



North Irrigation System Update

penticton.ca

August 18, 2026

Dear North Irrigation System User,

The City of Penticton would like to thank North Irrigation System users for their efforts since Stage 2 water restrictions came into effect on May 1, 2026. Despite these efforts, drought conditions have continued to worsen throughout the Okanagan and water supply challenges remain significant. This update provides an overview of current drought conditions, irrigation demand trends, reservoir storage levels, and the factors being considered as the City continues to actively manage available water supplies for the remainder of the irrigation season.

What We Need from North Irrigation System Users

Current drought conditions, reservoir storage levels, and irrigation demand trends indicate that additional conservation efforts are needed across the North Irrigation System. Although July water use was slightly below the five-year average, overall demand continues to exceed Stage 2 conservation targets. The City is asking all users to review their irrigation practices, reduce unnecessary water use wherever practical, and optimize irrigation schedules to help preserve available water supplies. Additional conservation efforts will help support agricultural water demands, protect critical water infrastructure, and reduce the likelihood of further restrictions should drought conditions persist through the remainder of the season.

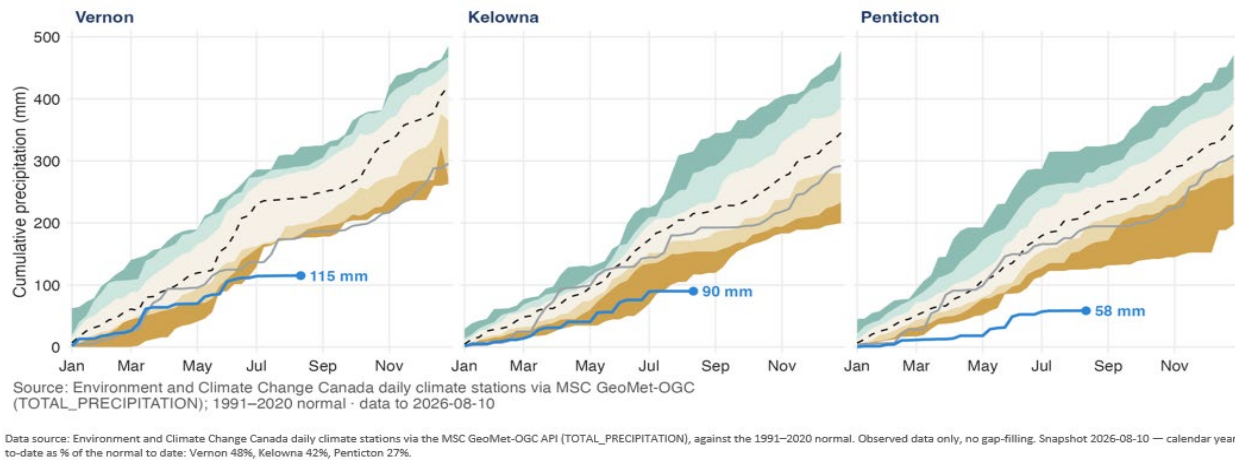
Drought Conditions and Precipitation

Drought conditions across the Okanagan continue to intensify, placing increasing pressure on available water supplies, irrigation infrastructure, and environmental flows.

Since May 1, 2026, the Penticton Airport climate station has recorded only 40.3 mm of total precipitation. This represents an increase of just 0.2 mm since the City's previous irrigation system update on July 20, with that small amount of rainfall occurring earlier in July. Meaningful precipitation has effectively been absent for several weeks, providing little benefit to soil moisture, stream flows, watershed recharge, or irrigation demand.

Looking at the broader year-to-date trend, Penticton has received only 58 mm of total precipitation in 2026. The graph below illustrates how current precipitation levels compare to historical conditions and highlights just how exceptionally dry the year has been. A significant portion of the annual precipitation typically received by this point in the year has simply not materialized. Penticton has

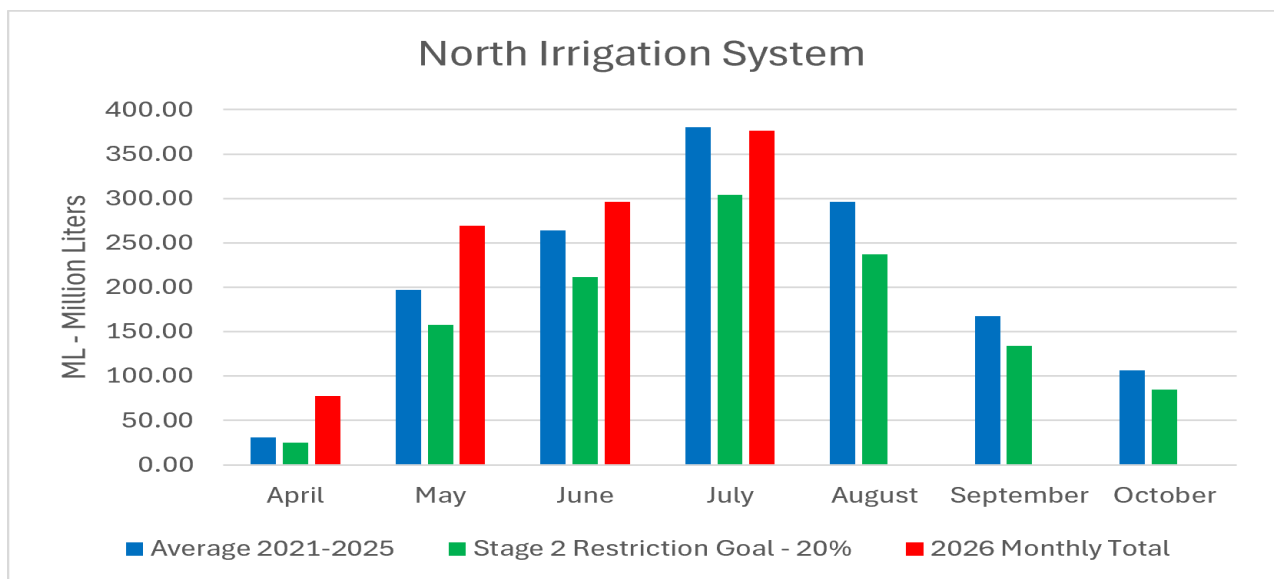
received significantly less precipitation than neighbouring communities, with Kelowna recording 90 mm and Vernon recording 115 mm year-to-date. At just 58 mm, Penticton has received approximately 27% of normal precipitation, highlighting the severity of current drought conditions.



Reflecting these worsening conditions, the province increased the local drought classification from Level 4 to Level 5 on July 30, 2026. Level 5 is the highest drought rating under the provincial drought framework and indicates exceptionally dry conditions with significant impacts to water users and aquatic ecosystems. At this time, there are no indications of meaningful rainfall or watershed recovery that would substantially improve water supply conditions before the end of the irrigation season.

Current and Historical Irrigation Demand

The chart below compares 2026 North Irrigation System demand to the five-year average (2021–2025) and the Stage 2 conservation target, which represents a 20% reduction from historical average demand.



The five-year average includes 2021, the last irrigation season during which Penticton experienced significant drought conditions and Stage 2 water restrictions. As a result, the comparison reflects both average operating years and a previous drought year.

July 2026 irrigation demand reached approximately 375 million litres, compared to a five-year July average of approximately 380 million litres. While overall demand was approximately 1% below the historical average, July consumption exceeded the Stage 2 conservation target of approximately 304 million litres by nearly 23%. The chart also shows that consumption exceeded the Stage 2 target during May, and June as well.

These results indicate that despite mandatory Stage 2 water restrictions and increasingly severe drought conditions, water use has not been reduced to levels needed to achieve conservation objectives. While July demand was slightly lower than the five-year average, overall consumption continues to remain well above Stage 2 targets, placing additional pressure on limited water supplies and critical water infrastructure during one of the driest years on record.

Updated Current Conditions:

- Provincial Drought Rating: Level 5
- Total 2026 Precipitation: 58 mm
- Total Precipitation Since May 1: 40.3 mm
- Increase Since Previous July 20 Update: 0.2 mm
- July 2026 Irrigation Demand: 375 ML
- Five-Year July Average (2021-2025): 380 ML
- July Stage 2 Conservation Target: 304 ML
- July Demand Compared to Historical Average: 1% Below Average

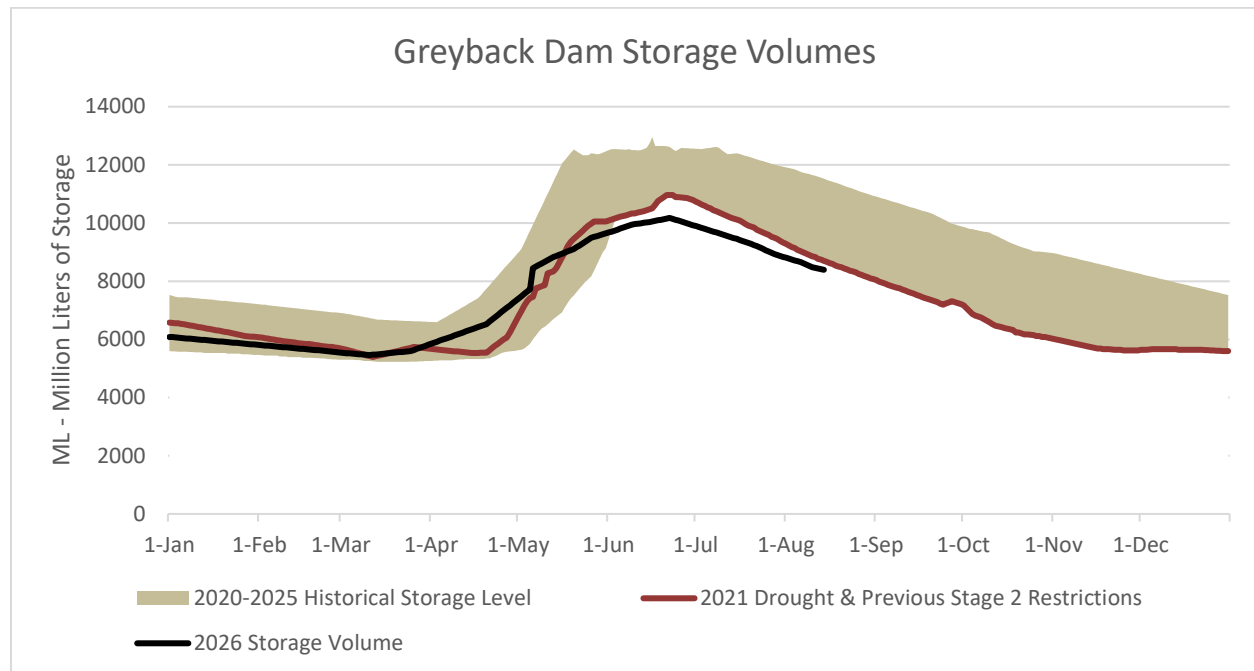
Reservoir Storage and Water Supply Outlook

As previously communicated in our July 20 letter, the primary water source for the North Irrigation System is Greyback Reservoir, located approximately 19 km northeast of Penticton. Greyback Reservoir has a live storage capacity of approximately 12.5 million m³, or 12,500 ML (million litres) of water. The reservoir relies on annual snowpack accumulation and spring precipitation to replenish storage levels through freshet runoff. This stored water is then used to support downstream environmental flow requirements, agricultural irrigation demands, and a portion of the City's potable water supply through the water treatment plant.

Historically, Greyback Reservoir experiences substantial annual recharge during the spring freshet period. In 2026, storage reached a seasonal low of 5,462 ML on March 11 before increasing to a peak of 10,177 ML on June 22. This represents a net recharge of 4,715 ML, equivalent to 37.7% of Greyback Reservoir's full storage capacity. Historically, median annual recharge is approximately 48.2% of full pool, indicating that 2026 recharge was substantially below typical conditions.

While this recharge provided a significant increase in storage, it was not sufficient to refill the reservoir to capacity. At its seasonal peak, Greyback reached only 81% of full pool, leaving storage levels

approximately 2,323 ML below capacity entering the summer demand season. This reduced storage buffer increases the importance of achieving conservation targets during the remainder of the irrigation season.



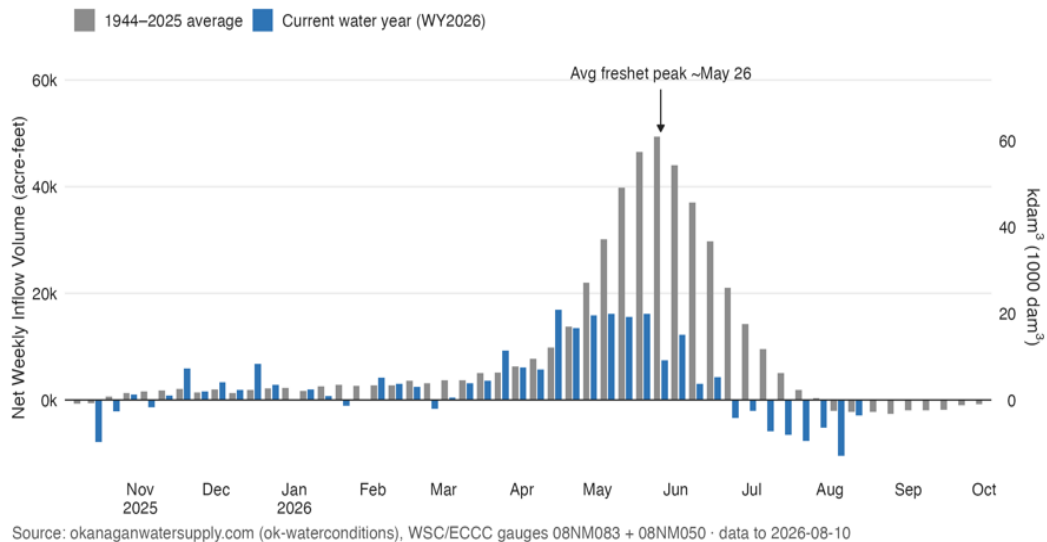
The inability to achieve full pool in 2026 is a significant concern. Reservoirs such as Greyback provide an important buffer against dry conditions by storing surplus runoff from wetter periods for use during peak summer demand and future drought years. Entering the irrigation season with storage levels nearly 20% below capacity reduces operational flexibility and increases the risk that continued drought conditions or a below-average snowpack in 2027 could further constrain available water supplies.

Current long-range forecasts are indicating the potential for a milder winter across much of British Columbia. While seasonal forecasts carry uncertainty and can change over time, warmer winter conditions may result in reduced snow accumulation at higher elevations, limiting the runoff available to recharge Greyback Reservoir next spring. If below-average recharge conditions persist into 2027, the City of Penticton could face additional supply challenges and a reduced storage buffer entering the operating season.

To preserve upland water storage in Greyback Dam, the water treatment plant has shifted current operational blend ratios from the normal percentage of 80% Okanagan Lake and 20% Penticton Creek to 95% lake and 5% creek. This transition also increases reliance on Okanagan Lake, which is currently supplying approximately 95% of the City's domestic water needs.

While Okanagan Lake remains a large and resilient water source, it also depends on annual spring freshet inflows from tributary watersheds to replenish water withdrawn throughout the year. When these recharge flows are well below normal, as they have been in 2026, the importance of conservation becomes increasingly significant.

The graph below illustrates weekly net inflows to Okanagan Lake compared to the historical average. While the average freshet period typically delivers substantial inflows through May and June, 2026 experienced significantly lower recharge volumes, resulting in less water being added to the lake during the period when annual replenishment would normally occur.



Data source: okanaganwatersupply.com (08WB ok-waterconditions), WSC/ECCC gauges 08NM083 + 08NM050. Weekly net inflow for the current water year against the 1944–2025 weekly average; evaporation excluded (operational convention). Snapshot 2026-08-10 — 44 observed weeks in WY2026.

As a result, Okanagan Lake levels are continuing the downward trend expected from a year with limited watershed runoff and reduced freshet contributions. Much of the annual recharge that would typically be received during spring runoff has already been utilized, and current conditions show little indication of a meaningful recovery before the end of the water year. Although the lake remains a reliable long-term water source, consecutive years of below-average recharge and increasing demands place greater importance on responsible water use and conservation efforts across all sectors.

The combination of reduced North Irrigation System storage, exceptionally dry watershed conditions, low freshet inflows, and below-average recharge to Okanagan Lake underscores the need to reduce demand wherever practical for the remainder of the irrigation season.

Overall Outlook

The combination of Level 5 drought conditions, extremely low precipitation, reduced reservoir storage capacity, and irrigation demand that continues to exceed conservation targets presents significant challenges for the remainder of the irrigation season.

The City is asking all North Irrigation System users to carefully review their irrigation practices and identify additional opportunities to reduce water use wherever practical. Reducing unnecessary irrigation and avoiding excessive water use during peak demand periods will help preserve available supplies, reduce pressure on infrastructure, and support reliable service for all users.

The North Irrigation System is intended to support agricultural operations and agricultural water requirements. Customers who utilize a portion of their agricultural connection for residential landscape irrigation are reminded that residential watering should be conducted in accordance with the City's current watering days and times applicable to all residential customers. Adhering to these schedules helps reduce peak demand on the water system and supports community-wide conservation efforts during this period of extreme drought.

While many customers have taken meaningful steps to conserve water, overall system demand remains above Stage 2 conservation targets. Additional conservation efforts across the system will be necessary to achieve Stage 2 conservation targets. Without meaningful reductions in demand, the City may need to consider additional measures to protect available water supplies should drought conditions persist.

Stay Informed

The City continues to provide irrigation system updates as conditions evolve throughout the season.

If you are not currently receiving emails through the North Irrigation System agricultural user distribution list, please send your name, service address, and preferred email address to publicworks@penticton.ca and request to be added.

Maintaining current contact information will help ensure you receive timely updates regarding drought conditions, irrigation operations, water supply status, and any future changes to water restrictions.

Thank you for your continued cooperation and commitment to responsible water use. Every reduction in demand helps preserve available water supplies, protect critical infrastructure, and maintain reliable service throughout this period of exceptional drought. Working together, we can help reduce the risk of further restrictions and improve the resiliency of our water system for the remainder of the season.

Sincerely,



Dave Best

Infrastructure - Manager of Utilities

