 2016, the Government of Alberta (GoA) entered into a five-year agreement with TransAlta Generation Partnership (TransAlta) to modify operations at several TransAlta water infrastructure facilities to help protect communities along the Bow River against the impacts of both floods and drought. The agreement was recently extended for an additional five years, now expiring on April 1, 2026.

Modified operations agreement with TransAlta

Leveraging existing infrastructure is an effective and immediate option to help protect communities, including the City of Calgary, along the Bow River downstream of Ghost Reservoir.

Terms of the agreement:

- The original five-year Water Services Agreement began in May 2016.
- TransAlta and the GoA recently extended the existing agreement, which now is in effect until April 1, 2026.
- The modified operations period at Ghost Reservoir is from May 16th to July 7th, primarily for flood mitigation purposes.
- The modified operations period at Barrier Lake, Upper Kananaskis Lake, and Lower Kananaskis Lake is year-round, and primarily for drought mitigation purposes.
- Compensation paid to TransAlta is \$5.5 million per year

Flood management

The extended agreement allows the Province of Alberta to set elevations on the Ghost Reservoir during the period of May 16 to July 7 until 2026, which is typically the highest storm risk period of the year.

Up to 65 million cubic metres of storage will be available at Ghost Reservoir for flood mitigation purposes. The amount of storage available will vary each year based on prevailing conditions. Sixty-five million cubic metres is a significant amount of storage, but it would not prevent flooding if we experienced an exact repeat of the 2013 event. Using available storage does, however, give operators the ability to attenuate – or lower to some degree – the peak flows experienced down stream of the reservoir and may also delay the arrival of peak flows to downstream communities.

Drought management

The agreement includes the ability of the Alberta government to have TransAlta store water in the Kananaskis system to be used in periods of low flows in the Bow River. This part of the agreement is year-round for the duration of the agreement. Up to 40 million cubic metres may be available at the Kananaskis-area reservoirs for drought mitigation during periods of extreme low-flow stress on the Bow River. During times of drought, water stored in upstream reservoirs (Kananaskis System) can be released into the Bow River to maintain environmental flows.

Reservoir management

Each year, the Government of Alberta works closely with TransAlta to assess and determine appropriate reservoir elevations during the control period, May 16th to July 7th. Some of the key factors that are considered include current snowpack conditions in the mountains, baseline river flows, soil moisture conditions and the *Provincial Water Supply Outlook*. Above average snowpack in the mountains means storm events could generate higher flood flows and it also suggests a higher likelihood of

being able to fill the reservoir later in the summer. Under these conditions the reservoir would be set to a lower elevation during the control period. If the overall water supply forecasts were below normal or we were experiencing a multi-year water shortage cycle, Ghost Reservoir levels could be set above the lowest threshold. It is a challenge to balance both the need for maintaining flood control storage and being able to fill the reservoir later in the summer after the highest flood risk period has passed. Current information on all reservoir elevations, river flows and proposed forecasted operations will be posted on the Alberta River Basin website (<https://rivers.alberta.ca/>) under forecasters comments.

Ghost Reservoir

Lower water levels at Ghost Reservoir during the period of this agreement are still within the defined operating limits of TransAlta's water license and within the historic operating range. The Ghost Lake Reservoir is a "reservoir" and will fluctuate over a broad range of elevations. In some years the reservoir will be operated near historical norms and, in potentially wet years, the reservoir will be set lower. The Government of Alberta is only able to specify target reservoir elevations on Ghost Reservoir during the control period and an overall volume target in the Kananaskis system. TransAlta considers a number of factors when deciding how to meet these targets, including factors related to riparian health, fisheries as well as commercial interests.

TransAlta compensation

Compensation paid to TransAlta is intended to offset the estimated commercial loss TransAlta will incur due to modified operations at the four facilities included in the agreement. These reservoirs are designed and operated to produce electricity. The lower the water level, the less electricity TransAlta is able to produce. By holding at set elevations, TransAlta's ability to optimize for power production is also reduced.

Five-year extension

The GoA continues to explore a number of long-term solutions for flood and drought mitigation in the Bow River basin; however, the implementation of many of the strategies being explored will take years or decades to be realized. Utilizing existing infrastructure in the basin, namely the Ghost Reservoir, allows an immediate flood attenuation benefit to communities downstream of the reservoir.

Stakeholder engagement

In 2015 and 2016, there was an extensive public engagement process with impacted residents, business owners, recreational users, and other key stakeholders. Its purpose was to explain the agreement and to identify and discuss issues related to modified water levels at Ghost Reservoir. Moving forward, operating information can be found on the Alberta River Basins Website (<http://rivers.alberta.ca/>) and the Alberta Rivers App.

Mitigation options for the Bow River Basin

The Bow River Working Group's [report](#) includes recommendations on a combination of potential new water infrastructure projects throughout the Bow River basin and modified operations at TransAlta facilities. Because of the amount of storage required to meet flood and drought mitigation goals, the use of TransAlta infrastructure will almost certainly be a significant part of any mitigation strategy for the Bow River. Phase 2 (Feasibility Study) of the [Bow River Reservoir Options project](#) started in 2020.