



MEMORANDUM

File No: 5790.10.09
Date: May 7, 2024

TO: Greater Vernon Advisory Committee
FROM: Utilities Department
SUBJECT: May 2024 Greater Vernon Water Supply Update

SUMMARY

Greater Vernon Water (GVW) is in the freshet monitoring period, but based on the Water Storage Triggers Assessment, Greater Vernon Water (GVW) will remain in **Stage 1 Water Restrictions**.

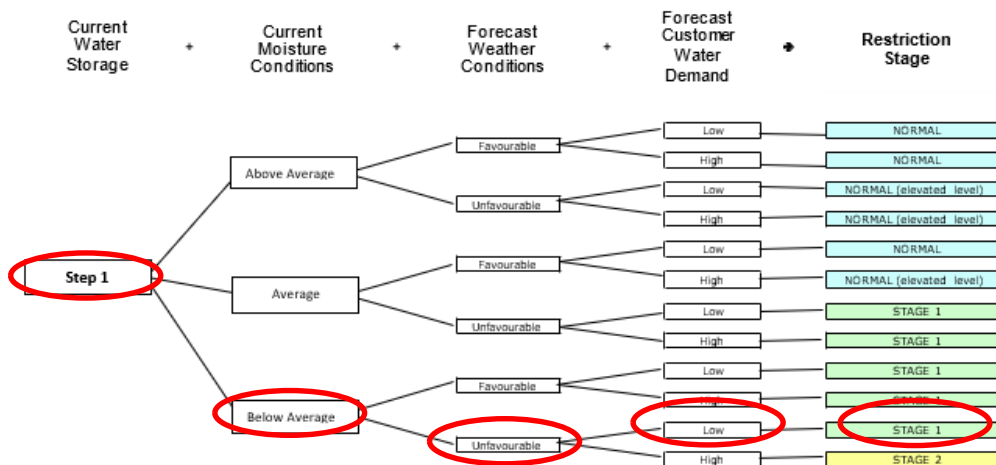
In April, freshet typically brings increased water flow due to melting snow with spring rains, leading to an increase of incoming water for storage reservoirs. Agricultural irrigation also starts during this time, coinciding with rising temperatures escalating customer demand for water. Melt has been slow in April with the cool evening temperatures, rain has been below average and currently storage is below average. In May, it is expected that freshet will continue as snow continues to melt with some precipitation to fill storage reservoirs.

With the warmer than average weather approaching in the next week, customer demand is expected to increase. GVW is asking that customers conserve water and GVW will be completing heightened messaging to customers of the risk of drought this summer. Stage 1 also impacts operations and the variable Environmental Flow Needs (EFN) requirements for Duteau Creek. Operations has been actively conserving water in the Duteau storage reservoirs by optimizing the use of Kalamalka Lake, reducing operational flushing and is preparing backup wells. In addition, GVW is working directly with larger irrigators who requested early turn on and are providing messaging to the public of possible risk of drought.

May and June are pivotal months in establishing storage levels that will set restriction levels. At this time of the year, staff complete monitoring of triggers on a weekly basis to be able to initiate drought response immediately if required.

DECISION TREE

Although GVW is in the freshet monitoring stage, the current water storage will remain as a Step 1 level (Figure 1 and Figure 2) as both the Duteau Reservoirs and Kalamalka Lake are below average. With the current moisture conditions and unfavourable weather forecast (warm and dry in the next week), the restrictions will remain as a Stage 1. The warmer weather approaching impacts EFN flows and operational measures. Weather in the next few months and the flows from freshet into the reservoirs will be pivotal to determine the impact of restrictions during the irrigation season.



TRIGGER ASSESSMENT

GVW uses the Water Shortage Management Plan (WSMP) to guide decisions about GVW water management. Staff monitor four (4) triggers to assess the water supply and drought conditions:

1. Reservoir Levels (Water Storage)
 - o **Duteau Reservoir** - As of May 1, reservoir levels are significantly below average for this time of year. This is due to a combination of slower melt in April with the cool temperatures and below average rain in April. Duteau storage is in the freshet monitoring period and the next few weeks, especially with the warmer weather coming, will be pivotal in determining storage for this year which will inform stage restrictions. GVW will keep the Duteau storage level as Step 1 for decision making at this time due to the lower than average level and uncertainty in the up and coming weather patterns.
 - o **Kalamalka Lake** - April 2024 Kalamalka lake levels remain below normal and below provincial targets (Figure 2). Freshet has also seen a slow start on this system as well.
2. Current Moisture Conditions – Snowpack levels at the GVW snow measuring stations were at zero as of the May 1 snowpack reading completed by operations. There were still patches of snow observed through the trees and snow at higher elevations which should contribute to storage levels. Recent precipitation was below average for April when looking at the last 10 years of Vernon Auto data.
3. Forecast Weather Conditions – the Federal forecast is predicting above normal temperatures and above normal precipitation for May. It should be noted there is considerable uncertainty in these forecasts with a confidence level of only 40-49% for temperature and between 50-59% for precipitation. A review of past data for GVW indicates that rain in May and June are extremely important to GVW storage.
4. Customer Demand Forecast – Customer demand for April was considered lower than average due to the cooler temperatures and some precipitation (Figure 3). Warmer weather in May is forecasted, at least in the next week, with an expected increase in customer demand.

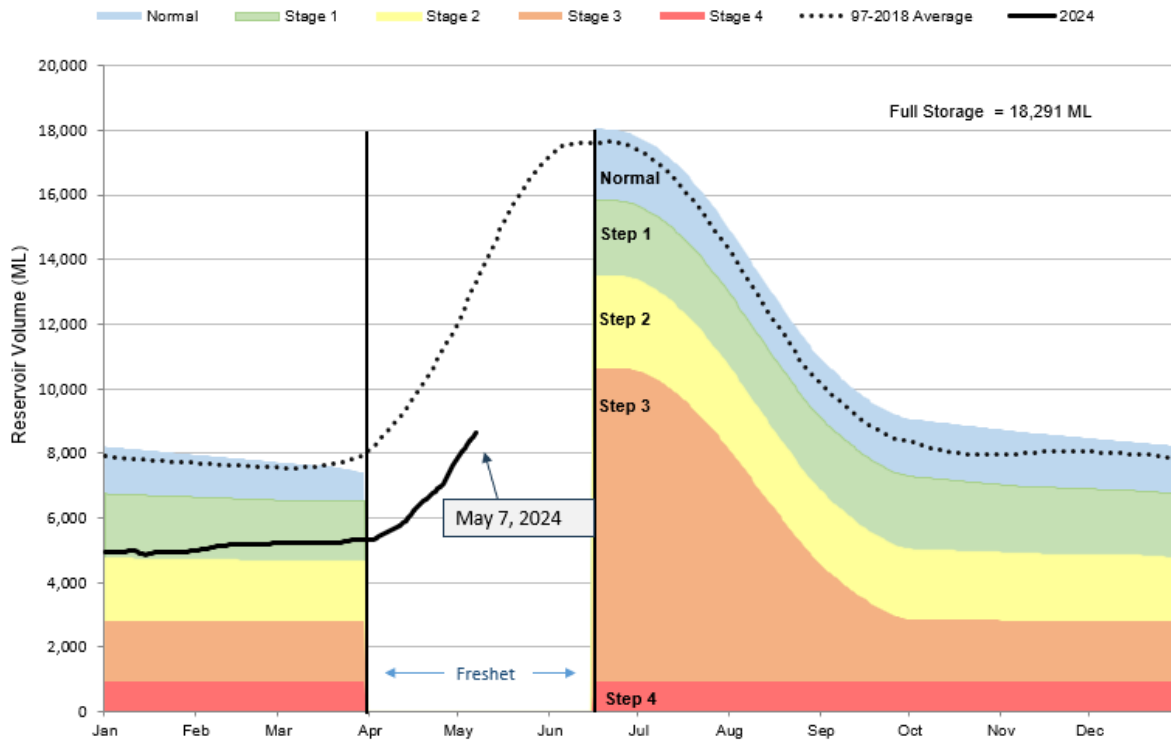


Figure 1: The Duteau reservoir levels in Megaliters (ML) to May 7, 2024

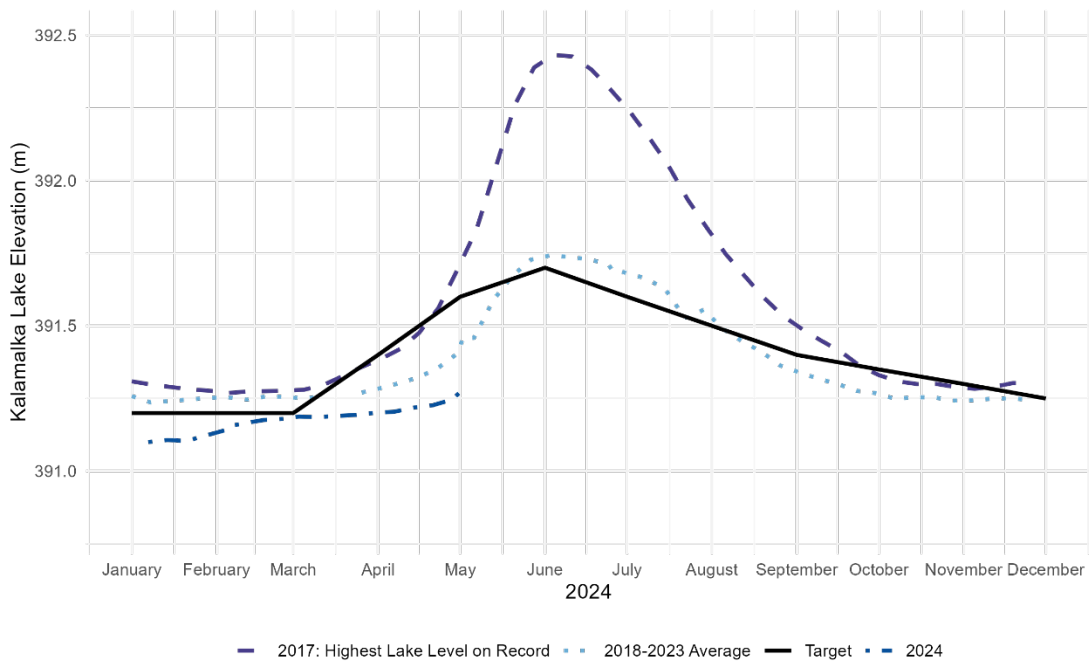


Figure 2: Kalamalka Lake elevation for 2024 compared to the 2018-2023 average and provincial targets

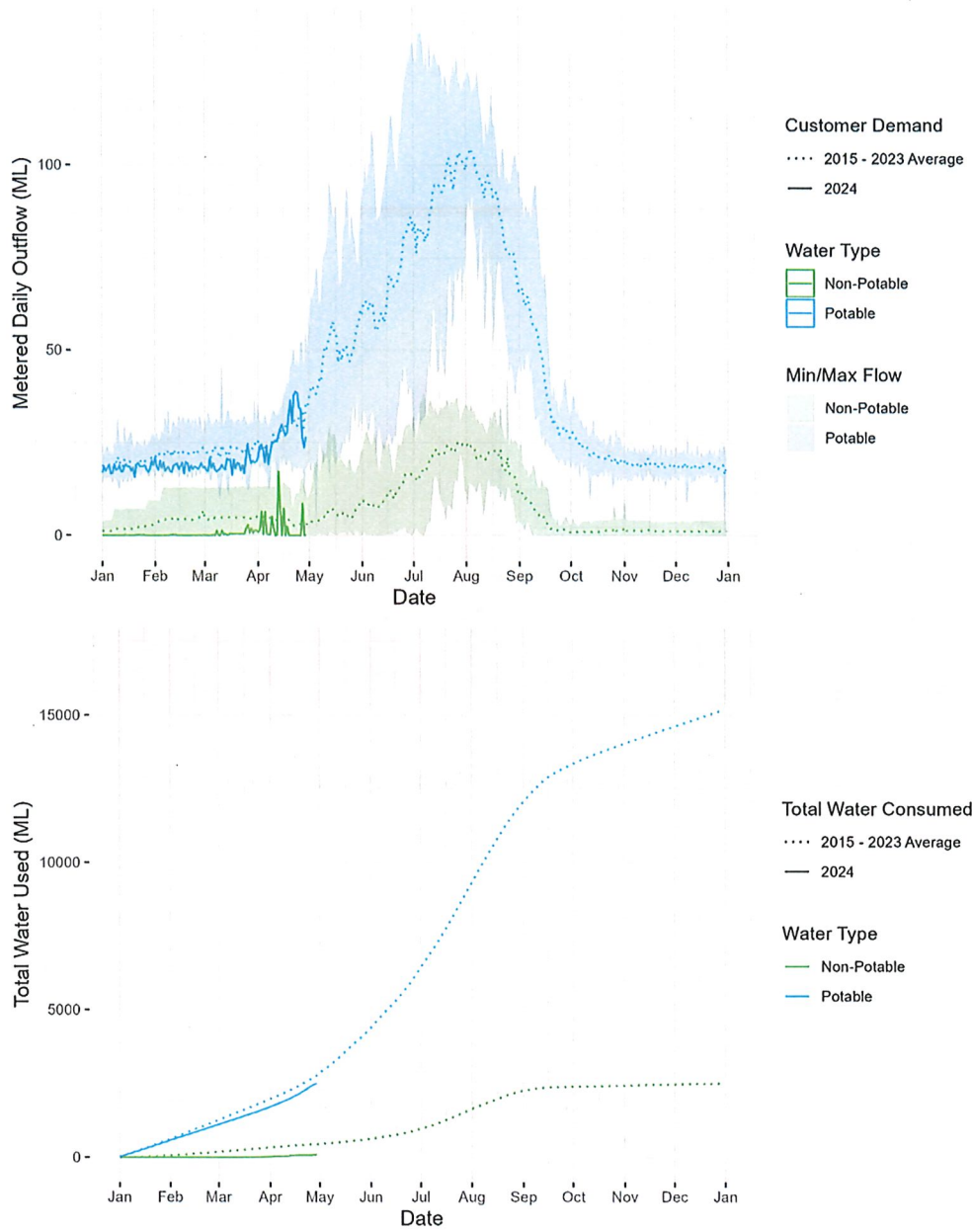
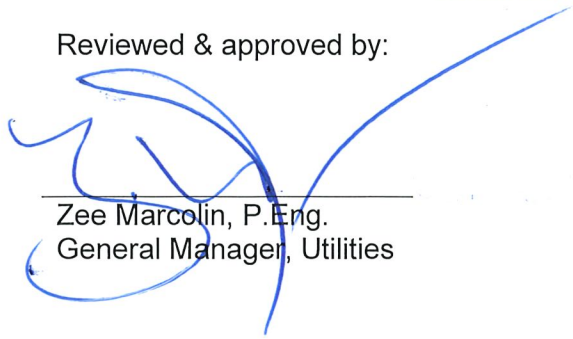


Figure 3: GVW Customer Demand to May 1, 2024

For the GVW Water Shortage Management Plan and further information on the triggers and the water system can be found at www.rdno.ca/restrictions.

Reviewed & approved by:



Zee Marcolin, P.Eng.
General Manager, Utilities