

## Water Treatment Plant

### Position Paper

November 2023

Wabamun Lake is a prairie headwater lake and as such has no water inflow from outside its immediate watershed. Since its glacial formation, the lake has relied solely on precipitation and a small amount of groundwater inflow to maintain water level. Historical records since 1915 show a repetitive pattern of fluctuating water levels that correspond with weather patterns and are exemplified by the current low water level.

Pursuant to the mining plan approved by the Provincial regulator (now the AER), TransAlta is required to collect surface water in the mined areas and to treat it prior to releasing the water from its site. This is to prevent water affected by contact with excavated materials from entering the lake.

In accordance with the Water Licence held by TransAlta, the net annual loss of runoff to the lake from the mine site, is to be pumped into the lake after the water has been properly treated at the Sundance Wabamun Lake Water Treatment Plant (WLWTP). In addition to replacing lost runoff from the Highvale Mine, between 2002 and 2007, TransAlta was directed to pump additional treated water into the lake to "repay the water debt" or water loss associated with the historical operations of the Wabamun Power Plant.

The WLWTP is supplied with water for treatment from the Sundance cooling pond which, in turn, receives water pumped from the North Saskatchewan River. However, its capacity is limited to supplying water for the Sundance power plant operations (boiler feed, water and site potable water) and in replacing runoff diverted due to mining activity as required by the water licence. With the conversion of the Sundance power plant from coal to gas in late 2021, coal mining has ceased, and the mine site is now in the reclamation phase. As reclamation proceeds, the amount of water to be pumped by the WLWTP will decrease as the quality and quantity of water reaching the lake returns to pre-disturbance values.

Recently, a number of residents have proposed using the existing WLWTP and pipeline from the river to augment natural inflow to the lake. Their reasoning is that any inflow of treated water will act to "flush" the lake and reduce the nutrient concentrations that contribute to excess vegetative growth including cyanobacteria. Additionally, the added water would help to maintain lake levels suitable for recreational use during periods of low precipitation. This group estimates that at full capacity, operating full time, the WLWTP could contribute as much as 11 vertical centimeters of water per year, to offset the natural and historically observed fluctuations in the lake. TransAlta estimates that current pumping levels would equate to about 2 vertical centimeters. This figure does not take into account precipitation gains or evaporative losses which have a much larger effect on lake level. Costs of operating the WLWTP have been estimated to be hundreds of thousands of dollars per year with cost of ownership likely in the millions.

Provincial government policy is to not take on the work or costs related to infrastructure or operations associated with controlling inflow or outflow from Wabamun Lake. Government would serve primarily as the regulator and facilitate the approval process. Government position is that the cyclical fluctuations of lake water levels are expected and are a natural function of lake ecosystems. As a result, any costs

associated with continued or increased operation of the WLWTP above what is legally required, would have to be borne by the individuals seeking to own and/or operate the system.

While not directly opposed to the operation of the WLWTP for the proposed purposes, the WWMC does not see the licensing, purchase, operation, and inherent liability of the WLWTP as a part of its mandate. Our Watershed Management Plan and Strategic Plan make no reference to any attempts to artificially control water level and we simply do not have the resources to dedicate to a costly and what might be an ineffective initiative. Furthermore, until TransAlta has met its regulatory requirements, they would not be able to relinquish control of the WLWTP to an outside operator. It is our position that, as per the watershed management plan, our efforts to reduce eutrophication are best directed towards education and promotion of beneficial land use practices. Our work to monitor lake water quality, encourage riparian restoration, defend against aquatic invasive species, deal with recreational demands on the lake and liaise with municipalities and other stakeholders should remain our priorities.