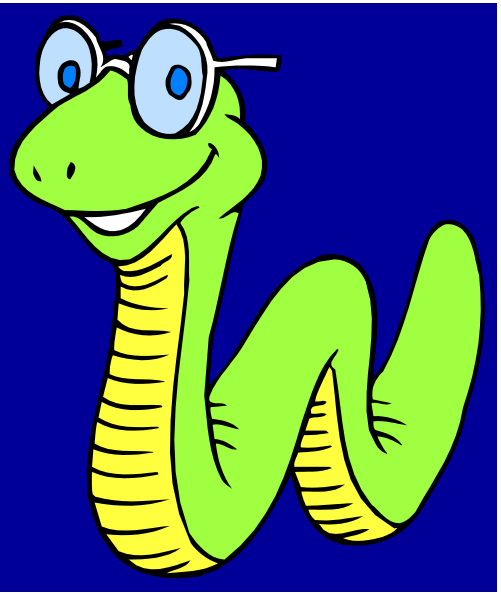
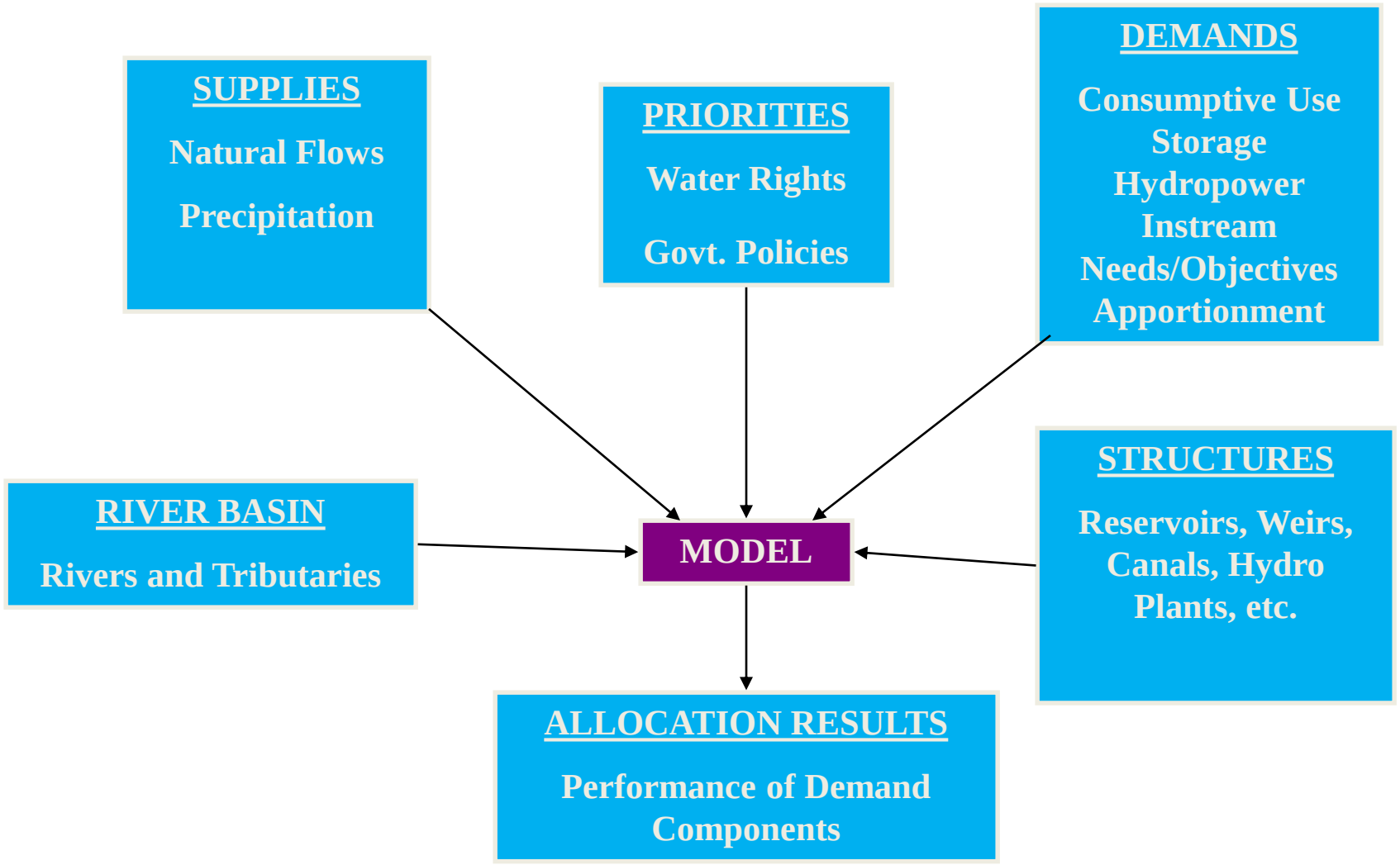
WRMM and Water Management Issues in Alberta

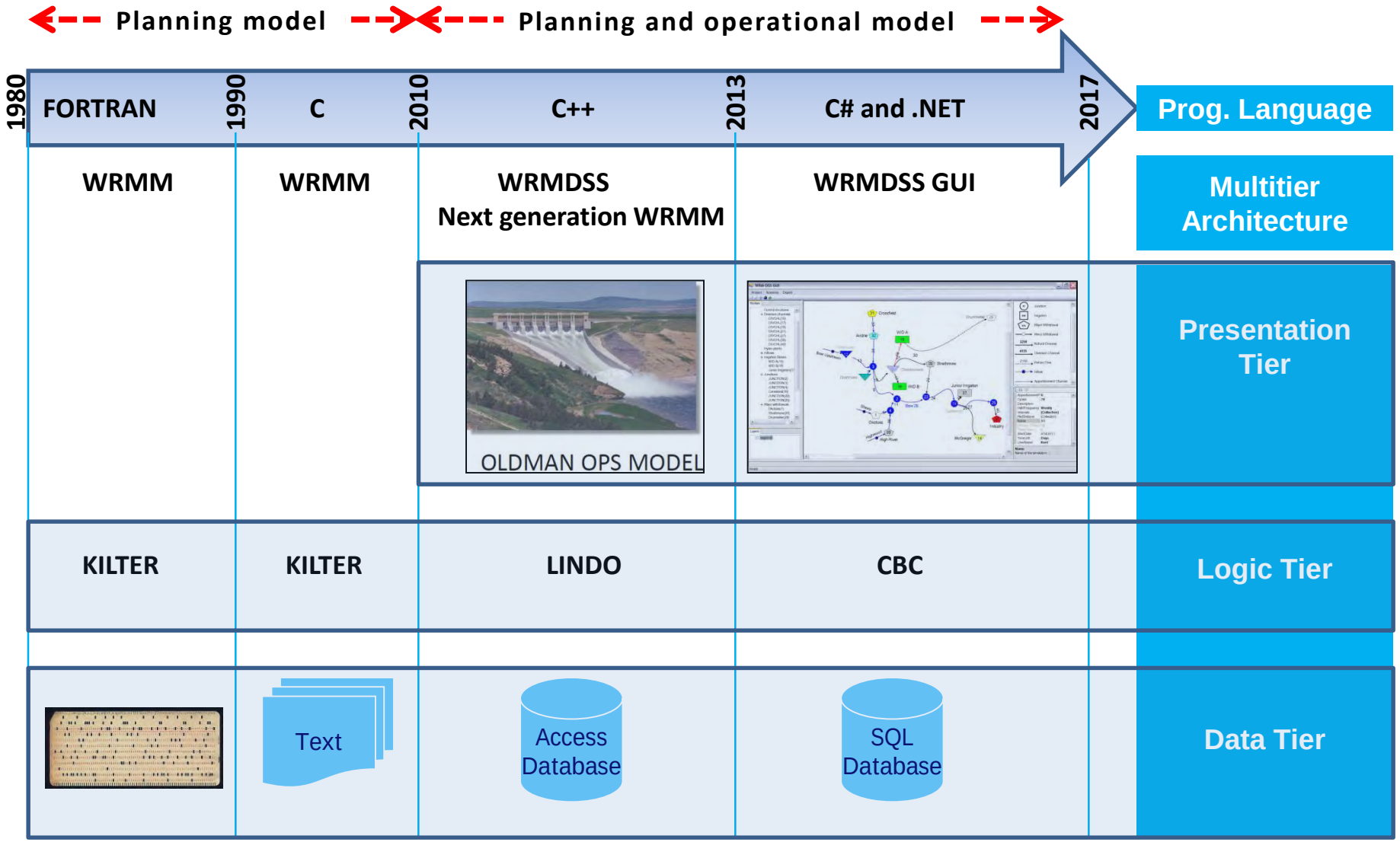
Water
Resources
Management
Model



WRMM Concept

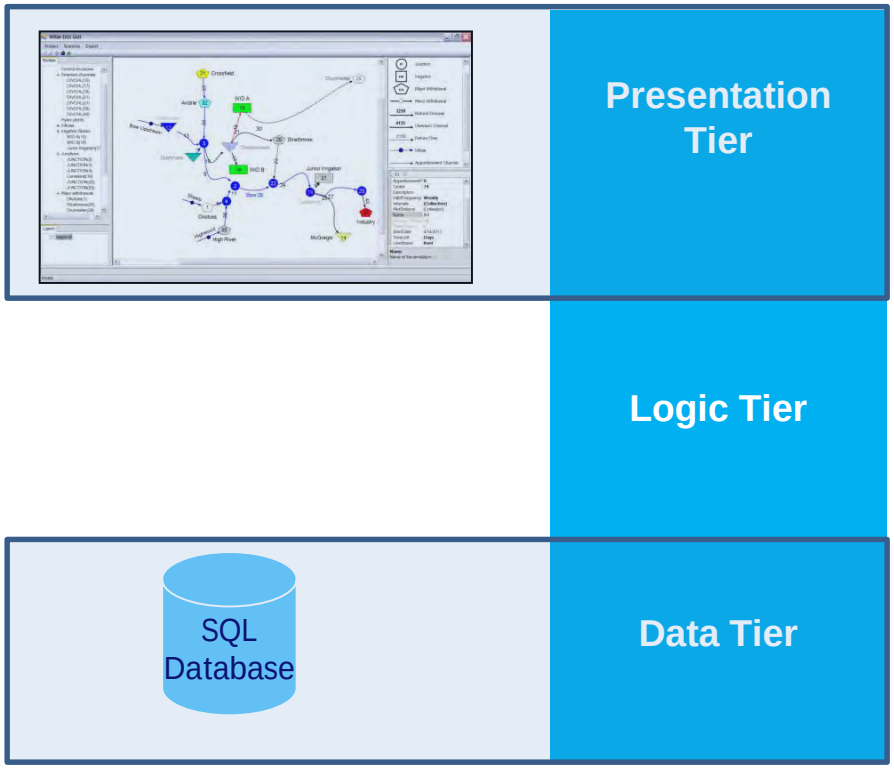


WRMM Evolving With Technology



Decision Support Systems

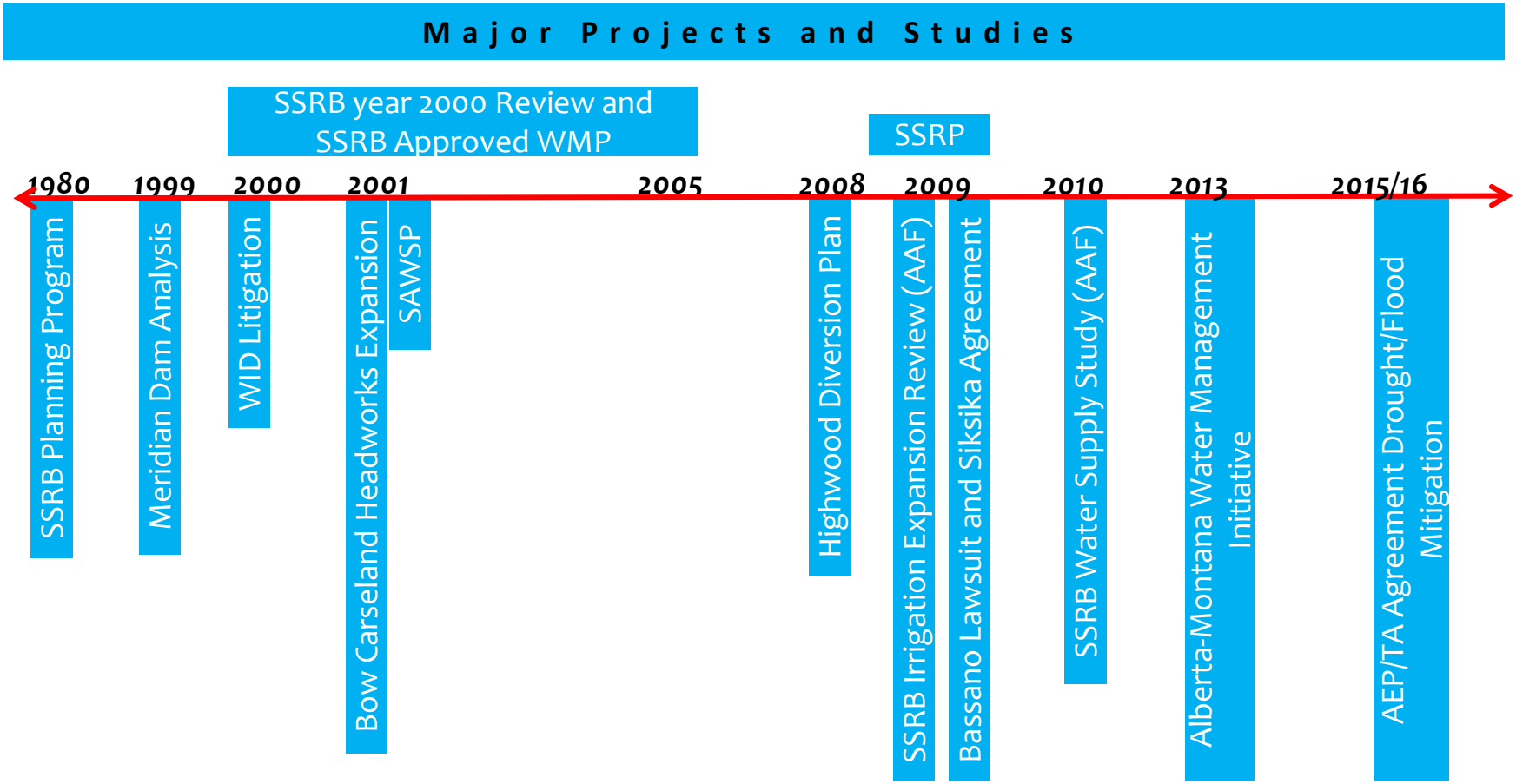
Development of Open Data Handling Platform



Platform that facilitates:

- Extraction of weather forecast variables (precipitation, temperature, etc.) for low flow forecasting,
- QC/QA input data (and edit when required),
- Visualization, query and analysis of model output,
- Data management and data sharing between different models, and
- Model interaction/linking.

Water Allocation Modelling in the SSR



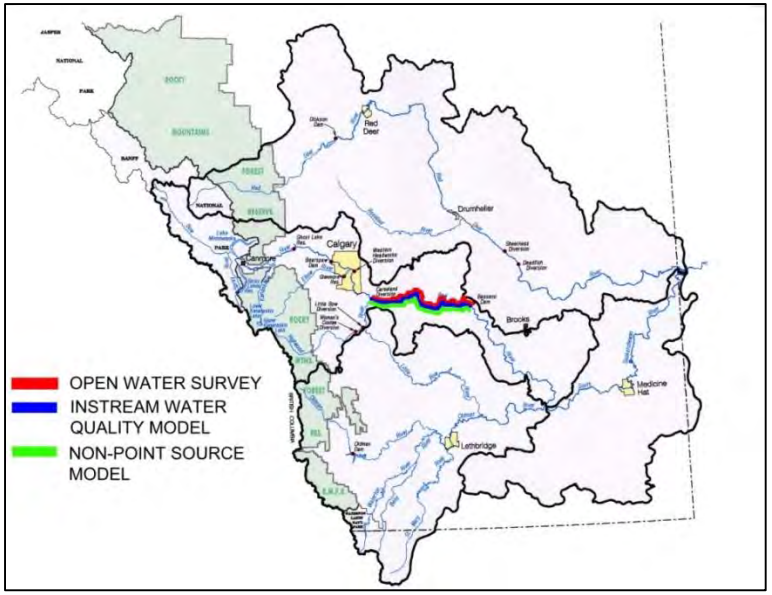
Ongoing Modelling Support:

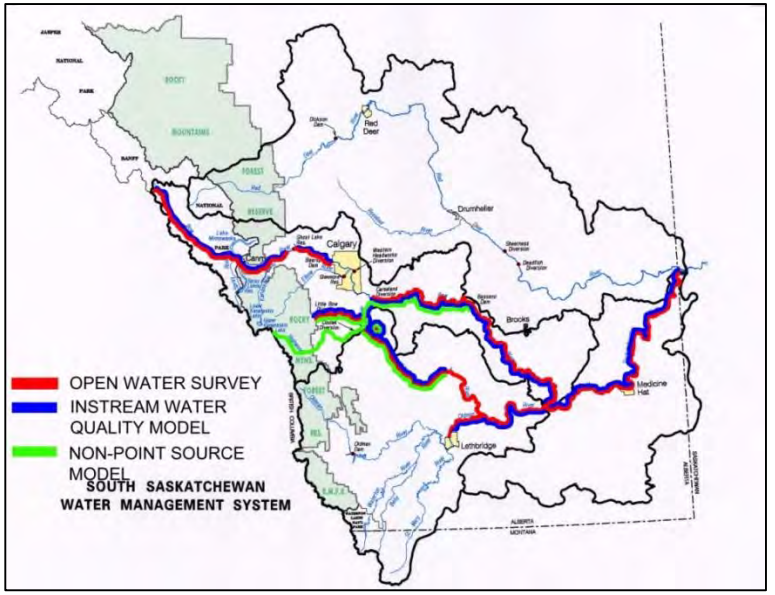
- **Referrals (Approvals, OIB, Cross-Ministry, etc.)**
- **Emerging Issues**
- **Tools Development (Operational models for water shortage management)**

Water Quality Modeling in the SSR

Support Regional Approvals under *AEPEA* and the *Water Act*

What we do	Why we do it	How we do it
Develop and apply mechanistic water quality models in the SSR • Bow River • Oldman River • South Saskatchewan River	-Support Approvals under AEPEA and Water Act. -Support Regional Planning (e.g. BRPMP) -Support other stakeholders	-Instream model: EFDC, WASP/HEC-RAS or CE-QUAL-W2 (> 8 river reaches calibrated) -Non-point source model: SWAT (> 5 sub-basins calibrated)





Water Management Issues in Alberta

- Water Allocation Challenge in a closed basin
- Water Quality Issues (Point and non-point source)
- Ground Water Supply and Contamination
- Understanding of Surface water -ground water interaction
- Climate change
- Population growth and Irrigation expansion
  - Increase in Water Demand