Black/Harmony/Farewell Creek Watershed

Harmony Creek Subwatershed

BLACK/HARMONY/FAREWELL CREEK WATERSHED EXISTING CONDITIONS REPORT INTRODUCTION

Draft
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DURHAM REGION

Central Lake Ontario Conservation

TABLE OF CONTENTS

1.0 INTRODUCTION.....2

2.0 STUDY AREA AND SCOPE 3

3.0 METHODOLOGY 5

4.0 CONCLUSION.....7

Appendix A – Stakeholders & Agency Questionnaire.....8

LIST OF FIGURES

Figure 1: Black/Harmony/Farewell Creek watershed..... 4

1.0 INTRODUCTION

Central Lake Ontario Conservation Authority (CLOCA) is in the process of preparing updated watershed management plans for each of the major watersheds within its jurisdictional boundaries. The watershed plan for Oshawa Creek was the first to be completed. In the last few years, enactment of new provincial legislation and policies, like the Oak Ridges Moraine Conservation Act and Oak Ridges Moraine Conservation Plan, Clean Water Act, the 2005 Provincial Policy Statement (PPS), and source water protection initiatives have placed a greater emphasis on the need for watershed plans. In fact, the Oak Ridges Moraine Conservation Plan (ORMCP) requires watershed plans to be completed for all watersheds within the Moraine. The headwaters of the Lynde, Oshawa, Harmony, Black, Farewell and Bowmanville/Soper Creek watersheds originate from the Oak Ridges Moraine. The Black Harmony Farewell Creek watershed will be the second watershed plan in CLOCA's jurisdiction that will satisfy the requirements of the Oak Ridges Moraine Conservation Plan.

'the Central Lake Ontario Conservation Authority is in the process of preparing updated watershed management plans'

2.0 STUDY AREA AND SCOPE

Black/Harmony/Farewell Creeks and its tributaries drain a combined area of approximately 108 km^2 (Figure 1). This watershed is located entirely within the Regional Municipality of Durham and traverse through two local municipalities: the City of Oshawa and the Municipality of Clarington. The headwaters of the Black/Harmony/Farewell Creek watershed originate in the south slope till plain of the Oak Ridges Moraine (ORM). The watershed's creeks continue downstream and join at two locations. The first being where the Black Creek joins the main branch of the Farewell Creek immediately north of Highway 2 in Courtice, and the second being where the Harmony tributaries join the Farewell Creek branch south of Highway 401. This creek system then outlets into Lake Ontario through a diversion channel just west of Oshawa Second Marsh Provincially Significant Wetland (PSW) Complex.

'the watershed is located entirely within the Regional Municipality of Durham and traverse through two local municipalities: the City of Oshawa and the Municipality of Clarington.'

In addition to the ORM, the Lake Iroquois Beach represents another major landform within the watershed. The Lake Iroquois Beach crosses in an east-west direction through the centre of the watershed. The cultural landscape of the Black/Harmony/ Farewell Creek watershed is dominated by farmlands south of the Oak Ridges Moraine. The urban areas of the City of Oshawa and Municipality of Clarington occupy most of the south portion of the watershed, with the publicly owned Oshawa Second Marsh forming the dominant open space on the Lake Ontario waterfront. The Harmony-Farewell Iroquois PSW Complex is located within the central portion of the watershed and a portion of which lies within special study areas as designated by the Municipality of Clarington Official Plan. There are three hamlets located within the Black/Harmony/Farewell Creek watershed. Mitchell Corners and Solina are both located in Clarington, while a very small portion of the Hampton hamlet is captured within the Black/Harmony/Farewell Creek watershed boundary.

Farewell Creek subwatershed

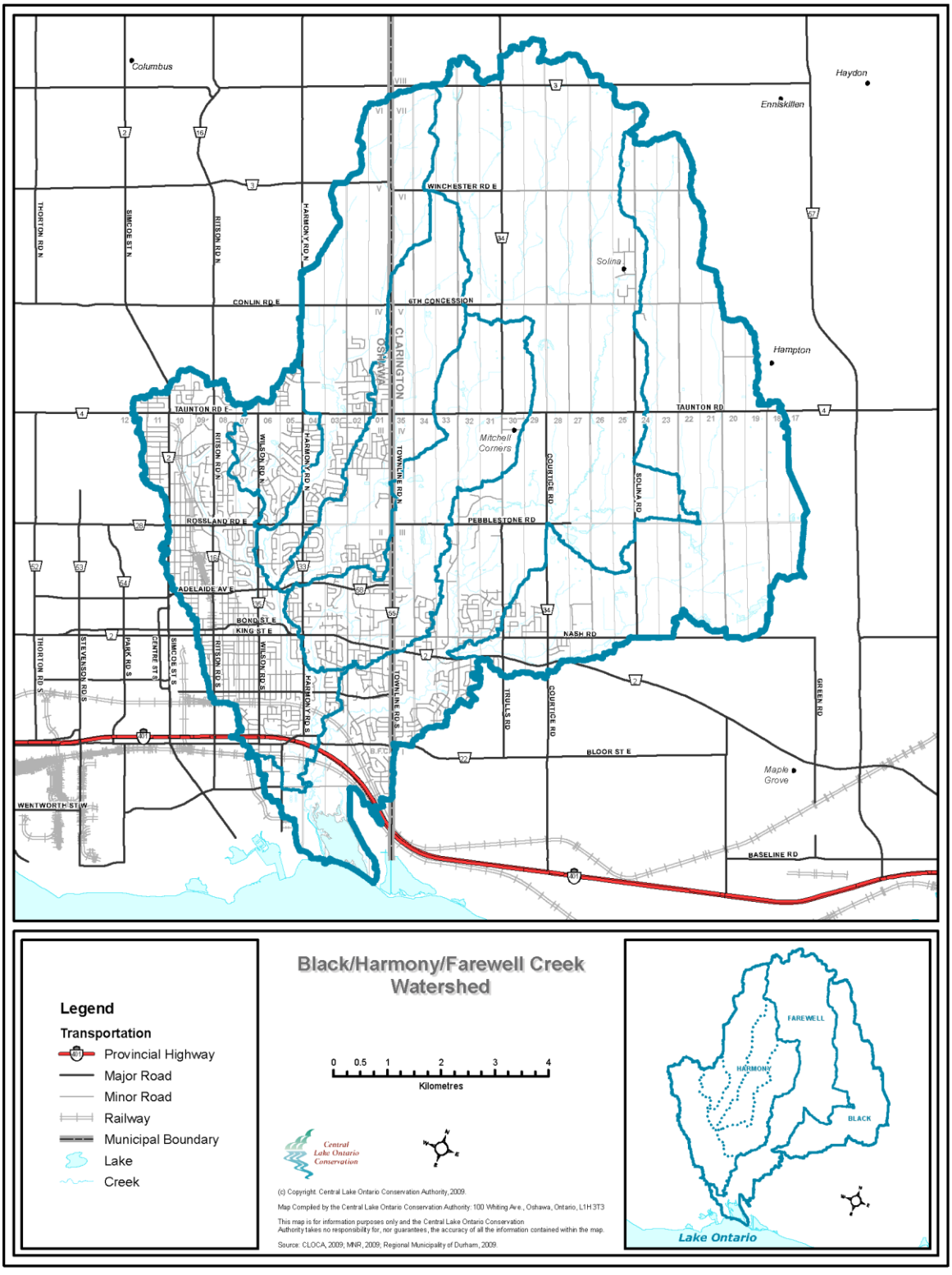


Figure 1: Black/Harmony/Farewell Creek watershed

3.0 METHODOLOGY

When dealing with the natural environment, it makes the most sense to make management decisions based upon nature's boundaries. A watershed is the area where all water drains towards one common water body. The size and scale of a watershed can range from that of a small tributary to the drainage area of the Great Lakes Basin or larger, an ocean. A watershed plan examines the health and functionality of a watershed and seeks the answer to the question, "what do we need to do to have a healthy watershed?"

To answer this question, the structural and functional parts of the watershed ecosystem and how they work together are examined. These components include environmental features such as landscapes, fish and wildlife habitats and communities, groundwater and surface water, as well as natural processes such as erosion and flooding. In addition to examination of the environmental features, cultural and historic use of the watershed by humans, plans for future growth and development within the watershed, are also examined. Having assessed the historic and existing conditions, an examination of the impacts that are predicted to occur due to future human and natural influences can be undertaken, providing for an assessment of natural systems and a prediction of the watershed's future health. A completed watershed plan provides a solid foundation upon which to make environmentally sound decisions that will maintain and improve the watershed's future health. It also provides a basis on which planning decisions can be made having regard for potential cumulative impacts of change on all components of the ecosystem.

A watershed management plan may be summarized as "...a document developed co-operatively by government agencies and other stake-holders to manage water, land/water interactions, aquatic life and aquatic resources within a particular watershed (the land drained by a river and its tributaries) in order to protect the health of the ecosystem as land uses change"

Water Management on a Watershed Basis, (MNR & MOEE, 1993)

With the passage of the Oak Ridges Moraine Conservation Plan (ORMCP), specific requirements have been set out that must be addressed when preparing a watershed plan. Many of these requirements are similar to the standard set of study components that are often used in watershed plans. However, the ORMCP has a stronger emphasis on ground and surface water quality/quantity and water budgets. In addition, the 2005 Provincial Policy Statement (PPS) requires planning authorities to identify those natural features that are necessary to the hydrological and ecological integrity of the watershed. Notwithstanding this, it is important to recognize that each watershed has its own unique characteristics and that a watershed study must be specifically designed in order to place necessary emphasis on the key characteristics of the individual watershed in addition to meeting legislative requirements.

This watershed plan will be undertaken in 3 phases. The first phase, the Existing Conditions Report, provides an assessment of the state of the watershed by examining the following components: human heritage; green space; land use and policy; impervious surfaces; air quality; climate; physical geography; water budget; water temperature; surface water quality; surface water quantity; stormwater management; fluvial geomorphology; hydrogeology; aquatic habitat and fisheries; terrestrial natural heritage; and wetlands. Each component is summarized in its own

stand-alone chapter, with 18 such chapters comprising the Existing Conditions report. This report will be the basis for establishing the current state of the Black/Harmony/Farewell Creek watershed. Each of these components has been prepared by technical experts drawing upon the current knowledge base and data that is available to CLOCA. It is anticipated that there will be gaps in the information. A critical gap analysis will be undertaken that will determine priorities in addressing these gaps in the next phase.

During the first phase, XXX (to be determined) letters were sent to stakeholders and agencies notifying of the release of the draft existing conditions report, request for comments, request to complete an online survey (see AppendixA: Stakeholders and Agency Questionnaire) and notification of the upcoming public information session. This information was also posted on CLOCA's website and advertisements of the public information session will be posted in local newspapers.

A public information session of the draft existing conditions report will be held in December 2009 at the Courtice Community Centre. The session is designed to share CLOCA's information with the public and also to gain additional information and comments. After this information session is held, the existing conditions report will be refined and finalized. In all, a total of XXX (to be determined) completed surveys and XXX (to be determined) comments were received.

The second phase will be the development of alternative management options, management recommendations and the identification of preferred management options. Possible future impacts to the watershed and its resources will be identified and assessed, including consideration of the impact of population growth, intensification in farming practices, and the predicted climate change. Management options will include recommendations for land development and recommendations for private and public land stewardship programs and agency initiatives. This phase will end with a public information session, seeking opinions from the public and stakeholders with respect to the management options and recommendations.

'with the start of the first phase, a questionnaire was sent to stakeholders and agencies'

Taking the input received during the second phase, the third and final phase will confirm the recommended management options and include an implementation and monitoring plan. The implementation plan will identify tools and programs that will support achieving the objectives of the recommended management option. Monitoring the effectiveness of the implemented recommendations is important to assess not only the outcome, but how the outcome was achieved. The recommended management options, implementation and monitoring plan will be presented to the public and stakeholders and will complete the watershed plan for the Black/Harmony/Farewell Creeks.

4.0 CONCLUSION

It is recognized that watershed management plans are tools to be used to assist in making responsible management choices about watercourses and their surrounding environments. The plan's recommendations are to be implemented by the various watershed partners and stakeholders. Through the development of this plan, public awareness of water related issues in the face of increasing urbanization and resource demands will be increased. The watershed plan will also be used as a foundation for identification of stewardship projects and programs as the plan will identify where stewardship can be focused and the types of stewardship activities and programs that would provide the greatest benefit to the overall health of the watershed.

'the plan's recommendations are to be implemented by the various watershed partners and stakeholders'

Black Creek subwatershed

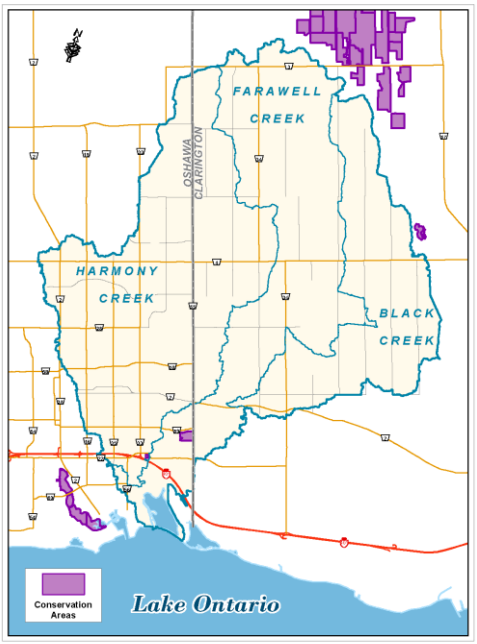
WHAT WE DO ON THE LAND IS MIRRORED IN THE WATER

Appendix A

Central Lake Ontario Conservation

Survey: Black/Harmony/Farewell Creek Watershed Management Plan

Black/Harmony/Farewell Creek Watershed Management Plan Moves Forward! Your Input Is Needed!



The Central Lake Ontario Conservation Authority (CLOCA) is launching the development of a watershed management plan for the Black/Harmony/Farewell Creeks. Management of a watershed is a shared responsibility, therefore public and stakeholder participation throughout the planning and compilation of the Plan is very important.

Your participation in this survey is valued. **Please take a few minutes to complete this short online survey at www.cloca.com by January 31st 2010.** *An information sheet about watershed planning is attached.*

1. Stakeholder Contact Information

Name: _____

Affiliation: _____

Address: _____ City: _____ Postal Code: _____

2. Email Address: _____

3. The following topics will be incorporated into the watershed plan and will contribute to the development of an action plan for implementation. Of these topics, which would be of interest to you?

√ (check all that apply)

- ☐ Human Heritage *(history of the people)*
- ☐ Green Spaces *(open spaces, parks, trail systems)*
- ☐ Land Use and Policy *(land development, planning policy, existing land use)*
- ☐ Aquatic Habitat and Species *(fish, etc.)*
- ☐ Terrestrial Natural Heritage *(flora and fauna)*
- ☐ Wetlands
- ☐ Air Quality
- ☐ Climate *(patterns and trends)*
- ☐ Physical Geography *(physical features of the landscape)*
- ☐ Water Temperature *(stream)*
- ☐ Water Quality *(groundwater and surface water)*
- ☐ Fluvial Geomorphology *(stream and valley characteristics)*
- ☐ Hydrogeology *(groundwater)*
- ☐ Surface Water *(streams, ponds)*
- ☐ Water Use *(volumes taken from surface water or groundwater)*
- ☐ Water Conservation
- ☐ Stormwater Management
- ☐ Other *(please specify)* _____

4. Referencing the topic(s) you've identified in Question 3, can you think of any issues that should be addressed in the Plan?

Yes ☐ No ☐ If yes, please describe.

5. How would you address and/or resolve the issues that you identified above?

6. Do you have any additional information such as bird sightings, high water/low water levels, etc., within the Black/Harmony/Farewell Creek Watershed that you wish to share with CLOCA? If so, please provide this information in the space below.

7. Are there other organizations with interest in the Black/Harmony/Farewell Creek Watershed that you feel may be interested in completing this questionnaire?

Yes ☐ No ☐ If yes, please provide contact information: Name: _____

Phone: _____ Email: _____

8. Do you wish to receive future study updates or notifications regarding the progress of the preparation of the Black/Harmony/Farewell Creek Watershed Management Plan?

Yes ☐ No ☐

9. If yes to Question 8, which method of communication do you prefer? ☐ Email ☐ Mail

10. Do you have any additional comments?

**** Please complete this survey online at www.cloca.com by January 31st, 2010.**
THANK YOU for PARTICIPATING in this Survey. Your INPUT is VALUED!

If you have any questions or comments regarding this survey or the general watershed planning process, please contact:

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Black/Harmony/Farewell Creek Watershed Management Plan Information

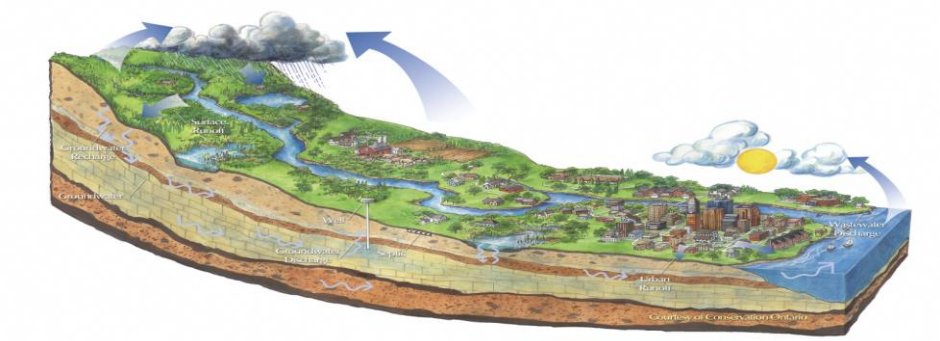
Watershed Facts

The **Black/Harmony/Farewell Creek Watershed** covers an area of over 108 km^2 or 10800 hectares. The watershed is located within the City of Oshawa and the Municipality of Clarington. The headwaters of the Black/Harmony/Farewell Creeks originates in the south slope till plain of the Oak Ridges Moraine and drains south to Lake Ontario.

What is a Watershed Management Plan?

"Everything is connected to everything else"

This is no truer than within a watershed where the relationships between various resources, land uses, human activity and other factors including climate are inextricably linked.



We all live within a watershed and our activities can have either a positive or negative effect on the water, natural spaces and health of the watershed and ultimately the health of your community. A watershed management plan examines the environment and assesses the relationships between these elements. From this information the foundation upon which to make environmentally sound decisions to maintain and improve a watershed's future health is derived.

How are Plans developed?

To start, the existing features and functions within the watershed are identified. Watershed targets comprised of goals and objectives depicting the desired conditions for the watershed are then established. These goals and objectives provide the direction for planning and management of the watershed. Alternative management options are developed and evaluated and a preferred management strategy is selected.

To determine whether the strategies and recommendations of the management plan are effective in achieving the desired outcomes, it is critical to monitor various parameters (such as water quality or fish populations) before and after the plan's implementation.