



Nashville Resource Management Tract (Nashville Conservation Reserve) Management Plan

FINAL DRAFT

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Executive Summary

The Nashville Resource Management Tract (NRMT) is a large Toronto and Region Conservation (TRCA) owned property located in the Region of York - within the municipalities of King and Vaughan. The landmass is approximately 820 hectares in size and is found within the Main Humber subwatershed of the Humber River watershed. The Humber River is one of Ontario's most significant rivers, stretching over 100km and one of two major rivers in the Greater Toronto Area (GTA). NRMT is a diverse site containing many different habitat types such as upland forests, bottomland forests, meadows, former agricultural fields, wetlands and small tributaries that feed in to the main stem of the upper Humber River. The property supports a variety of wildlife, provides significant deer wintering yards and is an important migratory corridor. Because of its large size, and current and future ecological value, NRMT is an integral part of TRCA's natural heritage system.

The population in the surrounding area is projected to rise significantly over the next 20 years and will put increased environmental stress on the lands, including demand for access and recreation. Additionally, development plans currently under way to the east and west of NRMT have the potential to impact the hydrology of the site, which many natural systems depend on. These future impacts underscore the need for careful planning, responsible management, and above all, restoration of the disturbed lands. The central goal is to mitigate environmental impacts and improve and protect the integrity of natural systems within and surrounding NRMT.

The Nashville Resource Management Tract Management Plan provides specific instructions on how to protect the natural heritage system of NRMT – while also providing visitors with nature-based recreation opportunities. A vision statement was developed for the property that provided the framework for which this plan was developed. Goals and objectives related to the protection and enhancement of the property were established to guide the actions of TRCA and all related stakeholders. Finally, specific management recommendations and actions were developed in order to provide instruction and direction on how to accomplish the goals and objectives of plan; and ultimately, realize the vision for NRMT. Some key management recommendations include:

- Implementing habitat restoration projects as recommended in current and future habitat enhancement plans.
- Increasing natural cover to at least 39 percent of total watershed area.
- Protecting and conserving all archeological sites to mitigate disturbances; and, conform to ministry standards and guidelines.
- Working with Township of King, City of Vaughan and Region of York to ensure a coordinated trail construction and maintenance standard for a multi-use trail system.
- Engaging local residents and community groups in a stewardship program to care for NRMT lands and integrate the stewardship work into a combined approach for the property.
- Renaming NRMT to better reflect current property uses and to gain greater recognition and understanding among the general public.

The foundation of this plan emanated from strategies and plans from TRCA and our municipal and regional partners. With the implementation of this plan, TRCA can continue to work towards

accomplishing the goals and objectives set out in recent strategies such as the Living City vision and 10-Year Strategic Plan. From a municipal perspective, the plan will help provide pedestrian and cycling trails that have been determined to be essential to the growth of communities surrounding NRMT. Finally, the plan supports York Regions' vision and strategy of creating healthy communities and a sustainable natural environment.

TRCA has developed a budget in order to achieve and complete the goals, objectives and recommendations set out in the management plan. Implementation of the plan, separated in to three phases over a 5-year period, is estimated to cost \$3.3 million. The 7-year plan includes a detailed 25 kilometre trail plan, site-securement and protection projects, along with an assortment of natural heritage and cultural heritage interpretation sites.

The Nashville Resource Management Tract Management Plan has been developed through extensive consultation with partners, community groups, stakeholders, and the public, and has been greatly strengthened by their input and expertise. NRMT has remained mostly untouched for the past 50 years and is anticipated to become a destination for those wanting to experience the best of the Humber River Watershed. TRCA looks forward to implementing the management plan and work towards the shared goal of the successful stewardship of this valuable greenspace.

1 Introduction

1.1 Overview

The *Nashville Resource Management Tract (NRMT) Management Plan* provides direction to protect, conserve and restore the valuable ecological features and functions of NRMT, while guiding the current and future uses of the conservation land. The plan recognizes that engaging local residents and creating stewardship ethic in the community is essential for the future health of this natural area. Furthermore, the development of a trail plan that will allow visitors to enjoy and appreciate the NRMT is a key component of the management plan.

The management planning process was conducted in several phases that consisted of the following key actions: compiling background materials and research; holding public information and consultation sessions; holding advisory committee meetings; forming goals and objectives; developing management recommendations and trail and public use plans. The management plan itself includes a description and evaluation of the property based on relevant plans and policies, existing resource inventories and environmental conditions, site limitations and opportunities. Additionally, the plan identifies specific management zones for the site that delineate and guide the types and levels of appropriate activities. The plan also makes recommendations for future initiatives, including the protection of natural features and habitat regeneration based on an ecosystem approach to planning and management. Finally, detailed plans for trails and public use are presented.

1.2 Conservation Lands

TRCA owns over 17,000 hectares of land within the Greater Toronto Area. The purpose of this ownership is to protect and manage valley and stream corridors, flood plains, the Lake Ontario

shore lands, wildlife, vegetation and environmentally significant areas. Where compatible, access and facilities for public use are permitted and encouraged (TRCA, 1995). The goal of TRCA in managing its conservation lands is to “ensure the environmental stewardship of authority lands and to continue to bring into ownership additional conservation and hazard lands essential for achieving a healthy regional environment and sustainable communities” (TRCA, 2001).

1.2.1 Resource Management Tract

A Resource Management Tract or RMT is a TRCA owned – non-gated recreation area 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 nature-based recreation. Usually, RMT’s include a mix of open space, nature trails and passive recreational uses. NRMT has been defined as an RMT since acquiring the majority of the lands in the 1960’s (TRCA, 2006).

1.3 Plan Process

Past experience has shown that residents and community groups have grown more concerned with the impact of land use change on the remaining natural landscapes within the Greater Toronto Area. At the same time, user groups, businesses and municipalities have expressed a growing interest in a variety of uses for public lands, including nature-based recreation, ecological restoration and community stewardship. The provision of public uses on TRCA-owned land must consider economic factors and the recreational needs of the community, while ensuring the natural landscape is protected and properly stewarded.

In 2007, Toronto and Region Conservation Authority (TRCA) initiated the preparation of the management plan for the NRMT. This was supported by resolution #A229/07, adopted by the Authority board at meeting #1/07, held on March 30, 2007, as follows:

“THAT staff develop a Nashville Resource Management Tract Management Plan;

THAT staff establish an Advisory Committee, which would include members of the Humber Watershed Alliance, interested community groups, community residents, agency staff, municipal staff and area councilors to assist with the development of the management plan and to facilitate the opportunity for public input.

AND FURTHER THAT the draft management plan, as developed with the assistance of the Nashville Resource Management Tract Management Plan Advisory Committee, be submitted to the Business Excellence Advisory Board for approval.”

Due to other priority projects including the Claireville Conservation Area Management Plan Update and the Bolton Resource Management Tract Management Plan, as well as staffing changes, the management plan was deferred. In 2012, resolution #A49/12 was endorsed at meeting #3/12 of the Authority board, held on April 27, 2012. The resolution was as follows:

“THAT WHEREAS the draft Nashville Resource Management Tract Management Plan is being prepared;

AND WHEREAS public input is an important part of the management plan development process;

THEREFORE BE IT RESOLVED THAT, to assist with the development of the management plan and to facilitate the opportunity for public input, staff be directed to appoint an Advisory Committee which includes members of the Humber Watershed Alliance, representatives of interested community groups, community residents, agency staff, municipal staff and the local and regional councilors for the area;

AND FURTHER THAT the draft management plan, as developed with the assistance of the Nashville Resource Management Tract Management Plan Advisory Committee, be submitted to the Authority Board for approval.”

Resolution #A116/14 was endorsed at meeting #6/14, July 25, 2014 to approve the Nashville Resource Management Tract Management Plan in principle. The following actions were adopted by the authority board:

“THAT the draft Nashville Resource Management Tract Management Plan dated June 2014 be approved in principle;

THAT the draft Plan be circulated to the Township of King, the City of Vaughan and the Region of York requesting endorsement of the Plan;

THAT following circulation, staff report back to the Authority to confirm endorsement of the final Plan;

THAT the lands referred to as "Nashville Resource Management Tract", be renamed and referred to as the "Nashville Conservation Reserve";

AND FURTHER THAT Toronto and Region Conservation Authority (TRCA) staff proceed to implement the ‘immediate’ projects outlined in the management plan document, in partnership with project stakeholders.”

The NRMT management plan was developed following a TRCA model that has been successfully implemented in the past at properties such as the Oak Ridges Corridor Conservation Reserve and Claireville Conservation Area. The first step was the creation of a background report to identify current land uses, policies, natural and cultural heritage resources, as well as public uses. From that information, management zones were developed to protect important areas and focus nature-based recreation in less sensitive locations. The management plan also contains management recommendations, including restoration areas, trail plan, and an implementation strategy outlining preliminary costs. The planning process was undertaken in three phases:

Phase One

- Complete a background report that provides the following information:
 - A comprehensive review of existing plans and studies within the study area and the Humber River watershed
 - Documentation of existing and proposed land use and property ownership

- Description of the current public uses and types of recreation activities within the area
- Identification of property and public safety issues
- Inventories of natural and cultural heritage resources, as well as identification of information gaps that may exist
- Circulate a community newsletter
- Host a public information session to introduce the management plan
- Form an advisory committee and host introductory meetings

Phase Two

- Develop a plan vision
- Determine draft management zones, such as Nature Reserve, Natural Environment, Restoration, and Public Use
- Integrate watershed management recommendations
- Develop draft management and implementation recommendations
- Develop a draft trail plan
- Host advisory committee meetings to review the draft plan
- Circulate a community newsletter study update
- Host a public information session to review draft material

Phase Three

- Finalize the trail plan
- Finalize the management recommendations
- Develop a plan implementation strategy and associated costs
- Host advisory committee meetings to review the final draft plan
- Circulate a community newsletter study update
- Host a public information session to review the final draft plan
- Obtain partner and TRCA Board endorsement

1.4 Public Advisory Committee

A public advisory committee was established for the duration of the project to provide an integrated approach to the development of the plan. Participating advisory committee representatives included:

- York Region– council and staff;
- City of Vaughan – council and staff;
- King Township – council and staff;
- Humber Watershed Alliance;
- East Humber Subcommittee;
- Humber Valley Heritage Trail Association;
- West Humber Naturalists
- King Environmental Advisory Committee
- Kleinburg Area Ratepayers Association

- community residents;
- special interest groups; and,
- local business representatives

The advisory committee helped TRCA staff to finalize the project terms of reference, establish vision, goals and objectives, determine management zones and management recommendations, and develop the trail and public use plans. The committee also provided technical input and assisted with the public consultation program for the management plan.

In summary, the advisory committee was responsible for the following major functions:

- Providing technical expertise, monitoring information and advice to TRCA throughout the development of the master plan
- Ensuring that appropriate staff and members at their respective municipalities/agencies/associations were adequately informed throughout the process
- Providing commentary and input on suggestions brought to the advisory committee
- Assisting in the identification of current outstanding issues and making suggestions regarding appropriate ways to resolve them
- Assisting TRCA in presentations and public forums, where appropriate.

This study is the result of over three years work and commitment by this dedicated committee and TRCA staff. The advisory committee provided direction for the management zones, trail plan, public use and recreation plan, and recommendations contained in this management plan. Copies of the minutes for the advisory committee meetings have been compiled and can be obtained from TRCA upon request.

1.5 Public Consultation and Aboriginal Engagement

At the outset of the management plan process, it was agreed that public use and stewardship of NRMT would be important to the community. Consequently, the public had to have meaningful input in the planning process. To facilitate a wide range of opportunities for input, many techniques were used to generate a high level of awareness and public comment. The public consultation program included:

- Meetings with interested organizations and groups in the community.
- Information sessions, newsletters, questionnaires and mailings to the community to identify a broad range of potential needs and opportunities for the site.
- Public meetings to present the background information, plan vision, proposed management zones, concept plans, trail plan, public use plan and management recommendations.

Aboriginal communities were also engaged throughout the planning process. At the initiation of the project, a notification letter was sent to Aboriginal communities requesting them to express their interests or concerns in the project as well as to invite a representative to join the Public Advisory Committee (PAC). It was also noted that engagement separate from the PAC would also be welcomed. A small number of responses were received; however, TRCA conducted follow-up phone calls to ensure notification was received, as well as to answer any questions that could help

evaluate their interest in the project. Following initial communications, a project update was provided during the trail planning and management recommendations process. Lastly, a final notification will be sent at the completion of the management plan process. Future opportunities to include the input from aboriginal communities in programming and interpretation of cultural knowledge are key components of the Aboriginal Engagement process.

1.6 Endorsement of the Management Plan

Successful stewardship of the NRMT will require the support from a number of formal and informal partners. In lieu of this, TRCA sought endorsement for this management plan from a variety of groups including the Regional Municipality of York, City of Vaughan, Township of King and the technical and public advisory committees. The public, local community and users were informed and consulted throughout the process through newsletters, questionnaires and public meetings for each phase of the management planning process. Their concerns, comments and suggestions were heard and integrated in the plan wherever possible.

King Township

On January 12, 2015, TRCA presented the NRMT Management Plan to the Council of the Township of King. At the same meeting, Council considered Parks, Recreation and Culture Department Report Number PRC-2015-07 advising on the development of the Nashville Resource Management Tract Management Plan. The Council received the Parks, Recreation and Culture Report as information and recommended the NRMT Management Plan dated September 2014 and prepared by the Toronto and Region Conservation Authority (TRCA) be approved in principle. The following recommendations were approved:

- a) That report PRC-2015-07 be received as information; and
- b) That the Nashville Resource Management Tract Management Plan (dated September 2014 and prepared by Toronto and Region Conservation) be supported in principle.

City of Vaughan

On April 8, 2015, TRCA presented the NCR Management Plan to the Committee of the Whole (Working Session) of the City of Vaughan. At the same meeting, the committee considered staff report No. 15 and recommendations submitted by City of Vaughan staff advising on the development of the Nashville Conservation Reserve Management Plan. The following recommendations were approved:

- a) That the presentation from the Toronto and Region Conservation Authority be received; and
- b) That the Draft Nashville Conservation Reserve Management Plan by the Toronto and Region Conservation Authority be endorsed in principle with the understanding that future planned transportation and utility corridors will be required and may impact this plan.

Report No. 15, of the Committee of the Whole (Working Session), was subsequently adopted without amendment by the Council of the City of Vaughan on April 21, 2015.

Regional Municipality of York

On May 14, 2015, TRCA presented the NCR Management Plan to the Committee of the Whole. Following the presentation, recommendations were made by the committee and were sent to council for approval. Regional Council, at its meeting held on May 21, 2015, adopted the following recommendations of Committee of the Whole regarding TRCA's deputation on the Nashville Conservation Reserve Management Plan.

- a) Receipt of the deputation from the Toronto and Region Conservation Authority regarding the Nashville Conservation Reserve Management Plan.
- b) Referral of this item to staff for a future report.

1.7 Plan Review and Amendment

The management plan should undergo review every seven to ten years. This will be done in consultation with the stewardship group established for NRMT. Should major revisions be necessary to reflect changing environmental, social or economic conditions; they will only be made after consultation with affected groups and individuals. Revisions of the plan will be consistent with the original stated values, goals and objectives to protect the natural resources of the property.

2 Plan Vision, Goals and Objectives

It is important that the management planning framework for the NRMT be integrated with that of the TRCA and the Humber River watershed. The following four sections provide brief descriptions and objectives of each strategy and plan. These four strategies and plan were reviewed and incorporated as part of the process for developing the NRMT management plan vision, goals and objectives contained in sections 2.5 and 2.6.

2.1 The Living City Region – A Strategic Vision for the New Millennium (2006)

The Living City Region identifies TRCA's expertise in urban and regional environmental protection and restoration, and commits both the Living City Foundation and TRCA to supporting a healthy and sustainable regional environment – through project implementation, partnerships and public education. The vision of *The Living City Region* recognizes that the Toronto region is more than simply a place to live and work; it is a living, breathing ecosystem that supports a rich diversity of life and life-giving processes. This strategy requires a commitment to the protection and restoration of the natural environment and is critical to the future health of our communities. It is also the foundation for building sustainable cities, critical to the future of our planet. TRCA is committed to making a Living City Region.

TRCA's vision of a 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.
- **Regional 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** – 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 (TRCA, 2000)

2.2 Building the Living City – 10 Year Strategic Plan (2013)

In 2013, TRCA introduced a strategic plan covering a 10 year period from 2013 to 2022. The plan emphasizes TRCA’s commitment to safeguarding and enhancing the health and well-being of the residents of the Toronto region through the protection and restoration of the natural environment and the fundamental ecological services our environment provides. The central theme of this commitment is expressed through the adoption and endorsement of The Living City vision.

The following basic principles provide the ethical foundation for the strategic directions, objectives and actions designed to build The Living City and were used to develop the Nashville Resource Management Tract Management Plan:

People are a part of nature. Looking after one entails taking care of the other

- People and nature are a part of a single, dynamic and complex ecosystem. The state of health and well-being of the population impacts the health of natural systems, just as the state of our natural environment affects the health of people.

Natural systems provide fundamental and irreplaceable benefits that are vital to our health and well-being

- Natural systems provide services that are economically and ecologically impossible to duplicate. These include: capturing, storing and cleaning the water we drink; producing oxygen and cleansing pollutants from the air; regulating climate; reducing flooding from storms; providing health recreation opportunities; and offering natural aesthetics that nourish the spirit. Communities are sustained by the successful integration of natural systems with human activities. In the context of an urbanizing region we have a responsibility to create green infrastructure that supports natural systems.

“Systems thinking” leads to the most effective solutions

- The challenges that we face in promotion sustainability and building The Living City are complicated and interrelated. Therefore, solutions must reflect the complex and interconnected social, economic and ecological systems that make up The Living City region. TRCA will apply “systems thinking” in developing integrative and adaptive solutions to these challenges.

All residents deserve opportunities to help shape the future of their community

- TRCA will empower and mobilize a diverse range of stakeholders in community decision making processes and collaborative city building. We will promote engagement and strive to

ensure that The Living City truly reflects the needs and contributions of all its citizens (TRCA, 2013)

2.3 TRCA's Terrestrial Natural Heritage System Strategy (2007)

The *Terrestrial Natural Heritage System Strategy (TNHSS)* provides extensive data, scientific models, mapping and guidance for TRCA staff, TRCA's partner municipalities and community groups for achieving natural heritage protection objectives.

The need for a TNHSS originated from observations by TRCA and others that showed an alarming reduction in vegetation communities and species populations, and their distribution within TRCA's area of jurisdiction. This change was occurring simultaneously with urban expansion despite best efforts at protection. The reduction in forests, wetlands, meadows and their species was also accompanied by an increase in flooding and erosion, and in conflicting recreational uses in protected areas. Changes in land use were being approved site by site without understanding how, cumulatively, they were impacting the region's natural system and environmental health.

TRCA has redefined its approach towards biodiversity conservation to better reflect the role of ecosystems in the landscape. One important premise is that the distribution and quantity of natural cover and species is intricately linked to water, air quality and climate regulation, quality of life, and sustainability for citizens of our Living City region. Conservation efforts should, therefore, not focus solely on the conventional protection of rare species or special natural areas.

The TNHSS guides the natural heritage approach used in the development of this management plan. The 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. This approach evaluates a site's contribution to the landscape at three levels:

- The entire TRCA jurisdiction
- Defined areas of planning units such as the watershed
- Subwatershed Municipal areas

A key component of the terrestrial natural heritage approach is the ranking and scoring of vegetation communities and fauna species. The 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
- Quality of Distribution including:
 - Matrix influence
 - Patch size and shape
 - Biodiversity

The terrestrial natural heritage information that was gathered was analyzed and used to determine the appropriate management zones and trail alignments. The ranking and scoring of

vegetation communities and fauna species reflects their sensitivity 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) rank 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 (i.e. within TRCA jurisdiction) and their locations have attempted to be protected through the plan. A complete copy of the biological inventory report for NRMT, including listing of species and vegetation communities, can be found in the *Nashville Resource Management Tract Management Plan Background Report* (TRCA, 2012).

The Target Terrestrial Natural Heritage System

The goal of the target terrestrial natural heritage system is to protect and restore a system that is robust enough to sustain the existing distribution and populations of regional species of conservation concern. The target system quality still ranges from “very poor” to “excellent” but is improved overall, from being dominated by “fair” patches in the existing system to “good” patches in the target system. This results from improving individual patch size, shape, and, to some degree, matrix, throughout the system.

The distribution of natural cover in the target system is still very much skewed to the north, generally within the Greenbelt area, largely because of the limited opportunity to increase natural cover in existing urban areas. From a quantity perspective, the target system covers approximately 74,000 hectares, or approximately 30 percent of the total land surface area of the TRCA jurisdiction. This is the quantity necessary to achieve a target system that is dominated by “good” quality patches and to achieve the best distribution possible given existing constraints. The existing 25 percent of natural cover in the jurisdiction is made up of 16.5 percent forest and wetland and 8 percent meadow. With the quantity target increase to 30 percent, the intent is for the natural system to be 80 percent treed habitat (60 percent upland and 20 percent swamp), 10 percent meadow and 10 percent open wetland.

In summary, the target system will see an increase regionally in terrestrial natural cover quality, from “fair” to “good”, and in quantity, from 25 to 30 percent, and will include a shift in the habitat type distribution. Additionally, the Greenbelt area (which includes portions of NRMT) will see increases in quantity and quality of terrestrial natural cover from 44 percent to 63 percent. (TRCA, 2007)

2.4 Humber River Watershed Plan: Pathways to a Healthy Humber (2008)

Since the publication of the first Humber Watershed Plan (*Legacy: A Strategy for a Healthy Humber*) in 1997, much has been learned about the Humber watershed from monitoring, research and the experiences of watershed partners. The updated watershed plan revises the watershed management strategies in light of new information, a stronger scientific foundation, and better understanding of the effects of human actions on the ecosystem.

The guiding framework for the watershed plan is a set of principles and 30 objectives with specific targets for watershed conditions. They address:

- Environment: stream form, groundwater, surface water, air, aquatic system, terrestrial system
- Society: cultural heritage, nature-based recreation
- Economy: land use, resource use

The path to a healthier, more resilient watershed that emerged from this analysis is based on a comprehensive and inter-dependent set of strategies that will protect and enhance valued resources, regenerate damaged systems, and build more sustainable communities. This will help to increase the resilience of natural systems to human activities and climate change. It will also create healthier places for people and wildlife and stronger support for economic activities. (Barrett, 2008)

2.5 Vision for the Nashville Resource Management Tract

During the management planning process for the NRMT, vision, goals and objectives were developed through an extensive consultation process. The initial result of this process was the development of several themes and key words that would be used to help describe the important natural and cultural heritage features that are unique to the region surrounding NRMT. It was important to recognize that a large amount of the property has historically been used for agricultural purposes (as well as the surrounding region):

- Heritage – Humber River, bridges, cultural heritage
- Natural Heritage – connectivity, diversity, environment-first approach
- Trails – connectivity, recreation, appropriate
- Community stewardship – public engagement
- Near urban agriculture

From this list, a vision statement was created that encompasses the historical, ecological and agricultural features that are synonymous to the region:

A vital and dynamic part of the connected greenspace in the upper Humber River Watershed, the Nashville Resource Management Tract boasts extensive, high quality habitat that supports a diverse suite of species. It is valued by community members and visitors alike for its unique cultural heritage resources, spectacular trails, and agricultural features.

2.6 Management Goals and Objectives

The following management goals and objectives have been derived from various TRCA management strategies, policies and plans, and from the ideas put forth by the NRMT Management Plan advisory committees during visioning workshops. Management goals and objectives have been organized in the following categories: terrestrial resources, aquatic resources, cultural heritage resources, nature-based public use, conservation education, stewardship and outreach, conservation land use and management, and implementation, monitoring and review of the management plan. Management recommendations (section 5) have been developed to support these goals and objectives and are organized into similar categories.

2.6.1 Terrestrial Resources

1. **Goal:** To protect, restore and enhance the natural ecosystems and to ensure the health and diversity of native species, habitats, landscapes and ecological functions.

- a) Objective: To restore and naturalize disturbed areas in the NRMT.
- b) Objective: To maximize linkages and connectivity of the natural heritage features to one another and adjacent lands.
- c) Objective: To establish and manage forests within the NRMT.
- d) Objective: To protect the health of native species.

2.6.2 Aquatic Resources

- 2. **Goal:** To protect and enhance the form and function of the Humber River aquatic system.
 - a) Objective: To protect, restore and enhance the health and diversity of native aquatic habitats, communities and species.
 - b) Objective: To protect and restore surface water quality, with respect to toxic contaminants and other pollutants (such as sediment, nutrients, and road salt).
 - c) Objective: To provide for sustainable fishing opportunities and the safe consumption of fish.
 - d) Objective: To protect groundwater recharge and discharge.
 - e) Objective: To prevent groundwater contamination.
 - f) Objective: To maintain natural hydrologic connection to the floodplain and in doing so eliminate or minimize risks to human life and property.
 - g) Objective: To maintain and improve NRMT's contribution to the water balance of the Humber River.

2.6.3 Cultural Heritage Resources

- 3. **Goal:** To celebrate the diverse cultural heritage of the Humber River and NRMT by protecting, conserving and interpreting archaeological and historic resources.
 - a) Objective: To protect and conserve all known and unknown archaeological sites and cultural landscapes including all properties/structures included in the Vaughan Heritage Inventory.
 - b) Objective: To promote the cultural heritage features of the NRMT including the Kleinburg Nashville Heritage Conservation Resource District.
 - c) Objective: To integrate the NRMT trail system with the Kleinburg Nashville Heritage Conservation District.

2.6.4 Nature-Based Public Use

- 4. **Goal:** To encourage healthy living and provide opportunities for appropriate and accessible nature-based recreation by providing safe, enjoyable and sustainable trail experiences.
 - a) Objective: To focus public access and use on passive, outdoor recreation with development limited to appropriate areas.
 - b) Objective: To provide access to diverse landscapes, places, wildlife habitats, programs and experiences.
 - c) Objective: Plan and manage outdoor nature-based recreation facilities in a manner that integrates ecological health with social benefits
 - d) Objective: To use principles of ecological integrity (having regard for all of a systems components, functions and linkages), in planning trails throughout NRMT.

- e) Objective: To develop and enhance the trail system within the NRMT to provide connections to other trails along the Humber River.

2.6.5 Conservation Education

- 5. **Goal:** To promote knowledge and understanding of the natural and cultural values of the land and water, their protection and management requirements, as well as their significance, sensitivities and interrelationships within the NRMT and with surrounding areas.
 - a) Objective: To offer passive learning opportunities about the natural environment, cultural and heritage resources and sound conservation land management practices.
 - b) Objective: To foster outdoor educational learning.

2.6.6 Stewardship and Outreach

- 6. **Goal:** To inspire community stewardship through genuine engagement and consultation, provide innovative educational experiences and encourage partnerships that will achieve watershed and management plan objectives.
 - a) Objective: Encourage community participation in property management and land use planning.
 - b) Objective: Promote partnerships among environmental, cultural heritage, agriculture, recreation and education organizations, private industry and public agencies in property management and programming.
 - c) Objective: Encourage action-oriented initiatives to protect, conserve and regenerate NRMT.
 - d) Objective: Improve community connections to the watershed through recognition, preservation and celebration of heritage features and resources.
 - e) Objective: Raise funds for environmental regeneration, protection, education, and awareness initiatives in the NRMT.
 - f) Objective: Encourage people to choose lifestyles that are sustainable and ecologically-sound through demonstrations and passive education opportunities at the NRMT.

2.6.7 Conservation Lands Use and Management

- 7. **Goal:** To integrate NRMT as part of a sustainable community by planning for future development and achieving balance between demand for public use and need for natural heritage protection.
- 8. **Goal:** To protect and enhance the integrity and economic viability of agricultural areas by valuing the community, for-profit and educational aspects of agriculture.
 - a) Objective: To protect and enhance the integrity, economic viability of, and provide for appropriate public access to agricultural areas within NRMT
 - b) Objective: To promote the benefits public ownership, public stewardship and the responsible use of surrounding lands which connect to and influence the natural system of the NRMT.
 - c) Objective: To reduce and eliminate inappropriate land uses such as dumping, unapproved trail creation and encroachments.
 - d) Objective: To offset downstream ecological damage.
 - e) Objective: To maintain property standards on NRMT property.

2.6.8 Implementation, Monitoring and Review of the Management Plan

9. **Goal:** To implement a progressive land management model at the NRMT that will foster a strong sense of community involvement and provide a diverse and well-connected natural system.
 - a) **Objective:** To track the success of land management strategies and actions, and adapt management strategies in response.
 - b) **Objective:** To provide for ongoing public involvement in the management process.

3 Existing Environment

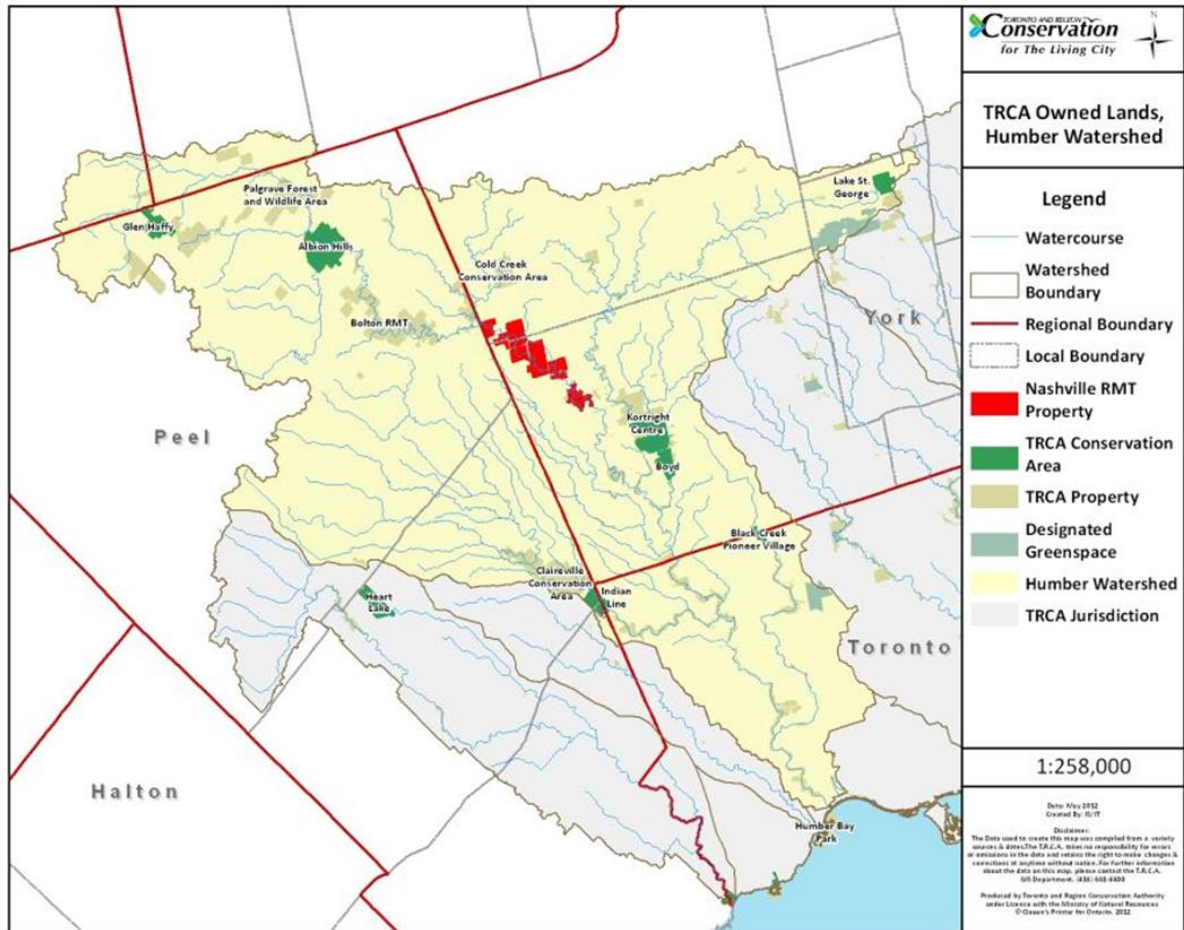
3.1 Terrestrial Natural Heritage

NRMT is located within the relatively well-forested Humber Watershed. The property also forms a junction between two natural corridors extending northwest along the Humber River and southeast along the East Humber River. The surrounding region consists of a matrix of primarily rural land uses, but with a growing suburban centre on the east and west side, the NRMT shows signs of decline in habitat quality and abundance of species of concern. Nevertheless, the site still provides a diverse range of habitats and species. The clearing of forests for agriculture within NRMT has left a significant impact on the quality of habitat and species richness. The result of this is a forest habitat that is fragmented and considered “fair” patch quality under TRCA’s Terrestrial Natural Heritage Strategy (TRCA, 2007). Under current conditions the NRMT study area supports 299 recorded species of native vascular plants, 114 of which are of regional concern. There are 96 species of breeding fauna, including 33 of regional concern (TRCA, 2012).

3.2 Aquatic Resources

The NRMT is located in the Upper Main Humber subwatershed but not in the headwater areas on the Oak Ridges Moraine or the Niagara Escarpment (see Figure 1). The Upper Main Humber subwatershed is still largely rural with some small urban centres and natural areas. This is the largest subwatershed of the Humber River with a drainage area of 357 square kilometres and 597 kilometres of watercourse (47% of the watershed). The more recently defined fish management zones identified in the Humber River Watershed Plan (2008) shows the NRMT within the smaller subcatchment boundary known as FMZ 5. Fish collection within FMZ 5 has occurred in 2004, 2007, and 2010. Species richness and diversity have essentially been maintained at consistent levels through these years with 18, 20, and 19 different species collected respectively; some of the surveyed species have been identified as sensitive to habitat degradation. In each year, the only non-native species found was Rainbow Trout (stocked and/or naturalized). This strongly suggests that aquatic conditions in FMZ 5 are stable and healthy. The Redside Dace, a provincially endangered species under the Endangered Species Act, is present within the larger stream system that flows through the NRMT. A recovery habitat for Reside Dace flows through some of the tributaries on the eastern side of the NRMT property. This species and its habitat are regulated by the Ontario Ministry of Natural Resources (OMNR); any works (including stream and riparian restoration) within the regulated area (meander belt plus 30m on each side) may require a permit under the Endangered Species Act. Most recently, the Rapids Clubtail (dragonfly) was identified as having habitat through the main stem of the Humber River flowing through the NRMT, although this species is not yet regulated by the OMNR.

Figure 1: NRMT Humber Watershed Context Map



The watercourses within the NRMT fall into two categories. The Main Humber River, the major watercourse travelling through the tract, is classified as ‘intermediate riverine coldwater’ while the tributaries flowing across the NRMT and into the main river are ‘small riverine warm water’ (O.M.N.R., T.R.C.A, 2005). This suggests that baseflow contributions (i.e., groundwater) originating from the tract itself are low. The main river receives additive flows (groundwater and surface water) from the large upstream catchment; significant groundwater contributions to the main river would be expected from the headwaters across the Oak Ridges Moraine and Niagara Escarpment. The relatively high baseflow suggests that the river has relatively stable flows throughout the year and that the coldwater temperatures tend not to fluctuate dramatically during hot summer months.

Within the management directions of the Humber River Watershed-based Fisheries Management Plan each section of watercourse has designated target fish species (O.M.N.R., T.R.C.A, 2005). The *Humber River Watershed Plan* maintains the intent of the FMP but provides a broader range of species to reflect a community management approach. In either case, the particular zone should be managed in such a way as to promote the establishment or continued proliferation of the targeted species or community. For the section of the Main Humber River that flows through the NRMT, the FMP indicates that the watercourse should be managed for Brown

Trout and Redside Dace. However, more recent direction from MNR is to not manage Brown Trout within regulated Redside Dace streams as the latest science indicates Brown Trout to be a significant predatory risk to Redside Dace survival.

The associated tributaries within the property target darter species. The expanded target fish communities listed in the Humber Watershed Plan, more specific to the NRMT location, include Redside Dace and specifically 2 darter species (Rainbow Darter and Blackside Darter). In terms of restoration work, the NRMT is identified as a high priority area for riparian zone rehabilitation. The watershed target is for 75% of the watercourse length to have associated woody vegetation. Achieving this goal and improving riparian habitat in the NRMT is part of the Humber River Watershed-based Fisheries Management Plan.

Angling is a popular form of recreation in the Humber and the management direction for the watershed is to allow access to the river for angling purposes on all public lands. The NRMT is a high priority area to implement best management practices to ensure appropriate angling activity occurs.

3.3 Human Heritage

The many archaeological sites and built heritage structures identified within the NRMT and the vicinity of the project area help to characterize past human activities. Furthermore, archaeological investigations within and adjacent to the NRMT indicate that people have been living in the area since the end of the last ice-age. Should future archaeological investigations be undertaken within the NRMT, there is a strong possibility that new archaeological resources will be discovered.

More information regarding the archaeological findings within and surrounding the NRMT can be found in the Nashville Resource Management Tract Background Report (TRCA, 2012).

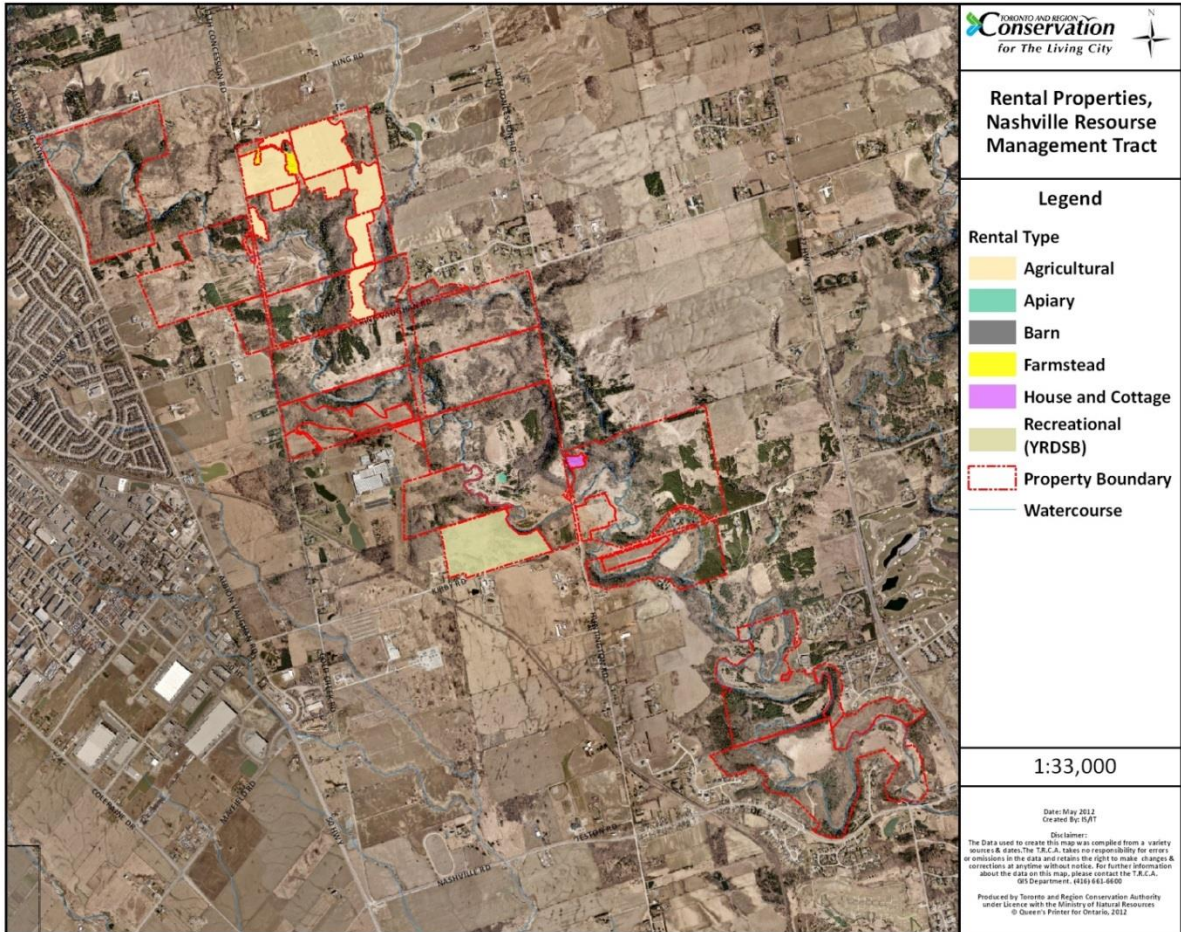
3.4 Current Land Use

3.4.1 Leases

There are a number of leases on the NRMT property (see Figure 2). In the northern section of the property, over 279 acres have been under agricultural lease since 1992. This lease includes a farmstead, and is renewable on an annual basis. Towards the west side of the property, on the north side of Kirby Road, is the Burrington Outdoor School, which is under a recreation lease. The leased area encompasses approximately 63 acres and began in 1969. There is a small apiary leased on the property, which has been in existence since 1994 and is renewed annually. Lastly, there is a residential lease at the northern end of Huntington Road (north of Kirby Road), which includes a house and cottage. This has been rented annually since 1972.

There is a pipeline easement and a water easement on the property, located in Concession 9, Lots 25 and 26. The area of the water easement is quite small, and is located near Highway 27.

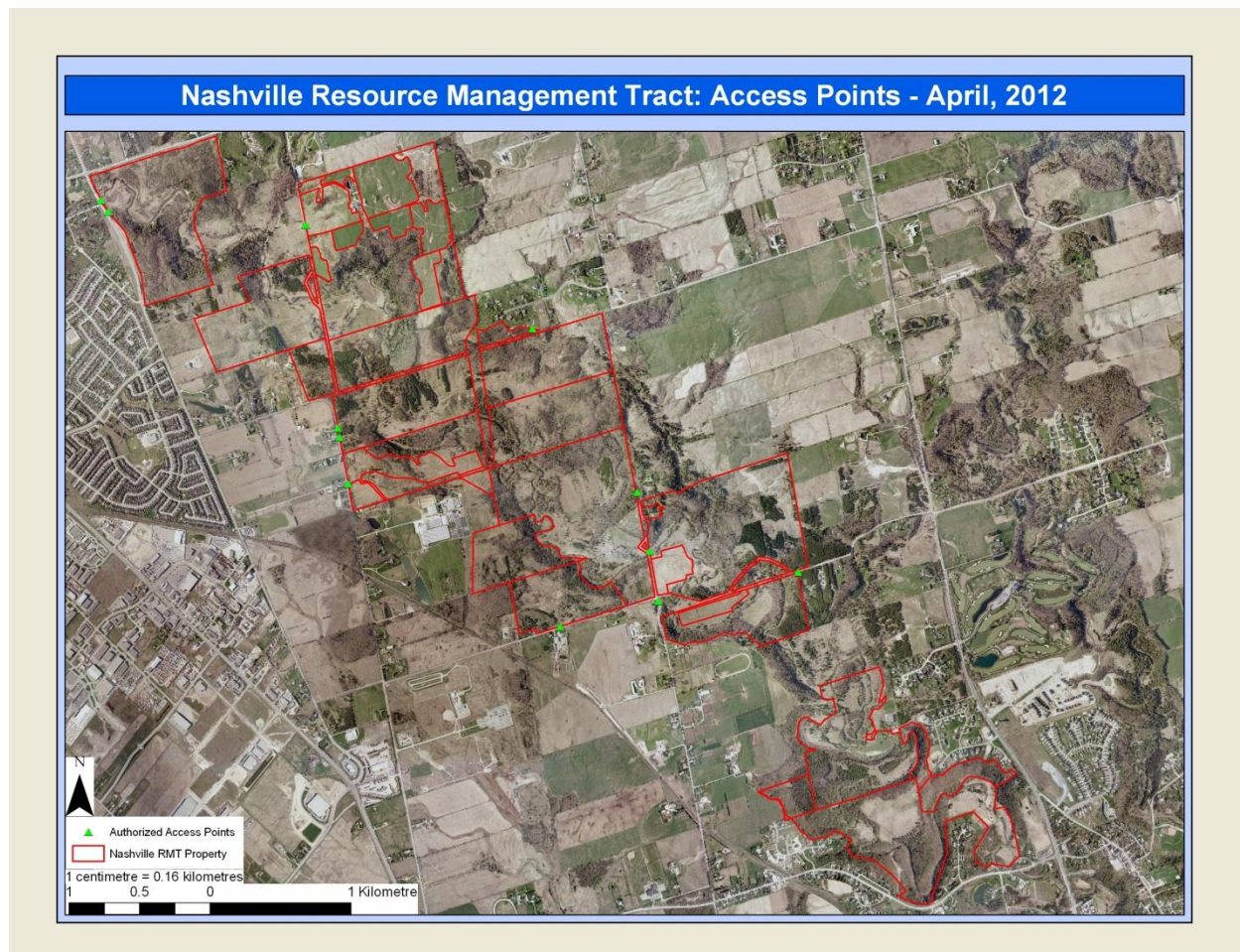
Figure 2: NRMT Leases and Rental Properties



3.4.2 Infrastructure and Services

Since the property is managed as a RMT and has never been an active use park, infrastructure and services on the property are limited. The NRMT has no formal public parking areas nor public washrooms, and limited formal access. A map of current authorized access points is shown as Figure 3.

Figure 3: NRMT Authorized Access Map



3.4.3 Operations

There has never been full-time staff assigned to manage NRMT. In the past, staff from the once-active Cold Creek Conservation Area to the north performed casual maintenance operations on the property. Since the closure of the Cold Creek Conservation Area, and its subsequent transfer to King Township for management, most property maintenance work has been completed by staff from the TRCA Conservation Lands group. Work has included inventorying of boundaries, access points and trails, as well as extensive site securement work. Restoration work on the property is carried out by staff from the Restoration Services and Forestry groups.

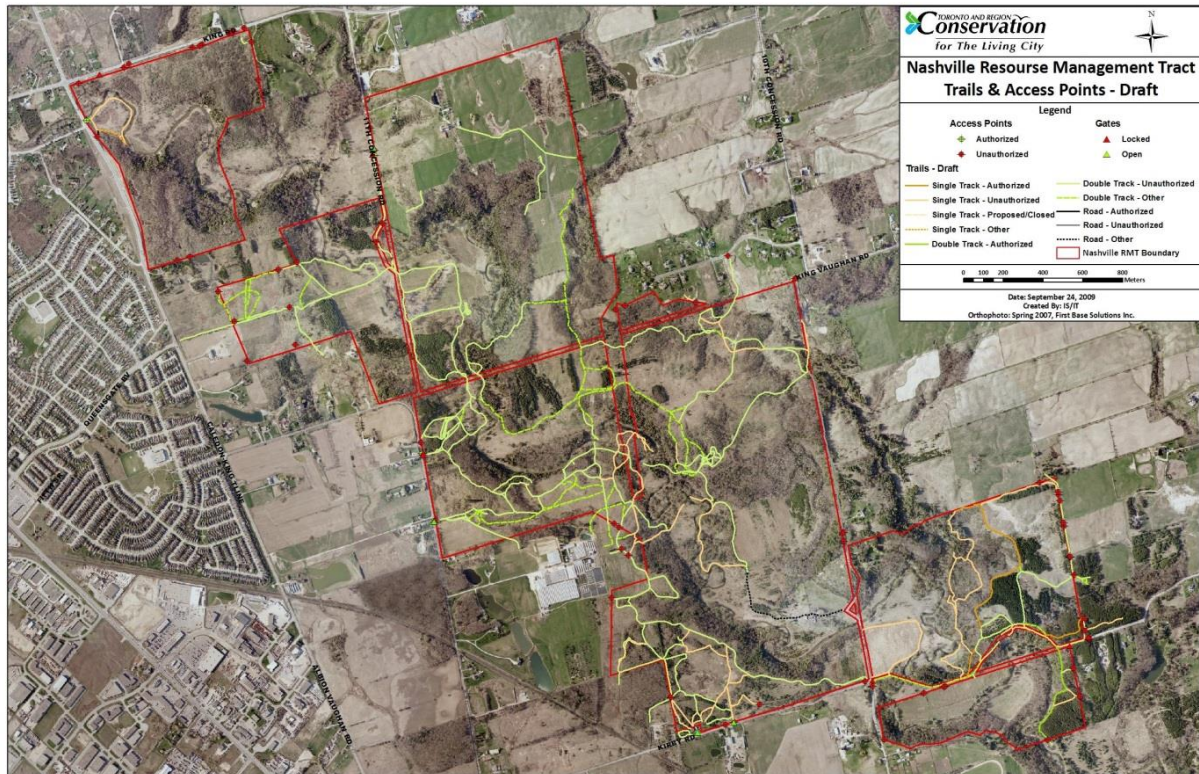
3.4.4 Recreation

There are two formal trail loops currently in the NRMT which are confined to two small sections of the property. These two trails form part of the Humber Valley Heritage Trail (HVHT) and is managed by the Humber Valley Heritage Trail Association – Kleinburg Chapter. The two trails have a combined length of three kilometres. The only permitted trail uses are walking, hiking, cross country skiing and snowshoeing.

There is an extensive system of informal trails at NRMT, totaling over 40 km (see Figure 4). These include extensive ATV and dirt bike trails, both of which are unauthorized. Other than local

hiking and riding clubs, the NRMT has remained mostly unused by those living in the region. As a part of this management plan, a trail plan for the entire property will be developed to ensure that future formalized trails are built to provide a valuable passive recreational experience to users while ensuring natural heritage protection.

Figure 4: NRMT Unauthorized Trails and Access Map



The Humber River has a healthy fishery and is a popular river for anglers. There are currently no formal access points for anglers and developing appropriate access will be an important part of the management plan. The fish species found in the river and the annual stocking of fish are discussed in section 3.2.

3.4.5 Security

Security is a major issue within NRMT. Many unauthorized users are gaining access to the tract through informal access points (see Figure 4 for unauthorized access points). There is a significant amount of ATV, dirt bike and snowmobile use within the property. Poaching is also a major concern within the tract which affects the safety of all users. Extensive securement work has been completed at the site in recent years, including blocking or fencing access points, removing garbage and other hazards, and installing signage. Continuation of this work is an important aspect of the management plan. Specific implementation projects will be developed through Site Securement and Protection Plans and have been included as a line item in the budget.

3.5 Surrounding Land-Use and Future Proposed Development

3.5.1 Land Use

The land-use surrounding the property is mostly rural and agricultural, though there are expanding residential communities, particularly to the south and east. In the southern portion of the property, NRMT is in proximity to the communities of Nashville and Kleinburg, both of which are expanding. Under the North Kleinburg-Nashville Secondary Plan, there are areas of potential development that would be in proximity to the NRMT. Both are east of Huntington Road, north of Nashville Road, and south of Kirby Road. These areas would feature low-rise residential communities. Similarly, there are two subdivision plans currently slated for areas west of Highway 27, north of Nashville Road and south of Kirby Road. These developments would result in the transference of greenspace into TRCA ownership, which could improve the contiguous nature of NRMT where gaps currently exist.

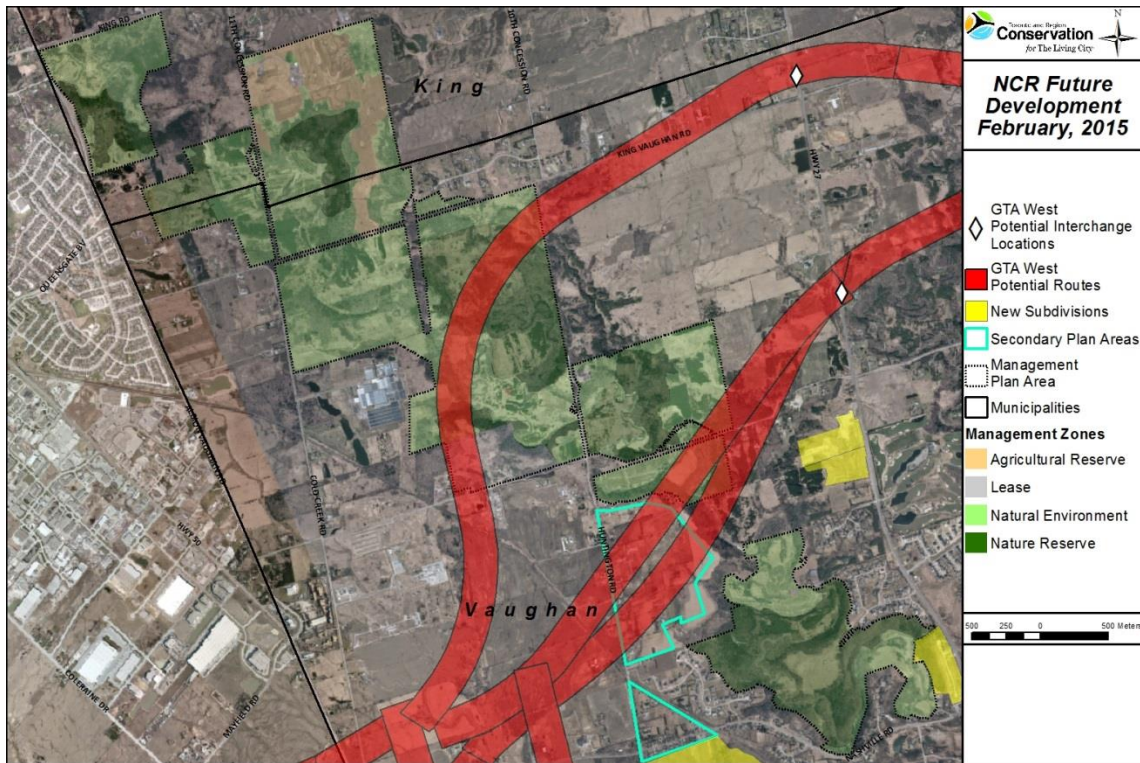
The northern section of the property is located near the community of Bolton. The western border of the northernmost parcel of property is in close proximity to a residential area. This part of the NRMT is within walking distance of homes and there is an informal trail that has been developed by residents and formalized by the Humber Valley Heritage Trail Association (HVHTA).

3.5.2 Future Development

There are two significant transportation development initiatives that have the potential to impact the NRMT. At the time of writing of this document, the Ministry of Transportation was in the process of preparing the second phase of the Individual Environmental Assessment (IEA) for the Greater Toronto Area (GTA) West Corridor project. This undertaking would see the development of a transportation corridor that will include: a new transportation corridor from Highway 400 that would terminate at Highway 401/407 in Halton Region and a north-south connection to Highway 427 and Highway 410 (MTO, 2012). Mapping from the first stage of the environmental assessment shows the study area corridor bisecting the NRMT (see Figure 5). The second stage within the IEA will examine alternative alignments within the corridor. While actual construction will not occur within the effective timeframe of this management plan, planning and consideration of the potential impact of these corridors will be a part of the management planning process.

Under the North Kleinburg-Nashville Secondary Plan, there are areas of potential development that would be in proximity to the NRMT. Both are east of Huntington Road, north of Nashville Road, and south of Kirby Road. These areas would feature low-rise residential communities. Similarly, there are two plans of subdivision currently for areas west of Highway 27, north of Nashville Road and south of Kirby Road (see Figure 5).. All of these developments would result in the transference of greenspace into TRCA ownership, which has the potential to improve the contiguous nature of NRMT where gaps currently exist.

Figure 5: NRMT Future Development Map



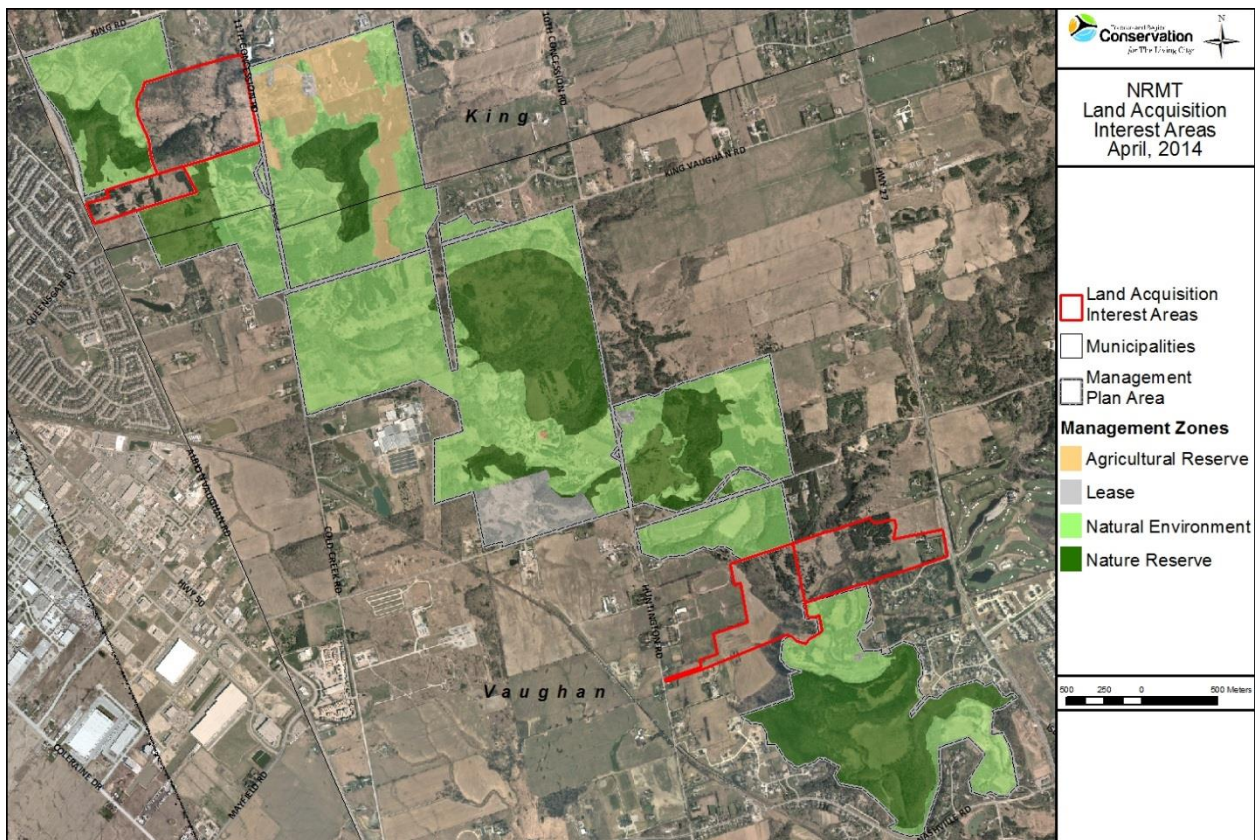
3.6 Land Acquisitions

TRCA is interested in acquiring the remaining property along the Humber River where there are two large privately-owned properties between the three parcels that make up NRMT (see Figure 6). Acquiring these lands would fall under the *Greenlands Acquisitions Project (GAP)* for 2011-2015 and is supported by *Ontario Regulation 166/06, Valley and Stream Corridor Management Program* (1994). TRCA has developed a list of conditions that need to be met in order to consider land acquisition. These last two non-publicly owned sections separating NRMT are essential to the overall ecological health and integrity of the Humber River Watershed and meet all the criteria to consider acquiring these lands. A recommendation has been made to acquire these lands in the NRMT Management Plan and can be found in section 5.5. The following list summarizes the criteria for land acquisitions set out in the GAP document (TRCA, 2005):

- Expands properties already in public ownership.
- Provides a link between lands which are already in public ownership.
- Facilitates a project such as flood control, erosion control or shoreline protection.
- Is needed to regenerate a degraded area.
- Secures public access for outdoor education, a regional trail and other appropriate resource-based recreation or other uses.
- Ensures the land remains unaltered in order to protect important or sensitive species, landforms, features or functions, and thus ensures more certainty of permanent care and control than other methods can provide (e.g., Environmentally Significant Areas, habitat for species at risk and wellhead protection zones).

- Conserves a key property when no other solution exists.

Figure 6: NRMT Land Acquisition Interest Areas



4 Management Zones

A key component of TRCA’s management planning process is the delineation of land management zones within the boundaries of the subject property. The zones are distinguished by a graduated level of ecological protection, management and operational criteria and acceptable levels of public use. Table 1 provides a general description of land management zones developed for NRMT with corresponding acceptable public uses and TRCA permitted activities.

Table 1: NRMT Management Zone Descriptions

Management Zone	Description	Public Uses	TRCA Activities
Nature Reserve	Areas which have significant or unique natural features, landforms, species or habitats that require careful management to ensure long-term protection	Public access is limited to authorized trails for low impact activities such as walking, hiking, cycling, leashed dog walking, and cross country skiing. The number and length of trails should be kept to a minimum, and only major trails such as inter-regional trails should be located within this zone. A complete ban on any public use is also possible in this zone, based on the need for natural or	Fish, wildlife, water, forest management and research.

		cultural heritage protection.	
Natural Environment	Large core habitat areas and corridors that are natural in character but do not meet the criteria of the nature reserve zone.	Public access is limited to authorized trails for walking, hiking, cycling, leashed dog walking, cross country skiing, horse riding and associated low impact comfort stations only.	Fish, wildlife, water, forest management and research.
Restoration	Locations identified as priority sites for active or potential forest management and habitat improvement projects to take place. It should be noted that restoration projects may take place in other management zones if identified as necessary.	Public use level is dictated by the type of management zone (e.g. nature reserve or natural environment) within which the restoration designation is superimposed	Fish, wildlife, water, forest management and research.
Lease	Areas containing TRCA property that is subject to a lease agreement. Possible leases could include agricultural lands, residential homes and their immediate grounds, educational buildings and associated facilities.	General public use is not permitted in these zones. The leasee may allow for limited public use as per the terms of their use (e.g., school groups may use educational buildings).	Fish, wildlife, water and forest management, crops, horticultural nursery operations, low intensity buildings and uses associated with leased properties. Details are determined by the lease agreement.
Agricultural Reserve	Areas that have existing agricultural activities or have the potential for agricultural uses. These areas may be subject to lease agreements.	General public use is not permitted in this zone, particularly where lands may be under private lease. Public use may be allowed in some areas if an agricultural use is developed that is targeted to the public (e.g. community garden).	Agriculture/crop fields, horticultural nursery operations, meadows and hay fields, and associated buildings.
Public Use	Areas associated with large access points and parking lots.	Public use is permitted. The types of public use activities are determined by the recommendations of the corresponding management plan.	Fish, wildlife, water forest management and research. Grading and soil compaction associated with car parking lots.

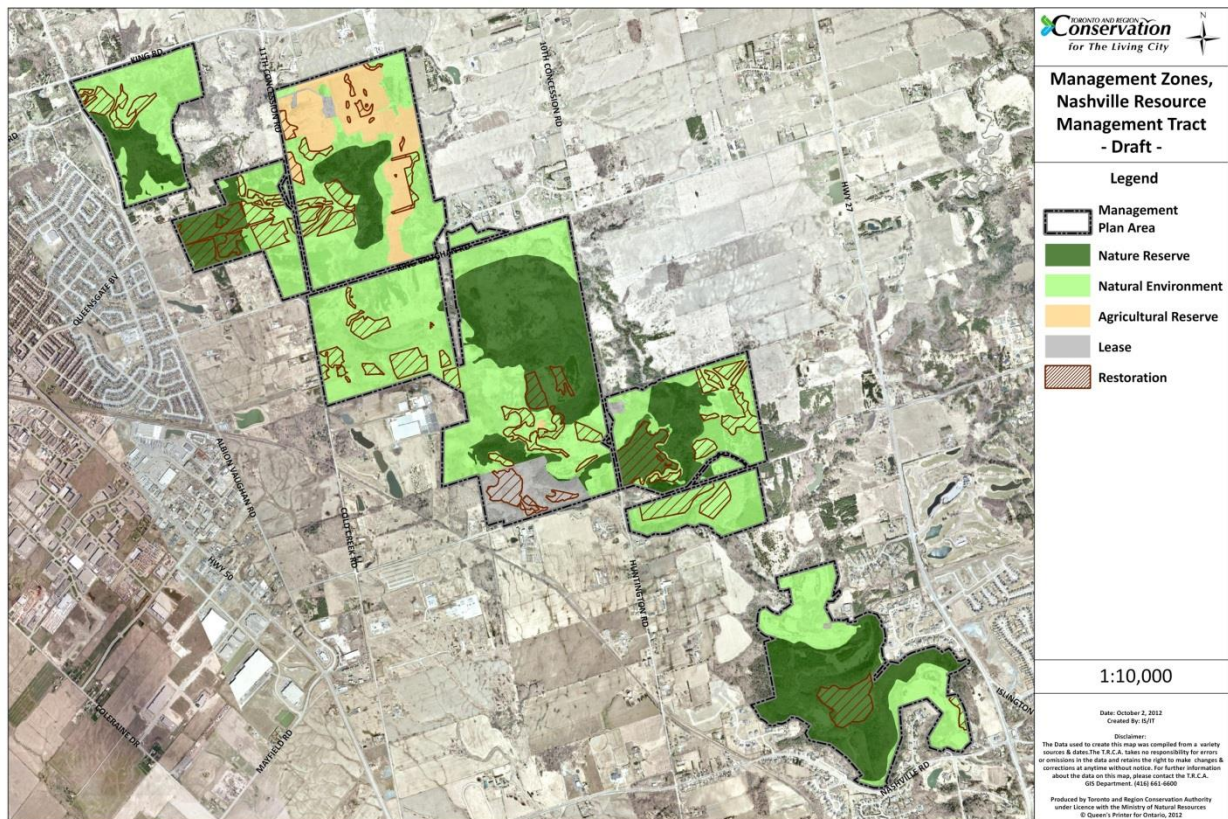
Cultural Heritage Preserve	Areas of cultural heritage significance. Intended to be used only where heritage artifacts require distinct protection beyond the guidelines and best practices dictated in the management plan.	Public use is not permitted in these zones when artifacts or features are in need of a high level of protection. Public use may be permitted in areas where it can be supported without impacting features.	Cultural heritage, fish, wildlife, water, forest management and research.
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These zones and definitions are based on the Ontario Provincial Parks – Planning and Management Policies but have been modified to more closely address the requirements of the NRMT and TRCA. Given the current pressures of urbanization on the quality and quantity of natural cover throughout TRCA’s jurisdiction, it is paramount to adopt a nature first philosophy for the management of any natural area and to address each site in a larger regional context. By implementing the recommended system of land management zones, TRCA will improve the condition and resilience of natural habitats in the Township of King, City of Vaughan, Region of York and the GTA.

4.1 Determining the Management Zones

In order to define the appropriate land management zones within NRMT, TRCA staff reviewed, inventoried, analyzed and ranked the features and functions for the area using environmental data collected and displayed using geographic information systems (GIS). The final land management zone delineation is shown as Figure 7.

Figure 7: NRMT Management Zone Map



The critical information that was considered in determining the land management zones is as follows:

- Interior forest habitat
- Vegetation communities
- Species of concern
- Environmentally Significant Areas (ESAs)
- Areas of Natural and Scientific Interest (ANSIs)
- Evaluated, identified and unclassified wetlands, including Provincially Significant Wetlands (PSWs)
- Natural corridors and linkages
- Existing public use areas
- Lease areas
- Existing and approved infrastructure
- Easements Identified and potentially hazardous areas
- Contaminated sites containing non-native invasive vegetation
- Archaeological resources
- Heritage and cultural resources

4.2 NRMT Management Zones

While developing management zones for NRMT, a priority was to conserve and protect the ecological and cultural integrity of the site while still providing opportunities for public access, now and into the future. Efforts were made to identify various ecological criteria that could be used to identify areas sensitive to disturbance. Some of the criteria considered were: the area of interior forest cover; rare or sensitive ecological communities; rare or sensitive flora & fauna; species at risk and their habitat; and amphibian and ground nesting bird habitat. The following seven sections describe in detail each management zone and their related specifications.

4.2.1 Nature Reserve

278 Hectares

The locations in which the highest number or most sensitive of species, communities or habitats occurred have been designated as Nature Reserve. It is desirable to minimize public access to the Nature Reserve zones so these lands can provide a sanctuary for flora and fauna. Major trail systems, such as inter-regional trails, are permitted to cross nature reserve zones where it is deemed appropriate by TRCA staff. Resource management projects encouraged in this zone include those designed to protect, enhance, restore and connect natural features, landforms, species or habitats. This includes forest management, fish habitat improvement, naturalization and invasive species management activities. All trails should be monitored to ensure that invasive species are not spread throughout the area.

4.2.2 Natural Environment

455 Hectares

Areas that are considered to be ecologically healthy but still may require some restoration efforts have been designated as Natural Environment. These areas still have significant natural and/or cultural heritage value, but are not as sensitive as those classified as Nature Reserve. Public access to the site, in the form of trails for walking, hiking, cycling, horse riding, leashed dog walking, and cross-country skiing, will be provided and focused in the Natural Environment zone. Natural Environment areas are suitable for environmental management projects designed to protect, enhance, restore and connect natural features, landforms, species or habitats. All trails should be monitored to ensure that invasive species are not spread throughout the area.

4.2.3 Restoration

55 Hectares

Restoration zones are areas that have been identified in NRMT under either a Habitat Implementation Plan (TRCA, 2004) or the TRCA Managed Forest Plan (TRCA, 1998). These are areas that are either scheduled for regular forestry maintenance projects or are areas identified as opportunities for habitat improvement. Resource management activities encouraged in this zone include environmental management projects designed to protect, enhance, restore and connect natural features, landforms, species or habitats. By undertaking successful restoration activities, these areas will naturally mature and evolve into either Natural Environment or Nature Reserve zones. There are opportunities to partner with municipal partners and other agencies to facilitate the enhancement of restoration areas in NRMT.

In addition to these areas, a 1.8 hectare open table land site on the east side of Cold Creek Road – 1.3km north of Kirby Road – has been slated for strategic placement of clean surplus soil. Existing table lands will be enhanced by creating wetland and interpretive opportunities while creating the foundation for diverse habitat and public features. It is anticipated that the design will accommodate approximately 60,000 cubic metres of topsoil. This project was supported by resolution #A25/12, adopted by the Authority board at meeting #2/12, held on March 30, 2012.

4.2.4 Lease

29 Hectares

Buildings and lands subject to residential or commercial lease agreements are part of the Lease management zone. Access to these areas is restricted to TRCA staff, building tenants and their guests/clients. Additional land may be leased for agricultural use in the future.

4.2.5 Agricultural Reserve

54.53 Hectares

Areas that have existing agricultural activities or have the potential for agricultural uses or gardens have been characterized as Agricultural Reserve. An Agricultural Reserve has been designated in one area within the NRMT with potential to add additional agricultural areas as part of restoration work. Individual farm tenants currently hold ongoing lease agreements with TRCA (see section 4.2.4).

4.2.6 Public Use

Hectares to be determined

Portions of the NRMT that are marked for a high level of public use – such as large access points, parking lots and dog off-leash areas – have been identified as Public Use Zones. These areas have yet to be determined as TRCA is currently working with our municipal and regional partners to secure the required right-of-way and permission to enter agreements necessary to develop entrances off of roadways. Currently, there are no formal public entryways in to the property with the exception of two HVHTA trailheads. Resource management activities encouraged in this zone include environmental management projects designed to protect, enhance, restore and connect natural features, landforms, species or habitats wherever possible, while still allowing for appropriate public access.

4.2.7 Cultural Heritage Preserve

Hectares to be determined.

Cultural Heritage Preserves have been designated based on a known Aboriginal or early European settlements existing below or above grade. Boundaries of these zones have been determined by developing a non-descript buffer around known features. This zone encompasses the Burrington Resource Centre and the McEwan Bridge at Huntington and Kirby Road. These two cases are unique as the bridge will continue to function as a vital water crossing for the trail plan and the Burrington Resource Centre currently has an ongoing lease with York Region. Depending on site conditions, areas of historical significance will not be identified on public mapping due to privacy concerns. Signage will be used for areas deemed relevant and important to recognize by

the staff steering and public advisory committees. TRCA requires that an archaeological investigation be undertaken prior to any development or undertaking that will significantly disturb or alter the soil and result in negative impacts to cultural heritage resources. Any significant archaeological finds that cannot be mitigated (i.e. foundations, wells) may be left in-situ and a new Heritage Preserve Zone would be established to ensure proper documentation, conservation and interpretation.

5 Management Recommendations and Actions

Management recommendations provided in this document have been created to guide the actions of TRCA, and its partners and stakeholders; to ensure that the NRMT will continue to be a healthy and vital part of the Humber River watershed. These recommendations are similar to the provisions outlined in *TRCA's Valley and Stream Corridor Management Program* (TRCA, 1994), the *Strategy for Public Use of Conservation Authority Lands* (TRCA, 1995), the watershed management objectives outlined in *Legacy: A Strategy for a Healthy Humber* (TRCA, 1997) and *Humber River Watershed Plan: Pathways to a Healthy Humber* (Barrett, 2008).

Each section has a list of general management recommendations, as well as specific management actions, if necessary. The management actions are measurable, while the recommendations are broader statements. Table 4 in Section 7.1 lists these actions with associated costs and projected timelines for implementation. The recommendations and actions are consistent with the watershed plan for the Humber River.

5.1 Management Zones

As discussed in the previous section, seven unique land management zones have been defined for NRMT with specific activities permitted within their boundaries. Due to these restrictions, recommendations have been made to improve ecological features and public facilities within them. Each zone has its own unique list of recommendations and can be found within this section. Limited to moderate public uses (such as hiking, biking and equestrian) will still be permitted outside of public-use zones but will be designed to not significantly impact environmentally sensitive areas. Section 5.1.1 through 5.1.7 provides general recommendations for each individual management zone, while the following list outlines overarching recommendations for the management of these zones:

Management Recommendations

1. Review and update management zones for NRMT every 7 to 10 years – pending the completion of a natural heritage inventory update.
2. Monitor all land management zones regularly for terrestrial natural heritage and public use indicators. Monitoring should include: species of regional conservation concern, public opinion surveys, trail user counts and other specifications developed as part of a monitoring program.
3. Restore, enhance and connect environmental features and functions within the land management zones to support TRCA's *Terrestrial Natural Heritage System Strategy* (TRCA, 2007).

4. Install limited interpretive signage in land management zones to educate the public about the environmental features of the zone and appropriate public uses.

5.1.1 Nature Reserve

See Section 4.2.1 for further information regarding Nature Reserve zones.

Management Recommendations

5. Install limited interpretive signage to promote awareness about the function of Nature Reserve land management zones.
6. Decommission informal and inappropriate trails through environmentally sensitive areas.

5.1.2 Natural Environment

See Section 4.2.2 for further information regarding Natural Environment zones.

Management Recommendations

7. Install interpretive signage to promote awareness about the function of Natural Environment land management zones.
8. Decommission informal and inappropriate trails through environmentally sensitive areas.

5.1.3 Restoration

See Section 4.2.3 for further information regarding Restoration zones.

Management Recommendations

9. Implement habitat restoration projects as recommended in current and future habitat enhancement plans.
10. Actively manage primary restoration areas to ensure the success of restoration projects.
11. Pursue opportunities to partner with local municipalities and other agencies to enhance terrestrial and aquatic habitats.
12. Complete approved topsoil placement projects for purposes of creating sound and visual attenuation landforms, enhancing wetland interpretive habitat features and restoring forest cover.

5.1.4 Lease

See Section 4.2.4 for further information regarding Lease zones.

Management Recommendations

13. Restrict access to residential/commercial Lease land management zones to TRCA staff, tenants and their guests.
14. Conduct regular/annual/biennial audits of residential/commercial leases to ensure property standards associated with lease agreements are upheld. Provide advance written notice to tenants prior to such audits.

5.1.5 Agricultural Reserve

See Section 4.2.5 for further information regarding Agricultural Reserve zones.

Management Recommendations

15. Monitor agricultural operations to ensure implementation of best management practices.
16. Post interpretive signs and/or prepare a brochure regarding near-urban agriculture within NRMT and the Humber River watershed.
17. Restore natural cover and habitat on fields that have been taken out of agricultural production.

5.1.6 Public Use

See Section 4.2.6 for further information regarding Public Use Zones.

Management Recommendations

18. Locate new public use activities in areas zoned as Public Use to sustain the vision, goals and objectives of the NRMT Management Plan.
19. Focus high-intensity public uses within Public-Use zones. Limited low to moderate impact public uses may be permitted elsewhere on the property.

5.1.7 Cultural Heritage Preserve

See Section 4.2.7 for further information regarding Cultural Heritage Preserve zones.

Management Recommendations

20. Prepare an interpretive plan for the Burlington Resource Centre, McEwan Bridge and any other significant heritage feature found through the Public Advisory Committee research.
21. Ensure that TRCA's Archaeological Resource Management Unit conducts archaeological assessments of any locations where ground-level disturbances are planned and/or are identified as high archaeological potential in the City of Vaughan's database.
22. Establish new Heritage Preserve zone, if appropriate, around any significant cultural heritage resources.
23. Any proposed construction or changes in NRMT that fall within the boundaries of the Kleinburg Nashville Heritage District will be required to comply with the Ontario Heritage Act, the Kleinburg Nashville Heritage District Guidelines and obtain a Heritage Permit.
24. More detailed analysis using GIS mapping should be completed to confirm whether other built heritage resources identified in the Vaughan Heritage Inventory are located within the NRMT area.

5.2 Ecological

5.2.1 Natural Heritage Protection

Recommendations in this section are intended to provide direction on how to protect as well as to maximize the contribution of NRMT lands to the wider natural system. A number of the following management recommendations and actions will support the objectives of the *Humber Watershed Plan (2008)* and their associated targets, including protection of existing sites, enhancement of natural cover through restoration (including forest, wetland, and meadow habitats), and mitigation of severely disturbed areas. Some representative targets from the *Humber River Watershed Plan* include:

- Increase natural cover to at least 39 percent of total watershed area.
- Increase wetland cover to 10 percent of total watershed area.
- Reduce baseline ratios of severely disturbed area to total evaluated areas.
- Enhance and expand native habitat and species type representation in the terrestrial system. (Barrett, 2008)

Management Recommendations

25. For both aquatic and terrestrial ecosystems, annual monitoring of flora, fauna and overall condition of the ecosystems is recommended, with the continuation of monitoring initiatives already in place, and expansion of these efforts where gaps exist.
26. Limit any land-use changes (e.g. loss of natural cover) that will reduce matrix influence scores.
27. Protect and restore groundwater recharge and discharge locations and pathways.
28. Mitigate the effects on drainage, seepage and recharge zones of any management actions (e.g. parking lots and trail surfaces).
29. Investigate the need for additional groundwater monitoring sites to assess hydrological impacts of pending development on surrounding lands.
30. Ensure salt is not used in any TRCA winter management of trails and parking lots.
31. Develop an invasive species prevention awareness campaign targeting new residents about the impacts of non-native species and the live releasing of aquatic species into wetlands and directly in to streams.
32. All management work conducted must occur during times when there will be the least impact on vegetation, breeding birds, and dispersing and migrating amphibians.
33. Undertake invasive species management to reduce competition for native flora.
34. Replace exotic species with site-appropriate native plants.

Management Actions

- i. Complete a forest inventory for NRMT lands and determine any necessary forest management priorities and recommendations.
- ii. Consult a hydrological recharge model prior to parking lot and trail construction to ensure infiltration and water balance is maintained.

5.2.2 Restoration

The continuing suburban development to the east of NRMT will lead to increased pressures on the natural system. Therefore, it is imperative that measures be implemented to mitigate any negative impacts in order to maintain a healthy level of biodiversity on the site. One of the most important recommendations for NRMT will be to protect and enhance natural cover through restoration. The increase of natural cover through strategic plantings and restoration will increase the size of habitat blocks, thereby improving the resiliency of fauna and flora communities to the impacts of development and increased user pressure. Recommendations for restoration within NRMT include:

Management Recommendations

35. Position restoration projects so they positively impact all other terrestrial natural heritage indicator categories (e.g. patch size and shape, connectivity, and matrix influence).
36. Maximize natural cover through reforestation of interstitial open habitat, and by maintaining and enhancing continuous links between habitat patches.
37. Ensure that site habitat quality is improved by working at both the level of vegetation community and local topography, and at the more fine-detailed microhabitat level, such as providing actual nesting opportunities.
38. Restoration work carried out on meadow and agricultural land should incorporate “pit and mound” topography if appropriate, as well as installation of “natural” cover objects and brush piles so as to provide shelter for dispersing amphibians.
39. Maintain agricultural fields for active agriculture or similar use (e.g. community gardens or near-urban agriculture).

Management Actions

- iii. Implement restoration activities as per the habitat implementation program for the Humber Watershed, as outlined in the Humber Habitat Implementation Plan (TRCA, 2004).

5.3 Cultural

The property contains archaeological resources that have been identified, and holds high potential to encounter more archaeological sites, both Aboriginal and EuroCanadian in nature. Future studies should be initiated to identify these unidentified cultural resources. An objective of the Humber River Watershed Plan is to recognize, preserve and celebrate cultural heritage, and accordingly have a target of increasing the database of known archaeological, historic and burial sites, and built structures (Barrett, 2008). The following recommendations and actions support this target:

Management Recommendations

40. Ensure that TRCA’s archaeological resource management unit conducts archaeological assessments of any locations where ground level disturbances are planned, such as for trail routes, vegetation planting and parking lot construction.
41. Protect and conserve all archeological sites to mitigate disturbances; and, conform to ministry standards and guidelines.
42. Pursue opportunities to preserve and interpret heritage sites for public education.
43. Pursue opportunities to involve Aboriginal communities with regards to any significant archaeological findings on site.
44. Investigate potential to incorporate archaeological findings and history in to local education programs.

Management Actions

- iv. Complete archaeological assessments within NRMT and interpret findings.

5.4 Social

The Humber River Watershed Plan outlines specific targets to reach in order to provide opportunities for public enjoyment that are compatible with, and raise awareness of, the

watershed's natural and cultural heritage. The plans aim to provide a variety of appropriate public uses and experiences, to incorporate greenspace into all developments, and to create an accessible and connected greenspace system. Sample targets include:

- Manage 100% of public greenspace through application of standards of best practice.
- Greenspace located within two kilometres of all homes.
- Build an additional 60 kilometres of inter-regional trails in the Humber Watershed.
- Provide opportunities for nature-based recreation experiences related to various concept areas or themes.
- 100% completion of planned trail systems and linkages (Barrett, 2008).

In addition to these recommendations, the management planning process for NRMT has identified other 'social themed' recommendations contained in the next six sections.

5.4.1 Trails

The primary socially-themed objective of the management plan is to create a trail system that will provide nature-based recreation opportunities for those in close proximity to NRMT, as well as for the broader region – by connecting York Region to Peel Region. A detailed trail plan is outlined in section 6, and includes recommendations and actions relating to trail design, location, maintenance, permitted uses, and signage. This section outlines high-level trail recommendations that form the basis of the plan.

Management Recommendations

45. Develop a detailed trail multi-phase construction plan for the trail plan and receive all necessary permits and approvals.
46. Implement the multi-use trail with the assistance of the NRMT Stewardship Committee and any other interested trail partners.
47. Continue to administer the annual Trail Agreement between TRCA and HVHTA for the management and maintenance of pedestrian-only trails within NRMT. Update the map schedule as necessary to reflect any changes to applicable trails.
48. Connect the NRMT trail system to other trails systems in the area, where possible, including interregional trails (e.g. Humber Valley Heritage Trail System) and local trails.
49. Incorporate the guidelines and regulations set out in the Accessibility for Ontarians with Disabilities Act (AODA, 2005) in trail design where needed.
50. Promote limited and nature-based public uses that have minimal negative environmental impacts.
51. 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.
52. All trail construction, reconstruction, naturalization or closures will be carried out in accordance with TRCA's *Trail Planning and Design Guidelines* (TRCA, 1992)
53. Obtain all necessary regulatory permits and approvals required under the Endangered Species Act prior to commencing any potentially disruptive management or implementation activities, including trail development and parking lot construction.

54. Provide interpretive experiences for visitors, and educate about proper trail etiquette and environmental issues.
55. Decommission and restore all informal trails that are not slated to become part of the formal trail system.
56. Consider all reasonably foreseeable natural heritage impacts when designing the trail system, including:
 - Ensuring that trails avoid areas where species of concern and their habitats have been identified.
 - Avoiding known salamander breeding ponds
 - Avoiding transecting interior forest, instead staying close to edges of forest patches.
 - Designing trails that must run through interior forest to be narrow, reducing the creation of new edge type habitat within the forest block.

Management Actions

Specific actions for the NRMT trail system are provided in section 6 (Trail Development).

5.4.2 Near Urban Agriculture/Public Gardens

One of TRCA's paths for achieving the Living City vision is to provide sustainable near-urban agriculture opportunities on its own lands. Urban gardening and nearby rural agricultural production provides consumers with a local, healthy source of food that requires minimal transportation and fewer greenhouse gas emissions. As part of the management plan for the property, TRCA will be working with community members to encourage the growing of produce within NRMT – in areas designated as agricultural reserve zones.

Management Recommendations

57. Pursue partnerships and programs to establish near-urban agriculture within NRMT.
58. Maintain compliance with TRCA's Sustainable Near-Urban Agriculture Policy for lands owned and managed by TRCA.

5.4.3 Site Securement

The *Nashville Resource Management Tract Site Securement and Protection Plan* (TRCA, 2010) was prepared in advance of the management plan and included as a part of the *Nashville Resource Management Tract Background Report* (TRCA, 2012). It contains an inventory of all known access points, trails, hazards and dumped material. Extensive work has already been undertaken to curb unauthorized uses and mitigate damage. Due to the findings of the site securement and protection plan and the current and proposed growth in the area, continued efforts to secure the site is paramount to the success of the management plan. Recommendations for site securement of NRMT have been included below:

Management Recommendations

59. Ensure continual monitoring and management of unauthorized uses occurring on the property in order to prevent environmental damage, protect public health and safety, and reduce maintenance costs.
60. Work with York Regional police, Township of King and City of Vaughan by-law staff to address unauthorized use on the site.

Management Actions

- v. Conduct annual or semi-annual monitoring of all boundaries; including assessment of fencing, encroachments, trail conditions and signage.
- vi. Utilize inventory totals from previous and future site securement work to develop implementation projects for fencing, gate and signage installation; decommissioning of unauthorized trails, and garbage removal.

5.4.4 Community Outreach, Engagement and Awareness

The growing community surrounding NRMT is a valuable resource for the sustained interest and protection of the property. The management planning process has already identified several community groups who share an interest in NRMT and helped form the Public Advisory Committee (PAC). At the completion of the NRMT Management Plan, TRCA will help transition the PAC in to a stewardship group. This group will assist TRCA in the implementation of the numerous plan recommendations and actions.

Outreach materials are also an important component of community engagement and awareness. A biannual newsletter was sent out to homeowners surrounding NRMT during the planning process, and provided neighbours with management plan updates, event listings and information related to the history of NRMT. Following the completion of the management plan, a trail guide and map will be developed for the NRMT lands. The following community outreach and engagement actions have been created for NRMT:

Management Actions

- vii. Establish the NRMT Stewardship Committee to help TRCA achieve the goals, objectives, recommendations and actions set out in the NRMT Management Plan.
- viii. Create a terms of reference for the committee that outlines roles and responsibilities.
- ix. Work collaboratively to create annual work plans for the committee based on the management plan.
- x. Develop a trail guide and map for NRMT.
- xi. Involve local community members as trail stewards to help care for and maintain the trail system, in collaboration with the Humber Valley Heritage Trail Association (HVHTA).
- xii. Proactively inform new homeowners of permitted uses on TRCA lands, through methods such as homeowner information packages, regular distribution of newsletters, and proper signage.

5.4.5 Dog Off-Leash Area

The TRCA has indicated that it will only further investigate the opportunity if either the City of Vaughan or a formal dog-walking group is formed and assumes responsibility for the maintenance

of a leash-free area as defined in the TRCA's Policy and Operational Procedures for Managing Domestic Animals (2003). TRCA has identified two areas that would be suitable for a dog off-leash area. These areas are suitable as they have low ecological value and exclude, by means of distance, the possibility of dogs entering the trail system.

If a dog off-leash area were to be established at NRMT, the TRCA will undertake an education and monitoring program to inform dog walkers about its policy prohibiting dogs off leash and to promote the new dog-off leash area. The program would include information pamphlets, monitoring of off-leash use, and issuing of trespassing notices to offenders.

Management Recommendations

61. Continue to explore the possibility of establishing a dog-off leash area within NRMT and work with municipal and community partners to determine maintenance responsibilities.

5.4.6 Operating Name

A recommendation was made through the NRMT staff steering committee to change the name of the property as part of the management planning process. Following this recommendation, a survey was sent out to both staff and public advisory committees to accumulate a list of potential names. The public advisory committee determined from the set of potential names – that the name should follow the newly established Oak Ridges Corridor Conservation Reserve property in Richmond Hill and rename the property "conservation reserve". The name "Nashville Conservation Reserve" reflects current and future management of the property and bestows a much more positive and meaningful title for the tract. The name change has become a recommendation of the management plan and will become finalized after approval by the Conservation Authority Board.

Management Recommendations

62. Change the name of Nashville Resource Management Tract (NRMT) to Nashville Conservation Reserve (NCR).

5.5 Economic

Several aspects of the NRMT Management Plan will not only benefit the larger objectives of TRCA, but will also assist the Township of King, The City of Vaughan and York Region in achieving their own planning and policy objectives. The support, participation and assistance of TRCA's municipal and regional partners have been crucial in developing the management plan document. Continued support from all stakeholders will play an important role in implementing the plan. TRCA will continue to foster existing partnerships, form new partnerships and seek out funding and grant opportunities to support implementation of the management plan.

Management Recommendations

63. Explore opportunities to partner on project implementation with the Township of King, the City of Vaughan, Ontario Ministry of Transportation, the Regional Municipality of York, local community groups and other interested stakeholders.
64. Research and apply for funding opportunities that would help offset implementation costs.

65. Renew efforts to acquire the remaining lands along the Humber River that surround the NRMT property.

6 Trail Development Recommendations and Actions

Most of NRMT can be considered healthy from an ecological perspective; however, the property faces increasing pressures from extensive informal trails created by unauthorized ATV and equestrian usage. For the most part, NRMT lands are designated as natural environment, which enables TRCA to design trail corridors through these areas while mostly avoiding nature reserve areas that contain sensitive natural environments. By providing controlled public access to natural areas, trails can provide valuable educational and aesthetic experiences for users. At the same time, an increased number of trail users will act as a deterrent for those who wish to use the property inappropriately.

Several communities are growing around the boundaries of the property and the demand for access to the property has grown significantly. Local municipalities and the Region of York have designed master trail plans that utilize TRCA property in some shape or form. In addition, several other local community groups such as the Humber Valley Heritage Trail Association (HVHTA) and local equestrian riding clubs have indicated their desire to increase the length and quality of trails within the property. Due to these reasons, TRCA has been given a great opportunity to work with local and regional stakeholders to create trails that provide the greatest amount of enjoyment and functionality for the community.

As part of the management planning process for NRMT, a detailed trail plan has been created for the property and abutting TRCA lands. Through an extensive consultation process that involved various steering and advisory committees, community members, and municipal and regional staff members – the objective was to design a system that would be enjoyable for users while also maximizing protection for the natural system. The following six subsections provide detailed trail plan recommendations and actions:

6.1 Trail System

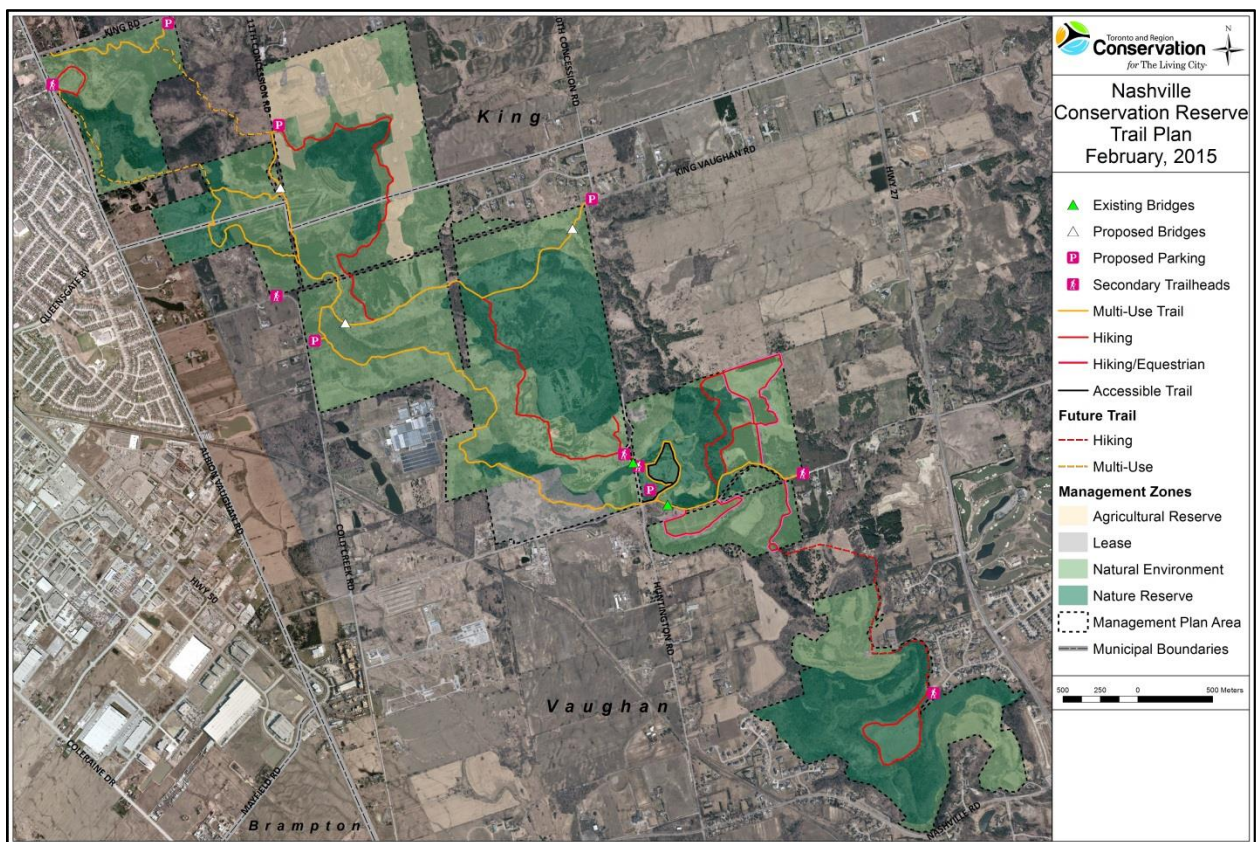
The trail system complements the overall management plan for NRMT and offers guidelines for the development of an integrated trail system through the property. The plan includes local loop trails within Nashville as well as interregional trails to connect to communities such as Nobleton, Kleinburg and Bolton. The trail system is designed to accommodate a variety of users and offers different trail types, lengths and difficulties. Approximately 24.9 kilometres of trail have been proposed for the property which will decrease the total amount of trails on the property by roughly 40 percent. Figure 8 depicts the trail plan in its entirety. The following sections describe proposed features and trail types proposed for the NRMT.

Management Recommendations

66. Work with Township of King, City of Vaughan and Region of York to connect NRMT to local and regional trail systems and ensure a coordinated trail construction and maintenance standard is used for all trails.

67. The detailed alignment of proposed trails must be reviewed by TRCA technical staff and OMNR to ensure proper placement of the trail and reduced impacts to the natural environment.
68. Work with HVHTA and the NRMT Stewardship Committee to plan and construct the hiking trail.
69. Work with HVHTA and the NRMT Stewardship Committee to develop an interpretive trail experience throughout the hiking trail system. (See Section 5.3 for related Cultural Heritage Recommendations).
70. Link NRMT to Kleinburg and the TRCA Living City Campus
71. Work with the Region and Peel, the TRCA Humber Watershed Team and other applicable TRCA staff to ensure a safe and complete connection is developed – at the appropriate time – to link York Region to Peel Region with the goal of enhancing the Humber River interregional trail system.

Figure 8: NRMT Trail Plan Map



6.1.1 Trail Hub

A significant recommendation during the draft trail planning process was to create a ‘trail hub’ at the corner of Huntington and Kirby Roads (see Figure 9). A trail hub can be defined as an area within TRCA property that has a greater number of trail connections, larger parking area and distinctive signage. The area would serve as the main entry point for most trail users. A key feature of the trail hub is to provide lower difficulty trails closer to the main parking area and increase in difficulty as users move further away. Not coincidentally, a fully accessible trail loop has been

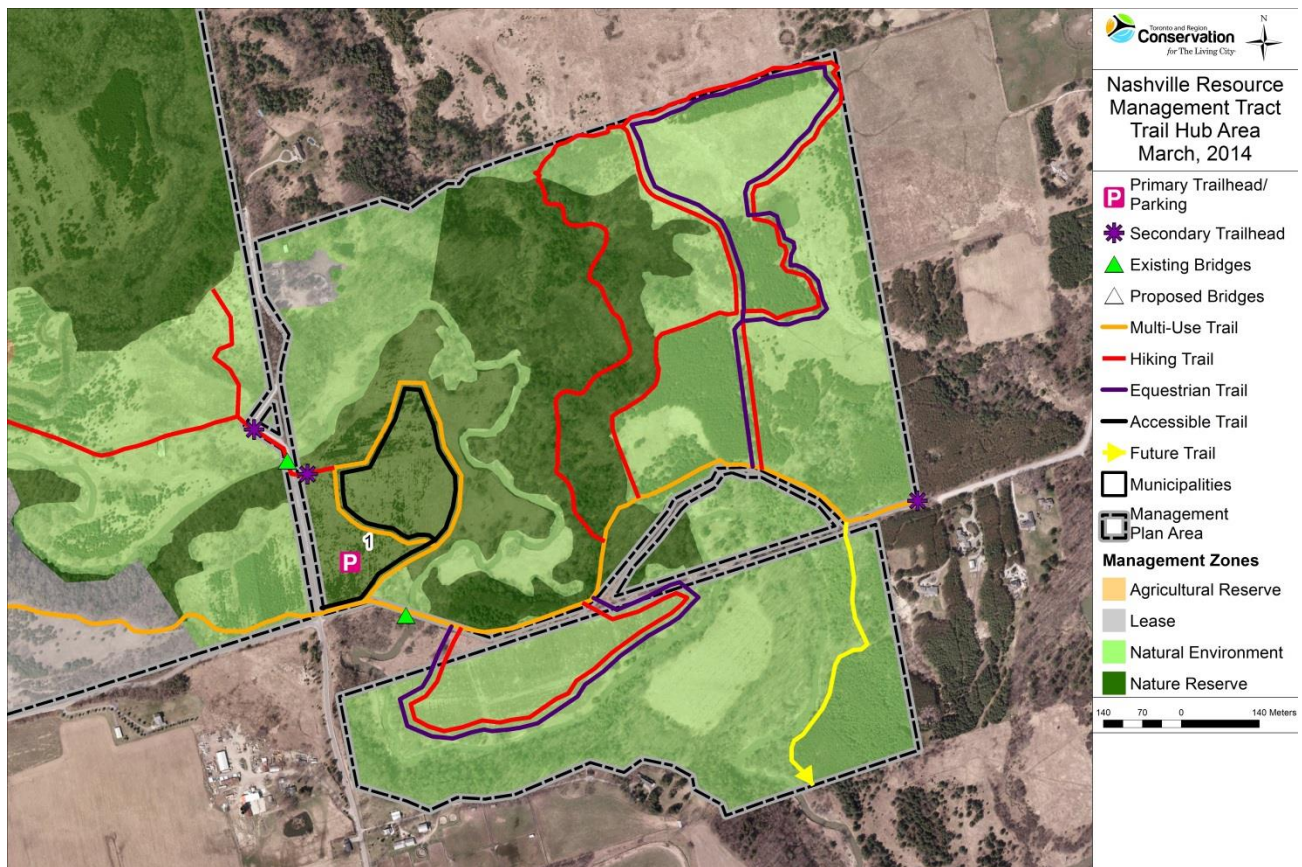
proposed for this area. The intersection of Huntington and Kirby Roads was chosen as a preferred location of for a number of reasons:

- Current location of Humber Valley Heritage Trail main entrance.
- Relatively flat terrain and open space.
- Community has historically parked here to access trails on property.
- Strategically located between communities in King and Vaughan.
- Off main regional and local highways for added traffic/pedestrian safety.
- Offers high visibility from both Huntington and Kirby Roads for TRCA enforcement and local and regional police.

Management Actions

- xiii. Develop/Construct a trail hub area at the intersection of Kirby and Huntington, consisting of: a large 30 car parking area with adequate room for horse trailers; signage and trail maps; trailheads for the accessible, hiking, multi-use and equestrian trails; and barrier free access to the accessible trail system.

Figure 9: NRMT Trail Hub Area Map



6.1.2 Multi-Use Trail

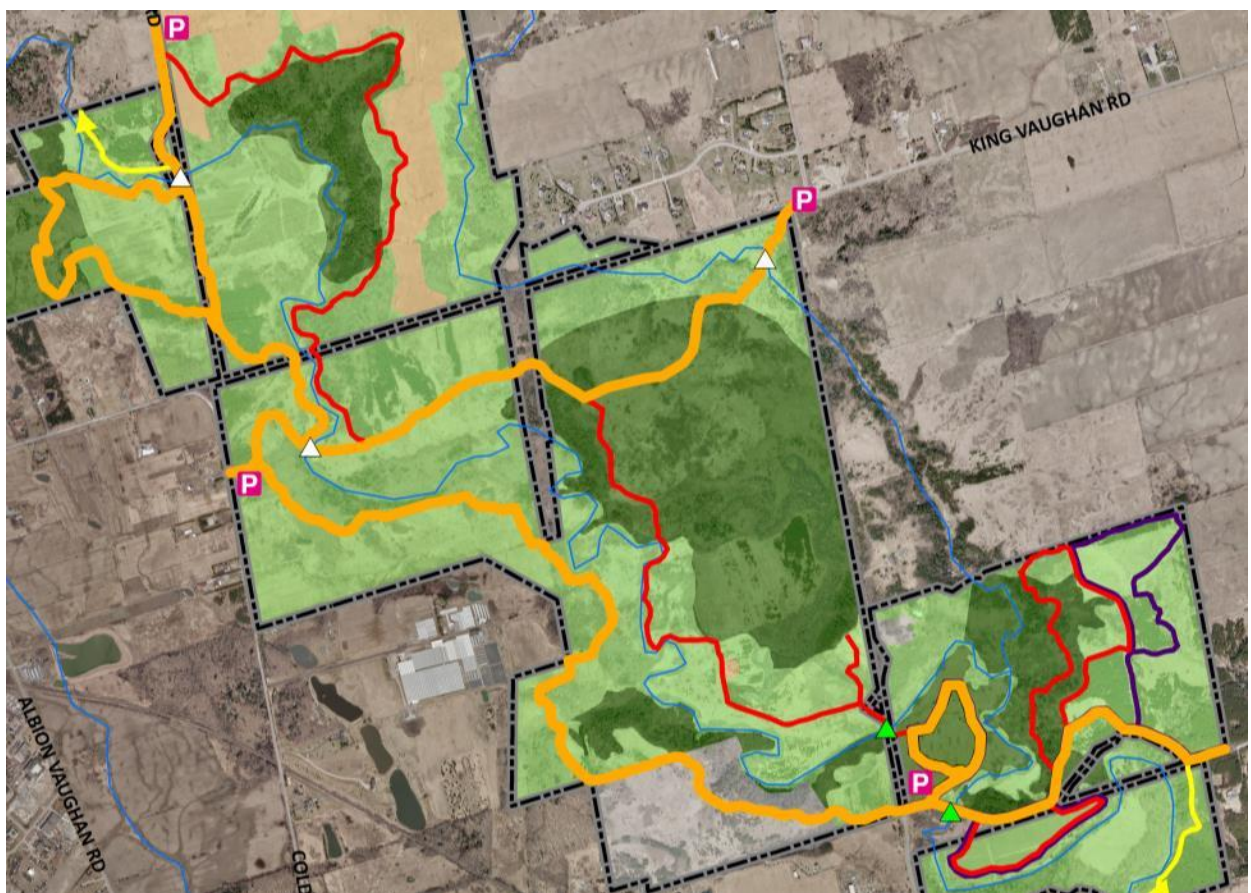
The multi-use trail will stretch a total of 12.5 kilometres (including the accessible trail section) and will consist of natural surfaces or limestone screening with a trail width between 1.5-3m wide.

Multi-use trails in NRMT will be designed for use by the casual off-road cyclist and hiker rather than providing the steep and technical trail experience associated with mountain-biking trails. Figure 10 profiles the multi-use trail system (highlighted in orange). Note: each management action breaks down the individual trail sections by trail surface type.

Management Actions

- xiv. Construct/formalize a 7.0 kilometre natural-surface multi-use trail with a width of 2.5 metres between Huntington/Kirby Road and Cold Creek Road; Cold Creek Road and Concession 11 and two additional multi-use loops (see detailed descriptions of these trails in section 6.1.2.1., 6.1.2.2 and 6.1.2.5.).

Figure 10: NRMT Multi-Use Trails Map



6.1.2.1 Huntington and Kirby Road to Cold Creek Road 3.6 kilometres

This section of the multi-use trail extends from the intersection of Kirby Road and Huntington Road, loosely following the western side of the Humber River to the Cold Creek parking area. The western side of the Humber River was chosen as an ideal location for the multi-use trail as it provided the least amount of difficult terrain and consisted of several pieces of unauthorized trail that could be repurposed as authorized multi-use trail.

6.1.2.2 Cold Creek Road to Concession 11

2.2 Kilometres

This section will provide a north-south multi-use trail connection between the parking area and secondary access point on Cold Creek Road and the parking area at the bottom of Concession 11. Starting from the Cold Creek parking area, the trail will dip down in to the Humber Valley and follow the river north. The trail eventually connects to one of two multi-use trail loops and the beginning of the hiking trail system.

6.1.2.3 Kirby Road Allowance

1.3 Kilometres

The Kirby Road Allowance has long acted as an entryway in to NRMT. The Humber Valley Heritage Trail utilizes the western side of the road allowance to enter their looped trail along with the casual hiker and biker using this section as a thoroughfare between two sides of the property. This multi-use trail section will be designed to have hiking, biking and equestrian as permitted uses.

The trail will need to be designed with proper sightlines so as to avoid user conflict on the trail. This is particularly true for the steep section of the road allowance that leads in to the Humber Valley. The steep drop will require a trail that provides the safest experience for users and least harmful to the environment. TRCA will be using the experience of our local and regional partners as well as trail building experts to design a trail that meets all safety requirements. The road allowance is a crucial connection for the growing community and the NRMT trail plan. York Region and City of Vaughan's Pedestrian and Cycling Master Plans both utilize the Kirby Road Allowance as an east-west multi-use connection. Further discussion between York Region and the City of Vaughan will take place to discuss the future of Kirby Road.

Management Actions

- xv. Construct/formalize a 1.3 kilometre multi-use trail system along the Kirby Road Allowance, with a surface of limestone fines and a compacted granular base, and a width of 3 metres.

6.1.2.4 King Vaughan Road to Cold Creek Road

2.5 kilometres

The King Vaughan Road to Cold Creek multi-use trail connection is the second east-west corridor through NRMT and will be built using limestone screening. Users who drive to NRMT will be able to use the King Vaughan Road parking area or the Cold Creek Road parking area to access the multi-use trail system or hiking trails. Local residents will also be able use this route as a way to pass through the property quickly. Two bridges are needed to be constructed along this route including one just west of the King Vaughan Road parking area and the other just east of the Cold Creek Road parking area.

Management Actions

- xvi. Construct/formalize a 2.5 kilometre multi-use trail system between King Vaughan Road and Cold Creek Road, with a surface of limestone fines, a compacted granular base, and a width of 2.4 metres.

6.1.2.5 Additional Looped Section

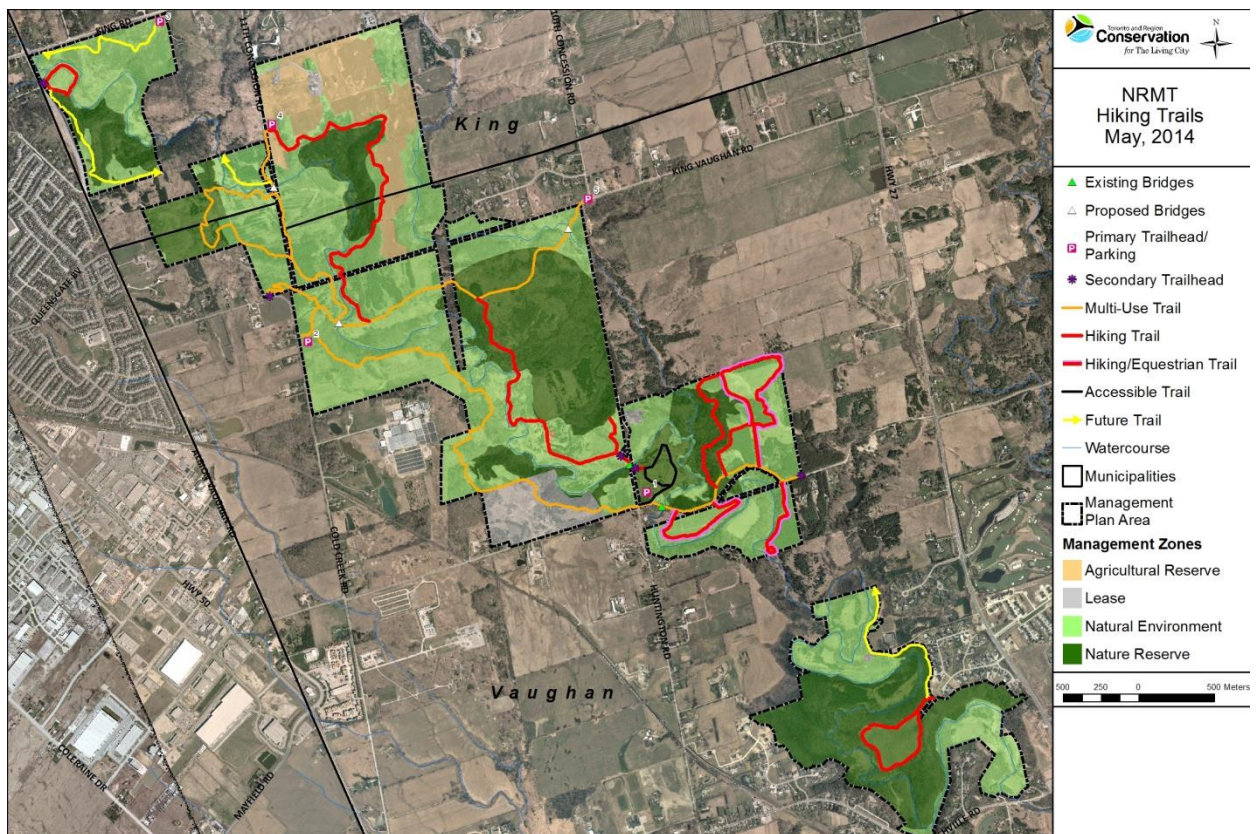
1.8 kilometres

One additional loop sections has been added to the trail plan. This loop of approximately 1.8 kilometres is situated between the proposed entrances off of Cold Creek Road and Concession 11. This multi-use trail could serve as the connection south of the Humber River to the land locked parcel of NRMT at the corner of King Road and Albion-Vaughan Road (depending on land acquisitions). Due to its rolling terrain, trail difficulty will be moderate to difficult.

6.1.3 Hiking Trail

Hiking trails have been located within NRMT for many years. The Humber Valley Heritage Trail Association (HVHTA) currently has a trail use agreement with TRCA for two trail loops within NRMT. These trail sections are extremely valued within the community and the expansion of HVHTA hiking trails to approximately 12.4 kilometres will provide users with a similar experience throughout the property. The hiking trail system has multiple parts and is described in the following subsections. Figure 11 profiles the proposed hiking trail system.

Figure 11: NRMT Hiking Trails Map



6.1.3.1 HVHT: Huntington and Kirby Road to Concession 11

5.3 Kilometres

Two large hiking trail sections have been proposed for the east side of the Humber River. This single-track trail will connect the trail hub area to the second east-west multi-use trail, three other

parking areas, and will allow for several looping opportunities. A key feature of the hiking trail is a spur trail that leads to a vista overlooking the Humber River. Due to the east-west multi-use trail between King Vaughan Road and Cold Creek Road and the recommendations from TRCA ecology staff, the hiking trail system is combined with the multi-use trail system to avoid repetition and additional disturbance to the natural features of NRMT.

Management Actions

- xvii. Construct/formalize a 5.3 kilometre hiking trail between Kirby and Huntington Road and Concession 11, with a natural surface, and a width of 0.5 metres.

6.1.3.2 Forest Heights Loop

1.4 Kilometres

Residents of the Forest Heights community (off of Highway 27) have established an unauthorized trail emanating from the end of Forest Height Blvd. along the Trans-Canada Pipeline corridor. The trail then enters the valley and loops around a large open field. In order to provide continued access to residents of this community (and others along Highway 27), TRCA will be establishing this as a hiking-only trail loop. Future land acquisitions will make it possible to construct a trail north from this entry point to connect to the multi-use trail system along the Kirby Road Allowance.

Management Actions

- xviii. Construct/formalize the existing Forest Heights Loops, with a natural surface, and a width of 0.5 metres.

6.1.3.3 HVHT: Existing Trail Loops

2.7 Kilometres

HVHTA manages two existing trail loops within NRMT. These loops will essentially remain the same with the exception of the hiking loop within the trail hub area. The entrance to the HVHT at Huntington and Kirby will become a multi-use trail with equestrian usage permitted. The multi-use trail will be part of the HVHT for a few hundred metres until the hiking trail veers off from the main trail. The other change is the addition of permitted equestrian use along one section of hiking trail within the trail hub area. TRCA will design the trail so that it will not hinder the quality of the trail for both user groups.

Management Actions

- xix. Maintain the existing 2.7 kilometre Humber Valley Heritage Trail Association (HVHTA) hiking loops.

6.1.4 Hiking/Equestrian Trail

3.5 Kilometres

The community surrounding NRMT has a long history of equestrian use. As the management plan has evolved, TRCA has worked with local equestrian business owners and riders to make sure

that horses will be able to utilize the property – while at the same time, protecting the natural environment, other trail users, and TRCA property. Equestrian use has been limited to a select number of trails within the trail hub area in order to prevent environmental degradation in nature reserve areas (see Figure 12). The trail hub parking area (at Huntington and Kirby) will have a large area for horse owners to park and will be the main entry point for this user group. Kirby Road at the dead end off of Highway 27 will be a secondary entry/exit point so that riders can use the road allowance as a thoroughfare to get from one side of the property to the other.

6.1.4.1 Kirby Road Spur

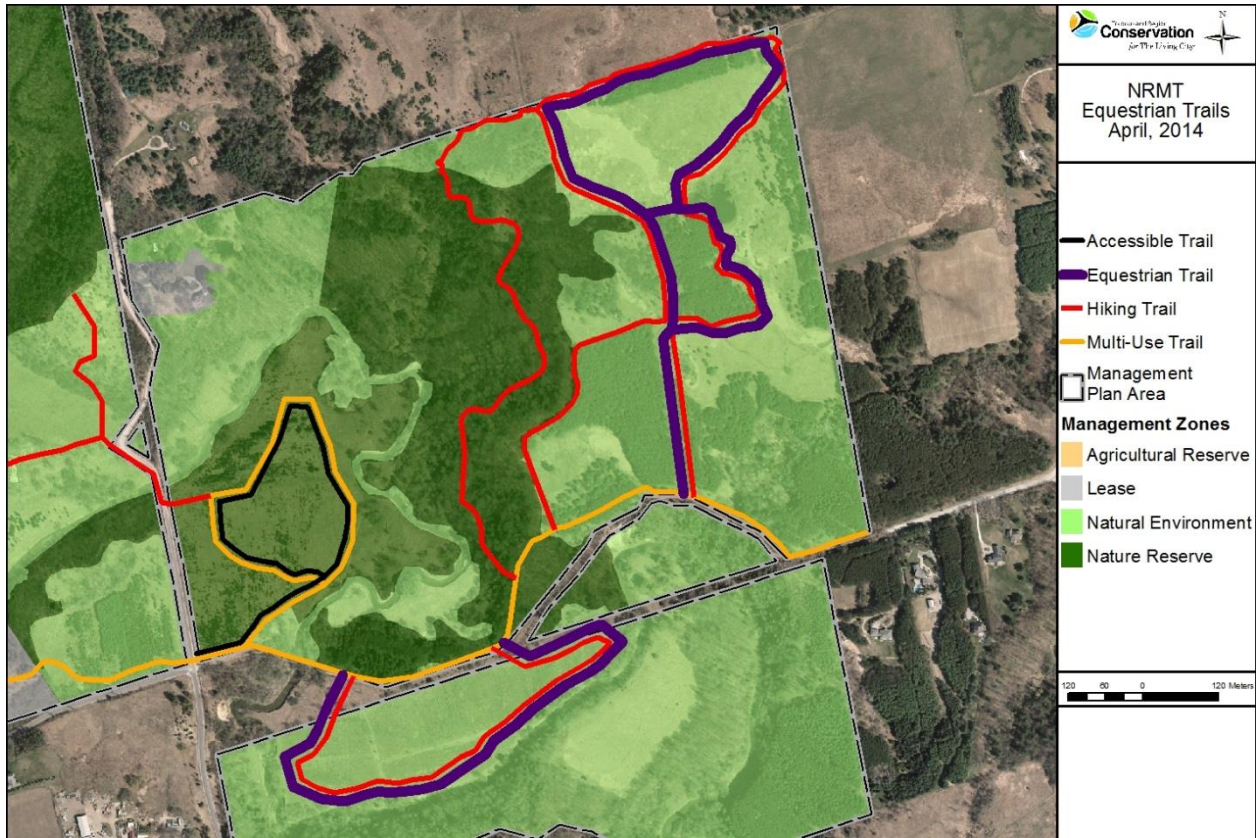
0.6 Kilometres

A current unauthorized hiking and equestrian trail stems from the Kirby Road Allowance, heading south, which provides access to private property. Ongoing land acquisitions may allow TRCA to build additional trail to connect to TRCA lands closer to Nashville Road in the future. This trail will be established as an authorized hiking and equestrian trail to continue to allow access for private residents. A loop will be added to ensure that trail users are able to turn around safely. Trail users will be made aware of the private property with adequate signage posted at the beginning of spur as well as at the property boundary.

Management Actions

- xx. Maintain existing equestrian trails and formalize a 3.5 kilometre hiking/equestrian trail system with a width of at least 0.5 metres and a clearing height of 3.5 metres.

Figure 12: NRMT Equestrian Trails Map



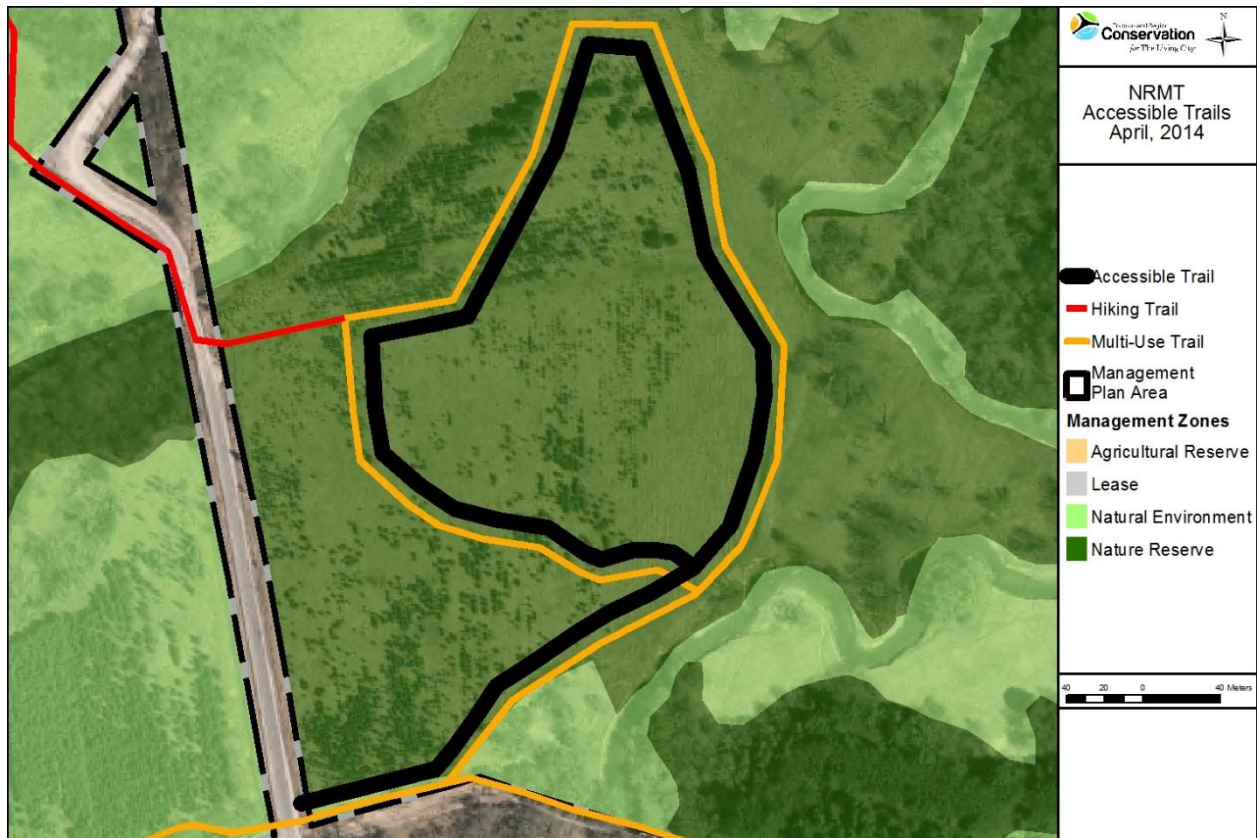
6.1.5 Accessible Trail 1.0 Kilometres

As part of TRCA's goal of meeting and exceeding the Accessibility for Ontarians with Disability Act (2005) legislation, and to complete the goal and objectives set out in the Nature-Based Public Use section of this management plan (Section 2.6.4), an accessible trail loop has been proposed to be built within the Trail Hub area of NRMT (see Figure 13). The flat terrain and easy access to the trail hub parking area made it a suitable location for this trail type. The accessible trail will be constructed of a hard-packed surface ideal for those with physical limitations.

Management Actions

- xxi. Construct/formalize a 1.0 kilometre accessible trail loop within the trail hub area, with a surface of limestone fines, a compacted granular base, and width of 2.5 metres.

Figure 13: NRMT Accessible Trails Map



6.1.6 Future Trail Connections

Currently, it is not possible to design a trail system that flows through the entire NRMT site due to two large gaps that exist between TRCA lands. Ongoing land acquisitions are taking place in the area and TRCA is hopeful that the gaps will be acquired in the future. In addition, TRCA has been successful in developing right-of-ways or lease agreements with private landowners to permit TRCA trails to cross properties which are not owned by TRCA; however, landowners have not been approached by staff at this time.

In the north, two future trail connections have been designed for both sides of the Humber River. The preferred route would run on the east side of the Humber River, all the way to the intersection of King Road and Albion-Vaughan Road. The east side provides improved access to land more suitable to building trails and parking areas.

In the south end of NRMT, TRCA land acquisitions may enable a trail to be designed and constructed between the Kirby Road Allowance and Nashville Road. TRCA staff has walked these areas to look for potential trail routes, and it was decided that the steep edges along the Humber River would only permit a hiking trail. One idea is to provide a 750m multi-use and/or equestrian trail section extending south from the Kirby Road Allowance which would then turn in to a hiking trail that would continue south along the Humber River to the proposed trail loop off of Forest Heights Blvd and eventually Nashville Road. Currently, however, the multi-use trail ends at the end of the Kirby Road Allowance. Figure 8 profiles future trail connections (highlighted in yellow).

Management Recommendations

72. Develop future trail connections that connect existing and future communities surrounding NRMT; while utilizing existing trails, future parking areas/secondary trailheads and potential land acquisition areas.
73. Develop design guidelines for the TRCA buffers between NRMT and adjacent community lands to successfully interface with future surrounding development lands.

6.1.7 Parking Areas

Five small to moderate sized parking areas have been planned for NRMT. Lots have been proposed to hold either 20 or 30 cars depending on their location, space availability, and the trails starting from those areas. Each parking area will act as a primary trailhead or entry point in to the property. Construction of these parking areas will correlate with the building of adjacent trails. Phase 1 suggests that the trail hub parking area at Huntington/Kirby Rd will be built first, followed by Cold Creek Road. Phase 2 recommends that all remaining parking areas be constructed (King Vaughan Road, King Road and Concession 11). The King Vaughan Road parking area has been proposed to be built within the boundary of the King Vaughan Road Allowance, just west of Concession 10. Consideration of this parking lot will be part of ongoing consultations with the City of Vaughan. Figure 14 displays all five parking areas (labelled as primary trailhead).

Management Actions

- xxii. Design and construct four parking areas at the suggested sites within NRMT
- xxiii. Consult with the City of Vaughan on the proposed parking

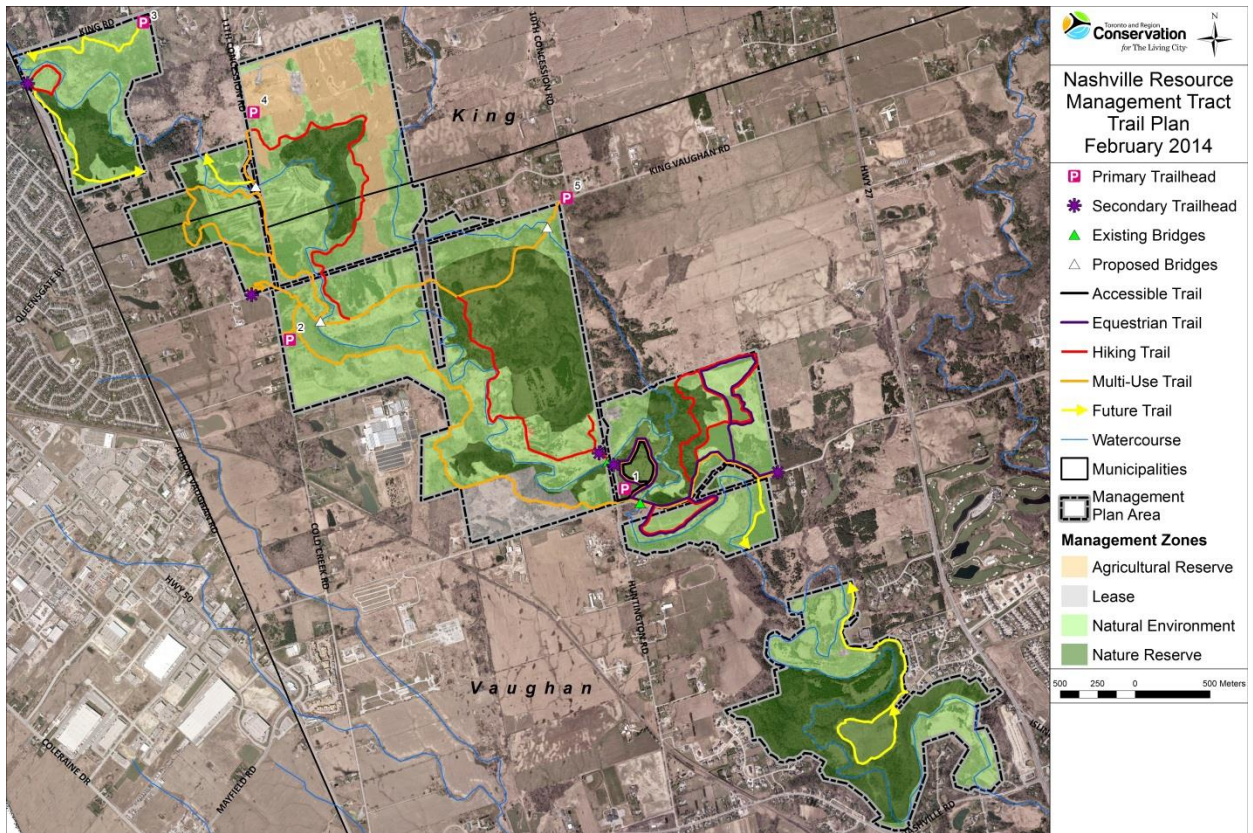
6.1.8 Trailheads

The trail plan features both primary and secondary trailheads which will be located at formal access points, described in the following subsections. Figure 14 illustrates both primary and secondary trailheads.

Management Actions

- xxiv. Install primary and secondary trailheads at key locations. See sections 6.1.8.1 and 6.1.8.2 for a list of these locations. See section 6.4 for signage guidelines.

Figure 14: NRMT Trailhead Locations Map



6.1.8.1 Primary Trailheads

Primary trailheads will be established as part of the five parking area locations and may include: TRCA and/or HVHT standard property identification signs, other trail amenities including benches, additional interpretive information and/or community information boards.

Locations:

- Huntington and Kirby Road (trail hub parking area)
- King Vaughan Road and Concession 10 (parking area)
- Cold Creek Road (parking area)
- Concession 11 (parking area)
- King Road (parking area)

6.1.8.2 Secondary Trailheads

Secondary trailheads will be formalized at preexisting entry points in to the property (with the exception of Cold Creek Road) and may include: basic property identification, way-finding information and TRCA and/or HVHT standard signs. Seating may be included.

Locations:

- Kirby Road Dead End (off of Highway 27)
- Cold Creek Road (pedestrian/cycling entrance)

- Huntington Road (bridge crossing entrances (2))
- Albion-Vaughan Road (current HVHT entrance)

6.1.9 Existing and Proposed Bridges

Without question, the existing and proposed bridges within and surrounding NRMT are imperative to the development of the trail plan (see Figure 14). Each bridge provides a crucial connection between trail types, parking areas and looping opportunities for trail users. Based on the current trail plan configuration, bridges with the highest priority are those currently constructed, followed by Cold Creek, Concession 11 and finally, King Vaughan. The following sections provide a breakdown of each bridge and their proposed use.

Management Actions

- xxv. Obtain all necessary permits and approvals from the OMNR.
- xxvi. Develop work plan for the study, design and construction of three prefabricated steel bridges.

6.1.9.1 McEwen – Existing Bridge

High priority to maintain

The McEwen Bow String Bridge spans the Humber River and is situated on the Kirby Road Allowance, approximately 165 metres east of where Kirby Road intersects Huntington Road. The bridge, also known as the Burlington Bridge or Bell Bridge, was constructed in 1923 but was closed to traffic during the late 1970s. This is one of three concrete bowstring bridges that span the Humber River and currently owned by the City of Vaughan. The bridge is now a part of the Humber Trail System and employed by pedestrian traffic. Preserving this bridge as a part of the trail system is of utmost importance due to its use as a connection between two separated sections of TRCA land and several different existing and proposed trail systems. The trail plan has proposed the convergence of all trail types over the bridge including multi-use, hiking and equestrian.

Management Action

- xxvii. Work with the City of Vaughan to pursue all reasonable solutions to maintain a connection over the Humber River along the Kirby Road Allowance.

6.1.9.2 Huntington Road – Existing Bridge

High priority to maintain

The Huntington Road Bridge crosses the Humber River and provides vehicular access to a private residence, a TRCA rental property and a commercial apiary currently leasing land from TRCA. Huntington Road ends approximately 500 metres past the river crossing. The trail plan utilizes this bridge as a pedestrian crossing to permit hikers to cross the river and the road to continue hiking north west or south east (depending on direction). TRCA will work with City of Vaughan to allow pedestrians to cross over the Humber River using the bridge while maintaining all safety precautions.

Management Action

- xxviii. Work with City of Vaughan staff to permit a trail crossing or sidewalk along one side of vehicular bridge.

6.1.9.3 Cold Creek

High priority to construct

The Cold Creek Bridge was once utilized by a campground named Woodside Park that existed before TRCA acquired the land back in the 1960’s. Currently, the bridge has been dismantled, but there are two existing bridge abutments on either side of the Humber River that have the potential to be reclaimed to secure a new prefabricated steel bridge crossing. This bridge would handle a multi-use trail that would enable users to access hiking trails, as well as to cross the property using the second east-west route from the Cold Creek parking lot to the entrance at King Vaughan Road.

6.1.9.4 Concession 11

Medium priority to construct

This crossing will enable the multi-use trail to cross the Humber River and permit users who park at the dead end at the bottom of Concession 11 to access the rest of NRMT. In addition, it will allow users who have hiked north from Cold Creek Road to cross the river and loop back south using the hiking trail. The multi-use trail will either end at the Concession 11 parking area or would continue towards the King Road parking area. The proposed bridge will be a prefabricated steel structure.

6.1.9.5 King Vaughan

Medium priority to construct

The King Vaughan Bridge will permit the second east-west multi-use trail to cross a tributary of the Humber River and continue towards connections to hiking trails and ultimately the Cold Creek Bridge and parking area. This prefabricated steel bridge will provide access to visitors entering from the parking area at the King Vaughan parking area. There are no existing bridge abutments at this location.

6.1.10 Permitted Uses

Appropriate, nature-based public uses are permitted along trails that are designated for that specific use. Hiking, biking, horse riding and cross-country skiing have all been included as permitted uses on the property. Leashed dog-walking will be a requirement on this property, which is consistent with all TRCA lands. Table 2 outlines the permitted uses for each trail type/section:

Table 2: NRMT Permitted Uses Guide

Trail Type/Section	Permitted Use
Hiking Trails	Hiking, Leashed Dog-walking
Multi-use (Natural Surface)	Hiking, Biking
Multi-use (Limestone Screening)	Hiking, Biking, Horse-riding (Kirby Road Allowance only)
Equestrian Trails	Horse-riding, Hiking
Accessible Trails	Hiking, Biking, Horse-riding

Management Recommendations

74. The permitted uses on NRMT should only include hiking, biking, horse-riding, cross-country skiing and leashed dog-walking.

Management Actions

- xxix. TRCA to post permitted use signs at trailheads.
- xxx. Stewardship committee, HVHTA members to inform and educate user about permitted uses.

6.2 Trail Construction Schedule

TRCA has developed phased scheduling to design and construct the trail plan in three separate parts. A summarized version of the schedule can be seen below as Table 3.

Table 3: NRMT Phased Construction Summary

Phase 1 (1-2 Years) 2015 – 2016
Granular Multi-Use Trail Construction (Kirby Rd. Allowance)
Granular Multi-Use Trail Construction (Accessible Loop)
Natural Surface Multi-Use Trail Construction (Huntington/Kirby to Cold Creek)
Hiking/Equestrian Trail Construction (Trail Hub Area)
Design and Construction of 20 Car Parking Lot (Cold Creek Rd.)
Design and Construction of 30 Car Parking Lot (Huntington and Kirby)
Lookout Node Construction (3)
Primary Trail Hub Construction (1)
Primary Trailhead Construction (1)
Secondary Trailhead Construction (1)
Phase 2 (3-5 Years) 2017 – 2022
Granular Multi-Use Trail Construction (King Vaughan to Cold Creek)
Natural Surface Multi-Use Trail Construction (Phase 2 - Cold Creek to Concession 11)
Hiking Trail Construction (Phase 2 - Huntington/Kirby to Concession 11)
Lookout Nodes Construction (3)
Design and Construction of 20 Car Parking Lot (Concession 11)
Design and Construction of 20 Car Parking Lot (King Vaughan Road)
Primary Trailhead Construction (2)
Secondary Trailhead Construction (3)
Bridge Construction (3 Total)
Phase 3 (1-5 Years) 2022 – 2027 – may be rolled in to Phase 2
Granular Multi-Use Trail Construction (King Road Area)
Design and Construction of 30 Car Parking Lot (King Road)
Primary Trailhead Construction (1)
Secondary Trailhead Construction (1)
Lookout Node Construction (1)

6.3 Trail Management

The trail system will require annual trail management and maintenance. An annual work plan and maintenance budget will be developed, and should include: the purchase and placement of granular fines, wood chips and other trail surface materials; repairs to trails; removal of hazard trees; replacement of signage; and re-routing as required.

Management Actions

- xxxi. TRCA and Humber Valley Heritage Trail Association to create new agreement for existing and proposed trails.
- xxxii. Involve local community members as trail stewards to help care for and maintain the trail system, in collaboration with the HVHTA.
- xxxiii. Develop a maintenance schedule for the trail system in accordance with TRCA's *Trail Planning and Design Guidelines* (1992)
- xxxiv. TRCA to conduct regular trail monitoring, including monitoring for informal trails and hazard trees.

6.3.1 Decommissioning Existing Trails

NRMT has an extensive system of informal trails. These trails were mapped as part of the *Site Securement and Protection Plan* (2010) for NRMT. Closures of the trails that will not form part of the planned trail system have already commenced, and will continue during implementation. Trail closure methods include ground scarification, placement of woody debris or live plantings at trail openings, signage, or mechanical closures as needed. It is also important to include signs regarding trail closures that provide context and rationale.

Management Actions

- xxxv. Close all informal trails that are not part of the formal trail network using methods which include ground scarification, placement of woody debris, live plantings at trail openings, signage, or mechanical structures.

6.3.2 Hazard Tree Management

Hazard tree management must be carried out to ensure the safety of trail users and has been outlined in TRCA's Hazard Tree Policy (2012). This policy developed 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" (TRCA, 2012). The recommendations below are based on TRCA's Policy for Managing Hazard Trees and the associated Operational Procedures for Managing Hazard Trees. Temporary trail re-routes or closures may be required until the hazard tree can be removed and the trail safely re-opened.

Management Actions

- xxxvi. Ensure trails in NRMT are inspected and managed as directed under TRCA's Policy for Managing Hazard Trees and the associated Operational Procedures for Managing Hazard Trees.

6.4 Signage

Signage for the trail system will be designed comprehensively and will be consistent with that of other properties along the Humber River. The following general recommendations and actions apply to all signage types:

Management Recommendations

75. Consistent design and graphic communications.
76. Clarity in conveying the desired message to a range of users, including considerations for accessibility.
77. Vandal and weather resistant materials with long-term durability.
78. Signage should be designed to address general trail information, regulatory and directional information, and interpretation.
79. Signs should be limited in scope, number and location so they do not detract from the natural protection and restoration objectives or the aesthetics enjoyed by visitors.

Management Actions

- xxxvii. Develop signage designs and logos that reflect the new property name (to be determined).
- xxxviii. Ensure that signage design and installation complies with requirements of the *Accessibility for Ontarians with Disabilities Act (AODA, 2005)*.

6.4.1 Property Identification

Property identifications signs are visible from roadways at primary trailhead locations where parking is provided. These signs will include:

- Property name with TRCA logo.
- Contact information.
- Property address (if applicable).

6.4.2 Trail Identification and Information

Primary and secondary trailhead signs will be placed at all trailhead points, and will include:

- Trail identification, including: trail name, trail identity logo, and logos of inter-regional trails where appropriate (e.g. HVHT).
- Trail route map, showing trail loops and distances, degree of difficulty, and any necessary accessibility information.
- Trail user code of conduct.
- Notice board for promotion of trail related events or activities, habitat sensitivities, etc.
- Trail management contact information.

Management Actions

- xxxix. Install trailhead signs at all primary and secondary trailheads, and include trail identification information, trail route map, user code of conduct, trail management contact information and emergency contact information.

6.4.3 Directional

Trail intersection signs should be located at trail junctions, and directional signs should be placed as needed. Signage may include:

- Trail identity logo, styling and colours compatible with trail information signs.
- Trail name and/or distinctive logo, distance marker and directional arrows.
- Simple post markers with graphic, numeric or colour coding that identify the trail or trail loop and correspond with an overall route map at trailheads or on trail guide brochures.

Management Actions

- xl. Install trail intersection signs at all trail junctions, and additional way-finding signs as needed.

6.4.4 Regulatory

Regulatory signs display permitted uses, authorized access points, and where necessary, prohibitions and warnings. Such signage must be included on all trailhead signs, and may also be required near natural areas where access is discouraged, potential hazard areas, and restoration areas. Temporary trail closures due to conditions, wildlife considerations or environmental restoration will also be signed. Regulatory signs should be designed as part of the overall signage system using compatible styling; however, the message should be easily recognized from a distance.

Management Actions

- xli. Install regulatory signs at all authorized access points and where needed to inform users of prohibitions, hazards, restoration areas, trail closures, etc.

6.4.5 Interpretive

These signs should be used in conjunction with the results of a collection of “ecological features”, “historical features” and “vistas” collected during the trail planning process. Possible themes include wildlife and natural ecosystems, landscape and human heritage. The information should be both interesting and informative and oriented to help trail users build stewardship ethic.

Interpretive signs should be located within a widened trail node, at viewing locations or rest areas, to allow for unimpeded use of the trail. Sign design and construction may vary according to the trail setting or storyline, but consistent design should be used within each trail loop and each sign series should be compatible with the overall NRMT trail system.

Management Actions

- xlii. Develop and install interpretive signs at appropriate points throughout NRMT lands.

6.5 Emergency Access

Access for such vehicles is accommodated by building the multi-use trail wide enough to accommodate emergency support vehicles. The trail system has not been designed to accommodate full-size fire trucks or ambulances but will permit smaller vehicles such as ATV's. Trail marker posts with waypoints and maps will be installed throughout the property to assist with

rescue, particularly on hiking trails. Staging areas will be available at all parking areas and all secondary access points emanating from municipal roads. Fire hydrants are located close to NRMT where residential streets border the property boundary.

Management Actions

- xliii. TRCA to provide trail plan mapping information for NRMT to all local emergency service providers.

6.6 Trail Plan Implementation

The trail plan will be implemented in partnership with the Humber Valley Heritage Trail Association (HVHTA), York Region, the Township of King, City of Vaughan and community groups. A detailed implementation plan will be developed that outlines the phasing of trail construction, and will form the basis of funding requests to support trail development.

Management Actions

- xliv. Work with the HVHTA, York Region and the Township of King and City of Vaughan to implement the development of the trail system and associated management recommendations and actions.
- xlv. Prepare a detailed implementation plan that includes a phased approach to trail development.
- xlvi. Draft funding proposals for the Ontario Trillium Foundation, TD Friends of the Environment Fund, York Region and Township of King and City of Vaughan and other non-traditional sources to seek funding support for trail plan implementation.

7 Implementation Schedule and Budget

NRMT is one of TRCA's largest and most scenic properties – and as such – it requires the collaborative efforts of partner municipalities and region, interest groups and the local community. The development of trails, related infrastructure, and the protection and enhancement of NRMT is a large scale project that will be developed in phases. Subject to further analysis, detailed plans and funding availability – implementation of the NRMT Management Plan is estimated to cost \$3.3 million over a period of 12 years.

7.1 Implementation Schedule

The implementation of the NRMT Management Plan will require the cooperation of TRCA, the NRMT Stewardship Committee and other partners. Table 4 summarizes the major projects and costs for implementation that are identified in the plan. Implementation of the management plan will be led by various TRCA departments including Conservation Lands, Restoration Services, Ecology, Archaeology and Property Services. Items listed include required activities that TRCA must conduct in order to meet the requirements set forth in local, regional, provincial and TRCA policies and regulations. Other items such as trail construction, parking areas, fencing, restoration work, and marketing materials have been calculated using recent and similar projects to approximate their cost.

Day-to-day maintenance and site level operations at NRMT will be conducted by TRCA's Conservation Lands department. Beyond completion of the implementation plan, the Conservation Lands and Property Services departments will continue to administer trail agreements with trail partners, conduct annual property audits, complete site securement and protection plans, oversee the continuation of the stewardship committee, and manage the trail systems within NRMT.

Table 4: NRMT Implementation Schedule and Budget

ITEM	TRCA LEAD	ANTICIPATED COST
Immediate (0-1 Year) 2014-2015		
Invasive Species Management Prioritization Plan	Ecology	\$1,500.00
Detailed Trail Design Study	Conservation Lands	\$10,000.00
Archaeological Survey of all Trail Corridors/Public Garden/Urban Ag Areas	Archaeology	\$50,000.00
No Trespassing/ Dog Off-Leash Sign Installation	Conservation Lands	\$1,500.00
Sub-Total		\$63,000.00
Phase 1 (1-2 Years) 2015-2016		
Granular Multi-Use Trail Construction (Phase 1 - Kirby Rd. Allowance)	York Partnership	\$185,000.00
Granular Multi-Use Trail Construction (Phase 1 - Accessible Loop)	York Partnership	\$140,000.00
Natural Surface Multi-Use Trail Construction (Phase 1 - Huntington/Kirby to Cold Creek)	York Partnership	\$100,000.00
Hiking/Equestrian Trail Construction (Trail Hub Area)	Conservation Lands	\$55,000.00
Design and Construction of 20 Car Parking Lot (Cold Creek Rd.)	Conservation Lands	\$70,000.00
Design and Construction of 30 Car Parking Lot (Huntington and Kirby)	Conservation Lands	\$90,000.00
Lookout Nodes Construction (3)	Conservation Lands	\$36,000.00
Primary Trail Hub Construction (1)	York Partnership	\$20,000.00
Primary Trailhead Construction (1)	York Partnership	\$14,000.00
Secondary Trailhead Construction (1)	Conservation Lands	\$5,000.00
Regulatory Signage Installation	Conservation Lands	\$2,000.00
Gate and Fencing Installation/ Repair	Conservation Lands	\$68,000.00
Public Garden/Near-Urban Agriculture Project(s)	Humber/Vaughan Partnership	\$50,000.00
Sub-Total		\$835,000.00
Phase 2 (3-5 Years) 2017-2022		
Controlled Burn/ Mowing Regime	Ecology	\$15,000.00
Granular Multi-Use Trail Construction (King Vaughan to Cold Creek)	York Partnership	\$350,000.00
Natural Surface Multi-Use Trail Construction (Phase 2 - Cold Creek to Con 11)	York Partnership	\$125,000.00
Hiking Trail Construction (Phase 2 - Huntington/Kirby to Concession 11)	York Partnership	\$190,000.00
Lookout Nodes Construction (3)	Conservation Lands	\$36,000.00
Design and Construction of 20 Car Parking Lot (Concession 11)	York Partnership	\$70,000.00
Design and Construction of 20 Car Parking Lot (King Vaughan Road)	York Partnership	\$70,000.00
Primary Trailhead Construction (2)	Conservation Lands	\$42,000.00

Secondary Trailhead Construction (3)	Conservation Lands	\$15,000.00
Way finding Signage and Trail Post Marker Installation	Conservation Lands	\$24,000.00
Interpretive Signage Development and Installation	Conservation Lands	\$30,000.00
Trail Guide and Map	Conservation Lands	\$10,000.00
River Crossings (3 Total)	Dev Comp./ York Partnership	\$650,000.00
Sub-Total		\$1,627,000.00
Phase 3 (pending) 2022-2027 (may be rolled in to Phase 2)		
Granular Multi-Use Trail Construction (King Road Area)	Conservation Lands	\$145,000.00
Design and Construction of 30 Car Parking Lot (King Road)	King Partnership	\$90,000.00
Primary Trailhead Construction (1)	King Partnership	\$20,000.00
Secondary Trailhead Construction (1)	Conservation Lands	\$5,000.00
Lookout Node Construction (1)	Conservation Lands	\$12,000.00
Sub-Total		\$272,000.00
Ongoing (1-7 Years)		
Invasive Species Management	Conservation Lands	\$55,000.00
Invasive Species Monitoring	Conservation Lands	\$25,000.00
Hazard Tree Removal	Conservation Lands	\$30,000.00
Decommission Informal Trails	Conservation Lands	\$45,000.00
Property Audit	Conservation Lands	\$25,000.00
Encroachment Removal	Conservation Lands	\$33,000.00
Stewardship Committee	Conservation Lands	\$15,000.00
Trail Captain Program	Conservation Lands	\$13,000.00
NRMT Newsletter Production and Distribution/Land Care Literature	Conservation Lands	\$25,000.00
Sub-Total		\$266,000.00
Implementation Total		\$3,063,000.00
Contingency (10%)		\$306,300.00
TOTAL 12-YEAR BUDGET		\$3,369,300.00

7.2 Partnership Opportunities

Partnerships have been a key component in the development of the NRMT Management Plan. Numerous organizations and individuals have been instrumental in assisting TRCA thus far. Partners have included the Township of King, City of Vaughan, the Regional Municipality of York, the OMNR, HVHTA and the Humber Watershed Alliance.

TRCA will continue to look to partnerships for assistance in achieving its objectives for NRMT. Fostering existing partnerships and building new ones will be essential for successful implementation of the management plan. Partners who are stakeholders in the property, and who have a mutual interest in providing nature-based recreation and healthy lifestyle opportunities include the Township of King, the City of Vaughan and York Region. A continued collaborative

relationship and cost-sharing among these partners over the long term will be important in realizing the recommendations of the management plan to the mutual benefit of all parties.

The City of Vaughan has expressed interest in several potential projects at NRMT that will provide residents with active recreation and nature appreciation opportunities. Given the city's focus on developing trails and recreation opportunities, the city may wish to partner with TRCA on the development of trails, trailhead infrastructure and trail guides. The scenic and natural splendor of NRMT will make the property a destination point and potential tourism draw within the City of Vaughan and York Region. The property's location within the region is well suited to serve the recreational requirements of residents from many areas as well meet the needs of the future communities that are planned for the lands immediately bordering the property.

The Official Plan for the Region of York, (2010) includes chapters on Sustainable Natural Environment, Healthy Communities and Economic Vitality. The policies in the Official Plan are intended to guide economic, environmental and community-building decisions affecting the use of land throughout the region. The Sustainable Natural Environment section of the plan contains policies that protect the Region's natural features and ecosystems, while the Healthy Communities section emphasizes the community as a balanced and diverse place to live, work, enjoy recreation and interact with others. The Official Plan for York Region provides an excellent platform for partnership between the Region and TRCA to protect the natural features of NRMT, while providing nature-based recreation.

York Region has also begun examining its role in coordinating a natural heritage trails system throughout the Region, and would therefore benefit from supporting the types of trail linkages proposed for NRMT. York Region's Pedestrian and Cycling Master Plan (2008) is supportive of regional and interregional scale trail networks that provide opportunities for commuting as well as recreation. The Pedestrian and Cycling Municipal Partnership Program is a York Region funding program that exists to support the development and construction of regional scale trails within York Region. There is potential for TRCA to partner with York Region through this program to support the cost of constructing the proposed trails. NRMT is also identified as part of the Regional Greenlands System, and can play a role in helping York Region achieve their targets for natural cover.

TRCA is interested in promoting use of its conservation lands as part of a component of healthy living. As part of this wellness program, there is potential to partner with public health departments and other health promotion industries. TRCA will look to local businesses and fundraising as a source of funds to support the implementation of the management plan. TRCA will also seek to partner with local community service groups to assist with plan implementation.

There is also potential for the continued involvement of volunteers in activities such as planting, clean-ups, trail maintenance and ecological monitoring. Many of these activities are already undertaken as volunteer measures by local residents and the dedicated volunteers who have served on the management plan advisory committee. The stewardship committee will be an important component in establishing these types of programs and funding opportunities.

7.3 Stewardship Committee

As previously stated, an integral part of NRMT management is the establishment of a working stewardship committee to oversee and participate in the management and implementation of the necessary and numerous plan objectives. The committee would assist with specific activities such as trail maintenance, education and communications. They would also assist TRCA in implementing site development activities, maintenance, environmental protection and restoration work. As well, the committee would assist in the monitoring of environmental and public use indicators and 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 complete assessment of the management plan on a regular and ongoing basis and will establish a thorough priority list. The key directions for the stewardship committee include:

- Review the management plan and establish priority actions for implementation
- Implement a detailed trail plan and develop a trail guide for users
- Participate as a designated trail captain
- Develop and maintain a NRMT newsletter and communications plan to raise awareness and inform surrounding communities about the area
- Educate private landowners in and around NRMT regarding stewardship practices and “Natural Neighbour” initiatives
- Establish a list of volunteers willing to aid in a volunteer program
- Prepare and install natural and cultural heritage interpretive signs
- Assist TRCA in implementing the various stewardship programs including the Sustainable Neighbourhood Retrofit Action Plan (SNAP).
- Develop educational resources and tools for private landowners and visitors
- Monitor the trails for invasive plant species and prevent their spread through barriers and other eradication techniques
- Monitor the presence of noxious weeds and remove them as necessary
- Organize celebrations events to increase public awareness
- Assist TRCA in implementing the Terrestrial Natural Heritage Monitoring Program
- Secure financial and in-kind resources to undertake the work.

7.4 Agency and Municipal Stewardship

The natural, cultural and recreational resources that exist in NRMT 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 management plan can be achieved.

There is a great opportunity to connect the recommendations of the NRMT Management Plan to municipal goals and objectives. Continued communication with the Township of King, the City of Vaughan and the Regional Municipality of York will be crucial to finding shared opportunities and efficiencies for achieving shared goals and objectives. In support of TRCA policies, municipalities

and government agencies should be encouraged to follow these 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 a publicly accessible trail system in an area that provides users with an enjoyable experience
- Promote private land stewardship that increases awareness about best management practices and creates opportunities to engage landowners in protecting and enhancing the NRMT and its valuable resources.

7.5 Private Land Stewardship

NRMT will provide opportunities for outdoor recreation, conservation education and nature appreciation to the surrounding communities. It will also provide many health benefits to the community. Adjacent landowners and users of the TRCA property can help to ensure that the surrounding landscape does not negatively impact the environmental quality of this unique natural area. One of the key recommendations of this management plan is the creation of a stewardship committee. This committee will be made up of representatives of local government, residents, community groups, business owners and other stakeholders. The role of the committee will be to assist in implementation where appropriate, such as in trail development, clean-up activities, restoration or naturalization projects, etc. The committee can also help to encourage area residents to undertake the following actions in an effort to fulfill the goals and objectives of this management plan:

- Plant native species on adjacent lands instead of using exotic horticultural species, some of which may be invasive, such as Norway maple and goutweed.
- Leash pets on site to minimize disturbance to wildlife and pick up waste to prevent feces from entering watercourses after rainfall.
- Assist in promoting the TRCA's "Natural Neighbours" messaging.
- Promote and participate in TRCA's Sustainable Neighbourhood Retrofit Action Plan (SNAP).

7.6 Public Use

Completion and implementation of the NRMT Management Plan actions and recommendations is critical to ensure protection of the environment, appropriate public use, and user safety. The management plan was developed through extensive consultation with the public and community partners, and the proposed plan implementation is fully supported. If realized, the Nashville Resource Management Tract Management Plan will help to enhance the experience of users, while ensuring environment protection is achieved.

7.7 Safety and Security

Discussions will be held with police and other emergency service providers to identify their concerns and questions regarding accessing NRMT lands for patrol and emergency response purposes. Due to the land's natural character, many areas are inaccessible by conventional response vehicles, such as fire, ambulance and police vehicles.

A preliminary Emergency Action Plan (EAP) will be developed to provide a course of action in the event a trail emergency should arise. Maps of the evacuation routes will also be included within the EAP for the NRMT property. A finalized version of the EAP will be provided to local and regional emergency services.

Management Actions

- xlvi. Establish a trail locator system, such as a series of way-finding post markers along the trails in order to locate and orient users.
- xlviii. Create a fully integrated map depicting all named trails and location of markers along each trail and display at all primary and secondary trailheads.
- xlix. Develop an emergency response plan for NRMT with involvement from local and neighbouring emergency service providers.

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