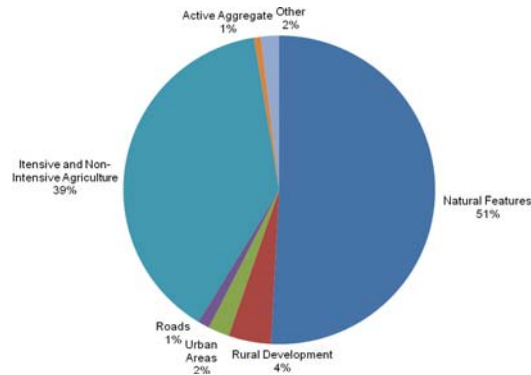


Black River Subwatershed Plan Executive Summary

The Black River subwatershed occupies 375 km² of lands south of the eastern portion of Lake Simcoe. With the headwaters originating on the Oak Ridges Moraine, the Black's watercourses flow mainly through natural features and agricultural areas throughout much of the system before reaching the community of Sutton and the outlet into Lake Simcoe. The subwatershed supports a high level of natural features, as well as a good deal of agriculture. The subwatershed jurisdiction is mainly within York Region, with a small portion falling within Durham Region. The municipalities that fall within its boundaries are Georgina, East Gwillimbury, Whitchurch-Stouffville, and Uxbridge.



Land use distribution in the Black River subwatershed

The land within the Black River subwatershed provides a number of benefits to the river, to Lake Simcoe, and to its residents and visitors. The 50% of subwatershed area that is occupied by natural areas, including a high percentage of wetland, absorb rain and snow melt, maintaining groundwater levels and baseflow, helping to prevent flooding and erosion, and improving water quality. These areas also provide habitat for a wide variety of species, as well as numerous nature-based recreation opportunities. In addition, the Black's agricultural areas, which occupy close to 40% of the subwatershed, provide a close-to-market supply of fresh vegetables, as well as

opportunities for infiltration. The Black's natural features and greenspaces provide its urban residents with the connection with nature that so many of them value. In a study undertaken to estimate the value of the services provided by the subwatershed's ecosystem, it was found that it would cost close to \$180 million to replace these natural services with man-made solutions. Given the immense intrinsic and monetary value of the subwatershed's features, the development of this subwatershed plan is an important step in ensuring that these services continue to be performed economically, while balancing the other demands on the subwatershed such as urban growth, agriculture, industrial, and recreational uses in a truly integrated fashion.

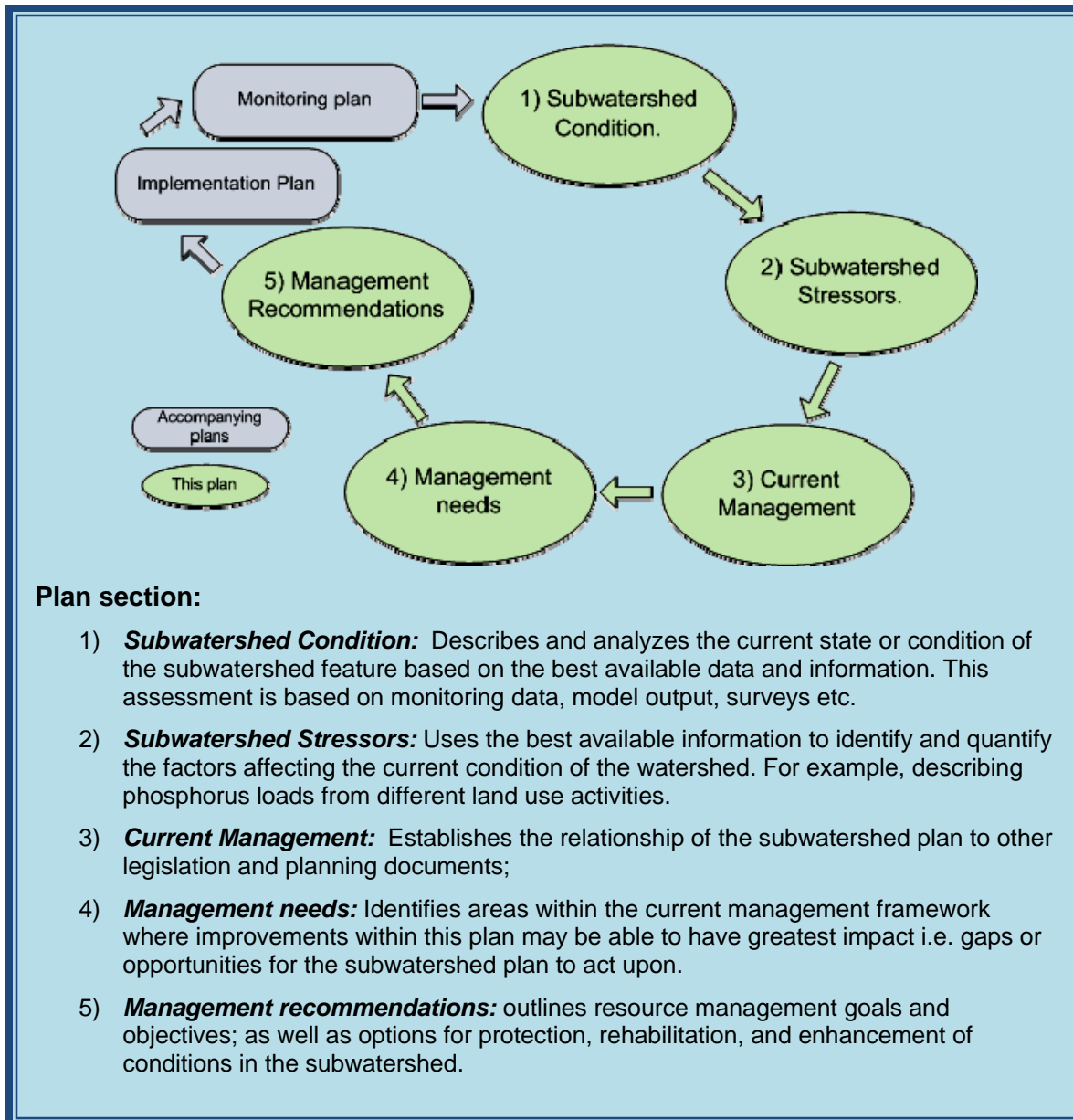
In spite of the benefits provided by its natural areas, the Black River is showing some signs of stress from anthropogenic land uses. For example, in the 2008 Watershed Report Card, the Black River received low grades for the amount of urban area with stormwater controls, and the fish community received a 'C' grade. In addition, phosphorus concentrations in the subwatershed regularly exceed the provincial water quality objective. Much of the stress in the subwatershed can be attributed to the very large extent of agricultural land use in the subwatershed, as well as several urban areas located throughout the system, such as Mount Albert and Sutton. Impacts from the agricultural areas include the removal of riparian vegetation, the input of sediment-laden sediment which impacts both water quality and the habitat of fish and benthic invertebrates, the use of large volumes of water for irrigation, channelization, and the rapid conveyance of stormwater directly to area watercourses by tile drainage. In the Black's urban areas, impacts from the high level of impervious surfaces include decreased infiltration of rain and melt water, which can result in low groundwater levels and reduced baseflow in area watercourses; impacts to water quality as contaminants are carried with stormwater runoff; instability and erosion of streambanks and other geomorphological impacts; effects on stream habitat such as sediment deposition or disruption of natural riffle-pool sequences, resulting in

changes to the composition of aquatic communities; and impacts on biodiversity. These impacts can be particularly detrimental in those areas of the subwatershed that lack stormwater controls, which are prevalent in this subwatershed. In addition, there are issues associated with other activities in the subwatershed such as recreation and industrial uses, including water consumption, the introduction of invasive species, and the input of nutrients and other contaminants into area watercourses. Another source of stress in the subwatershed is the removal of wetlands for peat extraction. The cumulative effects of these activities have caused some impacts in this fairly healthy subwatershed.

There have been some successes in addressing some of the concerns in the Black River subwatershed. Initiatives such as the completion of streambank erosion control projects, tree plantings, establishment of riparian vegetation, and other BMPs will help to improve conditions with respect to bank stability, water quality and quantity, and aquatic and terrestrial natural heritage in the subwatershed.

The Black River subwatershed is scheduled to experience some growth in the coming years; the Provincial Places to Grow Plan identifies that population and employment growth will occur in the Lake Simcoe watershed. Provincial growth forecasts have been allocated to all municipalities in the Region. In the Black River subwatershed, both the communities of Sutton and Mount Albert are expected to grow, though the population is not expected to increase as dramatically as in other subwatersheds in York Region. However, along with the housing that will have to be built to accommodate these new subwatershed residents, new employment lands, shopping centres, and schools will also be required to meet their needs. In addition to the above, in order to service these increases in population and employment, critical municipal infrastructure projects, including roads, municipal sewers and treatment facilities and water supply systems will also need to be built, maintained and expanded in the subwatershed. This will result in increased levels of impervious surfaces and its associated impacts, combined with a reduction in the natural features that help to mitigate these impacts. These changes, as well as the unknown impacts that climate change may bring to the subwatershed, will have a significant effect on the health of the subwatershed if measures are not taken to mitigate them.

To build on the successes of the projects initiated so far, and to mitigate impacts of the changes that are to come, a comprehensive, integrated subwatershed plan is needed for the Black River subwatershed. The plan that follows is intended to provide the blueprint for the conservation authority, the municipalities, and subwatershed stakeholders to move forward and continue the important work that has been completed in order to mitigate the impacts of land use changes and improve conditions in the subwatershed. It includes chapters dedicated to each of five subwatershed parameters, these being water quality, water quantity, aquatic habitat, fluvial geomorphology and terrestrial natural heritage, although it is acknowledged that all of these parameters are related and certainly interact with each other. Each chapter is loosely structured around a state-pressure-response framework, in that each chapter firstly describes the current condition (state), secondly describes the stressors likely leading to the current condition (pressure), and finally recommends management responses in the context of the current management framework (response) (See text box below).



The management responses (high level recommendations) fall into eight broad categories, these being:

- A. Planning and Policy
- B. Use of Better Management Practices
- C. Changing the Way Things Are Done 'On the Ground'
- D. Applied Research and Science
- E. Monitoring (Surveillance, Compliance, and Reporting)
- F. Management, Rehabilitation, and Restoration
- G. Adaptive Response (Climate, Social, Political)
- H. Communications

From these recommendations fall a number of detailed recommendations, the implementation of which will help to meet the plan's goals and objectives. These detailed recommendations will form the implementation plan, a document which will assign responsibilities, develop timelines, estimate costs, and set priorities for undertaking the actions that will need to be taken in the Black River subwatershed. Input from the subwatershed municipalities, conservation authority staff, stakeholders and members of the public will be incorporated through the process of developing the implementation plan. Implementing the recommended actions of this plan is a huge undertaking with respect to both the funding and human resources that will be needed, and will require assistance from all of these subwatershed partners.

Undertaking the actions outlined in the implementation plan will help to protect the existing natural resources, facilitate informed planning decisions, and improve the efficiency of the development review process. An over-arching concept to keep in mind throughout the subwatershed planning process is that it is far more beneficial, both financially and ecologically, to protect resources from degradation than to rehabilitate them once they have been damaged. These plans support this concept, and provide alternatives for instances where it may not be possible to maintain the Black's resources in their natural state.

The implementation plan will identify actions to be undertaken in both the short and the long term. However, the subwatershed plan will be reviewed on a regular basis as part of the adaptive management framework to ensure the effectiveness of the actions being undertaken. Depending on the state of the subwatershed the subwatershed and implementation plan may be updated at that point in order to incorporate the most up to date information on the subwatershed state and to incorporate any new tools and practices that may be used. By undertaking these regular evaluations and updates, the partners can ensure that all of the necessary steps are being taken in order to achieve the goal of a maintaining a healthy Black River subwatershed.