Field	Response
1. Contact Information | Name	Edward A. Sudicky, FCAE, FRSC
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1. Contact Information | Phone	519-575-3446
2. Please indicate the alignment of your research expertise to one or more of the following GWF objectives/ deliverables:	Improve disaster warning – develop scientific knowledge, monitoring and modelling technologies, and national forecasting capacity to predict the risk and severity of extreme events Predict water futures – use Big Data to make informed decisions, better models to assess change in human/natural land and water systems
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 – Diagnosing and Predicting Change in Cold Regions:	Hydrometeorology and Climate Change – improve understanding and prediction of how climate change influences water availability and extreme events Hydrology and Terrestrial Ecosystems – improve understanding and prediction of hydrological and terrestrial processes and watershed hydrology and how processes and systems will evolve and interact under a changing climate Water Quality and Aquatic Ecosystems – improve understanding and prediction of how climate changes in climate, hydrology, and land use impact water quality and the health of aquatic ecosystems
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems:	Big Data for Water – sensors, sensing, instrumented river basins, data analysis systems Decision Support Systems – predictive and diagnostic modelling system development and deployment for hydrology, water quality and water resources

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3.3 Please indicate the alignment of your research expertise to the GWF Science Pillar 3 - Designing User Solutions:	Water Environment - ecosystem health and conservation, water management Agriculture - including farming, food processing, country foods Energy & Natural Resources - including mining and hydroelectricity Other Industry - Including Insurance, Finance, Measurement and Engineering sectors
4. Please indicate the alignment of your research expertise to one or more of the following user needs:	Projects to improve environmental monitoring, including sensors, drones, satellites, river basin observatories, lake buoys, software development, chemical fingerprinting, real-time monitoring, citizen science, and integration of Big Data platforms for Cold Region water science. Model development to support climate change impact assessment, including regional climate change modeling, hydrological and ecological modeling, specifically involving improvements in forecasting and predictive capacity, downscaling, and scenario development of water futures. Risk reduction and analysis tools, including forecasts of floods, droughts, wildfires, and freezing rain (and other weather and climate extremes); water quality assessments; disease risk analyses; and integrated assessments. These tools alert industry and government to potential problems and allow cost/benefit analyses for potential risk mitigation. Complex system modeling and analyses reflect the growing awareness of interacting dynamics in human-natural coupled systems. These studies emphasize the inter-relationships between water resources and transportation systems, infrastructure, energy generation, mining, food production, and source water protection.

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5. Please list regions of Canada and the biomes (e.g. mountains, boreal forest, Great Lakes-St Lawrence), watersheds, and/or river basins where you are interested in conducting research for GWF:	My research and that of my team at Aquanty, Inc., an R&D consultancy I founded several years ago, has been engaged and continues to be engaged in large basin- and watershed-scale projects involving coupled climate/land surface/surface water/subsurface water and contaminant transport modelling in 3D. These projects span the Canadian land mass. Our state-of-the-art HydroGeoSphere software platform is used worldwide in academia, industry and government agencies.
6. Please list any other expertise or recent experience (subjects, river basins, technology) not covered by above query that could help us in assessing your alignment with the GWF programme:	