

April ,13 2022

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### **ERO-019-4978 Subwatershed Planning Guide**

The Ontario Society of Professional Engineers (OSPE) is the advocacy body and voice of the engineering profession. Ontario currently has more than 85,000 professional engineers, 250,000 engineering graduates, 6,600 engineering post-graduate students and 37,000 engineering undergraduate students.

OSPE recognizes the significance of watershed management and its importance for the protection of Ontario's natural resources, human and environmental health. We therefore offer a response to the consultation for the proposed guide to sub-watershed planning in Ontario. We understand the guide is intended for sub-watershed planning primarily related to land use and infrastructure planning. The attached documents from the consultation were also reviewed to allow for an effective response to key points in the consultation.

Over many decades, watershed management has evolved in Ontario. A key change is the ecosystem-based approach to water resource and land use management using the boundaries of the sub-watershed.

In Ontario, it has been established that a watershed is an ecosystem-based unit where it is defined by a boundary for managing human activities that have a potential effect on the water resource. The drainage area of the river provides the natural boundary for managing and mitigating human and environmental interactions.

#### **Roles and responsibilities of sub-watershed planning among agencies**

Watershed management should be the responsibility of the Province, while the sub-watershed should be the responsibility of the municipalities. But where borders are concerned, there is a need for constituent municipalities to form partners with knowledgeable agencies under the Conservation Act. This therefore places responsibility on partnered Conservation Authorities. Boundary related concerns include impact of land development on storm and wastewater management, runoffs from farmlands and industries, flood and erosion effects, and protection of heritage areas and Indigenous Communities.

Conservation Authorities should be responsible for implementing local initiatives to educate landowners on their responsibilities as they function within the sub-watershed boundaries. They should take the lead role in regulating potential impacts of farm activities on drinking water sources and establish minimum regulatory requirements for land use and transfer activities like the inspection of septic systems as a condition of deeds or accessing the impact of drilling activities on the ecosystem.

Monitoring and regeneration projects within a sub-watershed should also fall within the jurisdiction of Conservation Authorities.

#### **Relationship between watershed and sub-watershed planning and land use and infrastructure planning**

Watershed plans provide a general overview, whereas sub-watersheds plans typically consist of expanded details of a defined portion that make up the watershed. Similarly, the tributary plans are a more detailed version focused on the impact of the community, its projects, and land development or use. It is critical that resources be made available to

facilitate alignment of subwatershed planning, monitoring and reporting measures throughout the complete watershed.

Page 9 of the Draft Sub-watershed Planning Guide illustrates an idealized path and relationship for watershed and sub-watershed plan / study, consideration should be given to including Indigenous Communities.

#### Purpose and principles of sub-watershed planning

The key purpose of sub-watershed planning is protection and regeneration of the natural resource and developing regulatory frameworks to administer them. Like the watersheds of the Ontario Greenbelt, the policy options are to preserve, protect, and restore the watershed. Most watershed projects are driven by urban development pressures. Some are development projects while others are initiated to address general management issues, rehabilitation or regeneration needs. The shift to the eco-based system is a more strategic approach than the traditional reactive approach.

Setting the stage and aligning interests involve data collection, identifying partners and working with them. Boundaries will often cross municipalities and regions. In this case, municipalities and agencies of different intents (e.g., fishery biologists, water quality experts, soil engineers) need to work together by forming partnerships agencies from their constituent municipalities under the Conservation Act. A Conservation Authority can initiate plans and policies through which the protection of boundaries can be enforced.

#### Recommended steps, approach, and best practices for undertaking sub-watershed planning

The logical and efficient approach to carry out watershed planning is to begin with the watershed plan, then develop a sub-watershed and then further details can be developed in tributary plans and environmental site plans. However, in practice (mostly due to financial constraints), many municipalities and Conservation Authorities develop sub-watershed plans then later integrate them into the overall watershed plan. Perhaps some level of flexibility is required in the draft guide for this.

There has been more focus and attention on the planning part of the management cycle in the Province than on implementation, monitoring, and review. Consideration should be given to standardized review periods where evaluation can be carried out to understand the successes, and lessons learned (across watersheds), so that identified best practices may be incorporated into sub-watershed plan updates.

#### Best Practices for Stakeholder and Indigenous community engagement in the sub-watershed planning process

Indigenous community engagement is consistent with the concept of watershed management as a comprehensive tool for planning water and land use in relation to the environment, and the social and economic well-being of the communities within the watershed. A great deal of information like ecological changes with time, and regeneration needs, can be drawn from the historic and contemporary observations of Indigenous communities. Such observations may guide modelling and simulations for predictions, and in defining measures of watershed health and/or regeneration objectives.

The guidance document should comment on Indigenous community cultural use of watershed flora and fauna, and ensuring that watershed planning ensures the sustainability of the watershed system in supporting key flora and fauna.

Consideration should be given to whether municipalities are sufficiently resourced to meaningfully engage with Indigenous Communities and vice versa. Consideration should be given to Provincial and Federal partnership in funding initiatives summarized in the planning document to promote monitoring, data collection and sharing initiatives, and training opportunities.

#### Tools and considerations to support watershed planning

Continued provincial investment in watershed monitoring and modelling is required to evaluate the impact of Climate Change on watersheds. This data is critical to mitigate hazards to the built environment (e.g. arising from flood hazards), and to limit impact on watersheds arising from development (e.g. ensuring that engineers have appropriate data to design appropriate and resilient stormwater management infrastructure, and that communities maintain the capacity of naturalized buffers).

Climate change and associated necessary adjustments to watershed planning documents may require additional capping or of regulating land use on a parcel of land identified to be within the boundaries of the sub-watershed which may be viewed as conflicting with landowner property rights. This may be challenging as landowners may view it as constraints to maximizing the use of their land and call for significant financial impact. Tools may include educating landowners on effects of activities on sub-watersheds, provision of regulatory incentives, reduced property taxes or land acquisition. Land acquisition is a significant tool for protecting sensitive ecological features especially when other tools like the land use policies do not provide sufficient protection, however, this requires financial support.

Periodic reviews or evaluations should be carried out when natural systems have had enough time to respond to management actions taken for implementation of the sub-watershed plan. Depending on the nature of the action, a timeline may be set at 10 years. The guide should provide consideration to trigger mechanisms – processes that define warning/alert thresholds for degradation, and enhanced monitoring and mitigation measures to be undertaken when specified thresholds are exceeded. Trigger mechanisms may be a means of reviewing and revising the sub-watershed plan in response to changing conditions so that adjustments to the plan may be made proactively.

Thank you for the opportunity to provide feedback on your policy proposal. OSPE would be pleased to elaborate on any points in our submission. If you have any additional questions, please contact Stuart Atkinson, OSPE Public Affairs Manager, at [satkinson@ospe.on.ca](mailto:satkinson@ospe.on.ca).

Sincerely,



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