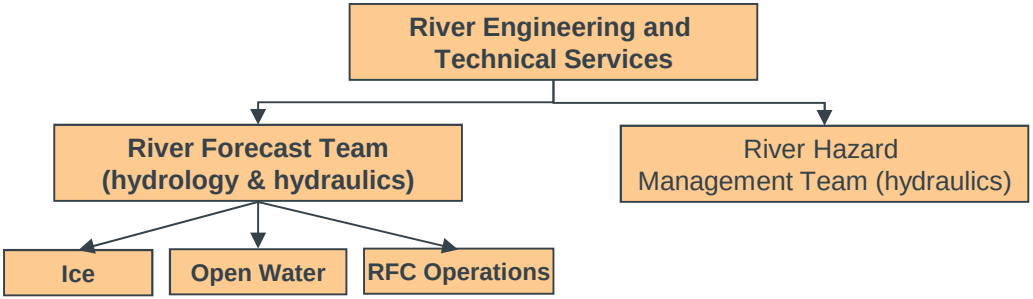
Alberta's River Forecast Centre



ECCC Flow Forecasting Meeting
Vancouver, BC

Colleen Walford, River Forecast Specialist Engineer
River Engineering and Technical Services Section
February 20, 2019

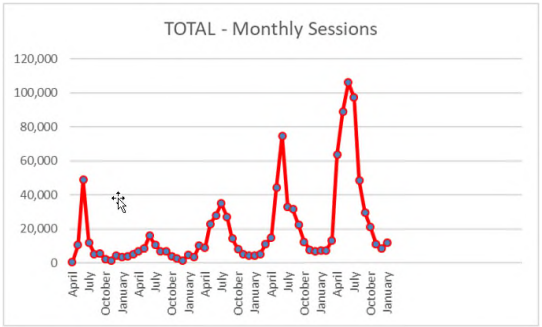
Organization

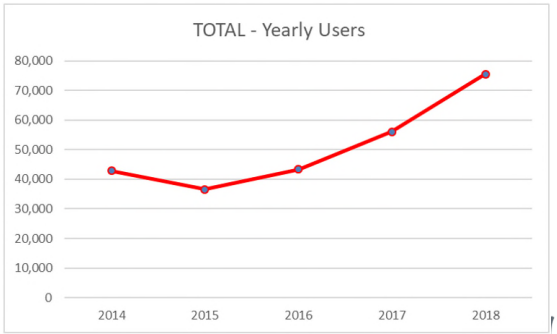


- Operations Staff (2) – QA/QC – station start-up and shutdown
- Ice Forecasters (3)
  - On-site - Peace River (freeze-up and break-up)
  - On-site - Fort McMurray (break-up)
  - Provincial spring break-up
- Open Water Forecasters (6)
  - Spring-melt through October

Products/Deliverables

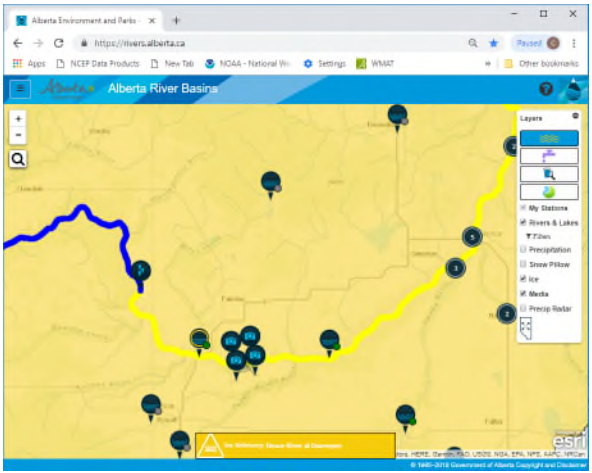
- Near real-time monitoring and reporting
  - WSC, MSC, AEP, AAF, TA, BC Hydro, City of Calgary, Town of Canmore
  - 631 precipitation sites, 278 Q/HG sites
- Communication with the public and emergency managers (~180)
  - Website and Mobile App - push notifications
  - Forecaster Comments - past and future precipitation and how it may or is affecting AB rivers
  - Forecaster available to provincial, first nation, municipal and industry emergency managers 24/7 via duty phone





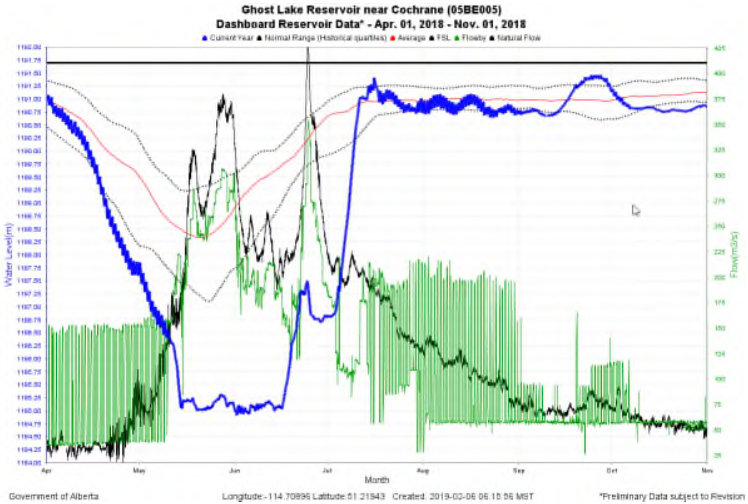
Products/Deliverables

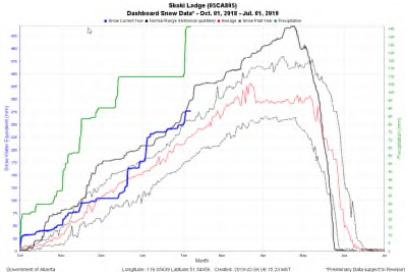
- Flow, water level and Tp forecasting
  - Issue advisories as required
  - 24/7 RFC operations as required
  - Emergency Manager Portal – current data, chat, archive, SMS/email, Whiteboard
  - Emergency travel time estimates
  - Water Shortage – low flow forecasting
- Seasonal water supply forecasts
- Spring runoff forecast
- Ice monitoring and ice jam risk evaluation
- Daily natural flow calculation

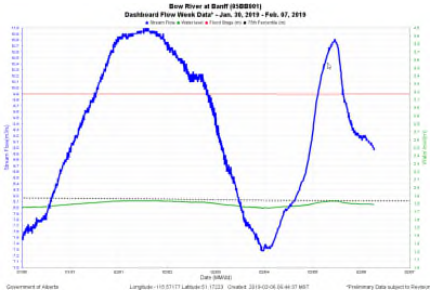


Tools – Situational Awareness

- Daily data scans
  - WISKI dashboard plots (auto x2 daily) – reservoirs, precipitation, Q/HG, snow pillows
  - Website

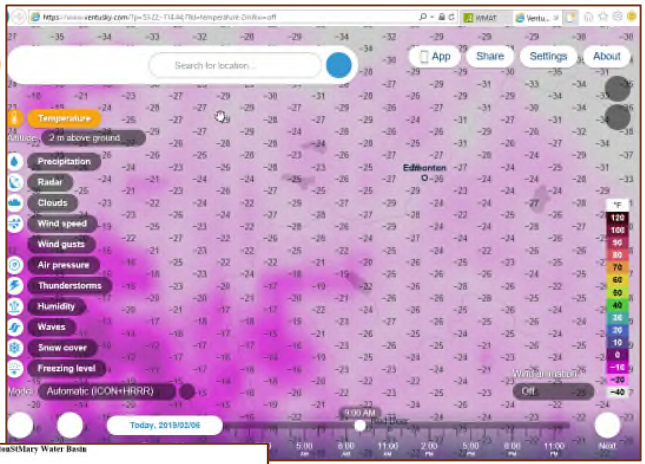


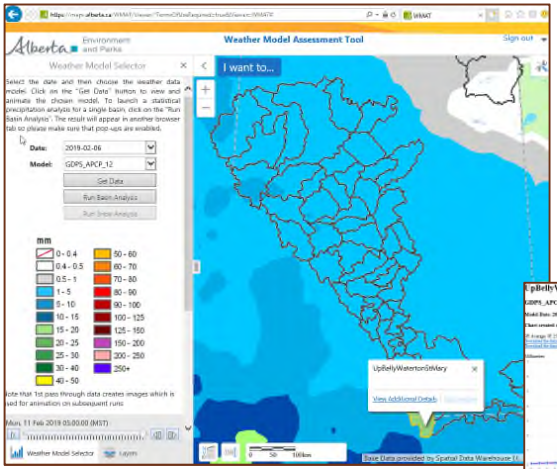


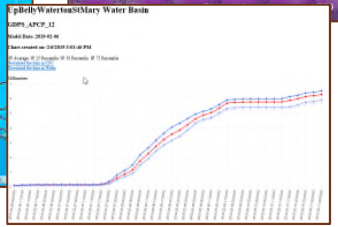


Tools – Situational Awareness

- Daily weather model scans
  - Weather Model Assessment Tool (ECCC data – animated, clipped to RFC basins)
  - RWDI contract (NOAA data, WRF – clipped to RFC basins)
  - SpotWx – point data
  - Twisterdata.com (NOAA data animated)
  - Ventusky.com

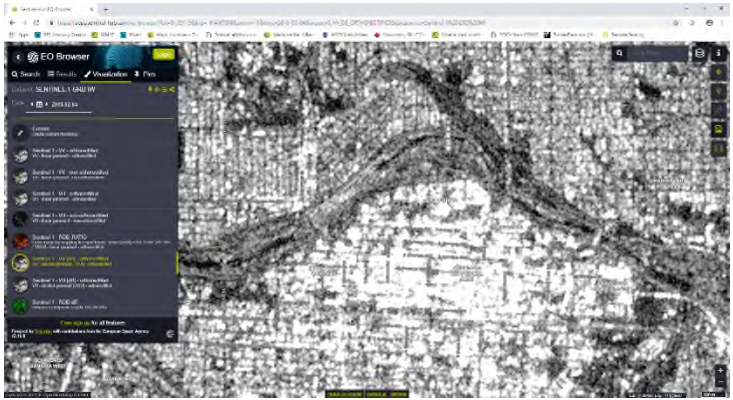


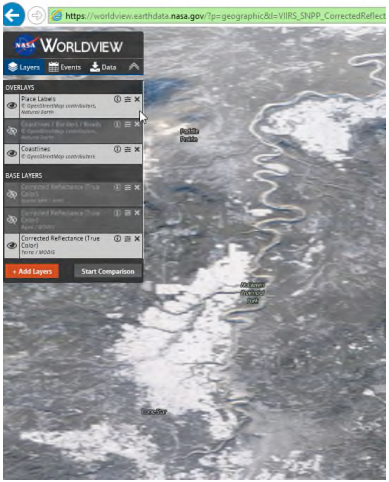




Tools – Situational Awareness

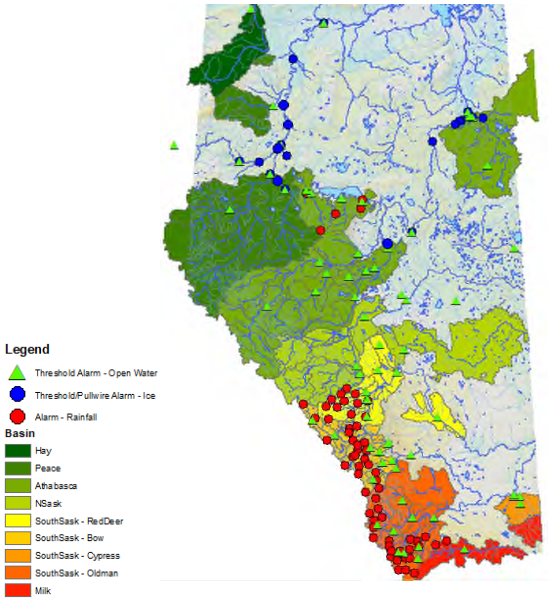
- Daily remote data evaluation
  - MODIS (https://worldview.earthdata.nasa.gov and AAF composite)
  - Satellite – RADARSAT-2 (ice cover classification)
  - Sentinel 1, 2 and 3 (river ice cover)

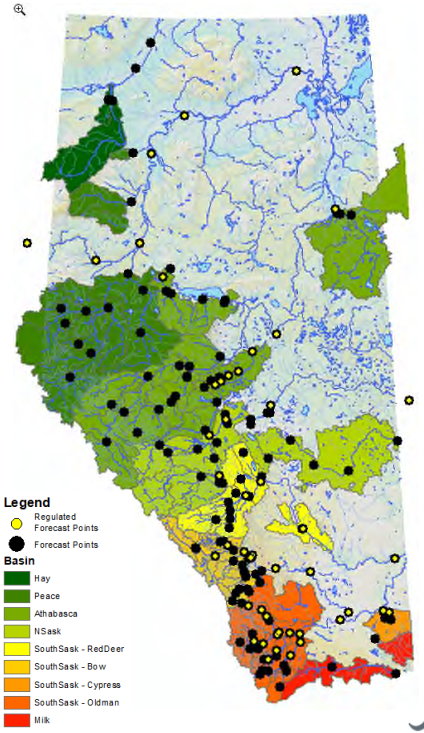




Tools – Event Operations

- Hydstra Platform – Streamflow Synthesis and Reservoir Routing Models
  - 130 Forecast Points – modelled/routed
  - 65 – Rainfall Intensity Alarms
  - 70 – HG Threshold Alarms





Current Development

- Forecasting Model Review – completion March 31,2021
  - Complete: HEC-HMS, HFAM, NWS, RAVEN
  - Underway: MIKE Hydro, MESH, WATFLOOD
  - Possible work: Mike-SHE, HBV,WaSim/UBCWM/Hype
- Delft-FEWS implementation underway – completion April 2020
- Website Portal and Advisory Creator Updates



ECCC Resources

- Current
  - Station Data
  - Datamart – weather model data (SNOD, APCP)
  - Website – scraping forecast temperature data
  - Modelled SWE jpg – Climate Process Section
  - Emails – Warning Preparedness Meteorologists
  - Decision Support Desk/Operations Desk





- Needs
  - Datamart - modelled swe
  - Station adjusted SNODAS
  - NRT data on datamart with defined station maintenance process
  - Defined coordination plan and role clarity

Questions?

