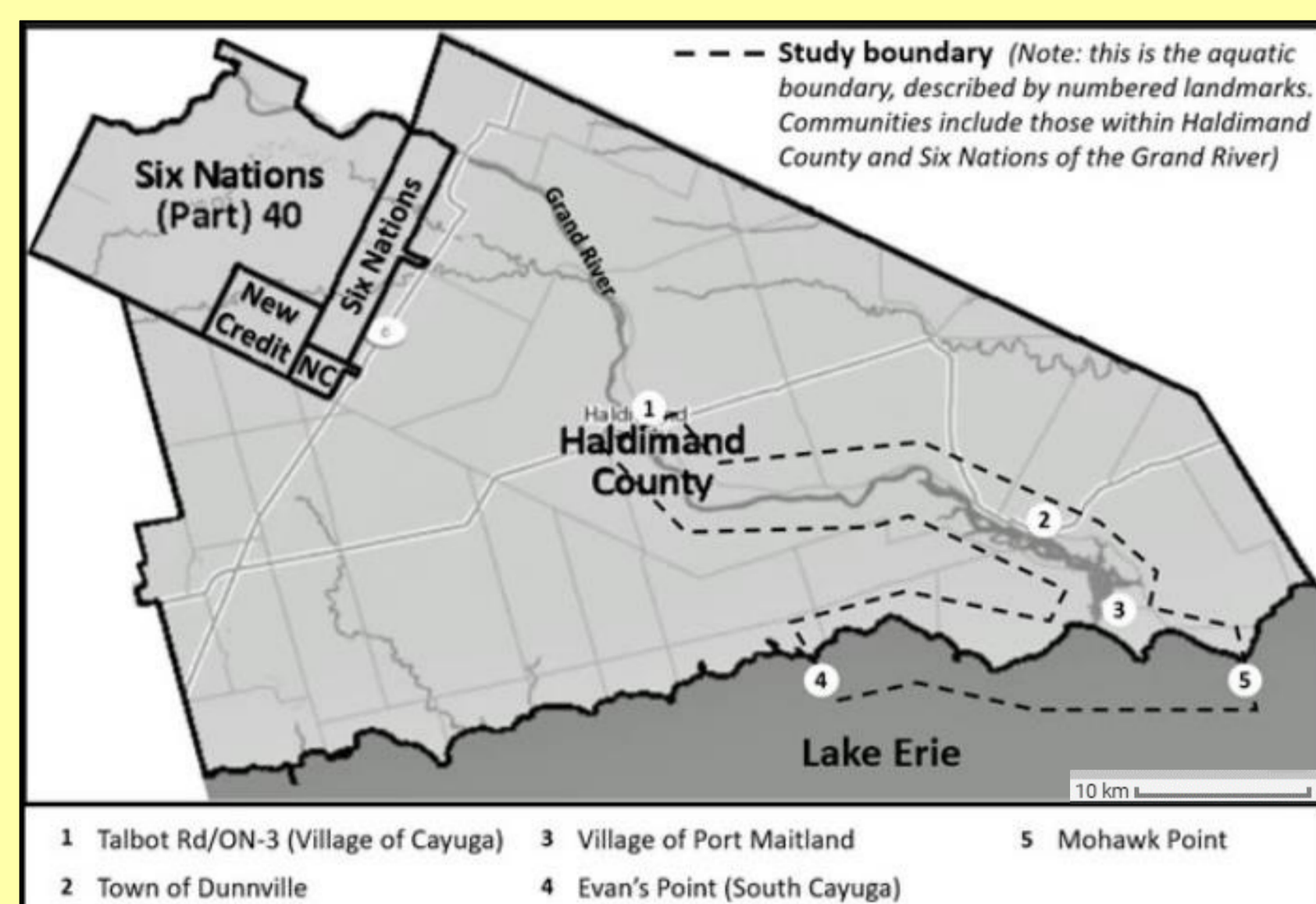# Monitoring in the Grand-Erie Interface: a framework in consideration of cumulative effects

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Introduction

Challenges: Fragmented, uncoordinated monitoring; guided by Western Science, community views often excluded; multiple jurisdictions (federal in Lake Erie, provincial and/or local in the Grand River... responsibility in the estuary is often unclear).

Goal: Propose a water monitoring framework for the interface (estuary) of the Grand River and Lake Erie that considers cumulative effects, is co-created by diverse stakeholders and connects to decision-making.

Approach: Community-based Participatory Action Research (**CBPAR** – five phases, see below); Cumulative effects data case study (Nov 2019-May 2020); Participant observation (e.g., water manager meetings, conference workshops – throughout); Document and literature review (throughout).

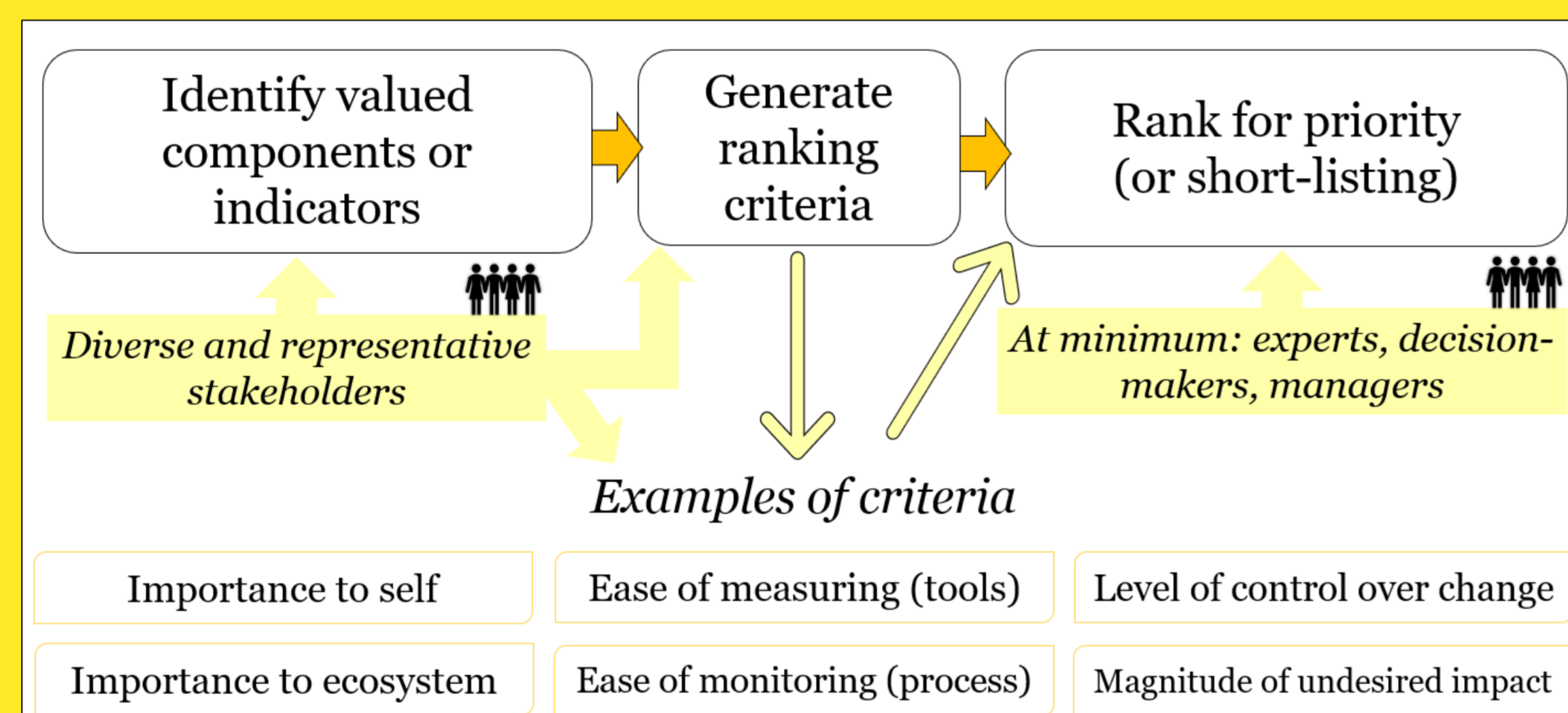## CBPAR Phase 1

Muskoka WATERSHED COUNCIL

Papers from Phase 1

Ho, E. 2018. Criteria-based ranking (CBR): A comprehensive process for selecting and prioritizing monitoring indicators. *MethodsX*, 5: 1234-1329.

Ho, E., Eger, S., and Courtenay, S. 2018. Assessing current monitoring indicators and reporting for cumulative effects integration: A case study in Muskoka, Ontario, Canada. *Ecological Indicators*, 95: 862-876.

Exploratory study (Jan-Aug 2016): A new Criteria-based Ranking process for selecting and/or prioritizing indicators was developed and tested:

Conclusions: The Criteria-based Ranking process is a helpful and efficient approach for standardising indicator selection and incorporating diverse perspectives.

CBPAR Phase 2

Monitoring review (Sep 2018-Aug 2019): 9 programs, 22 criteria

Top results:
– *Done well (all programs)*: Western knowledge frameworks are used.
– *Done poorly (1 program)*: Roles are clear; Community-based monitoring; Funding provided for community.

Conclusions:
– Monitoring is generally technically-sound, but socially disconnected.
– Design and implementation should be more coordinated and inclusive of diverse views and needs.

CBPAR Phase 3

Key informant interviews (Oct 2018-Oct 2019) – early conclusions:

– Monitoring and decision-making are not well-connected. Institutional barriers (and approaches to address these) exist.
– Optimized partnerships and coordinated collaboration (increased capacity, decreased redundancy) are imperative.
– Multiple forms of inquiry (e.g., approaches to analysis, integrating Indigenous knowledge) and reporting should be applied to monitoring data.
– Few examples of monitoring programs considerate of cumulative effects exist.

CBPAR Phases 4 & 5 (in progress)

4. **Public engagement via the arts**:
   a) Great Art for Great Lakes event series (Jun-Oct 2019)
   b) Six Nations photojournalism contest (Jul 2019-Apr 2020)

5. **Synthesis workshop (Apr/May 2020)**: You're invited! Join us to co-create the proposed framework!
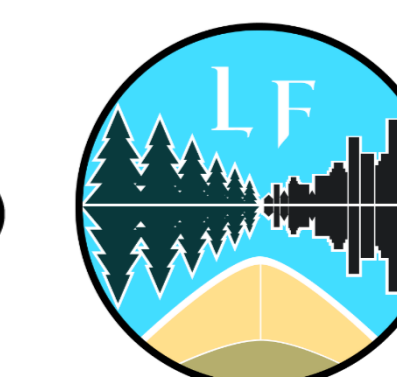
Next steps

1. Complete CBPAR Phases 2-5, including their respective summary reports
   • Would you like to attend the workshop in April/May 2020? Email e23ho@uwaterloo.ca!
2. Cumulative effects data case study (select indicator(s) via arts public surveys)
3. Complete publications for CBPAR phases 2-5 and for the case study