



UNIVERSITY OF SASKATCHEWAN

Global Institute for  
Water Security

USASK.CA/WATER



# What is the Vision for GWF Integrated Modeling with implications for GIWS

Presentation to GWF-IMPC  
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- What do you mean by ‘Integrated Model?’
- Do you have a vision in IMPC for a model or a set of models?
- How did you arrive at that vision?
- How will you achieve that vision?
- What is the GIWS vision?
- What will the GWF IMPC legacy be?



What do you mean by ‘Integrated Model’

Integration of natural and human systems?

vs

Explicit solution of coupled systems of differential equations  
(aka multi-physics models)



Do you have a vision in IMPC for a model or a set of models?

- What are the key GWF questions you are trying to address that can help drive the vision?
- ‘Vision’ requires a good set of ‘eyes’ connected to a ‘brain’ that can survey the hydrology and societal landscapes and produce a thoughtful statement on needs and directions
- Vision can be aspirational; therefore
- Does IMPC have a mission statement?



## How did you arrive at that vision?

- Was there a workshop with the IMPC team?
- Does IMPC target end-user and stakeholder uptake? If so, were they included in co-development?
- What model(s) and why?
- Is there a broader GWF modeling vision, or is it the same as the IMPC vision?
- Does 'core modelers' imply core IMPC modelers?
- What is the relationship to ECCC needs?



## How will you achieve that vision?

- Do you have a project manager?
- Have milestones been agreed upon and met?
- Have the relevant documents been written and approved?
- How do you track progress?



## What are the deliverables?

Papers and reports?

Academic code?

A fully-functioning, fairly well-written code?

An end-to-end modeling system that will be delivered to end users?

Accessible, user-friendly model-output portal with visualization?



## What is the GIWS vision?

- We have not met as a team to examine our modeling portfolio and goals, or to revisit them since Howard left.
- My personal interests include high-resolution, the major natural and human processes, satellite data assimilation, potential links to other sectors/processes, like climate, biochemistry, agriculture, economics, etc., a focus on research code that can inform policy and management.
- It is probably time for a GIWS retreat or series of retreats now that I am settled in.



## What will the GWF IMPC legacy be?

- What will have been accomplished when the program ends?
- What capacity will have been built nationally and at the partner and collaborating institutions?
- Clearly at GIWS we want to continue a strong modeling and prediction program so we will continue IMPC and other coordinated modeling activities, e.g. with ECCC, within GIWS; that requires some alignment of GIWS and GWF goals.
- How about at the partner institutions? GWF should contribute to building strong modeling teams and putting them on a path towards sustainability.
- Maintaining the IMPC network is highly desirable so we can continue to address problems of national significance.
- None of us can do it alone.