



Toronto and Region Conservation Authority

Board of Directors Meeting Agenda

#9/18

November 30, 2018

9:30 A.M.

HEAD OFFICE, 101 EXCHANGE AVENUE, VAUGHAN

Pages

1.	ACKNOWLEDGEMENT OF INDIGENOUS TERRITORY	
2.	MINUTES OF MEETING #8/18, HELD ON OCTOBER 26, 2018 Minutes Link	
3.	BUSINESS ARISING FROM THE MINUTES	
4.	DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF	
5.	DELEGATIONS	
6.	PRESENTATIONS	
6.1	A presentation by Michael Bender, Associate Director, Master Planning and Greenspace Conservation, TRCA, in regard to item 8.1 - Draft Trail Strategy for the Greater Toronto Region.	
7.	CORRESPONDENCE	
8.	SECTION I - ITEMS FOR BOARD OF DIRECTORS ACTION	
8.1	DRAFT TRAIL STRATEGY FOR THE GREATER TORONTO REGION Approval in principle	4
8.2	GOODWOOD RESOURCE MANAGEMENT TRACT TRAIL PLAN PROJECT	19
8.3	TRANS CANADA TRAIL CONNECTION – EAST DUFFINS HEADWATERS TO ROUGE NATIONAL URBAN PARK IN UXBRIDGE	31

8.4	ROUGE RIVER WATERSHED HYDROLOGY STUDY	42
9.	SECTION III - ITEMS FOR THE INFORMATION OF THE BOARD	
9.1	TRCA RESPONSE TO ONTARIO'S CLIMATE CHANGE PLAN CONSULTATION	50
10.	MATERIAL FROM EXECUTIVE COMMITTEE MEETING	
	<u>Meeting Minutes</u>	
10.1	SECTION I - ITEMS FOR BOARD OF DIRECTORS ACTION	
10.1.1	GREENLANDS ACQUISITION PROJECT FOR 2016-2020 Flood Plain and Conservation Component, Humber River Watershed 21 and 24 Disan Court, City of Toronto (CFN 60349). Acquisition of property located at 21 and 24 Disan Court, in the City of Toronto, under the "Greenlands Acquisition Project for 2016-2020," Flood Plain and Conservation Component, Humber River watershed. Page 525 (PDF Page 2)	
10.1.2	GREENLANDS ACQUISITION PROJECT FOR 2016-2020 Flood Plain and Conservation Component, Rouge River Watershed Sedgewick Property Inc. (CFN 60323). Acquisition of property located west of Leslie Street and south of Bethesda Sideroad, in the Town of Richmond Hill, Regional Municipality of York, under the "Greenlands Acquisition Project for 2016-2020," Flood Plain and Conservation Component, Rouge River watershed. Page 528 (PDF Page 5)	
10.1.3	MEETING SCHEDULE 2019-2020 Approval of schedule of Board of Directors and Committee meetings for the period beginning January 25, 2019 and ending February 21, 2020. Page 531 (PDF Page 8)	
10.2	SECTION III - ITEMS FOR THE INFORMATION OF THE BOARD	
10.2.1	2019 BUDGET UPDATE Prospective 2019 Municipal Levies. Update on the 2019 municipal budget submission process. Page 534 (PDF Page 11)	
10.3	SECTION IV - ONTARIO REGULATION 166/06, AS AMENDED Receipt of Ontario Regulation 166/06, as amended, for applications 11.1 - 11.12, which were approved at Executive Committee Meeting #9/18, held on November 9, 2018. Page 536 (PDF Page 13)	

11. NEW BUSINESS

NEXT MEETING OF THE BOARD OF DIRECTORS #10/18, TO BE HELD
ON JANUARY 4, 2018 AT 9:30 A.M. AT HEAD OFFICE, 101 EXCHANGE AVENUE,
VAUGHAN

John MacKenzie, Chief Executive Officer
/am

Section I – Items for Board of Directors Action

TO: Chair and Members of the Board of Directors
Meeting #9/18, Friday, November 30, 2018

FROM: Carolyn Woodland, Senior Director, Planning, Greenspace and Communications

RE: **DRAFT TRAIL STRATEGY FOR THE GREATER TORONTO REGION**
Approval in principle

KEY ISSUE

Approval of an approach to consult on the Draft Trail Strategy and Workbook for the Greater Toronto Region and to utilize the Draft Trail Strategy and the Workbook in the review of development projects and plans.

RECOMMENDATIONS

WHEREAS it is the objective of Toronto and Region Conservation Authority (TRCA) to collaborate with municipal partners, private interests, community groups and the general public to realize a linked regional open space system with trail networks that connect communities, parks and greenspace through landscapes and landforms like the river valleys, the Lake Ontario waterfront, the Oak Ridges Moraine and the Niagara Escarpment;

AND WHEREAS staff have drafted the Trail Strategy for the Greater Toronto Region through engagement with these external partners to support this objective;

THEREFORE, LET IT BE RESOLVED THAT the Draft Trail Strategy for the Greater Toronto Region, dated November 2018, be endorsed for the purposes of engaging with external partners to obtain input prior to finalizing the Strategy and Workbook and for informing staff reviews of projects and plans and preliminary budget submissions;

THAT TRCA staff report back to the Board of Directors by Q3 2019 for final approval of the Strategy;

THAT staff use the Draft Trail Strategy and Workbook in their work with project partners to develop budget submissions and to prepare an integrated phasing plan with preliminary priorities and a corresponding financial strategy to kick-start implementation of the Strategy;

AND FURTHER THAT TRCA's trail partners and the Regional Watershed Alliance be so advised.

BACKGROUND

Toronto and Region Conservation Authority (TRCA) has a long history of nature-based trail planning, development and delivery. Over the past 60 years, TRCA has worked in collaboration with its regional trail partners to provide responsible access to nature through scenic recreational trails and greenways. In 1989, TRCA proposed the concept of a Greater Toronto Region trail network in greenspace that would connect the Oak Ridges Moraine and the Niagara Escarpment to the shoreline of Lake Ontario. Inspired by the successful establishment of the Bruce Trail, this proposed trail network would provide continuous public access from Lake Ontario through TRCA

Item 8.1

valley lands to the magnificent landscapes of the TRCA region, including the Oak Ridges Moraine and Bruce Trail.

Since 1989, TRCA has developed this network in partnership with community groups and all levels of government. Within our jurisdiction, there are currently over 500 kilometres of regional trails in greenspace connecting the municipalities of Mono, Peel, York, Durham and Toronto, including sections of the Bruce Trail, the Lake-to-Lake Trail, the Oak Ridges Trail, The Great Trail (Trans Canada Trail) and the Waterfront Trail. In addition, TRCA has planned and implemented local and neighbourhood trail connections to connect residents to conservation lands and local trail systems. This comprehensive network has become an important conservation mechanism to secure greenspace, mitigate climate change, improve human health and well-being, promote responsible public access and inspire environmental stewardship.

Our region is experiencing unprecedented urban growth. By 2041, our population is projected to increase by 40 per cent to reach close to 10 million residents (Ontario Ministry of Finance, 2017). Twelve of the Urban Growth Centres in the Growth Plan for the Greater Golden Horseshoe (Ontario Ministry of Municipal Affairs, 2017), including 25 new communities, are in TRCA's jurisdiction. Increasing the amount of greenspace in our natural system is a primary means to accommodate this projected urban growth while maintaining quality user experiences and ecological functions. We must proactively and sensitively locate our trail infrastructure to support these new and expanding communities while mitigating the environmental impact associated with intensification.

Expanding greenspace and providing trails more equitably across our jurisdiction will provide nature-based amenities, recreation opportunities and active transportation options to underserved communities while improving our collective health and well-being. The creation of new trails, trailheads and neighbourhood linkages to our regional system will facilitate access to incredible destinations, allowing people to experience nature through the seasons. TRCA must target our efforts and capitalize on development opportunities to realize these possibilities and service this growth according to our environmental planning policies and objectives. TRCA must also secure adequate and sustainable investment in this community infrastructure on our lands and our partner owned lands that accounts for the full lifecycle costs of trails to maintain assets in a state of good repair so that we can achieve our desired level of service.

In response to these influences, TRCA has prepared the Draft Trail Strategy for TRCA's Jurisdiction (Trail Strategy) to provide a strategic vision for a complete regional trail network in greenspace that facilitates sustainable living in this next generation of trails. As development accelerates, TRCA will employ this Strategy and partner with municipal, provincial and federal colleagues, non-governmental organizations (NGOs), community partners and the development industry to inform our efforts to acquire, protect and enhance natural assets and to achieve new and upgraded trails, while connecting people to nature. Through this collaboration, ongoing public securement of greenspace and the provision of scenic trail greenways will occur. At our doorstep, we have precious natural landscapes with nature-based recreation trails across the Oak Ridges Moraine, the Niagara Escarpment, our nine river valleys and the waterfront. By working together strategically, we can grow and maintain this legacy in support of complete communities, a thriving economy and a healthy environment.

In undertaking the Draft Trail Strategy, TRCA has followed a seven-stage process:

Stage 1: Scoping Study and Brief

Stage 2: Research and Context Review

Item 8.1

Stage 3: Trails Inventory and Existing Conditions Audit

Stage 4: Trails Value and Demand Review

Stage 5: Strategic Objectives and Concept Plan Development

Stage 6: Draft Trail Strategy and Workbook

Stage 7: Communications and Branding Campaign (in progress)

Throughout these project stages, TRCA business units across all divisions were consulted in the Strategy development. This engagement also included working sessions with external groups comprised of: Federal staff (Parks Canada), Provincial staff (Ontario Ministry of Tourism, Culture and Sport), Regional Municipality staff (Peel, York, Durham and Toronto), Local Municipality staff (Township of Adjala-Tosorontio, Town of Ajax, Town of Aurora, City of Brampton, Town of Caledon, King Township, City of Markham, City of Mississauga, Town of Mono, City of Pickering, Town of Richmond Hill, Township of Uxbridge, City of Vaughan, Town of Whitchurch-Stouffville), Conservation Authorities (Conservation Ontario, Central Lake Ontario Conservation Authority, Credit Valley Conservation, Lake Simcoe Region Conservation Authority), charitable and advocacy organizations (Ontario Trails Council, Nature Conservancy of Canada) and grassroots associations (Bruce Trail Conservancy, CycleTO, Durham Mountain Biking Association, Green Durham Association, Humber Valley Heritage Trail Association, Oak Ridges Trail Association, Trans Canada Trail, Trans Canada Trail Ontario, Waterfront Regeneration Trust).

Through this engagement, our external partners communicated their strong support for the Draft Trail Strategy. They confirmed that the Strategy addresses current shared challenges in trails development, particularly initiatives that provide greater leadership around, investment in, promotion of and full life-cycle management of the Greater Toronto Region trail network. They strongly support coming together as a united voice to advocate for trail funding at the Regional, Provincial and Federal levels.

In September 2018, the Regional Watershed Alliance (RWA), which is an advisory board to our Board of Directors, received the Draft Trail Strategy and presentation for information and input. Following this presentation, the RWA voiced overall support for the Draft Trail Strategy. Generally, RWA members wish to advance the objectives of the Strategy through grant and program opportunities within their various networks, and municipalities. The RWA members supported the alignment of the proposed trail and destination capital projects with municipal work plans and budgets. The RWA also advocates that TRCA and partners seek funding from all levels of government to implement the Strategy. The RWA resolved that the proposed working groups of *Greenspace and Ecosystem Services* and *Integrated Community / Watershed Planning and Engagement* consider integrating Trail Strategy priorities into their work plans, including the formation of a Trail Leaders Round Table. Upon approval of this Draft Trail Strategy, TRCA will follow up with these RWA subcommittees on these action items.

OVERVIEW

The Draft Trail Strategy outlines TRCA's plan to complete, expand, manage and celebrate the Greater Toronto Region trail network in this next generation of trails. Its purpose is to express TRCA's policy on regional trails in our greenspace system across our rapidly urbanizing watersheds. It also serves as a framework to guide the planning, development and management of these trails in the current landscape of urban intensification. In addition, the Draft Trail Strategy provides rationale and informs effort to secure greenspace and should be used to support the Greenlands Acquisition Project for 2016-2020 (GAP) and its future iterations. As such, it will facilitate the concerted effort of expanding greenways and building the Greater Toronto Region trail network in partnership with our trail community colleagues. The Draft Trail Strategy consists of:

Item 8.1

- A vision expressing what we want to achieve
- A concept describing our proposal
- Guiding principles to steer our efforts
- Context for our work
- Strategic objectives to translate our vision into specific plans and projects
- Implementation plans to execute our concept
- An action plan outlining the strategic roadmap to achieve our vision

The **vision** for the Greater Toronto Region Trail network sees a complete regional trail system in greenspace that connects our growing communities to nature and to each other, supporting active living and enhancing our conservation legacy.

The **concept** for the Greater Toronto Region trail network sees the development of over **570 kilometres (km) of proposed trails** through the Oak Ridges Moraine, the valleys of the Etobicoke, Mimico, Highland, Petticoat and Duffins Creeks, the major valleys of the Don, Humber and Rouge Rivers, the Lake Ontario Waterfront, through regional infrastructure corridors, including transit, utility and electric power facility corridors and the introduction of blue trails, which are paddling routes on our navigable waterways. Combined with the **530 km of existing trails** in our greenspace system, this concept would see the provision of over **1,100 km of regional trails for the Greater Toronto Region**.

This concept builds on the existing regional trail system and capitalizes on current growth and development opportunities to strategically expand greenspace and trails through a variety of mechanisms. It also proposes investment in 10 conservation destination areas to enhance the trail network and provide amenities. This concept is intended to be a point of departure for discussion. It identifies the existing trail system, key missing links within the regional network, and proposes opportunities for trail connections that would link into both the regional and municipal trail systems. Many of the opportunities to be investigated extend beyond TRCA-owned lands and require collaboration with member municipalities, private landowners and other agencies. The proposed trail alignments are conceptual and represent potential segment alignments to be refined through collaboration and negotiations.

Five **guiding principles** form the foundation of the Draft Trail Strategy, underpinning the vision of the document and informing the rationale and methodology for its implementation: Lead, Collaborate, Steward, Invest and Celebrate. Eight **strategic objectives** have been developed in support of these principles to meet the challenges associated with trail development in the Greater Toronto Region. These objectives, along with their associated initiatives and actions, will guide TRCA and partners toward achieving the overarching vision of the Draft Trail Strategy. The objectives are:

1. Organize effective trail leadership
2. Prioritize trail and destination area capital projects
3. Promote greater trail use and awareness
4. Build a sound knowledge base
5. Balance enjoyment and protection of our heritage
6. Promote meaningful community engagement
7. Support complete communities
8. Secure adequate and sustainable investment

The Draft Trail Strategy also includes an implementation Workbook to outline the steps required to achieve our vision, concept and objectives and complete the Greater Toronto Region Trail

Item 8.1

Network. The Workbook consists of:

- Trail Capital Projects: Candidate List
- Destination Area Projects: Candidate List
- Implementation Plans
- Preliminary Order of Magnitude Costs
- Action Plan

The Trail Capital Projects: Candidate List and Destination Area Projects: Candidate List outline prioritized trail and destination area capital projects by region, to inform capital planning efforts by TRCA and municipal trail partners. Each candidate project has been assigned an implementation priority based on defined investment criteria. These capital projects are illustrated in the Implementation Plans required to complete the Greater Toronto Region Trail Network. The Action Plan organizes the eight strategic objectives and associated initiatives and actions into a timeframe to be phased across short, medium and long-term time horizons.

The Draft Trail Strategy supports The Living City vision for a new kind of community where human settlement can flourish forever as part of nature's beauty and diversity. In particular, it reinforces TRCA's Leadership Strategy 3: Rethink greenspace to maximize its value, identified in TRCA's Building the Living City®: 10 Year Strategic Plan 2013-2022. The expected outcomes of the Draft Trail Strategy will be:

- Provision of connected routes and corridors for wildlife, recreation and active transportation
- Provision of natural spaces for play, exploration and recreation
- Provision and protection of green infrastructure and ecosystem services
- Protection of our cultural heritage and promotion of its understanding
- Support for opportunities for local food production
- Creation of opportunities for land-based education
- Enhancement of our physical landscapes, informing existing and future development
- Encouragement of urban regeneration
- Support for the economic potential of eco-tourism
- Improvement of social inclusion, equity and accessibility to greenspaces
- Improvement of opportunities to enjoy and connect with nature
- Reinforcement of our regional identity

See the [Draft Trail Strategy](#) and [Workbook](#).

RATIONALE

Since the original vision of the Greater Toronto Region trail network proposed in 1989, our region has developed significantly. Thirty years of intensification warrants an update to the Greater Toronto Region trail network concept as well as the development of an associated Trail Strategy to deliver it. TRCA has the ability to bring four key strengths to continue the development of a regional greenway trail network in the Greater Toronto Region.

1. Over 18,000 hectares of greenspace are currently secured by TRCA. This land is largely associated with our large-scale regional natural features, including the valley and stream corridors, Lake Ontario waterfront, Niagara Escarpment and Oak Ridges Moraine. These features also serve as corridors where further securement will allow the completion of an inter-regional trail network.

Item 8.1

2. TRCA jurisdiction transcends local and regional government boundaries to include the majority of the river valley corridors and a significant portion of the Lake Ontario Waterfront and the Oak Ridges Moraine within the Greater Toronto Region.
3. Additional trail funding can be facilitated by TRCA and partners through municipal grants, private donations and revenues.
4. TRCA has accumulated considerable technical expertise in the field of trail planning, design, construction, maintenance, assessment, monitoring and programming. As the author of the 1989 concept for the Greater Toronto Region trail network, TRCA is positioned to build on this trails legacy.

FUNDING SOURCES

Regional trail projects are funded from a variety of sources. At TRCA, these sources include revenues and occasional donations or government grants (see **Table 1: Trail Funding Sources**). Financial resilience will require a greater range of eligible funding sources and leveraging the revenue-generating potential of trails and related facilities. In addition to these sources, TRCA will continue to engage with regional trail partners to capitalize on future development opportunities that maximize budgets, time and resources.

TABLE 1: TRAIL FUNDING SOURCES

	SOURCE OF FUNDS	DESCRIPTION
CURRENT SOURCES	Development Charges (DCs)	Development fees
	Development Plan Approvals and Municipal Infrastructure EA Approvals	Co-operative funding agreements obtained through planning and development approvals processes
	Donations / Sponsorships	Funds received through Toronto and Region Conservation Foundation (TRCF) and/or from trail donation boxes, Donations and sponsorships received from volunteer trail associations, the general public, the private sector and donations directed through municipalities
	Federal Gas Tax Fund (GTF)	Local infrastructure priority funding
	Government Grants	Municipal, provincial or federal funding
	Government Infrastructure Programs	Provincial or federal funding programs
	Municipal Taxes	Municipal operating and/or capital budgets
	Revenues	Municipal levies, capital, special projects
FUTURE SOURCES	Public-Private Partnerships (PPP)	Co-operative funding arrangements, Site-specific developer agreements
	Pay-Per-Use	Trail user fees (parking, membership)

Many of the proposed trail and greenway connections in the Greater Toronto Region Trail Network require partnerships with municipal partners, NGOs and the development industry.

Item 8.1

Leveraging the development process to secure trail project funding and implementation opportunities provides a mechanism for execution. The inclusion, siting and design of trails should be considered at the initiation of the development process. With proper planning during official plan reviews and from project outset, trails can be situated in the most appropriate location for a particular development area. Municipal departments need to coordinate these potential routes with TRCA and landowners as plans evolve for new community growth areas. Upgrading of existing connections should also be considered with wayfinding, parking and rest areas, as needed.

As Secondary Plans and Master Environmental Servicing Plans (MESPs) are developed, TRCA and partner municipalities should be looking at opportunities to implement the Greater Toronto Region Trail Network plans to ensure that new neighbourhoods are well connected to municipal parks and our greenspace system. Negotiations through the development process would also include acquisition of major land holdings to facilitate inter-regional trails and community connections. Municipalities should work with trail partners to ensure that short-term trail routes and restoration opportunities are implemented with development funding, including Development Charges (DCs) and considered in Section 37 Agreements, where such opportunities are present. Long-term trail connections should be confirmed through the planning process e.g., consent or subdivision process, by agreements, and through infrastructure Environmental Assessments (EAs). Transit and transportation infrastructure also provides key opportunities for implementing active trail linkages to the larger community systems and transit hub stations. This Draft Trail Strategy will be considered where TRCA is reviewing transit and transportation projects to ensure safe crossings, wayfinding and other measures are protected for and designed into such projects.

Ongoing maintenance of trail routes can be challenging for only one agency with limited budget flexibility. In existing neighbourhoods, or in areas that do not have upcoming development opportunities, trail partners should leverage existing budgets and new funding opportunities through federal, provincial and municipal infrastructure funding programs that support active transportation, climate change adaptation and the creation of green infrastructure. Past applicable provincial funding programs have included: Climate Change Action Plan (CCAP), the Ontario Municipal Commuter Cycling Program (OMCC), the Ontario Sport and Recreation Communities Fund (OSRCF), Ontario Trillium Foundation grants and Greenbelt Foundation grants. Current applicable municipal funding programs include: York Region Pedestrian and Cycling Municipal Partnership Program (YRMPP). TRCA and municipal trail partners must also look to seize opportunities to align upcoming major infrastructure projects with the inclusion of trail corridors. By capitalizing on complementary regional infrastructure project opportunities to build trails, we can maximize our infrastructure, leverage funding opportunities and help to complete the remaining gaps that exist.

Trails require sustained investment to address operating fund shortages required to manage and maintain existing and proposed trails. In order to maintain their recreational and active transportation functions, trails require ongoing funding to be maintained in a state of good repair and to achieve their desired level of service. TRCA and its partners must strive to adopt the principles of asset management in accounting for the full lifecycle of the natural and cultural heritage and user monitoring, planning, design, implementation and maintenance of trails. The Strategy recommends developing a Trail Lifecycle Costing Tool to fully account for these activities in order to improve trail cost analysis. In addition, the Draft Trail Strategy recommends TRCA and municipal trail partners create Trail Maintenance Reserve Funds for ongoing trail operations and maintenance expenditures to improve our ability to adequately manage our existing and proposed trail assets in a state of good repair.

GOVERNMENT OBJECTIVES AND PROGRAM OPPORTUNITIES

The Draft Trail Strategy provides the government with a unique opportunity to meet its federal, provincial and municipal objectives in a cost-effective manner. The **Government of Canada** is making historic new investments in infrastructure to build the cities of the 21st century and provide communities across the country with the tools they need to innovate and prosper. The **Investing in Canada Plan** provides investment to support three key objectives:

- Create long-term economic growth
- Support a low carbon, green economy
- Build inclusive communities

The Strategy supports these objectives through provision of the five main infrastructure priorities targeted by the Investing in Canada Plan:

1. **Public Transit Infrastructure.** The Greater Toronto Region trail network is a key component of our region's active transportation network. Trails provide transportation alternatives to cars, helping to reduce traffic congestion and long commutes that make it harder for people to get to work and for families to spend time together. Trails also address the current "first mile/last mile" (FMLM) barrier to the success of our regional public transit system.
2. **Green Infrastructure.** The Greater Toronto Region trail network provides green infrastructure that protects our communities and supports Canada's ongoing transition to a clean growth economy. Greenways provide the needed forest vegetation that filters the air and directly improves its quality. The buffering effect of vegetation in our river valleys is important in controlling the delivery of surface pollutants to streams. The development of trails through our greenways offers an opportunity for residents to see and smell, first hand, the benefits of a strong network of natural open spaces in the local community.
3. **Social Infrastructure.** Investing in the Greater Toronto Region trail network is an investment in our social fabric. The Strategy promotes investment in Indigenous communities, out-of-classroom education, and cultural and recreational infrastructure through trails. Indigenous peoples, educators, volunteers and grassroots organizations are key partners in creating and managing our regional trail network. Working in partnership, meaningful relationships can be created to respect and celebrate various cultural ways and beliefs, improving the quality of life for present and future generations.
4. **Trade and Transportation Infrastructure.** The Greater Toronto Region trail network supports the development of stronger, more efficient transportation corridors in our region. Trails integrated into our public transit network provide residents with an active transportation alternative to move about their daily lives, helping to reduce road congestion, bottlenecks and capacity issues. Trails help the transportation system withstand the effects of climate change by acting as a climate change mitigation measure.
5. **Rural and Northern Communities Infrastructure.** The Greater Toronto Region trail network connects rural communities in the protected northern areas of the Niagara Escarpment, the Oak Ridges Moraine and the Greenbelt to the growing suburban and urban communities of the Greater Toronto Region. It also connects rural communities beyond TRCA jurisdiction by linking into Provincially and Federally significant trails, including the Bruce Trail, the Lake-to-Lake Trail, the Oak Ridges Trail, The Great Trail (the Trans Canada Trail) and the Waterfront Trail.

Item 8.1

Furthermore, nine mandates of the **Government of Ontario** are supported by the Draft Trail Strategy:

1. The **Ministry of Tourism, Culture and Sport (MTCS)** has identified walking as one of the most popular active living pursuits in Ontario. Public trails provide an accessible recreation alternative for all Ontarians. Eco-touring throughout Southern Ontario is a growing tourist business that requires a strong network of hiking and cycling trails linking the city to the country. From the standpoint of cultural heritage, trail development in greenway corridors encourages the cataloguing and development of archaeology resources. With over 18,000 hectares of valley and waterfront lands, TRCA is custodian to the largest reserve of archaeological resources in Southern Ontario. The **Ontario Sport and Recreation Communities Fund (OSRCF)** is a grant program that supports a vision of getting and keeping Ontarians active in community sport, recreation and physical activity.
2. The **Ministry of Natural Resources and Forestry (MNRF)** plays a role in the planning and management of natural heritage systems, including the provision of sustainable outdoor recreation opportunities and education on natural heritage. MNRF also partners with the natural resources and forestry industry to demonstrate sound forest and wildlife management in Southern Ontario. Greenway trails provide greater access to managed forests and interpretive trails through Conservation Areas can educate the public on a wide variety of vegetation and wildlife habitats in their communities. In terms of mineral resource management, aggregate resource rehabilitation projects can support the development of regional trails on the Oak Ridges Moraine and the Niagara Escarpment with the cooperation of such groups as the Ontario Stone, Sand & Gravel Association. This type of partnership resulted in the successful restoration of a former gravel pit in TRCA's East Duffins Headwaters Properties (EDH) to provide for enhanced biodiversity, sustainable nature-based recreation trails and interpretive education.
3. Trails provide opportunities for the **Ministry of Education** and school boards to animate the course curriculum in out-of-classroom education across the disciplines. The 10 proposed Conservation Area destinations, including TRCA facilities such as the Kortright Centre for Conservation, Conservation Field Centres and Black Creek Pioneer Village, offer incredible education opportunities through the interpretation on the trails.
4. The **Ministry of Children, Community and Social Services** helps to build communities that are resilient, inclusive and sustained by the economic and civic contributions of all Ontarians. A sense of community is one of the most critical elements in sustaining a neighbourhood. The development, management and programming of trails are strong builders of community spirit. The active participation of community service clubs, organized youth groups and creative recreation programs can help build a sense of pride that is critical to the quality of life in our communities. Volunteer contributions range from raising funds to building and maintaining trails. Reduced crime and an increased sense of self-worth are natural by-products when community-driven projects like trails are encouraged.
5. The quality of our air and water are the direct concern of the **Ministry of Environment, Conservation and Parks**. The buffering effect of vegetation in our river valleys is important in controlling the delivery of surface pollutants to streams. The development of trails through our greenways offers an opportunity for residents to experience the benefits of a strong network of natural open spaces in the local community. The **Waterfront Regeneration Trust** provides strong support for Greenway Trails in its legislative mandate and its ongoing work with Provincial agencies, municipalities and shoreline residents. TRCA actively supports those

Item 8.1

efforts by sharing staff expertise, funding and a coordinated approach to trail management issues.

6. The development of inter-regional trail links throughout the Greater Toronto Region will greatly enhance the community's ability to experience a healthy walk or cycle in a natural setting. The **Ministry of Health** can significantly enhance its promotion of the wellness concept by encouraging communities to use greenway trails. The demonstrated health elements are both physical and mental. A key result of a healthier community will be reduced health care costs.
7. One of the many crossover benefits of greenway trails is the promotion of active transportation and the subsequent reduction in air pollution and greenhouse gas emissions. The **Ministry of Transportation** supports the development of pedestrian and cycling networks as a core part of Ontario's transportation system. Increasing cycling opportunities in Ontario offers many benefits, including improved well-being, lower rates of chronic conditions and reduced health care costs as a result of active living, reduced traffic congestion in urban areas, a cleaner environment and increased tourism opportunities across the province. The Greater Toronto Region trail network will offer pedestrians and cyclists an environmentally safe alternative to move about their daily lives. Improved mapping and signage between existing greenway trails will further enhance the enjoyment and safety of such trails.
8. The **Ministry of Indigenous Affairs** works to ensure a better future for First Nations, Inuit and Métis people. Trails provide opportunities for Indigenous communities to enhance awareness about their culture and heritage through the exploration of interpretive trails.
9. The **Ministry of Economic Development, Job Creation and Trade** supports a strong, innovative economy that can provide jobs, opportunities and prosperity for all Ontarians. There is ample evidence that trails not only enable Canadians to live actively in a healthier environment, but also that trails most often economically benefit both adjacent landowners and the local business community (Go for Green, [The Economic Benefits of Trails](#)). Direct impacts of the Trail Strategy include equal opportunity employment for construction workers, designers, technicians, researchers and planners. Indirect economic benefits include the promotion of private commerce in such fields as increased sales for walking shoes, cross-country skis, bicycles and their repair, public transit use, sport clothing, gift shops and restaurants. The Bruce Trail Association has identified an economic spinoff of \$44 million (2018 dollars) from their trail system.

Finally, municipal mandates of the **Regions of Durham, Peel and York** and the **City of Toronto**, as well as those of their lower-tier municipalities, are supported by the Draft Trail Strategy. Regional and local governments recognize trails as essential green infrastructure through the inclusion of recreational and active transportation trail policies in Strategic Plans, Official Plans, Recreation Master Plans and Transportation Master Plans. These policies set out standards for new communities, managing growth and development and protecting the environment. All of the municipalities in the Greater Toronto Area make recommendations to prioritize walking, cycling and transit to meet the needs of residents and develop complete communities. Several Official Plans also include policies to improve connectivity between greenspaces and cover the role of trails in active transportation, recreational service delivery, community engagement and ecological enhancement. In response to population growth and changing community needs, municipalities are constructing significant regional trail routes. For example, York Region, the City of Toronto and the Town of Richmond Hill are implementing the Lake-to-Lake Cycling Route and Walking Trail that will connect Lake Simcoe to Lake Ontario. The City of Toronto has developed

Item 8.1

the Toronto Ravine Strategy a document that heightens public awareness of the outstanding system of river valleys and forests, parks, major trail routes and natural landscapes connecting to vast urban neighbourhoods. Our Draft Trail Strategy builds on our collaboration for this Ravine Strategy, and sets the regional trail system forming a rich extension of landscape experiences from Toronto, north to the Oak Ridges Moraine and the countryside beyond. New trail segment construction along the Humber Trail, the Etobicoke Creek Trail and the East Don Trail are also recent examples of successful trail building partnership projects between TRCA, the regions and local municipalities.

Based on these overlapping government objectives, implementation of the Draft Trail Strategy with other municipal objectives should be possible and should strive to coordinate major funding requests by TRCA and municipal partners with contributions from all levels of government and include support from public groups and the private sector.

PRELIMINARY COSTING

Basic unit costs per linear metre for the various trail descriptions and types implemented in the concept for the Greater Toronto Region Trail Network are shown in **Table 2: Trail Unit Costs**. The basis for this costing has come from collaborative analysis with our municipal partners.

TABLE 2: TRAIL UNIT COSTS

TRAIL DESCRIPTION (TYPE)	UNIT	2018 DOLLARS
Single-use		
Construct new hiking trail in valley/ridge areas	Linear Metre	\$ 130.00
Multi-use		
Construct new asphalt waterfront trail	Linear Metre	\$ 1,240.00
Construct new asphalt trail in valley/ridge areas	Linear Metre	\$ 702.40
Construct new asphalt trail in road right-of-ways	Linear Metre	\$ 555.40
Construct new asphalt trail in utility corridors	Linear Metre	\$ 372.40
Bike-only		
Construct new cycle-track trail along roadways	Linear Metre	\$ 450.00
Other Costs		
Planning	Percentage	10.0%
Design and Engineering	Percentage	10.0%
Permitting	Percentage	10.0%
Contingency	Percentage	25.0%
Natural Heritage and Tree Compensation	Percentage	5.0%

These metrics were used to calculate the preliminary order of magnitude estimates for trail construction project costs per region shown in **Table 3: Trail Project Costs**. This table includes trail construction project costs per region, according to the high, medium or low implementation priority phase of work categorized in the Draft Trail Strategy. Following partner consultation, the Trail Capital Project List will be updated to include trail project costs on a per-segment basis to highlight the cost of specific proposed trails (e.g., Seaton Trail, Humber Trail, etc.). Table 3 further itemizes trail project cost according to land ownership, by TRCA versus Other, per region and identifies the corresponding expenditures.

TABLE 3: TRAIL PROJECT COSTS

TRAIL PROJECT COSTS (MILLIONS)				
REGION	HIGH PRIORITY	MEDIUM PRIORITY	LOW PRIORITY	TOTAL
Durham	\$2.3	\$16.1	\$21.0	\$39.4
Durham (TRCA lands)	\$1.3	\$0.6	\$1.4	\$3.3
Durham (Other lands)	\$1.0	\$15.5	\$19.6	\$36.1
Peel	\$24.2	\$12.9	\$33.9	\$71.0
Peel (TRCA lands)	\$7.8	\$0.0	\$0.1	\$7.9
Peel (Other lands)	\$16.4	\$12.9	\$33.8	\$63.1
Toronto	\$52.2	\$46.5	\$5.1	\$103.8
Toronto (TRCA lands)	\$11.0	\$3.0	\$0.0	\$14.0
Toronto (Other lands)	\$41.2	\$43.5	\$5.1	\$89.8
York	\$49.9	\$66.0	\$54.7	\$170.6
York (TRCA lands)	\$18.0	\$6.7	\$2.6	\$27.2
York (Other lands)	\$31.9	\$59.3	\$52.1	\$143.4
TOTAL (TRCA lands)	\$38.1	\$10.3	\$4.1	\$52.5
TOTAL (Other lands)	\$90.5	\$131.2	\$110.6	\$332.4
GRAND TOTAL	\$128.6	\$141.5	\$114.7	\$384.9

Based on preliminary high-level costing of the proposed trail connections, the total cost to construct the proposed 570km of trails to complete the Greater Toronto Region Trail Network is **\$384.9 million**. Of this amount, the total cost of these new trail construction projects on TRCA-owned lands is **\$52.5 million**. The accuracy of this estimate is considered to be **+/- 20 to 30% accurate**. This cost is expected to increase annually according to projected inflation. These trail construction project costs include planning, design and engineering, permits and agreements, construction and contingencies. These trail construction project costs exclude crossings, lighting, engineering features, site servicing and trail amenities.

TRCA is already undertaking trail and destination capital project work in support of the Draft concept for the Greater Toronto Region Trail Network within approved capital budgets of multiple TRCA and municipal partner programs.

IMPLEMENTATION

The Draft Trail Strategy is an evolving plan for trail connections as user needs change in an expanding region. It will guide strategic planning directions for years to come. As growth area community plans are finalized, municipalities will need to connect local neighbourhoods, old and new, to greenspace attractions to meet community needs. These priority linkages will be set in project discussions with municipal trail planning partners.

Following approval in principle of the Draft Trail Strategy, TRCA staff and external partners will work together to evaluate, finalize and prioritize the proposed trail and destination capital projects required to complete the Greater Toronto Region Trail Network. The Draft **Trail Strategy: Workbook** has been developed as a reference tool to facilitate this effort. The Workbook provides a Draft list of proposed trail and destination area capital projects organized by region and municipality. It also includes implementation plans and an action plan to guide the execution of the Strategy over a multi-year approach, as well as outlining preliminary order of magnitude costs for the proposed trails. The Workbook will assist TRCA and municipal partners in prioritizing trail projects, aligning capital budgets and coordinating funding requests and commitments. This

Item 8.1

exercise will lead to the development of a phasing plan with preliminary priorities for each region within TRCA's watershed and a corresponding financial strategy to kick-start project implementation.

Upon final approval of the Trail Strategy by the Board of Directors, the following three priorities will be immediately pursued:

1. Organize Effective Trails Leadership. Establish an interdivisional Trail Working Group, comprised of staff from Finance, Restoration and Infrastructure, PMO, Greenspace and communications business units to guide the implementation of the Strategy and coordinate its delivery across TRCA business units. The group will also align trail and destination projects with municipal budgets and advocate for projects and funding. This group will promote knowledge-sharing, build capacity and focus fundraising efforts in support of the Strategy.

2. Prioritize Trail and Destination Projects. The Trail Working Group will meet with the Trail Leaders Round Table, that was established via the RWA interest in supporting this initiative, to utilize the Trail Strategy: Workbook to evaluate, finalize and help to prioritize the proposed trail and destination capital projects required to complete the Greater Toronto Region Trail Network. This meeting or meetings will inform staff efforts to finalize the prioritized Trail and Destination Area capital projects lists and perform high-level cost analysis for confirmed capital projects. TRCA staff will work with municipal partners to develop a phasing plan with preliminary priorities and a corresponding financial strategy to kick-start trail project implementation.

3. Promote Greater Trail Use and Awareness. The Trail Working Group and Trail Leaders Round Table will produce a digital and print map of the Greater Toronto Region Trail Network to provide clear wayfinding information for improved user orientation, safety and experience. They will implement a communications plan to promote the network and to generate support to secure funding to implement the Strategy.

Implementation will also be assisted by the development of a Trail Handbook, which will form an update to TRCA's Trail Planning and Design Guidelines Manual (1992), conveying sustainable trail planning, design and best management practices.

FINANCIAL DETAILS

Funds utilized to prepare and finalize the Draft Trail Strategy are located in the Peel Conservation Land Care and York Conservation Land Care accounts (440-01 and 442-01, respectively). The recommendations in this report can be implemented within current base budgets and resources included in the 2018-2019 Conservation Land Care program budgets.

One full-time equivalent (FTE) Senior Coordinator position in the Master Planning and Greenspace Conservation business unit will be assigned as the primary coordinator for the Trail Strategy. Tasks associated with supporting the Trail Strategy will also require ongoing senior management and staff support from the business unit's Associate Director, Manager, Supervisor, second Senior Coordinator and Administrative Coordinator.

In 2019, TRCA staff in the Planning and Development division will complete the following Trail Strategy work:

1. Finalize the Trail Strategy for TRCA Board of Directors approval.

Item 8.1

2. Initiate administration of the Trail Strategy upon approval. Administration includes overseeing all financial, operating, project planning, reporting and advisory components.
3. Advance the Action Plan.
4. Undertake one high-priority regional trail connection project in collaboration with municipal trail partner(s).
5. Initiate preparation of the Trail Handbook.

The cost to complete this work in 2019 is \$548,930.20.

In 2020 and beyond, TRCA staff in the Planning and Development division propose to complete the following Trail Strategy work on an annual basis:

1. Administer the Trail Strategy, which will include considering all proposed amendments or staff updates from municipalities.
2. Advance the Action Plan (see Workbook).
3. Undertake one or two prioritized regional trail connection projects per year in collaboration with trail partner(s).

The total annual cost to complete this Trail Strategy work in 2020 and beyond is \$353,783.43.

In 2019, monies required to fund the proposed Trail Strategy work will be made available in the Peel Conservation Land Care and York Conservation Land Care accounts (440-01 and 442-01, respectively). This cost will be accounted for in the projected 2019 Conservation Land Care program budget. In 2020 and beyond, the total annual cost for proposed Trail Strategy work required to increase the TRCA's trail program budget to meet the directions provided in the Trail Strategy and its Workbook will be identified as an unmet need on the long list of TRCA's budget planning process. Dependent upon TRCA project priorities, this unmet need may be advanced to the short list, subject to support from the Senior Leadership Team. This budget increase is required as operating funding, in order to support the successful ongoing administration and execution of the Trail Strategy into the future while continuing to advance the full portfolio of project work that is undertaken by the Master Planning and Greenspace Conservation business unit beyond the Trail Strategy initiative.

As well, funding for specific Trail Strategy projects outlined in the Action Plan will be identified as future unmet needs in TRCA's budget planning process. In conjunction with these requests, staff will continue to explore the variety of additional funding sources outlined in **Table 1: Trail Funding Sources** to contribute to the financial implementation of projects outlined in the Trail Strategy.

DETAILS OF WORK TO BE DONE

- Engage with external partners and the public to obtain final feedback to finalize the Draft Trail Strategy (December 2018).
- Pursue and obtain funding to administer the Strategy and deliver priority trail and destination capital projects with trail partners (ongoing).
- Finalize revisions to Draft Trail Strategy, based on the received input (March/April 2019).
- Develop a phasing plan with preliminary priorities and a corresponding financial strategy to kick-start trail project implementation (April 2019).
- Continue to work with the Regional Watershed Alliance towards the establishment of a Trail Leaders Roundtable.
- Report back to the Board of Directors with final Trail Strategy for approval (Q3 2019).

Item 8.1

- Utilize the Draft Trail Strategy in the review of current projects and plans.

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Date: November 30, 2018

Attachments: 2

Attachment 1 – [Draft Trail Strategy](#)

Attachment 2 – [Draft Trail Strategy Workbook](#)

Section I – Items for Board of Directors Action

TO: Chair and Members of the Board of Directors
Meeting #9/18, Friday, November 30, 2018

FROM: Carolyn Woodland, Senior Director, Planning, Greenspace and Communications

RE: **GOODWOOD RESOURCE MANAGEMENT TRACT TRAIL PLAN PROJECT**

KEY ISSUE

Approval of the Goodwood Resource Management Tract Trail Plan.

RECOMMENDATION

WHEREAS The TRCA Board of Directors approved the undertaking of the Goodwood Resource Management Tract Trail Plan Project;

AND WHEREAS Green Durham Association (GDA) and the Oak Ridges Trail Association (ORTA) have committed to providing \$50,000 towards the implementation of the plan (\$40,000 GDA and \$10,000 ORTA);

THEREFORE, LET IT BE RESOLVED THAT the draft Goodwood Resource Management Tract Trail Plan dated September 2018 be approved;

THAT the Community Liaison Committee be so advised of the approval of the Trail Plan;

THAT the approved Trail Plan be circulated to the Township of Uxbridge, the Region of Durham, Parks Canada, ORTA, GDA, and the Regional Watershed Alliance for information;

THAT Toronto and Region Conservation Authority (TRCA) staff proceed to secure the property agreements and/or acquisitions necessary to implement a safe trail connection to Webb Road;

THAT TRCA staff conduct a focused engagement with First Nations on design of the proposed Eagles Rest planned commemorative and viewing area to inform fundraising efforts, detailed design, and construction.

AND FURTHER THAT TRCA staff work with its partners and community leaders to seek out and secure funds, grants, sponsors and donors that will contribute towards the implementation of the Trail Plan.

BACKGROUND

The Goodwood Resource Management Tract (Goodwood RMT) is comprised of 127.5 hectares (315 acres) of greenspace located in the West Duffins Creek subwatershed. The property is bordered by Webb Road to the south, Concession 2 to the west, and Concession 3 to the east. It is located entirely within the Township of Uxbridge in the Regional Municipality of Durham (see **Attachment 1**). The property lies within the Oak Ridges Moraine, and is comprised entirely of natural cover. The trail system on the property includes several kilometres dedicated to hiking, snow-shoeing and cross-country skiing. The trail system includes a section of the main Oak Ridges Trail and a side trail of the Oak Ridges Trail, which connects to Rouge National Urban Park (RNUP) on the south side of Webb Road. The Goodwood RMT has historically been

Item 8.2

managed as part of the Duffins Creek Headwaters Management Plan for TRCA Properties (2003), and these trails were identified in that Management Plan.

The southern boundary of the Goodwood RMT is almost directly across the road from the northernmost tip of RNUP. These northern RNUP lands were added to the Park in 2017, part of an approximately 2,100 hectare (5,200 acre) northeastern addition that extends RNUP into Durham Region and further into the Oak Ridges Moraine. Trans Canada Trail Ontario (TCTO) has expressed interest in connecting the Trans Canada Trail from its existing alignment in the East Duffins Headwaters to RNUP through a new trail spur. A proposal has been made to establish this new Trans Canada Trail route through co-designating sections of the existing Oak Ridges Trail network, including the side trail within the Goodwood RMT. With both the Oak Ridges Trail and the Trans Canada Trail running through the Goodwood RMT property, there is a key opportunity to provide a trail gateway between these important interregional trail systems and the trail system within the northern RNUP lands.

Understanding that there has never been a dedicated Trail Plan for the Goodwood RMT and a new dedicated Trail Plan would address the possibilities of this new context, at Authority Meeting #10/17, held on January 5, 2018, Resolution #A230/17 was approved as follows:

WHEREAS Green Durham Association in partnership with TRCA, Parks Canada, and the Oak Ridges Trail Association has received \$75,000 from the Ontario Trillium Foundation to undertake a public planning process for the Goodwood Resource Management Tract Trail Plan project;

AND WHEREAS Parks Canada has committed to providing \$33,000 towards the trail planning project with a focus on developing a northern gateway from TRCA lands and the Oak Ridges Trail to Rouge National Urban Park;

AND WHEREAS Green Durham Association and the Oak Ridges Trail Association have committed to providing \$50,000 towards the implementation of the plan (\$40,000 Green Durham Association, and \$10,000 Oak Ridges Trail Association);

THEREFORE LET IT BE RESOLVED THAT staff initiate a public planning process in partnership with Parks Canada, the Green Durham Association, and the Oak Ridges Trail Association to undertake the Goodwood Resource Management Tract Trail Plan Project;

AND FURTHER THAT staff report back to the Authority on the final draft Trail Plan for approval.

Trail Plan Process

The Goodwood RMT Trail Plan outlines overarching objectives for the trail system, trail alignments, design standards, signage, amenities, and opportunities for design enhancements at feature areas throughout the site. The Goodwood RMT Trail Plan was developed through a collaborative process that engaged TRCA staff, municipal partners, stakeholders and community members. This public planning process brought together partners with valuable expertise in regional trail networks; the project was undertaken in partnership with Parks Canada, GDA, ORTA, Trans Canada Trail (TCT) and the Ontario Trillium Foundation (OTF).

The planning process was undertaken in three phases, and the approval of the Goodwood RMT Trail Plan is a component of the final phase of this process.

Item 8.2

Phase 1 – Project Initiation and Study Inventory:

- Inventoried natural environment, land use context
- Inventoried existing trails and associated wayfinding and amenities
- Established a TRCA staff Technical Advisory Committee (TAC), host meeting
- Established a Community Liaison Committee (CLC), host meeting
- Initiated on-line engagement (TRCA YourSay engagement website)
- Undertook Initial outreach to Indigenous partners

Phase 2: Trail Planning – Alternatives and Preferred

- Developed trail network options
- Generated options for trail amenities and programming
- Generated design feature options to develop a trail gateway; acknowledging the connection between RNUP, TRCA land, and regional trail connections (the Oak Ridges Trail and Trans Canada Trail)
- Finalized a Terrestrial Biological Inventory Report for the Goodwood RMT and surrounding area
- Held meetings with the TAC and CLC
- Hosted a Public Engagement Session
- Consulted with the Township of Uxbridge Accessibility Advisory Committee as part of AODA Integrated Accessibility Standards (Ontario Regulation 191/11) requirements on consultation with people with disabilities
- Identified a safe public crossing of Webb Road
- Evaluated trail network options and develop a preferred trail network alternative
- Refined trail amenities, wayfinding and programming opportunities
- Refined gateway design opportunities

Phase 3: Plan Finalization¹

- Developed management recommendations and a phased implementation plan
- Developed trail design standards and design concepts for trail signage, amenities, and feature areas, including gateway features
- Developed and finalized the Goodwood RMT Trail Plan document
- Fulfilled OTF & TCT grant requirements for recognition and reporting (OTF and TCT grants contributed to funding for developing the Goodwood RMT Trail Plan)
- Obtain TRCA Board of Directors approval of Goodwood RMT Trail Plan
- Obtain Parks Canada, GDA and ORTA support for the plan

Engagement with TRCA staff and the public was critical to the planning process for the Goodwood RMT Trail Plan. Public engagement was undertaken through a multidimensional approach. The smaller CLC sought focused input from key external stakeholders, and broader public engagement techniques enabled more general feedback from the broader community. The project team also initiated engagement with First Nations, to continue as part of the detailed design of specific trail plan components. A joint Ryerson/University of Toronto Graduate Studies course employed the Goodwood RMT Trail Plan process as the inspiration for a semester-long student project, and TRCA staff engaged with the students to share knowledge of the site and

¹ Certain elements of Plan Finalization are still outstanding at the time of TRCA Board of Directors approval

Item 8.2

give feedback on student ideas. On-line, traditional media, and face-to-face communication methods were employed to provide information about the project and seek relevant input.

An open-house format Public Engagement Session was held on March 26, 2018, at the Goodwood Community Centre (268 Highway 47, Goodwood, ON). It is estimated that approx 80 people attended the session, including the Township of Uxbridge Mayor and several Councillors, area residents, and local trail and environmental organizations. CLC members were also in attendance. Materials presented to the public included the Goodwood RMT's regional context, mapping showing vegetation communities and environmental features present on the property, three trail network options, and ideas for trail infrastructure, amenities, programming, and gateway features. There were also informational booths set up by various trail and environmental organizations, including GDA, ORTA, the Uxbridge Trails Committee, TCTO, the East Duffins Headwaters Stewardship Committee, and the Oak Ridges Moraine Land Trust. Key feedback from the public included the desire for trail loops, though this comment often included the caveat that any new trails should not degrade the ecology of the site, and some attendees expressed that there should not be any new trail linkages because of these environmental concerns. Attendees expressed the desire to experience the scenic features of the site and the site's topography. There was also a noted desire for better connections to the GO station, to RNUP, and to the Goodwood community; to create a north-south gateway. Regarding amenities, attendees expressed desire for wayfinding signage, interpretive signage, postmarkers, observation platforms, guided hikes, safe road crossings, more parking, viewpoints, separation between the heavy equestrian area and hikers, bike parking, kiosks, trail juncture signage (with trail ratings, nearby amenities, regional trail maps, etc.), archways, tick awareness programming, trail atlases, rest/meeting points, garbage/recycling containers, boardwalks, educational programming for children, horse-friendly access, and programs to prevent dogs-off-leash.

Trail Plan Objectives

Three overarching objectives guide the Goodwood RMT Trail Plan. These objectives are informed by the Duffins Creek Headwaters Management Plan for TRCA Properties, Living City Policies for Planning and Development in the Watersheds of Toronto and Region Conservation Authority (LCP), Building the Living City (TRCA's 2013-2022 Strategic Plan), The TRCA Trail Strategy (Draft 2018), internal TRCA and public stakeholder engagement, and the property's current regional context.

- **Protect an Ecological Sanctuary** - the first and foremost trail planning objective is to protect the Goodwood RMT as an ecological sanctuary, minimizing impact to the integrity of the site's sensitive ecological and landscape features.
- **Develop a Regional Trail Gateway** – the Goodwood RMT should create a gateway to celebrate the transition between RNUP and the regional trail networks and greenspace destinations of the surrounding landscape.
- **Create a Natural and Cultural Heritage Destination** – The Goodwood RMT should be a destination in itself, celebrating the scenic natural and cultural features of the site and providing engaging trail experiences.

Trail Network

The recommended trail network included in the Goodwood RMT Trail Plan (**See Attachment 2**) supports the three overarching trail planning objectives described above. To fulfill the "Protect an Ecological Sanctuary" trail planning objective, trail alignments are oriented away from the interior of the site, maintaining the large central core area of the site as undisturbed habitat. The trail alignments follow existing linear disturbances, namely existing formal and informal trails, and so there are no new major areas of disturbance to sensitive flora, fauna, and vegetation communities. The trail network fulfills the "Develop a Regional Trail Gateway" trail planning

Item 8.2

objective, with links southwards to RNUP, eastwards along the Oak Ridges Trail/future Trans Canada Trail to recreation destinations such as the East Duffins Headwaters, and trail links westwards along the Oak Ridges Trail to the Lincolnville, Goodwood, and Stouffville communities. To fulfill the “Create a Natural and Cultural Heritage Destination” trail planning objective, trail alignments provide a connected system including a small loop. The trail alignments also cross through a wide variety of environments and highlight unique natural and cultural heritage features of the property.

The recommended Goodwood RMT trail network passes through a rich evolution of landscapes - from remnant plantation forests to mixed-hardwood forests to open meadows and wetlands. The trail network passes over a number of watercourses including the West Duffins Creek. Sections of the trail network will also pass beside active agricultural lands. A number of remnant cultural heritage features can be seen from the trail, which allude to the site’s agricultural history. The sloping trail system within the Goodwood RMT exemplifies the Oak Ridges Moraine topography which characterizes the site and surrounding area. The authorized trail network will be approximately 6.48 km in total length.

Minor variations from the trail alignments shown in **Attachment 2** may occur during further detailed design and trail construction based on site landscape barriers or opportunities for improvements in slope sustainability. The Goodwood RMT trail network will include trail re-alignments to help mitigate problematically steep grades in certain areas of the trail system, minimize maintenance, or to avoid disturbance to the surrounding landscape as the trails are constructed to the planned design standards. A minor re-route is also recommended at the location where the trail connects to Webb Road, to better align the existing trail connection to Webb Road with the location of a safe pedestrian road crossing. Trail closures are recommended for the existing unauthorized trails not included in the recommended trail network. The trails will permit hiking, snowshoeing, and cross-country skiing, along with equestrian use on certain sections. The highly natural character of the trails will be maintained – the trails will remain as natural surface. The existing boardwalks and bridge over the West Duffins Creek are reaching the end of their service life and should be upgraded/replaced. The technical details and level of infrastructure needed for these bridges and boardwalks will be confirmed by a qualified civil/structural engineer and based on appropriate geotechnical and geomorphic assessments.

Trail Design Standards

Tables 1 and 2 below represent typical trail design standards for the future Goodwood RMT trail network as shown in **Attachment 2**. Implementing these design standards will involve widening the trail at certain pinch points, additional clearing, and/or minor trail re-routes. Slight variations from these standards may occur due to on-site landscape barriers or environmental conditions.

Table 1: Goodwood RMT Trail Network Design Standards - Hiking Trail

Trail Design Standards – Hiking Trail	
Trail Tread Width	0.5 m
Trail Clearing Width	1 m
Trail Clearing Height	2.5 m
Trail Surfacing	Natural surface

Approximately 3.52 km of the Goodwood RMT Trail Network will be Hiking Trail standard.

Table 2: Goodwood RMT Trail Network Design Standards - Equestrian Trail

Trail Design Standards – Equestrian Standards	
Trail Tread Width	0.5 m minimum
Trail Clearing Width	1.8 m
Trail Clearing Height	3.5 m
Trail Surfacing	Natural surface

Approximately 2.92 km of the Goodwood RMT Trail Network will be Equestrian Trail standard. This trail is designed to accommodate hiking uses as well.

Trail Feature Areas

The Goodwood RMT trail network will include design enhancements that highlight unique features of the property, improve visitor experience, and tell a story about the natural and cultural significance of the site. Many of these design features are clustered in specific areas to create special places along the trail system. See **Attachment 2** for the locations of these feature areas. The Appendix: Goodwood Resource Management Tract Design Elements within **Attachment 3** provides more detail on the conceptual design of these feature areas. The conceptual designs for these areas will be further refined through detailed design and a structural engineering review of the design components.

Maple Way (Concession 3 Entrance):

The Concession 3 Entrance is intended to be the main entrance to the Goodwood RMT. It is therefore an important location to create a gathering space and rest area where visitors can meet and orient themselves. Signage and wayfinding elements will improve the visibility of the property – currently this entrance is almost hidden from view. In this area the trail follows an old farm road allowance so the area is naturally open, and large mature maple trees provide a monumental scenic presence.

Homestead:

The 'Homestead' area will tell the story of early Uxbridge settlers by revealing the c.1860 stone building foundation, hidden for years in the wild overgrowth just north of the Oak Ridges Main Trail. The history of the three 'Yeomen' who cultivated small areas of land for their families, their farming practices, and the importance of settling close to Duffins Creek, will be shared with interpretive signage installed in this reclaimed space. Designed as an outdoor room with seating random flagstone paving, this location will become an educational destination for groups and people of all ages.

Eagle's Rest:

The history of early Ontario relating to Indigenous First Nations people includes the trading of commodities, formal agreements, and shared and evolving understandings. This area has been designed with a wood deck look-out over Duffins Creek, inspired by the silhouette of an eagle wing. This place is a gesture to honour the Indigenous communities that lived in and continue to live in the Uxbridge area. The concept developed for this special place was inspired by an impromptu water ceremony performed by an Indigenous elder at this location, and will be further refined through future input and engagement with First Nations. The space will allow for people to gather for ceremony, and will include seating for resting and teachings, as well as interpretive signage to share the important cultural history of the Township of Uxbridge. In addition to any input received from First Nations engagement, the conceptual design of this area will be further refined through relevant engineering studies including a structural review.

Item 8.2

The Green Door (Webb Road Entrance):

This access point is almost directly across from RNUP, allowing the important interregional trails that pass through the Goodwood RMT to connect to RNUP and vice versa. A gateway structure and seating area would celebrate this important connection and the collaboration between the trail partners who made it possible. The design of this structure shall be further refined through the input of TRCA's trail partners. There is a small open area which provides space for this structure as well as seating and wayfinding elements. TRCA will continue to coordinate with Parks Canada to coordinate signage and welcome messaging between the Goodwood RMT and RNUP. Within this Webb Road entrance area, a minor trail re-route is recommended to better align the existing trail access from Webb Road with the location of a safe pedestrian road crossing. The location and design of this crossing was determined through a site selection study and detailed design completed by Dillon Consulting Ltd. An additional land acquisition and/or agreement is necessary for this minor trail re-route. The construction of the pedestrian crossing will encourage trail connectivity between the Goodwood RMT and RNUP by safely and efficiently connecting trail users to the two trail networks within each of these properties on either side of Webb Road.

Water Pump Garden:

The Water Pump Garden is a rest spot beside a heritage tree, and is an opportunity for an interpretive focal point. The design includes a circular space formed by a frame of random flagstone paving and a curved bench (similar to that used in the Homestead), and will remind visitors of the vital importance of clean water to early settler life.

West Duffins Ridge Lookout:

An old farm road follows a ridge overlooking the West Duffins Creek. Breaks in the trees provide a view of the Creek, and a small seating and interpretation area takes advantage of this viewpoint.

Moraine Lookout:

A grassy open area at the top of a kame provides excellent internal views of the surrounding rolling landscape, including lush forest and wetland. A small seating area allows visitors to take in these views.

Wayfinding

Wayfinding elements are essential for visitor safety and orientation. A suite of wayfinding elements will be incorporated into the Goodwood RMT trail system, both within the feature areas and spread out on the site. This suite of wayfinding elements will include a new primary trailhead kiosk, a new main entry sign, secondary trail maps, and postmarkers. The design of these elements are detailed within Appendix: Goodwood Resource Management Tract Design Elements (see **Attachment 3**). The design of elements not constructed previously by TRCA will be confirmed through structural engineering review.

Amenities

Trail amenities provide improvements to visitor comfort, accessibility, and engagement with the site. A suite of trail amenities will be incorporated into the Goodwood RMT trail system, both within the feature areas and spread out on the site. The suite of trail amenities will include benches and different forms of interpretive signage, detailed within Appendix: Goodwood Resource Management Tract Design Elements (see **Attachment 3**). The design of elements not constructed previously by TRCA will be confirmed through structural engineering review. Based on ongoing visitor use monitoring and trail counter data, the need for on-site washrooms and increased parking will be evaluated in coordination with Parks Canada's RNUP trail and welcome areas planning.

Item 8.2

Accessibility

TRCA is committed to improving accessibility for persons with disabilities. It is anticipated that the Goodwood RMT trail network will conform to almost all of the accessibility standards for recreational trails set out by Regulation 191/11: Integrated Accessibility Standards, under the Accessibility for Ontarians with Disabilities Act (AODA) (2005). Looking beyond these accessibility standards, TRCA will implement design enhancements to the trail system to improve accessibility for persons with visual impairments. A rope line feature is proposed along one side of the trail from Concession 3 to the West Duffins Creek, to guide users along the path. At the Concession 3 entrance, an interpretive 3D topographical model is proposed so that visitors can feel the undulating landscape of the site. Further details on these interpretive features is described within Appendix: Goodwood Resource Management Tract Design Elements (see **Attachment 3**). The design of these features, as well as any additional specific accessibility enhancements, will be refined through further engagement with the Uxbridge Accessibility Advisory Committee. These enhanced accessibility features will help the Goodwood RMT trail system fulfill the spirit of the AODA and provide engaging trail experiences to a wider variety of abilities.

Trail Management

The existing Goodwood RMT trail system is managed and maintained by ORTA, through an agreement with TRCA. Based on this agreement, ORTA is responsible for the maintenance, repair, operation, and oversight of the Oak Ridges Trail system. However, ORTA is required to report any trail safety hazards to TRCA in a timely manner. Also, a trail maintenance agreement was signed between TRCA and GDA in May 2018 to allow GDA volunteers to undertake trail maintenance along certain authorized trails on TRCA property until May 2019. The Oak Ridges Side Trail/proposed Trans Canada Trail within the Goodwood RMT property is included within this agreement. The Goodwood RMT trail system will continue to be maintained and managed through partnerships with local organizations, including ORTA and/or GDA. Any maintenance and management activities by these local organizations shall be authorized through maintenance agreements with TRCA.

RATIONALE

The Goodwood RMT is located at a critical juncture in the regional trail landscape, and there has never been a dedicated trail plan for the property. The Goodwood RMT Trail Plan capitalizes on the opportunities of this new context, and the planning included extensive internal TRCA and public stakeholder engagement, which has led to full support of the proposed Trail Plan. With Parks Canada currently undertaking trail planning work within the new RNUP lands directly across from the Goodwood RMT, and a Trans Canada Trail connection to RNUP proposed through the Goodwood RMT, trail users and visitors to the area can be expected to increase in the future. Environmental data collected in 2017 provides new insight into the site's unique high habitat quality and its sensitivity to disturbance. Therefore, establishing a trail system that protects the natural heritage of the Goodwood RMT is essential to successfully and sustainably accommodate the area's anticipated increase in visitor use. Creating trail experiences within the Goodwood RMT that showcase the site's rich natural and cultural heritage will encourage visitors to branch out from RNUP and onto the interregional trail linkages which extend into popular TRCA greenspace destinations connected by these trails, such as the East Duffins Headwaters. Creating a gateway experience between RNUP and the Goodwood RMT demonstrates the ongoing partnership between TRCA and Parks Canada, as well as the community organizations that play a vital role in managing the interregional trails crossing through the Goodwood RMT.

The Goodwood RMT Trail Plan supports *Building the Living City*, TRCA's 2013-2022 Strategic Plan, including the Five-Year Update to this Plan. By **rethinking greenspace to maximize its**

Item 8.2

value, this plan capitalizes on the opportunities presented by the site's important position within the regional trail landscape. Also, by continuing to support and celebrate the trail partnership success stories with local community organizations in Durham Region, the Goodwood RMT Trail Plan **fosters sustainable citizenship**. Finally, by creating more meaningful trail experiences through interpretive elements and design features that speak to the natural and cultural heritage of the area, the Goodwood RMT can help **tell the story of the Toronto region**.

TRCA Trail Strategy

The TRCA Trail Strategy provides a vision and direction for the planning, development, and management of a complete regional trail system across TRCA's jurisdiction. With RNUP classified as a Destination in the Trail Strategy, developing the Goodwood RMT as a gateway to the Park helps to facilitate this initiative.

The implementation of the Goodwood RMT Trail Plan supports the implementation of the Trail Strategy, as the Goodwood RMT Trail Plan aligns with a number of Strategic Objectives, Initiatives, and Actions identified within the Trail Strategy Action Plan:

- *“Plan, develop and maintain existing and proposed trails within TRCA-owned and regulated areas in a manner consistent with TRCA's The Living City Policies” (Action A of Initiative 5.1, Ongoing Priority)*
- *“Continue to pursue existing funding sources and explore future funding sources to establish and maintain sustained investment in the Greater Toronto Region Trail Network” (Action C of Initiative 8.1, Ongoing Priority)*
- *“Study and continue to implement sustainable trail planning, design, construction and management best practices” (Action C of Initiative 4.2, Short-Term Priority)*
- *“Support event programming, storytelling and educational opportunities to engage all communities in celebration of our rich Indigenous and settler history” (Action C of Initiative 5.3, Short-Term Priority)*
- *“Partner with interested municipalities, communities, tourism agencies, private businesses and trail organizations to promote destinations. (Action A of Initiative 7.2, Short-Term Priority)*
- *“Offer trail monitoring and maintenance programs to volunteers to grow our network of trail stewards” (Action B of Initiative 6.1, Medium-Term Priority)*

FINANCIAL DETAILS

The total cost to implement the Goodwood RMT Trail Plan is estimated at \$1,494,000 over 9 years (adjusted for inflation from 2018 \$CAD cost estimates). A phased implementation budget has been developed for the plan and is included within **Attachment 3**. All cost estimates are preliminary and will be refined through the results of technical study, structural review of design components, and evaluation of financial capacity. Please note that \$913,000 of this estimate overlaps with the implementation budget for the Trans Canada Trail Connection – East Duffins Headwaters to Rouge National Urban Park. As the management and operation of the Goodwood RMT trail system will be undertaken by local trail volunteer organizations (ORTA, GDA), TRCA does not anticipate to incur any additional yearly operating costs as a result of the Goodwood RMT Trail Plan.

Funding to implement this Trail Plan is not currently within the allocation for trails management as part of TRCA's budget from the Region of Durham. From the total estimated cost of \$1,494,000 there is \$913,000 that overlaps with the Trans Canada Trail Connection – East Duffins Headwaters to Rouge National Urban Park cost, leaving a remaining amount of \$581,000. Therefore, the funding to implement the Trail Plan will be included on TRCA's Durham corporate

Item 8.2

long list of unmet needs for the 2020 budget cycle.

Priorities and opportunities for implementation of the Goodwood RMT Trail Plan will also be influenced by emerging funding partnerships. The Trail Plan identifies a number of potential funding sources including grants, sponsorships, municipalities, and partnerships with local trail volunteer organizations. Staff will continue to work with project partners to prioritize and secure additional funding for the various implementation components.

DETAILS OF WORK TO BE DONE

The successful implementation of the Goodwood RMT Trail Plan will require the efforts of TRCA and its partners.

TRCA will take the following actions:

- Circulate the Goodwood RMT Trail Plan with TRCA approval to GDA, Parks Canada, ORTA, and the Regional Watershed Alliance for information (Fall 2018)
- Circulate the Goodwood RMT Trail Plan with TRCA approval to the Township of Uxbridge and the Region of Durham for information (Fall 2018)
- Advise the CLC that the Goodwood RMT Trail Plan has received approval from the TRCA Board (Fall 2018)
- Work with TRCA Property & Risk Management Staff to secure necessary property agreements and/or acquisitions to ensure a safe trail connection to Webb Road (Winter 2019) using available funds, and or subject to obtaining funds.
- Continue to work with project partners to secure funds necessary to implement the trail plan as described in the phased implementation budget (see **Attachment 3**) (ongoing 2019).
- Work with Parks Canada to further the implementation of the Webb Road pedestrian crossing (ongoing 2019)
- Continue to collaborate with Parks Canada regarding signage, detailed pedestrian crossing design, and future parking opportunities to ensure alignment with RNUP trail planning work (ongoing 2019)

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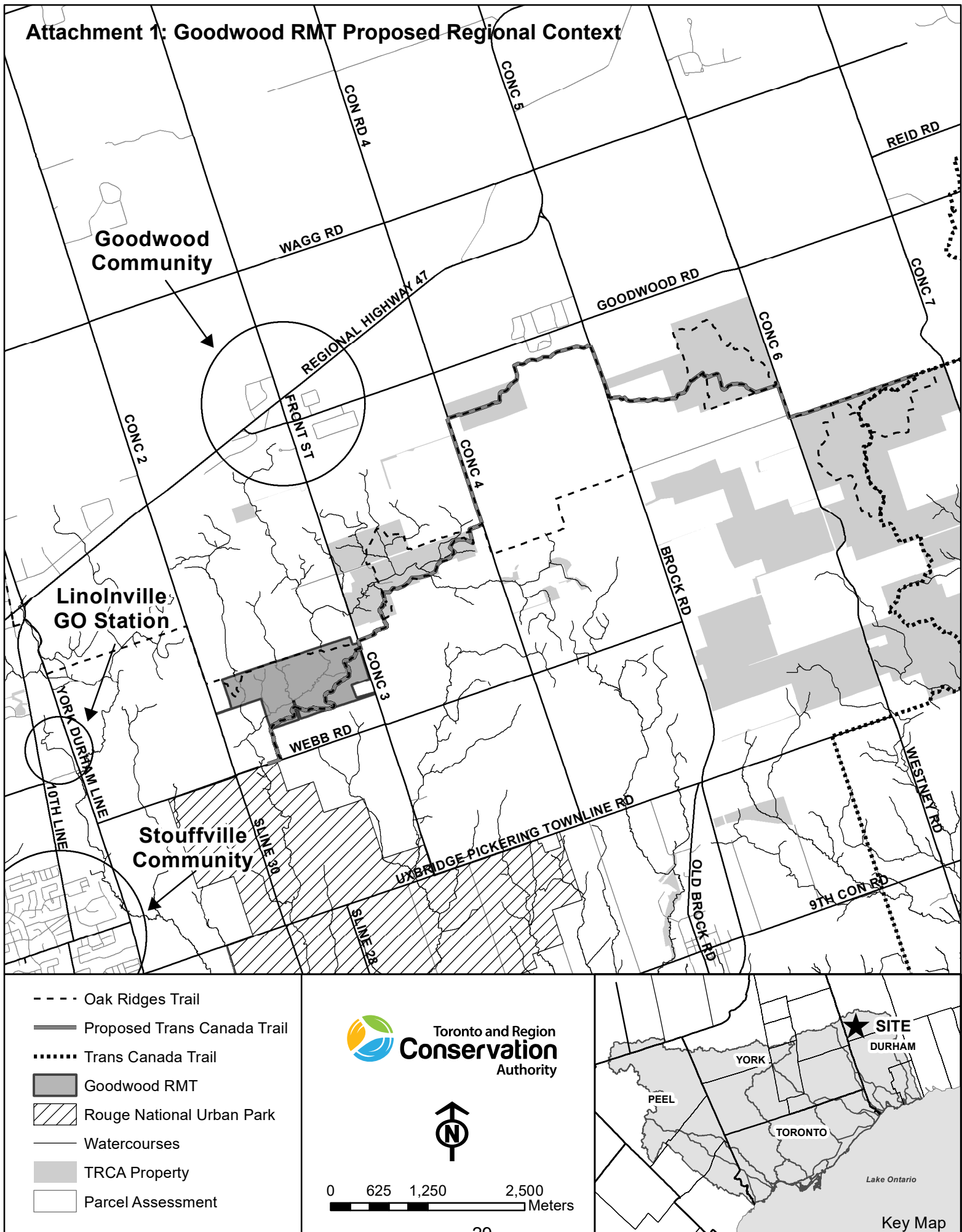
Emails: corinna.thomassen-darby@trca.on.ca, mike.bender@trca.on.ca

Date: November 30, 2018

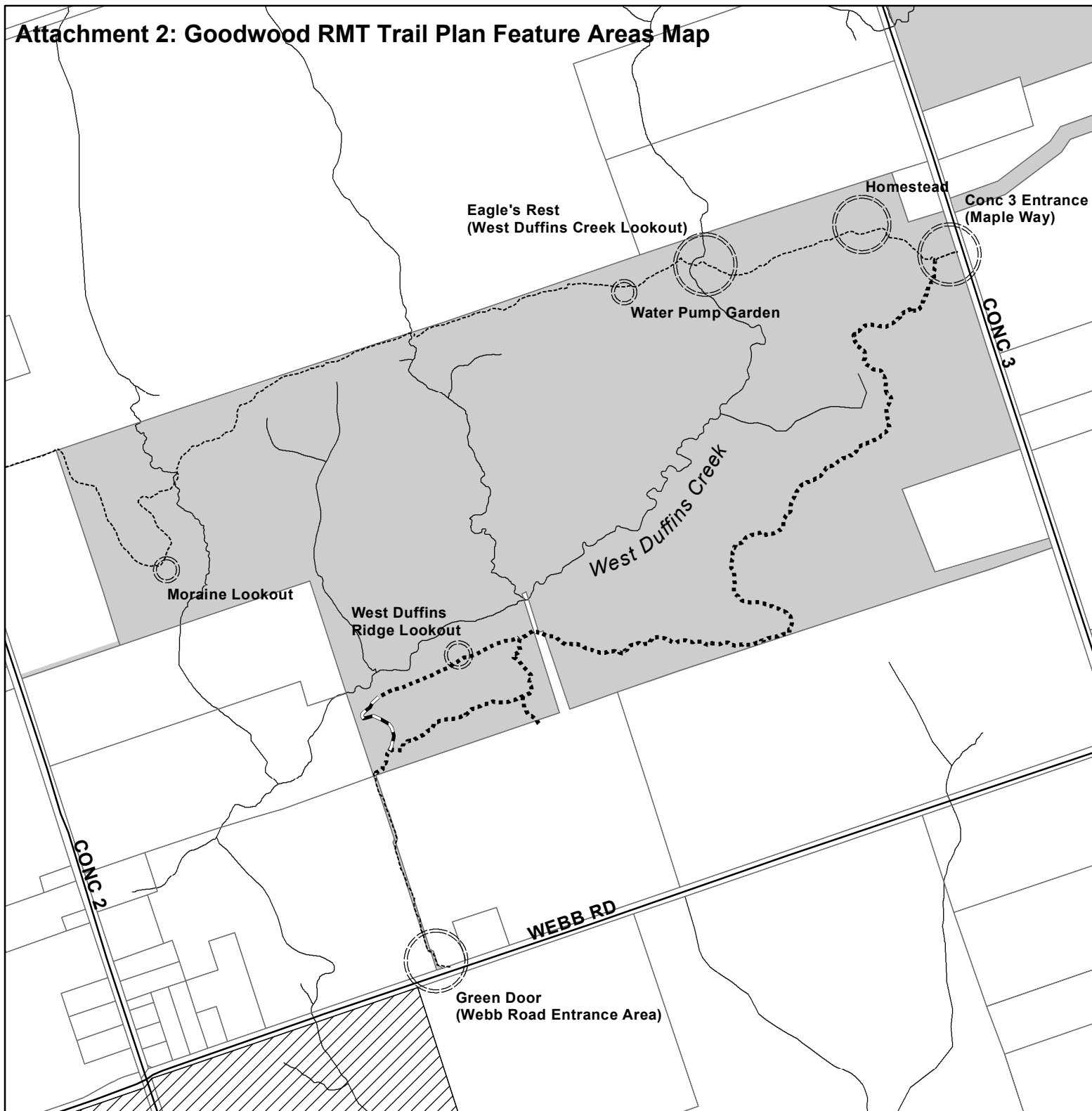
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






Attachment 3 - [Goodwood Resource Management Tract Trail Plan](#)

Attachment 1: Goodwood RMT Proposed Regional Context



Attachment 2: Goodwood RMT Trail Plan Feature Areas Map



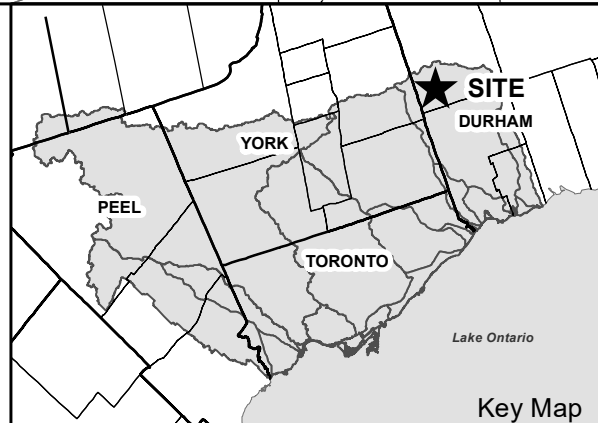
-  Major Trail Re-Alignment
-  Hiking Trail Standard
-  Equestrian Trail Standard
-  Feature Areas
-  Rouge National Urban Park
-  Watercourses
-  TRCA Property
-  Parcel Assessment



Toronto and Region
Conservation
Authority



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Meters



Key Map

Section I – Items for Board of Directors Action

TO: Chair and Members of the Board of Directors
Meeting #9/18, Friday, November 30, 2018

FROM: Carolyn Woodland, Senior Director, Planning, Greenspace and Communications

RE: **TRANS CANADA TRAIL CONNECTION – EAST DUFFINS HEADWATERS TO ROUGE NATIONAL URBAN PARK IN UXBRIDGE**

KEY ISSUE

Approval of the Trans Canada Trail Connection – East Duffins Headwaters (EDH) to Rouge National Urban Park (RNUP) Final Report, which proposes designation of an existing trail to be part of a new Trans Canada Trail spur from the existing alignment within the EDH to RNUP.

RECOMMENDATION

WHEREAS The Goodwood Resource Management Tract (Goodwood RMT) Trail Plan process has been completed, including confirmation of a recommended trail network within the Goodwood RMT;

AND WHEREAS Trans Canada Trail (TCT) and Trans Canada Trail Ontario (TCTO) agreed to contribute \$35,000 towards confirming the new Trans Canada Trail route and the design of a bridge crossing;

THEREFORE, LET IT BE RESOLVED THAT the Trans Canada Trail Connection – EDH to RNUP Final Report be approved;

THAT the approved Final Report be circulated to Lake Simcoe Region Conservation Authority (LSRCA), who will bring the Final Report to the Regional Municipality of Durham for endorsement;

THAT the endorsed Final Report be circulated to TCT and TCTO for approval;

THAT the approved Final Report be circulated to the Township of Uxbridge, Parks Canada, Green Durham Association, the Oak Ridges Trail Association and the TRCA Regional Watershed Alliance for information;

THAT TRCA staff continue to work with Parks Canada to further the implementation of the Webb Road Crossing – detailed design and construction to be funded by Parks Canada;

AND FURTHER THAT Toronto and Region Conservation Authority (TRCA) staff actively work with its partners and community leaders to seek out and secure funds, grants, sponsors and donors that will contribute towards the implementation of this new Trans Canada Trail spur connection.

BACKGROUND

In 2017, approximately 2,100 hectares (5,200 acres) of land were added to RNUP, extending the Park north into the Township of Uxbridge and further into the Oak Ridges Moraine. These new lands now place RNUP in proximity to important interregional trail systems which showcase the beauty of the Oak Ridges Moraine, namely the Oak Ridges Trail system, the Greenbelt Cycling

Item 8.3

Route and the Trans Canada Trail. Recognizing this, TCT and TCTO expressed interest in connecting the Trans Canada Trail from its existing alignment in the East Duffins Headwaters to RNUP utilizing a portion of the existing Oak Ridges Trail through a conjoined trail spur. The Trans Canada Trail is the longest recreational trail in the world, crossing Canada from coast to coast to coast for over 24,000 kilometres (km). The Trans Canada Trail generally runs north-south through the Township of Uxbridge, entering the EDH complex of TRCA properties from the north at approximately Concession 7 and Houston Road (the Walker Woods property). It is within EDH that the Trans Canada Trail intersects with the Oak Ridges Trail system. The Trans Canada Trail then continues southwards from EDH through the City of Pickering and the Town of Ajax to meet Lake Ontario at the mouth of the Duffins Creek, where it joins the Waterfront Trail and continues west.

The Oak Ridges Trail network runs for over 300 km generally east-west across the length of the Oak Ridges Moraine, and includes trail connections both to the Trans Canada Trail and to the northernmost tip of RNUP. Within the Township of Uxbridge, the Oak Ridges Trail system crosses through some of TRCA's most pristine greenspaces. These conservation lands help protect the health of the Duffins Creek headwaters and preserve sensitive wildlife habitat in perpetuity. In addition, the TRCA properties also provide "anchors" of public enjoyment allowing people to explore and appreciate the natural beauty of the Oak Ridges Moraine year-round. The Trans Canada Trail Connection - EDH to RNUP will connect the existing Trans Canada Trail to RNUP by conjoining with a 15.32 km section of the existing Oak Ridges Trail, crossing through these high-quality TRCA greenspaces (see **Attachment 1**).

Project Process

During the spring of 2018, TCT and TCTO agreed to contribute \$35,000 for TRCA to confirm the route of the Trans Canada Trail Connection – EDH to RNUP and undertake studies for the alignment confirmation and design of a bridge crossing. The contribution agreement between TCT and TRCA was signed on July 17, 2018.

The proposed Trans Canada Trail Connection – EDH to RNUP route was planned in concert with the Goodwood Resource Management Tract (Goodwood RMT) Trail Plan's planning process, and the results of this public planning process provided critical input for the final alignment of the proposed Trans Canada Trail route. This public planning process determined the future Goodwood RMT trail network, which includes the final large greenspace section of the proposed Trans Canada Trail route, prior to confirming the remainder of the alignment along the Oak Ridges Trail to EDH. This process also included the site selection and preliminary design of a safe pedestrian crossing of Webb Road, which will directly link the proposed Trans Canada Trail route with the RNUP trail system. A suite of trail improvements, wayfinding elements, amenities, and feature areas were developed for the Goodwood RMT, and many of these elements are located along the proposed Trans Canada Trail route within the Goodwood RMT property. This suite of wayfinding elements and trail amenities were expanded along the proposed Trans Canada Trail route into Secord Forest and Wildlife Area. As a result of the Goodwood RMT Trail Plan process, it was determined that the proposed Trans Canada Trail route would not include a new bridge crossing. During the internal and external public stakeholder engagement that took place as part of the Goodwood RMT Trail Plan process and once alternatives had been vetted, the objective to designate a new Trans Canada Trail connection between the existing Trans Canada Trail and RNUP along the existing Oak Ridges Trail network was proposed to the public.

Outside of the Goodwood RMT Trail Plan process, multiple site walks were undertaken with various TRCA technical staff teams to validate the proposed Trans Canada Trail route and inventory the necessary trail infrastructure, wayfinding, and amenities improvements to create a

Item 8.3

safe, engaging, and more accessible trail experience along this route. These site walks took place on August 23, August 30, August 31, and September 10, 2018 and included each TRCA greenspace property and the LSRCA-managed, Regional Municipality of Durham-owned property along the proposed Trans Canada Trail alignment.

Based on the stages of work outlined above, a Final Report was compiled to detail the proposed Trans Canada Trail route and the inventory of trail infrastructure, wayfinding, and amenity improvements to implement the route (see **Attachment 2**). A phased implementation budget was also developed as part of this Final Report. Certain elements of the inventory, which support the implementation of both the Goodwood RMT Trail Plan and the proposed Trans Canada Trail, are included within the phased implementation budgets of both projects.

Description of the Proposed Route

The proposed Trans Canada Trail Connection - EDH to RNUP will be created through co-designating a 15.32 km section of the existing Oak Ridges Trail network, leading from the existing Trans Canada Trail route in the EDH to RNUP (see **Attachment 1**). The route will consist of both trail sections in greenspace and trail sections on rural roads.

TRCA Walker Woods Greenway Section

The section of the proposed Trans Canada Trail route within Walker Woods will follow along the existing Oak Ridges Trail and pass through a well-connected network of local trails presenting a great variety of trail loop alternatives. This large greenspace features mixed deciduous and coniferous forest on the rolling topography of the Oak Ridges Moraine landscape. Lush forest frames the trail corridor, with mature oaks and maples creating thick canopy above. Existing parking lots near the proposed Trans Canada Trail are located at Walker Woods near Concession 7 and Houston Road (approximately 15 vehicle spaces), and at Concession 6 and Albright Road (approximately 10 vehicle spaces). This section of the proposed Trans Canada Trail is 1.69 km long, and will be designed according to TRCA's trail design guidelines for hiking, cycling, horseback riding, cross-country skiing and snowshoeing use.

Concession 6 Roadway Section

This section of the proposed Trans Canada Trail route runs north-south along the road shoulder of Concession 6, within a Township of Uxbridge road right-of-way. This two-lane roadway has a highly rural character and is largely forested on both sides. A safe trail road crossing will be necessary along this paved roadway section. This section is 0.47 km long, and will be designed to accommodate hiking, cycling, and horseback riding. Cross-country skiing and snowshoeing are also permitted and will be weather dependent.

TRCA North Walker Woods Greenway Section

The proposed Trans Canada Trail route within North Walker Woods crosses through a similar landscape to Walker Woods, featuring lush mixed deciduous and coniferous forest with relatively open understory showcasing the rolling topography of the Oak Ridges Moraine. Dappled sunlight comes through the trees, illuminating parts of the forest floor below. Cool vernal ponds create secluded havens for wetland wildlife and allow rare plant species to thrive. The sloping topography of the Oak Ridges Moraine causes the trail to wind through peaceful green hollows and along internal ridges. Loops of local trails criss-cross the site, with a small pull-off parking area (accommodating approximately one to two vehicles) servicing the proposed Trans Canada Trail route from the Concession 6 trail access. This section of the proposed route follows the Oak Ridges Trail, is 2.72 km long, and will be designed according to TRCA's hiking and horseback riding trail design guidelines. Cycling, cross-country skiing and snowshoeing are also permitted.

Item 8.3

Brock Road Roadway Section

Brock Road is a fast-moving and heavily trafficked two-lane Regional Municipality of Durham Road. This Regional Road has a large right-of-way, including wide road shoulders and mowed grassy strips on both sides of the road. Within this section of the proposed Trans Canada Trail route, the trail runs north-south along a mowed area spatially separated from the road by a grassy buffer. The road lies within a rural environment surrounded by largely open fields, farms, and forests. A safe trail road crossing is necessary along this roadway section. This section of the proposed Trans Canada Trail will follow the Oak Ridges Trail, is 0.75 km long, and will be designed for hiking and horseback riding. Cycling, cross-country skiing and snowshoeing are also permitted.

Durham Forest (Norton Tract)

This section of the proposed Trans Canada Trail route within the Durham Forest (Norton Tract) passes through an area completely covered by thick forest, mainly mixed pine plantation. This area was once a demonstration site for plantation management. The trail is characterized by a generous clearing width, located mainly along an old forestry road. A small pull-off parking area from Brock Road (accommodating approximately two to three vehicles) serves the proposed Trans Canada Trail route, and there could be opportunity to expand this parking lot to approximately six vehicles. A local trail connection from Norton Drive provides an additional linkage to the proposed Trans Canada Trail route. This section of the proposed Trans Canada Trail follows the Oak Ridges Trail, is 1.11 km long, and will be designed for hiking and horseback riding. Cycling, cross-country skiing and snowshoeing are also permitted.

TRCA Clubine Tract

Within Clubine Tract the proposed Trans Canada Trail route continues from rows of pine plantation through thick mixed coniferous/deciduous forest. While existing parking is limited to the Concession 4 road shoulder, there could be opportunity to construct a small pull-off parking area (accommodating approximately two to four vehicles) at the trail access from Concession 4. This section of the proposed Trans Canada Trail follows the Oak Ridges Trail, is 1.12 km long, and will be designed according to TRCA's hiking and horseback riding trail design guidelines. Cycling, cross-country skiing and snowshoeing are also permitted.

Concession 4 Roadway

This section of the proposed Trans Canada Trail route runs north-south along the road shoulder of Concession 4, a Township of Uxbridge right-of-way. This two-lane roadway has a highly rural character and is largely surrounded by farms, fields, and forests. A safe trail road crossing will be necessary along this roadway section. This section of the proposed Trans Canada Trail route will follow the existing Oak Ridges Trail, is 1.46 km long, and will be designed for hiking and horseback riding. Cycling, cross-country skiing and snowshoeing are also permitted.

TRCA Secord Forest and Wildlife Area

Within Secord Forest and Wildlife Area the proposed Trans Canada Trail route runs through highly varied environments, including mixed forest, plantation forest, open meadows, and a number of wetland areas characterized by birch and cedar trees along with other hardwoods and conifers. Headwater springs and streams spill through the property and pool into vernal ponds, which are surrounded by lush vegetation and forested cedar marshes. A number of boardwalks support the trail system, though this infrastructure is aging and should be replaced. Secord Pond, a large dammed lake, is the central feature of this property and is seen to full advantage from the trail. An existing parking lot near the centre of the site (accommodating approximately 15 vehicles) could serve the proposed Trans Canada Trail route in this area with the necessary wayfinding improvements to direct people from the proposed Trans Canada Trail route to the

Item 8.3

parking lot. This section of the proposed Trans Canada Trail follows the main Oak Ridges Trail, is 2.93 km long, and will be designed according to TRCA's hiking trail design guideline. Cycling, cross-country skiing, horseback riding and snowshoeing are also permitted.

Concession 3 Roadway

This section of the proposed Trans Canada Trail route runs north-south along the road shoulder of Concession 3, a Township of Uxbridge right-of-way. This two-lane roadway has a highly rural character and is largely surrounded by farms, fields, and forests. A safe trail road crossing will be necessary along this roadway section. This section of the proposed Trans Canada Trail follows the Oak Ridges Trail, is 0.13 km long, and will be designed for hiking and horseback riding. Cycling, cross-country skiing, and snowshoeing are also permitted.

TRCA Goodwood Resource Management Tract

The section of the proposed Trans Canada Trail route within the Goodwood RMT will run through historic conifer plantation, mixed forest and wetland patches. This property will essentially become the gateway between RNUP and the key interregional trails that cross the Oak Ridges Moraine, namely the Trans Canada Trail and the Oak Ridges Trail. Recognizing this important gateway role, feature areas are planned at specific points along the trail system highlighting the natural and cultural heritage of the site and surrounding landscape through amenities, wayfinding, and interpretive elements. The majority of these feature areas are either along or close by the proposed Trans Canada Trail route. A small pull-off parking area (accommodating approximately one to two vehicles) serves the proposed Trans Canada Trail route from the Concession 3 trail access. Parking for the Goodwood RMT could also be accommodated with the parking lot at Secord Forest and Wildlife Area. This section of the proposed Trans Canada Trail follows a small portion of the main and a large section of a side section of the Oak Ridges Trail, is 2.77 km long, and will be designed according to TRCA's hiking trail design guideline. Cycling, horseback riding, cross-country skiing, and snowshoeing are also permitted.

Webb Road Roadway Section

This section of the proposed Trans Canada Trail route will provide the final connection to the RNUP. This trail section is relatively short, running along the road shoulder of this Township of Uxbridge two-lane road right-of-way. This roadway is surrounded by rural landscape, characterized by active agricultural lands and open meadows. A trail crossing engineering study for Webb Road was completed by Dillon Consulting Limited in partnership with Parks Canada, providing the location and detailed design for a safe pedestrian road crossing to facilitate a trail connection to RNUP. Construction of the crossing still needs to be completed. The Goodwood RMT Trail Plan includes a recommendation for a minor trail re-route to better align the existing trail access to Webb Road with the location of the safe pedestrian crossing of Webb Road. This section of the proposed Trans Canada Trail will follow the secondary section of the Oak Ridges Trail, is 0.17 km long, and will be designed for hiking and horseback riding. Cycling, cross-country skiing, and snowshoeing are also permitted.

Proposed Trail Route Implementation

A detailed inventory and phased implementation budget for the trail improvements, wayfinding elements, and amenities to support the establishment of the proposed Trans Canada Trail route are provided within **Appendix 2**. The sections below summarize these improvements, wayfinding elements, and amenities.

Trail Improvements

Along the proposed Trans Canada Trail route there are certain areas where the trail would benefit from repair, modification, or additional supportive infrastructure. These improvements will

Item 8.3

improve trail sustainability, safety, and/or functionality for various users along the proposed route. These improvements include repair or replacement of the trail surface infrastructure, the installation of new or replacement culverts, trail width modifications, design and construction of safe pedestrian road crossings, parking expansions, and both major and minor trail re-alignments.

Wayfinding

In order for trail users to be aware that they are on the Trans Canada Trail and to orient themselves while along this route, a robust regime of wayfinding signage should be installed. Adequate wayfinding is essential for trail user safety and emergency response, but also improves visitor experience. The design of elements on TRCA properties not constructed previously by TRCA will be confirmed through structural engineering review.

Along the proposed Trans Canada Trail route, new and replacement postmarkers are recommended in three styles based on their location – the standard EDH postmarkers are proposed within or nearby to the TRCA's EDH properties complex (Walker Woods, North Walker Woods, and Clubine Tract), LSRCA's Durham Forest style postmarkers are recommended within the Durham Forest (Norton Tract) and the postmarker style recommended by the Goodwood RMT Trail Plan is proposed within the Goodwood RMT and Secord Forest and Wildlife Area. New and replacement primary trailhead kiosks are also recommended in the standard TRCA style, Durham Forest style, and Goodwood RMT Trail Plan style based on the property differentiation above. At secondary trail access points, new or replacement secondary trailhead maps are recommended. Property name signs are recommended at trailheads to increase visibility and identification of these entrances from the roadway. At the Goodwood RMT and Secord Forest and Wildlife Area, main entry signs are proposed to announce the main entrance to these greenspaces, bringing a higher profile and visibility to these properties.

The scheme of wayfinding signage proposed incorporates the 2018 Trans Canada Trail Signage Guidelines. These signage guidelines outline requirements for standard Trans Canada Trail-branded signage to be incorporated along the proposed Trans Canada Trail route in a number of different sizes and locations. Within greenspace sections of the proposed Trans Canada Trail route, this signage will be mounted on postmarkers. Along the roadway sections, this signage will be mounted on metal u-bars within the road right-of-ways. Oak Ridges Trail wayfinding signage already exists along this entire route and where possible and appropriate, wayfinding signs for both the Trans Canada Trail and the Oak Ridges Trail will be combined.

Amenities and Feature Areas

Trail amenities improve visitor comfort, accessibility, and engagement with the surrounding environment. A suite of trail amenities will be incorporated along the proposed Trans Canada Trail route with a particular focus on the Goodwood RMT. The Goodwood RMT Trail Plan recommends an elevated program of trail design enhancements in specific areas of the site that highlight unique features of the property, improve visitor experience, and tell a story about the natural and cultural significance of the site. These amenities and design features were developed as part of the Goodwood RMT Trail Plan planning process. Many of these feature areas are located on or near the proposed Trans Canada Trail route, and they have the potential to add value and interest to the route. Further details on these feature areas can be found in the Goodwood RMT Trail Plan, or within Section 5.4 of the Trans Canada Trail Connection – EDH to RNUP Final Report (see **Attachment 2**). More broadly along the proposed Trans Canada Trail route, wood benches are recommended at scenic locations within greenspace sections of the trail to improve visitor comfort and accessibility.

Accessibility

TRCA is committed to improving accessibility for persons with disabilities, and efforts will be made to improve accessibility along the proposed Trans Canada Trail route. TRCA will undertake accessibility audits of all the relevant trails to be included on the signs at primary and secondary trail heads, to ensure that these signs will fulfill the relevant accessibility standards for recreational trails set out by Regulation 191/11: Integrated Accessibility Standards, under the Accessibility for Ontarians with Disabilities Act (AODA) (2005). This information will be posted online on the TRCA website and in other communications materials, along with trail mapping, permitted uses, etiquette, and amenities locations.

Looking beyond these accessibility standards, the Goodwood RMT Trail Plan recommends design enhancements to the Goodwood RMT trail system to improve accessibility for persons with visual impairments. These design enhancements are either along or connected to the proposed Trans Canada Trail route. A rope line feature is proposed along one side of the trail from Concession 3 to the West Duffins Creek, to guide users along the path. At the Concession 3 entrance, an interpretive 3D topographical model is proposed so that visitors can feel the undulating moraine landscape of the site. Further details on these features are described within Section 5.5 of the Trans Canada Trail Connection – EDH to RNUP Final Report (see **Attachment 2**) and within Section 5.7 of the Goodwood RMT Trail Plan. While the proposed Trans Canada Trail route will be designated on existing trails and therefore many of the AODA standards do not apply, these enhanced accessibility features will help to fulfill the spirit of the AODA, support TRCA's commitment to improving accessibility for persons with disabilities, and provide engaging trail experiences to a wider variety of abilities.

Trail Management

The existing trails intended for co-designation as Trans Canada Trail are currently part of the Oak Ridges Trail system and are managed and maintained by the Oak Ridges Trail Association (ORTA). ORTA is a volunteer group with a mandate to build and maintain a public hiking trail on the Oak Ridges Moraine, in greenspace wherever possible. ORTA conducts regular outreach and programming to promote and support their trail network through their various local chapters, and currently have a membership of over 700 volunteers. ORTA have formally expressed their support for the proposed Trans Canada Trail connection, and their organization will continue to operate these trails once the route is implemented. The Oak Ridges Trail network crosses numerous individual properties owned both publicly and privately, and ORTA obtains legal permission to manage and maintain the trail from individual landowners. TRCA will continue to support ORTA to secure the necessary formal property agreements to implement the proposed Trans Canada Trail route and maintain the existing designated trails under management agreement.

On TRCA properties along the proposed Trans Canada Trail route, the Oak Ridges Trail System is managed and maintained by ORTA, through an agreement with TRCA. Additionally, a trail maintenance agreement was signed between TRCA and Green Durham Association (GDA) in May 2018. GDA is a local volunteer organization based in Uxbridge dedicated to protecting, preserving, and enhancing greenspace within the Regional Municipality of Durham. The agreement allows GDA volunteers to undertake trail maintenance activities along certain authorized trails on TRCA properties in the Regional Municipality of Durham until May 2019. These trails include the proposed Trans Canada Trail within Walker Woods, North Walker Woods, Secord Forest and Wildlife Area, and the Goodwood RMT.

RATIONALE

Designating a section of the Oak Ridges Trail as part of the Trans Canada Trail network will capitalize on the new opportunity to connect the Trans Canada Trail to the northernmost reach of RNUP. By designating the trail along existing Oak Ridges Trail infrastructure, this alignment minimizes new environmental disturbance and keeps costs to a minimum. Local volunteer organizations such as ORTA and GDA have a long history of successful trail advocacy within the Regional Municipality of Durham, including securing funding for the continued expansion and improvement of these trails. TRCA enjoys longstanding partnerships with these local organizations, as well as with Parks Canada, LSRCA, and TCTO. TRCA can harness this robust partnership capacity to actively seek funding for the implementation of the proposed Trans Canada Trail route. The Trans Canada Trail Connection - EDH to RNUP opens up new trail and visitor experiences within the Township of Uxbridge, along the Trans Canada Trail, and within RNUP. Providing a direct Trans Canada Trail connection to the northern end of RNUP will encourage users to experience the recreational, educational, and natural value of the RNUP, as well as TRCA and other publicly-owned greenspaces which frame the route. This connection will create mutually supportive recreational linkages between RNUP and another one of Canada's vital outdoor assets: the longest recreational trail in the world, the Trans Canada Trail.

The Trans Canada Trail Connection – EDH to RNUP supports *Building the Living City*, TRCA's 2013-2022 Strategic Plan, including the Five-Year Update to this Plan. This trail route allows TRCA to **rethink greenspace to maximize its value** (Strategy #3), showcasing the beauty and recreational opportunities presented by TRCA's greenspaces within the Township of Uxbridge while concurrently fulfilling an important national trail gap. Also, by adopting a trail management approach that emphasizes local trail maintenance and stewardship by community organizations in Durham Region, the Trans Canada Trail Connection – EDH to RNUP **fosters sustainable citizenship** (Strategy #5). By establishing a route that crosses through a variety of landscapes and incorporates interpretive elements that speak to the natural and cultural heritage of the area, this newly co-designated trail can help **tell the story of the Toronto region** (Strategy #6).

TRCA Trail Strategy

The TRCA Trail Strategy provides a vision and direction for the planning, development, and management of a complete regional trail system across TRCA's jurisdiction. Within the Greater Toronto Region Trail Network, The Trans Canada Trail Connection – EDH to RNUP follows the existing Oak Ridges Trail and a completed part of the Rouge Gateway Trail. This proposed route connects two Destinations to each other, including the Forested Headwaters and RNUP.

The implementation of the Trans Canada Trail Connection – EDH to RNUP supports the implementation of the Trail Strategy, as this proposed route aligns with a number of Strategic Objectives, Initiatives, and Actions identified within the Trail Strategy Action Plan:

- “Plan, develop and maintain existing and proposed trails within TRCA-owned and regulated areas in a manner consistent with TRCA's *The Living City Policies*” (Action A of Initiative 5.1, Ongoing Priority)
- “Continue to pursue existing funding sources and explore future funding sources to establish and maintain sustained investment in the Greater Toronto Region Trail Network” (Action C of Initiative 8.1, Ongoing Priority)
- “Study and continue to implement sustainable trail planning, design, construction and management best practices” (Action C of Initiative 4.2, Short-Term Priority)
- “Support event programming, storytelling and educational opportunities to engage all communities in celebration of our rich Indigenous and settler history” (Action C of Initiative 5.3, Short-Term Priority) – these opportunities overlap with the Goodwood RMT Trail Plan

Item 8.3

- *“Partner with interested municipalities, communities, tourism agencies, private businesses and trail organizations to promote destinations. (Action A of Initiative 7.2, Short-Term Priority)”*
- *“Offer trail monitoring and maintenance programs to volunteers to grow our network of trail stewards” (Action B of Initiative 6.1, Medium-Term Priority)”*

FINANCIAL DETAILS

The Trans Canada Trail Connection – EDH to RNUP Final Report identifies a number of potential funding sources including grants, sponsorships, municipal partners, and partnerships with local trail volunteer organizations. Staff will actively work with TCT and TCTO, Parks Canada, LSRCA, individual landowners, and local trail organizations to pursue funding opportunities and prioritize implementation work for the proposed Trans Canada Trail route. The total cost to implement the Trans Canada Trail Connection – EDH to RNUP is estimated at \$1,777,000 over 9 years (adjusted for inflation from 2018 \$CAD cost estimates). Implementation costs located on TRCA lands total \$1,623,000 over 9 years (adjusted for inflation from 2018 \$CAD cost estimates). Please note that \$913,000 of this estimate overlaps with the implementation budget for the Goodwood RMT Trail Plan. As the management and operation of the proposed Trans Canada Trail route will be undertaken by local trail volunteer organizations (ORTA, GDA), TRCA is not anticipated to incur additional yearly operating costs as a result of the new trail route. A phased implementation budget has been developed for the plan and is included within **Attachment 2**. All cost estimates are preliminary and will be refined through the results of technical study, structural review of design components, and evaluation of financial capacity. The implementation costs are beyond the scope of the existing TRCA budgets dedicated to trails in this area. Therefore, new funding sources are required for the implementation of this project.

Funding to implement this proposed Trans Canada Trail Connection is not currently within the allocation for trails management within TRCA’s budget from the Region of Durham. This includes both the \$913,000 that overlaps with the Goodwood RMT Trail Plan, and the remaining \$864,000. Therefore, the funding to implement the proposed Trans Canada Trail Connection will be included on TRCA’s Durham corporate long list of unmet needs for the 2020 budget cycle. While broadly the implementation of the Trans Canada Trail Connection – EDH to RNUP is identified as an ongoing priority by the TRCA Trail Strategy, certain elements of the proposed Trans Canada Trail are associated with the Trail Strategy’s short-term priority actions and may be identified as focus areas to support implementation of the Trail Strategy. These priorities for implementation will also be influenced by emerging or incidental grants and partnership opportunities.

DETAILS OF WORK TO BE DONE

The successful implementation of the Trans Canada Trail Connection – EDH to RNUP will require the efforts of TRCA and its partners.

Upon approval of this report, TRCA will take the following actions:

- Circulate the Trans Canada Trail Connection – EDH to RNUP Final Report with TRCA approval to LSRCA, who will bring the Final Report to their Board of Directors and the Regional Municipality of Durham for endorsement (Fall 2018);
- Circulate the Trans Canada Trail Connection – EDH to RNUP Final Report with TRCA, LSRCA and Regional Municipality of Durham endorsements to TCT and TCTO for approval (Fall 2018);
- Circulate the Trans Canada Trail Connection – EDH to RNUP Final Report to the Township of Uxbridge, Parks Canada, ORTA, GDA and the TRCA Regional Watershed Alliance for information (Fall 2018);

Item 8.3

- Initiate necessary property agreements and/or acquisitions to ensure a safe trail connection to Webb Road (Winter 2019);
- Work with Parks Canada to further the implementation of the Webb Road pedestrian crossing (ongoing 2019);
- Support ORTA in formalizing land permissions for the Oak Ridges Trail with individual landowners along the proposed Trans Canada Trail route (Township of Uxbridge, LSRCA, Regional Municipality of Durham) (Winter 2019);
- Continue to work with project partners to actively seek funding necessary to implement the trail plan as described in the phased implementation budget (see **Attachment 2**) (ongoing 2019).

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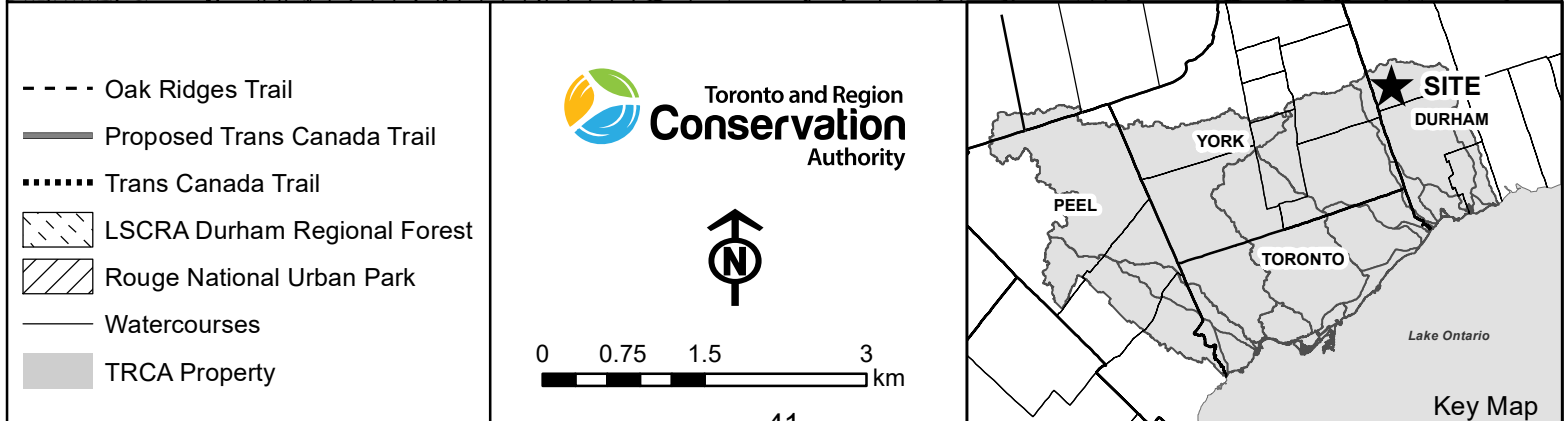
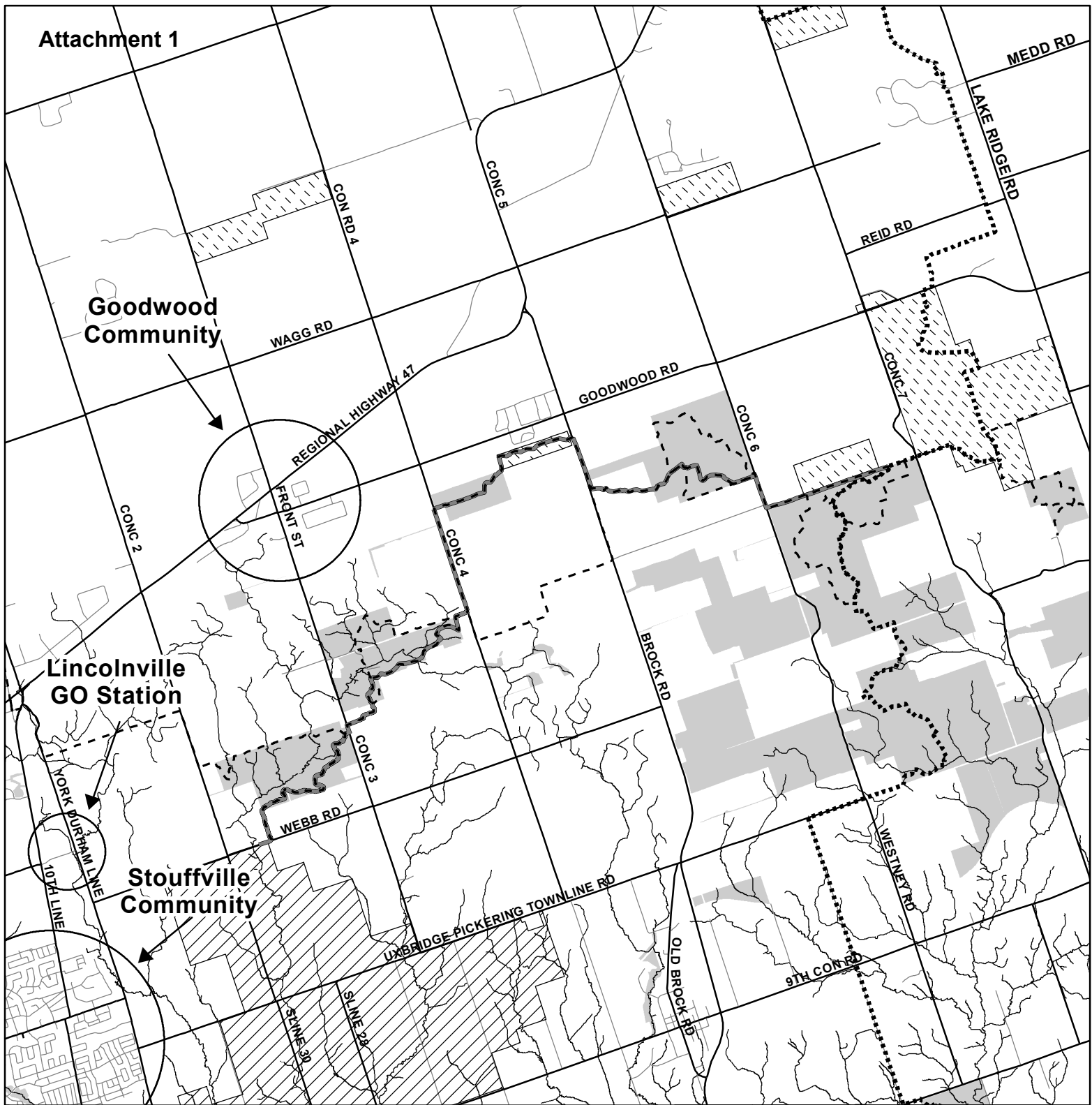
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Date: November 30, 2018

Attachments: 2

Attachment 2 - [Trans Canada Trail Connection East Duffins Headwaters to Rouge National Urban Park Final Report](#)

Attachment 1



Section I – Items for Board of Directors Action

TO: Chair and Members of the Board of Directors
Meeting #9/18, Friday, November 30, 2018

FROM: Nick Saccone, Senior Director, Restoration and Infrastructure

RE: **ROUGE RIVER WATERSHED HYDROLOGY STUDY**

KEY ISSUE

Approval to adopt the Rouge River Watershed Hydrology Study as prepared by Toronto Region Conservation Authority Engineering Services staff and Wood Environment & Infrastructure Solutions.

RECOMMENDATION

THAT the Rouge River Watershed Hydrology Study (September 2018) prepared by Toronto and Region Conservation Authority (TRCA) staff and Wood Environment & Infrastructure Solutions be approved;

THAT staff be directed to disseminate the final watershed results and documentation to municipal staff and the development industry through an update to TRCA's Stormwater Criteria;

THAT staff be directed to apply the results from the Rouge River Watershed Hydrology Study to update floodline mapping for regulatory purposes;

AND FURTHER THAT staff be directed to use the results of the Rouge River Watershed Hydrology Study as a foundation for conducting technical hydrologic assessments of the watershed as part of future watershed/subwatershed plans and studies.

BACKGROUND

The hydrologic model for the Rouge River watershed was previously updated in 2001 by Marshall Macklin Monaghan using the Visual OTTHYMO computer model. Since the 2001 hydrology update, significant changes have occurred within the watershed, including Official Plan (OP) updates by municipalities within the watershed showing key new development communities in Richmond Hill, Markham and Whitchurch-Stouffville. In addition, new hydrologic information has been collected that has been incorporated into this model, including additional flow and rainfall data throughout the Rouge River watershed. As such, the hydrology model has been updated to reflect the proposed land use changes and improved information.

RATIONALE

As over 17 years have passed since the previous update to the Rouge River watershed hydrology model, an updated hydrology model is needed to reflect new meteorological information, new development and land use in the watershed, and updated Official Plans in order to guide development. The results of the updated Rouge River watershed hydrology model will be used to update floodline mapping and flood remedial plans. In addition, flood control criteria were developed as part of the Rouge River Watershed Hydrology Study and will be incorporated into TRCA and municipal stormwater management criteria for new development. These flood control criteria are important in achieving TRCA's goal of mitigating and reducing the risk to life and property caused by flooding.

Finally, this report represents the first step in assisting our municipal partners and stakeholders through their planning process in response to the 2017 Provincial Plans, including the Growth Plan, Greenbelt Plan, and Oak Ridges Moraine Conservation Plan. The Rouge River Watershed Hydrology Study and subsequent floodplain mapping updates will provide a foundation for future watershed plans and studies that support our partner municipalities with their ongoing watershed planning and Official Plan conformity process, including the Municipal Comprehensive Reviews (MCR).

MODEL DEVELOPMENT

The Rouge River Watershed Hydrology Study Update was awarded to Wood Environment & Infrastructure Solutions (Wood) to provide consulting services. Based on the needs of the watershed model and the layout of the Rouge River Watershed, TRCA and Wood selected the PCSWMM computer model for use in this study. PCSWMM, or Personal Computer Stormwater Management Model, is a computer model used to calculate the hydrologic characteristics of a watershed or subwatersheds, including peak flow rates and runoff volume. The PCSWMM model represents state-of-the-art computer modelling for hydrologic assessments, capable of long-term continuous simulation for erosion assessment or instantaneous design-storm assessments for specific event calculation. Further, the foundation of the computer model, EPA SWMM, is fully compatible with GIS software and is fully supported by the US EPA, allowing for a program that is rigorously and robustly supported. Finally, the model is also supported by the MNRF for establishing peak flow rates for Regulatory Floodline Mapping.

Over 840 catchment areas were delineated based on an average catchment size of approximately 40 ha in an effort to more closely reflect municipal Official Plans, with boundaries confirmed by TRCA GIS staff. Once the catchment areas were delineated, the existing condition parameters, including land use and soils information, were provided by TRCA GIS staff, with the land use data based on 2009 high resolution aerial photographs. A total of 1336 hydraulic elements have been incorporated into the PCSWMM model to represent the open watercourses, and 293 hydraulic elements have been incorporated into the model to represent the hydraulic structures. Finally, stormwater management facilities were incorporated based on catchment area.

The existing conditions model was then calibrated to match as closely as possible the TRCA instream flow information for actual storm events. The calibration process assists in producing a reliable and representative hydrologic model for a watershed. The process includes adjusting specific parameters within acceptable tolerances in order for the model to match the existing instream responses as best as possible. Calibration was conducted in order to:

- Match the volume of runoff generated by the land;
- Match the timing of the peak runoff within the system; and
- Match the peak flows within the watercourses.

After the calibration was conducted based on a selection of actual storm events, the calibrated model was validated by comparing the results against a different set of actual storm events, confirming that the results were within an acceptable range.

With the model calibrated and validated, peak flow values were generated to represent current development conditions for the two-year through 100-year design storms, the 350-year design storm, and Regional Storm event, based on Hurricane Hazel. Future land use peak flows were then generated, with the future land use information gathered from municipal Official Plans. Land use planning information was also reviewed by TRCA senior planning staff, and was confirmed to be accurate to the Official Plan information and updates.

Item 8.4

Finally, the model was peer reviewed by WSP and RBWater, companies with extensive water resources engineering history in the fields of hydrology, hydraulics and stormwater management. Comments provided by the peer reviewer were addressed, and WSP and RBWater signed off on the updated model.

RESULTS

The Rouge River Watershed Hydrology Study Update ultimately produces peak flow rates for the 2-year through 100-year design storms and the Regional Storm event for existing conditions of the watershed and future build-out conditions as outlined in municipal Official Plans. **Table 1** in **Attachment 1** summarizes the percent difference in peak flow rates associated with the 100-year design storm from the PCSWMM model compared to the 2001 Rouge River Watershed Hydrology Update at major hydrologic reference points. The majority of the flow node locations are showing consistently higher values for the 2018 study during Official Plan build out compared to the 2001 study. This is not unexpected; as urban expansion associated with updated Official Plans naturally leads to increases in peak flows within the respective subwatersheds. Further, this suggests that stormwater management controls are required in order to effectively control the impacts of development on peak flow rates up to and including the 100-year storm events. As part of this study, flood control criteria were developed and applied to the model to reduce the impacts of the development. **Table 2** in **Attachment 1** demonstrates the effectiveness of the proposed stormwater management criteria for peak flow rates associated with the 100-year design storm at specific locations during future conditions. The results show that, on average, the post development peak flows associated with the 100-year design storm are controlled to approximately 11 % below the existing peak flow rates. This result suggests that the established flood control criteria are effective in reducing flood risk as a result of future development.

The updated Rouge River Watershed Hydrology model also resulted in changes to peak flows associated with the Regional Storm. As shown in **Table 3** in **Attachment 1**, portions of the Little Rouge and Upper Rouge subwatersheds are showing decreases in peak flow rates, as advancements in modeling data collected, such as soils information, instream flow data and rainfall data, have allowed TRCA to better understand the response of the watershed to rain events. However, peak flow rates associated with the Regional Storm at the mouth of the Rouge River (Rouge Marshes @ Kingston Rd) have increased by approximately 15% due to the development occurring in upstream section of the watershed. In addition, Regional Storm peak flow rates at flow node locations within subwatersheds where intensive urbanization has occurred or is proposed to occur, including sections of Eckardt Creek, Upper Rouge and Robinson Creek are showing an increase of approximately 16.3%, 13.3% and 31.4 %, respectively, compared to the 2001 study. In many of these areas, updates to the municipal Official Plans result in increased developable land, and therefore have an impact on peak flow rates. In order to reduce the risk of flooding impacts during a Regional Storm event, the study team prepared stormwater management targets for the Regional Storm. As shown in **Table 4** in **Attachment 1**, the proposed stormwater management targets for the Regional Storm will reduce peak flow rates at most every location, resulting in an average decrease of approximately 1.2% in the peak flow rates associated with the Regional Storm. Moving forward, TRCA will use these targets to work with our Municipal partners and the development industry on developing solutions using a risk based approach that could include a number of options, including but not limited to:

- Applying the targets developed in storage facilities;
- Further investigating downstream impacts to determine appropriate stormwater management measures;
- Investigating off-site remedial works to mitigate flood risk, such as crossing infrastructure improvements; or
- A combination of the above.

Item 8.4

It should be noted that the reduction in peak flow rates and associated risk reduction associated with Regional Storm controls will not be used in assessing the Regulatory floodlines in the Rouge River Watershed as mandated by the MNRF. Therefore, the values provided in **Table 3** of **Attachment 1** will continue to be used for establishing Regulatory floodlines.

The information provided in Tables 1, 2, 3, and 4 also show that several key areas within the watershed, including proposed new development lands, are showing significant changes in peak flow rates, and therefore may result in changes to the floodplain. In order to accurately reflect the changes determined as part of this hydrology study, TRCA staff will need to conduct floodplain mapping updates to large areas of the Rouge River watershed. This will take place base in 2019 utilizing funding from the National Disaster Mitigation Program (NDMP).

FINANCIAL DETAILS

Financial contributions for the Rouge River Hydrology Study were provided through the York Region Stormwater Management Fund account 107-15 at a cost of approximately \$214,250 which included both staffing and consultant expenditures.

RESOLUTIONS

TRCA staff will adopt the Rouge River Watershed Hydrology Study, using this model for all future studies and hydrologic analysis, including updating floodline mapping, flood remedial plans, stormwater management criteria, and watershed studies. In addition, TRCA staff will begin to disseminate the final modeling results and documentation to municipal staff and the development industry through an update to TRCA's Stormwater Criteria through the winter of 2018 and into the spring of 2019. Further, TRCA staff will use the updated peak flow rates calculated as part of the update for floodline mapping exercises moving forward, and will provide updated floodline mapping for the entire Rouge River Watershed in 2019 based on the NDMP funding. Further, TRCA staff will use the flood control criteria to inform our development planning, environmental assessment review and regulatory responsibilities for development within the Rouge River Watershed. Finally, the Rouge River Watershed Hydrology Study will provide the hydrologic foundation for future watershed plans and studies and will be made available to our partner municipalities to assist with conforming to the 2017 Provincial Plans.

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Date: November 30, 2018

Attachments: 1

Attachment 1

Table 1– Summary of Rouge River Peak Flow Rates at Specific Subwatersheds – 100-year Design Storm

Flow Node Location	2001 Future OP Peak Flows (cms)	2018 Current Peak Flows (cms)	2018 Future OP Peak Flows (cms)	% Change, 2001 to 2018 Future OPs
<i>Little Rouge River Subwatershed</i>				
Little Rouge @ Major	85.4	55.8	62.4	-27%
Little Rouge @ HWY 7	57.9	53.5	59.0	2%
Little Rouge @ Kingston Rd	57.7	70.2	86.5	50%
<i>Upper Rouge River Subwatershed</i>				
Upper Rouge River Sub @ Major Mackenzie	22.9	77.9	101.1	341%
<i>Berczy Creek Subwatershed</i>				
@ Woodbine Ave	46.6	44.4	50.2	8%
<i>Bruce Creek Subwatershed</i>				
@ 16th Ave close to Kennedy Rd	47.0	34.0	34.5	-27%
<i>Beaver Creek Subwatershed</i>				
@ N of 407	38.2	69.3	74.4	95%
<i>Eckardt Creek Subwatershed</i>				
Eckardt Creek Sub @ Main Street Unionville	75.1	100.6	106.2	41%
Eckardt Creek Sub @ Kennedy Rd	162.8	151.6	162.3	0%
Eckardt Creek Sub @ HWY 7	165.4	149.7	160.1	-3%
<i>Rouge River Subwatershed</i>				
Rouge River Sub @ N of 407	162.4	152.4	163.9	1%
Rouge River Sub @ Steeles Ave E	160.9	155.1	167.3	4%
Rouge River Sub @ Kingston Rd	151.6	158.9	172.0	13%
<i>Rouge Marshes</i>				
Rouge Marshes @ Kingston Rd	209.3	209.0	226.1	8%

Item 8.4

Table 2 – Percent Difference in Future Conditions Uncontrolled and Controlled Peak Flows at Specific Locations – 100-year Design Storm

Flow Node Location	2018 Future OP Uncontrolled Peak Flows (cms)	2018 Future OP Controlled Peak Flows (cms) based on Flood Control Criteria	% Change, Controlled to Uncontrolled 2018 Future OP Peak Flows
<i>Little Rouge River Subwatershed</i>			
Little Rouge @ Major	62.4	54.8	-12%
Little Rouge @ HWY 7	59.0	52.5	-11%
Little Rouge @ Kingston Rd	86.5	70.5	-18%
<i>Upper Rouge River Subwatershed</i>			
Upper Rouge River Sub @ Major Mackenzie	101.1	96.3	-5%
<i>Berczy Creek Subwatershed</i>			
@ Woodbine Ave	50.2	36.7	-27%
<i>Bruce Creek Subwatershed</i>			
@ 16th Ave close to Kennedy Rd	34.5	34.5	0%
<i>Beaver Creek Subwatershed</i>			
@ N of 407	74.4	67.6	-9%
<i>Eckardt Creek Subwatershed</i>			
Eckardt Creek Sub @ Main Street Unionville	106.2	100.2	-6%
Eckardt Creek Sub @ Kennedy Rd	162.3	146.7	-10%
Eckardt Creek Sub @ HWY 7	160.1	143.9	-10%
<i>Rouge River Subwatershed</i>			
Rouge River Sub @ N of 407	163.9	146.6	-11%
Rouge River Sub @ Steeles Ave E	167.3	149.1	-11%
Rouge River Sub @ Kingston Rd	172.0	153.3	-11%
<i>Rouge Marshes</i>			
Rouge Marshes @ Kingston Rd	226.1	203.2	-10%

Item 8.4

Table 3 – Summary of Rouge River Peak Flow Rates at Specific Subwatersheds – Regional Storm

Flow Node Location	2001 Future OP Peak Flows (cms)	2018 Current Peak Flows (cms)	2018 Future OP Peak Flows (cms)	% Change, 2001 to 2018 Future OPs
<i>Little Rouge River Subwatershed</i>				
Little Rouge Subwatershed @ Major Mackenzie Dr	388.7	214.8	224.9	-42.1%
Little Rouge @ HWY 7	291.3	239.1	247.7	-15.0%
Little Rouge @ Kingston Rd	262.0	283.7	281.1	7.3%
<i>Upper Rouge River Subwatershed</i>				
Upper Rouge River Sub @ Major Mackenzie Dr	229.3	252.6	259.7	13.3%
<i>Berczy Creek Subwatershed</i>				
@ Woodbine Ave	176.7	153.3	177.9	0.7%
<i>Bruce Creek Subwatershed</i>				
@ 16th Ave close to Kennedy Rd	201.6	145.6	143.8	-28.7%
<i>Beaver Creek Subwatershed</i>				
@ N of 407	106.0	107.8	108.3	2.2%
<i>Eckardt Creek Subwatershed</i>				
Eckardt Creek Sub @ Main Street Unionville	266.2	309.2	309.5	16.3%
Eckardt Creek Sub @ Kennedy Rd	643.0	565.8	564.7	-12.2%
Eckardt Creek Sub @ HWY 7	658.4	659.1	566.1	-14.0%
<i>Rouge River Subwatershed</i>				
Rouge River Sub @ N of 407	645.2	618.6	623.5	-3.4%
Rouge River Sub @ Steeles Ave E	634.9	641.1	654.3	3.1%
Rouge River Sub @ Kingston Rd	517.5	670.7	680.1	31.4%
<i>Rouge Marshes</i>				
Rouge Marshes @ Kingston Rd	761.3	871.5	878.4	15.4%

Item 8.4

Table 4 – Percent Difference in Future Conditions Uncontrolled and Controlled Peak Flows at Specific Locations – Regional Storm

Flow Node Location	2018 Current Peak Flows (cms)	2018 Future OP Uncontrolled Peak Flows (cms)	2018 Future OP Controlled Peak Flows (cms)	% Change, 2018 Future controlled to 2018 Future uncontrolled
<i>Little Rouge River Subwatershed</i>				
Little Rouge Subwatershed @ Major Mackenzie Dr	214.8	224.9	214.8↓	-4.5%
Little Rouge @ HWY 7	239.1	247.7	239.1↓	-3.5%
Little Rouge @ Kingston Rd	283.7	281.1	283.6↓	0.9%
<i>Upper Rouge River Subwatershed</i>				
Upper Rouge River Sub @ Major Mackenzie Dr	252.6	259.7	250.9↓	-3.4%
<i>Berczy Creek Subwatershed</i>				
Upper Rouge River Sub @ 16th Ave close to Warden Ave	153.3	177.9	153.2↓	-13.9%
<i>Bruce Creek Subwatershed</i>				
Upper Rouge River Sub @ 16th Ave close to Kennedy Rd	145.6	143.8	145.6	1.3%
<i>Beaver Creek Subwatershed</i>				
Upper Rouge River Sub @ N of 407	107.8	108.3	107.8	-0.5%
<i>Eckardt Creek Subwatershed</i>				
Eckardt Creek Sub @ Main Street Unionville	309.2	309.5	308.9↓	-0.2%
Eckardt Creek Sub @ Kennedy Rd	565.8	564.7	563.9↓	-0.1%
Eckardt Creek Sub @ HWY 7	659.1	566.1	636.2↓	12.4%
<i>Rouge River Subwatershed</i>				
Rouge River Sub @ N of 407	618.6	623.5	617.7↓	-0.9%
Rouge River Sub @ Steeles Ave E	641.1	654.3	640.5↓	-2.1%
Rouge River Sub @ Kingston Rd	670.7	680.1	670.2↓	-1.5%
<i>Rouge Marshes</i>				
Rouge Marshes @ Kingston Rd	871.5	878.4	870.9↓	-0.9%

Section III – Items for the Information of the Board

TO: Chair and Members of the Board of Directors
Meeting #9/18, Friday, November 30, 2018

FROM: Chandra Sharma, Director, Watershed Strategies

RE: **TRCA RESPONSE TO ONTARIO'S CLIMATE CHANGE PLAN CONSULTATION**

KEY ISSUE

To provide TRCA Board of Directors a summary of staff comments on Ontario's Climate Change Plan Consultation, as released by the Province of Ontario and due on November 16, 2018.

RECOMMENDATION

IT IS RECOMMENDED THAT the staff report, highlighting TRCA staff comments on Ontario's Made-in-Ontario Climate Change Plan, be received.

BACKGROUND

On October 24, 2018, the Province of Ontario [released a consultation process](#) to obtain comments in advance of their release of a climate change plan later this fall. The plan proposed by the Province of Ontario is expected to include several areas of focus, specifically:

1. Creating an understanding of the effects that climate change is having on our households, businesses, communities and public infrastructure to better prepare and strengthen our resiliency;
2. Ensuring polluters are held accountable and creating dedicated measures that will efficiently reduce greenhouse gas emissions;
3. Improving Ontario's business climate by unlocking the power of the private sector to finance and drive innovative climate solutions. This will include an emissions-reduction fund to invest in technology-based and other solutions to reduce emissions in Ontario.
4. Finding a balanced solution that puts people first, makes life more affordable for families, and takes Ontario's role in fighting climate change seriously.

TRCA staff have compiled and provided comments in response to this consultation process prior to the closing date of November 16, 2018.

SUMMARY OF TRCA COMMENTS

1. **Creating an Understanding of Climate Change Effects on Households, Business, Communities and Public Infrastructure to Strengthen Resiliency**

Climate Information Translation Service is needed - While more climate information is needed in some areas, we do have a significant amount of historical data and future climate projections already available through a range of government and academic sources to help inform current decision-making. However, there is insufficient capacity, guidance and support on how to best use climate data to make evidence-based decisions in the public and private sectors. In order to help households, businesses, and communities better prepare for future climate and strengthen resilience, there is a particular need to build knowledge and capacity of how to use climate data in the broader public sector (eg. municipalities, CAs, transit agencies, energy utilities Infrastructure Ontario) in asset management and capital planning for critical infrastructure systems (water,

Item 9.1

energy, transportation, etc.), as well as in land use and watershed planning. The TRCA, acting as host of the Ontario Climate Consortium, is playing such a role with public sector partners connecting them with leading climate research expertise in universities across the province to transform climate data into formats that support decision-making, such as vulnerability and risk assessments. We would be pleased to work with your ministry team to highlight this collaborative work and to further advance this work as part of this Plan.

Need for Investment in Local Flood Management and Flood Mitigation- TRCA, working with our municipal partners also plays a critical role in flood plain mapping and management. There is a strong economic rationale for increased public investment into Conservation Authority flood management programs, as was articulated in [Conservation Ontario's 2013 business case](#) which identified updated floodplain mapping, investments in under resourced flood management operations and aging infrastructure as priority areas for funding. TRCA has been able to update its flood modeling and mapping capabilities using state of the art techniques capable of assessing the impacts of climate change, thanks to collaborative support from the Federal and Provincial governments through the National Disaster Mitigation Program (NDMP). Given the success of the NDMP program to date, TRCA highly recommends that the Government of Ontario work collaboratively with the Federal Government to renew it beyond intake 5. Furthermore, as part of your Plan, additional guidance from the Province through an update to the MNR *Technical Guide, River and Stream Systems: Flooding Hazard Limit* could include further guidance and a consistent approach to incorporating measures to address the impacts of climate change.

Need for more refined scale of local watershed baseline data via expansion of local monitoring- TRCA supports efforts to develop a better understanding of the impacts of climate change, particularly as it relates to flooding and drought which are two of the most significant impacts on ecosystems, households, businesses, communities and public infrastructure in our jurisdiction. To achieve a better understanding of impacts we suggest that the province as part of the Plan, support the expansion of local monitoring and baseline data capacity related to both precipitation and stream gauging stations to build the evidence base to support adaptation investments.

Resilient Infrastructure Capital Funding and Opportunities for continued Fed/Prov cooperation – TRCA is undertaking heavy infrastructure resiliency work including the construction of flood protection landforms, coastal shorelines, and restored river corridors. These projects often facilitate redevelopments and help make our communities more resilient to the impacts of climate change. We would like to discuss how to fund many EA approved projects where detailed design and construction dollars from senior levels of government could ensure more resilient communities as part of this Plan. In many cases the opportunity for TRCA to lever private investment and industry partnerships is possible if government funding or land is made available (e.g., Black Creek Renewal in Vaughan, Brampton Riverwalk, etc.). In addition to the NDMP projects, the TRCA would like to emphasize the importance of continuing efforts to leverage the Federal Government's \$2 billion Disaster Mitigation and Adaptation Fund (DMAF) which is aimed at strengthening the resilience of Canadian communities through investments in large-scale infrastructure projects, including natural/green infrastructure projects, enabling them to better manage the risk associated with current and future natural hazards, such as floods, wildfires and droughts. The TRCA would encourage the Government of Ontario to continue to work with the Federal Government to ensure the eligibility of Ontario-based applicants for DMAF funding and to use TRCA as a vehicle to deliver such infrastructure projects for the Province and municipal partners as part of this Plan.

Source Water protection is a priority - Conservation authorities have been integral partners in the implementation of the Drinking Water Source Protection Program and the *Clean Water Act*,

Item 9.1

2006, the legislation that enables the protection of sources of drinking water. The quality and amount of drinking water available to municipal water supplies are threatened by warming temperatures, drought, stormwater runoff, and more frequent flooding. Relying just on water treatment facilities to ensure safe drinking water is costly. We recommend that you continue to support efforts to protect water sources and prevent overuse and contamination as a first step in partnership with water treatment approaches.

Public engagement and awareness building - Public engagement is needed to help individuals, businesses and other organizations understand how climate change will impact them, and how they can become more prepared. Engagement tactics will need to take many forms to reach key audiences, including via social media, and the use of infographics that make complicated information easier to understand. TRCA is a leader in community engagement in the GTA, and has made significant advances to incorporate information about projected climate impacts into its programming. With over 3.5 million people living within our watersheds, we would welcome opportunities to collaborate with the Province to increase awareness of climate risk, and mitigation opportunities through proactive investments in engagement via TRCA as part of your Plan in support of provincial climate change plan measures.

2. Ensuring Polluters are Held Accountable and Creating Measures to Reduce Greenhouse Gas Emissions

Ecosystem-based carbon sequestration - In addition to GHG emissions reductions, the Government of Ontario could also explore ways to encourage increased carbon sequestration in Ontario forests, wetlands and other natural systems. Land based carbon sequestration is an approach that can complement GHG emissions reduction approaches, while also providing land conservation benefits and increased access to nature for residents of Ontario. As one of the largest landholders in the GTA (15,000 hectares), the TRCA and other CA's are well placed to support the province with a comprehensive approach and a program to increase carbon sequestration in ecosystems, across the province. We would encourage the province to support efforts to better understand the carbon sequestration potential of Ontario's natural systems, particularly those in highly urbanized areas where conservation and enhancement can provide a multitude of co-benefits for public health. We are cautiously supportive of efforts to develop carbon offset market mechanisms to incentivize ecosystem based carbon sequestration, and would welcome the opportunity to work with MECP staff on program design considerations to ensure high quality offsets are generated as part of your Plan.

Enhanced data collection and reporting measures, and engagement to identify reduction opportunities - Collecting good data on GHG emissions across all sectors is a necessary first step towards ensuring polluters are held accountable. There are already mechanisms in place to collect GHG data from large emitters, as well as from broader public sector organizations. Furthermore, regulations for large buildings (>50,000 sq ft) are coming into effect over the coming years. We recommend that these steps be maintained as part of your Plan. Complementing data collection and reporting, there is a need for engagement efforts to help building and facility managers understand their energy and GHG footprint, as well as opportunities to make reductions through changes to building operations as well as capital upgrades. TRCA runs a suite of programs under its Partners in Project Green (PPG), and Community Transformation Program that do just that across a wide range of sectors, including industry, hospitals, municipal buildings, and schools. We would welcome the opportunity to share with the Ministry our track-record of success in this area to demonstrate the potential of scaling up training and education in the building sector as part of the development and implementation of your Plan.

3. Improving Ontario's Business Climate by Unlocking Private Sector Finance to Drive Innovative Climate Solutions

Many proven technologies exist today that can be deployed to reduce GHG emissions, however a wide range of barriers impede widespread adoption and scaling. Through partnerships and collaboration of private sector organizations to share knowledge, resources, best practices, and work on collective impact projects, many of these barriers can be overcome. TRCA is actively involved in efforts to raise awareness of new technologies and to promote adoption. For example, TRCA's Partners in Project Green (PPG) program has established close relationships with IC&I sector organizations and is actively working with them to reduce GHG emissions. In addition, our Sustainable Technology Evaluation Program is working with businesses to identify and test the best available technologies for getting us to our climate goals. Through this research and industry training we are helping our communities select and install the right technologies for the job. We would welcome the opportunity to expand and highlight this work as part of your Plan.

From an adaptation investment perspective, better information on the risk/return ratios is needed. For example, climate scenario analysis and vulnerability assessments can help inform return-on-investment calculations for adaptation investment decisions in critical infrastructure sectors. This requires best-in-class climate information, and the expertise to translate that into cost benefit tools. TRCA is developing this expertise, in collaboration with our Ontario Climate Consortium partners, and is eager to work with our municipal and provincial partners to mainstream this practice into asset management and capital planning across the public sector. Support for this effort via inclusion of similar direction in your Plan would help accelerate better decision making.

4. Finding a Balanced Solution to put People First, while making Life Affordable and taking Ontario's Role in Fighting Climate Change Seriously.

Conservation First - Conservation (e.g. energy and water consumption) is the most cost-effective way to drive emissions reductions across key sectors while also making life more affordable for families by reducing utility bills. The narratives of conservation and environmental stewardship go hand-in-hand and, and can also help to drive investment and job creation in local communities such as contractors delivering home retrofits that reduce energy cost for households.

The TRCA has a range of programs that support conservation efforts across a range of sectors. For example, our Partners in Project Green (PPG) program is supporting resource conservation in the industrial commercial sectors, while our Sustainable Neighbourhoods program (SNAP) is working in mainly suburban residential neighbourhoods across the GTA to engage communities in conservation and stewardship efforts. Both of these programs are driving GHG emissions reductions, along with a range of other environmental priorities, as well as cost savings for households and businesses. These are proven successful models that could be scaled up across the province.

For the institutional sector (e.g. hospitals, schools and municipalities), TRCA has been working with the private sector to identify low capital ways to unlock significant savings in cost, energy and GHG emissions. Through our community transformation program with the Ontario school sector, we identified readily achievable savings of \$71 million in costs, 262,000MWhH in electricity, 140 million m³ in natural gas and total GHG emissions reduction potential of 213ktonnes. The Community Transformation Program is another model that could be scaled up across the province.

Item 9.1

Scaling-up EV deployment – Electric vehicles are another pathway to drastically reduce Ontario's GHG emissions while making life more affordable for families. EVs can rely on made-in-Ontario electricity to power them, and result in reduced annual fuel costs for the average consumer. When EVs are charged overnight, consumers are taking advantage of Ontario's surplus baseload electricity, and helping to create local jobs (win-win-win). TRCA is working with its municipal partners to develop local and regional strategies to scale-up EV adoption in the GTA. We are keen to share the results of these municipal strategies with the province, to seek support and enable scaling-up of successful approaches.

FINANCIAL DETAILS

Staff is engaged in this policy analysis work as per the normal course of their duties. No additional funding is proposed.

DETAILS OF WORK TO BE DONE

- TRCA staff to continue to stay engaged with the Province of Ontario as details and potential future engagements for their new climate change plan are released.

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