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Translating hydrology research into practice: A Canadian Perspective

Alain Pietroniro¹, Prabin Rokaya², Corinne Schuster-Wallace³, and John W Pomeroy³

¹University of Calgary, Department of Civil Engineering, Schulich School of Engineering, Calgary, Alberta, Canada

²Watershed Resilience and Transboundary Waters, Alberta Environment and Park, Edmonton, Alberta, Canada

³Centre for Hydrology and Department of Geography and Planning, University of Saskatchewan, Saskatoon and Canmore, Canada

Hydrology research is regarded as vital for advancing human development and environmental conservation through improved hydrological process understanding and by devising solutions to address water management challenges. This is particularly acute in a time of global change and the need to find pathways to water sustainability. Success for research in hydrology is often measured through quantitative research outputs, such as the number of journal publications, citation indices, number of students trained, patents, and external research funding. User involvement in the research and development process is rarely considered a metric for success in hydrology. Despite successful scientific or engineering advancements, a greater scientific understanding of hydrology and ever-increasing publications, much of the research has limited uptake by practitioners and implementation into practice, leading to a growing gap between research and practice. This lack of utilisation is not due to a lack of need by users, but rather is a symptom of the disconnect between these advances and research that would most add value to practitioners and their application needs. We explore some outstanding challenges in translating academic research into practice and make some recommendations to bridge the increasing gaps between research and practice through a transdisciplinary approach, user engagement metrics in funded research and strong knowledge mobilization. We also discuss the success and challenges of these approaches in the Global Water Futures program along with lessons learned.