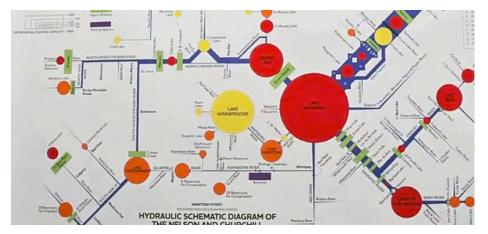


## **2024 INNOVATION AWARD**

Manitoba Hydro's OPBIFF Team



The Operational Physically-Based Inflow Forecasting Framework (OPBIFF) project has successfully modernized Manitoba Hydro's forecasting system by implementing physically-based hydrological models into the Flood Early Warning System (FEWS) forecasting platform. This system fosters innovation by enabling Manitoba Hydro's Hydrology and Climate Section to rapidly test and implement customized features on their large, diverse, and remote watersheds.

The FEWS is an off-the-shelf platform that was designed and built by Manitoba Hydro professional engineers to be completely customized to their needs and directly integrates into their Decision Support System for reservoir management. A primary factor in the design is to be flexible and adapt to future needs, including incorporation of new features, models, and adaptors. A key innovation of OPBIFF is the direct use of multiple sources of uncertainty in producing and communicating flow forecasts through the platform. This includes merging uncertainty from Environment & Climate Change Canda's weather models, historical weather uncertainty spanning the past 40-yeasrs for seasonal forecasts, and hydrological model uncertainty. The innovative method to integrate these sources of uncertainty in an operational system is novel and has gained interest from other utilities and forecasting centers for their own implementation.

OPBIFF is an example of "innovation by design", a primary factor in the design is to be flexible and adapt to future needs, including incorporation of new features and models. Since its implementation in 2021, this system has been used to help Manitoba Hydro to navigate floods and droughts. The team continues to expand OPBIFF to implement advanced tools to improve forecast confidence. OPBIFF has modernized Manitoba Hydro's reservoir forecasting, helping Manitoba Hydro better understand watershed conditions and to capitalize on weather-related opportunities, resulting in significant economic benefits to the people of Manitoba.

In recognition of the innovation and engineering ingenuity demonstrated in their OPBIFF project, Engineers Geoscientists Manitoba is pleased to present the 2024 Innovation Award to Manitoba Hydro's OPBIFF project.