



**REGIONAL
DISTRICT
NORTH
OKANAGAN**

MEMORANDUM

File No: 5790.10.09.2024

Date: July 29, 2024

TO: Greater Vernon Advisory Committee

FROM: Utilities Department

SUBJECT: August 2024 Greater Vernon Water Supply Update

SUMMARY

Based on the Water Storage Triggers Assessment and Decision Tree Matrix (Figure 1), Greater Vernon Water (GVW) will maintain **Stage 1 Water Restrictions**.

In July, water demands started to draw on stored water reserves, which must last through the dry summer months until precipitation or snowmelt replenishes the reservoir levels. Sporadic precipitation and cooler weather in June led to lower water demand and along with the rain the first weekend in July, brought levels slightly into the “Normal” step. With the warmer temperatures and increased customer use, Duteau Creek water storage in July has brought reservoir levels back into “Step 1” (Figure 2). Additionally, Kalamalka Lake is considerably below the provincial target for this time of year (Figure 3).

Based on the status of both sources, GVW will remain in Stage 1 restrictions unless there is a drastic change (i.e. more rain causing higher storage levels or higher demand than expected causing lower storage levels).

Staff will continue to monitor triggers on a weekly basis to be able to initiate drought response immediately if conditions change. Heightened messaging to customers as per the Stage 1 procedures about conserving water and working with large irrigators to reduce the irrigation peak continues. GVW is encouraging all customers to conserve water whenever possible. Lawns only need to be watered once a week, and reducing water use now helps ensure our reserves last through summer. At this time, the Drought Stakeholder Working Group (DSWG) will be updated on current storage conditions monthly.

Although the Stage 1 restrictions continue, GVW is still concerned about the continuing drought and lack of precipitation as the fall approaches. In the fall of 2023, when storage typically recovers enough to fully cover customer demands, the fall rain was well below average causing storage to continue to drop to very low levels. If this trend continues into the fall of 2024, GVW may deny or restrict volumes for agricultural late turn offs.

The British Columbia Technical Drought Working Group has declared the Bessette Subbasin a drought Level 3. The South Thompson and the Okanagan basins are currently at a Level 2. At Level 2, conditions are becoming very dry and at Level 3 are severely dry. At a Level 3, it is predicted that adverse impacts to socio-economic or ecosystem values are possible. This declaration does not directly apply to GVW as it refers to unregulated streams (i.e. no storage

MEMBER MUNICIPALITIES:
CITY OF ARMSTRONG
DISTRICT OF COLDSTREAM
CITY OF ENDERBY

VILLAGE OF LUMBY
TOWNSHIP OF SPALLUMCHEEN
CITY OF VERNON

ELECTORAL AREAS:
“B” – SWAN LAKE
“C” – B.X. DISTRICT
“D” – LUMBY (RURAL)

“E” – CHERRYVILLE
“F” – ENDERBY (RURAL)

reservoirs). As a condition of its water licences, GVW releases environmental flows to Duteau Creek, which helps supplement water for fisheries on Bessette Creek.

DECISION TREE

The current water storage has moved into “Step 1” and both the Duteau Reservoirs and Kalamalka Lake remain below average (Figure 1 & Figure 2). With the current moisture and weather forecasted in the next week, the restrictions will remain as a Stage 1.

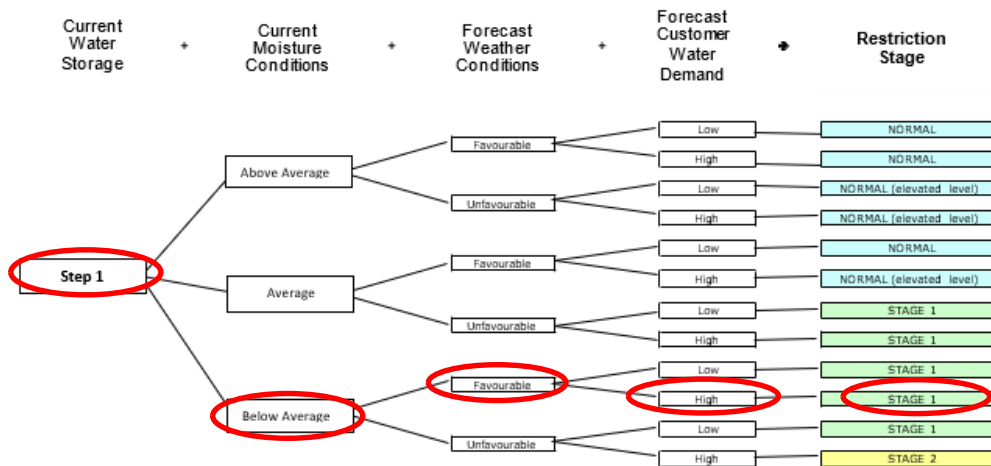


Figure 1 – Decision Tree Matrix

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)
 - **Duteau Reservoirs** – As of July 23, 2024, reservoir levels are into “Step 1” and remain below average for this time of year. This is due to a combination of low snowpack and below average rain (Figure 2).
 - **Kalamalka Lake** – Kalamalka lake levels remain below normal and below provincial targets (Figure 3). Please note that previous studies of Kalamalka Lake indicate that lake levels are largely impacted by inflow of groundwater. Greater Vernon Water, in partnership with the District of Lake Country, is currently completing a detailed water balance study to further refine this assessment and gain more knowledge on this important water source.
2. Current Moisture Conditions – Recent precipitation was below average for May, June and July when looking at the last 2011 to 2024 of Vernon Auto data (Figure 4).
3. Forecast Weather Conditions – the Federal forecast predicts above-normal temperatures for August and September with a 60-69% probability. Precipitation forecasts indicate below-normal levels of precipitation with moderate probability (50-59%) for the same time period. Environment Canada is predicting precipitation in the forecast with temperatures with a low of 12°C and highs of 27°C for the next seven (7) days.

- 4. Customer Demand Forecast – July and August are normally high customer demand times as it the prime growing season for agriculture and outdoor gardens. The storage reservoirs were constructed to accommodate high summer use. What GVW looks for in this trigger is whether the overall customer demands are much higher than normally seen for the time of year and if the excessively high demand continues, will this higher rate potentially deplete storage too fast. The higher temperatures in July did see slightly higher customer demands but GVW has been working with large irrigators to make scheduling changes to assist in more efficient water use. With cooler weather predicted in the coming weeks, demands are expected to stay at seasonally high flows but remain within normal range (Figure 3).

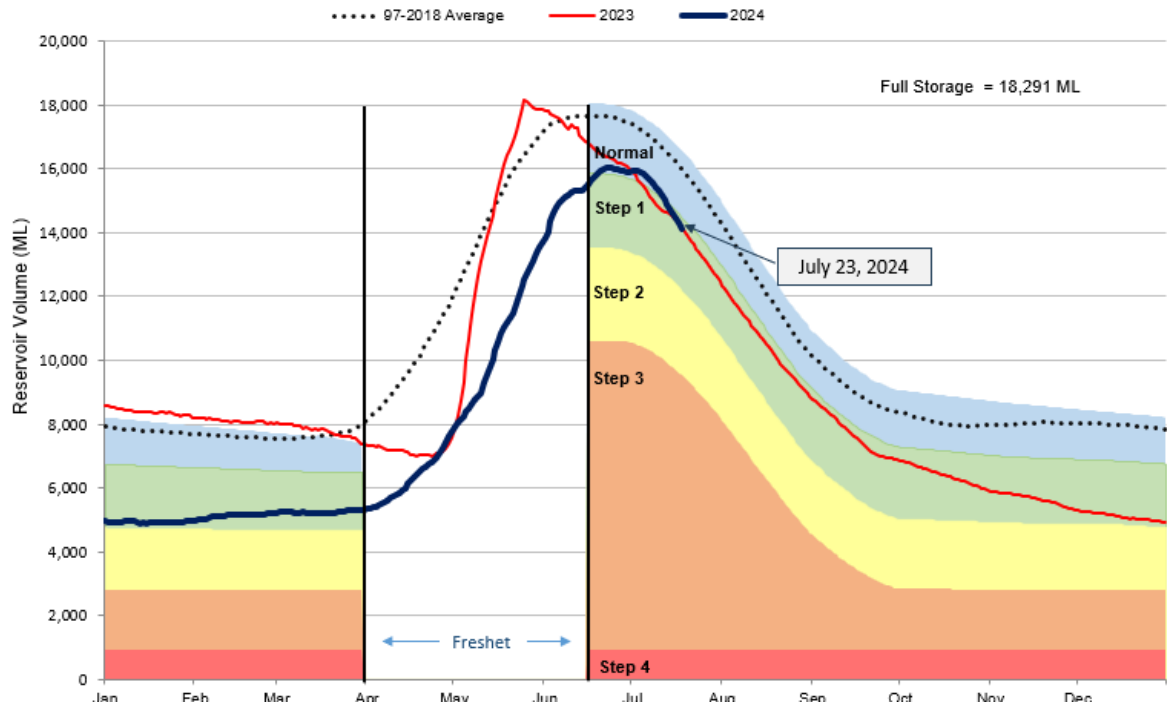


Figure 2: The Duteau reservoir levels in Megaliters (ML)

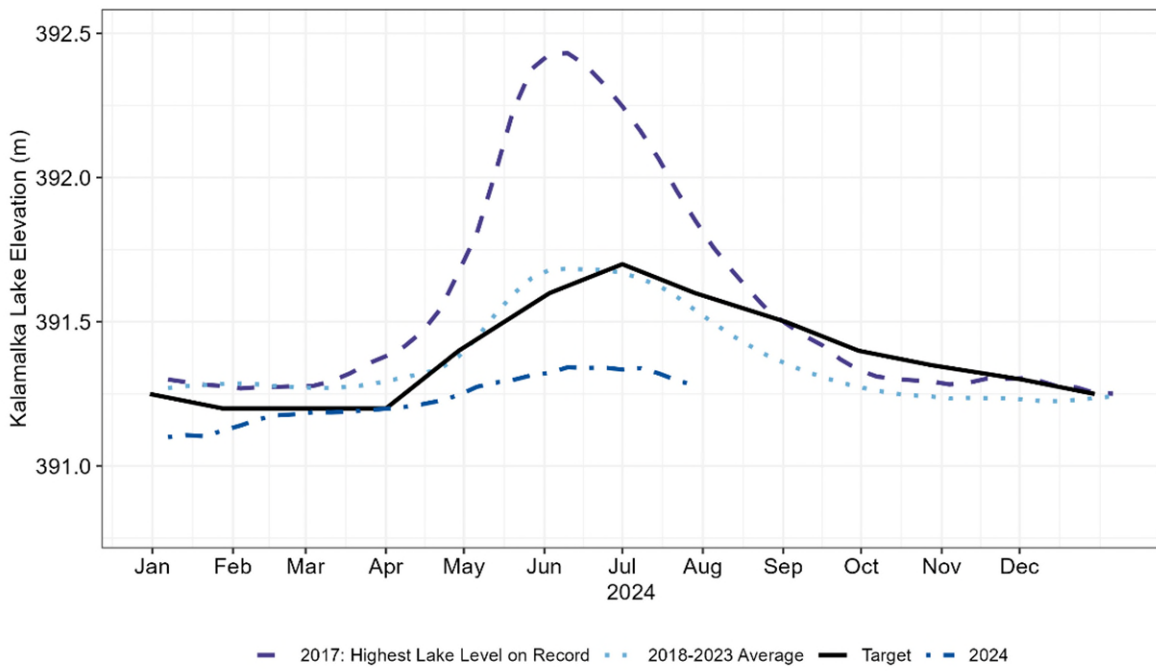


Figure 3: Kalamalka Lake Elevation

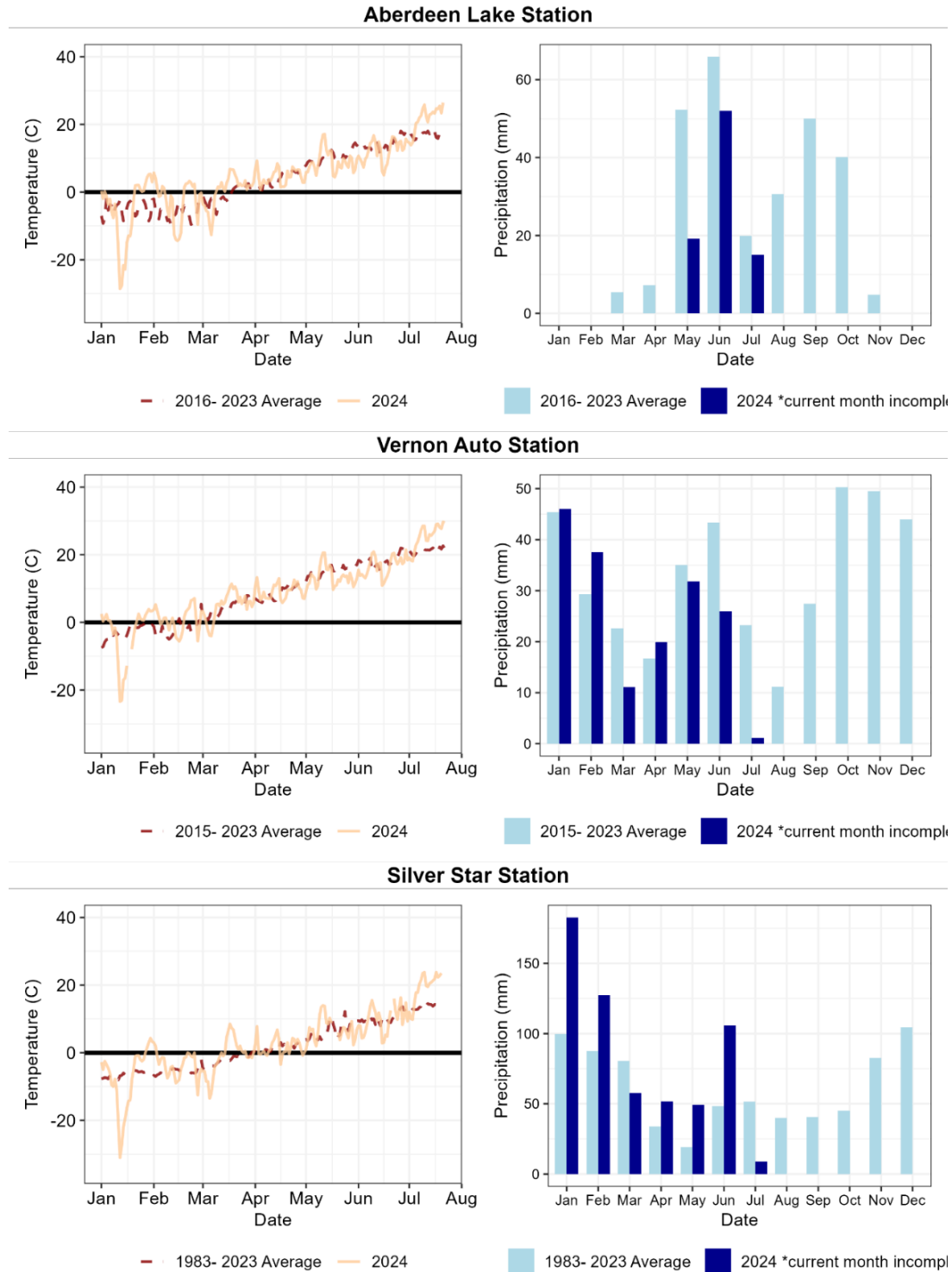


Figure 4: 2015 to 2024 Temperature and Precipitation Reported at Local Weather Stations

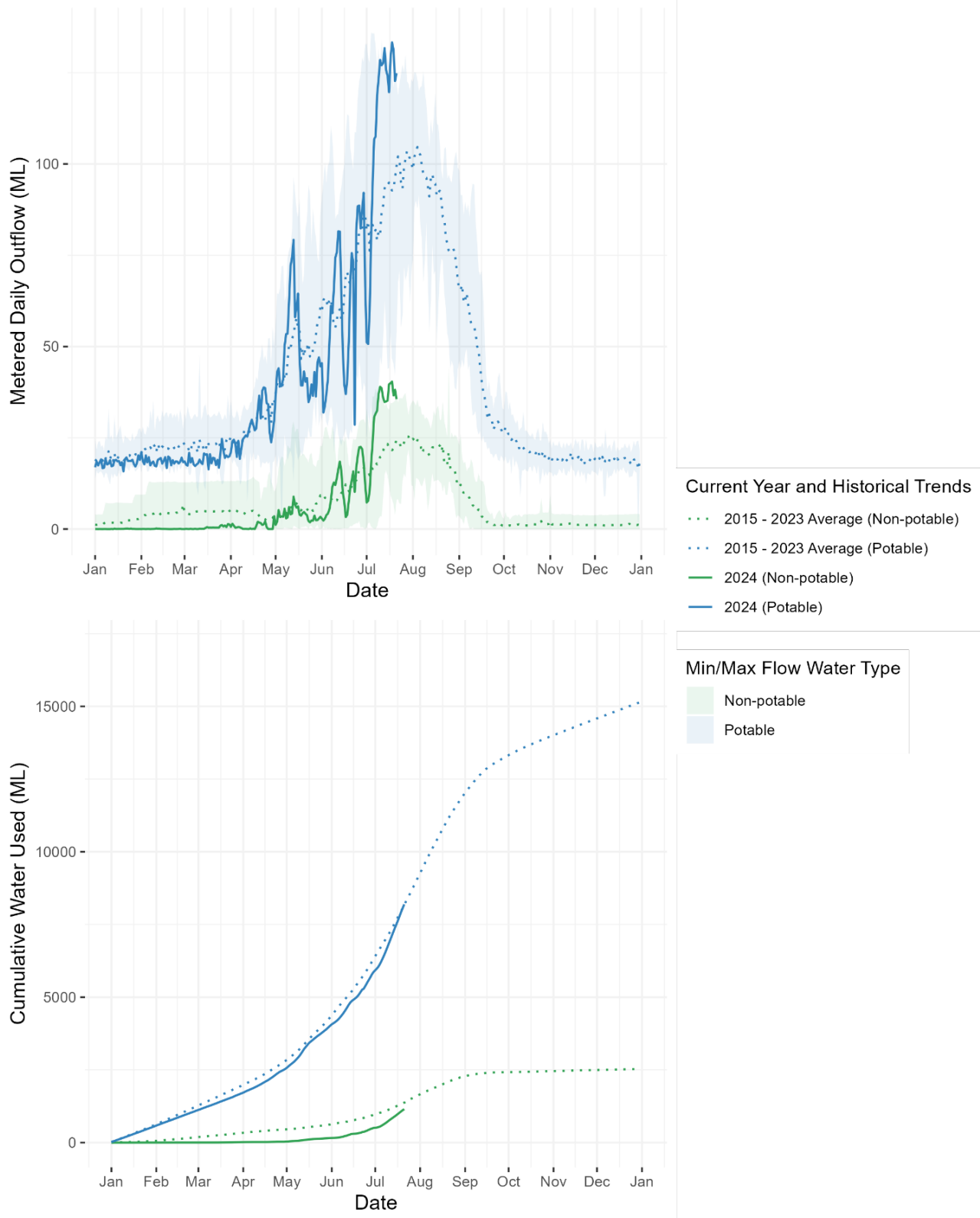



Figure 5: GVW Customer Demand

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

Reviewed & approved by:

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Zee Marcolin, P.Eng.
General Manager, Utilities