

# GREENWOOD

Conservation Lands  
Master Plan

August 2014





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## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>IV</b>	4.5 Public Use .....	30
<b>1 Introduction .....</b>	<b>1</b>	4.6 Trails .....	31
1.1 Overview .....	1	4.7 Site Securement & Protection .....	32
1.2 Context .....	2	4.8 Community Outreach and Engagement .....	33
1.2.1 The Living City Vision .....	2	4.8.1 Stewardship Committee .....	33
1.2.2 TRCA's Terrestrial Natural Heritage System Strategy (2007) .....	2	4.8.2 Trail Captain Program .....	33
1.2.3 A Watershed Plan for Duffins Creek and Carruthers Creek (2003) .....	7	4.8.3 Outreach Materials .....	34
1.2.4 Rouge, Duffins, Highland, Petticoat Valley Conservation Report (1956) .....	7	4.9 Economic Considerations .....	34
1.2.5 Brock Lands Restoration Plan (2011) .....	8	4.10 Integration into the GCL .....	34
1.2.6 Greenwood Conservation Area Management Plan (2005) .....	8	<b>5 Public Use and Recreation Plan .....</b>	<b>35</b>
1.3 Study Process .....	9	5.1 Public Use and Recreation Plan .....	35
1.3.1 Technical Advisory Committee .....	10	5.2 Development of Recommendations .....	36
1.3.2 Public Advisory Committee .....	10	5.2.1 Evaluation of Recommendations .....	38
1.3.3 Public Consultation .....	11	5.3 Public Use and Recreation Plan .....	38
1.3.4 Aboriginal Engagement .....	11	5.3.1 Recreation Plan – Recommendations .....	40
1.4 Location, Site Description and Resource Uses ...	12	5.3.2 Recreation Plan – Additional Recommendations .....	41
1.5 Greenwood Conservation Area and Rodar Property .....	12	<b>6 Trail Plan .....</b>	<b>42</b>
1.6 Brock North and South (Brock Lands) .....	13	6.1 Introduction .....	42
<b>2 Vision, Goals and Objectives .....</b>	<b>16</b>	6.2 Existing Trails .....	42
2.1 A Vision for Greenwood Conservation Lands .....	16	6.2.1 Current Greenwood Conservation Area Trails .....	42
2.2 Master Plan Goals and Objectives .....	17	6.2.2 Rodar Property Trails .....	44
2.2.1 Natural Heritage .....	17	6.2.3 Existing Brock North and South Trails .....	44
2.2.2 Public Use and Recreation .....	17	6.3 Trail Plan Objectives .....	44
2.2.3 Cultural Heritage .....	18	6.4 Greenwood Conservation Lands – Trail Plan .....	45
<b>3 Management Zones .....</b>	<b>19</b>	6.4.1 Trail Features .....	45
3.1 Management Zones .....	19	6.4.2 Trail Infrastructure .....	50
3.2 Determining and Defining the Management Zones .....	19	6.5 Monitoring and Review .....	52
3.3 Mapping the Management Zones .....	21	6.5.1 Trail Plan .....	52
<b>4 Management Recommendations .....</b>	<b>26</b>	6.5.2 GCL Trails .....	52
4.1 Introduction .....	26	6.6 Summary .....	52
4.2 Natural Heritage Protection .....	27	<b>7 Implementation .....</b>	<b>53</b>
4.2.1 Hydrology .....	27	7.1 Plan Implementation Schedule .....	53
4.2.2 Invasive Species .....	28	7.2 Partnership Opportunities .....	56
4.2.3 Species of Concern .....	28	7.3 Stewardship Committee .....	56
4.3 Restoration .....	29	7.4 Agency and Municipal Stewardship .....	57
4.4 Cultural Heritage .....	30	7.5 Public Use .....	57
		7.6 Safety and Security .....	57
		7.7 Endorsement and Maintenance of the Master Plan .....	58
		7.8 Plan Review and Amendment .....	58
		7.9 Conclusion .....	58



## TABLE OF CONTENTS

<b>REFERENCES</b> .....	<b>59</b>	<b>APPENDIX 5</b> – Greenwood Conservation Area User Survey Summary & Comments .....	<b>69</b>
<b>APPENDICES</b> .....	<b>61</b>	<b>APPENDIX 6</b> – Stream Impacts Associated with Off-leash Dog Walking .....	<b>73</b>
<b>APPENDIX 1</b> Duffins Creek Watershed Plan Summary .....	<b>61</b>	<b>APPENDIX 7</b> – Greenwood Conservation Area, Trail User Monitoring Survey Summary .....	<b>74</b>
<b>APPENDIX 2</b> – TRCA Board Resolutions relating to the Greenwood Conservation Lands .....	<b>61</b>	<b>APPENDIX 8</b> – Municipal Dog Park Review .....	<b>77</b>
<b>APPENDIX 3</b> – GCL Public Meeting Questions and Answer Summary .....	<b>62</b>	<b>APPENDIX 9</b> – Sustainable Design Standards .....	<b>79</b>
<b>APPENDIX 4</b> – First Nations and Métis ENGAGEMENT List .....	<b>69</b>	<b>APPENDIX 10</b> – Trail Monitoring Program .....	<b>81</b>
		<b>APPENDIX 11</b> – TRCA Hazard Tree Policy .....	<b>82</b>

## MAPS

<b>Map 1.1:</b> Greenwood Conservation Lands Study Boundary .....	<b>3</b>
<b>Map 1.2:</b> Greenwood Conservation Lands Watershed Context .....	<b>4</b>
<b>Map 1.3:</b> Greenwood Conservation Lands Existing & Future Land Use .....	<b>5</b>
<b>Map 1.4:</b> Greenwood Conservation Lands Study Boundary with Seaton Natural Heritage Boundary .....	<b>6</b>
<b>Map 3.1:</b> Greenwood Conservation Lands Interim Management Zones .....	<b>22</b>
<b>Map 3.2:</b> Greenwood Conservation Lands Restoration Areas .....	<b>23</b>
<b>Map 3.3:</b> Greenwood Conservation Lands Public Use Opportunities .....	<b>24</b>
<b>Map 3.4:</b> Greenwood Conservation Lands Long Term Management Zones .....	<b>25</b>
<b>Map 5.1:</b> Greenwood Conservation Lands Draft Recreation Concept Plan .....	<b>39</b>
<b>Map 6.1:</b> Greenwood Conservation Lands Trail Plan Existing Trails .....	<b>43</b>
<b>Map 6.2:</b> Greenwood Conservation Lands Trail Plan Work Required .....	<b>46</b>
<b>Map 6.3:</b> Greenwood Conservation Lands Trail Plan .....	<b>47</b>
<b>Map 6.4:</b> Greenwood Conservation Lands Trail Plan with Loops .....	<b>49</b>
<b>Map 7.1:</b> Greenwood Conservation Lands Implementation Plan .....	<b>55</b>
<b>Map A7.1:</b> Greenwood Conservation Lands Trail Plan with TRAFx Trail Counter Locations .....	<b>75</b>

## TABLES

<b>Table 3.1:</b> Management Zone Definitions .....	<b>19</b>
<b>Table 3.2:</b> Management Zone Resource Uses .....	<b>20</b>
<b>Table 7.1:</b> Master Plan Implementation Schedule and Costs .....	<b>54</b>
<b>Table A7.1:</b> Trail Counter Results .....	<b>76</b>

## FIGURES

<b>Figure A5.1:</b> Survey Question #1 Summary .....	<b>70</b>
<b>Figure A5.2:</b> Survey Question #2 Summary .....	<b>70</b>
<b>Figure A5.3:</b> Survey Question #3 Summary .....	<b>70</b>
<b>Figure A7.1:</b> Trail Counter Daily Averages .....	<b>76</b>
<b>Figure A7.2:</b> Trail Counter Hourly Trends .....	<b>77</b>

## EXECUTIVE SUMMARY

The Greenwood Conservation Lands (GCL) are composed of four parcels of land known as Brock North, Brock South, the Rodar Property, and Greenwood Conservation Area (GCA) in the Town of Ajax and the City of Pickering. These lands cover 675 hectares (ha) (1,668 acres) within the East Duffins subwatershed and are home to a wide range of environments including intact mixed forests, open meadows and wetland communities.

Toronto and Region Conservation (TRCA) initiated the preparation of a comprehensive Master Plan for the GCL in 2011, after the acquisition of the Brock Lands from the City of Toronto. The Greenwood Conservation Lands Master Plan was created to protect, conserve and restore the valuable ecological features and functions of the site, while guiding the current and potential future public uses of the area. It is intended to provide a vision of what is possible within the GCL, and motivate partners and supporters to help TRCA achieve that vision. The Greenwood Conservation Lands Master Plan will guide management and use of the property for approximately the next 25 years.

The Master Planning process occurred in several phases that consisted of compiling background materials and research; holding public information and consultation sessions; holding advisory committee meetings; developing the vision, goal and objectives; developing management recommendations; and developing a trail and recreation plan. Additionally, the plan identifies specific management zones for the site that guide both natural and cultural heritage protection and identify recreational opportunities on the site. Detailed plans for future trail systems and recreation opportunities are presented along with a recommended implementation schedule and required budget.

The Greenwood Conservation Lands Master Plan has been designed so that related management issues likely to arise in the future have already been discussed, and recommendations are provided. Although this plan is designed to be in place for 25 years, recommendations and implementation strategies may be revisited through the process of adaptive management to ensure the plan remains adaptable to issues not addressed in this plan.





# 1 INTRODUCTION



## 1.1 Overview

The Greenwood Conservation Lands (GCL) are composed of four parcels of land known as Brock North, Brock South, the Rodar Property, and Greenwood Conservation Area (GCA) in the Town of Ajax and the City of Pickering. Map 1.1 identifies each of the four parcels along with the study boundary of the Master Plan. These lands cover 675 ha (1,668 acres) and are home to a wide range of environments including intact mixed forests, open meadows and wetland communities. Situated within the East Duffins subwatershed, three sensitive watercourses flow through the site: Spring Creek, Brougham Creek and East Duffins Creek. The site has significant cultural heritage features due to use of the land by both First Nations peoples and early European settlers. Along with these natural and cultural heritage features, there are many nature-based recreation opportunities throughout the site.

The [Greenwood Conservation Lands Master Plan](#) was created to protect, conserve and restore the valuable ecological features and functions of the site, while guiding the current and potential future public uses of the area. It is intended to provide a vision of what is possible within the GCL, and motivate partners and supporters to help TRCA achieve that vision.

The Master Planning process occurred in several phases that consisted of compiling background materials and research; holding public information and consultation sessions; holding advisory committee meetings; developing the vision, goal and objectives; developing management recommendations; and developing a trail and recreation plan. Additionally, the plan identifies specific management zones for the site that guide both natural and cultural heritage protection and identify recreational opportunities on the site. Detailed plans for future trail systems and recreation opportunities are presented along with a recommended implementation schedule and required budget.

The [Greenwood Conservation Lands Master Plan](#) will guide management and use of the property for approximately the next 25 years. Various plan components, such as Management Zones, Management Recommendations, Trail Plan and Recreation Plan have been included so that related management issues likely to arise in the future have already been discussed, and recommendations are provided. This Master Planning process has been one that has engaged technical staff of the TRCA and its partners, as well as local interest groups and the public. Although this plan is designed to be in place for 25 years, recommendations and implementation strategies may be revisited through the process of adaptive management to ensure the plan remains adaptable to issues not addressed in this plan.

## 1.2 Context

Situated in the mid-reaches of the Duffins Creek watershed (Map 1.2), the GCL is characteristic of a rural environment, however there are future development plans that will significantly alter the surrounding area. Some of the plans for the area include the development of the Seaton Lands (west of the GCL) into a mixed use community of 70,000 people, the establishment of Rouge Park as Canada's first National Urban Park, and the proposed development of the Pickering Lands site owned by Transport Canada (Map 1.3). The Trail Plan for the Seaton Lands, as outlined in the Seaton Natural Heritage System, links neighbourhoods to each other, as well as to the larger regional trail and open space as seen in Map 1.4. These trail systems will help connect surrounding communities to the GCL.

The long term condition of the GCL will be influenced not only by future development in the surrounding area, but also by various existing plans, such as regional and municipal Official Plans, and TRCA's own [Watershed Plan for Duffins Creek and Carruthers Creek](#). The GCL Master Plan must be consistent with TRCA's vision and objectives as outlined in [Building The Living City: 10-Year Strategic Plan 2013-2022](#). The visions, goals and objectives of the supporting documents have been reviewed and incorporated into the development of the GCL Master Plan.

### 1.2.1 The Living City Vision

The Living City® is a vision based on TRCA's conviction that the future of the planet will be determined in rapidly expanding city regions. The vision is for a new kind of community, The Living City®, where human settlement can flourish forever as part of nature's beauty and diversity. This vision of The Living City® Region has four objectives:

- **Healthy Rivers and Shorelines** - To restore the integrity and health of the region's rivers and waters from the headwaters in the Oak Ridges Moraine, throughout each of the nine watersheds in TRCA's jurisdiction, to the Toronto waterfront on Lake Ontario.
- **Greenspace and Biodiversity** - To protect and restore a regional system of natural areas that provide habitat for plant and animal species, improve air quality and provide opportunities for the enjoyment of nature.
- **Sustainable Communities** - To facilitate broad community understanding, dialogue and action toward integrated approaches to sustainable living and city building that improves the quality of life for residents, businesses and nature.

- **Business Excellence, a Green Economy and Responsive Governance** - To produce continuous improvement in the development and delivery of all programs through creative partnerships, diverse funding sources, and careful auditing of outcomes and effectiveness.

Toronto and Region Conservation maintains the responsibility to ensure the conservation, restoration and responsible management of Ontario's water, land and natural habitats located within TRCA's jurisdiction. This is accomplished through the development and implementation of programs and reports that aim to balance human, environmental and economic needs.

Five key TRCA Watershed strategies have been integrated into this Master Plan:

- [Terrestrial Natural Heritage System Strategy \(2007\)](#)
- [A Watershed Plan for Duffins Creek and Carruthers Creek \(2003\)](#)
- [Rouge, Duffin, Highland, Petticoat Valley Conservation Report \(1956\)](#)
- [Brock Lands Restoration Plan \(2011\)](#)
- [Greenwood Conservation Area Management Plan \(2005\)](#)

### 1.2.2 TRCA's Terrestrial Natural Heritage System Strategy (2007)

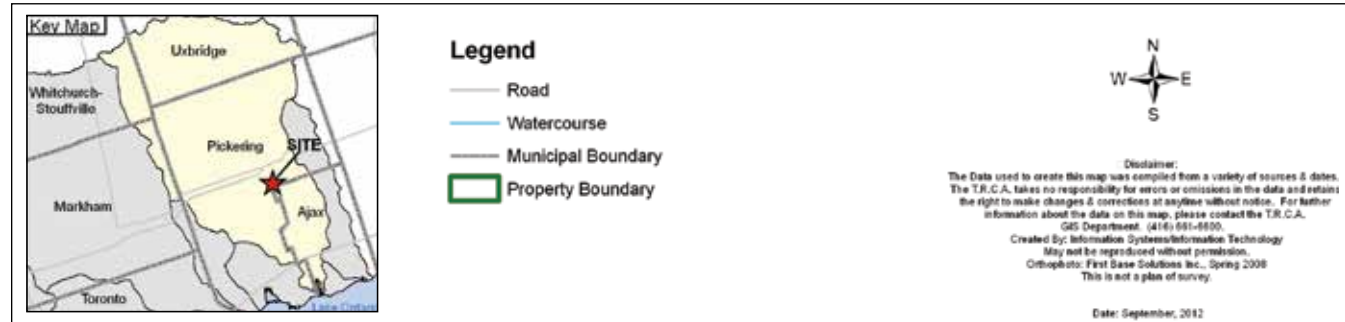
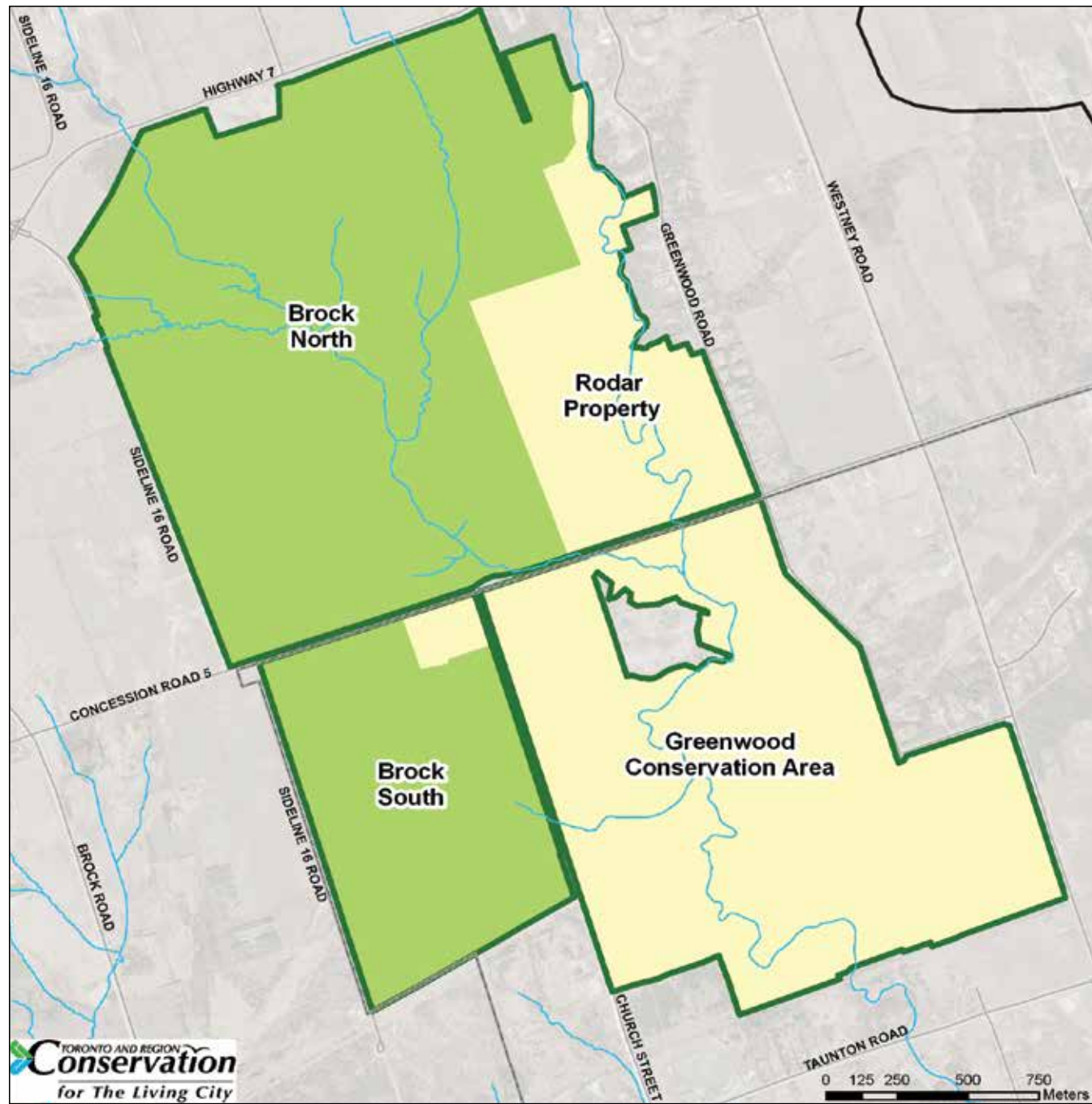
The [Terrestrial Natural Heritage System Strategy](#) recognizes the implications of rapid urbanization in the Greater Toronto Area and is based on two principles:

- That rare species protection alone is not enough for ensuring regional health; and
- That the protection of more than just "significant sites" is needed to ensure regional health.

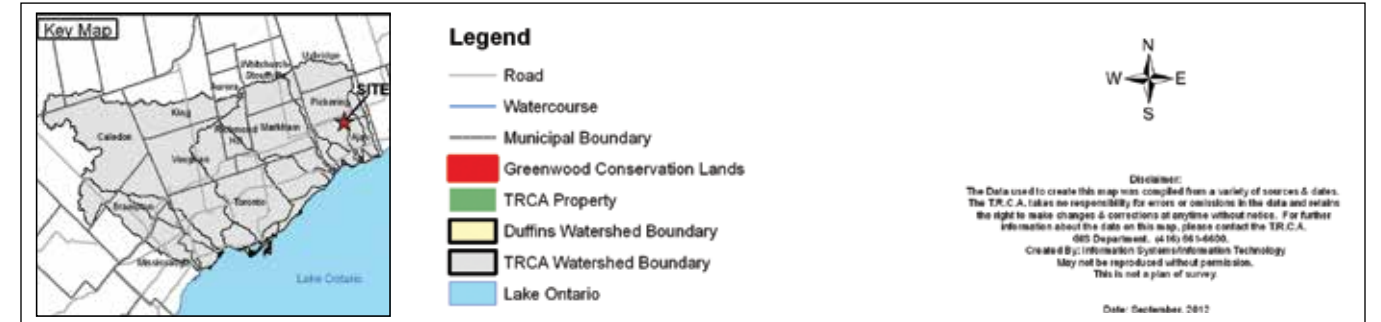
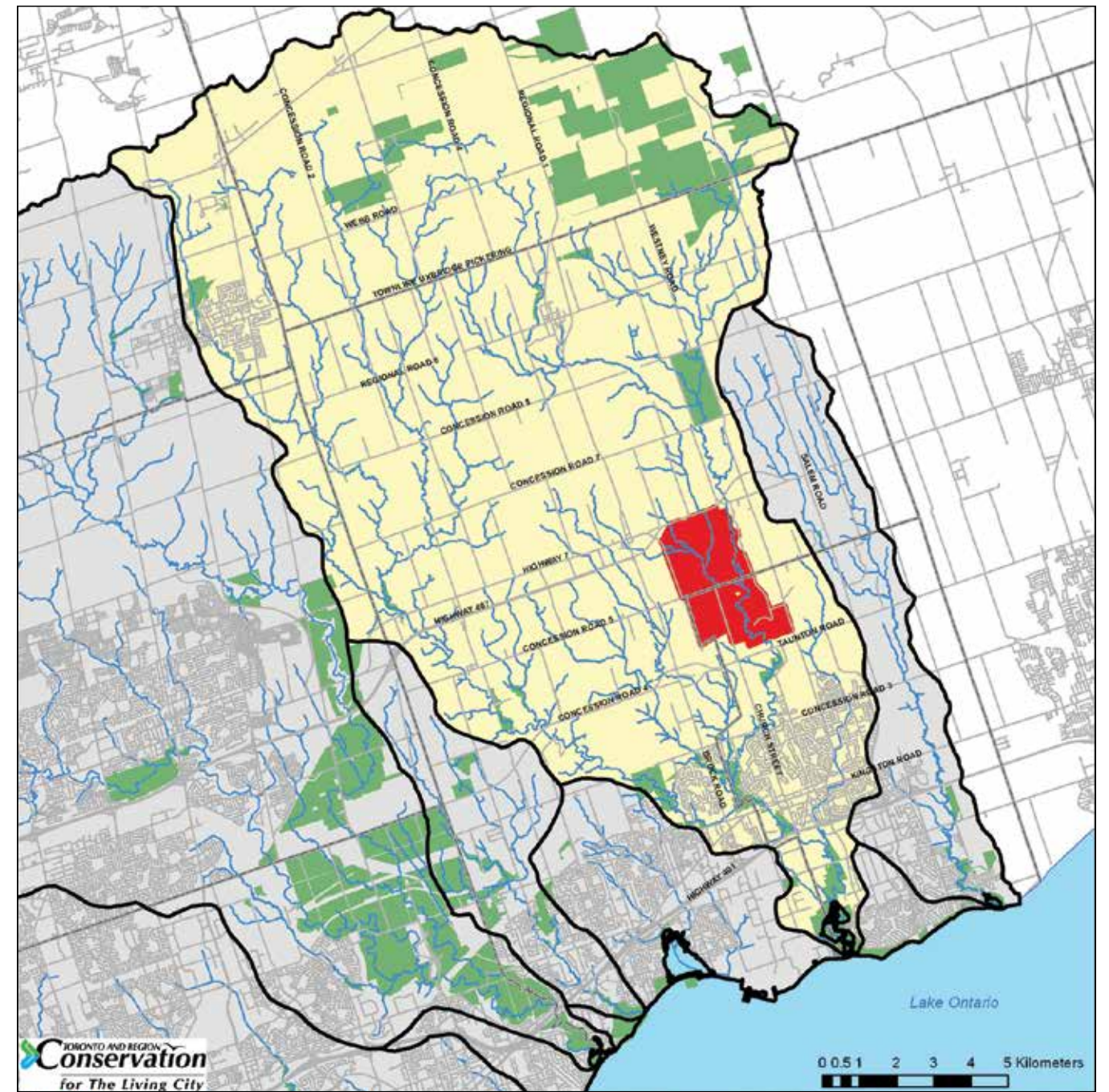
This approach considers the site within the context of the region and regional pressures. It provides clear and detailed direction for gathering and analyzing information about natural habitats, vegetation communities, and species and forms the basis for developing strategies for protection and restoration. This approach moves beyond the contemporary model of defining natural heritage systems based on a series of cores and corridors. It recognizes that all habitat patches have some value and make a contribution toward ecological health across the landscape. This approach evaluates a site's contribution at three levels:



Map 1.1: Greenwood Conservation Lands Study Boundary

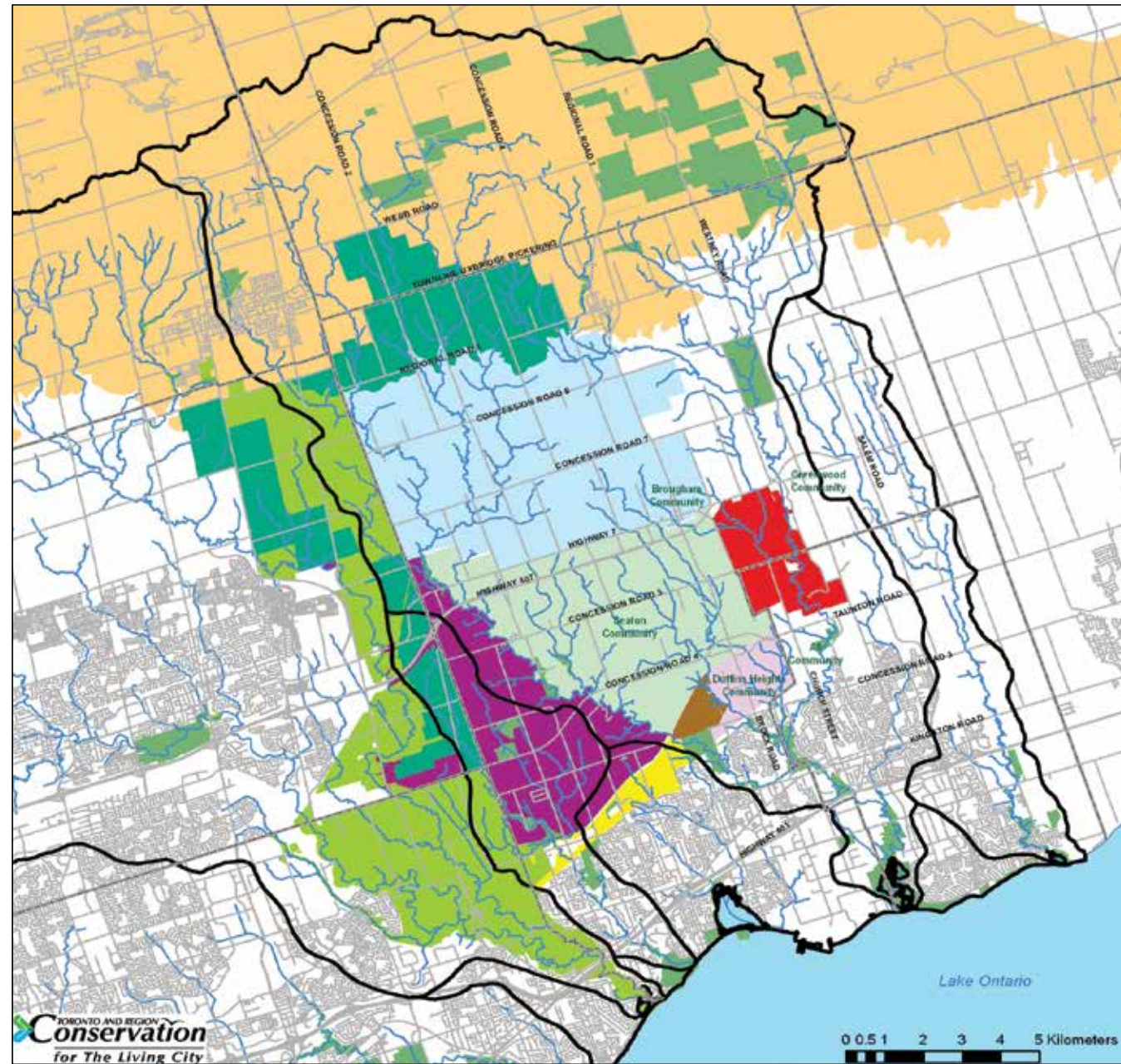


Map 1.2: Greenwood Conservation Lands Watershed Context

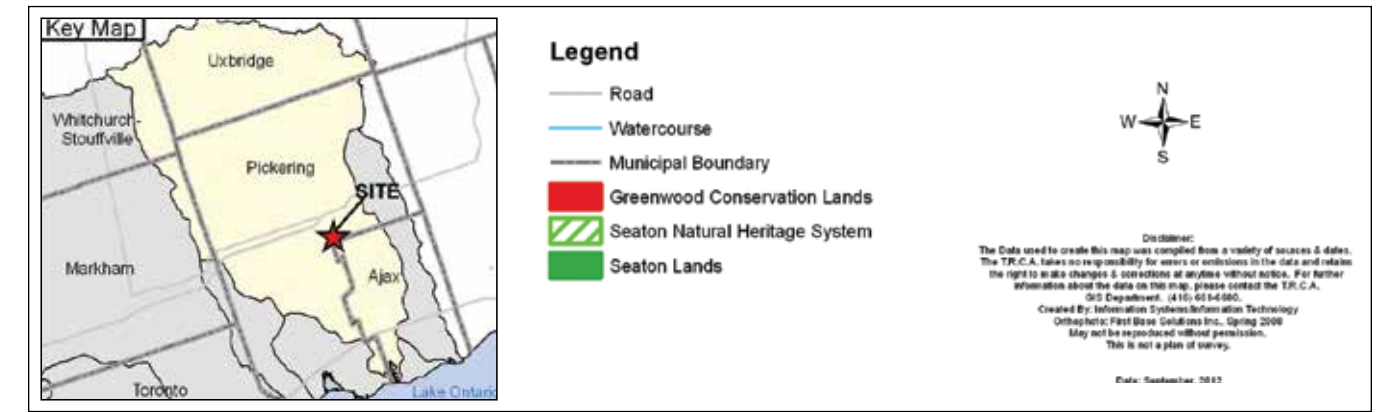
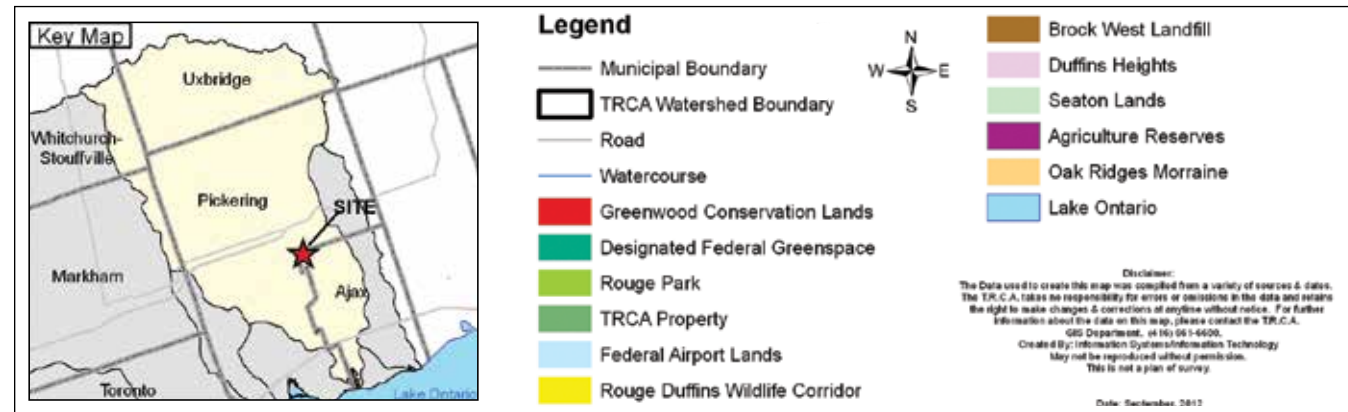
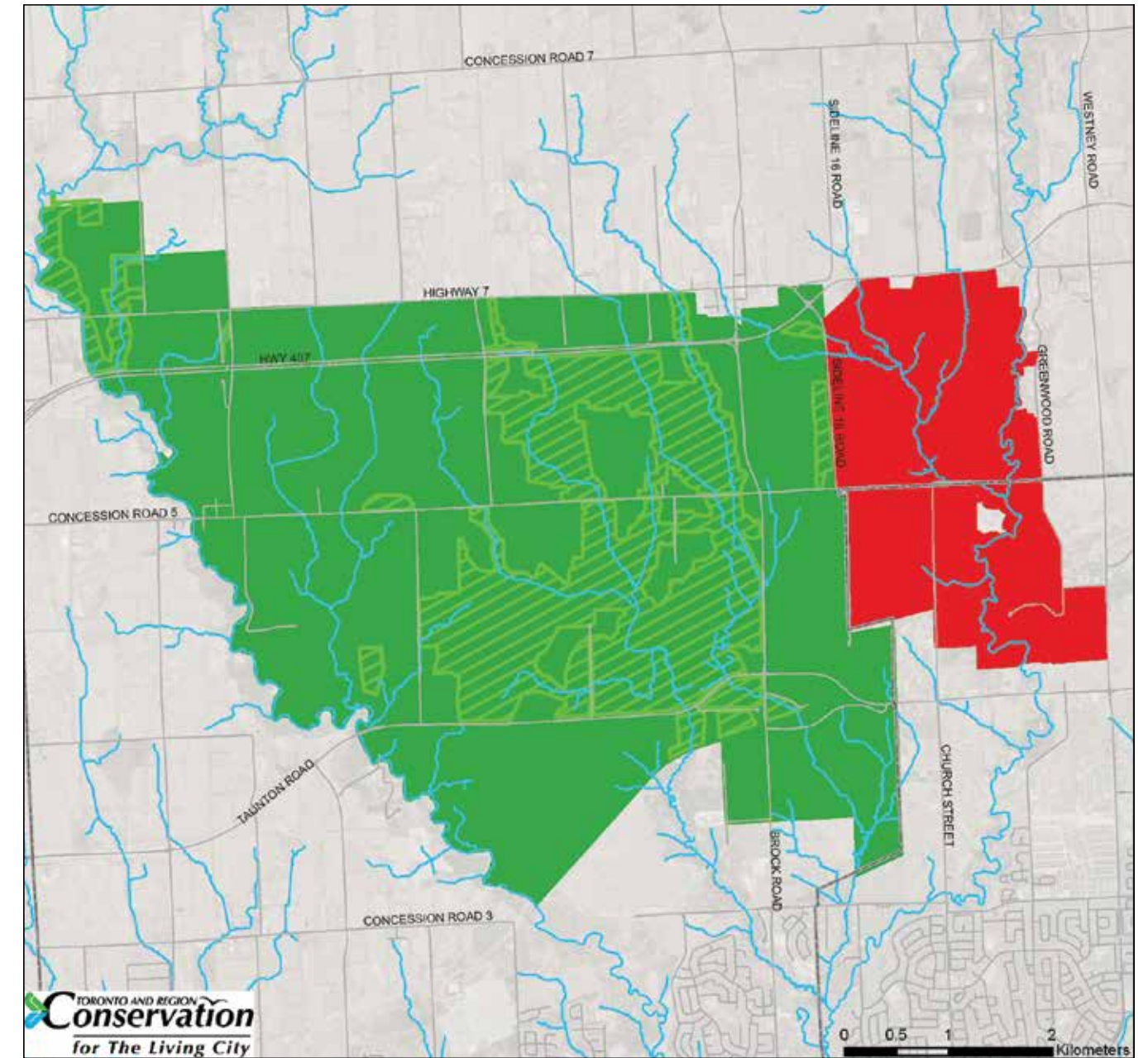




Map 1.3: Greenwood Conservation Lands Existing & Future Land Use



Map 1.4: Greenwood Conservation Lands Study Boundary with Seaton Natural Heritage Boundary





1. The entire TRCA jurisdiction
2. Other defined areas of planning units such as the watershed and sub-watershed
3. Municipal areas

A key component of the TRCA Terrestrial Natural Heritage System approach is the scoring and ranking of vegetation communities and fauna species. This ranking information is used to determine if there are any species or vegetation communities of concern on the site. A second key component of the approach is the terrestrial natural heritage indicators and measures that are used to establish quantitative targets for the terrestrial ecosystem. The indicators are:

- Quantity of Natural Cover
- Distribution
- Matrix Influence
- Patch Size and Shape
- Landscape Connectivity
- Biodiversity

The terrestrial natural heritage information gathered at the Brock Lands was analyzed to determine the appropriate management zones and trail alignments. By scoring and ranking the vegetation communities and fauna species, it reflects the primary resistance to urbanization and human encroachment. Species are ranked based on local distribution or local (L) ranks. These L ranks are in some ways analogous to the provincial (S) and global (G) ranks that are assigned to vegetation communities, flora and fauna. The TRCA ranks range from L1 to L5. Generally, L1 to L3 species or vegetation communities are of regional conservation concern (e.g., within TRCA jurisdiction) and the locations have been preserved.



### 1.2.3 A Watershed Plan for Duffins Creek and Carruthers Creek (2003)

The Vision and Recommendations created within A Watershed Plan for Duffins Creek and Carruthers Creek has been integrated into the GCL Master Plan to ensure a consistent watershed management approach. A Watershed Plan for Duffins Creek and Carruthers Creek was designed to evaluate the potential effects of current and future watershed activities, and identifies management actions needed for watershed protection and enhancement. The watershed vision, developed by a task force of elected representatives, is as follows:

“It is envisioned that the Duffins Creek and Carruthers Creek watersheds will be healthy, dynamic and sustainable watersheds that continue to have clean, safe water with functioning wetlands and diverse self-sustaining communities of native plants, fish and wildlife, where natural and human heritage features are protected and valued. Residents will recognize the watersheds as essential community resources that enhance their quality of life. All stakeholders will participate in the stewardship of the watersheds and growth and development will reflect this vision and the importance of protecting and enhancing this priceless legacy.”

This vision is supported by a management philosophy that promotes five key elements.

1. Net Gain
2. Environment First
3. Balance Land Use
4. Human Health and Safety
5. Everyone Counts — Ownership, Commitment and Follow Through

More information on the watershed plan and how it has influenced the GCL Master Plan can be found in Chapter 2. Indicators, targets and measures for management actions were set in the plan. Integral management actions that are the top priorities for implementation can be found in Appendix #1 – Duffins Creek Watershed Plan Summary.

### 1.2.4 Rouge, Duffins, Highland, Petticoat Valley Conservation Report (1956)

Early assessment of the properties now known as Greenwood Conservation Area (GCA), Rodar, and Brock South collectively defined them as high value for conservation efforts. Given their rural location and

proximity to Duffins Creek, TRCA's Rouge, Duffins, Highland, and Petticoat Valley Conservation Report (1956) recommended the area for early acquisition. The endorsement of purchasing over 287 ha (711 acres) of land was in support of designing a Multiple Use Conservation Area, as highlighted in the Conservation Report. The general setting was described as an attractive and suitable environment for the development of parklands with significant natural heritage attributes. At the time of the report, the GCA and the Rodar Property consisted of approximately 35 per cent forested cover in large continuous belts within the river valley and approximately two and a half miles of shallow unpolluted streams, including a portion of Duffins Creek.

The surroundings of the recommended area were predominantly rural, and the possibility of residential development in the future was noted. It was highlighted within the report that the northern expansion of the City of Pickering would make acquiring these lands somewhat more difficult in the future, which is why the GCA and Rodar parcels were recommended for early acquisition.

The recommended developments needed on the property were minimal and included: reforestation approximately 25 per cent of the property, the construction of service roads to improve access into the park, and the addition of parking spaces for visitors. The Conservation Report also makes note of the possibility for future acquisition of the Brock South portion of land. The southern portion of the Brock property contained a fully operational gravel quarry, and it was recommended that once the gravel supplies were deemed to be exhausted the site be reforested and incorporated into the GCA.

### 1.2.5 Brock Lands Restoration Plan (2011)

The terrestrial landscape and hydrologic functions of the Brock North and South properties have been significantly altered through previous aggregate extraction and landfill operations. Toronto and Region Conservation has undertaken a restoration planning exercise to transform the property into one of the most significant natural heritage parcels and recreational destinations in Durham Region.

The Brock Lands Restoration Plan gives priority to restoring altered and degraded sites for each habitat. For terrestrial opportunities, priority will be directed at restoring hydrology, amending topography and soils and re-vegetating the landscape to promote connections between existing forest patches and other habitat

types, as well as to increasing forest patch size. Some unique habitat features have formed as a result of to the dramatic land alterations. These unique features include cultural fen and cultural sand barren habitats that have emerged on the site due to previous aggregate extraction activities. The restoration plan aims to preserve some of these features in the interest of site diversity, while others will be restored to more natural historical conditions. The aquatic restoration target for all stream reaches is to maintain high quality continuous habitat that is consistent with a natural coldwater system.

Planning undertaken to date has identified the following habitat opportunities:

- Wetland enhancement to restore hydrologic function resulting in the restoration of 26 ha of wetland habitat;
- Link the natural system and provide connectivity with the planned Seaton Natural Heritage System to the west and the Greenwood Conservation Area to the east;
- Promote diversity of habitats including thicket swamp, cattail marsh and meadow marsh, and provide habitat for species of concern within our jurisdiction including Virginia Rail, Swamp Sparrow, wood frog, and spring peeper;
- Conduct both large and small scale reforestation initiatives and install structural habitat features to connect existing habitat cover, which will result in 139 ha of forest restoration; and
- Restore the hydrology of the site, day-light streams, remove barriers and utilize natural channel design principles, and stream-side (riparian) plantings to improve 14.7 kilometres (km) (142 ha) of cold water fisheries habitat and riparian corridors.

### 1.2.6 Greenwood Conservation Area Management Plan (2005)

The Greenwood Conservation Area Management Plan provides direction on the management of both the active GCA, as well as the Rodar Property, while guiding the protection and public uses opportunities of the area. This management plan arose as part of a management agreement and partnership with the Town of Ajax, which actively manages this conservation property within its municipal boundary.

The GCA Management Plan provides direction through plan components such as management zones,





East Duffins Creek in Greenwood Conservation Area

management recommendations and a Trail Plan. These plan components were all reviewed and updated for inclusion into the GCL Master Plan.

Other plans, strategies, and documents, similar to those previously mentioned, have been considered and incorporated into the GCL Master Plan. These documents include City of Pickering's [Trails and Bikeway Master Plan](#) (1996), [Seaton Natural Heritage System Management Plan and Master Trail Plan](#) (2008), Town of Ajax's [Recreation, Parks and Culture Master Plan](#) (2008), and [Walkable + Bikeable Ajax: The Ajax Pedestrian and Bicycle Master Plan](#) (2010). These documents are outlined in the [Brock Lands Master Plan Background Report](#), which can be obtained by contacting TRCA.

### 1.3 Study Process

Experience has shown that there is not only a demand for access to public lands, but also an increased public support for the preservation and protection of the remaining natural green space within the Greater Toronto Area. Simultaneously, there has been a growing interest

from various user groups, businesses, and municipalities for outdoor recreation and education opportunities on public lands.

Toronto and Region Conservation initiated the preparation of a comprehensive Master Plan for the GCL in 2011, after the acquisition of the Brock Lands from the City of Toronto. The goal of this management strategy is to effectively protect the natural features on TRCA owned lands, while meeting the needs of the community.

At Authority Meeting #4/09 with TRCA's Board of Directors, on May 22, 2009, TRCA staff was directed to request that the City of Toronto convey the Brock North and Brock South Landfill sites to TRCA at a nominal cost of \$2.00. (The Brock West Landfill site was not included in the package of properties.) Furthermore, TRCA staff was directed to work with the City of Pickering and the Town of Ajax staff to develop a naturalization and management plan for the property.

At Authority Meeting #1/11 on January 28, 2011, TRCA staff reported that the City of Toronto had conveyed the

land to TRCA for the agreed price of \$2.00, and that staff had initiated planning discussions with the City of Pickering and the Town of Ajax staff related to the restoration and recreation potential of the property.

The Toronto and Region Conservation Authority Board adopted Resolution #A75/09 on May 22, 2009, and Resolution #A13/11 on January 28, 2011. The full resolutions can be found in Appendix #2 – TRCA Board Resolutions relating to the Greenwood Conservation Lands.

The [Greenwood Conservation Lands Master Plan](#) was undertaken in four phases as follows:

#### Phase One

- Establish internal and external committees
- Determine the draft management zones
- Complete the Background Report
- Host the first Public Advisory Committee meeting
- Host the first public information session

#### Phase Two

- Complete the site securement and protection plan
- Develop the draft management recommendations
- Integrate the watershed management recommendations
- Host Public Advisory Committee meetings
- Circulate a study newsletter

#### Phase Three

- Develop the recreation and public use concepts
- Develop a Trail Plan
- Host a Public Advisory Committee meeting
- Host a public information meeting
- Circulate a study newsletter

#### Phase Four

- Develop the implementation and budget schedule
- Finalize the Master Plan report and recommendations
- Obtain TRCA Board and project partners' approval
- Circulate a study newsletter

Consultation and engagement with project partners and stakeholders was an integral part of developing the GCL Master Plan. The development of the plan engaged the people who will manage the site, as well as future visitors. To ensure that the Master Planning process was inclusive of all project partners, stakeholders and the community at large, extensive consultation was conducted. The following outlines the consultation process of the GCL Master Plan and those who were engaged.

#### 1.3.1 Technical Advisory Committee

The Technical Advisory Committee (TAC) worked alongside TRCA staff to establish the vision, goals and objectives, determine the management zones and management recommendations, and develop the trail and public use plans. The continued cooperation from each of these municipalities has assisted the development of this Master Plan. Copies of the minutes for the TAC meetings have been compiled and can be obtained from TRCA upon request. The TAC for the GCL consisted of an internal working group with representatives from both the Town of Ajax and the City of Pickering.

#### 1.3.2 Public Advisory Committee

The Public Advisory Committee (PAC) worked with TRCA staff to finalize the vision, goals and objectives, and management zones and management recommendations. Since the PAC was composed of the user groups that will be actively using the site, members of the PAC played an important role in the development of the trail and recreation plans. The committee also provided technical input and assisted with the public consultation program for the Master Plan.

In summary, the Advisory Committee was responsible for the following major functions:

- Ensure that appropriate staff and members at their respective user group/agencies/associations were adequately informed throughout the process
- Provide commentary and input on suggestions brought to the committee
- Assist in the identification of current outstanding issues and make suggestions regarding appropriate ways to resolve them
- Assist TRCA in presentations and public forums, where appropriate.

The Master Plan Advisory Committee consisted of representatives from the following groups and municipalities:



- Ajax Active Transportation & Trails Advisory Committee
- Ajax Environmental Advisory Committee
- Ajax Recreation & Culture Advisory Committee
- Durham Environmental Advisory Committee
- Durham Mountain Biking Association
- Durham Trail Coordinating Committee
- Green Durham Association
- Greenwood and Area Ratepayers Association
- Friends of Seaton Trail
- Oak Ridges Trail Association
- Ontario Federation of Anglers and Hunters
- Ontario Trail Riders Association
- Pickering Museum Village
- Pickering Naturalists
- Whitevale and District Residents' Association
- Trans Canada Trail - Ontario
- Local Residents

This Master Plan is the result of 18 months of work and commitment by this dedicated committee. Copies of the minutes for the PAC meetings have been compiled and can be obtained from TRCA upon request.

### 1.3.3 Public Consultation

At the outset of the Master Planning process, it was identified that public use, enjoyment and stewardship of the GCL would be important to the community. As a result, public input would become a priority in the development of integral plan components.

The public consultation program included:

- Meetings with interested organizations and user groups in the community to provide comment on specific plan components. During the planning process TRCA staff met with the cycling community, the off-leash dog walking community, and the hiking community to discuss proposed plans and public interest.
- Information sessions, newsletters, and mailings to the community to share information and updates on the Master Plan.

- An online user survey to gain a better understanding of local users, and future recommendations. More detail on this survey is provided in Chapter 6.
- Two rounds of public information sessions. The purpose of the first round of meetings, was to present draft plan components and obtain feedback from the public. Questions, comments and recommendations gathered from these meetings have been compiled and can be found in Appendix #3 – GCL Public Meeting Questions and Answer Summary. The second round of meetings was conducted to present the updated and revised plan components. In total four public meetings were held in 2012.

In summary, the public was supportive regarding the development of the Master Plan and its components. The public, local community and users were kept well informed and consulted throughout the Master Planning process, and their concerns, comments and suggestions were integrated into the plan wherever possible.



Open House at Greenwood Conservation Area Pavilion, January 17, 2012

### 1.3.4 Aboriginal Engagement

Numerous cultural heritage features have been recorded onsite, and as a result it was established that First Nations and Métis communities may have a special interest in the planning process. Public engagement and support play an important role in an effective planning process; therefore TRCA engaged with a number of aboriginal groups.

A letter introducing the project and a brief synopsis of the vision, goals and objectives were sent to First Nations groups in late 2011. For a list of the all the First Nations groups who were contacted please see Appendix #4 – First Nations and Métis Consultation List. A number of groups requested additional information and consultation regarding the project. As a result, two meetings with interested First Nations groups and TRCA staff were held.

Those First Nations groups initially contacted were also sent an update package in July 2012. The information sent included an update on completed plan components and an updated progress schedule.

### 1.4 Location, Site Description And Resource Uses

This section provides a summary of the current state and history of the GCL and the four parcels. It is a summary of the information provided in both the [Greenwood Conservation Area Background Report](#) (2003) and the [Brock Lands Master Plan Background Report](#) (2011), available at [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).

The GCL are made up of four separate parcels of land; Brock North, Brock South, the Rodar Property, and the GCA (Map 1.1). The recently acquired Brock North and South properties are adjacent to both the GCA and the Rodar Property creating a large continuous green space, 675 ha (1,668 acres) in size. The Greenwood Conservation Lands are located in the Regional Municipality of Durham, in both the Town of Ajax and the City of Pickering. The GCL span from Sideline 16 east to Greenwood Road, with a small portion extending to Westney Road. Highway #7 is the northern boundary of the Greenwood Conservation Lands, while the southern limits are defined by hydro corridors just north of Taunton Road. The property is bisected by Concession Road 5, which defines the border of the Town of Ajax to the south and the City of Pickering to the north.

The Greenwood Conservation Lands are found within the Lake Iroquois Plain, which was created approximately 12,500 years ago along the shores of the glacial Lake Iroquois. The shoreline, known for its abundance of gravel and sand, forms the southern boundary of the South Slope.

The Greenwood Conservation Lands play a critical role as a complex network of recharge and discharge areas for regional groundwater. The Brock Lands contain the confluence of two sensitive watercourses, Brougham Creek, a true cold water stream, and Spring Creek, a cool water stream. Brougham Creek contains salmonid species, such as brook trout (*Salvelinus fontinalis*) and, historically, supported reddsides dace (*Clinostomus elongatus*), a provincially and federally endangered fish species, however today only Spring Creek supports a population of reddsides dace. East Duffins Creek runs through the Rodar Property and the GCA and also provides habitat for salmonid species, and is a reintroduction site for the extirpated Atlantic salmon (*Salmo salar*).

### 1.5 Greenwood Conservation Area and Rodar Property

Land acquisition starting in 1957 and continuing through the 1980s has accumulated a total of 283 ha (699 acres), which make up the GCA and the Rodar Property. Both sites boast a wealth of ecologically diverse vegetation communities including interior forest habitat, cedar swamps, wetlands, meadows, riparian habitat, as well as a rich flora and fauna population.

As a result of the previous management planning and implementation, the GCA now hosts a wide variety of recreational opportunities. The portion of the GCA located on the eastern side of East Duffins Creek is where most of the active recreation takes place. Services in this area include shade pavilions for picnicking, sports fields, washrooms and an events pavilion, as well as wildlife viewing opportunities. Connecting the two portions of the GCA is a popular multi-use trail system, which provides kilometres of trails for the users to explore. Along the trail, users will find many viewing areas overlooking the valley of East Duffins Creek, as well as interpretive signage educating users about the natural and cultural heritage of the GCA. On the western portion of the GCA a popular dog off-leash area is accessed from Church Street.

The Rodar Property has undergone less recreational development over the years, but still has attractions such as hiking trails, fishing opportunities and a parking lot trailhead located off Concession Road 5.





Greenwood Conservation Area



Brock North

**1.6 Brock North and South (Brock Lands)**

Prior to the acquisition from the City of Toronto in early 2011, the Brock Lands had undergone significant land use changes over the years. The Brock Lands, comprising 392 ha (969 acres), contain a wide variety of environments ranging from cedar-dominated forest with open meadow habitats, to fen-like wetlands and ponds. To date, 579 flora species have been catalogued, including 109 species of conservation concern. Flora species of concern were specifically associated the cultural fen, wetland, cultural sand barren and forest habitats. A total of 108 vertebrate fauna species have been recorded by TRCA on the site, which includes 37 species of regional concern and two provincial species at risk.



Brock North



Brock South

Historically the Brock Lands were utilized for agricultural purposes until the 1950s when aggregate extraction began. However, as extraction took place groundwater became exposed, which saturated the ground making extraction difficult. As a result of these difficulties, aggregate operations were terminated in the early 1980s. Portions of Brock North were used by the City of Toronto as a landfill site, accepting refuse in 1978 and 1979. The garbage was removed by early 1997 and water monitoring of the leachate system continued to operate until 2006. As a result of these previous land uses, the majority of the current natural features onsite have been disturbed and resulted in the creation of unique cultural fen and cultural sand barren communities.





Brock North Landfill, Site Closed.

Although the majority of the Brock Lands have not been opened for public use, there is evidence of unauthorized access, such as mountain biking and the use of motorized recreational vehicles (including ATVs, dirt bikes and 4-wheel drive vehicles).



Evidence of an informal trail at Brock South



## 2 VISION, GOALS AND OBJECTIVES

### 2.1 A Vision for the Greenwood Conservation Lands

During the Master Planning process for the GCL, the vision, goals and objectives were developed to guide the development of the Master Plan within a consistent set of boundaries. They also provide a filter for future implementation and management decisions.

It is important that the vision for the GCL be consistent with the vision contained in [A Watershed Plan for Duffins Creek and Carruthers Creek](#) as mentioned in Chapter 1. The watershed vision is achieved through the application of a management philosophy that is represented by five key points:

1. Net Gain
  - Improve upon existing features and functions throughout the watersheds.
  - Use the unique opportunities provided by extensive public land holdings in the watersheds.
2. Environment First
  - Manage the watersheds as a system, considering the environmental function first.

- Protect and enhance the natural features and functions as a first step in a hierarchy of other management approaches.

#### 3. Balance Land Use

- These watersheds, adjacent to one of the largest cities in Canada, must support a combination of natural, urban and agricultural land uses and systems.
- Apply the principles of the urban planning theory Smart Growth.
- Incorporate the concept of balance into land use actions, thus ensuring the integrity of watershed functions.

#### 4. Human Health and Safety

- Recognize links between human health and the health of the environment.
- Minimize risks to human health and safety.

#### 5. Everyone Counts — Ownership, Commitment and Follow Through

- Demonstrate sustainable living and sustainable community design.



- Build upon existing leadership, stewardship and good decision-making practices.
- Strengthen existing partnerships and develop new partnerships.
- Make the appropriate lifestyle choices, change behaviours, and encourage innovation in thoughts, words and actions.

The purpose of the Duffins and Carruthers watershed planning process was to undertake a detailed analysis of natural features and functions, human heritage, and public use. The Watershed Plan is intended to evaluate the potential effects of current and future watershed activities and identify management actions needed for watershed protection and enhancement. These management actions were recognized and integrated into the GCL Master Plan vision and management recommendations.

With consideration for the Watershed Plan, the vision for the GCL provides direction for the future management of the property. The vision for the GCL encompasses three main points as follows:

- Support functioning, diverse and self-sustaining communities of native plants, fish and wildlife.
- Become a public destination, offering a variety of recreational and cultural experiences.
- Facilitate important regional trail links and provide connectivity to surrounding natural heritage systems.

The main focus of the vision is to ensure the natural features on site are restored and protected, while recognizing the need for appropriate public use activities. The Greenwood Conservation Lands also serve as an integral parcel of land facilitating an increased connectivity to the surrounding ecology and trail infrastructure.

### 2.2 Master Plan Goals and Objectives

Achieving the GCL vision requires the development of a set of goals and objectives. Each goal helps build on the vision, while remaining consistent with TRCA's Living City approach and the Duffins and Carruthers Watershed Plan. Each goal is then followed by a number of key objectives intended to guide specific actions that will be taken to implement the Master Plan. The goals and objectives are organized under three management categories and are listed as follows.

#### 2.2.1 Natural Heritage

Goal: Protect and restore ecological function and resilience to both aquatic and terrestrial systems.

Objectives:

- Restore and enhance altered hydrology and sensitive ground water zones.
- Enhance landform and soil conditions to promote self-sustaining natural communities.
- Restore natural cover and provide connectivity at both the local and regional scale.
- Create and enhance optimal fish and wildlife habitat.



Great Blue Heron

#### 2.2.2 Public Use and Recreation

Goal: Create a public destination that offers a variety of recreational and cultural experiences.

Objectives:

- Provide opportunities for appropriate, accessible nature-based recreation activities that complement Greenwood Conservation Area.
- Plan and manage appropriate outdoor recreation facilities in a manner that protects ecological health while providing social benefits.
- Integrate recreational activities that meet municipal partners' needs and contribute to health and well-being of the existing and emerging communities.
- Construct and maintain trails that are linked to communities and inter-regional trails

#### 2.2.3 Cultural Heritage

Goal: Protect and conserve the cultural heritage features for their inherent value and depiction of the long term human use and occupancy of the area.

Objectives:

- Identify and promote the area's heritage features, including former Brougham Post Office.
- Identify and protect known and potential archaeological sites.
- Interpret the early history of the property including use by First Nations.
- Explore potential partnership with the Pickering Museum.



Cairn on Brock North property marking where Brougham's first post office stood in 1832



Plaque on cairn





# 3 MANAGEMENT ZONES

### 3.1 Management Zones

Management zones have been developed as part of the Master Planning process to guide how the property is managed, where ecological features must be protected, where public use and trails will be permitted, and where restoration efforts will be focused.

### 3.2 Determining and Defining the Management Zones

Based on a review of the existing natural and cultural heritage resources of the site, eleven management zones were identified within the GCL. These management zones function by protecting interior forest, habitat corridors, sensitive wetland habitat and breeding habitat. They distinguish varying levels of ecological protection, management needs and acceptable levels of public use as defined in Table 3.1. The permitted resource uses within the different management zones are summarized in Table 3.2.

Table 3.1: Management Zone Definitions

MANAGEMENT ZONE	DEFINITION
Nature Reserve – Category #1	Communities that are sensitive to all forms of development or human interactions. Designated to protect the ecologically sensitive communities (e.g., cultural fens, cultural sand barrens) and intact environments across the entire GCL. Human activity and development are not permitted within these designated areas.
Nature Reserve – Category #2	Areas that have significant or unique natural features, landforms, species or habitats such as large, continuously forested tracts, valley lands and wetlands that provide wildlife habitat. These areas are also sensitive environments and require careful management to ensure long term protection, but can withstand small levels of passive public use.

MANAGEMENT ZONE	DEFINITION
Natural Environment	Large core habitat areas and corridors that are natural in character and are considered to be ecologically healthy, but may require environmental enhancements. These areas are typically more resilient to human activity and can sustain various forms of passive recreation.
Heritage Preserve	Locations acknowledged as containing or likely to contain cultural heritage attributes. A buffer is established around these sites to ensure adequate protection.
Unique Heritage Preserve	Area identified for potential expansion of the Pickering Museum Village (PMV). The extent of this zone was determined by the required buffer around Spring Creek, adjacent forest cover, and Heritage Preserve in the immediate vicinity of the PMV lands.
Restoration	Outlines the specific areas identified for enhancement and restoration activities as dictated by the Brock Lands Restoration Plan (2011).
Public Use – Active	Highly impacted areas of the property requiring significant restoration, or areas that have existing or potential for recreational and educational uses, facilities or services. Due to the poor conditions of these areas they are suitable for high density recreational options.
Public Use – Passive	Areas of the property containing features or conditions that can withstand recreational usage without negatively impacting the site.
Residential Lease	Residential dwellings under lease agreements. These leases are reviewed annually.
Park Operations	An area of the property utilized for operational buildings by Town of Ajax staff for operational, maintenance and administrative duties.
Agriculture	Areas designated for active agricultural use or similar resource use such as community gardens.

Table 3.2: Management Zone Resource Uses

MANAGEMENT ZONE	PERMITTED INTENSITY OF USES	EXAMPLE RESOURCE USES
Nature Reserve – Category #1	None	Research, monitoring, natural feature protection, habitat management.
Nature Reserve – Category #2	None to very low Intensity	High priority trail linkages, research, monitoring, natural feature protection, habitat management.
Natural Environment	Low Intensity	Linkage trails, local and inter-regional trail, nature viewing/interpretation, education, habitat management, natural feature protection, research and monitoring.
Restoration	None to High Intensity	Habitat restoration and enhancement work. Local and inter-regional trail, nature viewing/interpretation, education, habitat management, natural feature protection, research and monitoring.
Public Use – Active	Medium to High Intensity	Active recreation including sports fields and infrastructure, parking lots, trailheads, and associated structures or facilities.



MANAGEMENT ZONE	PERMITTED INTENSITY OF USES	EXAMPLE RESOURCE USES
Public Use – Passive	Medium to High Intensity	Multi use trails, user focused trails, parking lots, trailheads, recreational angling, and associated structures or facilities, as well as research, monitoring, habitat management and natural feature protection.
Heritage Preserve	None to Low Intensity	Local and inter-regional trail, nature viewing/interpretation, cultural interpretation, education, habitat management, natural feature protection, research and monitoring.
Unique Heritage Preserve	Low to High Intensity	Toronto and Region Conservation approved expansion plans for the Pickering Museum Village.
Park Operations	Low to High Intensity	Operational facility for Town of Ajax staff.
Residential Lease	Low to Medium Intensity	Permitted uses under the Residential Lease Agreement between the TRCA and the tenant.
Agriculture	Medium to High Intensity	Crops, horticultural operations and associated buildings.

### 3.3 Mapping the Management Zones

The management zone maps for the GCL are separated into four different maps Interim Management Zones (Map 3.1), Restoration (Map 3.2), Passive Public Use (Map 3.3), and Long Term Management Zones (Map 3.4).

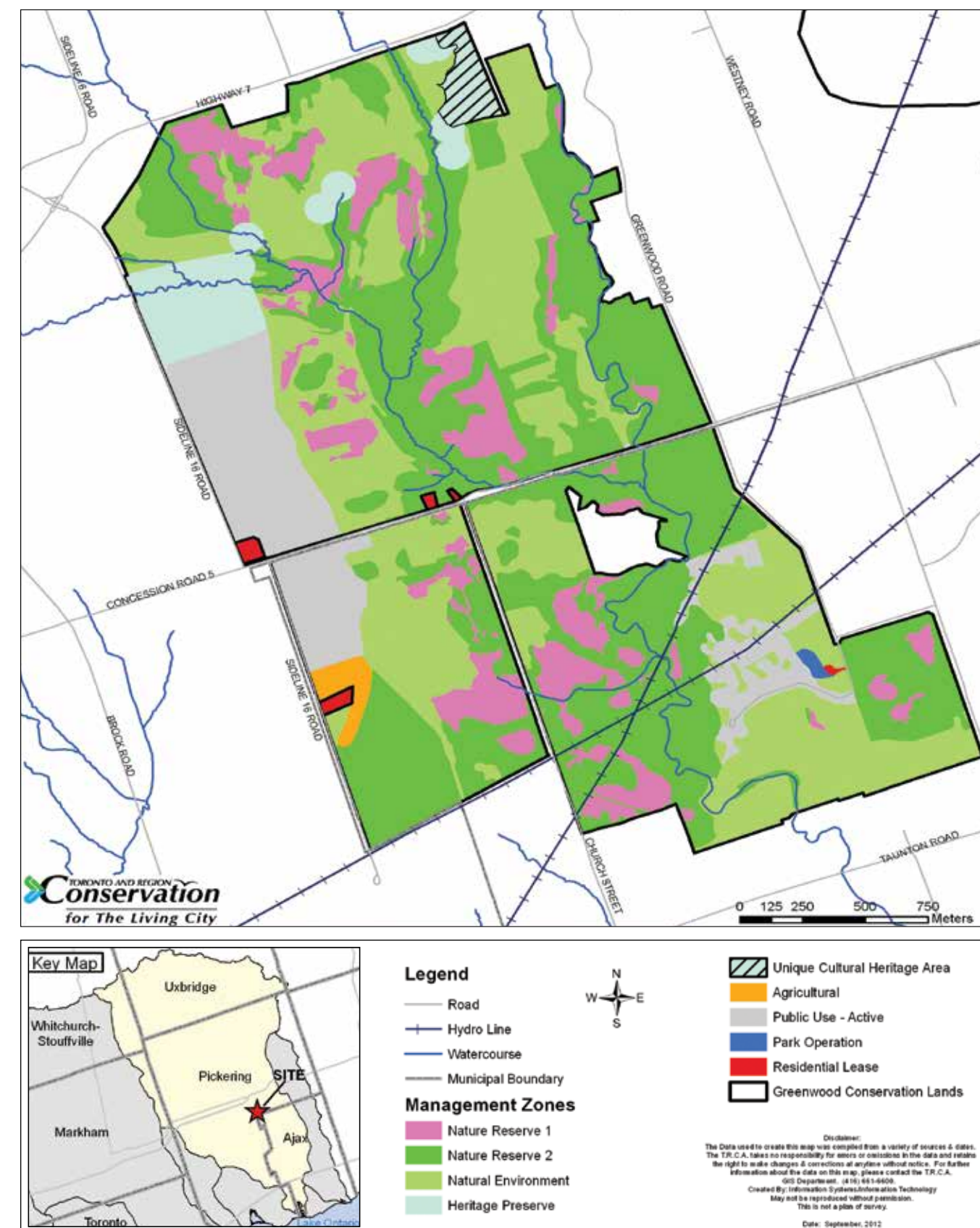
The Interim Management Zones map (Map 3.1) outlines the current conditions and attributes of the site as informed by recent natural and cultural heritage surveys. The map provides an important baseline to ensure that current conditions are properly identified in order to appropriately direct future management. This map designates management zones as defined in Table 3.1.

Map 3.2 depicts where restoration opportunities have been identified, however restoration may take place outside of these areas if necessary. Restoration will have an influence on the long term ecological health of the lands, and may change the long term management zones, but for immediate purposes it is has been overlaid on existing conditions to illustrate where restoration activity will be focused in the short term.

Map 3.3 illustrates passive public use opportunities and was created with consideration for existing site conditions, desire lines and connectivity to surrounding existing or planned trails and communities. This information layer is critical to understanding where the majority of trails and other passive recreational uses will take place without compromising the original or potential value of natural and cultural heritage features.

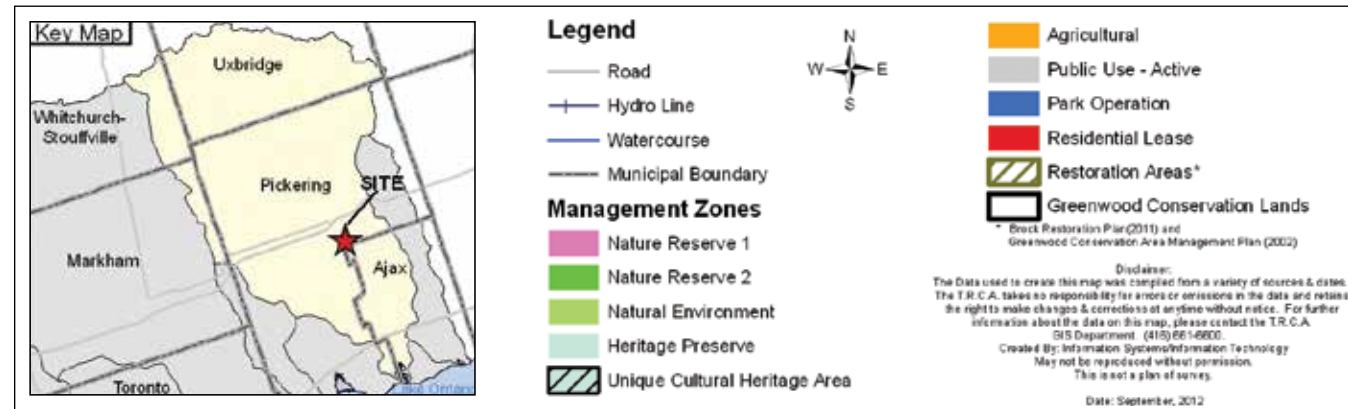
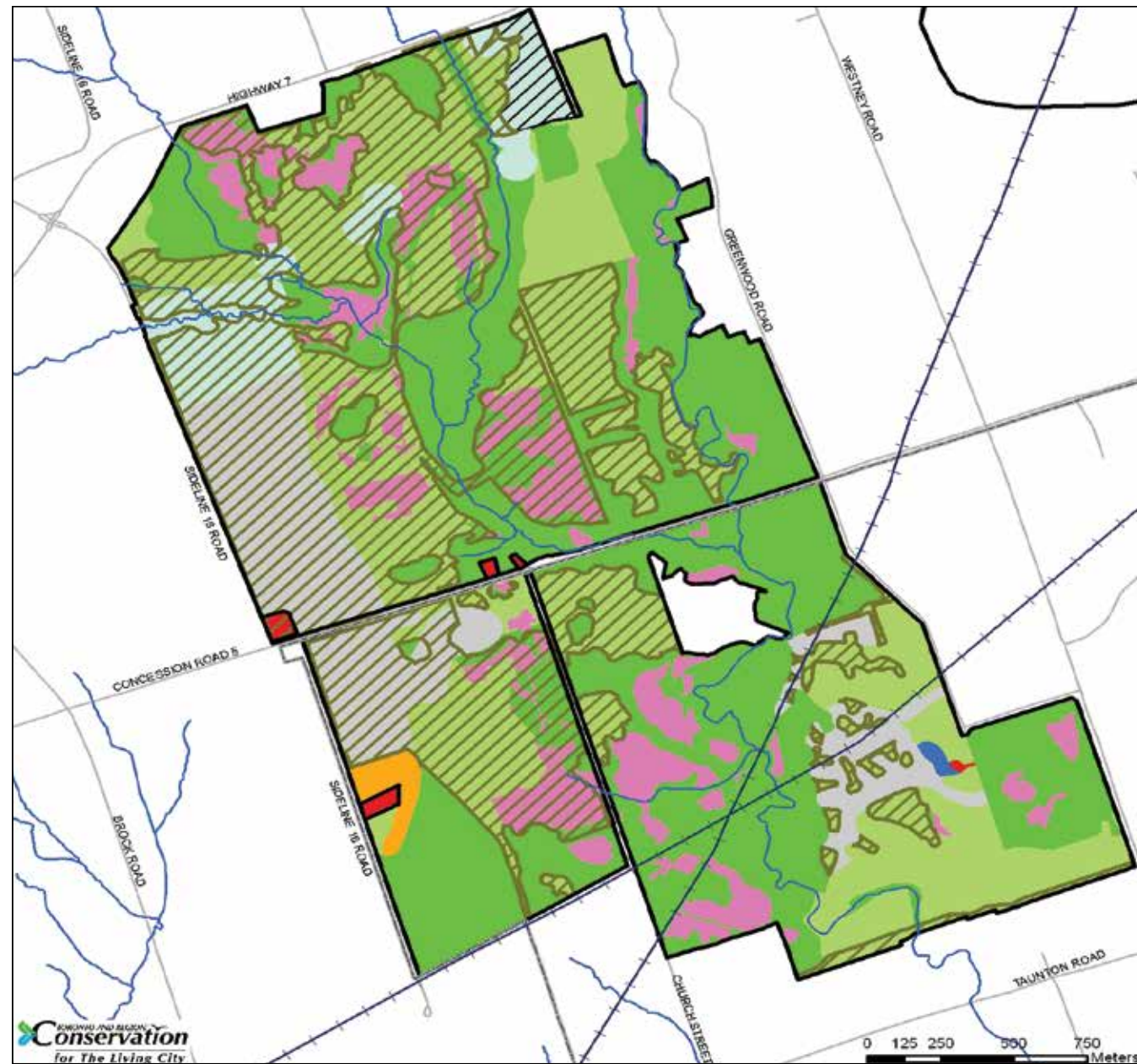
Map 3.4 identifies the long term vision for the GCL after implementation of the Restoration Plan and the public use, recreation and trail plans. The category 1 and 2 Nature Reserves have now been consolidated into a single management zone to simplify the vision for the long term management of the property and to identify that many of the features of the site will improve with restoration and proper management. In total, it is predicted that approximately 67 per cent of the lands will be protected Nature Reserve and the remaining 33 per cent will be utilized for public use, both passive and active. Following implementation of the Restoration Plan and the Master Plan, the Long Term Management Zones map will need to be revisited to identify landscape changes and ensure sound management of the site.

Map 3.1: Greenwood Conservation Lands Interim Management Zones

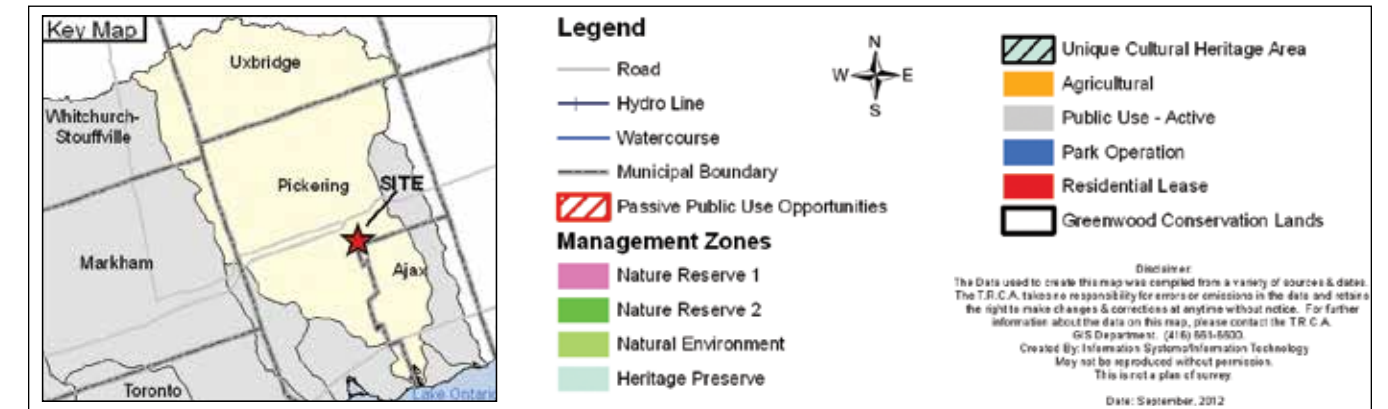
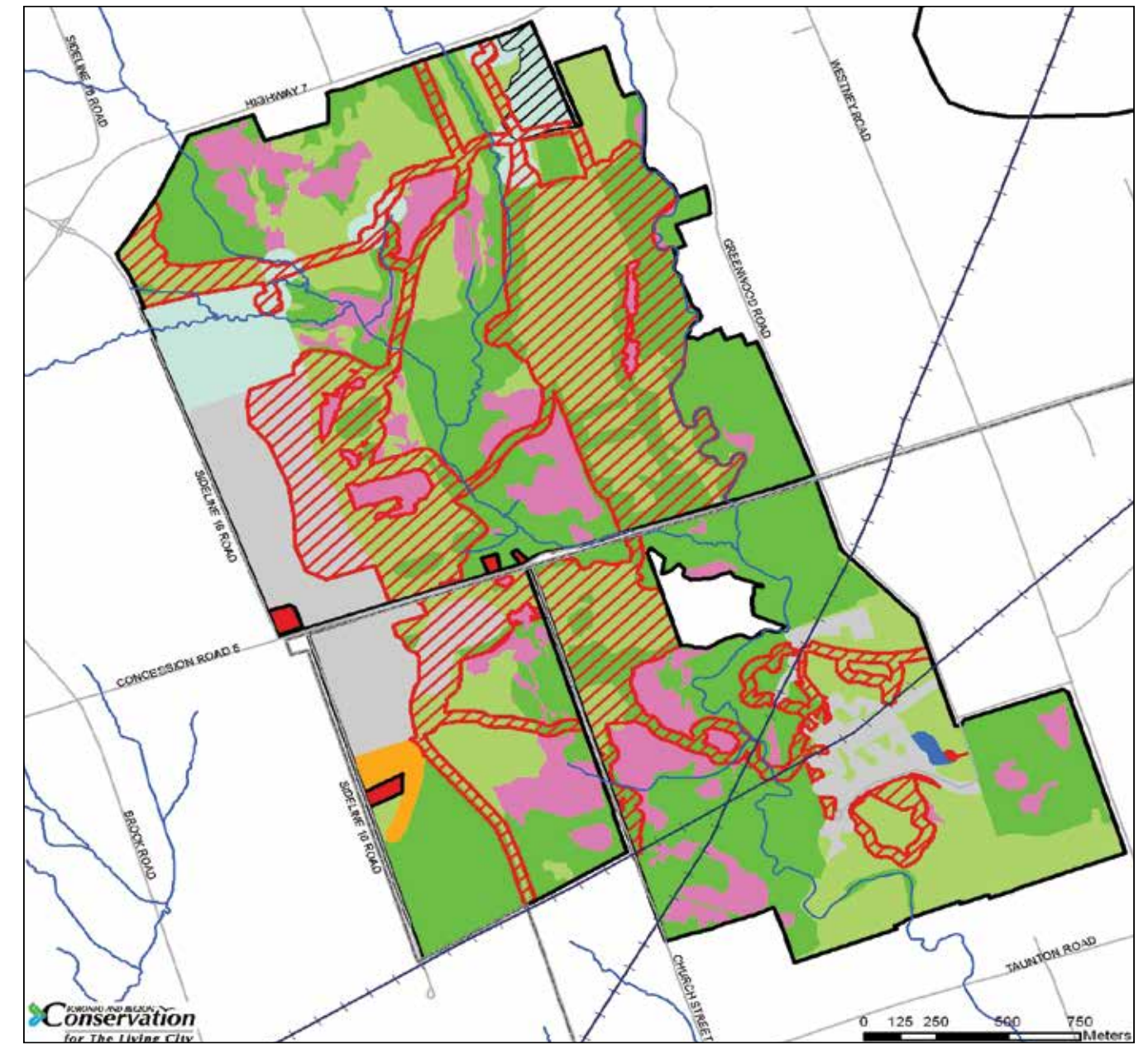




Map 3.2: Greenwood Conservation Lands Interim Management Zones with Restoration Areas

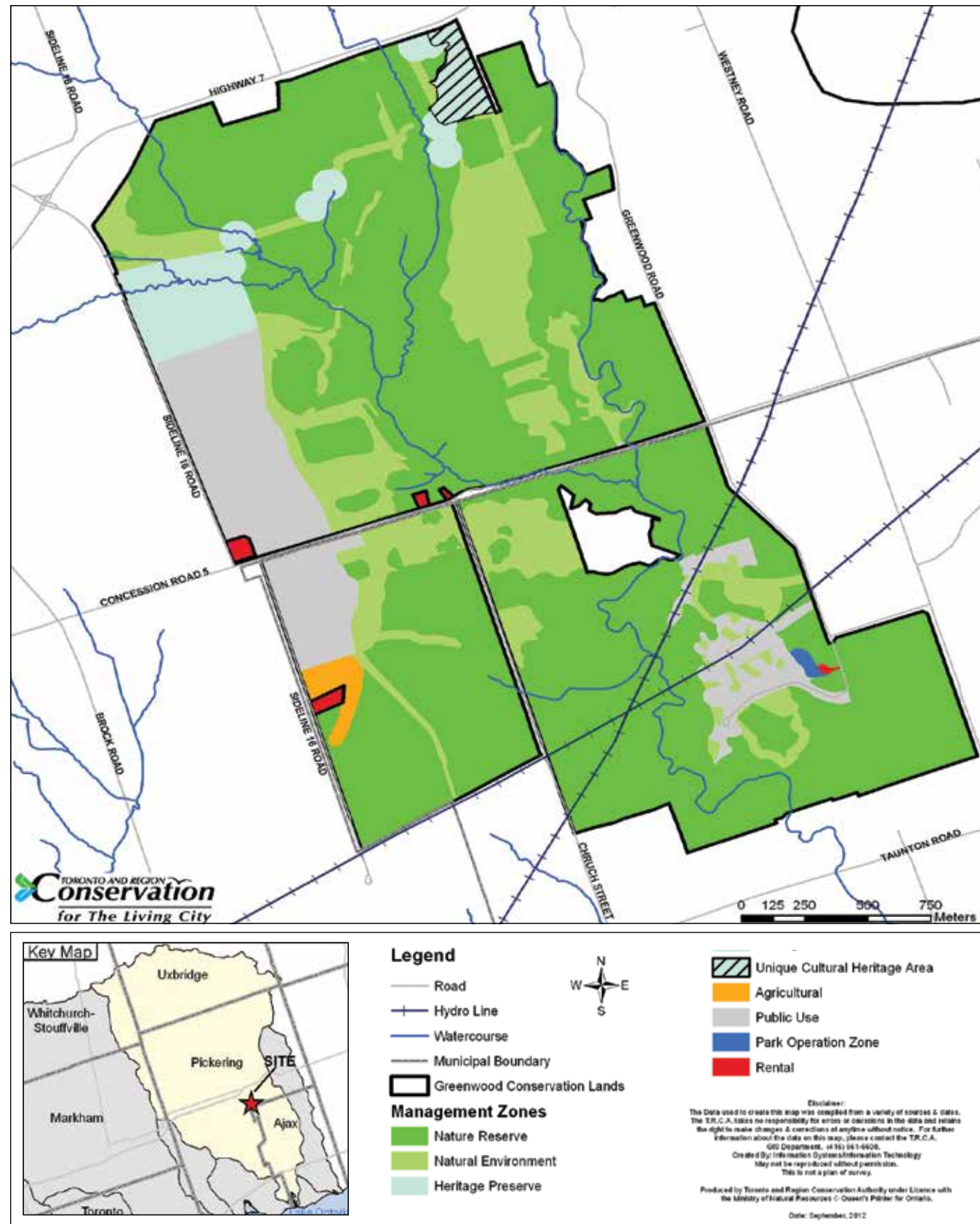


Map 3.3: Greenwood Conservation Lands Interim Management Zones with Opportunities





Map 3.4: Greenwood Conservation Lands Long Term Management Zones



# 4 MANAGEMENT RECOMMENDATIONS

## 4.1 Introduction

The management recommendations of the GCL Master Plan are intended to guide the actions of TRCA, its partners and stakeholders to ensure the GCL remains a healthy and vital part of the Duffins Creek watershed. The recommendations have been separated into the following nine categories:

- Natural Heritage Protection
- Restoration
- Cultural Heritage
- Trails
- Public Use
- Site Securement and Protection
- Community Outreach and Engagement
- Economic Considerations
- Integration into the GCL

Each category contains a number of broad, strategic management recommendations, as well as more specific and measurable recommendations. The individual deliverables are further described in Chapter 7, which also discusses the budget, and implementation timelines.

The management recommendations set forth in A Watershed Plan for Duffins Creek and Carruthers Creek target the protection and restoration of terrestrial and aquatic ecosystems, the enhancement of natural cover, the provision of public access to greenspace and nature-based recreation opportunities, and the protection of cultural heritage resources. The management recommendations for the GCL support and build on the objectives of the Watershed Plan. A full list of watershed objectives, management actions and targets for the Duffins and Carruthers watersheds, can be found Appendix #1 – Duffins Creek and Carruthers Creek Watershed Plan Summary. Some targets include:

- ≥49 per cent natural land cover in Duffins Creek
- 75 per cent of stream length covered with woody vegetation
- Increase wetland cover to 6 per cent of total sub-watershed area
- Remove or mitigate in-stream barriers, except where integral to the Duffins and Carruthers Fisheries Management Plan



## 4.2 Natural Heritage Protection

The Greenwood Conservation Lands study area boasts a wide range of valuable habitat types, including wetlands, cold water streams and valley land forests. The following recommendations are designed to protect these habitats and preserve the important role they play in sustaining connectivity to surrounding systems.

The Greenwood Conservation Lands will be managed with an “environment first” approach, meaning that natural heritage protection and enhancement will be a key part of all management recommendations. This approach will help guide such activities as restoration projects, the design and construction of the trail system, and the development of a stewardship program. The recommendations included in this section focus on the protection, enhancement and monitoring of the natural heritage resources of the GCL.

### Management Recommendations

- For both aquatic and terrestrial ecosystems, monitor the flora, fauna and overall condition of the ecosystems, while continuing with monitoring initiatives already in place and expanding these efforts where gaps exist.



East Duffins Creek in Greenwood Conservation Area

- Complete a forest inventory for the GCL, and determine appropriate forest management priorities and recommendations.
- Limit any land use changes (e.g., loss of natural cover) that will reduce the matrix influence score.
- Consider the effects on drainage, seepage and recharge zones of any management actions (e.g., parking lots and sports fields) on natural heritage features.
- Ensure all management work occurs during appropriate times to minimize impacts on vegetation, breeding birds, and dispersing/migrating amphibians, hibernating reptiles and other wildlife.
- Pursue expanding the contiguous area of natural heritage protection through acquisition of select lands, in particular the Miller property in the GCA.
- Ensure salt is not used in any TRCA winter management of trails and parking lots.

### 4.2.1 Hydrology

Hydrology plays a fundamental role in shaping the biodiversity of the site, and is a considerable point of

vulnerability due to previous land uses. The hydrology of the GCL is important for the cold water stream, wetland and forest communities present on the site, and for the overall health of the watershed. Given the site’s altered hydrology and the pending development of the surrounding lands, an understanding of site’s hydrological function is imperative.

### Management Recommendations

- Assess impacts to the site’s hydrology that have been created by previous land uses and develop a mitigation plan if required.
- Complete inventory of existing wells on the property and properly geo-reference them.
- Develop a water monitoring plan for the site and investigate the need for additional groundwater monitoring sites to assess hydrological impacts of pending development on surrounding lands.
- Assess functionality of the leachate collection system and develop a short and medium term operation plans.
- Protect and restore groundwater recharge and discharge locations and pathways.
- Consult hydrological recharge/discharge models prior to parking lot and trail construction to ensure infiltration and water balance are maintained.

### 4.2.2 Invasive Species

Infestations of several exotic invasive plant species have been identified in the GCL, including common buckthorn (*Rhamnus cathartica*), garlic mustard (*Alliaria petiolata*), dog-strangling vine (*Cynanchum rossicum*) and common reed (*Phragmites australis*). The primary concern is that the aggressive nature of invasive plant species can significantly impact native vegetation communities by outcompeting them, leading to a loss of biodiversity. Given that construction activities related to restoration and trail implementation are planned and an increase in public use is anticipated, the spread of invasive species on the GCL may increase, and therefore a strategy must be in place to ensure the spread of invasive species is minimized.

### Management Recommendations

- Develop an exotic invasive species management strategy for the GCL with specific targets on habitat protection and management actions.

- Implement best management practices during construction activities and other field work to minimize the spread of invasive species.
- Map invasive species communities within the GCL to determine baseline information.
- Establish priority locations for invasive species treatment and monitoring.
- Although there are no known occurrences on the GCL, monitor for giant hogweed (*Heracleum mantegazzianum*) along trails and public use areas for public health and safety.
- Develop an invasive species prevention campaign that targets GLC users and educates them about the impacts of exotic invasive species and the live release of aquatic species into rivers and ponds.



Dog-Strangling Vine near Carruthers Creek at Deer Creek

### 4.2.3 Species of Concern

Many of the recommendations in this chapter will serve to protect species of concern, and the following recommendations will further assist protection of species of concern in the TRCA jurisdiction.

### Management Recommendations

- Obtain all required regulatory permits and approvals related to species at risk prior to commencing any implementation activities, including restoration work or trail development.
- Maintain areas of cultural sand barrens and cultural fens that may host sensitive flora species, while ensuring that high priority groundwater discharge areas are protected and that ecological function is improved.



- Target species of concern in restoration planning.
- Continue regular monitoring of the site to document the presence of species of concern.

**4.3 Restoration**

Although healthy ecosystems exist within the GCL, a number of areas have been significantly altered due to previous land uses. Many of these alterations continue to impact the site and its connected attributes, such as Duffins Creek. Mitigating these impacts and restoring the site to a healthy condition are significant components of future management.

The Brock Lands Restoration Plan (2011) provides the framework to protect and restore the site’s natural ecosystems by enhancing the health and diversity of native species, habitats, landscapes and ecological processes. The main objectives of the Restoration Plan are to:

- Restore and enhance altered hydrology and sensitive groundwater zones.
- Enhance landform and soil conditions to promote self-sustaining natural communities.
- Restore natural cover and provide connectivity at both the local and regional scale.
- Create and enhance optimal fish and wildlife habitat.

For more information on the objectives and target of the Brock Lands Restoration Plan, visit [www.trca.on.ca/brock](http://www.trca.on.ca/brock).

**Management Recommendations**

- Implement the Brock Lands Restoration Plan.
- Seek project partners to assist in the implementation of the Brock Lands Restoration Plan.



Brock North restoration



Greenwood Stream restoration

**4.4 Cultural Heritage**

First used by aboriginal peoples and later by European settlers who were attracted by the abundance of natural resources, the lands within and around the GCL have been utilized for thousands of years. Archaeological sites have already been identified within the property, and other areas have been noted as having a high potential to contain additional archaeological sites, both of Euro-Canadian and aboriginal cultural affiliation.

A Watershed Plan for Duffins Creek and Carruthers Creek (2003) aims to identify, document and protect cultural heritage resources and increase awareness and appreciation of these significant resources. The following recommendations support these objectives.

**Management Recommendations:**

- Identify and protect archeological sites within the GCL, including completion of archaeological assessment prior to any land disturbance.

- Pursue opportunities to preserve and interpret heritage sites for public education.
- Address issues that may compromise known cultural heritage sites.
- Engage First Nations communities regarding significant aboriginal archaeological findings.
- Investigate educational programs that can facilitate a partnership with the Pickering Museum Village.
- Consider hosting the TRCA's Boyd Archaeological Field School at the GCL.

**4.5 Public Use**

Public recreation has been an active use within the GCA and the Rodar Property for many years, and the addition of the Brock Lands has increased available opportunities. Within the next two decades, the lands around the GCL will see an increase of approximately 70,000 new residents, therefore the demand for



recreational opportunities and public access is expected to grow significantly. These new residents represent a significant stewardship opportunity and also a potential challenge. The development taking place close to the GCL and the projected high volume of usage within the GCL will increase pressures on the site's natural features and may increase user conflicts. It is important that TRCA develop a well-planned, sustainable trail system that will encourage users to stay on trails and mitigate impacts to the ecological integrity of the site. Details on recreational opportunities and the development of the Trail Plan are outlined in Chapter 5 and Chapter 6, respectively, and provide more detail on how these pressures will be managed.

Extensive consideration was given to the proper location of public use opportunities during the management zones mapping process; however, further direction is required on exactly how recreational activities will be managed within these public use zones. The following recommendations provide an overview of how the public use zones will be developed and managed.

#### Management Recommendations

- Ensure developments on the GCL by local municipalities adhere to requirements of the Brock Lands Purchase Agreement with the City of Toronto and that all required permits are obtained. Toronto and Region Conservation staff will work with the project partners to facilitate discussion.
- Work with the Town of Ajax and the City of Pickering to develop detailed designs for identified features within public use zones, including a dog off-leash area, community park and museum expansion.
- Work with Town of Ajax staff to implement improvements to the existing dog off-leash area before a new location is opened.
- Should locations currently identified for future active public use not be utilized, evaluate the locations for restoration, protection or trail use opportunities.
- Amend the existing GCA Management Agreement with the Town of Ajax to include the Brock South lands.
- Increase TRCA and municipal by-law enforcement presence on managed lands to address unauthorized usage, including unauthorized use of GCA trails for dog off-leash use.

#### 4.6 Trails

A focal point of the GCL Master Plan is the establishment of a Trail Plan that will provide safe, year-round nature-based recreation opportunities for current and future neighbours of the GCL, as well as the residents of Ajax, Greenwood, Pickering, and the broader Durham Region. Nature-based recreation includes hiking, leashed dog walking, cycling, snowshoeing, cross-country skiing, geocaching and equestrian use. The trail system will be designed to provide a safe and enjoyable recreational experience, while minimizing impacts on the natural heritage system.



Snowshoeing is a popular winter trails activity

The trail network will be composed of areas with concentrated loop trails connected by a corridor trail. Key linkages with the surrounding area, including the Town of Ajax trail system and the planned Seaton Lands, will also be important components of the trail system. The Trans Canada Trail will be a main corridor trail running north-south through the GCL.

The Trail Plan is outlined in detail in Chapter 6, and includes recommendations relating to trail design, location, maintenance, permitted uses and signage. This section outlines key recommendations that form the basis of the Trail Plan.



Geocaching

#### Management Recommendations

- Promote nature-based public uses that have minimal negative environmental impacts.
- Create a continuous network of trails through the use of loops and trail connections, allowing trail users to adapt the system to their individual needs.
- Connect the trails within the GCL to other trails systems, including inter-regional trails, such as the Trans Canada Trail (TCT), the Seaton Trail and local municipal trails.
- Consider all potential natural heritage impacts when designing the trail system.
- Incorporate accessibility into trail design wherever possible.
- Ensure all trail construction, improvements, naturalization or closures are carried out in accordance with TRCA's [Trail Planning and Design Guidelines Manual](#) (1992) or any revised guidelines.
- Provide interpretive amenities along the trails to engage users about proper trail etiquette and environmental issues.
- Develop a trail guide, trail head signs and wayfinding system for the GCL.
- Adaptively manage trails, so that loop systems can be temporarily closed so that sensitive species (e.g., breeding birds or vulnerable plants species) in a given area are not adversely impacted.
- Decommission and restore all informal trails that are not designated to become part of the formal trail system.

- Work in partnership with the Town of Ajax to decommission the northern portion of Church Street to facilitate improved trail connections between the GCL parcels.
- Work with the Durham Regional Police Service and EMS to address safety concerns, and issues that may limit their response time within the trail system.

#### 4.7 Site Securement and Protection

The [Site Securement & Protection Plans for Brock Lands & Greenwood Conservation Area](#) (TRCA, 2011) was prepared prior to the completion of the GCL Master Plan. This document contains an inventory of existing trails, access roads, gates, boundary fence and built infrastructure conditions, as well as encroachments, unauthorized built structures, access points, and illegal dumping on the GCL that may pose a safety concern or provide the opportunity for unauthorized uses. Any such issues that were identified have since been addressed or are scheduled for resolution. Since implementation of the SSPP began, extensive work has been undertaken to prevent future unauthorized use and mitigate the damage of past uses. Such efforts include:

- Posting property boundaries/no entry signage
- Installing gates and barriers at access points
- Removing waste and hazards
- Assessing buildings for potential public safety concerns
- Removing unsafe built features
- Decommissioning informal trails

Given the long history of unauthorized use at this property and its proximity to urban areas, continued vigilance will be required keep the site secure and protect natural features and infrastructure.

#### Management Recommendations

- Implement the recommendations of the [Site Securement & Protection Plans for Brock Lands & Greenwood Conservation Area](#) (TRCA, 2011).
- Continue monitoring/assessing and managing all property boundaries, including fencing, unauthorized access points, condition of trailheads, signage, etc. to prevent environmental damage, protect public health and safety, and reduce maintenance costs.
- Promptly decommission any informal trails, bike stunts or other structures that are identified during monitoring exercises.
- Work with Durham Regional Police and municipal by-law staff to address unauthorized uses.



- Assist the Town of Ajax in addressing illegal dumping on the portion of Church Street to be decommissioned.
- Post signage along property boundaries identifying permitted access points and permitted uses.
- Proactively inform local residents of permitted uses on TRCA lands, through such methods as homeowner information packages and regular distribution of newsletters.

#### 4.8 Community Outreach and Engagement

During the Master Planning process various connections were fostered with a number of active community groups. These relationships have been nurtured through the Public Advisory Committee (PAC), as well as public information sessions and events. Continued communication and partnership with these organizations will be vital in developing the Stewardship Committee, the Trail Captain Program, and other initiatives that will help protect the ecological features of the GCL and make it a nature-based recreation destination. However, development of the community outreach and engagement programs is complicated because the surrounding area has not yet been developed, so most of the people who will eventually use the property do not yet live in the area. Therefore, it is important to engage the community as it develops to create a sense of stewardship and appreciation of the GCL and other surrounding greenspaces.

This section outlines several key initiatives that will effectively engage the public in stewardship opportunities. Many of the recommendations are based on successful community engagement and stewardship programs that TRCA has implemented in the past.

##### 4.8.1 Stewardship Committee

Consultation throughout the Master Planning process and ongoing public engagement will ensure that the GCL Master Plan will be supported by the community that will utilize and care for the lands. An integral part of fostering and sustaining community stewardship for the GCL is the development of a volunteer Stewardship Committee for the property. Once established, this committee would work with TRCA in an advisory role on the implementation of the Master Plan.

Typically, once the Master Planning process is complete, community members who participated as part of the Public Advisory Committee transition to form the foundation of the volunteer Stewardship Committee, as is the case at the East Duffins Headwaters and Heart Lake Conservation Area. A successful stewardship committee would include area homeowners and businesses,

particularly from those future communities that will be built around the GCL. Given that members of the PAC are local residents, area clubs or rate payer groups, they are the ideal members to promote stewardship and act as champions for the property.

Various members of the GCL Master Plan PAC have expressed interest in remaining involved in the implementation of the plan and hope to become members of the GCL Stewardship Committee once it is established.

##### Management Recommendations

- Establish the GCL Stewardship Committee whose main function will be to advise and assist with the implementation of the Master Plan.
- Develop the Terms of Reference for the Stewardship Committee and collaborate with the committee to create annual work plans based on the Master Plan.
- Engage local residents and community groups in stewardship programs that will improve the GCL and foster community stewardship.
- Work with regional and municipal partners to develop appropriate stewardship events.
- Work with local schools to educate students on the value of greenspace, particularly the GCL, and the importance of environmental conservation.

##### 4.8.2 Trail Captain Program

The “adoption” of the GCL Master Plan by the local community is needed for the property to succeed as a protected greenspace and a nature-based recreation destination. Like the Stewardship Committee, similar value has been identified where volunteers have the opportunity to become trail captains for the property. Volunteer trail captains are responsible for regular trail monitoring, light maintenance of the trail system, and reporting problems to TRCA that may require more substantial efforts. Since TRCA cannot regularly monitor all the GCL trails, this program helps ensure that trails are safe and well maintained.

##### Management Recommendations

- Establish the GCL volunteer Trail Captain Program and involve local community members to act as trail stewards.
- Develop the Terms of Reference for the Trail Captain Program and collaborate with the volunteers to create a monitoring schedule for all trails within the GCL.

##### 4.8.3 Outreach Materials

One of the main purposes of education and outreach materials is to reinforce the twin messages of stewardship and conservation. During the Master Planning process, information pamphlets were distributed to surrounding residents, and communication will continue through the GCL newsletter, the [Greenwood Leaflet](#). The production of this newsletter is a collaborative effort between TRCA, project partners, and community groups. The newsletter will be published twice yearly and will be distributed to area residents, local businesses, community centers, town halls, and libraries. It will also be available at select trailhead kiosks and through the TRCA website. Along with updates on the implementation of the Master Plan and Restoration Plan, future content will include event listings and general interest articles. Other TRCA materials, such as trail guides, may also be included with the newsletter.

##### Management Recommendations

- Continue communication with local residents, businesses, and community groups to keep them informed about the implementation of the GCL Master Plan and Restoration Plan and encourage their active participation in stewardship opportunities.
- Increase circulation of information materials to engage new residents as development continues in surrounding area.
- Proactively inform new homeowners of permitted uses on TRCA lands, through such methods as homeowner information packages, the regular distribution of newsletters and proper signage.
- Continue to produce the [Greenwood Leaflet](#) in a collaborative fashion and distribute to area residents.

##### 4.9 Economic Considerations

Implementation of the management recommendations outlined in this chapter will require significant financial support. The implementation of these recommendations will not only contribute to the larger objectives of TRCA, but will also assist the Town of Ajax, the City of Pickering and Durham Region in achieving some of their own planning and policy objectives.

Fortunately, many potential municipal and community-based partnership opportunities exist. Consultation and support by municipal and regional partners during the Master Planning process has been instrumental in developing the GCL Master Plan, and the continued support of these municipal partners will play an important role in implementation. Additionally, numerous organizations, community members and volunteers

have assisted with the development of the Master Plan, and their continued support will be essential in the efficient implementation of the plan. Toronto and Region Conservation will continue to foster existing partnerships and seek out new partnerships, funding and grant opportunities.

##### Management Recommendations

- Explore partnership opportunities with the Town of Ajax, the City of Pickering, the Durham Region, local community groups and other interested groups in order to implement the Master Plan.
- Investigate opportunities to obtain funding support from traditional and non-traditional sources.

##### 4.10 Integration into the GCL

It is the intent of TRCA, supported by the Public Advisory Committee and the Technical Advisory Committee, that the lands formerly known as the Brock Lands (e.g., Brock North and Brock South) be managed cohesively with the GCA and the Rodar Property. Key to achieving this goal is the integrated management of the four properties, which involves a number of elements. First, it is recommended that the names of all the TRCA land holdings in this area be known under the name Greenwood Conservation Lands. As such, the stewardship group, mentioned above, should be concerned with activities within the GCL. The Greenwood Conservation Area Stewardship Committee will be amalgamated into a new stewardship group. Trails standards and signage will also be consistent across the property, and all outreach materials, such as [The Greenwood Leaflet](#), will provide coverage over the entire GCL.

There is also potential for the operational management of Brock South to be added to the existing GCA management agreement with the Town of Ajax. Toronto and Region Conservation will continue to be responsible for the development and management of the GCL remaining lands.

##### Management Recommendations

- Rename the Brock Lands, Greenwood Conservation Area and Rodar Property under a single name of the Greenwood Conservation Lands.
- Integrate management of the Brock Lands with Greenwood Conservation Area in elements such as trail design, signage, stewardship and outreach materials.

Future updates to the [Greenwood Conservation Lands Master Plan](#) and the [Greenwood Conservation Area Management Plan](#) should be combined into a single planning document.



# 5 PUBLIC USE AND RECREATION PLAN



## 5.1 Public Use And Recreation Plan

In order to build healthy communities, the City of Pickering and Town of Ajax provide residents with access to greenspace and opportunities for active recreation through a number of parks, parkettes and recreational facilities located in close proximity to their homes. Toronto and Region Conservation supports our municipal partners' interest in contributing to the health and well-being of the public by providing a Public Use and Recreation Plan for the GCL. This Plan seeks to complement and expand upon the range of recreational and nature-based educational services that are currently offered in the area and considers the recreational needs and expectations of both existing and future residential communities as contemplated in the Central Pickering Development Plan.

Public use within the GCL will complement existing municipal parks and recreational services, offering both passive and active recreational opportunities.

A wide variety of passive recreational activities will be permitted, including cycling, hiking, leashed dog walking, angling, geo-caching, wildlife viewing, snowshoeing and cross country skiing. More information on the function of the passive use trail system is provided in Chapter 6, Trail

Plan and Recommendations. Active recreation activities, such as off-leash dog walking, field sports (baseball, soccer, football, etc.), community gardening, organized picnicking and a low ropes course, will also be permitted in designated areas.



The plan includes designated space for picnics



Example of an accessible node

Toronto and Region Conservation will be making a substantial effort to restore and enhance the natural heritage features and ecological function of the Brock Lands in the coming years. Toronto and Region Conservation recognizes that the site's wealth of natural features and open space will attract people from not only the surrounding community but also the Greater Toronto Area. As such, the GCL are susceptible to damage through misuse and overuse. To protect and preserve the site's natural assets, efforts have been made during the development of the Public Use and Recreation Plan to site public use and recreation activities with consideration for the site's natural heritage features, as well as the ongoing evolution of these natural features, whether through natural succession, active management or restoration.

In order to preserve sensitive and core habitats, higher intensity public use activities have been located on the periphery of the GCL in areas that have been significantly altered by previous land use activities and as a result currently have little habitat value. These areas include two sites located at the intersection of Concession Road 5 and Sideline 16: the Brock North site, which was a former landfill location, and the Brock South site, which was heavily impacted by previous aggregate extraction activities. These areas have been designated for more active recreation, which may include sports fields, group picnicking, and a trail network for off leash dog walking. Nature-based recreation activities such as hiking, equestrian riding, mountain biking, cross country skiing and conservation education have been integrated within the more sensitive natural areas of the GCL.

Detailed design and planning for all public uses will be guided by an "environment first" approach. Over the long term, this approach will also ensure that the GCL are established as an attractive "destination point" in the larger, regional network of trails and recreation facilities. Through such a balanced and measured approach, the GCL will make a meaningful contribution to rural economic development and the healthy lifestyle of its citizens.

## 5.2 Development Of Recommendations

The recreational service recommendations were developed through two separate processes. First, suitable locations for passive and active recreation were identified – locations that would not impact the natural and cultural heritage features of the site – through the designation of management zones for the GCL (as described in Chapter 3). The next step was to identify and review both desired and existing recreational uses and evaluate them in relation to the vision, goals and objectives and management recommendations of the GCL.

When investigating possible recreational uses, TRCA looked at recreational activities that had been suggested for other properties but had not been implemented due to incompatibility with the site conditions or concerns regarding potential impacts to sensitive environments.

A user survey of visitors to the GCA was completed to gain insight into desired improvements to the GCL. In order to capture the largest audience possible, this online survey was promoted through: the websites of TRCA and project partners, signage throughout the GCL, public meetings and open houses. Approximately 100 people responded to the survey. Some highlights from the survey include:

- Of those surveyed, 38 per cent visit GCA on a daily or weekly basis.
- A total of 42 per cent of visitors travel less than 15 km to get to GCA.
- Among the surveyed group, the most popular activities, in order, are cycling, hiking and dog walking.

For additional details on the findings of this survey, refer to Appendix #5 – Greenwood Conservation Area, User Survey Summary & Comments.





Cycling was the most popular activity in the user survey for Greenwood Conservation Area

Additional information on the number of users was needed to adequately plan for future parking and access requirements. It was determined that in 2011, 13,000 to 15,000 visitors obtained permits to use the active use areas of the GCA (e.g., the main portion of the park east of East Duffins Creek).

In order to compile information on the number of visitors accessing trails from Church Street, TRCA completed a Trail User Monitoring Survey. Full details are in Appendix #7 – Trail User Monitoring Survey. Over a one-month sampling period, it was calculated that approximately 3,300 people accessed the property from Church Street. These figures will be particularly important when determining the appropriate amount of space needed for future recreation and access. Approximately 58 per cent (1,900) of these people used the dog off-leash parking area and trails. Additional highlights of the information collected during this survey include:

- On average, 90 people used the trails leading from Church Street during weekdays.
- Almost 150 people, on average, used the Church Street trails each weekend.
- The highest number of visitors on a weekday was 157.
- The highest number of visitors on a single day during a weekend was 213.
- Peak usage is between 8 a.m. and 2 p.m.

Toronto and Region Conservation also worked with the Technical Advisory Committee (TAC) and the Public Advisory Committee (PAC) to investigate new opportunities, evaluate proposed recommendations and identify issues around existing recreational uses. Toronto

and Region Conservation was also contacted by interest groups requesting consideration of their sport/activity in the recreation plan.

Through this review, it was determined that a wide variety of recreational activities are compatible with the site. These public uses would include activities such as cycling, hiking, leashed dog walking, angling, geo-caching, wildlife viewing, snowshoeing and cross country skiing supported by a planned trail network as detailed in Chapter 6. Potential for designated open space for organized group activities or formal programmed areas that can support large group or family gatherings, sports, and active lifestyle pursuits were also considered.



Hiking is a popular trail activity enjoyed year-round

During the review of the existing recreational features, it was determined that the current location of the dog off-leash area was no longer appropriate as the area required significant restoration effort. The user group that enjoys the area has grown significantly and the off-leash area can no longer support such a high intensity of use. In addition, it was recognized that the trails leading to the East Duffins Creek from the designated off-leash area were being used, primarily, for off-leash dog walking. For more details on the impacts associated with the current off-leash area, see Appendix #6 – Stream Impacts Associated with Off-Leash Dog Walking. The negative impact of the unauthorized use of the adjacent trails



Bird-watching is an enjoyable low impact activity

further strengthened the recommendation to look for a new dog off-leash area. The location of the relocated dog off-leash area was selected based on direction provided by the management zones (Chapter 3), which identify potential sites compatible with active public use, such as a dog off-leash area.

### 5.2.1 Evaluation of Recommendations

The vision, goals and objectives for the GCL (see Chapter 2) provided the basis for reviewing and determining appropriate recreational activities. All proposed activities must be consistent with these guiding principles to warrant further consideration. The vision, goals and objectives aim to protect the function and diversity of the ecology onsite while offering recreational and cultural experiences.

The goal and objectives for public use and recreation, as outlined in Chapter 2, aim to ensure that all planned recreation activities will maintain protection of the ecological health of the site while providing social benefits. All of the recommended activities should meet the interests of all municipal partners and the local communities.

Proposed recreational activities were reviewed based on their potential impact on the cultural and natural heritage resources of the site. In order to properly protect the GCL, recreational uses that are not compatible with the ecological sensitivity of the site were removed from consideration. This included the unauthorized use of motorized vehicles onsite.

In the event that recreational activities already established on the property were in an unsuitable location, the

option of relocating them to a more appropriate area was investigated. Suitable activities were then reviewed by the TAC and PAC and presented to the public for comment. Through this consultation process, various new ideas and revisions were presented and discussed. Revisions that were suitable and that improved the recreational service, without increasing impacts on the GCL, were incorporated into the GCL Recreation Plan.

While assessing the existing trail system, TRCA staff identified an extensive mountain biking trail system in the Brock North, Rodar and GCA properties. Through various consultation meetings with the public and the Advisory Committees, it was established that cycling would be a permitted use in the GCL. Using the management zones, cycling trails located in sensitive areas were highlighted for relocation. Additional areas conducive to cycling were identified and included as a recommendation.

Recommendations of the Public Use and Recreation Plan were designed to address known and forecast recreational trends, while protecting the natural and cultural heritage values of the property.

In the future, if new recreational services are requested, they will be evaluated through the same process. Future recreational opportunities must be located in the appropriate management zone (see Chapter 3), should be compatible with the established recreational uses, and should not impact the natural and cultural attributes of the site. Additional public use considerations include the cumulative impacts on the GCL, the demand for the activity/program, and the cost associated with its undertaking.

### 5.3 Public Use And Recreation Plan

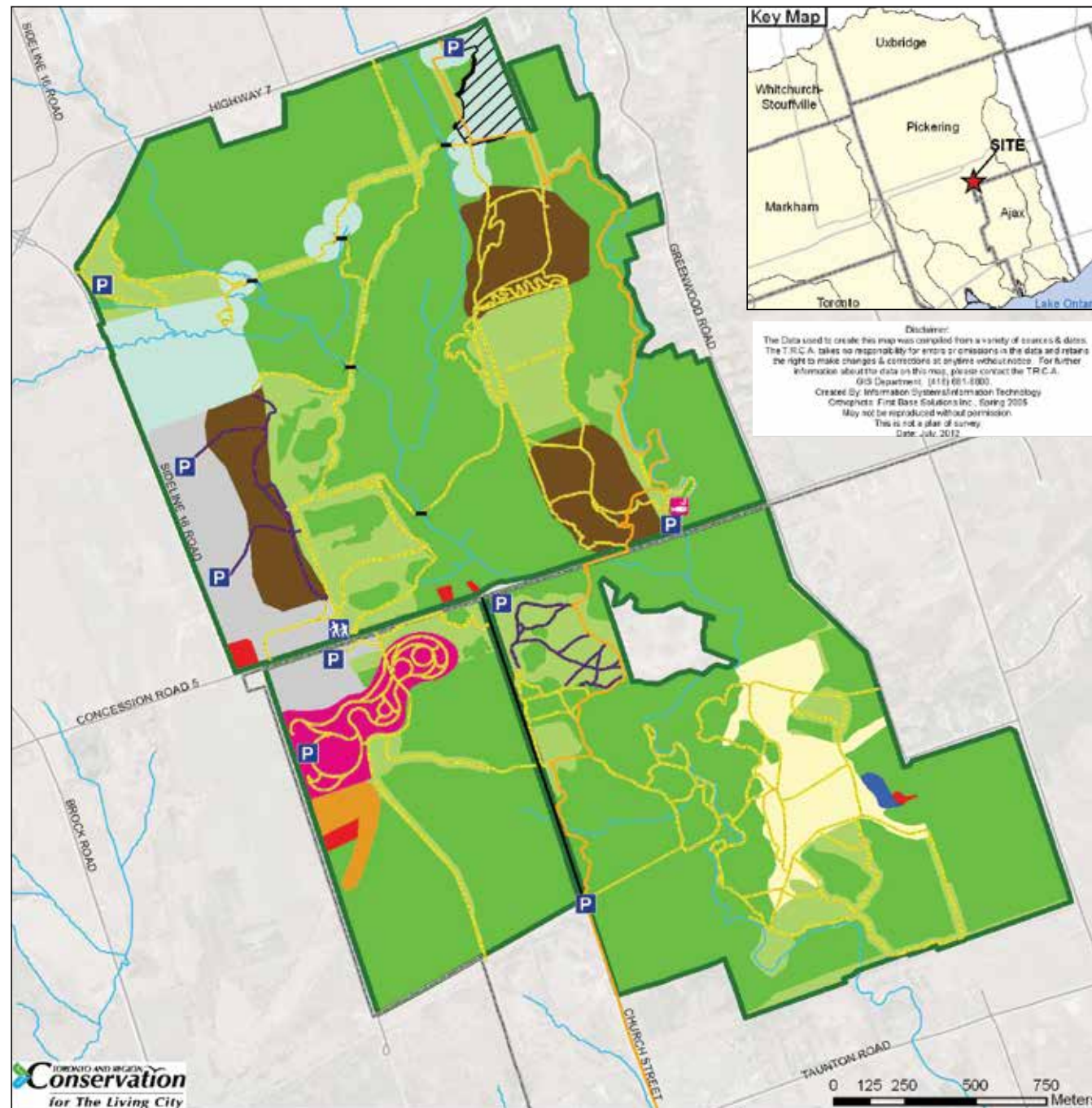
These site recommendations are not final design plans but, rather, guidelines to direct future management. Detailed designs, consultation and implementation plans will need to be completed in consultation with appropriate municipalities, partners and the future GCL Stewardship Committee.

The Public Use and Recreation Plan concept (Map 6.1) outlines the general recommendations for passive and active recreation on the GCL. The main recommendations of the Plan include:

- Relocate the existing dog off-leash area to a more suitable location.
- Develop three mountain biking focused areas.
- Identify expansion opportunities for Pickering Museum Village.



Map 5.1: Greenwood Conservation Lands Draft Recreation Concept Plan



- Designate an area where the City of Pickering may implement a community park.
- Provide an accessible platform along East Duffins Creek.
- Develop a passive multi-use trail system that safely connects the various recreational areas and areas of interest.

5.3.1 Recreation Plan – Recommendations

The following sections describe the key elements of the Public Use and Recreation Plan.

**Active Public Use Area (Brock South)** – Upon the completion of the restoration efforts on this site, the area will be suitable for active recreation. Some of the recommended uses under consideration include:

- Bike Park – with such features as a skills area, jump lines and pump track.
- Low Ropes Course – a series of elevated features designed for individual and team development exercises.
- Picnic/Day Use Area – to complement the adjacent GCA, this area can be developed as a trailhead area with the option of picnicking.
- Community Gardens – areas available for community-based agriculture.

Appropriate parking areas will need to be identified and provided for each of these recommendations.

**Dog Off-leash Area** – Based on comments provided at an open house, TRCA developed a list of desired features for a dog off-leash area to inform the design and location of a new leash-free site. Four municipal dog off-leash areas and both the existing and proposed dog off-leash area were reviewed within the context of desirable dog off-leash features identified during the consultation process. The result from this analysis indicated that the existing off-leash area in the GCA ranked the lowest in facilities and infrastructure, and the proposed off-leash area ranked highest based on future recommendations and site plans. For further details on this review, see Appendix #8 – Municipal Dog Park Review.

The new dog off-leash area will be 15.51 ha (38.31 acres) and will provide a nature-based experience that meets the needs of this popular activity. The new site will not only be larger than the previous site, but will also have greater parking capacity, open and shaded trails, and a fenced boundary for safety. Further discussion on additional features, such as a shade pavilion, potable



The new dog off-leash area will be developed in consultation with the public

water or other attributes, will be discussed when consulting with the public during the detailed design of the dog off-leash area. Implementation of the relocated dog off-leash area is targeted to be completed in a short timeframe to ensure adoption from the off-leash dog community; however, the timeline for implementation is still to be determined pending Brock South restoration.

**Community Park\*** – Although a timeline for construction of the community park has not been finalized, site preparation may begin as early as 2015. Proposed features of the community park include: baseball fields, soccer fields, football fields, two parking areas and a maintenance building. Once completed, this site will be managed and operated by the City of Pickering.

**Pickering Museum Expansion (Unique Cultural Heritage Area)\*** – A feasibility study will investigate the relocation of historic buildings, construction of a new visitors centre and installation of additional parking lots. One of the parking lots will be open to the public to use as a trailhead access point to the GCL and the other will be for paying customers of the museum. Development, maintenance and management of this site will be completed by the City of Pickering.

\*These are proposed partnership projects with the City of Pickering. In the future, if either the community park or the museum expansion is not required, the designated lands will be used for either public recreation or restoration opportunities.

**Mountain Biking Focused Areas** – To meet the high demand for cycling opportunities on the GCL and within Durham, three areas have been identified to provide a cycling focused experience. These areas will be open to all permitted uses, but will contain trails that are designed



with mountain biking in mind. Additional information on the trails within these areas is provided in Chapter 6.

**Fishing Platform** – To provide access to East Duffins Creek, a platform will be constructed. This site will allow users to easily access the site (further detail in section 6.4.1.5). It will also help preserve and protect the bank side vegetation from being trampled by users. The platform will offer angling opportunities and a vantage point from which to view the creek and surrounding area.

Detailed planning and site selection still needs to take place. It is hoped that a number of partners will be attracted to the project to help fund and promote it, as both a new use for the site and an excellent opportunity to offer access to people of all abilities.

**Agricultural Area/Community Garden** – Located in an area once used for farming, this location has been identified for future near urban agriculture projects. As the surrounding land is developed, small scale farming operations close to residential communities will become more important. In the future, it is envisioned that this site be utilized for community farming projects and small scale food production. A community-based initiative, such as an urban garden, presents excellent partnership and educational opportunities. Development of the site will be determined by the interest of the nearby community.



Urban agriculture presents new opportunities for the Greenwood Conservation Lands

**Existing Greenwood Conservation Area (GCA)**

The Greenwood Conservation Area has a rich history of nature-based recreation and has been enjoyed by the public for decades. This tradition will continue and be strengthened through the development of the various Master Plan recommendations. Current uses will continue in designated areas and new activities, such as mountain biking, will now be permitted. Under a management agreement with TRCA, future management of the GCA and Brock South will be undertaken by the Town of Ajax.

**5.3.2 Recreation Plan – Additional Recommendations**

A series of general recommendations were developed during the creation and review of the Recreation Plan. These recommendations will be taken into consideration when developing site level plans and programs.

- Promote environmentally-responsible use of all recreational features.
- Concentrate active recreational uses in areas that have been identified as appropriate for such activities.
- When developing site level designs, effort should be made to consult with the appropriate user groups.
- Complete further investigations into the known cultural heritage sites found on the property for use in an interpretive trail in partnership with the Pickering Museum Village.
- Share the importance of the cultural and natural heritage resources of the property through interpretive signs and/or an interpretive trail.
- Continue with existing services within GCA, such as picnicking, hiking, angling and other nature-based activities, and allow cycling as a permitted use in the future.
- Ensure adequate recreational areas remain in GCA to provide space for municipal events and camps.
- Ensure the landscaping of all recreational services/features is designed to portray a seamless transition between the active recreational areas and the surrounding natural environment.
- Provide gateway signage and features that identify the site as a TRCA facility to the public, especially along the Highway 7/407 corridor and future public transit infrastructure.
- Incorporate design standards that support ecological objectives (e.g., LEEDTM standards or equivalent for buildings, environmentally compatible site design, passive stormwater management/water recycling, use of recycled materials, and appropriate lighting). See Appendix #9 – Sustainable Design Standards.
- Develop and provide recreation activities that provide opportunities for a regional audience.
- Comply with relevant accessibility standards when developing site plans.



**6 TRAIL PLAN**

**6.1 Introduction**

Trail use as an outdoor activity is growing in popularity. Trail activities such hiking, jogging and cycling allow users of all ages and abilities to enjoy the beauty of the outdoors while also enjoying the health benefits of an active lifestyle. The Trail Plan is intended to guide the development and management of trails, access points, signage and related facilities in order to achieve the GCL Master Plan goals and objectives.

This chapter reviews the existing trail network within the GCL, summarizes the process of how the Trail Plan was developed and provides recommendations and actions on how to achieve the desired trail system for the GCL as envisioned in the Trail Plan.

**6.2 Existing Trails**

All existing trails were mapped by TRCA in order to obtain an understanding of desire lines, community connections, and current use of the site. Map 6.1 – Existing Greenwood Conservation Lands Trails outlines all mapped trails within the study boundary. In total approximately 60 km of trail was mapped and evaluated. This baseline

trail map became the foundation of the Trail Plan for the GCL. The following summarizes some of the features of these existing trails.

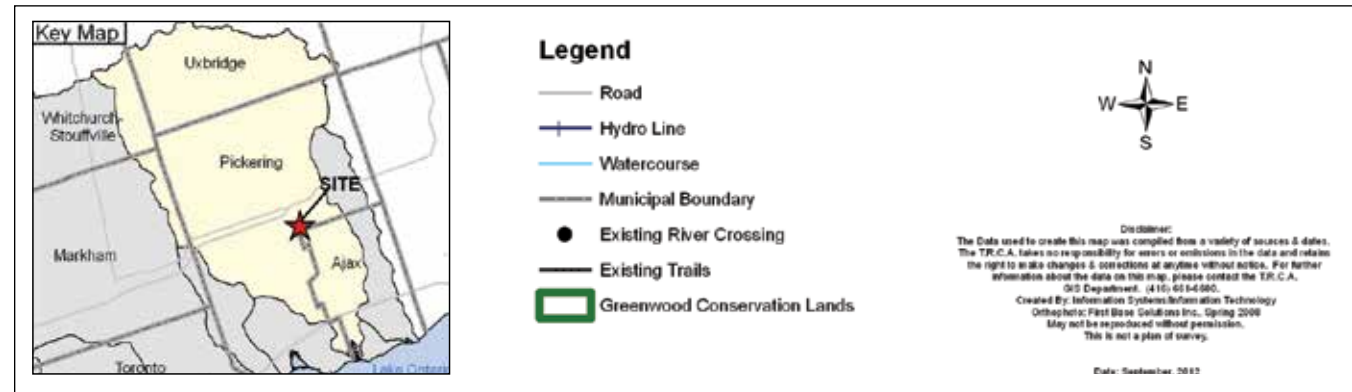
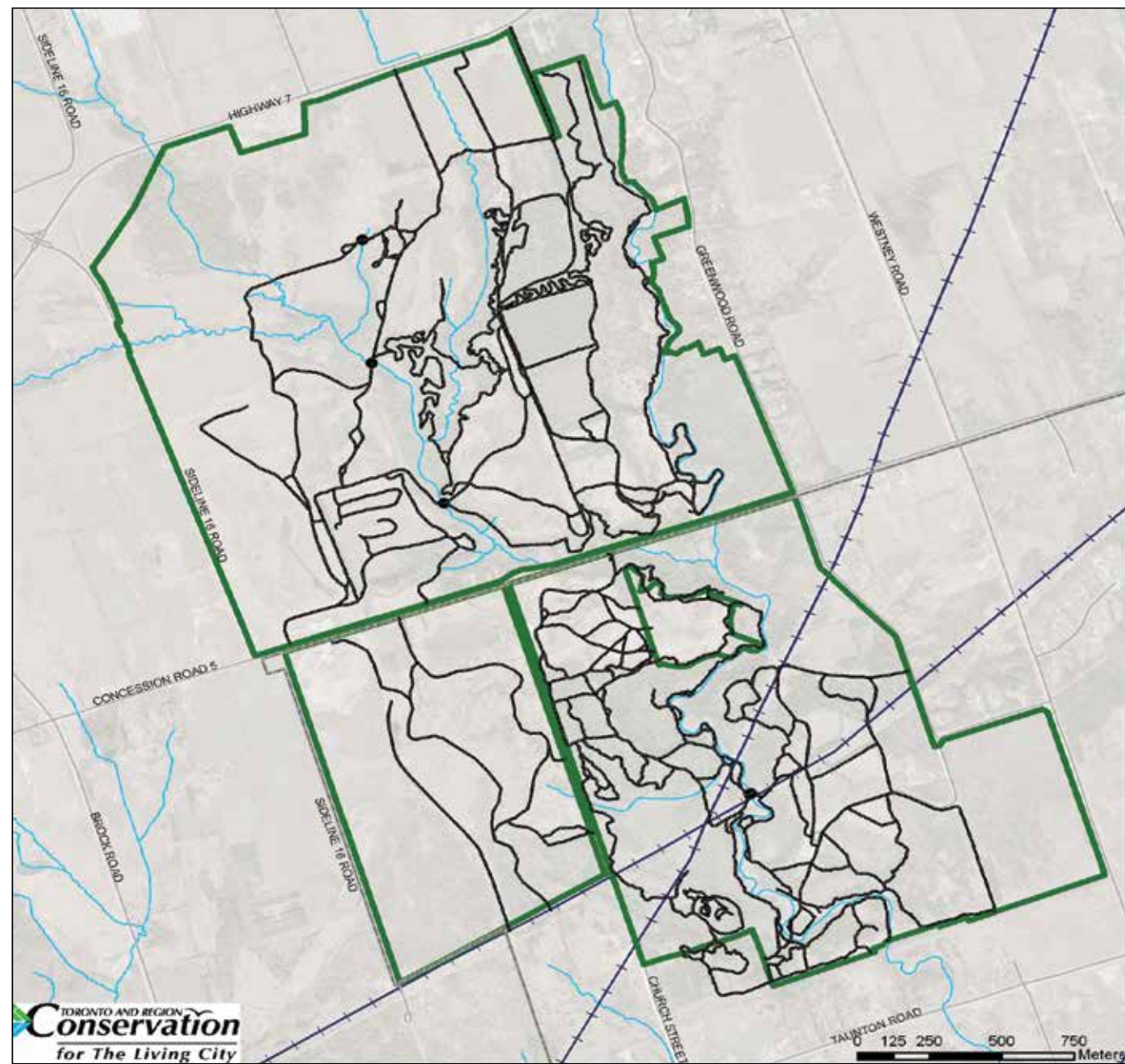
**6.2.1 Current Greenwood Conservation Area Trails**

Following the completion of the Greenwood Conservation Area Management Plan (2006), the Town of Ajax finalized and implemented the Trail Plan for the GCA. This Trail Plan identifies various loop trail options and includes wayfinding and interpretive signage. These trails travel through the various environments of the property and provide access to the East Duffins Creek. A portion of the inter-regional Trans Canada Trail (TCT) will also travel through the property.

There are three formal trailheads; the primary one being the main entrance to the GCA off Greenwood Road, and two secondary trailheads off Church Street, one of which is the access point to the existing Dog Off-Leash Area. There are also secondary access points along Concession Road 5, Church Street and Greenwood Road. Additional informal trails that are not a part of the GCA Trail Plan also exist.



Map 6.1: Greenwood Conservation Lands Trail Plan Existing Trails



### 6.2.2 Rodar Property Trails

Previously operated as a Conservation Area, many of the original trails still exist on the Rodar Property. Current trails are primarily made up of old maintenance roads and access roads to the plantation forests found on site. A continuation of the TCT starts at the trailhead to the Rodar Property at Concession Road 5, before travelling along the East Duffins Creek and connecting to the Pickering Museum Village. Access to the Rodar Property can also be gained from the Pickering Museum Village.



Rodar Property entrance

### 6.2.3 Existing Brock North and South Trails

Although public access to both the north and south portions of the Brock Lands has not been permitted in the past, a significant number of trails exist, particularly in Brock North. Limited usage and presence on these lands over the last few years has left the property open to unauthorized trail construction and unauthorized use by the public. Maintenance and access roads from previous land use provide connections to the constructed trails scattered throughout the property.

### 6.3 Trail Plan Objectives

To aid in the evaluation of the existing trails, a series of Trail Plan objectives and desired features were developed. These outline the desired function and features of the GCL trail system.

- Provide passive public use opportunities that have minimal impacts on the natural and cultural heritage resources on the property.

- Provide recreational connectivity and links to existing and proposed communities.
- Improve social impacts (e.g., privacy, security) on neighbouring properties.
- Involve local community members as trail stewards to help care for and maintain the trail system.
- Develop a comprehensive and integrated approach to interpreting the area's natural values, ecological processes and cultural heritage.
- Create a trail network that will become a regional attraction to the permitted user groups with specific accommodations to mountain biking (e.g., mountain biking focused areas).
- Ensure efficient trail connectivity between the recreational features of the property.
- Provide various loop options leading from each trailhead to provide the opportunity for shorter and longer visits.
- Design a trail system that is welcoming, safe and accessible for the public to explore.
- Provide sufficient and convenient parking and trailhead access to the trail system.
- Allow a range of trail experiences that accommodate beginner to intermediate trail users.

Note that all trail developments should adhere to TRCA's Trail Planning and Design Guidelines Manual (1992) or subsequent revisions.

Targeting these objectives, trails within passive public use management zones were identified and investigated for consideration as part of the final Trail Plan. Trails identified in sensitive or potentially hazardous areas of the property were designated for closure. Alternate trail routes were developed where necessary to sustain connectivity throughout the property. Onsite evaluations were also conducted to assess the current condition of trails and identify possible safety concerns. Trails that were considered compatible with the site conditions and long term vision for the property and requiring minimal upgrades were designated for use in the final plan.





Bench, Greenwood Conservation Lands

Through the evaluation of the existing trail network, an estimated 30 km of trail will be decommissioned as outlined in Map 6.2. Where trail closures are necessary, the best efforts will be made to restore the closed trail sections to as natural a condition as possible. Various techniques such as brush piling, signage and fencing will be implemented accordingly.

The Trail Plan also outlines future construction of an additional 10 km of trail, not including future trails identified for the cycling focused area. Further investigation into site level trail improvements including trail capping or re-routes is still required. Information on the recommended scheduling for trail work to be completed is outlined in Chapter 7 - Implementation Schedule & Budget.

Also identified in Map 6.2 are trails designated as “Under Review.” This designation is used to identify trails that currently exist in an area where significant restoration is recommended. During the development of a restoration plan, trail locations may be slightly revised or redesigned to accommodate site changes, however their overall use and function should not be significantly impacted. An important recommendation identified in Map 6.2 that will have significant benefit for both recreational and ecological connectivity is the desire to decommission a portion of Church Street. Where TRCA owns land on both sides of the road, the closure of Church Street is being recommended. This concept has been presented to the Town of Ajax and at the public meetings and was well received. The closure of Church Street would facilitate an increased ecological and recreational connectivity between Brock South and the GCA, while eliminating the current dumping issues on Church Street. This closure

would not impact access to any private residence along Church Street.

Trails identified as proposed have been provided as general recommendations for where trails should exist. Further investigation of these proposed trails, as well as approvals, will be required to facilitate construction of these trails. The Dog Off-Leash Area trails should be developed in consultation with project partners and the dog walking community. Once completed, these trails will travel through both open areas and forested locations, as requested by members of the public during consultation. Proposed trails in the northwestern portion of the property will only be developed should the need for future trails in this area be required. All trails will be located and designed to minimize any impacts to flora, fauna and landscape views.

### 6.4 Greenwood Conservation Lands – Trail Plan

Following the completion of all recommended trail work identified in Map 6.2, the Greenwood Conservation Lands Trail Plan will provide a safe, enjoyable, functional trail system that will link recreation and education opportunities within the GCL and with surrounding communities.

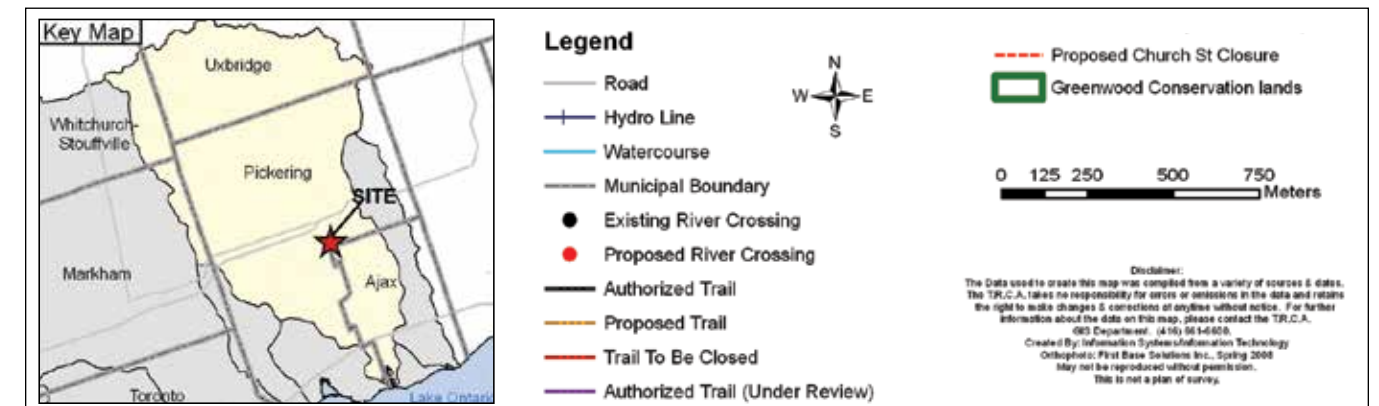
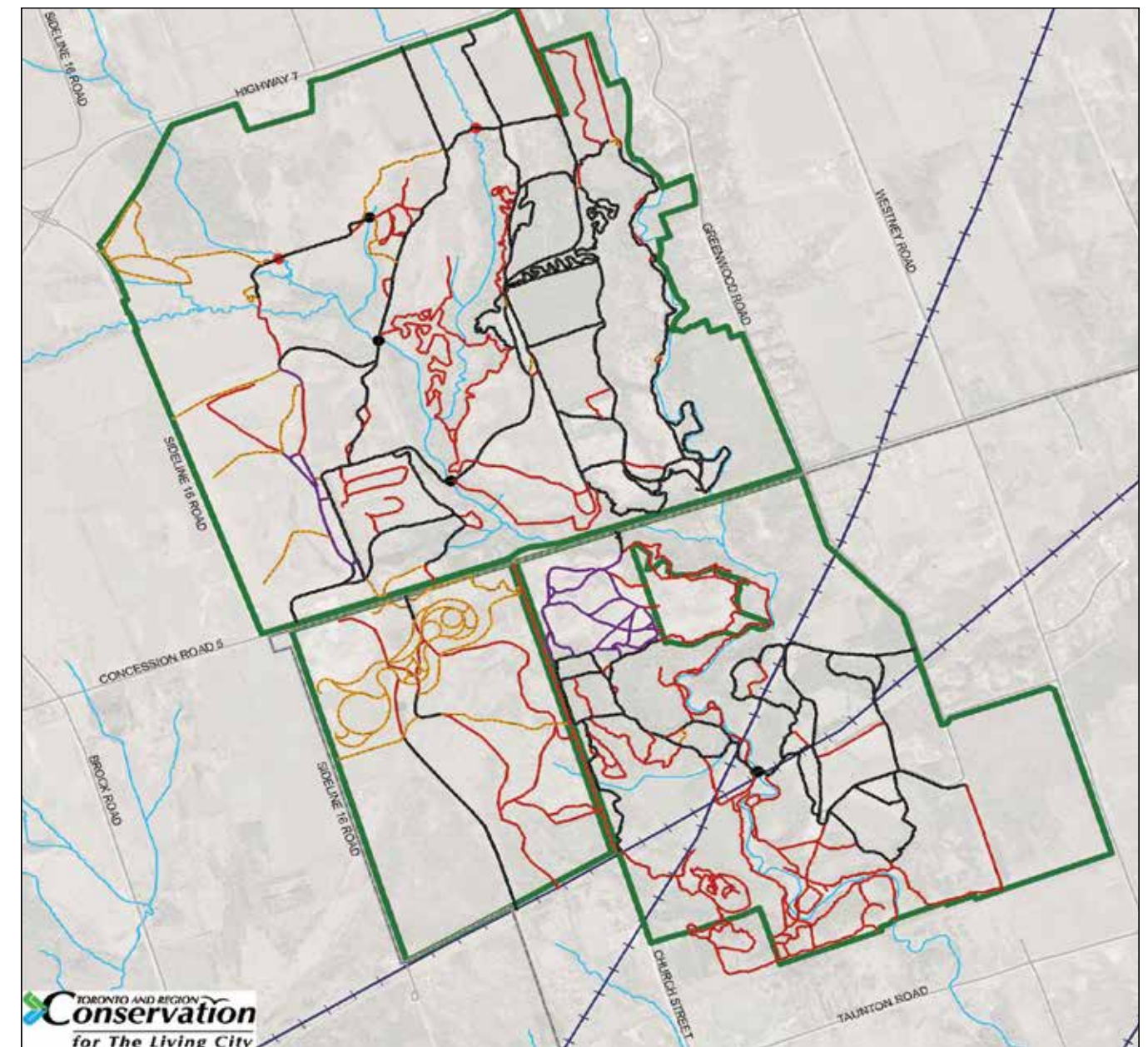
The finalized trail system, identified in Map 6.3 – Greenwood Conservation Lands Trail Plan, will include a number of features, including multiple loop options leading from different trailheads and linkage trails that will allow trail users to experience the many different areas and features of the lands. Some of the highlights of the GCL Trail Plan include:

- A multi-use trail system approximately 41 km in length
- Inter-regional trail connections with the TCT as well as links to the surrounding Seaton communities
- Over 8 loop trail options available
- Excellent connectivity between recreational features of the site and a total of 15 different access points

#### 6.4.1 Trail Features

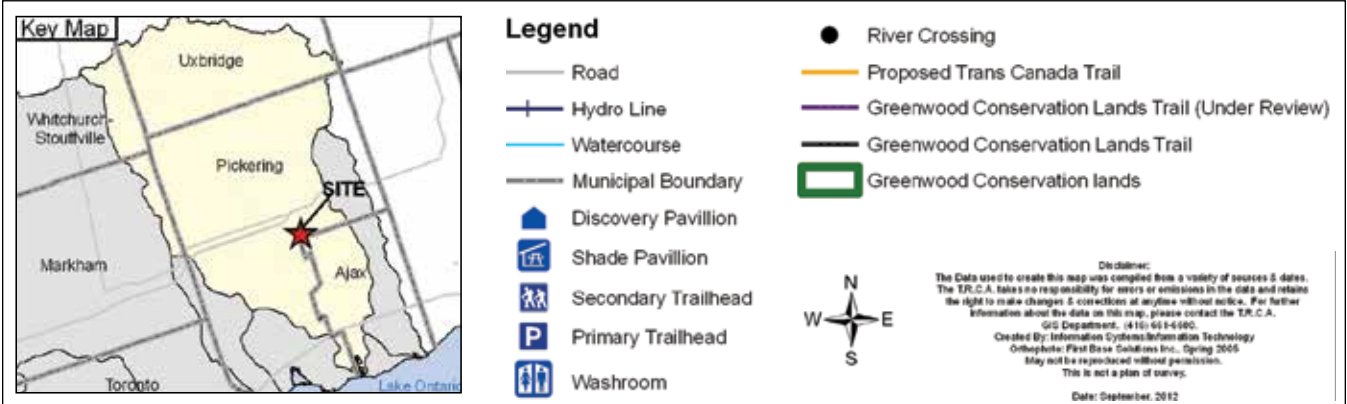
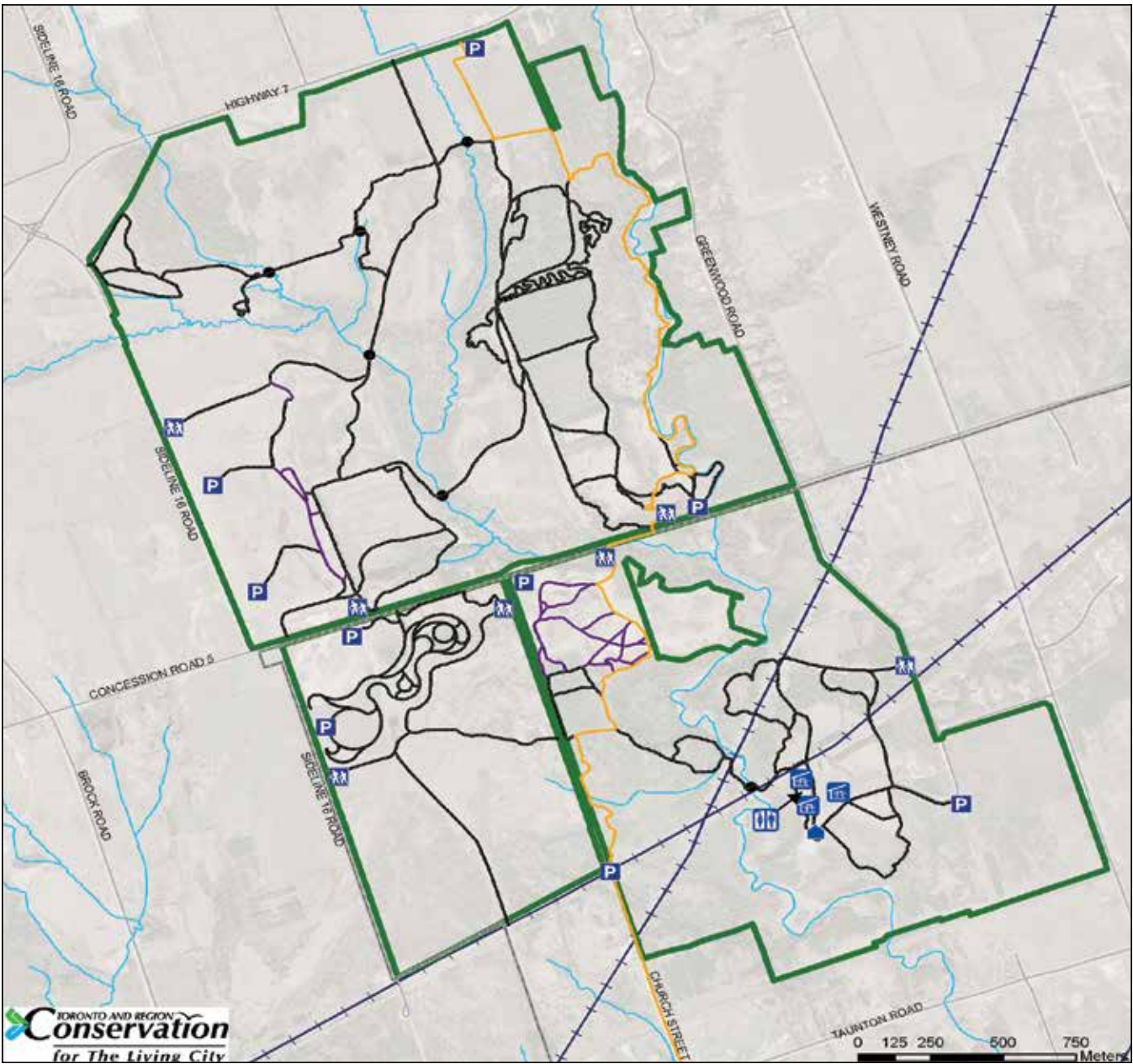
It is envisioned that the GCL trail network will support a multi-use trail system and become a destination for all trail related recreation including: hiking, cycling, leashed dog walking, geocaching, wildlife viewing and access to fishing locations. Use of the GCL is limited to daylight hours only. Night use of the property is not permitted, unless specific permission is granted by the TRCA. The following is a summary of the key features of the trail system.

Map 6.2: Greenwood Conservation Lands Trail Plan Work Required





Map 6.3: Greenwood Conservation Lands Trail Plan



6.4.1.1 Greenwood Conservation Area Trails

Since the completion of the 2006 Management Plan for the GCA, the Town of Ajax has formalized the trail system within the GCA. This updated Trail Plan for the GCL is recommending minimal revisions to this existing plan. Recommendations include the designation of the TCT through the GCA and formalizing trails in the former Dog Off-Leash Area. Trails in this area will be reviewed during the development of restoration plans for the site.

6.4.1.2 Trans Canada Trail (TCT)

The TCT is a national trail connecting the communities of Canada, from coast to coast to coast. Having a section of the TCT running through the GCL is an excellent feature to attract visitors to the area. In total 5.4 km of the TCT will run through the GCL and it will play an important function in providing a regional trail connection between the Lake Ontario waterfront and the Oak Ridges Moraine.

Generic colour titles have been given to these recommended loops with the intention of naming the trails with the input of a future Stewardship Committee. Adjustments to the exact location of these loops may also take place at the discretion of TRCA staff and the Stewardship Committee. The features and function of these loops are summarized below.

**Pink Loops** – Leading from the Rodar Property trailhead off Concession Road 5, these loops provide approximately 5.7 km of trail. They will function to not only connect two of the mountain biking focused areas, but also to allow visitors to travel along the East Duffins Creek. A portion of these loops is also designated as part of the TCT.

**Purple Loops** – Starting from the trailheads off Sideline 16 Road, these loops will allow visitors to travel approximately 4 km. These will likely become popular trails to visitors of the proposed Pickering Community Park.

**Brown Loops** – Developed to provide a connection between the different cultural heritage features of the site, this route starts at the Pickering Museum Village and links to the other cultural sites identified within the GCL. Further investigation into the sites found along the trail should take place. Information on these sites would be used to develop interpretive signs at key locations along the trail. In total these trails are approximately 3.6 km long.



Trans Canada Trail, Glen Major

6.4.1.3 Loop Trails

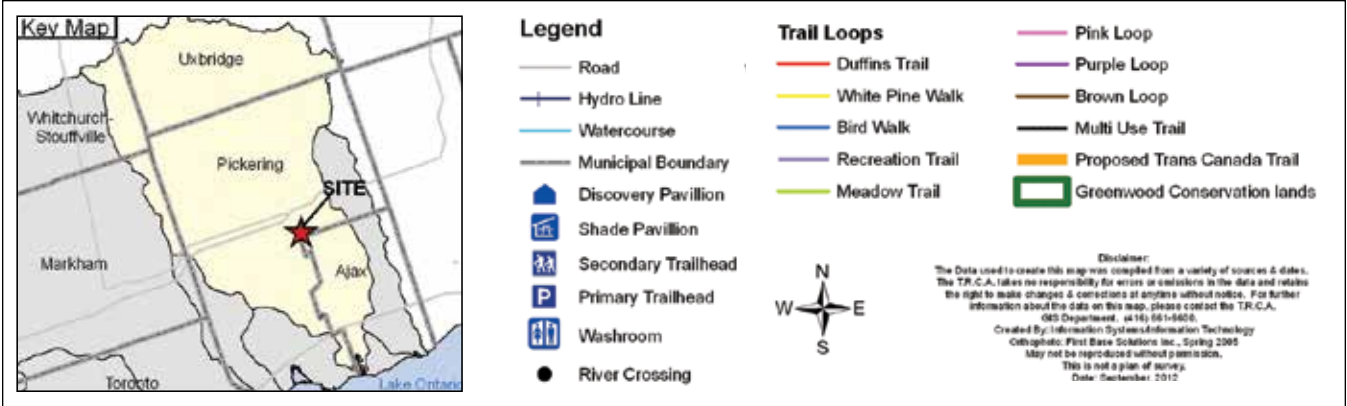
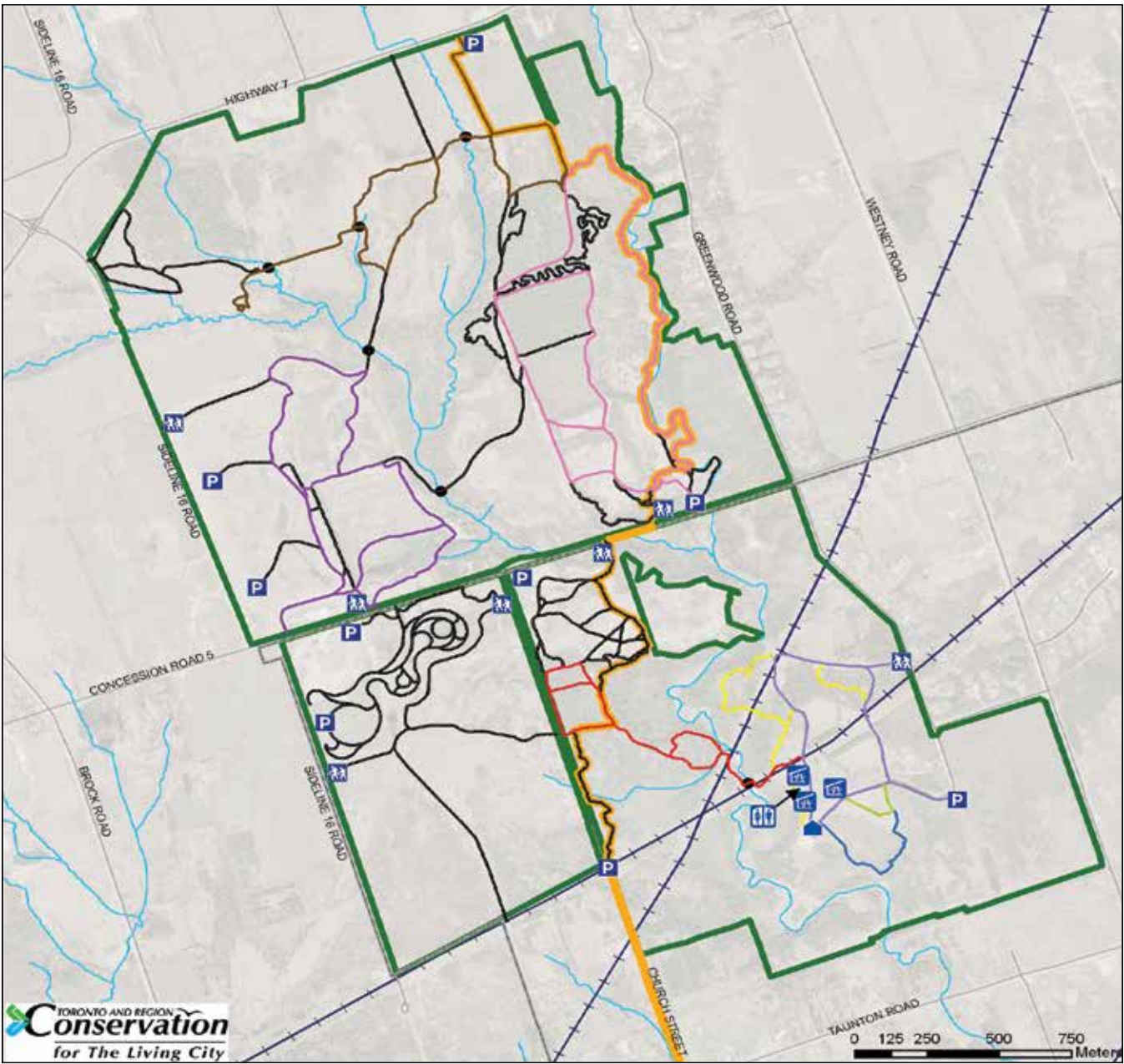
Designated loop trails play a valuable role in developing a functioning trail system. Commencing from trailheads, loop trails provide a variety of trail use experiences and ranges of difficulty. Designated loops provide users with a way to comfortably explore the GCL with confidence, while preventing trail use conflicts. Map 6.4, Greenwood Conservation Lands Trail Plan with Loops, identifies the recommended conceptual locations for three new loop trail systems within the GCL.

6.4.1.4 Cycling Focused Areas

It is important to acknowledge that the areas identified as cycling focused areas in Chapter 5 have not been formalized and that trails in these areas will be developed in the future. Future plans for these areas will include information on trail routing, difficulty ranking, connectivity to other areas of the property, and signage and must be approved by TRCA and the forthcoming GCL Stewardship Committee. A total of approximately 20-25 km of trails located in the three designated cycling locations are recommended. Existing linkage and multi-use trails in these areas will be considered in the total desired distance for these areas, however existing trails may be relocated or upgraded if necessary. All trails in the cycling areas will be open to all permitted uses, but will be designed and constructed with mountain biking as the preferred use in mind. Appropriate signage identifying these areas as cycling focused will be developed and installed. Design standards and difficulty ratings will be consistent with the specification of the TRCA's Trail Planning and Design Guidelines Manual (1992) or subsequent revisions.



Map 6.4: Greenwood Conservation Lands Trail Plan with Loops



Mountain biking is popular with current users of the Greenwood Conservation Lands

6.4.1.5 Accessibility

Although not designated in the GCL Trail Plan, there is a desire to investigate and implement an Accessible Trail within the GCL. Investigation into the appropriate location for this trail will require further analysis. Toronto and Region Conservation will survey all authorized trails using the High Efficiency Trail Assessment Process (HETAP). This evaluation will allow TRCA to classify trails based on attributes such as slope, tread width and surface type to determine if a trail is Accessible. Trail improvements may be required in some cases, but the preferred route(s) will be one that requires the least amount of modification and improvement. Finalization of the location, overall length and other attributes will require further investigation and consultation. Implementation of an Accessible Trail will conform to the Accessibility for Ontarians with Disabilities Act.

6.4.2 Trail Infrastructure

6.4.2.1 River Crossings

One of the larger implementation projects of the GCL trail system will be the installation or upgrading of river crossings. Both proposed and existing river crossings are identified in Map 6.2. Appropriate permits must first be obtained prior to the installation or upgrading of

these river crossings. Two new river crossings and one river crossing upgrade are required to provide effective trail connectivity throughout the GCL. The timeline for installing these river crossings is discussed in further detail in Chapter 7.

6.4.2.2 Trailheads and Access Points

Identified in the GCL Trail Plan are the locations of both primary and secondary trailheads, a list and summary of which is included below. Primary trailheads will feature kiosks with full trail maps, trail rules and general information on the GCL and will be the main access points to the GCL trails. Secondary trailheads may also have some parking available, but will function mainly as access points between two parcels of the property.

**Primary Trailheads** – Functioning as gateways to the GCL, these areas will have parking accommodations and trailhead kiosks. They are located in strategic locations to provide convenient access to the trails and recreational features of the GCL. The majority of the primary trailheads will need to be constructed. Some parking lots, such as the main GCA parking area and Rodar trailhead parking are already in place. The following is a list and summary of the primary trailheads in the GCL:

- Pickering Village Museum – Accessed from Highway #7, this trailhead parking lot will be a part of the proposed Pickering Museum Village expansion plans and will be a shared parking area for visitors of the Pickering Museum Village and the GCL trails.
- Proposed Community Park – Two parking areas have been identified as part of the proposed Community Park to be developed by the City of Pickering. These parking areas and trailheads will be accessed from Sideline 16 and are proposed as shared facilities with the users of the proposed Community Park facilities.
- Rodar Trailhead – Located on the north side of Concession Road 5 this trailhead has been a popular destination for many years for visitors of the Rodar Property. To accommodate an estimated increase in visitors it is recommended that this parking area be expanded.
- Public Use Area – Although the end use for the Active Public Use area located at the corner of Sideline 16 and Concession Road 5 has not been finalized, it is recommended that a primary trailhead be developed at this site. Access to this trailhead will be from the south side of Concession Road 5.
- Dog Off-Leash Area – To accommodate the large number of visitors expected to visit the relocated Dog



Off-Leash Area, a new parking lot will be constructed with access from Sideline 16. Based on the popularity of this activity, it is anticipated that the capacity of this parking lot will need to be greater than the existing Dog Off-Leash Area parking off Church Street. Further study into the size of this parking area will be required. It is recommended that this parking lot be situated in a location that would allow for shared use between Dog Off-Leash area users and the proposed Agricultural Area, as the latter will accommodate a multi-use trail connection.

- **Church Street Trailheads** – Should the recommended closure of Church Street take place, additional trailheads will be required to sustain access to the GCA. It is recommended that two trailheads be implemented once Church Street is decommissioned. One would be in the north, providing access from Concession Road 5 and replacing the current trailhead off Church Street. The second would be on the southern end of Church Street, north of Taunton Road.
- **Greenwood Conservation Area Trailhead** – No upgrades are recommended for this popular trailhead that is accessed from Greenwood Road.

**Secondary Trailheads** – These trailheads provide access to the GCL, but do not have designated parking lots, although some road side parking options may exist. These access points provide connections between parcels of land or will act as entrances to regional trail connections. Trail maps may be included at some of these secondary trailheads.

- **Sideline Road 16/Seaton Trails** – Connections to the surrounding communities and planned trails are an important consideration for the trail system of the GCL. This secondary access will provide the recommended connection to the future Seaton communities and trails.
- **Concession Road 5** – In total four secondary trailheads will exist along Concession 5. These will provide important connections across Concession Road 5 and connect the trail systems on either side of the road. One pair is located between Sideline 16 and Church Street, connecting Brock North and Brock South. The second pair will function as a connection of the TCT as it crosses from the GCA to the Rodar Property.
- **Greenwood Conservation Area** – A secondary trailhead that will access the GCA is provided off Greenwood Road. This will provide access to the recreational trails within GCA.

#### 6.4.2.3 Signage and Wayfinding

Signage on the GCL will play an important role in communicating information on rules, access points and wayfinding to visitors. The following provides a summary of the recommended signage necessary to provide key messages to visitors. An appropriate balance between clearly communicating messages and “sign pollution” on the property should also be considered when implementing these recommendations.

#### 6.4.2.4 Signage at Primary Trailheads

At each of the primary trailheads the following signage is recommended:

- Trailhead map containing general information on the trail system including rules, permitted uses, and information about trail length and difficulty, as well as all named trails and locations of post markers.
- Location identification (ID) signs will be a roadside sign that will introduce users to the GCL. These location ID signs will also help to acknowledge all the different trailheads as being a part of the larger GCL. These ID signs will also be valuable to emergency response personnel.

#### 6.4.2.5 Signage at Secondary Trailheads

At appropriate secondary trailheads trail maps may be required. Where signage is appropriate, general trail information will be provided, including rules, permitted uses, trail length and wayfinding post numbers.

#### 6.4.2.6 Wayfinding

An effective wayfinding program on the trails plays an important role in building the confidence of users as well as providing valuable information to emergency response personnel. They also provide information on trail identification and direction travelled. As on many other TRCA properties, numerical signs posts that include a “you are here” map are recommended. Numerical posts should be oriented such that users are facing north when reading the maps. Details on the specific location and number of these sign posts will be investigated in the future. Once finalized, information on the numerical posts will be used to develop a trail guide and provided to emergency response units in the area. An electronic version of this trail map should be made available for download on the TRCA website. Trail system data that can be uploaded to handheld GPS units and smart phones should also be made available to the public.

#### 6.4.2.7 Interpretive Signs

Interpretive signs should be incorporated into the sign program at key locations to highlight natural and cultural heritage facts and features and increase public awareness. Topics for these signs may include:

- Information on the Species at Risk found on the property
- Information on the Cultural Heritage features of the site, such as the Brougham Post Office
- The role the GCL plays in providing for a healthy Duffins Creek watershed

#### 6.4.2.8 Boundary Signage

Small signs along the boundary of the GCL will help to brand the site as Conservation Lands owned by TRCA. These boundary signs will also help to deter unauthorized access to the GCL by directing visitors to approved trailhead access points. Signs will be posted along boundary fence lines and should be installed at appropriate intervals.

In order to ensure that trail users have a safe and enjoyable experience in the GCL, specific considerations should be made to allow access to the lands for police patrol and emergency response purposes. As a result of the land’s natural character, many areas are inaccessible by conventional response vehicles, such as fire, ambulance and police vehicles. Special considerations are therefore required, including:

- A trail locator system such as a series of distance markers along the trails to locate and orient users.
- Geographic integration of the trail location system into the emergency response system of the fire, police and ambulance departments. A fully integrated map depicting all named trails and location of markers along each trail should be installed at all primary and appropriate secondary trailheads.
- An emergency response plan for the GCL with involvement from local and neighbouring emergency service providers.

### 6.5 Monitoring And Review

#### 6.5.1 Trail Plan

The Trail Plan provides initial recommendations for development and management. As implementation occurs and usage patterns evolve, the plan should be monitored and reviewed. Monitoring and review of the Trail Plan should be conducted at a minimum of every three years or as deemed necessary. To assist in the monitoring of the Trail Plan a baseline user survey should be completed. This baseline survey will provide figures that can be compared against surveys completed in the future. Trail use surveys should be completed every 3-5 years or as deemed necessary.

#### 6.5.2 GCL Trails

Monitoring and review of the trail system within the GCL should be conducted on a yearly basis to assess the success of implementation objectives, ensure unauthorized trail are not developed, and identify potential safety issues. Effective monitoring of the trails and infrastructure each year will not only provide a safer experience but will help manage public use safety and liability issues. A recommended Trail Monitoring Program for the GCL is summarized in Appendix #10. A part of this will be hazard tree assessment and removal for all approved trails as outlined in Appendix #11 – TRCA Hazard Tree Policy.

### 6.6 Summary

This Trail Plan provides an overview of trail locations, required work and associated recommendations. Where management agreements are not in place, it is suggested that TRCA’s Conservation Lands staff lead the implementation of the Trail Plan in collaboration with other departments. Conservation Lands can lead Trail Planning, consultation and design with ecology staff consulted regarding appropriate trail alignment and impacts on flora and fauna, and archaeology staff should be consulted on any trail construction that will involve soil removal.

Although implementation of this plan will take many years, priority actions are being recommended to have the trail system open and functioning as soon as possible. Taking early steps to formalize the GCL trails prior to the expected population increase from surrounding development will ensure the trail system is well established in advance of these pressures. It is with excitement that TRCA looks to the future, toward a trail system that protects the natural and cultural heritage of the site, while providing a recreational destination for the citizens of Durham and surrounding areas.



# 7 IMPLEMENTATION



Through the implementation of the Master Plan recommendations, the GCL will become significant recreational and conservation greenspace in Durham Region. Under the direction of TRCA, and with the assistance of the Stewardship Committee and our municipal and project partners, the management of the GCL will serve as an example of sustainability. The property will become a model for natural heritage protection and restoration, while gaining popularity through improved outdoor recreation and education opportunities. It is, therefore, imperative that management of the property follows sound environmental management principles. The implementation of the management recommendations will be executed using a phased approach, which was established by prioritizing each component recommended in the Master Plan.

## 7.1 Plan Implementation Schedule

The implementation of the GCL Master Plan will require cohesive management between TRCA, the Town of Ajax, the City of Pickering, the GCL Stewardship Committee and new project partners in the future. Each project has been ranked by the priority. In addition, a budget has been allocated to each deliverable, as available funding will be the final factor in determining when a project is implemented. Table 7.1 summarizes the scheduling and anticipated cost of each recommendation.

Map 7.1, GCL Master Plan Implementation Recommendations, identifies the priority areas for implementation of specific trail and recreation projects. Other more general recommendations, such as developing a trail guide and wayfinding systems, are not identified on this map, but are recommended for completion within one to four years of the Master Plan's approval.

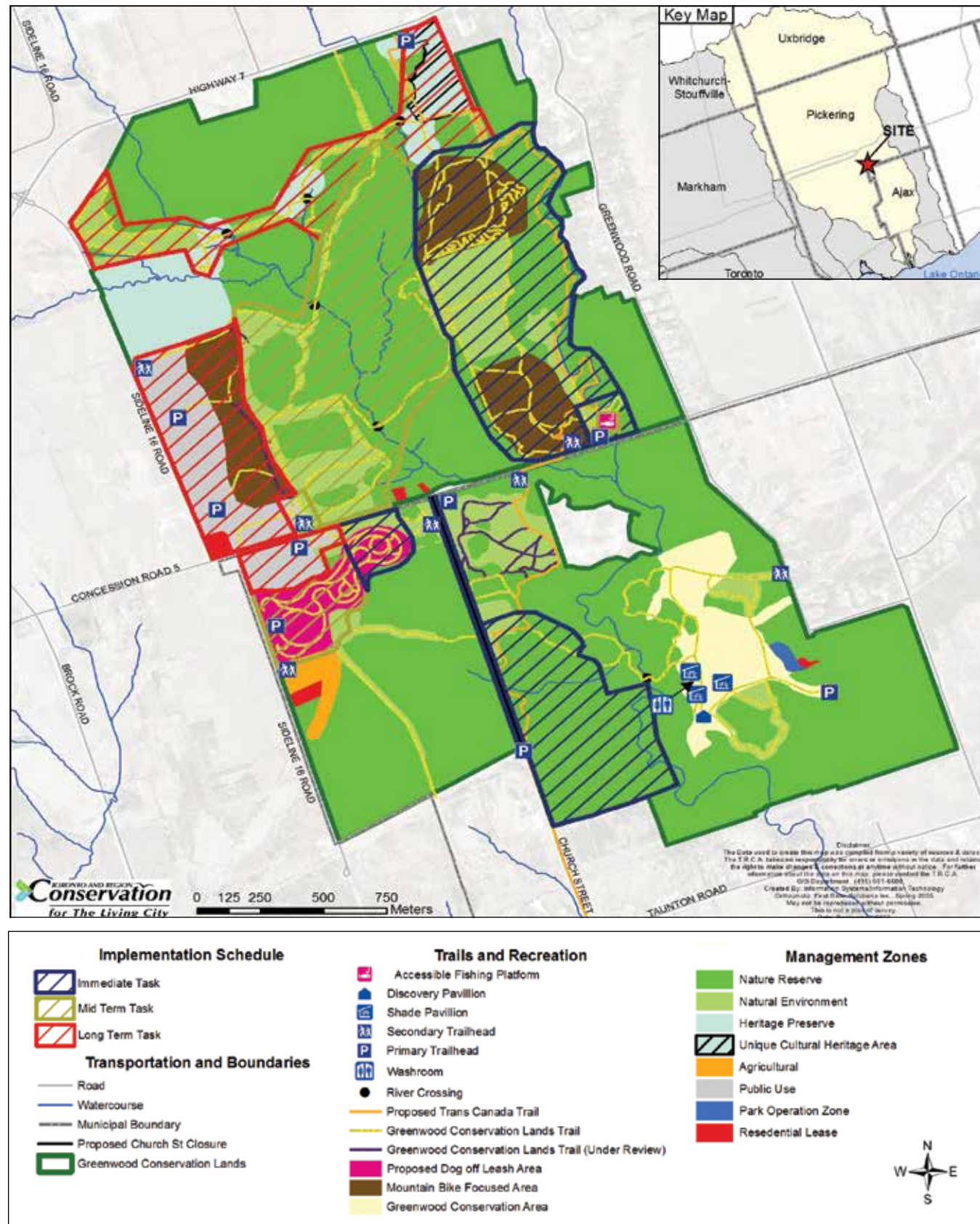
**Table 7.1:** Master Plan Implementation Schedule and Costs

ITEM	DELIVERABLES	LEAD	ESTIMATED COST (\$)*
Short Term Projects (2013-2014)			
Site Securement and Protection Plan	Building assessment and removal, boundary fencing	TRCA	\$29,000
Trail Plan	Trail closures, hazard tree assessment and removal	TRCA	\$125,000
Medium Term Projects (2014-2016)			
Site Securement and Protection Plan	Bike jump removal, fencing, garbage removal	Town of Ajax and TRCA	\$28,000
Trail Plan	Parking lot upgrades and additions, trail signage, decommission Church St., trail assessment & development (phase 1 & 2), mountain biking preferred area development (phase 1 & 2), Trans Canada Trail improvements, river crossings	Town of Ajax and TRCA	\$1,036,000
Recreation Plan	Dog off-leash area (phase 1 & 2)	Town of Ajax and TRCA	\$220,000
Natural & Cultural Heritage	Cultural heritage surveys, update general ecology	TRCA	\$180,000
Stewardship	Annual meetings, newsletters, trail captains program	TRCA	\$53,000
Long term Projects (2016-2019)			
Site Securement and Protection Plan	Building removal, fencing removal, building upgrades	TRCA	\$48,000
Trail Plan	Trail signage, hazard tree removal, river crossings, trail development & improvements (phase 3), mountain biking preferred area development (phase 3), accessible trail, interpretive signs, new parking lots, annual maintenance	TRCA	\$1,140,000
Recreation Plan	Bike park, accessible platform	Town of Ajax and TRCA	\$496,000
Natural & Cultural Heritage	Update general ecology	TRCA	\$6,000
Stewardship	Develop stewardship engagement program, newsletters, annual committee costs	TRCA	\$54,000
Total			\$3,415,000

\*Estimated costs subject to change based on development of site plans and proposals. Implementation subject to funding.



Map 7.1: Greenwood Conservation Lands Implementation Plan



Action items identified as requiring immediate action are based primarily around removing onsite hazards and ensuring the safety of those using the GCL. These projects should be completed prior to the public gaining access to the property.

- **Short Term Recommendations** will be completed from 2013-2014. These recommended projects address the immediate safety issues within the property. These projects include conducting building assessments and removing any unsafe structures on the immediate trail system, completing the property boundary fencing, as well as hazard tree assessment and removal throughout the property.
- **Medium Term Recommendations** will be completed from 2014-2016 and include upgrades to the existing trail system, Dog Off-Leash Area (see Map 7.1: Implementation Plan), the planning and development of two of the mountain biking focused areas, and upgrades to the Rodar trailhead parking lot.
- **Long Term Recommendations** will be implemented from 2016-2019. Key recommendations include implementation of the third mountain biking focused area, and implementation of finalized plans for the areas designated as Active Public Use in both Brock North and Brock South. Also included is the development of trail signage, the Accessible Trail, interpretive signs and parking lots.

These are only general recommendations for implementation. Funding availability will ultimately determine the implementation schedule.

**7.2 Partnership Opportunities**

Partnerships have been integral to the development of the GCL Master Plan, and numerous committees and organizations have assisted TRCA in this regard. Through the Master Plan planning process, TRCA has consulted with partners, including the Town of Ajax and City of Pickering, the community groups making up the Public Advisory Committee, and various aboriginal groups. Toronto and Region Conservation values the progress and accomplishments achieved through the efforts of these parties and looks toward maintaining existing relationships, while establishing new ones, to help achieve the vision for the GCL. A continued collaborative relationship and cost-sharing among these partners over the long term will be important in implementing the recommendations of the Master Plan to the mutual benefit of all parties.

The Greenwood Conservation Area is currently under the management of the Town of Ajax, which has also

expressed interest in expanding their management agreement to include the Brock South property. Ajax has continually been involved in the consultation and development of the Master Plan components.

The City of Pickering was also involved in the consultation process of the Master Plan. Their interest is in improving the recreation opportunities within the municipality, including the development of a community park and expanding the Pickering Museum Village.

The unique natural and cultural heritage features of the GCL make the property a destination point and potential tourism draw within Durham Region. The property's location within the region is well suited to serve the recreational requirements of current residents and meet the needs of the future communities that are planned for the lands immediately adjacent to the property. For this reason, additional partnerships to expand the benefits that the GCL provide should be investigated in the future.

**7.3 Stewardship Committee**

This plan contains a variety of detailed management recommendations that were established with the assistance and support of the various Master Planning advisory committees. One important recommendation is to develop a community-based Stewardship Committee. Similar to the composition of the Public Advisory Committee, this Stewardship Committee would be made up of local and regional interest groups, area residents and representatives of municipal and regional committees. The Stewardship Committee would oversee and participate in the implementation of the various plan recommendations, including those dealing with trails, education and communications. It would also assist TRCA in implementing site development, maintenance, environmental protection and restoration activities. Finally, the committee may also assist with the monitoring of environmental and public use indicators and with plan implementation.

The management plan recommendations provide a basic framework from which the Stewardship Committee can begin to operate. While the key recommendations are outlined here, it is anticipated that the committee will undertake a review of the Master Plan and its recommendations on a regular and ongoing basis. Some responsibilities of the Stewardship Committee may include:

- Review the Master Plan and establish priority actions for implementation as necessary.



- Assist in the development and implementation of a detailed Trail Plan and develop a trail guide for users.
- Develop and (potentially) participate in a “Trail Captain” stewardship program for the property.
- Assist in developing newsletter(s) and a communications plan to raise awareness and inform surrounding communities about the area.
- Educate private landowners in and around the GCL regarding stewardship practices.
- Develop educational resources and tools for private landowners and visitors.
- Monitor the trails for invasive plant species and noxious weeds and prevent their spread through barriers and other eradication techniques.
- Organize celebration events to increase public awareness.
- Assist TRCA in implementing the Terrestrial Natural Heritage Monitoring Program.
- Assist in securing financial and in-kind resources to undertake the work.
- Communicate the activities of the Stewardship Committee to its respective member organizations.
- Encourage area residents to undertake environmental improvements and restoration projects on their own properties to help expand the ecological benefits of the GCL.

#### 7.4 Agency And Municipal Stewardship

The natural, cultural and recreational resources that exist in the GCL provide benefits beyond the TRCA property boundaries; these resources extend into, and contribute to, the surrounding local and regional landscape. Therefore, integration with the community was considered throughout the planning process. An effort was made to reflect the recommendations and opportunities identified in municipal and government agency documents so that support for and implementation of the Master Plan can be achieved.

There is a great opportunity to connect the recommendations of the GCL Master Plan to municipal goals and objectives, and continued communication with the Town of Ajax and the City of Pickering will be crucial to finding shared opportunities and efficiencies for achieving the recommendations within this Master Plan.

To support TRCA policies, municipalities and government agencies should be encouraged to have regard for the following recommendations when considering new community design:

- Protect, restore and enhance as many natural open spaces as possible to maintain terrestrial natural habitat connectivity and interior habitats.
- Create publicly accessible trail systems that will connect communities to the regional trail network.
- Promote private land stewardship that increases awareness about best management practices and creates opportunities to engage landowners in protecting and enhancing the GCL and its valuable resources.

#### 7.5 Public Use

Completion and implementation of the recreation plan and the Trail Plan, which were developed for this Master Plan, is critical to ensure the protection of the environment while permitting appropriate public use and promoting user safety. The plan was developed through extensive consultation with user groups, and the proposed plans are fully supported by those involved in the process.

#### 7.6 Safety And Security

Public safety, as a policy of TRCA, is implemented through various methods and strategies. Within the Master Planning process for the GCL, consultation was initiated with the Durham Regional Police Service (DRPS) through its community relations officer. Given the natural landscape of the property, emergency access for ambulance, fire and police vehicles is limited. As a result, special considerations are required, including:

- Implement a trail locator system, such as a series of wayfinding signage along the trails, in order to assist trail users in identifying their location and to assist in clearly communicating this information to appropriate emergency responders.
- Integrate the trail location system into the emergency response system of the fire, police and ambulance departments.
- Install fully integrated maps, depicting all named trails and the location of markers along each trail, at all primary and secondary trailheads.

- Develop an emergency response plan for the GCL with involvement from local and neighbouring emergency service providers.
- Provide a life preserver where recreation opportunities exist in close proximity to a water feature.
- Install vehicle restriction devices at all trailheads to prevent any motorized access.
- As frequency of use increases around active recreation areas, consider equipping a public first aid station with an AED (automated external defibrillator) device at the main parking lot.

#### 7.7 Endorsement And Maintenance Of The Master Plan

As a partnership between the Town of Ajax, the City of Pickering, the GCL Public Advisory Committee and the community, this Master Plan required endorsement from various groups, including both municipalities and the TRCA Board. The public, local community and GCL users were informed and consulted during the Master Planning process through newsletters, questionnaires, open houses and public meetings. Their concerns, comments and suggestions were heard and integrated into the plan where appropriate.

Both the Technical Advisory Committee and the Public Advisory Committee brought many interests, issues and insights from the broader community to the forefront of the planning process, and their comments and suggestions were also integrated into this plan where appropriate.

Toronto and Region Conservation, local municipalities and the forthcoming GCL Stewardship Committee will continue to work together toward implementing, maintaining and adapting the GCL Master Plan.



Greenwood Conservation Lands

#### 7.8 Plan Review And Amendment

With the support of all the parties engaged in the development of the GCL Master Plan, the plan will undergo a review every seven to ten years. If major revisions are necessary to reflect changing environmental, social or economic conditions, they will only be made after consultation with the affected groups and individuals. Revisions of the plan will be consistent with the original stated vision, goals and objectives of the GCL, as well as [A Watershed Plan for Duffins Creek and Carruthers Creek](#), to protect the natural, recreational and educational values of the property.

The Master Plan identifies public use zones and trails, with the appropriate uses outlined in the recreation and Trail Plan. Any additional uses proposed for these zones will be screened and assessed accordingly. The screening process for specific public uses will ensure that all proposed uses, facilities and landscape changes are thoroughly examined and designed to minimize disruption and to protect, enhance or restore the natural values of this area.

#### 7.9 Conclusion

Over an 18-month period, TRCA and its project partners have worked hard to develop the GCL Master Plan and its recommendations. Through extensive efforts and subsequent consultation, these recommendations will not only provide appropriate protection to the natural and cultural features of the site, but will also provide exciting recreational uses for current and future users. Successful implementation of this plan will require effective partnership and cooperation from all those involved to ensure the site can one day be viewed as a model for balancing the recreational use of conservation-based lands.



## Bibliography

City of Pickering. 2010. Pickering Official Plan Edition 6. Corporation of the City of Pickering 2001 – 2011: [http://www.cityofpickering.com/standard/planning/official\\_plan/plan.html](http://www.cityofpickering.com/standard/planning/official_plan/plan.html) Accessed 2011.

City of Pickering. 2006. N11 Neighbourhood Plan: Central Pickering Development Plan. Corporation of the City of Pickering 2001 – 2011: [http://www.cityofpickering.com/Seaton/pdfs/DevelopersProposedPlans/MDC\\_N11.pdf](http://www.cityofpickering.com/Seaton/pdfs/DevelopersProposedPlans/MDC_N11.pdf). Accessed 2011.

City of Pickering. Section 01 Duffin Heights Neighbourhood Development Guidelines – Official Plan Compendium. Corporation of the City of Pickering 2001 – 2011: [http://www.cityofpickering.com/standard/planning/official\\_plan/CompendiumDocs/01-DuffinHeightsNeighbourhood.pdf](http://www.cityofpickering.com/standard/planning/official_plan/CompendiumDocs/01-DuffinHeightsNeighbourhood.pdf). Accessed 2011.

Conestoga-Rovers & Associates. 1996. Remedial Action Plan Movement of Brock North Waste, Brock North Landfill Site, Site Renewal Project, Pickering Ontario. Submitted to Metro Works Solid Management Division August 1996. Reference No. 8703(2).

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007. COSEWIC assessment and update status report on the redbase dace *Clinostomus elongatus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa, Ontario. vii + 59 pp. [www.sararegistry.gc.ca/status/status\\_e.cfm](http://www.sararegistry.gc.ca/status/status_e.cfm).

Dixon Hydrogeology Limited. 2004. City of Toronto Closure Plan Implementation Brock North Landfill. Reference No. T10L01. Submitted to City of Toronto December 2004.

Gerber, R.E. 2003. Duffins Creek Watershed Hydrogeology and Assessment of Land Use Change on the Groundwater Flow System. Gerber Geosciences Inc. Accessed March 10, 2003.

Golder Associates Ltd. 1987. Review of Hydrogeology and Assessment of Existing Designs, Brock North and South Landfills, Pickering/Ajax, Ontario. Reference No. 861-1188.

Golder Associates Ltd. 2008. Brock North Landfill Water Quality Monitoring Report 2006. Submitted to City of Toronto, Works and Emergency Service Department March 2008.

Government of Ontario. 2007. Endangered Species Act, S.O. 2007, Chapter 6. Service Ontario e-Laws. <https://www.ontario.ca/laws/statute/07e06>. Accessed May, 2011.

Johnson Sustronk Weinstein + Associates Limited. 1975. Report on Brock North and South Landfill Sites Town of Pickering. Submitted to Municipality of Metropolitan Toronto, February 13, 1975.

IBI Group. 2010. Walkable + Bikeable Ajax: The Ajax Pedestrian and Bicycle Master Plan. <http://www.townofajax.com/AssetFactory.aspx?did=8795>. Accessed May, 2011.

LGL Limited, Environmental Research Associates. 2002. The Bird Use, Bird Hazard Risk Assessment, and Design of Appropriate Bird Hazard Zoning Criteria for Lands Surrounding the Pickering Airport Site. For Public Works and Government Services Canada and Transport Canada, Ontario Region.

Ontario Department of Planning and Development. 1956. Rouge Duffin Highland Petticoat (RDHP) Valley Conservation Report. Toronto.

Ontario Federation of Anglers and Hunters (OFAH) and Ontario Ministry of Natural Resources (OMNR). 2011. The Atlantic Salmon Restoration Program. <http://www.bringbackthesalmon.ca/>. Accessed May, 2011.

Ontario Ministry of Municipal Affairs and Housing. 2006. The Central Pickering Development Plan. <http://www.mah.gov.on.ca/Page1726.aspx>. Accessed May, 2011.

Ontario Ministry of Natural Resources (OMNR) and Ontario Ministry of Municipal Affairs & Housing (OMAH). Peterborough/Toronto, Ontario. vi + 47 pp. <http://www.mah.gov.on.ca/Page189.aspx> Accessed 2011.

Ontario Ministry of Natural Resources (OMNR). 2005. Duffins Lomu Catch Summary Database. Excel Spreadsheet.

Ontario Ministry of Natural Resources (OMNR). 2008. Redside Dace Master Database 2008. Housed at the Royal Ontario Museum, Erling Holm.

Ontario Ministry of Natural Resources (OMNR). 2011. Species at risk in Ontario list. Government of Ontario, Canada <http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/276722.html> Accessed May, 2011.

Ontario Ministry of Public Infrastructure Renewal (OMPIR). 2006. Places to Grow: Growth Plan for the Greater Golden Horseshoe. Government of Ontario, Canada <https://www.placestogrow.ca> Accessed May, 2011.

Ontario Ministry of Transportation (MTO). 2011. Extending Highway 407 East From Brock Road Pickering to Highway 35/115. Queens Printer for Ontario March

10, 2011 <http://news.ontario.ca/mto/en/2011/03/extending-highway-407-east-from-brock-road-pickering-to-highway-35115.html> Accessed May 9, 2011.

Redside Dace Recovery Team. 2010. Recovery Strategy for Redside Dace (*Clinostomus elongatus*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 29 pp.

Region of Durham. 2008. Region of Durham Official Plan. [http://www.durham.ca/departments/planning/op\\_documents/dr\\_official\\_plan\\_2008/2008dropoc.pdf](http://www.durham.ca/departments/planning/op_documents/dr_official_plan_2008/2008dropoc.pdf) Accessed May, 2011.

The Greenwood Conservation Area Management Plan Advisory Committee (GCAMP), Toronto and Region Conservation Authority, and Town of Ajax. 2004. Greenwood Conservation Area Management Plan.

The Conservation Foundation of Greater Toronto. 2003. The Living City: 2003 Annual Report. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 1992. Trail Planning and Design Guidelines: A Handbook for an Inter-Regional Trail System in the Greater Toronto Area. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 1994. Valley and Stream Corridor Management Program. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2002. Terrestrial Natural Heritage System. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2002b. Duffins Creek State of the Watershed Report. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2003. Greenwood Conservation Area Management Plan – Background Report in Preparation for a Management Plan for the Greenwood Conservation Area. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2003b. A Watershed Plan for Duffins Creek and Carruthers Creek. 125pp. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2004. Fisheries Management Plan for Duffins Creek and Carruthers Creek. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2007. Terrestrial Natural Heritage System Strategy. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2008. Duffins Creek Watershed Wetland and Riparian Opportunities Plan. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2010. Pickering Lands Site Restoration Plan. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2011. Brock Lands Restoration Plan. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2011b. Brock Lands Master Plan Background Report. [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands). Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2011c. Brock Lands Terrestrial Biological Inventory and Assessment. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2011d. Site Securement & Protection Plans for Brock Lands & Greenwood Conservation Area. Toronto: TRCA.

Toronto and Region Conservation Authority (TRCA). 2013. Building The Living City: 10-Year Strategic Plan 2013-2022. Toronto: TRCA.

Totten Sims Hubicki Associates. 1996. Trails and Bikeway Master Plan. Submitted to the City of Pickering Recreation, Parks and Cultural Services.

Totten Sims Hubicki Associates. 2002. Master Plan – Strategic Plan Report. Blueprint for Future Development, of Recreation, Parks & Cultural Services. Submitted to the City of Pickering Recreation, Parks and Cultural Services, November, 2002.

Town of Ajax, Monteith, Brown Planning Consultant, Tucker-Reid & Associates, and the JF Group. 2008. Town of Ajax -Recreation, Parks and Culture Master Plan. Ajax: Town of Ajax.

Town of Ajax. 2009. Town of Ajax Official Plan. <http://www.townofajax.com/Page712.aspx>. Ajax: Town of Ajax. Accessed 2011.

Schollen & Company INC, North-South Environmental Inc., Lura Consulting, Archaeological Services Ltd., and Unterman McPhail Associates Inc. 2008. Seaton Natural Heritage System, Management Plan and Master Trails Plan. Queens Printer, Canada. Submitted to the Ontario Ministry of Municipal Affairs October 2008.



## Appendix #1 – Duffins Creek Watershed Plan Summary

A Watershed Plan for Duffins Creek and Carruthers Creek (2003) Indicators and Targets:

- Protect existing meadows, wetlands and forests identified in the enhanced terrestrial natural heritage system, and secure lands to be restored.
- Actively restore areas within the enhanced natural heritage system that contribute to multiple watershed benefits, and allow passive restoration to occur in the remaining areas.
- Provide stormwater quantity and quality controls for new and existing development, including transportation corridors.
- Manage land uses and water withdrawals to maintain or enhance infiltration patterns, groundwater pathways and resultant baseflows.
- Eliminate the remaining point source of pollution (e.g., the Stouffville Water Pollution Control Plant) and manage non-point sources of pollution (in particular, stormwater runoff and infiltration from urban land uses, transportation corridors and rural contributions).
- Enforce stringent erosion and sediment controls for construction and infrastructure maintenance activities.
- Protect and restore natural streams and stream processes by managing runoff and sediment loss at source, protecting valley and stream corridors, and naturalizing altered streams.
- Remove and/or mitigate human-built barriers to fish passage and sediment transport, including on-line ponds (built by damming, digging-out or dredging an area within an existing watercourse), where recommended by the Fisheries Management Plan.
- Maintain self-sustaining, resident/migratory fish and wildlife populations as barometers of a healthy natural heritage system.
- Identify and raise awareness of past and present human influences on the watersheds and the strong link between human heritage, watershed recreation, and human and environmental health.

## Appendix #2 – TRCA Board Resolutions Relating to the Greenwood Conservation Lands

TRCA Board adopted RES. #A75/09 on May 22, 2009

Resolution #A75/09 - GREENLANDS ACQUISITION PROJECT FOR 2006-2010

Flood Plain and Conservation Component, Duffins Creek Watershed, City of Toronto (Brock North and South), CFN 24260. Request to the City of Toronto to convey to Toronto and Region Conservation Authority the Brock North and South Landfill Site located on the north and south sides of 5th Concession Road, east of Brock Road, in the City of Pickering and the Town of Ajax, Regional Municipality of Durham.

Moved by: Glenn De Baeremaeker

Seconded by: Colleen Jordan

**WHEREAS** the City of Toronto properties (approximately 969 acres/362 ha) located on the north and south sides of the 5th Concession Road, east of Brock Road in the City of Pickering and the Town of Ajax, known as the Brock North and Brock South Landfill Sites, have been declared surplus to the City of Toronto's Solid Waste Management Division operational requirements;

**AND WHEREAS** the City of Pickering owns a property (approximately 8 acres/3 ha) located on the south side of Highway #7, east of Brock Road, in the City of Pickering (Pickering property), Regional Municipality of Durham;

**AND WHEREAS** Toronto and Region Conservation Authority (TRCA) had identified the Brock North, Brock South and Pickering property as part of TRCA's Terrestrial Natural Heritage Target System;

**AND WHEREAS** if these properties are renaturalized and managed in conjunction with the adjacent Greenwood Conservation Area, this complex has the potential to become one of the most significant natural heritage parcels south of the Oak Ridges Moraine in TRCA's jurisdiction;

**AND WHEREAS** the City of Pickering has expressed an interest in using a portion of the Brock North site for future expansion of the Pickering Museum and a district park facility;

**THEREFORE LET IT BE RESOLVED THAT TRCA** respectfully request that the City of Toronto convey the Brock North and the Brock South landfill sites containing 969 acres, more or less, and being Part of Lots 12 to 16 inclusive and Part of Road allowance between Lots 12 & 13 and between Lots 14 & 15, Concession 5, City of Pickering and Part of Lots 15 & 16, Concession 4, Town of Ajax to TRCA for nominal consideration of \$2.00;

**THAT TRCA** staff work with representatives of the Cities of Toronto and Pickering to determine what portion of the sites can be made available to the City of Pickering for use as future expansion of the Pickering Museum and a district park facility in accordance with the following conditions:

- a) payment by the City of Pickering of the appropriate compensation to the City of Toronto, for lands to be used by the City of Pickering;
- b) City of Pickering convey the Pickering property to TRCA for nominal consideration of \$2.00;
- c) the portion of the Brock North site used for future expansion of the Pickering Museum and a district park facility would be under a management agreement between the City of Pickering and TRCA;
- d) also included in the management agreement would be the remainder of Brock North, the Pickering property and the portion of Greenwood Conservation Area in Pickering.

**THAT TRCA** staff work with the City of Pickering and the Town of Ajax to develop a renaturalization and management plan for the complex that includes Brock North, Brock South, Pickering property and Greenwood Conservation Area;

**THAT** the Town of Ajax be requested to include Brock South in the existing management agreement for the portion of Greenwood Conservation Area in Ajax;

**AND FURTHER THAT** authorized TRCA officials be directed to take whatever action may be required to give effect to the foregoing, including the obtaining of necessary approvals and the signing and execution of any documents.

CARRIED

TRCA Board adopted RES. #A13/11 on January 28, 2011

Resolution #A13/11 - BROCK NORTH AND SOUTH RESTORATION PLAN

Update on staff progress related to the acquisition and planned restoration of the former Brock North and South landfill sites located north and south of the 5th Concession, in the City of Pickering and the Town of Ajax, Regional Municipality of Durham.

Moved by: Gay Cowbourne

Seconded by: Dave Ryan

**WHEREAS** the City of Toronto has conveyed its 392 hectare (969 acre) Brock North and South lands to Toronto and Region Conservation Authority (TRCA) for nominal consideration of \$2.00;

**AND WHEREAS** TRCA staff has initiated planning and discussions with staff of the City of Pickering and the Town of Ajax related to the restoration and recreational potential of the property;

**THEREFORE LET IT BE RESOLVED THAT** staff continue required consultation and planning activities and proceed with restoration of the property;

**THAT TRCA** staff pursue all available funding opportunities to finance the required restoration of the property;

**THAT TRCA** staff be authorized to enter into necessary agreements with area and regional municipal partners to facilitate restoration of the property;

**THAT** authorized officials be directed to take the necessary action to implement any agreements including obtaining needed approvals and the signing and execution of documents;

**AND FURTHER THAT TRCA** staff report back on the outcome of the restoration planning, financing strategy, management plan and agreements.

CARRIED

## Appendix #3 – Greenwood Conservation Lands Public Meeting Questions and Answer Summary

To introduce the recently acquired lands Brock Lands and the Greenwood Conservation Lands (GCL) Master Plan, and to open lines of communication with the predominant user groups, three open house meetings were held. These meetings were held with the hiking, cycling and dog walking communities. One of the main objectives of these meetings was to share TRCA's vision for the property and obtain an understanding of what



improvements or additions the various user groups would like to have incorporated into the GCL Master Plan.

### CYCLING OPEN HOUSE – QUESTION & ANSWER SUMMARY

January 17, 2012, 7 p.m. – 9 p.m., Greenwood Discovery Pavilion, Ajax

The following is a summary of questions and comments from the open house meeting with the cycling community and responses by TRCA.

1. What are the overall objectives for the Brock Lands, and how can they be compared to the East Duffins Headwaters (EDH)?

The Vision for the Greenwood Conservation Lands include:

- Lands supporting diverse and self-sustaining communities of flora and fauna
- Lands become destination, offering recreational and cultural heritage experiences
- Lands facilitate regional trail linkages and connectivity to surrounding natural heritage systems

The Vision for the EDH is:

As part of the Toronto and Region Conservation Authority's vision for The Living City®, the East Duffins Headwaters property will be a model for achieving biodiversity protection, enhancement and management on a provincially significant landform while providing for sustainable, healthy and enjoyable public experiences.

These Vision statements are similar in that natural heritage protection is a top priority. The difference exists in our desire to promote the Greenwood Conservation Lands (GCL) as a destination for recreational use. Both will continue to provide recreational opportunities although it has been identified that the GCL are more suitable for active recreational opportunities.



Cycling Open House, January 17, 2012

2. Where users are sharing the trails, they are generally unaware of their responsibilities to other users. Will these trails be designated to specific users to avoid conflicts? All trails will be multi-use and open to the various user groups. To properly inform users of the trail conditions and the user group likely to be encountered on them, TRCA is developing Trail Standards, which will be used to evaluate and rank the trails. By signing trails with this information we hope to avoid user conflicts.

3. Would there be the opportunity for neighborhood connectivity onto the lands, especially with the future plans of the Seaton community?

Yes, there will be opportunities to have future community trail connections to the GCL. Interregional trails such as the Trans Canada Trail (TCT) will provide communities with connectivity, as will planned connections to the Seaton communities.

4. Can there be some investigation into keeping the very popular single track located in the center of the property?

Through the Management Zones process, TRCA identified areas that are sensitive to human use and most valuable. Therefore, public use of these areas is not permitted. The characteristics of the area where the popular single track trails are located have identified it as a sensitive and valuable area requiring protection. The existing trails are not located in a suitable location and will be decommissioned. The closure of these trails will not take place until new trails are built in a more appropriate location.

5. Can the following requests be investigated for inclusion in the Recreation Plan or Trail Plan?

- Features such as jump lines in a bike park. *These features will be recommended for any future bike park plans.*
- Using natural features such as rocks and roots for technical areas. *Natural features will be used in the development of a skills area in the proposed bike park. Inclusion of natural features along trail has not yet been approved and will be investigated during the development of the TRCA Trails Strategy.*
- Connecting all 4 properties with wide multiuse trails. Where possible trail connections will link the different parcels of the GCL. To accommodate these connections we will be recommending a portion of Church Street be closed. This will allow for improved ecological and recreational connectivity through the adjacent lands.

- User specific signage defining trail etiquette and rules. *Trail rules and etiquette information will be posted on trailhead signage. Educational information on trail etiquette will also be included in future editions of the Greenwood Leaflet (newsletter for the Greenwood Conservation Lands), which will be distributed to local residents, provided in electronic email updates to those on our mailing list, and posted on the TRCA website. If you wish to be added to the GCL mailing list please visit [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).*

- Technical trail features with appropriate bypasses to be available. *The opportunity for technical trail features (TTFs) along trails is an item being investigated in the TRCA Trails Strategy.*

- Possibility of night riding. **More discussion required.**

- Water source available to wash dogs/bikes. *Although currently not a recommendation, this is a service that may be provided through municipally led Recreation Plan components (e.g., Pickering Community Park or Ajax Bike Park).*

- Maps and numbered posts similar to those found in the East Duffins Headwaters. *A similar wayfinding/mapping scheme to that of the EDH will be recommended in the GCL Trail Plan.*

6. Trails will need constant care and maintenance over time in order to avoid safety hazards and unsustainable trails. How is TRCA prepared to handle the long term maintenance of the trails?

Toronto and Region Conservation staff will take the lead on any trail construction projects or safety hazards. We will also be looking to develop both a stewardship committee and trail captain program to assist with the monitoring and reporting of safety or trail issues. Through these initiatives we will be working with the different user groups on volunteer based projects to increase stewardship and respect for the property and the trail system.

The following is a summary of comments submitted from the Durham Mountain Biking Association (DMBA).

1. The DMBA group would like to see the riding opportunities of cross-country and freeride with a wide range of skills from beginner to advance. This includes a well-designed stacked loop system that provides a good variety of distances for riders of different fitness levels. The system should also include trail features that use existing natural features, enhance the natural features, and/or engineered structures.

The GCL Recreation Plan is recommending three areas where “mountain bike preferred” trails will exist. This was done to provide the requested rider experiences. As previously mentioned, TTF will be investigated through the TRCA Trails Strategy.

2. There is hope that with the ongoing reworking of the terrain for hydrological purposes that it might be possible to use the area of the property with the greatest elevation changes to construct some “Flow Country trails.” Flow Country trails go predominantly downhill with short uphill sections, if the terrain permits, to naturally reduce the speed and to enhance the flow character. Appropriate elements such as berms, rollers, rocks, roots, small jumps and drops that should also be roll-able or can be avoided.

One of the proposed “mountain biking preferred” sites will be located within one of the restoration sites requiring elevation adjustments. As plans for this area move forward, TRCA will be looking to the cycling community for input to develop trails on this site.

3. The Church Street decommissioning is supported by the biking community due to the fact that it would allow the two properties to be joined without any artificial barriers between them. This could allow for increased interior habitat in the future, although the riders do not see this as a viable or interesting option for a biking trail given the flat, wide, and smooth surface.

Should Church Street eventually be decommissioned, TRCA will work with the Town of Ajax to restore the road bed to a more natural condition that is more compatible with the surrounding landscapes.

4. While mountain biking is traditionally a self-supported activity, we see the need for amenities in order to increase the number of less experienced riders. If we are going to encourage the local population to come to the property and enjoy their experience outdoors, we should make it easy for them. So at a minimum the following should be provided:

- washroom/change rooms
- trash bins that are collected on a regular basis
- water fountains
- bike wash
- bike lock post
- benches, picnic tables, shaded areas
- adequate parking
- park and trail head signage
- on-trail signage



Many of these services are already provided within the Greenwood Conservation Area. These services may be provided through municipally led Recreation Plan components (e.g., Pickering Community Park or Ajax Bike Park).

#### DOG WALKERS OPEN HOUSE – QUESTION & ANSWER SUMMARY

February 29, 2012, 7 p.m. – 9 p.m., Greenwood Discovery Pavilion, Ajax

The following is a summary of questions and comments from the open house meeting with the dog walking community and responses by TRCA.

1. Concerns around the poor condition and quality of the existing dog off-leash area in Greenwood Conservation Area (GCA).

Toronto and Region Conservation agrees that the current condition of the permitted dog off-leash area may not be as interesting and accommodating as the surrounding environments in the GCA. The permitted area was selected based on the fact that it can withstand the impacts associated with dog off-leash use and would display minimal impacts on the site. This concern from the dog walking community is one reason why TRCA is recommending a new location for the Dog Off-Leash Area.

2. Requests were made to have the following features provided in any relocated dog off-leash area:

a. Trails travelling through both open meadow areas, as well as forested areas.

The proposed new location for the dog off leash area will have both these requested features. One area will be restored by planting of trees and shrubs and the establishment of a ground cover while the other section will have trails going through an existing forested area. Vegetation in the restored area will be given one full year to establish before the area is open to the public. Over time, the restored area will transition into a forest.

b. Water available on site. This includes both running water for recreation and municipal water for drinking.

The current recommended site for the relocated dog off-leash area does not have water available on site. Grading plans for the site could be adjusted to provide standing water on site, but after hearing concerns around potential health issues expressed by the dog walking community, it was decided to not provide standing water on site. In the future, there is the possibility of having municipal water services or a well on site, subject to the provision of the amenity by the Town of Ajax.

c. Limited or no fencing around the dog off-leash area or along future trails.

The proposed plan is recommending a boundary fence only. This will allow the entire area to be open to off-leash dog use while still protecting the adjacent sensitive environments.

d. Avoidance of bottle necks along trails to allow the opportunity to avoid other potentially problematic dogs.

The trail network being recommended will provide various options to travel through the dog off-leash area in hopes of avoiding any such bottle necks. Should problematic dogs be encountered, we encourage users to contact Ajax's animal control department.

3. It was agreed that the areas along the trails in GCA are being impacted. It was felt that this impact was being attributed only to dog walkers and that there was other user groups who were equally responsible for these impacts.

Through the Master Planning process, TRCA has been engaging all of the different users groups who visit the Greenwood Conservation Area. It is through the development of this relationship that TRCA will be working with all users to educate them on proper trail user and the importance of respecting the forest and wildlife. Educational information on the importance of the natural heritage features of the site and the reasons behind protecting them will also be included in future editions of the [Greenwood Leaflet](#) (newsletter for the Greenwood Conservation Lands) which will be distributed to local residents, provided in electronic email updates to those on our mailing list, and posted on the TRCA website. If you wish to be added to the GCL mailing list please visit [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).

4. Many people travel great distances to walk their dogs off-leash at GCA, potentially making dog walking the most predominant use.

During the many visits of TRCA staff to the GCA it was evident that there are many dog walkers using the area and the available trails. It was for this reason that the TRCA wanted to meet specifically with this user group to understand their needs and interests. Although the actual numbers were not clear at the time of the open house, TRCA is currently tracking usage of the area and will report findings in the future.

5. What are the main impacts of off-leash dogs and why it is such a concern? How can this message be communicated to the users of GCA?

Some of the main impacts associated with dogs of leash in a natural setting such as a Conservation Area are impacts to nesting birds, trampling of sensitive vegetation and impacts to the watercourse. The following is a summary of these impacts. In the future TRCA will be investigating the installation of educational signage to inform users on the importance of protecting the natural heritage features. Educational articles on the different species that inhabit the GCL will also be included in future editions of the [Greenwood Leaflet](#).

Dogs, particularly unrestrained dogs, are seen as predators by wildlife. Birds, especially in North America, evolved in a landscape where there might only be a handful of such predators to look out for. In recent times, however, the density of such predators (or at least animals that birds naturally register as such, e.g., dogs) has increased dramatically. The presence of animals resembling predators can lead to a significant increase in stress for resident wildlife, particularly to ground-nesting or low nesting birds. Based on inventory data collected in 2011, GCA supports a large number of ground-nesting birds in both the forests and meadows. Thus, the presence of off-leash dogs has an impact on the success of ground-nesting, and potentially other, birds. In meadow habitats almost all bird species are ground-nesters; in forest habitats a large proportion of the bird species also nest on the ground (e.g., Ovenbirds, Black-and-white Warblers, Hermit Thrushes, Ruffed Grouse, American Woodcock) with a large additional suite of species nesting low in the forest understory. Species that nest in the middle and upper canopies in such habitats are much less impacted by the presence of off-leash dogs, and in fact many such species persist in even urban forest situations where off-leash dogs are abundant.

If a conservation area or any other natural area is to maintain something close to the full complement of successfully nesting bird species, then dogs need to be kept on-leash in areas not identified as an off-leash area. Birds may well continue to attempt to nest in such areas, but the chances of failure are increased by the presence of off-leash dogs and thus the area effectively acts as a population sink.

Trampling associated with off-leash dogs is another significant concern. Trampling can damage sensitive flora and soils, especially forest ground flora. Dogs running off-leash can also spread the seeds of invasive species in natural areas leading to additional impacts.

6. Why can't the dog off-leash area simply remain where it is and be extended to cover the area currently being used for off-leash dog walking?

Anyone who has visited the permitted Greenwood dog off leash area quickly realizes that there is little vegetation and natural cover on site. Since the site was originally a gravel pit this means the organic solid has been removed leaving conditions that will take many years to naturalize on their own. Toronto and Region Conservation sees the opportunity to take a more active position and help to restore the site through the importation of clean organic soils. This opportunity would boost the restoration opportunities for the site, but would also see public access to the site restricted during this work. This is one reason why TRCA is proposing the relocation of the Greenwood dog off-leash area. It has also been identified that the adjacent trails are also being used for dog off-leash walking. These trails are located in an area TRCA has identified as being sensitive to use and one which should not have a high volume of trail usage. By relocating the area to a new location, TRCA can provide trails though a forest without impacting a sensitive environment while still allowing for the restoration of this site, which will increase the aesthetics and health of the GCA.

7. When looking for an alternate location what features will be investigated? Will there still be access to the river?

When investigating a new site for the Greenwood Dog Off-Leash Area the following features were sought after:

- Existing natural heritage features will not be negatively impacted by use.
- Area will have existing forest cover suitable for dog off-leash use.
- Area equal in size to the existing permitted dog off-leash area (approximately 10 ha)
- Due to the impacts associated with dogs off-leash using a water course (listed above), access to a river is not being investigated.

The following features are also being recommended for inclusion in the site designs:

- Fencing only around the boundary to protect adjacent sensitive environment while proving open access to the site
- Large parking area for at least 25 cars
- Development of trails that allow for open access to the property while preventing pinch points
- Double gates at all entrance/exit points to properly secure the site



- Municipal waste collection
  - Small open area for permitted activities that require open space with a shade pavilion close by
8. If the dog off-leash area is relocated what will the timeline be for it to be opened and the existing area to be closed?

It is estimated that the restoration of the proposed relocation site will be completed in 2014. To ensure the planted vegetation has time to establish the site will remain unused for one year before it is opened as the new dog off-leash area in 2015-2016. This is only a proposed timeline as the implementation of the relocated dog off-leash area depends on the required budget being made available.

9. For those who are interested, how do they go about volunteering to help with projects such as trail maintenance, invasive species management, tree planting and garbage clean up?

To become a volunteer with TRCA, please register with our Environmental Volunteer Network at [www.trca.on.ca/get-involved/volunteer/](http://www.trca.on.ca/get-involved/volunteer/).

10. How will the information be communicated in the future?

In the future TRCA will be posting project updates relating to the Greenwood Conservation Lands Master Plan at [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands). You can also sign up for the [Greenwood Leaflet](#) (electronic newsletter) at the same site.

#### GREENWOOD CONSERVATION LANDS PUBLIC MEETINGS – QUESTION & ANSWER SUMMARY

The following information is a summary of questions from the GCL Public meetings where TRCA presented the Greenwood Conservation Lands Master Plan highlighting the Draft Recreation Plan and Trail Plan. These meetings took place on May 10, 2012 and May 17, 2012 in Pickering and Ajax, respectively.

1. Why is TRCA in support of transforming a natural environment into a community park?

The TRCA is working with the City of Pickering and the Town of Ajax to provide recreational opportunities for the citizens of Durham. It was at the request of these municipalities that TRCA investigated the opportunity to provide lands suitable for active recreation. Former land uses have significantly altered the natural setting of the areas allocated for the Pickering Community Park and the Dog Off Leash Area. As a result of these impacts, these

areas have been identified as suitable to accommodate the requests of the municipalities.

2. Will there be an available water resource within the proposed Off Leash Dog Park?

The current recommended site for the relocated Dog Off Leash Area does not have water available on site. Grading efforts of the existing site could have provided standing water on site, but after hearing concerns around potential health issues expressed by the dog walking community it was decided to not provide standing water on site. In the future there is the possibility of having municipal water services or a well on site if provided by the Town of Ajax.

3. Will the Plan include the opportunity to access the property without the use of a car?

Transportation to and from the site is outside of the scope of the GCL Master Plan, although TRCA is working with municipal public transit and active transportation plans to identify the proper locations of trailheads and access points.

4. In regards to the restoration project bringing in clean fill, what are the figures on how much fill has been brought into the property compared to how much more can be expected?

The fill operation is taking place to help restore the historical landforms in the area that were altered as a result of past land uses. This process is necessary in order to restore the natural drainage of the site and improve downstream water quality. At the time of the public meeting (May) an estimated 125,000 cubic metres had been brought to the site. When the project is completed the total volume will be approximate 375,000 cubic metres. For more information on the Restoration Plan please visit, [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).

5. How is the public voice heard and represented within the plan?

Throughout the plan TRCA has been working closely with the Public Advisory Committee (PAC), which is made up of local interest groups and stakeholders. Members of the PAC have been providing comments based on the interests of their particular group. Toronto and Region Conservation has also held open house meetings with the cycling community and the dog walking community to gain better understanding of their needs. Questions from the open house meetings have been summarized and responses posted on the Brock Lands website. We are also providing responses to questions asked at the two public meetings held in May. Comments from all public engagement meetings will be investigated and

where appropriate incorporated into the Master Plan. Information on the Master Plan was also presented in the [Greenwood Leaflet](#) (newsletter for the Greenwood Conservation Lands), which was distributed to local residents, provided in electronic email updates to those on our mailing list, and posted on the TRCA website. Additional public meetings will be held in the fall when the final plan components have been revised and finished. If you wish to be added to the GCL mailing list please visit [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).

6. How long is the portion of Church Street that TRCA is proposing to close?

The portion of Church Street being recommended for closure is approximately 1.2 km in length. Closure of the road is only being recommended where TRCA owns land on both sides of the road. This closure will not impact access to private property along Church Street.

7. Are there any more river crossings proposed for Greenwood Conservation Area?

No additional crossings in GCA are being recommended in the GCL Trail Plan.

8. How will the TRCA educate the public regarding important items such as sensitive areas, endangered species, or cultural features?

Various stewardship and educational programs that will inform local residents and users about the importance of protecting our natural and cultural heritage features are being recommended. These programs include the [Greenwood Leaflet](#) newsletter, interpretive signage through the GCL, as well as regular stewardship events that will engage users in educational activities such as interpretive hike and tree planting events. It is TRCA's desire to engage the public in the restoration and trail development projects to foster a growing respect for the lands and the species that call it home.

9. Why does the Master Plan not reference the restoration of the creeks and shorelines within the GCL property?

Both aquatic and terrestrial restoration opportunities within the GCL are identified in the [Brock Lands Restoration Plan](#) (2011), available on the website at [www.trca.on.ca/brocklands](http://www.trca.on.ca/brocklands).

10. Is there a plan for the Miller property in Greenwood?

TRCA is interested in acquiring the Miller property located in the center of the GCA and will be expressing these interests to the Miller group in hopes of eventually obtaining these lands.

11. Will motorized vehicles be permitted on site?

Motorized vehicles, with the exception of EMS or maintenance vehicles, are not permitted on the GCL or any TRCA lands.

12. Is the Restoration Plan recommending additional pine plantations to help restore forest cover to the site?

Restoring forest cover to the GCL is an objective of the Restoration Plan, although tree planting will not be completed in the form of a single species plantation. Reforestation efforts will include a variety of native trees and shrubs planted in a more natural pattern. Forest management such as thinning will be completed on existing plantations to transition them towards the desired hardwood forest.

13. Will armour stone be used in the restoration efforts?

Yes, various types of aggregates will be used in different restoration projects. Some of these projects may require the use of armour stone.

14. How did TRCA determine the size of the new parking lot being recommended at the new dog off leash area?

The recommended parking lot size was determined based on the desire to double the parking spaces available at the current Greenwood Dog Off-Leash Area. Further investigation into the usage of the Greenwood Dog Off-Leash Area will be completed in order to gain a better understanding of the number of users accessing and parking at the Dog Off-Leash Area.

15. Do we have some idea of the number of dog walkers currently using GCA?

Although usage numbers of the Dog Off-Leash Area are not known, it is estimated that approximately 13,000 to 15,000 people visit GCA annually for activities such as hiking, cross country skiing, picnicking as well as larger events such as "Pumpkinville."

16. Is the restoration plan only focusing on reforestation and aquatic improvement or are there efforts to maintain the meadows on site?

The current Restoration Plan calls for a significant amount of meadow restoration. There are a number of species, including some that are designated as species at risk in Ontario that rely on the health and biodiversity of the meadows. Efforts will be completed to manage these meadows to protect the habitat of these species.



17. If the TRCA is looking to protect these lands, why are we promoting an increase in visitors?

At TRCA we feel that recreation within a natural setting is important to a healthy community and increases the respect citizens have for natural environments. There are also educational opportunities that present themselves when the public is allowed to access public lands. In the near future the area surrounding the GCL will see significant population increases. By developing a Master Plan, we can help to manage and direct recreational activities in appropriate locations, while protecting and enhancing those areas that are most sensitive.

18. Perhaps the option of switching the Dog Off-Leash area with the Mountain Biking area could be looked at in order to eliminate the bottle neck design in the off-leash area.

TRCA staff have investigated this option and have decided to keep the proposed dog off-leash area where it is currently recommended. However, to address the concerns expressed about a pinch point in the trails, the proposed off-leash dog area and its recommended trails have been adjusted and the area expanded slightly.

19. Will activities such as cycling be permitted throughout the entire property?

All trails within the Greenwood Conservation Lands will be open to all permitted uses. These uses include hiking, cycling, leashed dog walking, geo-caching and winter uses such as cross country skiing and snowshoeing. In designated areas other activities such as off-leash dog walking will be permitted.

20. Will the bike jumps currently in Greenwood CA be removed?

Yes, unauthorized built structures will be removed from the property. In the future TRCA staff will be monitoring these sites to ensure they are not constructed again.

### Appendix #4 – First Nations and Métis Engagement List

(in alphabetical order)

- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island
- Chippewas of Rama First Nation

- Conseil de la Nation Huronne-Wendat/Huron-Wendat of Wendake
- Curve Lake First Nation
- Hiawatha First Nation
- Kawartha Nishnawbe First Nation
- Mississaugas of Scugog Island First Nation
- Mississaugas of the New Credit First Nation
- Regional Subject Expert for Ontario Consultation and Accommodation Unit, Aboriginal Affairs and Northern Development Canada
- Six Nations of the Grand River Territory
- Six Nations of the Grand River Confederacy Council
- Toronto and York Region Métis Council

### Appendix #5 – Greenwood Conservation Area User Survey Summary and Comments

#### Online Survey

In order to gain a better understanding of visitor usage within Greenwood Conservation Area (GCA), a survey was conducted to assess various issues and interests. In particular, TRCA wanted to understand current usage patterns and desired upgrades for the future, and engage the public in the planning process. Giving users a forum to express their opinions, both positive and negative, allows the public to gain a sense of involvement and inclusion; this, in turn, increases their level of respect for the land and support for the Master Plan moving forward. To obtain this information and support, a user survey was developed and distributed.

The survey was created using Survey Monkey, an online service that allows one to create and administer surveys, analyze the results and report on findings. The survey was designed to better understand current usage and identify areas of concern that may need to be addressed. The information gathered through the survey was considered in developing management recommendations during the master planning process and will be further considered when developing site plans. Estimates of existing usage patterns at GCA can be applied to the greater Greenwood Conservation Lands (GCL) when planning for future use and demands.

The survey was posted on TRCA and municipal websites, advertised on signs throughout the GCL, and distributed in hard copy at public information sessions and open houses. Given the tight timeline available for the survey to be completed and evaluated, a sample size of 100 responses was targeted. The survey asked a total of four questions, three of which were multiple choice and one that allowed the user to provide comments on his or her experience in GCA.

#### Survey Results

Question #1: How often do you visit GCA?

The majority of users (39 per cent) responded that they visit GCA at least once per month, with another 38 per cent claiming weekly to daily visits. The remaining 23 per cent of respondents said that this was their first time visiting or hearing about the property. These findings summarized in Figure A5.1, indicate that GCA is host to a large base of repeat visitors, with a steady influx of new users visiting the property.

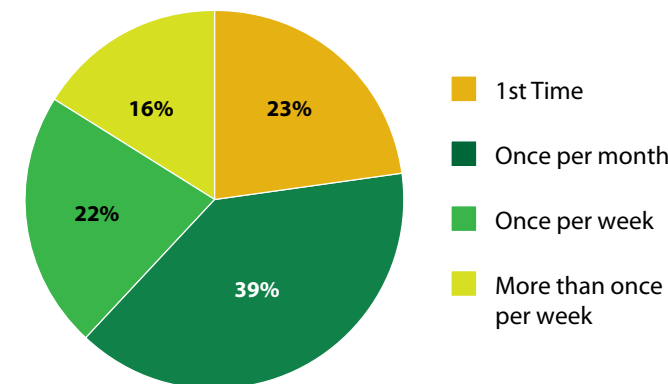


Figure A5.1 – Survey Question #1 Summary

Question #2: How far do you travel to use the trails in GCA?

The responses indicated that a large majority (42 per cent) of users travel less than 15 kilometres to the site, making GCA a local attraction. Users travelling between 15 and 30 km make up approximately 36 per cent, and the remaining users (22 per cent) were travelling distances greater than 30 km in order to visit the property. Therefore on average, 58 per cent of users were travelling over 15 kilometres each visit, making GCA a regional attraction. These results, summarized in Figure A5.2, indicate that GCA is popular among people not only on a local scale, but also on a regional scale. Given its rural location, GCA is currently a commuter park with no access by public transit. These patterns are likely to

change with the development of the adjacent Seaton lands. Local transportation corridors in the area should provide public transit and bike path connections to the trails and recreation opportunities of the GCL to avoid the dependence on cars to access the lands.

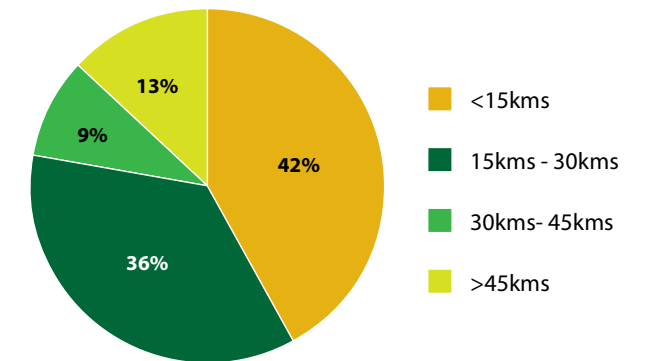


Figure A5.2 – Survey Question #2 Summary

Question #3: Which of the following activities do you generally enjoy while using the GCA trails?

In order to understand the interests of the visitors currently using GCA, users were asked to identify activities they enjoy on the property. Since the activity a user may participate in may change with each visit, multiple answers could be given to this question. The objective was to gain a better understanding of what activities are taking place on the GCA trails. Results, summarized in Figure A5.3, indicated that cycling, which was not an approved recreational activity within GCA is the most popular, followed by hiking/walking and then dog walking. Other activities mentioned, included running/jogging, snowshoeing, bird watching, and cross country skiing.

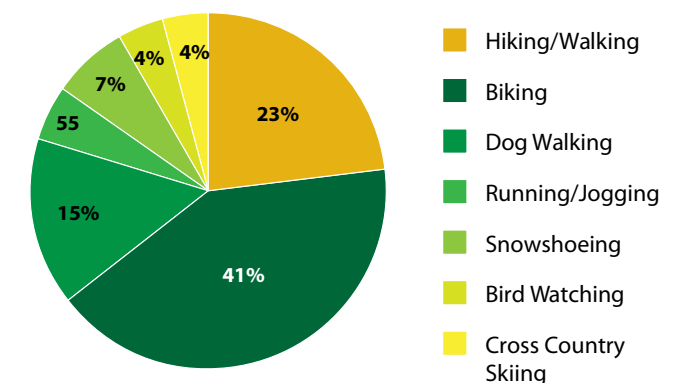


Figure A5.3 – Survey Question #3 Summary



Question #4: What improvements would you like to see in GCA?

The final question of the survey provided users with the opportunity to insert their comments on how GCA can be improved and suggest future recreational features for GCA. A full list of the provided responses is included below. Many of the users commented on their continued enjoyment of GCA over a number of years, while others expressed their opinions regarding such items as:

- Trail use
- General maintenance
- Additional signage and trail maps
- Continued access to (and improvement of) a dog off-leash area
- Increased enforcement of the rules
- A desire to have cycling as a permitted use

#### Conclusion

The completion of this survey has given TRCA a greater understanding of how people are accessing and using the trail system within GCA. This information will become useful in the development and implementation of various plan recommendations. Further data should be collected to obtain baseline usage data across the GCL once it is open to the public. This baseline data will allow TRCA to track usage over time and implement any adaptive management actions that may be required.

#### Survey Question #4 Summary

- Legalize mountain biking use.
- Trails geared to MTB.
- Better enforcement of dog leash policies. People think the entire area is leash free and dog heaven. I am a dog owner and it is not.
- Public archery range! Either in Greenwood or Brock Lands north of Conc. 5 (City of Pickering).
- More access to trash bins and more (if possible) parking.
- More trails, less people. Some sort of reporting system for all of the dog walkers with dogs off leash in the wrong areas.
- Mountain bike facilities.
- Better litter control.

- Would love to see it kept up in the winter.
- More mountain bike trails in the ravine areas.
- Strict enforcement of the leash free area, dogs are never seen on leashes anywhere in the park & their owners hang the poop in bags onto the trees for the rest of us to view – really ignorant!
- I like it just the way it is now that there is a lodge/building there to use.
- Mountain Biking accepted.
- Boardwalks installed in ecologically sensitive areas.
- Allow mountain biking.
- Organized walks/hikes.
- Would simply like to see biking listed as an officially approved activity.
- Better separation of bike trails from hiking/dog walking trails & better policing of areas where dogs need to be on leash.
- The pioneer barn should have signs posted instructing no further barn boards are to be removed (the boards have been used as fire-fuel).
- More cross country biking trails.
- More trail, but the addition of a bike park with professionally built jumps and skinnies would be excellent since those are being taken down.
- Good ride-able trails with varying difficulty for all types of off road mountain biking.
- Single track repairs, and events.
- Permitted Mountain Biking/Cycling use on as many of the existing single track trails as possible. Dismantling of any and all new illegal stunt trails in Greenwood. I don't mind the odd obstacle "option" on the regular trail, but the newer illegally constructed stunt trails and jumps are incompatible with the ecosystem of the Greenwood Conservation Area.
- Replace the foot bridge that was taken down by the river at the east end of the park.
- Perhaps dog walkers could be allowed to off-leash their dogs in the early morning through the woods. With signage clearly stating the hours, mixed use of the park could be doable. Also, paths that are very close to the river could be moved a bit further from the water edge – close enough that people can still hear and see the water but far enough so that the bank doesn't erode. But these current paths can't be simply

'closed,' a workable alternative needs to be provided. This park is a wonderful resource. I use it to: walk my dogs, exercise, stay healthy, enjoy the sounds of the water, bird watch, flora watch, chat with my husband, meet up with friends, and the list probably could go on. Thanks for the park and thanks for the consultation!

- Maintained trails, signs, ability to allow leashed dogs on trails, connection to Greenwood Park (Ajax), south of 5th Concession.
- I would like to see it open for mountain bike events like races.
- I haven't been to Greenwood in years; but was a frequent visitor due to the proximity to the city. Due to the issues with cycling I had to stop going to this great destination that didn't see nearly enough use from what I could see. I would return to bring my family for hikes but with all the dogs we stopped.
- Garbage bins, washrooms near the off leash dog park area.
- Some MTB specific trails would be great.
- To make bike riding allowable.
- More interconnecting routes.
- Return/restoration of the southern-most bridge crossing the creek.
- I tried to put comments in here but with only 2 very short lines visible it's impossible to compose anything sensible. Rightly or not, I can easily conclude that you really do not want comments.
- Love it!
- Designated trails without dogs and bikes.
- A boardwalk/bike track made by a private citizen was recently removed (under the Hydro pylons down near the creek). I would like that restored so we can walk there again in the summer. (In winter, it is hard frozen and OK for walking).
- Increase off-leash area.
- That our dog park is not taken away from us, that we get a greater area of space to walk our dogs!!!! I live in an apartment building and go to Greenwood every day to walk my dog and it would be a shame if you took that greenspace away from responsible dog owners.
- More trails.
- Perhaps some sections a bit easier for people with mobility limitations.

- I enjoy it just the way it is. Very long time user over 15 years. Permission for mountain biking, encouragement for dog owners to pick up after their dogs!
- Improved/allowing mountain bikes to ride here.
- More mountain biking trails.
- Better signs/markers.
- Specific mountain bike trails.
- I would like to see a sign up indicating that it is a multi-use green area and to be respectful of other users. If it is an off-leash area for dogs then indicate that, if it isn't otherwise. I would also enjoy one area of the park – a more remote one that walkers wouldn't probably use – for bikers that would like the challenge of wooden bridges. Thanks for the opportunity for input.
- Better maintenance of trails, more enforcement of wildlife abusers (fishing illegally, dumping garbage in parking lots). Better signage for more enjoyable experience.
- Sustain/maintain mountain bike trails – stronger rules for dog walks to pick up their dog waste and place it in the proper receptacles – putting it in a plastic bag then discarding it trailside is actually WORSE than just leaving it.
- I've thoroughly enjoyed the few rides I've had with my husband in this area over the years – as far as I'm concerned nothing needs changing!
- Signage.
- More bike trails and better signage.
- Better mapping and signage on trails.
- More mountain bike trails, please.
- I have been under the impression that the south section of Greenwood was not open to Mountain Biking, therefore have not ridden there, but have ridden a few times in the section north of Concession 5 not knowing if the land was under the same rules/ownership. With that being said, Mountain Bike access with marked trails such as what is available at Durham Forest I think would be ideal for people in the community that are unable to travel longer distances. Or, if there is a concern of the bikes with foot traffic then have Biking only in the section north of Concession 5.
- Restoration/return of the southern bridge over the creek (close to the railroad) so you can better circle the different sections of the conservation area.



- I like it just the way it is.
- Currently the off leash area has a number of old concrete slabs/partial structures both on the land and at the edge of the water, removal of the slabs would be helpful. A map of trails for the off leash area at the off leash entrance would be helpful (I appreciate the space and would like to abide by the rules but while in the park don't know the boundaries where I need to put my dog on a leash). Dog and owner drinking stations at the bowl would be helpful but only if possible without too much expense, most dog walkers do carry water for their dogs if on a long walk. I find there is a lack of other wildlife in this area for obvious reasons, however bird feeding stations may be a good idea, dog walkers are accustomed to carrying lots of items when out on a long walk, adding bird seed to the list of items would be no hardship and may help encourage birds to the area.
- Allow Mountain Bikes, Build technical, challenging mountain bike trails.
- Legal mountain bike trails with features similar to what is there already. Rebuild bridge on south end over the creek.
- Maintained mountain bike trails.
- More single trail bike trails.
- Trail maps.
- Better signage.
- Promote trails for the use of cyclists. Addition stunts and jumps would be great!
- Bike-specific trails or multi-use trails with technical trail features for cyclists that provide technical riding challenge but also have go-around options for less-experienced riders.
- Make it legal for mountain biking.
- Official usage for mountain biking and dedicated trails properly built for biking. Stunts, rocks, etc.
- Improved trail system. Legal stunt Maintenance.
- Better access.
- I'm an avid mountain biker, and would love to see the trail features (or "stunts") remain. They truly make the area unique. More bike trails.
- Accommodate user groups who have traditionally used the area, and put the kibosh on unauthorized environmental modifications by creating allowed dedicated trails and facilities for all.

- I would like progressive network of mountain bike trails that have features such as bridges, switch backs, rock gardens, drops, jumps, tabletops, skinnies, teeter totter, wall ride.
- Official mountain bike trails.
- More technical riding, jumps and features.
- Trail signage. Partnership with IMBA, Durham Mountain Bike Club on trail development and maintenance. Marked Trails.
- Open it up to bikes. Enforce dogs on leash rules.
- Legitimization of mountain biking features.
- Better signage.
- Biking as an approved use. Trails are in pretty good shape, but some improvements towards sustainability would be valuable in the long run. Separation of dogs-off-leash from the rest of the users – this could be a large, signed, fenced in area exclusively for dogs-off-leash. A little trail signage might be helpful. For example – when cycling is approved use, perhaps mark a route with small arrows that leads cyclists to and around a loop.
- More single track and stunts.
- More maps.
- Expanded trail network.
- Maintain the mountain bike trails – maybe talk to the DMBA – I think they look after Durham Forest.
- Return Mountain biking back to Greenwood as a legit activity. Build mountain bike only trails.

## Appendix #6 – Stream Impacts Associated with Off-Leash Dog Walking

How do streams respond to disturbance?

Streams are naturally dynamic places with a built-in resiliency to withstand or adjust to certain levels of physical disturbance. This resiliency allows streams to adapt to the depredations of natural events, such as storms, tree falls or ice jams. The active period of these events are short lived (hours or days), separated by lengthy periods between events (months or years). As a result, the watercourse generally has time to recover or adapt before the next disturbance occurs; this is a key factor in stream habitat stability.

So what is so different about the impacts associated with dogs entering a stream? First, dogs enter streams much more frequently, as often as daily and during all four seasons, offering little or no recovery period. Second, specific access points are experiencing repeated use by many dogs and their owners and sustaining damage. This is the situation that is currently occurring in East Duffins Creek flowing through Greenwood Conservation Area.

What are the observable stream impacts?

There are three main stream impacts related to frequent access to the same area: (1) loss of riparian vegetation, (2) bank erosion, and (3) turbid (e.g., murky) waters. The first impact is caused by trampling of bankside (or riparian) vegetation. In areas where the physical disturbance is heavy and sustained, the plants that help maintain bank stability (through their root systems) do not grow back. The loss of this vegetation leads to bank erosion, adding fine soil material to the stream at rates and perhaps amounts above what would occur naturally. This makes the water turbid and cloudy.

What can't we see?

The turbid stream conditions lead to two less observable impacts: (1) respiratory stress of nearby adult and young fish, and (2) potential smothering of fish eggs that may have been deposited in the area or downstream. The timing and duration of turbid conditions is a critical factor in determining the extent and severity of impacts to fish and other aquatic life. Certain seasons present periods of higher concern, which are discussed below.

**Respiratory stress** – Summer months are generally considered the most stressful period for fish due to low stream flows and correspondingly high stream temperatures. A lot of energy is spent on swimming around to find relatively cooler waters (e.g., deep pools or shaded, overhanging banks). Failing that, fish must persist in higher temperatures that increase metabolic rates to levels that can result in mortality. Increasing the frequency and perhaps duration of turbid water during the summer only adds to this stress, as silt can clog gills leading to respiratory distress.

**Smothering** – There are a number of different spawning strategies that leave eggs more or less vulnerable to being buried and smothered by unusually heavy and/or frequent loads of silt. Fish species that produce relatively vulnerable eggs are termed "brood hiders" and include trout, salmon and many minnow species, all present in East Duffins Creek. As brood hiders, these fish first clean silt from an area of stream bed and then build nests in the substrate (e.g., gravel). Eggs are deposited in the

nest, fertilized and covered with a layer of clean gravel before being abandoned in the nest. It is important for the entire egg incubation period to remain relatively silt free: approximately 60-90 days for salmonids and closer to a few weeks for warmwater species. Flows are not necessary going to be effective at washing away high silt loadings; the excessive silt is more likely to settle onto nests and smother eggs. Egg mortality could occur even if heavy siltation is relatively temporary.

In summary, with these localized impacts being effectively continuous and essentially year-round, all sensitive biological stages of fish are exposed to turbidity and settling, potentially resulting in more intensely stressful conditions and higher mortality rates than might otherwise occur naturally.

## Appendix #7 – Greenwood Conservation Area, Trail User Monitoring Survey Summary

### Trail Monitoring Survey

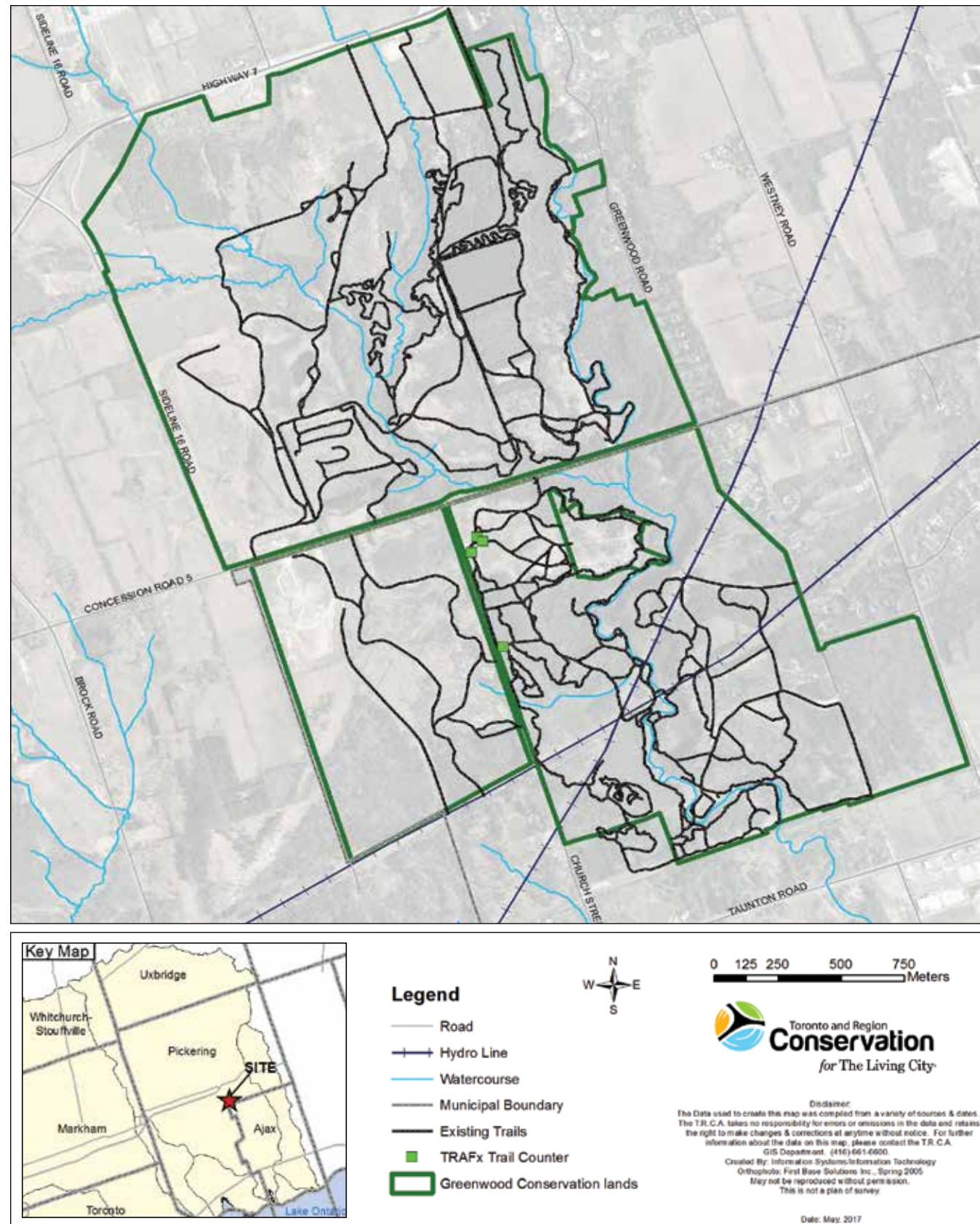
A Trail User Monitoring Survey was conducted in order to gain a better understanding of the volume and patterns of usage within the Greenwood Conservation Area, in particular on the trails and access points off Church Street. This information will be used to gain a better understanding of usage patterns in the western portion of GCA and the number of people using the dog off-leash area. It will also be used to inform future management decisions, such as the desired capacity of parking lots and the number of access points.

### TRAFx Trail Counters

Post markers containing TRAFx trail counters were installed at each of the trails leading in from Church Street. The TRAFx counter sends an infrared beam across the trail tread. Every time the beam is broken, the counter increases by one. The final data counts are automatically divided by two to accommodate a single person breaking the beam when he or she both enters and exits the park. Three of the counters were placed within the GCA dog off-leash area and the fourth was installed at the trailhead located off Church Street (see Map A1.1 for the location of the four trail counters). To avoid vandalism and unnecessary attention, each counter was concealed in an unmarked 6 inch by 6 inch post along the trail. No signage was installed in order to keep the survey discrete and avoid interference with data collection. The counters collected data from June 8, 2012, through July 8, 2012, when they were removed.



Map A7.1: Greenwood Conservation Lands Trail Plan with TRAFx Counter Locations



Influencing Factors

Natural factors (such as weather, insects and foliage) and human behaviour can interfere with the counters and affect the accuracy of the results. These obstructions cannot be avoided entirely and must be taken into account and reflected in the final numbers. In order to calculate the margin of error associated with using the counters, a manual trail user count was conducted and compared with the figures from the trail counters. Based on a comparison of the two data sources, it is estimated that there is a 25 per cent margin of error in the collected TRAFx data. The figures presented in Table A1.1 have been adjusted to take into account this margin of error.



TRAFx counter

Trail Survey Summary

In total, over the one-month collection period, an estimated 3,359 users entered GCA through the off-leash dog park (counters #1-3) or the Church Street entrance (counter #4). These data indicate that the most popular days fall on weekends, with an average attendance of 148 people accessing the park each weekend day, compared to an average of 87 people on weekdays.

Figure A7.1 further illustrates this pattern, showing that Saturdays and Sundays receive the highest percentage of activity. The counters also marked each figure with an hourly time stamp, indicating that peak hours of usage are from 8 a.m. to 2 p.m. The peak times for each counter location can be seen in Figure A7.2.

Table A7.1: Trail Counter Results

	Counters 1-3	Counter 4	Combined
Total # of visitors during the survey	1,960	1,364	3,359
Total # of visitors during weekends	883	600	1,483
Total # of visitors during weekdays	1,077	764	1,841
Average weekend day use	88	60	148
Average weekday use	51	36	87
Peak # of visitors on a weekend day	116	97	213
Peak # of visitors on a weekday	89	68	157

In the future, additional trail use surveys should be conducted over the greater GCL and over an extended period of time to gain a more accurate baseline number. Data collected in this survey will be considered when making future management decisions, such as the parking capacity needed to serve the relocated dog off-leash area.

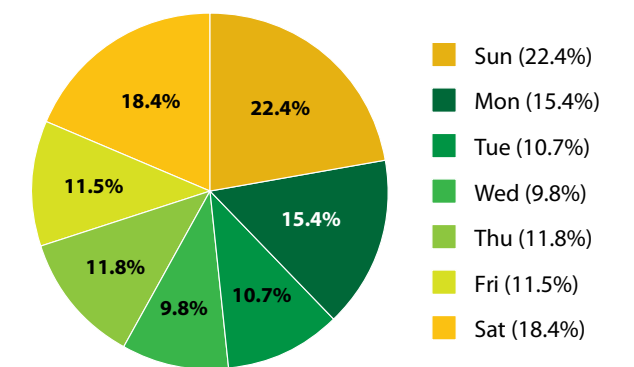


Figure A7.1: Trail Counter Daily Averages



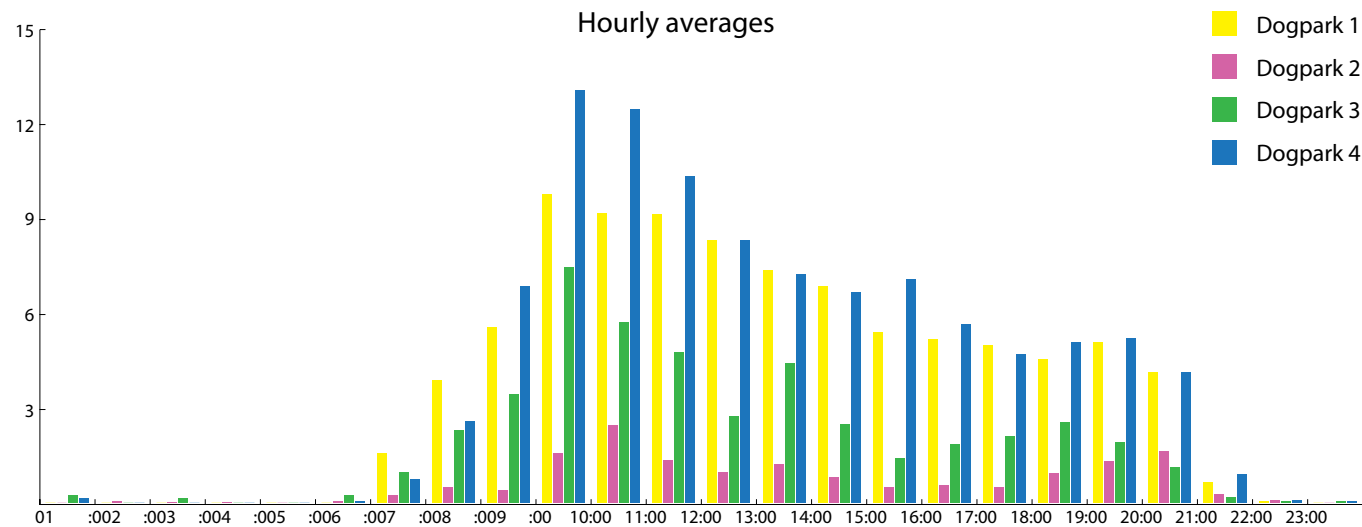


Figure A7.2: Trail Counter Hourly Trends

## Appendix #8 – Municipal Dog Park Review

During the development of the Greenwood Conservation Lands Master Plan, concerns regarding the existing dog off-leash area arose, prompting the development of a relocated dog park in the Brock South property. The current off-leash area was identified to be in an inappropriate location, and no longer suitable for the number and frequency of users in the area. Using the management zones created during the development of the Master Plan, TRCA identified a suitable location for the relocated dog off-leash area.

RANKING SYSTEM	
Preferred Features	Value
Shade pavilions in open areas	1
Play features for dogs	1
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	-2
<b>Total</b>	<b>13</b>

In order to ensure this new area would accommodate the current user needs, an assessment of the existing off-leash areas in the surrounding municipalities was conducted. The assessment criteria were developed through comments made at the open houses and public meetings, and by using the existing features in the reviewed areas.

The ranking system, included below, valued each feature with a score of one. Points are taken away if there are potential environmental impacts related to the construction of the site (but not for future impacts that may be associated with the use of the area). Toronto and Region Conservation staff evaluated off-leash dog parks in Markham, Pickering and Oshawa and ranked them accordingly. The existing GCA dog off-leash area and the proposed dog off-leash area were also evaluated based on existing and proposed features. The scores were recorded for each of the areas and a total grade was assigned to each area. They are set out in tables below.

RANKING SYSTEM	
Preferred Features	Value
Mixed use areas	1
• Open for playing	1
• Shaded walking trails	1
Only boundary fencing, not along trail	1
Access to water	1
• Municipal	1
• Natural (moving) water	1
Interpretive signage	1
Large designated area	1
• < 5 acres	1
• < 10 acres	1
• ≥ 20 acres	1

Analyzing the results of this study reveals that the existing off-leash area in GCA ranks the lowest of all the other dog parks assessed. This can be directly attributed to the lack of facilities and infrastructure located on-site, as well as the need for reforestation efforts on the site. In order to better accommodate this popular activity within the GCL, the dog park is being recommended to be relocated to the Brock South location. The assessment of the proposed leash-free area identified that it would be ranked the highest in comparison to other off-leash areas in the region. Not only would it offer an improved site for dog owners, but it also complies with the existing vision, goals and objectives created for the GCL.

MARKHAM (MILNER AVENUE) DOG OFF-LEASH AREA	
Preferred Features	Score
Mixed use areas	1
• Open for playing	0
• Shaded walking trails	0
Only boundary fencing, not along trail	0
Access to water	1
• Municipal	0
• Natural (moving) water	0
Interpretive signage	0
Large designated area	1
• < 5 acres	0
• < 10 acres	0
• ≥ 20 acres	0
Shade pavilions in open areas	1
Play features for dogs	1
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	0
<b>Total</b>	<b>7</b>

PICKERING (CONCESSION 3) DOG OFF-LEASH AREA	
Preferred Features	Score
Mixed use areas	1
• Open for playing	0
• Shaded walking trails	0
Only boundary fencing, not along trail	1
Access to water	0
• Municipal	0
• Natural (moving) water	0
Interpretive signage	0
Large designated area	1
• < 5 acres	1
• < 10 acres	0
• ≥ 20 acres	0
Shade pavilions in open areas	1
Play features for dogs	0
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	0
<b>Total</b>	<b>7</b>

OSHAWA (HARMONY) DOG OFF-LEASH AREA	
Preferred Features	Score
Mixed use areas	1
• Open for playing	1
• Shaded walking trails	1
Only boundary fencing, not along trail	1
Access to water	0
• Municipal	1
• Natural (moving) water	1
Interpretive signage	0
Large designated area	1
• < 5 acres	1
• < 10 acres	1
• ≥ 20 acres	1
Shade pavilions in open areas	0
Play features for dogs	0
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	-1
<b>Total</b>	<b>8</b>



EXISTING GCA DOG OFF-LEASH AREA	
Preferred Features	Score
Mixed use areas • Open for playing • Shaded walking trails	1 0
Only boundary fencing, not along trail	1
Access to water • Municipal • Natural (moving) water	0 0
Interpretive signage	0
Large designated area • < 5 acres • < 10 acres • ≥ 20 acres	1 1 1
Shade pavilions in open areas	0
Play features for dogs	0
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	-1
<b>Total</b>	<b>6</b>

PROPOSED RELOCATED GCA DOG OFF-LEASH AREA	
Preferred Features	Score
Mixed use areas • Open for playing • Shaded walking trails	1 1
Only boundary fencing, not along trail	1
Access to water • Municipal • Natural (moving) water	0 0
Interpretive signage	1
Large designated area • < 5 acres • < 10 acres • ≥ 20 acres	1 1 1
Shade pavilions in open areas	1

PROPOSED RELOCATED GCA DOG OFF-LEASH AREA	
Preferred Features	Score
Play features for dogs	0
Animal waste services	1
Posting of rules and by-laws	1
Potential for environmental impact	-1
<b>Total</b>	<b>9</b>

DOG OFF-LEASH PREFERRED FEATURES SUMMARY	
Location	Total Score
Markham (Milner Avenue) Dog Off-Leash Area	7
Pickering (Concession 3) Dog Off-Leash Area	7
Oshawa (Harmony) Dog Off-Leash Area	8
Existing GCA Dog Off-Leash Area	5
Proposed Relocated GCA Dog Off-Leash Area	9

## Appendix #9 – Sustainable Design Standards

In keeping with The Living City® objectives, TRCA has a mandate to design all new buildings with sustainable and green building design principles using LEEDTM or LEEDTM Canada certification. These standards are administered by the Canada Green Building Council and are an adaptation of the American program that's been tailored specifically for the Canadian climate, building codes and practices. The LEEDTM program recognizes leading edge design, construction and operational practices that reduce environmental impacts. This is achieved by awarding credits for achieving performance criteria that outperform standard building practices. The LEEDTM Canada for New Construction and Major Renovations program issues credits in five categories:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality

Within each of the categories there is flexibility to accommodate a wide range of green building strategies that best fit the constraints and goals of particular projects.

With respect to any proposed new structures and enhancements at the GCL, designing to LEED™ criteria includes these considerations: cost of construction, the seasonal use of the buildings, ease of maintenance, and suitability of the strategies for moderately-sized structures.

Many green building strategies are relatively easy to achieve without significantly modifying the construction technologies or the desired appearance of the building or unduly impacting building operations. For example, for credit as a reduced Heat Island, both green vegetated roofs and Energy Star® compliant highly reflective and high emissivity roofing (high albedo) will achieve points. Green roofs are more complex and expensive to achieve, require more maintenance, and are most often associated with large, flat-roofed buildings. High albedo roofing is applicable to all types of structures including open-air pavilions. Other relatively simple building measures include maximizing for day lighting and views, incorporation of green power sources, and reduced energy and water consumption in appliances and fixtures.

Sustainable site design credits include many strategies that are typically considered for compatibility with a natural setting and ecologically sensitive practices, including: limiting grading and site disturbance, using native and water efficient plant material, adopting passive stormwater management and reducing impervious surfaces. Even without LEEDTM certification objectives, these would be recommended measures for the GCL site.

The following are a range of possible green building and sustainable site measures that should be incorporated at the GCL.

### Green Building Measures

- Reduce potable water use for wastewater or provide 100 per cent on-site treatment through such measures as on-site greywater treatment units, dual flush toilets and composting toilets.

- Reduce potable water use through such measures as ultra-low flow fixtures, metered faucets, composting toilets, waterless urinals and the re-use of greywater for non-potable water use.
- Design building envelope and building systems to maximize energy performance.
- Use high performance windows to limit winter heat loss and summer solar gain (may involve glazing, shading and framing).
- Use specialized insulation measures to support thermal conservation (through exterior wall and roof construction).
- Use building orientation measure (e.g., south-facing orientation for roof, and east/west windows with overhangs to block out summer sun).
- Use Energy Star® compliant, highly reflective and low emissivity roofing over 75 per cent of the surface area. Green roofs are also credited but will be more difficult to achieve.
- Design passive solar measures (e.g., windows, skylights, thermal storage in flooring or walls).
- Consider alternative power sources: solar electric (photovoltaic) systems, wind energy, geothermal heat pumps, and heat recovery ventilators (HRVs).
- Reduce building and site light emissions and increase access to dark skies.
- Reduce use of scarce natural resources. Use salvaged or recycled materials, rapidly renewable resources or those that require less energy to produce.
- Divert and recycle construction waste.

### Sustainable Site Design and Landscape Measures

- Design with minimal building footprint and designate an area of adjacent open space equal to building footprint.
- Minimize site disturbance, including earthwork and clearing, to reduce development impact area.
- Demonstrate that post-development peak discharge rate and quantity doesn't exceed pre-development peak discharge rate and quantity. Examples of stormwater management (SWM) measures include infiltration trenches, vegetated swales, porous paving, detention areas and constructed wetlands.



- Provide passive stormwater treatment measures (e.g., run-off movement through bioswales, meadows, wetlands, SWM retention areas).
- Use water recycling technologies, such as harvesting of roof/downspout run-off for irrigation or to water planted areas, re-use of building greywater and waterplay drainage for landscape or non-potable building use (e.g., toilets, custodial use).
- Use permeable paving materials, such as gravel, porous asphalt, pavers (ecopavers, turfstone).
- Use recycled materials, limit use of scarce resources, and select materials requiring less energy to produce and/or manufactured regionally.
- Apply xeriscape principles (e.g., native plant material selected for reduced water consumption, drought resistance, climate hardiness).
- Limit turf. Use groundcovers, mulched shrub areas, permeable surfaces, gravel and pavers.
- Locate and plant trees to shade hard surfaces and buildings to reduce heat island effect and to cool buildings.
- Install solar powered landscape lighting (e.g., on trails and in parking lots).
- Use down-turned and shielded streetlight fixtures to promote dark skies.
- Promote alternative modes of transportation (e.g., ensure site connectivity with internal/external trails and bike routes, and provide bicycle racks and storage areas).
- Encourage access to transit.

## Appendix #10 – Trail Monitoring Program

An operations system is required to plan, schedule, perform and evaluate maintenance activities. The following guidelines outline the development of such a system. Toronto and Region Conservation should encourage user groups to actively participate in the monitoring and management of the GCL trails.

### 1. Establish Maintenance Objectives

These may vary from trail to trail depending on traffic flow or special trail features. The major objectives will include (1) ensuring user safety, and (2) maintaining the trail and its amenities at a level consistent with the

design and planning standards. This may also involve undertaking seasonal trail closures if deemed appropriate through monitoring.

### 2. Evaluate Trail Needs

The process of making lists of maintenance tasks and seasonal requirements would be required to satisfy the maintenance objectives. It may be determined that certain trails will require closure or seasonal signage as a part of this evaluation of trail needs. These would prevent safety hazards and negative impacts on the trail and surrounding ecosystem due to inappropriate use during certain times of the year (e.g., washouts due to rain or snowmelt).

### 3. Develop a Maintenance Program

Condense the maintenance tasks and seasonal requirements into a preliminary schedule. Use this schedule to determine the number of crews required to complete the program and the number of staff per crew.

### 4. Establish a Trail Monitoring System

To facilitate prompt repairs along a trail system or to determine if a trail needs additional seasonal maintenance, trails must be monitored regularly. This involves a thorough inspection of the trails and reporting of all deficiencies and their location. Specific tasks can be assigned a code number for ease of reference and execution by staff.

### 5. Schedule and Record Maintenance

Regular maintenance can be scheduled on a yearly basis. This forms the basic structure of the maintenance program for which labour and equipment can be allocated. However, special maintenance (such as windfalls or vandalism, which are unplanned occurrences) must also be given attention during scheduling. Schedules will become the basis for work orders. As the work orders are completed by staff on the trails, work reports should be kept detailing the tasks completed, time required and weather conditions. These work reports should be filed according to each particular trail and can be used to develop activity summary sheets or work standards. Activity summaries should be reviewed every two to three years to ensure that they conform to the work on the trails. The summaries can be used to evaluate efficiency of work crews and create time-efficient maintenance schedules.

### 6. Evaluate Maintenance Records

The trail logs and work reports should be reviewed on an annual basis, to determine excessive trail use, vandalism, damage and environmental degradation. This

information must be communicated to trail planning and routing authorities so that they can reassess the trail routes. This evaluation may result in trail closures, upgrades or rerouting.

## Appendix #11 – TRCA Hazard Tree Policy

### General Policy

Extensive portions of TRCA properties contain trees as natural or landscape features. Often trees are located near structures or in areas where public and staff are invited, and the trees could present a danger. It is generally accepted that trees have a finite life span and even a tree in excellent condition has a potential to fail. However, a tree with a structural defect(s) at any age increases the potential for failure.

It is the policy of the Toronto and Region Conservation Authority to maintain the safety of its lands for staff and the public from trees that pose imminent risk.

Toronto and Region Conservation reserves the right to shut down or close off an area due to unsafe conditions when such a drastic measure needs to be taken. This may involve any one of the uses commonly found on TRCA properties such as trails, picnic or parking areas. The area will re-open when risk to staff and the public has been abated.

The purpose of this policy is to outline a hazard tree program and sets the foundation for business units of TRCA that are involved with managing hazard trees. The need for such a program arises from the responsibility of TRCA to reasonably protect visitors, staff and infrastructure from tree hazards and show a deliberate effort by TRCA to ensure the health and safety of people on its properties.

There are four primary objectives to implementing this policy at TRCA:

1. That an inspection strategy be designed to ensure properties are routinely inspected and problematic trees are dealt with in a timely manner.
2. To implement a hazard tree rating system so that protocols are established and adhered to when dealing with hazard trees. This rating system will allow TRCA staff to record consistent assessments and quickly establish an action plan.
3. That an abatement plan be developed to address the result of the hazard tree assessment.

4. To place the responsibility of managing and administering this policy with the TRCA Forester, who will ensure that it is being adhered to as outlined.

### Part 1 - Hazard Tree Inspection and Policy Implementation Strategy

#### Introduction

The basis of managing hazard trees is routine inspection of TRCA properties as defined in these operational procedures. This allows hazard trees to be identified, trees at risk to be assessed for increased hazard potential and non-hazardous trees to be inspected for future risk potential.

Each time a property is inspected, the inspection shall be documented on a standard Hazard Tree Inspection Form, with information including the date, time, assessor's name and any other relevant information. As required, additional documentation including a Hazard Tree Rating Form and photographs should be attached to the Hazard Tree Inspection Form record and filed according to TRCA's records retention policy. Digital photographs will be stored on the hazard tree database.

The Restoration Services Division will monitor and track hazard trees in conjunction with their Managed Forest Tax Incentive Program commitments, and managed forest programs and activities, on areas other than active-use conservation areas and their associated peripheral properties. A digital hazard tree inventory, showing existing trees will be maintained by the TRCA Forester. This inventory will house all relevant tree information, including abatements and will be restricted to authorized TRCA staff under the direction of the Chief Administrative Officer.

Area Superintendents will continue to ensure the monitoring of hazard trees within the active-use parks and associated peripheral properties. The peripheral properties and associated trails will be identified through geographic information systems (GIS) and responsibilities identified. Some of these responsibilities will require additional funding for increased record keeping costs. Within three business days of their completion all Hazard Tree Inspection Forms will be forwarded to the TRCA Forester, for inspection, prioritization and filing.

It will be the responsibility of the TRCA Forester to ensure the availability of staff for hazard tree evaluations in passive-use conservation areas, resource management tracts, residential properties and rented farm land. No trees will be removed from these areas without the consent of the TRCA Forester. When many trees have been identified for abatement, prioritizing of these works



may be necessary. It will be the responsibility of the TRCA Forester and Area Superintendents to prioritize these works under applicable budget restraints. If trees cannot be removed, then the target areas must be closed to public use and staff access will be restricted until the hazards have been abated.

The TRCA Forester and Area Superintendents will organize outside quotations for tree abatement whenever necessary.

Toronto and Region Conservation properties will be mapped and identified digitally in GIS and be identified by their respective designations. All formal trail systems will be identified on a comprehensive map using geographic positioning system methods to identify each public trail.

Three-year budget forecasts, budget estimates, and up-to-date yearly expenditure tracking will be the responsibility of the TRCA Forester.

The TRCA owns several different types of land. Each property has a different use, a different set of targets and therefore, a different perspective of tree-related liability. Therefore, each property should be inspected with a different specified frequency and thoroughness.

The types of properties within TRCA are as follows: active-use conservation areas, passive-use areas/resource management tracts, residential properties, rented farm land, contract/lease and easement land, limited-use open land, and management-agreement land.



Hazard tree, Heart Lake Conservation Area.

*Active-Use Conservation Areas*

Active-use conservation area is a broad term used to cover many of the lands owned by TRCA which can have low to high volumes of people engaged in various activities for recreational, educational, business or scientific purposes. For the purposes of the hazard tree program, lands included in this group include: office environs, heritage sites, education/interpretative facilities and field centres.

An active-use conservation area also refers to a gated, paid-use property designed for public recreation. These properties possess some significant features to attract patrons including water-based activities, overnight campsites, nature trails, picnic areas, sports fields and playgrounds. Some of these properties receive significantly higher use during peak periods of the season.

The fact that active-use conservation areas are subject to user fees increases the issue of liability. Toronto and Region Conservation areas are marketed as safe, enjoyable facilities. A catastrophic tree event at one of these locations could generate significant legal ramifications in the event of injury or property damage. Unlike a passive-use conservation area setting, these conservation areas may see 24-hour usage. Many campsites are situated in wooded areas, and trees are generally incorporated into campsites to improve the natural aesthetics of the site, thus the potential for tree risk is increased in these sites. However, inside active-use conservation areas are sub-zones (high use and low use areas), which may not have the same frequency of visitation or proximity to a target for extended periods of time. These areas may be divided during assessments for prioritizing work action as outlined below.

Active-use conservation areas commonly have year-round or seasonal operations, with most conservation areas requiring a mix of full-time and seasonal staff. It will be the responsibility of area superintendents at these locations to ensure that high-use areas such as campsites, picnic sites, stopping points on trails and parking lots are inspected twice a year by a competent assessor. One inspection will be carried out during leaf on and one during leaf off season. Low-use areas within active-use conservation areas will be inspected annually. In addition to yearly inspections, competent assessors will respond to requests from park visitors regarding potential hazard trees within three business days. It is also recommended that inspections be carried out after a major weather disturbance in high-use areas to allow for identification of sudden hazards. This inspection will be determined by supervisory staff at these locations after weather information is reported by news broadcasts and/or a significant change in weather conditions is witnessed.

Each time one of the above-mentioned inspections is conducted the assessor will document their findings on a Hazard Tree Inspection Form provided to each facility. Once leaf on and leaf off inspections are completed and documented on the log form, supervisors will submit logs to the TRCA Forester where they will be filed until year-end. At year-end, inspection logs will be sent to central filing services. Intermittent inspection logs and forms will be submitted to the Forester as they are completed.

Supervisory staff from TRCA Parks and Culture Division will ensure a response within five business days by a competent assessor to a tree assessment request from a private land owner who borders a TRCA active-use conservation area or associated peripheral property. The assessor will complete a Hazard Tree Evaluation Form and document the inspection on the Hazard Tree Inspection Form. The supervisor will follow up on the recommendations of the inspection and take appropriate action as outlined in this document.

*Passive-Use Conservation Areas/Resource Management Tracts (RMT)*

Passive-use/conservation areas/RMTs are non-gated recreation areas designed for year-round, passive, public use. There is no charge for using these areas (some may have voluntary registration and/or donations), and there is rarely a defined service provided for the user. These areas provide the public with quality open space for recreation. They usually include a mix of open space, nature trails and passive recreational uses.

Liability related to tree failure is less likely in passive-use conservation areas than in an active-use conservation area. While many of these areas see year-round usage, the potential for tree-related mishap is reduced because the patrons have no permanence on the site. Also, public presence during periods of inclement weather is reduced, during which time tree failure frequently occurs. However, the fact that these areas openly offer the public recreation space means that vigilance in removing tree hazards must be exercised.

Due to the casual usage of these areas and lack of designated services associated with the complete property, inspection of the entire area may not be required. Hiking is often the intended use on these properties and trails see transient use, meaning that the user passes quickly through the area and the likelihood of a tree-related mishap is substantially reduced.

If the area has a signed trail system, they will be inspected every two years and documented on a Hazard Tree Inspection Form provided for the area. Completed

logs will be submitted to the TRCA Forester where they will be filed until year-end. At year-end logs will be sent to central filing services. It is important when inspecting trails to identify gathering points or stopping points such as benches, vistas or parking areas. These areas possess a greater potential for tree-related mishap. Any unsigned trails will be inspected as required.

Emergency contact numbers will be posted at designated access points to these areas and will provide regular users and clubs with an opportunity to inform TRCA staff of hazards. Many of the passive-use/conservation areas/RMTs that TRCA owns are already associated with active-use conservation areas through the peripheral properties program. Supervisory staff from these Active-Use Parks will continue to manage these properties for the hazard tree program. Remaining properties will be managed by TRCA Restoration Services.

*Residential Properties*

The TRCA owns residential properties and rents to tenants under contracts handled by the Conservation Lands & Property Services section. Conservation Lands & Property Services staff of TRCA will accept an initial request for a hazard tree inspection and relay information to the TRCA Forester. The Forester will ensure a response within five business days by a competent assessor to investigate the request. The assessor will complete a Hazard Tree Evaluation Form as well as document the inspection on a Hazard Tree Inspection Form. Completed forms and logs will be returned to the Forester to determine an abatement plan. The Forester will file these documents until year-end. At year-end forms and logs will be sent to central filing services. Tenants do not have the authority to implement an abatement plan for the property until inspected and approved by TRCA staff.



Rental home, Greenwood Conservation Lands



*Rented Farm Land*

The TRCA owns significant amounts of rural land that is rented for agricultural purposes. This is not publicly used land but is used exclusively by the tenant. The nature of farm land is that it is cleared of trees, so the most prevalent presence of hazard trees is at the edges, where fence rows or adjacent forests are found.

Conservation Lands & Property Services staff of the TRCA will accept an initial request for a hazard tree inspection and relay information to the TRCA Forester. The Forester will ensure a response within five business days by a competent assessor to investigate the request. The assessor will complete a Hazard Tree Evaluation Form and document inspection on a Hazard Tree Inspection Form. Completed forms and logs will be returned to the Forester to determine an abatement plan. The Forester will file these documents until year-end. At year-end, forms and logs will be sent to central filing services. Tenants do not have the authority to implement an abatement plan for the property until inspected and approved by TRCA staff.

*Contract/Lease and Easement Lands*

This term refers to TRCA properties that have all, or portions, of the property under contract, lease or easement agreement with an outside agency/business and excludes residential properties and farm lands. These lands will be the responsibility of the outside agency/business to manage for hazard trees according to TRCA's minimum standards policy. Agreement holders do not have the authority to implement an abatement plan for the property until approved by TRCA staff.

Located on TRCA properties are several large trail networks that provide recreational opportunities to hikers, cyclists, runners, cross-country skiers, horseback riders, etc. These trails are under "Trail Agreements" with other associations such as the Bruce Trail Association and the Trans Canada Trail Foundation. The association, under agreement with the TRCA, will be responsible to monitor and abate hazard trees according to our policy as a minimum standard. Persons from these associations using tools for clearing hazard trees must follow guidelines outlined in the Workplace Safety and Insurance Board, Ontario Health and Safety Act.

*Limited-Use Open Land*

This term refers to land that is owned by the TRCA but has no identified recreational use. In many cases, this land is held because of some environmental sensitivity. Flood plain land is also included in this category.

Mostly, hazard trees on these lands are found adjacent to public or private areas. Residences, roads, parking areas and trails may border these lands, and thus tree hazards must be cleared. These properties will be inspected as deemed warranted.

Emergency contact numbers will be posted at designated access points to these properties and will provide users and neighbours with an opportunity to inform TRCA staff of sudden hazards.

The TRCA Forester will ensure a response within five business days by a competent assessor to a hazard tree inspection request. The assessor will complete a Hazard Tree Evaluation Form and a Hazard Tree Inspection Form. If the assessors are able to abate the hazard at the time of the inspection, this must be documented. Completed forms and logs will be returned to the Forester to determine an abatement plan. The Forester will file these documents until year-end. At year-end, forms and logs will be sent to central filing services.

*Management Agreement Lands*

Toronto and Region Conservation owns a significant amount of land that is under management agreement with other parties, usually municipal or regional government. In this case TRCA owns the land and provides it for the use of the local community. The agency under management agreement with TRCA will be responsible to monitor and abate hazard trees in compliance with their municipal policy.

*Inspection Protocol*

While the areas of assessment may differ, the protocol for the assessment of each individual tree remains the same. Each tree that has a target must receive a thorough inspection for hazard potential. There are six zones of inspection for assessing each tree for failure potential. They are:

Zone 1 – this area is the stem and root zone 1.23 m up the stem, and 1.23 m out from the stem. This crucial area absorbs most of the tree weight under compression, and structural compromise in this area compromises the structure and safety of the entire tree.

Zone 2 – is the main stem, from the point 1.23 m up the stem, up to the main branch union. Failure points are often found in this zone, but can often be corrected.

Zone 3 – is the primary root system extending to about half way out to the drip line.

Zone 4 – is the primary branches out to one third their length.

Zone 5 – is the remainder of the structural roots.

Zone 6 – is the remainder of the crown. This area is often crucial in determining the tree condition.

Each of these areas must receive a thorough inspection. When failure potential is identified in any of these areas, the tree should be rated according to the hazard tree rating system (see below) to determine its exact hazard potential.

Careful inspection of the site is also important when inspecting a tree. Construction, or other damage to the root system of the tree, can result in tree decline and thus cause the tree to become hazardous over time.

**Part 2 - Hazard Tree Rating System**

The primary objectives of the hazard tree rating system are:

- To determine whether trees that show some evidence of failure potential are actually hazardous.
- To prioritize which hazardous trees should receive attention.
- To maintain a detailed record to justify tree pruning or removal.

The hazard tree rating system has been designed to accommodate the large number of trees present on TRCA lands. A Hazard Tree Evaluation Form has been designed to document the assessment of trees on TRCA property and to aid an assessor in determining the potential hazard of a tree. This form will also help to standardize assessments amongst TRCA staff.

The hazard tree rating system has five sections. Each tree is rated according to the five sections then the scores are totaled. The total determines whether the tree is hazardous or not. However, if the assessor at any time feels that one factor makes the tree immediately hazardous, this factor can override the system and the tree is marked for removal. The five sections are discussed in detail below.

*Section 1 – Species Rating*

The species rating assesses the known hazard potential of a tree species. Each species of tree has a different set of attributes that make it more or less likely to fail. Growth patterns, habitat, hardness of wood, rate of growth and root type all contribute to the failure potential of a tree species.

The hazard tree rating system rates tree species in one of three categories:

1. Low Failure Rate – this species is rarely known to fail under normal, acceptable growing conditions. The structure, hardness of wood and branch scaffold of this species is traditionally good.
2. Medium Failure Rate – this species has attributes that make it prone to failure under certain conditions, but under normal conditions failure is rare. The structure, hardness of wood and branch scaffold of this tree is average. The tree may be prone to pathogens that reduce its structural integrity.
3. High Failure Rate – this species is known to fail frequently under normal conditions. The structure, hardness of wood and branch scaffold of this species is poor, and it is usually prone to one or more pathogens that reduce its structural integrity.

The following trees are regularly found on TRCA lands; the failure potential of each is indicated.

HIGH FAILURE RATE	MEDIUM FAILURE RATE	LOW FAILURE RATE
Black Locust	Ash Family	American Beech
Manitoba Maple	Basswood	Cherry Family
Norway Maple	Birch Family	Crabapple/Apple
Poplar Family	Walnut Family	Hawthorne
Silver Maple	Elm	Oak Family
Tree of Heaven	Fir Family	Sugar Maple
Willow Family	Hemlock	Sycamore
	Honey Locust	White Cedar
	Horse Chestnut	Ironwood
	Larch	
	Pine Family	
	Red Maple	
	Tamarack	
	Tuliptree	
	Spruce Family	



*Section 2 – Size Rating*

The size of the hazard plays an important role in prioritizing which hazards must be abated first. Size rating can be assessed in one of two ways; the size of the defective part (e.g., dead branch, weak branch union) can be rated, or the entire tree can be rated. The size of the part plays a significant role in how much potential damage tree failure can cause.

It must be noted that smaller-sized hazards have the ability to cause extensive damage or injury, and therefore, smaller hazards should not be overlooked. Common sense dictates that the larger hazards must be given priority.

The hazard tree rating system rates size hazard in one of four categories:

1. Small Hazard – the tree or hazardous part is of a small size, 15 cm or less in diameter.
2. Medium Hazard – the tree or hazardous part is of a large size, 15-40 cm in diameter.
3. Large Hazard – the tree or hazardous part is of a very large size, over 40 cm or more in diameter.
4. Whole Tree.

For the purposes of the TRCA hazard tree program, trees greater than 15 cm in diameter at a height of 1.23 m up the stem will be the focus for assessment.

*Section 3 – Target Rating*

In order for a tree to be hazardous it must have a target. A tree in an out-of-the-way place, far from any public activity, is not hazardous despite the fact that it might have failure potential.

Targets are judged according to usage. Some areas receive high usage, while others see only occasional use. The hazard tree rating system rates hazard tree targets according to one of the four following criteria:

1. Occasional Use – areas that are infrequently used. These areas include open fields, trails and wooded areas.
2. Moderate Use – areas that receive active but not constant/regular use. These areas include walkways, picnic areas, passive-use recreation areas, and infrequently used driveways.
3. Frequent Use – areas that receive regular use. These areas include driveways, park roads, sheds, outhouses, picnic shelters, parking areas, tent or seasonal

campsites and concessions. They also include phone lines, cable lines or secondary utility lines.

4. Constant Use – areas that are extensively used. These areas include residential structures (houses, garages), municipal roads, community structures, permanent campsites, etc. They also include primary utility conductors and distribution conductors.

Identifying the target is important in identifying a hazard tree. The target often dictates the urgency with which a hazard tree is dealt. Careful inspection of a site is necessary to determine the exact target potential of a hazard tree. For example, if a tree has a structural defect and is close to a trail (target), but has an extensive lean away from the trail, then its target potential is low and it is not necessarily a hazard. Trees like this can be assessed to be beneficial as a habitat tree or for interpretive value.

*Section 4 – Tree Condition Rating*

Tree condition is an important consideration when assessing a tree for hazard potential. A tree in decline may not be immediately hazardous, but it will become hazardous in the future if it continues to decline. Rating the condition of the tree is especially important in flagging future hazards. This also assists in predicting future tree work needs.

The hazard tree rating system rates condition in one of three categories:

1. Good Condition – the tree shows good, healthy growth and little or no evidence of stress or decline.
2. Average Condition – the tree is in average condition; it may show some evidence of stress or decline, but not in a manner that threatens its survival.
3. Poor Condition – the tree is in decline; it shows small leaf size, reduced vigor, crown dieback and/or other features indicating stress or decline.

The condition of the tree should be carefully noted when rating a hazard tree. This permits the inspector to compare the tree condition from year to year and thus map decline.

*Section 5 – Tree Structure Rating*

Structure is perhaps the most important aspect of assessing the potential of a tree to fail. Trees are massive, complex organisms, and any compromise in the structural integrity of the tree can result in catastrophic failure. The list of possible structural defects that a tree can possess is large, but some of the more common defects have been listed below.

**Weak Branch Unions** – These are places where branches are not strongly attached to the tree. Trees with a tendency to produce upright branches, such as Elm and Silver Maple, often have weak branch unions.

**Wood Decay** – Wood decay, usually the result of some parasitic pathogen, creates cavities which make the tree inherently unstable by weakening its support structure.

**Cankers** – A canker is a localized area on the stem or branch of the tree, where the bark is sunken or missing. Cankers are caused by some external pathogen, and there is always a likelihood of branch failure at or near the canker.

**Growth Pattern** – Poor tree growth, such as a lean, branches that are larger than the trunk and crown deformity, can result in trees that are unsafe.

In many cases one structural defect will not make the tree a hazard, but combinations of these and other defects will give the tree the potential to fail. In some cases, one defect may make the tree hazardous. For example, a perfectly healthy Red Oak with a major basal cavity (cavity near the base of the trunk) is a hazard, despite its many other positive characteristics.

The hazard tree rating system rates tree structure in the following four categories:

1. Good Structure – the tree is structurally sound according to the accepted standards of its species. There are no evident structural compromises.
2. Average Structure – the tree has acceptable structure. While there may be some minor structural problems, they do not warrant immediate concern.
3. Poor Structure – the tree has one or more structural defects that warrant concern. Failure at one of these defects is possible.
4. Severe Structure – the tree has at least one major structural defect. This defect has immediate failure potential. This one point may override all other factors and result in immediate removal of the hazard.

Assessing the tree for structural defect is often the most difficult part of the inspection protocol. To properly inspect a tree, a careful ground level inspection should be done. In some cases, the assessor may request to have the crown inspected by a qualified tree-climber. Also, some limited root excavation may be required to thoroughly assess root condition and defects. The ground level inspection is sufficient in most cases, but further inspection may be required if the ground level inspection raises additional concerns.

*Rating Summary*

The preceding five rating categories are designed to provide a standardized system for assessing trees for hazard potential. In review, they are as follows:

- Species Rating** 1-Low Failure Rate; 2-Medium Failure Rate; 3-High Failure Rate.
- Size Rating** 1-Small Hazard; 2-Medium Hazard; 3-Large Hazard.
- Target Rating** 1-Occasional Use; 2-Moderate Use; 3-Frequent Use; 4-Constant Use.
- Condition Rating** 1-Good Condition; 2-Moderate Condition; 3-Poor Condition.
- Structure Rating** 1-Good Structure; 2-Average Structure; 3-Poor Structure; 4-Severe Structure.

After rating each category, the categories are totaled and the total is the Hazard Tree Rating. The rating is as follows:

- 16-17 Tree is an extreme hazard and requires urgent abatement
- 14-15 Tree is hazardous and should be abated in a timely manner
- 10-13 A tree at risk; it should be monitored regularly for change
- < 9 Tree is not hazardous.

As mentioned, if the assessor feels that one factor overrides all others, he/she can give the tree a hazard rating of ‘OV’ (override), indicating it must be removed at the earliest possible opportunity. Also, a dead tree should be given a rating of ‘DEAD’, and should be prioritized accordingly.

**Part 3 – Abatement Strategy**

A large part of this document has dealt with inspection and assessment, however, eliminating the actual hazards is perhaps the most crucial part of hazard tree management. The hazard tree rating system is designed to help prioritize work, so that tree hazards are removed in the most efficient manner possible.

Hazards are prioritized according to the rating they receive under the hazard tree rating system.

*Abatement Methods*

During the inspection procedure, the assessor must make a decision on the best way to abate the hazard. There are



three primary methods of abating a tree hazard:

1. Tree Removal – removal of the entire tree is a drastic step, but is often necessary when a tree has serious structural defects. Dead trees also must be removed if associated with a target.
2. Pruning/Selective Branch Removal – branch removal is often all that is required to abate a hazardous tree part.
3. Correction – there are several techniques that can be used to correct defects in trees. Steel braces and/or cables are commonly installed to strengthen weak branch unions. However, correction does not remove the hazard. Correction activities can be undertaken to extend the safe life of a tree, but should be used only when the tree has significant historic or landscape value. Installation of correction devices should be followed by routine inspections to insure that the devices are functioning correctly.

*Preventative Hazard Management*

An important part of a successful tree hazard abatement strategy is preventative hazard management. In this case, small trees that show hazardous potential are removed before they become large. This allows for easier, cost-effective hazard management. One of the problems with this strategy is the negative public perception of removing small, healthy trees. It is difficult to justify removing a young, vigorously growing tree for the sake of future cost savings.

Preventative hazard tree management is a more feasible strategy for such areas as active- and passive-use conservation areas, where public concern is less likely. The long term cost savings of this strategy are considerable.

Displaying signs at trail heads or access points to TRCA properties outlining the risks associated with being in areas that contain trees is a way to prepare visitors for the event of a potential tree failure under any circumstance. As well, signs offer a contact number for visitors to call if they see a potential hazard. Staff will then be able to respond to a situation before there is injury or damage to property.

Planting native trees in the appropriate site-classification will help limit future hazards.

*Marking Trees*

When a tree has been assessed as a hazard, it must be marked for future abatement procedures in accordance to policy standards. Because of the high-use nature of TRCA lands, permanently marking a tree in a highly distinguishable manner can often cause contention with the public. It is advisable that the tree not be marked until immediately before it is scheduled for removal. In some cases, using nonpermanent methods such as flagging tape is preferable to permanent methods such as paint. This allows the mark to be removed if other measures such as moving the target can be implemented. Once a tree has been identified as a serious hazard, the target area will remain closed until the hazard has been abated.

**Part 4 – Duties and Responsibilities**

The TRCA Forester will be required to assure compliance with these policies and procedures, including:

1. The implementation of a standardized database to track all trees assessed within this policy, and the maintenance of these records.
2. To assess the competency of assessors, and to ensure they meet required standards of knowledge to carry out tree assessments for TRCA.
3. To arrange for tree abatement, in cooperation with Area Superintendents, either internally or by outside contractors.
4. To help arrange for quotations from outside contractors when deemed necessary.
5. To ensure that all contractors are working within safe working practices as set out by the Workplace Safety and Insurance Board and Occupational Health and Safety Act.
6. To establish and manage the budgets necessary to comply with this policy and operational procedures.
7. To monitor all business units within the TRCA to ensure compliance with this policy.
8. To monitor compliance of this policy with agencies that are leasing, renting or managing TRCA property and do not have a management agreement.
9. To make services available to clients, as required to comply with this policy.

*Definitions*

Hazard Tree	A hazard tree has a structural defect that may cause the tree or portion of the tree to fail. A defective tree in the middle of the woods or an open field, away from paths or public use areas does not necessarily have to be considered a hazard
Target	The object, structure or person that potentially may be hit or impacted by a falling tree or tree part.
Invitee	The traditional visitor, employee, occupier or neighbour associated with TRCA property.
Weather Disturbance	A significant or rapid change to the normal seasonal weather pattern such as strong winds or ice storm that could negatively impact tree structure.

Infrastructure	The basic physical and organizational structures (e.g., buildings, roads, utilities) owned or managed by TRCA
Supervisory Staff	A broad term meaning a person who has charge of a workplace or authority over a worker.
Competent Assessor	A designated person who has been deemed qualified by the TRCA Forester about hazard tree inspection and determined capable to complete tree assessments according to TRCA policies and procedures for managing hazard trees.
Removal	To cut down a tree.



Hazard tree, Heart Lake Conservation Area



HAZARD TREE INSPECTION FORM

TRCA Property: \_\_\_\_\_ Assessor: \_\_\_\_\_

Zone:  Active Use C.A.  Passive Use/Res. Mgmt. Tract  Trail  Residential  
 Rented Farm  Limited Use Open Land  Man. Agreement Land

Sub Zone: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Inspection Initiated by: \_\_\_\_\_

TRCA  External

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Reason: \_\_\_\_\_

Action/Comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Supervisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Copies to:  Forester  Manager

HAZARD TREE RATING FORM

TRCA Property: \_\_\_\_\_ Assessor: \_\_\_\_\_

Zone:  Active Use C.A.  Passive Use/Res. Mgmt. Tract  Trail  Residential  
 Rented Farm  Limited Use Open Land  Man. Agreement Land

Sub Zone: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Species Rating:**

Species \_\_\_\_\_ 1 - Low Failure Risk 2 - Medium Failure Risk  
3 - High Failure (Refer to species chart)

**Size Rating:**

(Sixe of detective part)  
1 - Small (<6') 2 - Medium (6'-16') 3 - Large (<16') 4 - Whole Tree (Override to action)

**Target Rating:**

Use under tree:  pedestrian  structures  recreation  parking  utility  
1 - Ocassional Use 2 - Moderate Use 3 - Frequent 4 - Constant Use  
Can Target be Moved? Y N

**Condition Rating:**

1 - Good Condition Tree shows good, healthy growth  
2 - Average Condition Tree may show some signs of stress or decline  
3 - Poor Condition Tree is in decline

**Structure Rating:**

1 - Good Structure No evident structural compromises  
2 - Aveage Structure: Tree has acceptable structure (some minor)  
3 - Poor Structure: Has one or more structural defects  
4 - Severe Structure: Has at least one major structural defect