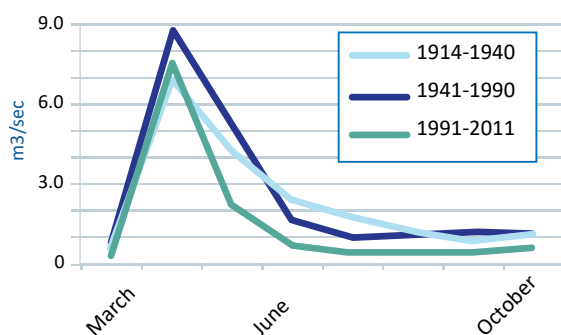


Assessment of the Water Supply & Demand in the Sturgeon River Basin

Purpose: This report reviews and provides feedback on the existing data and tools:

1. **WATER SUPPLY:** Hydroclimatic data (flows, evaporation and precipitation)
2. **WATER DEMAND:** Water allocation licences and use data which could be used or adapted for future modelling
3. **MODEL:** The Water Resource Management Model (WRMM) and its usefulness for ongoing water management

Median monthly flows of the Sturgeon River at Ft. Saskatchewan



Background

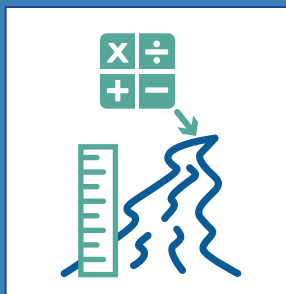
- **Pre-1970s:** No conditions were put on water allocation licences
- **1970s:** All new licences had conditions placed on them to stop diversions if flow fell below 5 cfs (cubic ft/sec)
- **1980s-90s:** the Sturgeon River basin was facing water shortages and low instream flow
- **1995:** Alberta Environment Report analyzed water allocation to facilitate new procedures
- **2005:** The Water Resource Management Model (WRMM) Assessed causes of declining summer flows and suggested possible water management alternatives for the basin

Water Resource Management Model (WRMM)



Instream Flow Needs

- Uses scientific calculations
- Determines the quantity of water needed in a water body to have little or no impact on the aquatic species and ecosystem health



Instream Flow Objectives (Water Conservation Objectives)

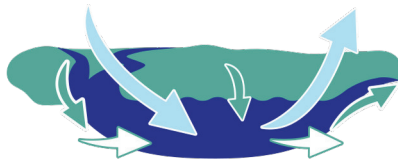
- Uses stakeholder and public consultation process
- Determines the quality and quantity of water needed in a water body to protect:
 - water and the aquatic environment
 - fish and wildlife
 - economic activity



Key Recommendations



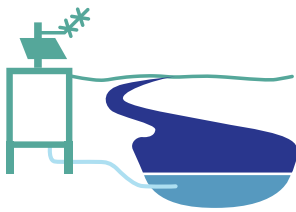
Update precipitation and evaporation data for four lakes



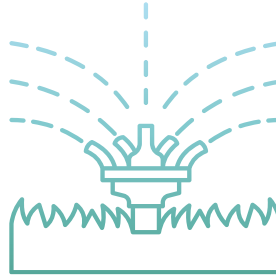
Lake water balance for Isle Lake and Lac Ste. Anne



Consumptive water use and irrigation demand



Determine historical weekly natural flows



Weekly irrigation data



Model three water allocation scenarios

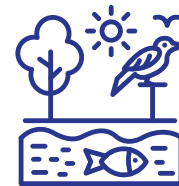
Sturgeon River Watershed Management Plan (SRWMP 2020) Key Outcomes



Informed and aligned policies and plans



Access to safe, secure drinking water



Healthy aquatic ecosystems



Reliable, quality water supply for the economy



Wise land-use that considers resilience



Resident and stakeholder support for Management Plan

