



Addendum A: Macleod Estate Trail Linkage

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A.1 INTRODUCTION & STUDY AREA

A.1.1 Introduction

Since the approval of the Oak Ridges Corridor Park (ORCP) Management Plan and the establishment of a trail system within the ORCP lands, urban development has increased substantially around the ORCP property. When the ORCP Management Plan was approved in 2006, the Macleod's Landing neighbourhood located at Jefferson Sideroad and Yonge Street was not fully established. This new neighbourhood has now grown to over 1000 homes, including the Macleod's Landing Public School. There is no trail linkage from this neighbourhood into the Oak Ridges Corridor Conservation Reserve (ORCCR) trail network¹. Local advocacy by residents of the Macleod's Landing neighbourhood has demonstrated the desire for a direct, safe trail connection from this relatively new neighbourhood to the trail network within the ORCCR.

To adapt the existing trail network to this newly identified community desire, TRCA undertook a public planning process from approximately October 2017 to June 2018 to assess the feasibility of a new trail connection from the Macleod's Landing neighbourhood to the existing ORCCR trail network. The new trail connection will be known for the purposes of this trail planning project as the "Macleod Estate Trail Linkage." The public planning process included the development of multiple trail alignment alternatives based on ecological and cultural constraints, gathering feedback on these alternatives, the determination of a preferred conceptual trail alignment, and the assessment of opportunities for trail amenities. The planning process included input from TRCA technical staff through a Technical Advisory Committee (TAC), the Town of Richmond Hill, key public interest groups through a Public Advisory Committee (PAC), and the general public.

From approximately July 2018 to March 2019, additional technical analysis, detailed planning and design, and focused stakeholder engagement was undertaken to work with local residents concerned with the preferred trail alignment resulting from the public planning process outlined above and evaluate an additional alternative trail option. This additional planning and design work involved the TAC, Town of Richmond Hill, PAC, and key Macleod's Landing neighbourhood residents.

This Addendum to the ORCP Management Plan reflects the results of both the public planning process undertaken from October 2017 to June 2018 and the additional focused planning work undertaken from July 2018 to March 2019. The Addendum describes the study area context and the existing trail system into which the future Macleod Estate Trail Linkage will integrate. It describes the project process that was undertaken, and engagement techniques that were employed to seek input into this process. The Addendum describes a design concept for the Macleod Estate Trail Linkage, including a conceptual alignment, general design standards, trail amenities, and opportunities for design interventions to enhance trail accessibility. Finally, recommendations for the management of the Macleod Estate Trail Linkage are included and a budget is

¹ It should be noted that a series of land use and land management changes have occurred since the approval of the ORCP Management Plan in 2006. The lands formerly known as the ORCP are now intended to be managed cohesively with approximately 175 hectares (ha) of TRCA-owned property to the immediate east of the lands formerly known as the ORCP. Both properties are now known collectively as the Oak Ridges Corridor Conservation Reserve. This Addendum recognizes and describes this new management context.

outlined. Guided by this Addendum, additional detailed design work will be undertaken for the Macleod Estate Trail Linkage that will address the additional technical details, engineering works, and siting of trail amenities needed to begin the construction of the trail.

A.1.2 Oak Ridges Corridor Conservation Reserve

Immediately adjacent to the 428 hectares that form the ORCP, TRCA owns approximately 175 hectares of greenspace lands east of Bayview Avenue. Referred to as the Oak Ridges Corridor Park East (ORCPE) property, these lands are dominated by natural cover and consist of many unique and sensitive natural features. A Management Plan was completed for the ORCPE in 2011 (Oak Ridges Corridor Park East Management Plan). The majority of the property within the ORCPE is owned by TRCA, with the exception of two parcels owned by the Province of Ontario (See Figure A1). The two parcels owned by the Province were addressed in the Management Plan developed for the ORCP in 2006; however, for the purposes of management zones, management recommendations and trail planning, they are now considered part of the ORCPE area.

It is the intent of TRCA and the Province that the main ORCP and the ORCPE lands be managed cohesively. Following the completion of the ORCPE Management Plan, the ORCP and the ORCPE were combined into ORCCR (See Figure A1). Restoration activities and trail development should consider the properties together as one area, and projects for the Reserve should be managed cohesively to allow TRCA to more effectively streamline work.

Together, the ORCCR properties form 603 hectares of prime Oak Ridges Moraine landscape on the natural boundary between the Humber River and Rouge River watersheds in the Town of Richmond Hill, Regional Municipality of York (see Figure A2). The ORCCR is located west of Leslie Street, south of Bethesda Sideroad, east of Bathurst Street, and north of Jefferson Sideroad and Stouffville Road.

The ORCCR is a rich natural area consisting of forest and successional forest areas, wetlands, waterbodies, meadows, agricultural fields, a golf course, approximately 17.1 km of popular recreational trails, and some notable cultural heritage features. The site contributes to a large forest complex, including the Jefferson Forest Area of Natural and Scientific Interest to the southeast. Bond Lake has been identified as an Area of Natural and Scientific Interest, and Bond Lake along with Philips Lake, Thompson Lake and other kettle waterbodies within the site form part of the provincially significant Philips-Bond-Thompson Wetland complex (See Figure A3). Bond Lake, Philips Lake and Jefferson Forest all support regionally- and locally-rare species. The site contributes a diversity of high quality and sensitive habitats to the ecosystem functions of the headwater region.

Urban development has increased substantially around the ORCCR in the past decade, and there are housing developments immediately adjacent to the boundary of the Reserve in multiple locations. The areas south of King Road, north of Jefferson Sideroad, and around Old Colony Road are especially developed. Richmond Hill's population continues to rise, and—pending development in the area surrounding the ORCCR along Leslie Street—will increase impact on the Reserve.

A.1.3 Study Area

The study area for the Macleod Estate Trail Linkage project is in the southwestern portion of the ORCCR, generally in the area surrounding Philips Lake. This area is within the ORCP property (See Figure A4). There are approximately 3.5 km of existing authorized trails in this area. Trail planning is focused within this area, though the surrounding context of this study area is examined as well to inform trail development and management decision-making.

A.1.4 Oak Ridges Corridor Park Management Plan

At TRCA Board Authority Meeting #8/06, on October 27, 2006, the ORCP Management Plan was approved through Resolution #A235/06:

“THAT the Oak Ridges Corridor Park Management Plan, prepared by AMEC Earth and Environmental dated August 2006, be approved;

THAT copies of the Oak Ridges Corridor Park Management Plan be sent to the members of the Oak Ridges Corridor Park Management Plan Advisory Committee with a request that the document be endorsed and they consider opportunities for providing multi-year funding to support the implementation of the plan, and operation of the park;

THAT staff assist with the establishment of an Oak Ridges Corridor Park Advisory Committee made up of interested citizens, interest groups and organizations, to help with the implementation of the management plan;

THAT the province be requested to approve the official name of the park as "Kettle Lakes Nature Reserve at Richmond Hill";

THAT approval be granted to enter into agreements with the Province of Ontario and the current Oak Ridges Corridor Park land owners to maintain and protect the completed trail on an interim basis and until the lands are conveyed to the Province of Ontario;

AND FURTHER THAT appropriate TRCA officials be authorized and directed to take such action as is necessary to implement the agreements including obtaining any necessary approvals and execution of documents.”

Section 6.0 of the ORCP Management Plan provides guidance for trail planning and development on the property. Regarding secondary trails, the Management Plan states:

“Secondary trails are proposed to link the neighbouring communities to the spine trail; the total length of proposed secondary trails is 2.8 km. People living adjacent to open space have a natural desire to access these areas. If formal access points are not provided, residents will make their own paths which can be much more detrimental to the sensitive environments than a formalized path in a pre-determined location.”

When the ORCP Management Plan was approved in 2006, the Macleod’s Landing neighbourhood near the Macleod Estate at Jefferson Sideroad and Yonge Street was not fully established. This new neighbourhood now contains approximately 1000 homes and the Macleod’s Landing Public School; however, there is no trail linkage from this area of the neighbourhood into the ORCCR trail network. The lack of a trail connection

creates the risk of informal trails, as the neighbourhood has expressed eagerness for an additional safe, direct trail linkage within the study area into the ORCCR. Existing informal trails from the Macleod's Landing neighbourhood have been inventoried within the study area (See Figure A5).

A.2 TRAIL PLANNING PROCESS

The planning process for the Macleod Estate Trail Linkage was undertaken from approximately October 2017 to June 2018, within an ecosystem framework and in consultation with TRCA staff, key public stakeholders, and the general public to ensure watershed health, public enjoyment and environmental sustainability. The project was managed under the broader umbrella of the "Oak Ridges Corridor Conservation Reserve Trail Planning Projects," which was concerned with both the Cycling on Secondary Trails project and the Macleod Estate Trail Linkage project².

A.2.1 Project Process

The public planning process was undertaken in three phases:

Phase 1: Initial Site Scoping and Evaluation

- Inventory ORCCR physical environment, natural environment, land use context in the study areas
- Inventory existing ORCCR trails in the study areas

Phase 2: Trail Planning

- Establish a TRCA staff Technical Advisory Committee (TAC), host meeting
- Establish a Public Advisory Committee (PAC), host meeting
- Initiate on-line engagement (TRCA YourSay Engagement Website)
- Develop and evaluate trail alignment alternatives for the Macleod Estate Trail Linkage, including trail connections to the ORCCR main spine trail and supporting trail amenities, such as parking, signage and resting areas
- Host a Public Engagement Session
- Consult on pedestrian and cycling trails with the Town of Richmond Hill Accessibility Advisory Committee
- Host meeting with the TAC and the PAC
- Develop management recommendations for the Macleod Estate Trail Linkage
- Drafting and finalization of the Addendum to the ORCP Management Plan

² The Cycling on Secondary Trails Project intends to evaluate and plan for changes to cycling uses within the ORCCR trail system, primarily focusing on mountain biking trails within the ORCPE property. While the Macleod Estate Trail Linkage Project and the Cycling on Secondary Trails Project were initiated simultaneously, the timeline for the Cycling on Secondary Trails project will extend further than the culmination of the Macleod Estate Trail Linkage Project. This longer timeline is due to the need for additional fieldwork and focused discussion with key interest groups. A further Addendum to the Oak Ridges Corridor Park Management Plan will be prepared at the completion of the Cycling on Secondary Trails Project.

Phase 3: Trail Plan Endorsement in Principle

- Bring the Addendum to the ORCP Management Plan to the TRCA Board of Directors for approval in principle

From approximately July 2018 to March 2019, TRCA undertook additional technical analysis, detailed planning and design, and focused stakeholder engagement to work with local residents concerned with the preferred trail alignment resulting from the public planning process outlined above and evaluate an additional alternative trail option. This additional focused planning and design work involved the TAC, Town of Richmond Hill, PAC, and key Macleod's Landing neighbourhood residents. An alternative trail option leading from a stormwater overland flow block off Vandervoort Drive to the spine trail was evaluated against the preferred trail alignment resulting from the public planning process. Additionally, more detailed trail designs and planting plans were developed articulating trail setbacks from private property and the specifics of planned vegetative screening and buffering measures.

The specifics of this additional project process are described below:

- Hosted TAC meeting for technical input to inform comparison of the Macleod Estate Trail Linkage alignment and a feasible Vandervoort Drive trail option
- Hosted site visit with the TAC and Town of Richmond Hill staff to confirm technical input
- Consulted with Town of Richmond Hill staff regarding stormwater engineering and planning considerations to inform identification of a feasible Vandervoort Drive trail option and comparison between both trail options
- Hosted site visit with concerned residents in opposition to the Macleod Estate Trail Linkage alignment
- Hosted site visit with neighbours adjacent to the ORCCR near the location of the Vandervoort Drive trail option
- Hosted PAC meeting
- Developed detailed designs and planting plans for the Macleod Estate Trail Linkage alignment
- Hosted meeting with neighbours opposed to the Macleod Estate Trail Linkage alignment to discuss setbacks and buffering measures
- Drafted and finalized a memorandum regarding an Investigation of the Vandervoort Drive Trail Entrance to compare this trail option to the Macleod Estate Trail Linkage alignment.

After the completion of this focused engagement and planning work, TRCA re-sought approval in principle of the Addendum to the ORCP Management Plan at the TRCA Board of Directors Meeting #4/19, and circulated this approved Addendum to the Oak Ridges Trail Association and Infrastructure Ontario.

A.2.2 Engagement and Consultation

Engagement with TRCA staff, external key interest groups, and the general public was critical to the planning process for the Macleod Estate Trail Linkage.

A.2.2.1 TRCA Staff

A TAC was formed to gain input and feedback from internal TRCA staff. This TAC included representation from various departments including Land Management, Planning Ecology, Terrestrial Natural Heritage, Archeology and Cultural Heritage, Planning & Development, Watershed Strategies, Restoration Projects, Resource Management Projects, Enforcement & Compliance, Parks & Culture, and Bathurst Glen Golf Course.

The TAC convened four times during the course of the Macleod Estate Trail Linkage planning process to discuss opportunities and constraints, trail alternative alignments, trail amenities, programming, and implementation. Meetings were held on January 17, 2018, March 22, 2018 and September 5, 2018. A site visit was held on September 13, 2018. Input on specific issues was also sought informally from TAC members. Key input provided by the TAC included the ecological buffers and constraints necessary to incorporate into decision-making for the trail alignment, appropriate design specifications and plantings, identification of drainage issues, and maintenance issues that could arise with certain potential trail amenities.

A.2.2.2 Public

Public engagement was undertaken through a multidimensional approach. A smaller PAC sought focused input from key interest groups, and broader public engagement techniques enabled more general feedback from the broader community. On-line, traditional media, and face-to-face communication methods were employed to provide information about the project and seek relevant input.

Public Advisory Committee

A Public Advisory Committee was formed to gain input and feedback from key external interest groups. The PAC included representation from The Regional Municipality of York, the Town of Richmond Hill, the Oak Ridges Trail Association, the Durham Mountain Biking Association, The Gordon & Patricia Gray Animal Welfare Foundation, and interested residents. The Committee met twice over the course of the project to discuss opportunities and constraints, trail alternative alignments, trail amenities, programming, and implementation. Meetings were held on January 19, 2018, April 6, 2018 and November 26, 2018. The PAC was concerned with both ORCCR Trail Planning Projects (the Macleod Estate Trail Linkage Project and the Cycling on Secondary Trails Project). Key input provided by the PAC included underscoring the need to prevent trail access to Philips Lake to preserve ecological value, recommendations for incorporating planting buffers into the trail design, the need to incorporate design to enhance trail accessibility for a wide variety of users, and suggestions for trail amenities and programming that promote ecological stewardship.

It should be noted that while the Philips Lake Stewardship Panel is not active and therefore could not be engaged through this public planning process, the PAC included many of the individuals who would likely make up this committee. This PAC included many of the same groups who had participated in the PAC convened for the Oak Ridges Corridor Park East Management Plan.

Online Engagement

An online web presence for the Macleod Estate Trail Linkage planning process was launched on December 21, 2017. An engagement webpage was created through the TRCA YourSay platform, which could communicate key project dates, project updates, distribute supporting documents and photos, advertise upcoming events, and enable users to provide feedback on key elements of the trail plan through an online survey and online comment forms. Users could also subscribe to email updates about the project. The YourSay page covered both the Cycling on Secondary Trails Project and the Macleod Estate Trail Linkage Project. Text was added to the Oak Ridges Corridor Conservation Reserve TRCA webpage to notify visitors

about ongoing ORCCR trail planning projects, and to direct visitors to the YourSay page for further engagement in the projects.

A general ORCCR online trail user survey was launched on December 21, 2017. The questions were intended to obtain a general sense of how trail users access the ORCCR, how they are using the trails, when and how often they visit, the purpose of their visit, what they like and dislike about the trail system, etc. A total of 112 responses were collected between December 19, 2017 and May 8, 2018. Some key findings from the survey indicate that most respondents access the ORCCR by car, that Stouffville Road, Jefferson Sideroad, and Old Colony Road are the most popular access points, that most respondents visit once per week for between one and three hours on weekend mornings, most respondents participate in hiking and mountain biking, and overall respondents rated their trail experiences at 8/10.

Public Engagement Session

A Public Engagement Session was held on February 22, 2018, at the Oak Ridges Community Centre (12895 Bayview Ave, Richmond Hill). The Public Engagement Session was concerned with both ORCCR Trail Planning Projects. Materials related to the Macleod Estate Trail Linkage Project presented to the public included contextual information on the entire ORCCR trail system, two conceptual alignment options for the proposed Macleod Estate Trail Linkage, study area ecological constraints, and perspective artistic renderings and cross-sections. The materials were mounted on display boards and presented in an open house format, where attendees were free to circulate around the space and view the materials at their own pace. Project team members from TRCA and the Town of Richmond Hill were available to answer questions from attendees in an informal manner.

The Public Engagement Session was advertised through both online and physical tactics. A flyer was distributed via Canada Post's neighbourhood mail to approximately 1764 addresses (1734 homes, 30 businesses), and this flyer was also posted at the Oak Ridges Community Centre, the Bond Lake Arena, and the Oak Ridges Moraine Public Library. The flyer was also included in a Macleod's Landing Public School newsletter. A newspaper ad promoting the Public Engagement Session was issued in the February 15, 2018 edition of the Richmond Hill Liberal newspaper. The Session was promoted through word-of-mouth at a TRCA Snowshoeing event on February 10, 2018. The Public Engagement Session was advertised through the online TRCA events calendar and the Town of Richmond Hill online bulletin board. Tweets were sent from the @TRCA_Trails Twitter account to promote the session, which were retweeted through the @YorkRegionGovt York Region Transportation Services Twitter account. An email blast was sent through the Oak Ridges Trail Association's email distribution list on February 14th, 2018. An email was sent out to people who had requested to subscribe for email project updates through the YourSay Engagement website. Details on the Public Engagement Session were posted to the ORCCR Trail Planning Projects YourSay Engagement website, and many of the marketing tactics employed to promote the Session directed people to the YourSay website to find out more about the event and the ORCCR Trail Planning Projects generally.

It is estimated that 69 people attended the Session. Feedback forms were distributed to session attendees, inviting them to choose the conceptual trail alternative alignment they preferred (and explain why), and describe the trail amenities and features they would like to see along the proposed new trail linkage. There were also large-format maps of the trail alternatives available for attendees to annotate with their comments. Broadly, there was community interest and support for the Macleod Estate Trail Linkage, with questions as to how the trail would interact with Philips Lake, what type of landscapes the trail would pass through, and what type of trail would be built. Local residents were generally supportive and excited about

the direct trail connection into the ORCCR. There was concentrated, rational, yet firm opposition for the proposed trail alignment from a few residents whose properties are situated adjacent to the location of the proposed trail, citing concerns over privacy, safety, environmental impact, and constructability of the proposed trail. The day after the Public Engagement Session, the materials from the Session were posted on the YourSay website, and an online questionnaire was posted asking the same questions as the feedback forms distributed at the Session. This online comment period continued for approximately 2 weeks and allowed people who were not able to attend the Public Engagement Session to provide their feedback.

At the Public Engagement Session, the sign-in sheet allowed people to provide their email to request to be added to the list of subscribers for email project updates. An email blast was sent to the whole list of project subscribers on July 6, 2018, including people who subscribed via the YourSay Engagement Website, notifying people of the July 20 TRCA Board Meeting. Another email blast was sent to this list of subscribers in advance of the April 26 Board of Directors Meeting.

Focused Engagement with Macleod's Landing Neighbours

An on-site meeting was scheduled with TRCA technical staff and the residents who had expressed their opposition to the plan at the Public Engagement Session on May 15, 2018, in an effort to address their concerns during the detailed design process. At the site visit the neighbours raised many of the same concerns as at the Public Engagement Session. They expressed concern for the security of their homes because the trail alignment is proposed so close to the rear yards of their properties. TRCA staff noted that they have not heard of any cases of people jumping fences into residential properties to commit crimes in any other areas in the TRCA jurisdiction where trails are in close proximity to residential properties. The neighbours also relayed that at the time they bought their homes, they were promised by the developer and the Town of Richmond Hill that their view into the ORCCR would remain undisturbed. The neighbours in attendance expressed concern for the environmental protection of Philips Lake and the surrounding area. TRCA staff discussed some trail design measures that could mitigate these issues, such as buffer plantings and fencing. The neighbours also raised concerns over the impact this trail could have on the value of their properties and historical political decision-making to re-open the approval of a previous Town of Richmond Hill trail alignment along the remnant silver maple carriageway from Silver Maple Road to Macleod Estate Court. TRCA staff reviewed the tentative plan approval and implementation commencement with the neighbours. It was suggested that the neighbours could provide a delegation or submit correspondence when TRCA seeks approval of the Macleod Estate Trail Linkage Addendum to have their concerns heard by the TRCA Board. These neighbours submitted correspondence as part of the July 20, 2018 TRCA Board Meeting outlining their concerns and suggesting another trail alignment from Vandervoort Drive to the ORCCR spine trail.

A site visit took place on Friday, September 21, 2018 with Town of Richmond Hill staff and nine residents of Birchbark Court, Roderick Court, and Miles Hill Crescent, including five out of the eight residents who expressed opposition to the preferred Macleod Estate Trail Linkage alignment through correspondence submitted at the July 20, 2018 TRCA Board Meeting. The site visit included both the potential Vandervoort Drive trail area and the locations of their concerns along the Macleod Estate Trail Linkage alignment. The residents discussed potential advantages of locating the trail at the Vandervoort Drive access area, including the greater trail setback from most nearby homes. They also reiterated their privacy, safety, ecological, litter, and property value impact concerns, adding that there are stormwater drainage concerns with the Macleod Estate Trail Linkage alignment.

To engage the neighbours who would be directly impacted by a Vandervoort Drive trail option, a site visit also took place on November 12, 2018 with Town of Richmond Hill staff and 16 residents of Vandervoort Drive. These residents registered for the site visit in response to a notice delivered on October 22, 2018 to 39 addresses along Vandervoort Drive and Miles Hill Crescent, whose properties border the ORCCR near the area where the Vandervoort Drive trail option would be located or construction disturbance could occur. These residents raised privacy, security and safety, ecological, littering, parking, property value impact, trail service area, and drainage concerns. The neighbours in attendance presented TRCA staff with a petition stating their opposition to the Vandervoort Drive trail option. The petition was signed by 23 people at the time of the site visit.

The correspondence submitted by the neighbours in opposition to the preferred Macleod Estate Trail Linkage alignment and a summary of the November 12, 2018 site visit was consolidated and presented as an attachment at the TRCA Board of Directors Meeting on April 26, 2019. In this way the comments expressed by both groups of neighbours could be considered by the TRCA Board of Directors in their decision to approve the Macleod Estate Trail Linkage alignment.

Town of Richmond Hill Accessibility Advisory Committee

The Ontario Regulation 191/11: Integrated Accessibility Standards (under Accessibility for Ontarians with Disabilities Act, S.O. 2005, c.11), in “Section 80.8: Consultation, recreational trails”, states:

“(1) Obligated organizations shall consult on the following before they construct new or redevelop existing recreational trails:

1. The slope of the trail.
2. The need for, and location of, ramps on the trail.
3. The need for, location and design of,
 - i. rest areas,
 - ii. passing areas,
 - iii. viewing areas,
 - iv. amenities on the trail, and
 - v. any other pertinent feature. O. Reg. 413/12, s. 6.

(2) Obligated organizations shall consult on the matters referred to in subsection (1) in the following manner:

1. Obligated organizations must consult with the public and persons with disabilities.
2. Municipalities must also consult with their municipal accessibility advisory committees, where one has been established in accordance with subsection 29 (1) or (2) of the Act. O. Reg. 413/12, s. 6.”

To fulfill these requirements, members of the project team attended a Town of Richmond Hill Accessibility Advisory Committee on March 28, 2018 to present the conceptual alignment for the Macleod Estate Trail Linkage and gain feedback from Committee members. Concern was expressed by the Committee regarding the granular limestone fine trail surface. It was noted that the trail surface should be firm and stable enough to prevent wheelchair wheels from slipping or becoming stuck, and pavement as a trail surface was

suggested. There was also concern raised over extended lengths of trail with 5-8% slope (30m). A switchback and/or rest areas at appropriate intervals should be considered to address this issue. It was noted that the trail width should be wide enough for wheelchair passing. It was also noted that signage should be accessible for those with visual disabilities. As a more general comment regarding the ORCCR trail system, it was suggested that trail improvements should be made to recognize aging population demographics; for example more washroom facilities should be integrated into the ORCCR trail system. Another general comment mentioned erosion issues that have been emerging on the existing ORCCR trail system, and that these maintenance issues need to be addressed for both the existing trail network and for the future Macleod Estate Trail Linkage. Efforts have been made to address many of these concerns within the Macleod Estate Trail Linkage Concept (see Section A4).

A.3 CURRENT TRAIL SYSTEM & CONDITIONS

A.3.1 Existing Trails

The existing authorized ORCCR trail network includes a spine trail, which is the primary multi-use trail offering an east-west link through the Reserve, and secondary trails which are intended to link neighboring communities to the spine trail and create loops for recreational enjoyment (see Figure A6). The authorized existing trail system within the study area consists of a section of the primary multi-use spine trail and two secondary trail sections (see Figure A5). The ORCCR trail network also includes linkages to regional trail networks - the Lake-to-Lake Cycling Route and Walking Trail alignment runs through the ORCCR, and this alignment connects with the Oak Ridges Trail directly north of the Reserve. A large section of spine trail is also a designated section of the Oak Ridges Trail Network. Thus, the ORCCR is linked to 121 km of Lake-to-Lake Cycling Route and Walking Trail, and over 350 km of trails that comprise the Oak Ridges Trail network (see Figure A7).

Table A 1: Existing Trail Network (excluding the Macleod Estate Trail Linkage)

	Existing ORCCR Trail Network	Existing Macleod Estate Trail Linkage Study Area Trail Network
Spine Trail	9620 m	2327 m
Secondary Trail	7527 m	1137 m
Total	17147 m	3464 m

A.3.1.1 Primary Trail

The primary multi-use spine trail runs generally east-west through the ORCCR property, from Bathurst Street in the southwest to Bethesda Sideroad in the northeast. The spine trail is designated as a side trail of the Oak Ridges Trail Network.

The primary trail is designed for a relatively high volume of use, and therefore the trail width and construction is substantial enough to allow safe passing, along with a consistent and even surface. The primary trail is constructed to a maximum width of 2.4 m and surfaced with compacted granular limestone fines on a compacted granular base (see Figure A8). The granular base is to be constructed to a maximum

width of 3 m. A geogrid web is employed to distribute the weight of the soil compaction evenly. The alignment of the spine trail has been carefully selected to follow the height of the land and minimize grade changes, thereby providing a trail experience that will be accessible to a wide range of users (see Section 6.2).

Appropriate, nature-based public uses are permitted along trails including hiking, walking, cross-country skiing, leashed dog-walking, and cycling. Based on the results of the online ORCCR trail user survey launched alongside this public planning process, hiking and cycling are the most prevalent trail activities.

A.3.1.2 Secondary Trails

Secondary trails serve two functions in the trail system: to link the neighbouring communities to the primary trail, and to provide loop trails for recreational enjoyment.

People living adjacent to open space have a natural desire to access these areas. If formal access points are not provided, residents often make their own paths, which can be much more detrimental to sensitive environments than a formalized path in a pre-determined location. As these secondary trails are providing access to local residents, a more moderate level of use is anticipated and therefore, it is possible to accommodate users on paths that are narrower than the spine trail (See Figure A9). A maximum width of 2 m with a granular surface is recommended for these trails (see Section 6.3).

A.3.2 Existing Access and Amenities

Currently, the closest trail access points to the ORCCR trail system within the study area are the entrance from Jefferson Sideroad near Lake Forest Drive, and from Yonge Street near Bond Lake (see Figure A10). It was expressed by a number of local residents that these access points are too far to be useful to them, and additionally walking up Yonge Street to the Yonge Street trail access is not safe due to high volumes of fast-moving motor vehicle traffic, with limited, to non-existent sidewalks.

The ORCCR trail system includes trail amenities that improve the trail user experience through enhanced user comfort, wayfinding, or interpretation opportunities. The current suite of trail amenities for the ORCCR includes trailhead kiosks, wooden postmarkers, and stone slab benches. Kiosks, benches, and postmarkers are sited based on ease of access, safety, and field-fit onsite. Trail signage and amenities are developed based on the guidance of the Oak Ridges Corridor Park Management Plan. This plan (see Section 6.8.5) recommends interpretive/educational signage may be installed at specific natural or cultural feature areas along the trail. Themes include wildlife and natural ecosystems, landscape or human heritage. See Figures A11 – A14 for examples of existing trail amenities within or near the Macleod Estate Trail Linkage study area.

A.4 MACLEOD ESTATE TRAIL LINKAGE CONCEPT

A.4.1 Macleod Estate Trail Linkage Goals

The goals of the Macleod Estate Trail Linkage mirror the goals of the existing Oak Ridges Corridor Park Management Plan:

- “1. To support the implementation of the Oak Ridges Moraine Conservation Act by contributing to the protection, restoration and enhancement of the Moraine’s ecological functions, protecting water quality and quantity, maintaining the integrity of the continuous natural system and fostering partnerships for stewardship.

2. To address the challenge of sustaining a sanctuary for nature in an urban setting by including public uses that provide opportunities for passive recreation, linkages to the Oak Ridges Trail, and experiential learning, while protecting the environmental integrity of the park.”

Within Section 6.0, the Oak Ridges Corridor Park Management Plan provides more specific direction as to the purpose of Secondary Trails (Section 6.3), and how these trails can contribute to the goals of the Oak Ridges Corridor Park Management Plan:

“Secondary trails are proposed to link the neighbouring communities to the spine trail; the total length of proposed secondary trails is 2.8 km. People living adjacent to open space have a natural desire to access these areas. If formal access points are not provided, residents will make their own paths which can be much more detrimental to the sensitive environments than a formalized path in a pre-determined location.”

When the Oak Ridges Corridor Park Management Plan was approved in 2006, the Macleod’s Landing neighbourhood was not fully established. This new neighbourhood now contains approximately 1000 homes and the Macleod’s Landing Public School, and the neighbourhood residents have expressed eagerness for a trail linkage into the Reserve within the study area. The lack of a trail connection coupled with the identified desire for access to the ORCCR trail network creates the risk of informal trails. These informal trails would likely not be developed with the technical input necessary to ensure protection of the surrounding environment. Therefore, without a more sustainable trail alternative, informal trails which degrade the integrity of the surrounding ecology are at risk of proliferating.

The Macleod Estate Trail Linkage will provide a trail connection from the Macleod’s Landing neighbourhood into the ORCCR trail system that has been designed intentionally and sustainably. The new trail alignment has been designed recognizing relevant ecological buffers, such as setbacks from the area of the Provincially significant Philips-Bond-Thompson Wetland complex. The trail alignment has been developed with the input of TRCA technical staff with knowledge of the area and the sensitivities of the surrounding environment.

The proposed new trail connection is intended to function as a neighbourhood connection and will serve a wide variety of users, providing enhanced access to the natural beauty of the Moraine landscape within the ORCCR in a sustainable, intentional manner. The trail opens further opportunities for passive recreation, which provides mental and physical health benefits. Enhancing opportunities for the neighbourhood to connect to this engaging and scenic greenspace also fosters local stewardship, as residents will be able to experience and value the ORCCR as a part of their day-to-day lives.

A.4.2 Macleod Estate Trail Linkage Alignment

The conceptual alignment for the new Macleod Estate Trail Linkage can be seen on Figure A15. The new trail will be approximately 798 m, having a width of 1.8 m, and will be classified as a secondary trail.

A.4.2.1 General Trail Experience

From the ORCCR spine trail, the new trail will pass eastwards through meadow area and new-growth conifer plantations, before turning southwards through thicker plantation forest. Once the trail reaches the fence surrounding Philips Lake, the trail will continue through a corridor of open meadow between the more mature forest that surrounds Philips Lake and the fence-line of neighbouring properties. The trail will then pass near the Macleod Estate residence before turning sharply eastwards along a remnant carriageway lined

with silver maples and connecting to Silver Maple Road. A bird's eye view of this conceptual trail alignment may be seen in Figure A16

A detailed view of the conceptual trail alignment can be seen on Figure A17. Minor variations from this alignment may occur during the detailed design and construction of the trail based on on-site landscape barriers or opportunities for improvements in slope sustainability.

A.4.2.2 Slope Characteristics

The longitudinal slope profile of the Macleod Estate Trail Linkage, as calculated from the conceptual trail alignment³, is gentle relative to the ORCP trail network⁴. Calculated over 10 m sections of trail, the maximum longitudinal slope of the Macleod Estate Trail Linkage conceptual alignment is 9.81% and the typical longitudinal slope is 2.57% (see Figure 18). Where the longitudinal slope of the trail exceeds 5%, efforts will be made during at the detailed design and implementation stages to find opportunities—through minor trail alignment adjustments—to reduce the trail's longitudinal slope. As the slope profile for the conceptual Macleod Estate Trail Linkage is based on a desktop exercise over 10 m intervals, a more detailed slope profile will be created based on the as-built trail alignment with TRCA's High-Efficiency Trail Assessment Process (HETAP) equipment. This more detailed longitudinal slope profile will be used for future trail signage purposes.

A.4.2.3 Property Ownership

Based on current land ownership arrangements and the conceptual alignment for the new Macleod Estate Trail Linkage, approximately 193 m of trail is located on land owned by the Town of Richmond Hill, approximately 57 m of trail is located on land owned privately, and approximately 546 m of trail is located on land owned by the Province of Ontario (ORCCR) and managed by TRCA (See Figure A19).

A.4.3 Macleod Estate Trail Linkage Design

The design standards of the Macleod Estate Trail Linkage are generally consistent with the Oak Ridges Corridor Park Management Plan Section 6.1.

The general design standards of the Macleod Estate Trail Linkage are based to the as-built design details of precedent secondary trail linkages constructed since the approval of the Oak Ridges Corridor Park Management Plan. The general design standards for the Macleod Estate Trail Linkage are described in Table A2 below:

³ The longitudinal slope calculations for the conceptual trail alignment are based on a desktop Geographic Information Systems (GIS) exercise. The trail alignment line was converted to a series of points every 10 m. The longitudinal slopes in between these points were calculated, thus providing longitudinal slopes in 10 m sections for the trail alignment. The maximum longitudinal slope is the highest longitudinal slope out of these 10m sections, and the average longitudinal slope is the average of the longitudinal slopes of these 10m sections. This methodology will thus not capture micro scale variations of longitudinal slope within these 10m sections.

⁴ The ORCP Primary and Secondary Trails, viewed together, have a typical longitudinal slope of 3.8% and a maximum longitudinal slope of 26.6%

Table A 2: Macleod Estate Trail Linkage Design Standards

Trail Characteristic	Design
Trail Tread Width	1.8 m
Trail Clearing Width	2.4 m – 2.77 m
Trail Clearing Height	3.5 m
Trail Surfacing	Compacted limestone granular fines on a compacted granular base, for enhanced accessibility pavement may be considered for the portion of trail along the remnant silver maple carriageway (See Figure A20)

A.4.4 Trail Amenities

A.4.4.1 Trailhead Signage

A trailhead kiosk will be incorporated into the Macleod Estate Trail Linkage. This structure will be designed to match the construction of existing trailhead kiosks throughout the ORCCR trail system (see Figure A11). This trailhead kiosk is recommended to be sited alongside the trail near the Macleod Estate residence immediately north of the silver maple carriageway, located where trail users can view both the Macleod Estate residence and the silver maple carriageway. The precise location of the trailhead kiosk will be finalized through the detailed trail design process.

Signage posted on the trailhead will be generally consistent with guidelines provided in the Oak Ridges Corridor Park Management Plan Section 6.8. All signage posted on these trailhead kiosks will conform to the Accessibility for Ontarians with Disabilities Act (2005) Regulation 191/11: Section 80.9 (Technical requirements for trails, general).

A.4.4.2 Postmarkers

Postmarkers will be incorporated into the Macleod Estate Trail Linkage. These postmarkers will be designed to match the construction of existing postmarks along the broader ORCCR trail system (see Figure A13).

The siting and design of these postmarkers will be generally consistent with the guidance provided within the Oak Ridges Corridor Park Management Plan Section 6.8.2, although the precise location of the postmarkers will be determined through the detailed trail design process and field-fit during construction.

A.4.4.3 Benches

Benches will be incorporated into the Macleod Estate Trail Linkage. These benches will be designed to match the construction of existing benches along the broader ORCCR trail system (see Figure A12). The siting of benches along the Macleod Estate Trail Linkage shall be designed to enhance trail accessibility for a wide variety of users, including seniors and persons with disabilities. These benches will be located along the section of trail away from residential properties. . The precise number and location of benches will be determined through the detailed design process.

The provision of benches will be generally consistent with the guidance provided in the Oak Ridges Corridor Park Management Plan Section 6.1.

A.4.4.4 Interpretive Signage

Interpretive Signage is recommended to be incorporated into the Macleod Estate Trail Linkage, highlighting the ecological importance of Philips Lake and/or the cultural heritage value of the Macleod Estate and the associated silver-maple lined carriageway. Interpretive signage relating to these features will be included alongside the trailhead kiosk discussed in Section A.4.4.1.

The Oak Ridges Corridor Park Management Plan Section 4.1 notes that Philips Lake supports locally and regionally rare species. Philips Lake is also part of the Provincially significant Philips-Bond-Thompson wetland complex, and is relatively undisturbed as compared to Bond Lake, the other major ORCCR waterbody. Interpretive signage could describe the ecological features of Philips Lake and its ecological importance, explaining why it is essential to limit disturbance to the Lake. Interpretive signage can provide important opportunities to foster environmental stewardship.

The Oak Ridges Corridor Park Management Plan Section 3.4.1 notes that the Macleod Estate (Drynoch Estate) is an important cultural heritage feature significant for its associative and architectural value. The Estate residence and the silver maple carriageway associated with the Estate have both been designated under the Ontario Heritage Act, R.S.O. 1990 for their design and associative value (Town of Richmond Hill, 2016). Interpretive signage could describe the history and significance of the Macleod Estate and the silvery maple carriageway, explaining how the Estate is linked to the broader history of Canada.

Any interpretive signs incorporated into the Macleod Estate Trail Linkage shall be designed to be generally consistent with the Oak Ridges Corridor Park Management Plan Section 6.8.5. These interpretive signs will also take guidance from the Accessibility for Ontarians with Disabilities Act (2005) Regulation 191/11: Section 80.9 (Technical requirements for trails, general), subsection (3); the signs will have high tonal contrast with its background in order to assist with visual recognition; and include characters that use a sans serif font.

A.4.4.5 Planting

A substantial vegetated buffer will be ensured between the Macleod Estate Trail Linkage and the surrounding Macleod's Landing neighbourhood. This will be provided through existing vegetation where possible, and through the creation of additional planted buffer area where needed. Visual screening and dissuading trail users from entering the planted area are priorities for the design of this planted buffer.

To help prevent trail users from attempting to access Philips Lake, the vegetated buffer in between the Macleod Estate Trail Linkage and Philips Lake should be enhanced. Visual screening and preventing trail users from entering the planted area are priorities for the design of this planted buffer.

A.4.4.6 Fencing

Additional fencing should be implemented between the Macleod Estate Trail Linkage and Philips Lake. Any additional fencing should be substantial physical barriers to prevent access by trail users, however the fencing should not detract from the greenspace trail experience.

A.4.5 Accessibility

In an effort for the Macleod Estate Trail Linkage to be accessible for a wide variety of users, the new trail will fulfill the following accessibility requirements as set forth by the Accessibility for Ontarians with Disabilities Act (2005) Regulation 191/11: Section 80.9 (Technical requirements for trails, general):

“80.9 (1) Obligated organizations shall ensure that any recreational trails that they construct or redevelop, and that they intend to maintain, meet the following technical requirements:

1. A recreational trail must have a minimum clear width of 1,000 mm.
 2. A recreational trail must have a clear height that provides a minimum head room clearance of 2,100 mm above the trail.
 3. The surface of a recreational trail must be firm and stable.
 4. Where a recreational trail has openings in its surface,
 - i. the openings must not allow passage of an object that has a diameter of more than 20 mm, and
 - ii. any elongated openings must be orientated approximately perpendicular to the direction of travel.
 5. Where a recreational trail is constructed adjacent to water or a drop-off, the trail must have edge protection that meets the following requirements:
 - i. The edge protection must constitute an elevated barrier that runs along the edge of the recreational trail in order to prevent users of the trail from slipping over the edge.
 - ii. The top of the edge protection must be at least 50 mm above the trail surface.
 - iii. The edge protection must be designed so as not to impede the drainage of the trail surface.
 6. Despite paragraph 5, where there is a protective barrier that runs along the edge of a recreational trail that is adjacent to water or a drop-off, edge protection does not have to be provided.
 7. The entrance to a recreational trail must provide a clear opening of between 850 mm and 1,000 mm, whether the entrance includes a gate, bollard or other entrance design.
 8. A recreational trail must have at each trail head signage that provides the following information:
 - i. The length of the trail.
 - ii. The type of surface of which the trail is constructed.
 - iii. The average and the minimum trail width.
 - iv. The average and maximum running slope and cross slope.
 - v. The location of amenities, where provided. O. Reg. 413/12, s. 6.
- (2) The signage referred to in paragraph 8 of subsection (1) must have text that,
- (a) has high tonal contrast with its background in order to assist with visual recognition; and
 - (b) includes characters that use a sans serif font. O. Reg. 413/12, s. 6.
- (3) Where other media, such as park websites or brochures, are used by the obligated organization to provide information about the recreational trail, beyond advertising, notice or promotion, the media must provide the same information as listed in paragraph 8 of subsection (1). O. Reg. 413/12, s. 6.”

The Macleod Estate Trail Linkage will also investigate opportunities to go beyond these design requirements, as requested by the Town of Richmond Hill Accessibility Advisory Committee. These exact scope, nature, and location of these elements will be determined during the detailed design phase.

A.4.5.1 Slope Improvements

Trail slope characteristics are linked to enabling accessibility for a wide variety of users. Typically trail longitudinal grades below 5% are considered to be accessible for the widest variety of users. Trail longitudinal slopes between 5% and 8% and between 8% and 10% can be incorporated into a trail that is accessible for a wide variety of users, including persons with disabilities, if areas with slopes less than 5% are included at appropriate intervals.

Based on the preliminary desktop longitudinal slope analysis of the conceptual Macleod Estate Trail Linkage alignment, areas of the trail have been identified which are anticipated to pose accessibility issues due to longitudinal slope. These areas can be viewed on Figure A20, identified by the red circles⁵. These areas should be evaluated during the detailed design and construction of the Macleod Estate Trail Linkage to incorporate intervals with slopes less than 5%. These rest areas could be realized through minor realignments of the trail to incorporate areas of grade lesser than 5% if possible, or by regrading a small area of the trail to a longitudinal slope lesser than 5%.

The exact design and siting of these rest areas will be determined through the detailed design process for the Macleod Estate Trail Linkage.

A.4.5.2 Paved Surface Area

The provision of a firm and stable surface area is necessary to enable accessibility for a wide variety of users. While the limestone granular fines currently in use along the existing ORCCR trail system can provide a surface area that achieves this accessibility, pavement can also be an effective surface area to enabling accessibility. Pavement may be an appropriate trail surface in more urbanized areas, while granular fine material may be appropriate in more natural settings (MBTW Group, 2013).

Based on the input of the Town of Richmond Hill Accessibility Advisory Committee, the possibility of installing a paved trail surface for the section of trail along the sliver maple carriageway will be evaluated. This section of trail is within an urban area and the trail longitudinal slope is minimal. The type and extent of any paved trail surface area along the Macleod Estate Trail Linkage will be evaluated based on budgetary and environmental impact considerations, and will be finalized during the detailed design process.

⁵ These areas were identified based on a combination of longitudinal slope characteristics. If a section of 8%-10% longitudinal grade was present, the area was identified for slope mitigation or rest areas. If an extended section of trail (approx. 30m) exhibited a consistent 5%-8% longitudinal grade, the area was identified for slope mitigation or rest areas. This methodology generally follows the precedent of the Accessibility Design Guidelines for York Regional Forest Trails (MBTW Group, 2013), as well as the input of the Town of Richmond Hill Accessibility Advisory Committee.

A.4.6 Macleod Estate Trail Linkage Management

The management, maintenance, and oversight of the section of the Macleod Estate Trail Linkage within the ORCCR property will be undertaken by TRCA staff, as per the Management Agreement between TRCA and the Province of Ontario.

The management, maintenance, and oversight of the sections of the Macleod Estate Trail Linkage within private lands or within lands owned by the Town of Richmond Hill will be negotiated between TRCA and individual landowners. If these activities are to be undertaken by TRCA, a formalized maintenance or management agreement will be necessary.

A.5 MACLEOD ESTATE TRAIL LINKAGE BUDGET

Total implementation cost for the Macleod Estate Trail Linkage: **\$ 521,303.21 (+HST)**

This cost is in 2019 dollars, and includes a contingency and administrative surcharge.

This cost does not include pavement as a surface treatment for the trail

The implementation budget may be refined further through the detailed design process.

FIGURES

Figure A 1: Oak Ridges Corridor Conservation Reserve Map

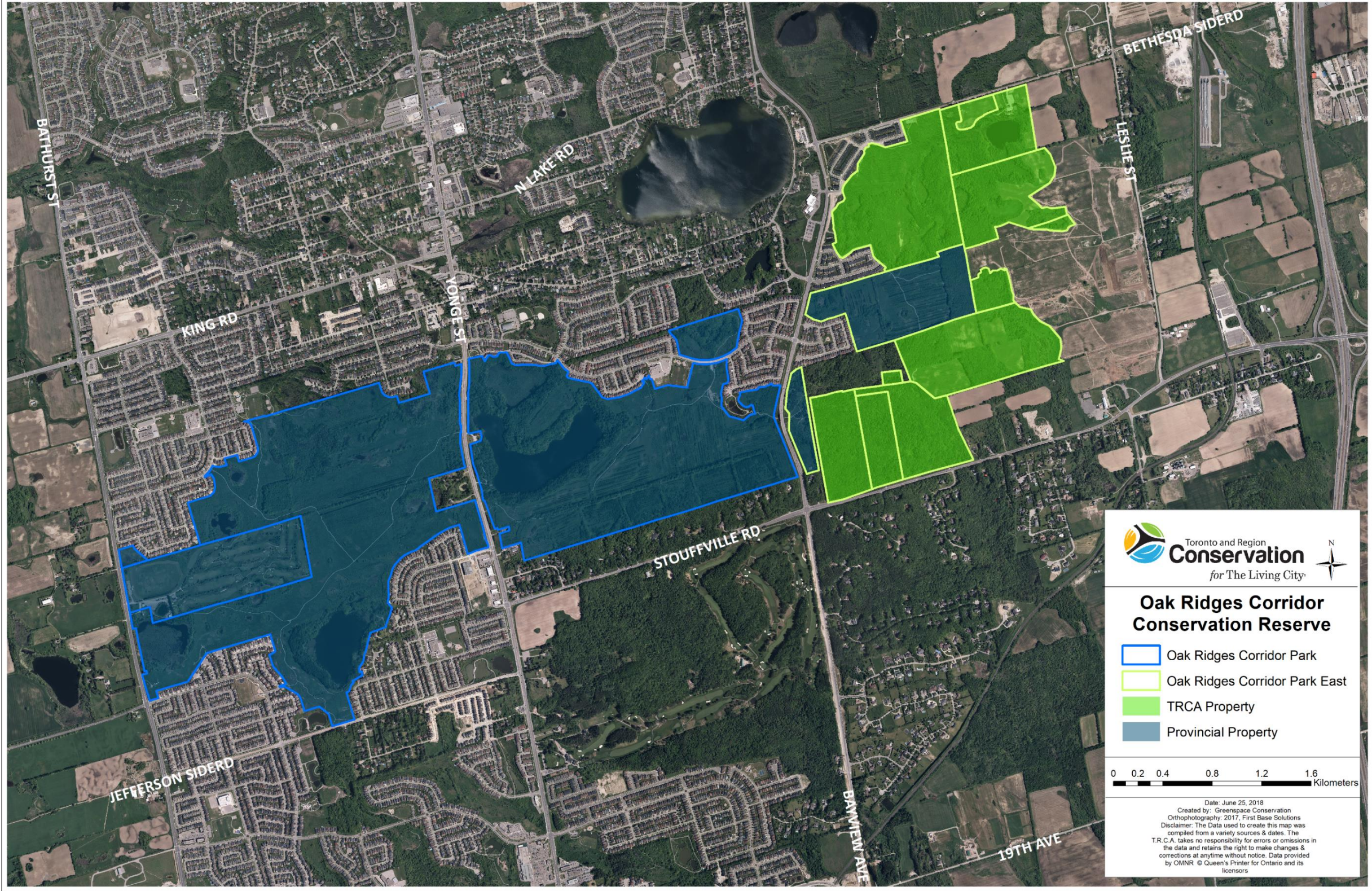
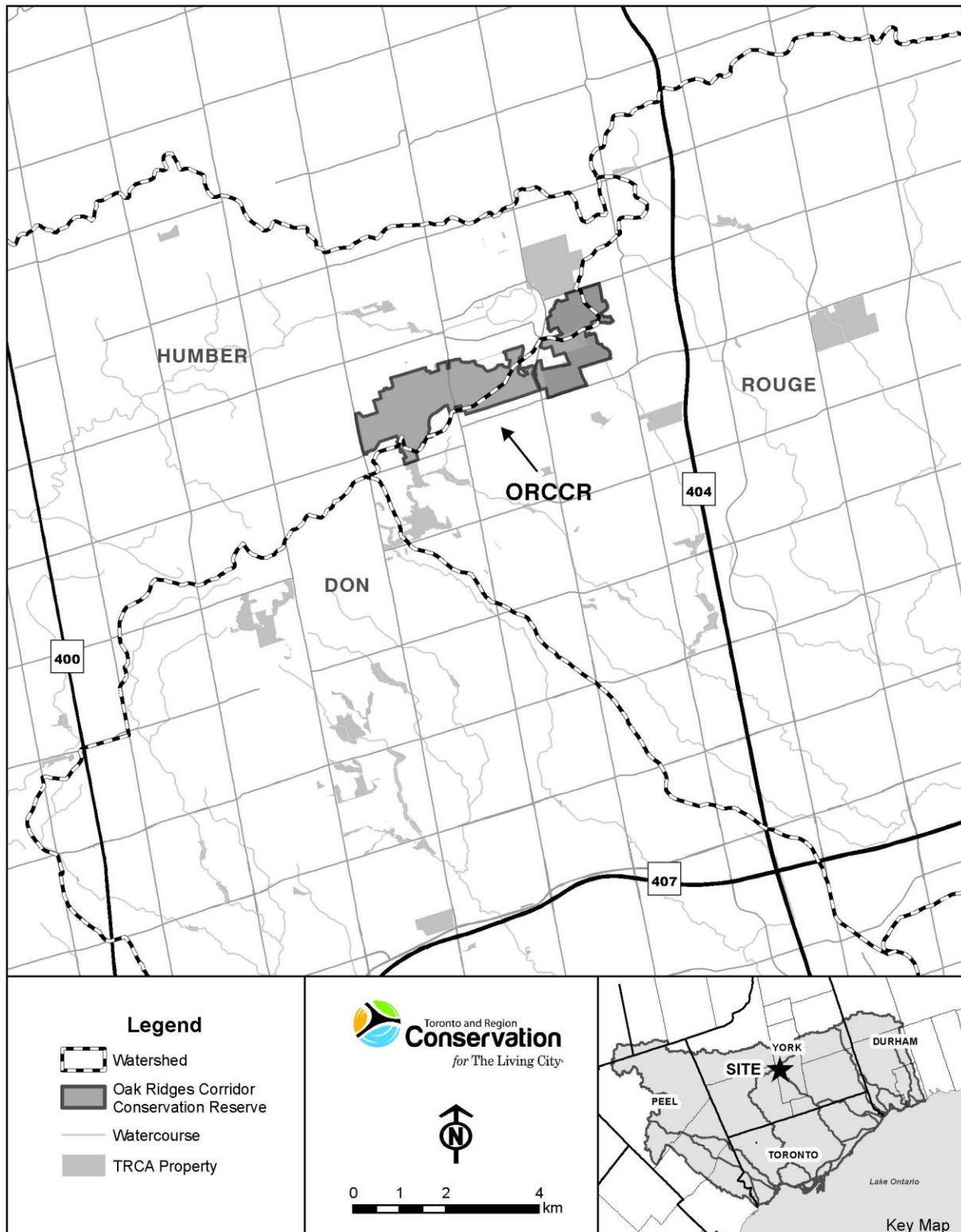


Figure A 2: Oak Ridges Corridor Conservation Reserve Location Map



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Figure A 3: Oak Ridges Corridor Conservation Reserve Areas of Natural and Scientific Interest and Provincially Significant Wetlands

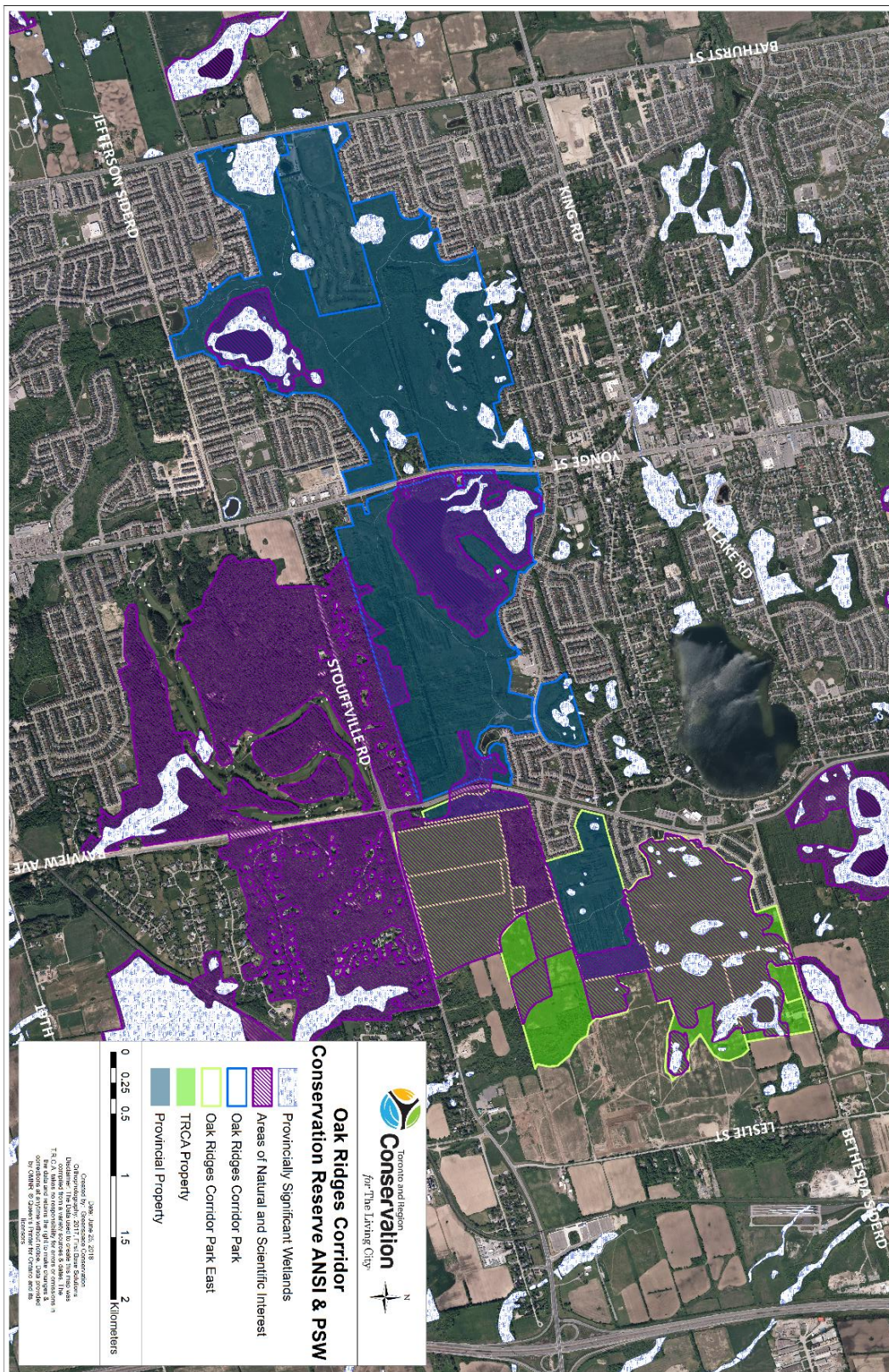


Figure A 4: Macleod Estate Trail Linkage Study Area

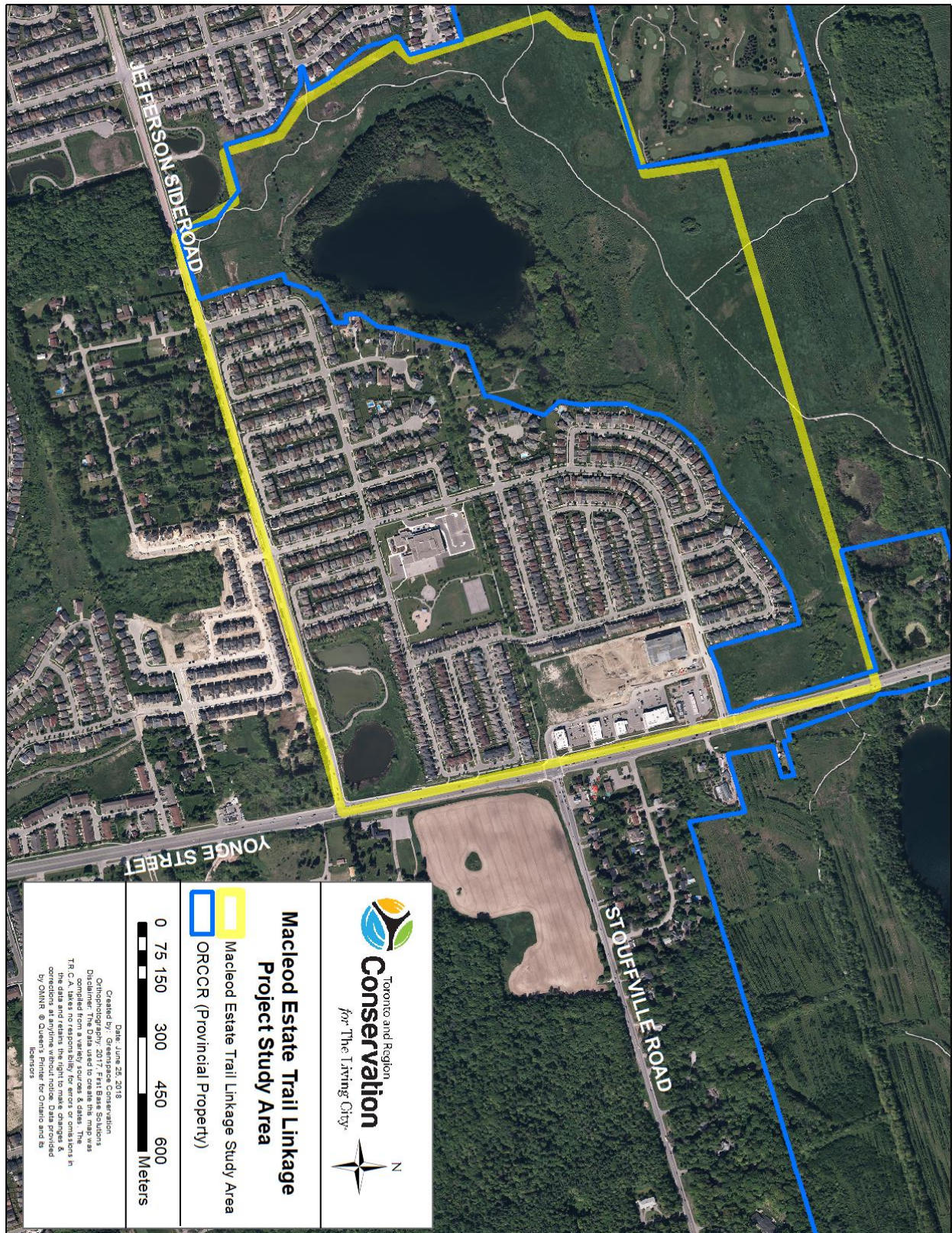


Figure A 5: Macleod Estate Trail Linkage Study Area Trail Map



Figure A 6: Oak Ridges Corridor Conservation Reserve Trail Map

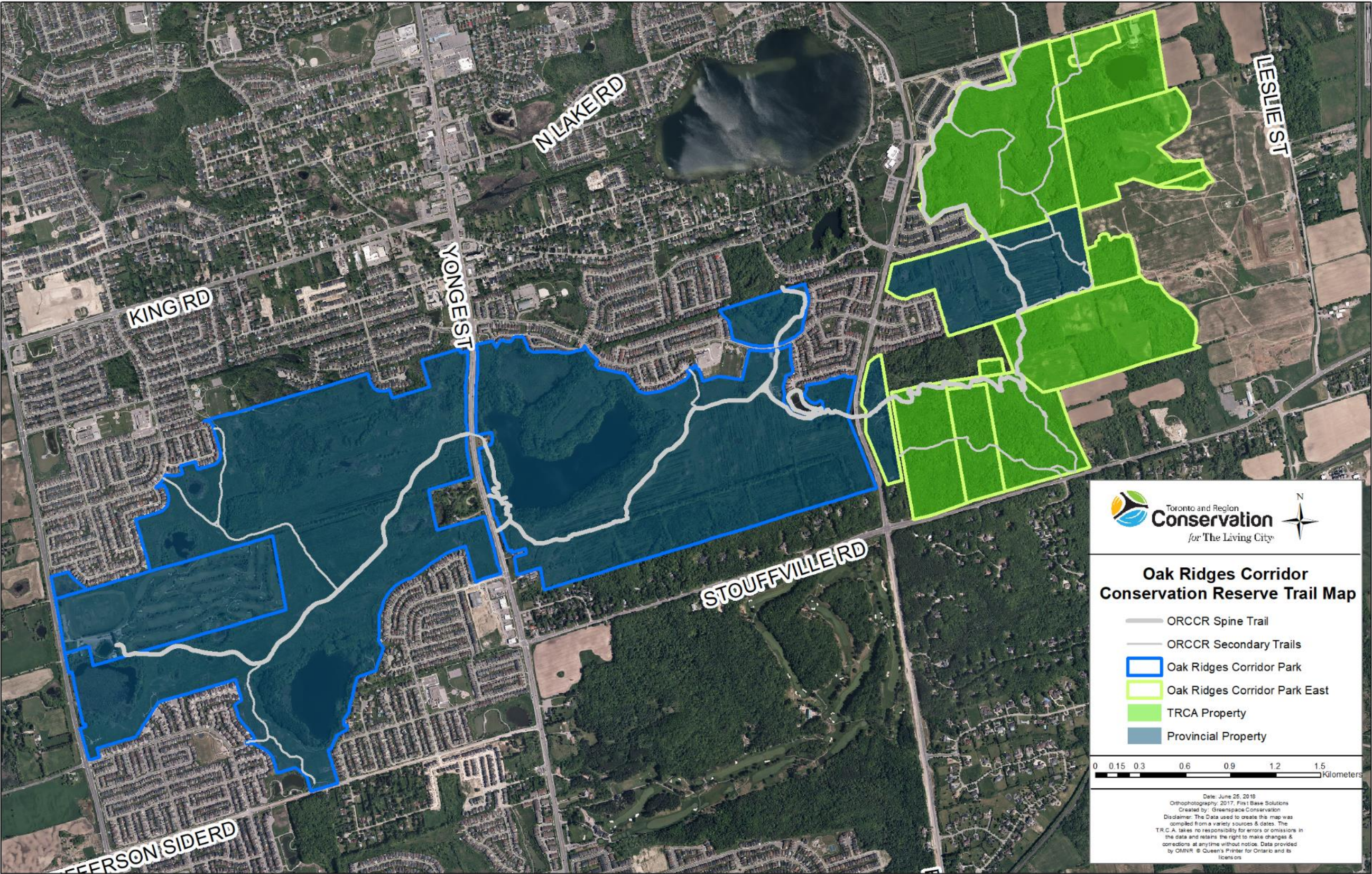


Figure A 7: Regional Trail Map

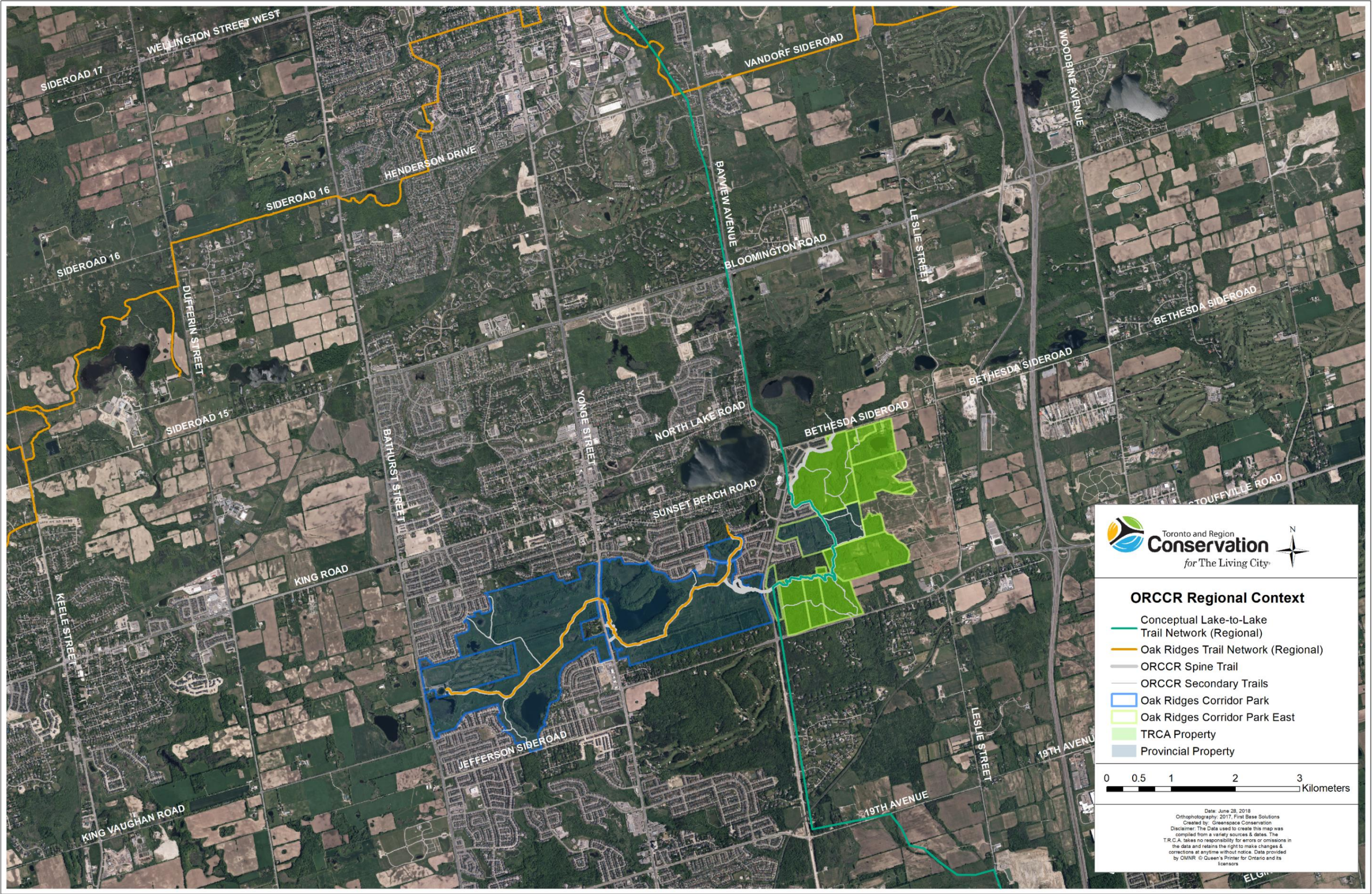


Figure A 8: ORCCR Spine Trail



Figure A 9: ORCCR Secondary Trail



Figure A 10: Existing Trail Access and Amenities



Figure A 11: ORCCR Trailhead Kiosk



Figure A 12: Stone Slab Bench



Figure A 13: ORCCR Postmarker



Figure A 14: Educational Sign Example



Figure A 15: Macleod Estate Trail Linkage Proposed Trail Map (Conceptual Alignment)



Figure A 16: Bird's Eye View of the Macleod Estate Trail Linkage Conceptual Alignment

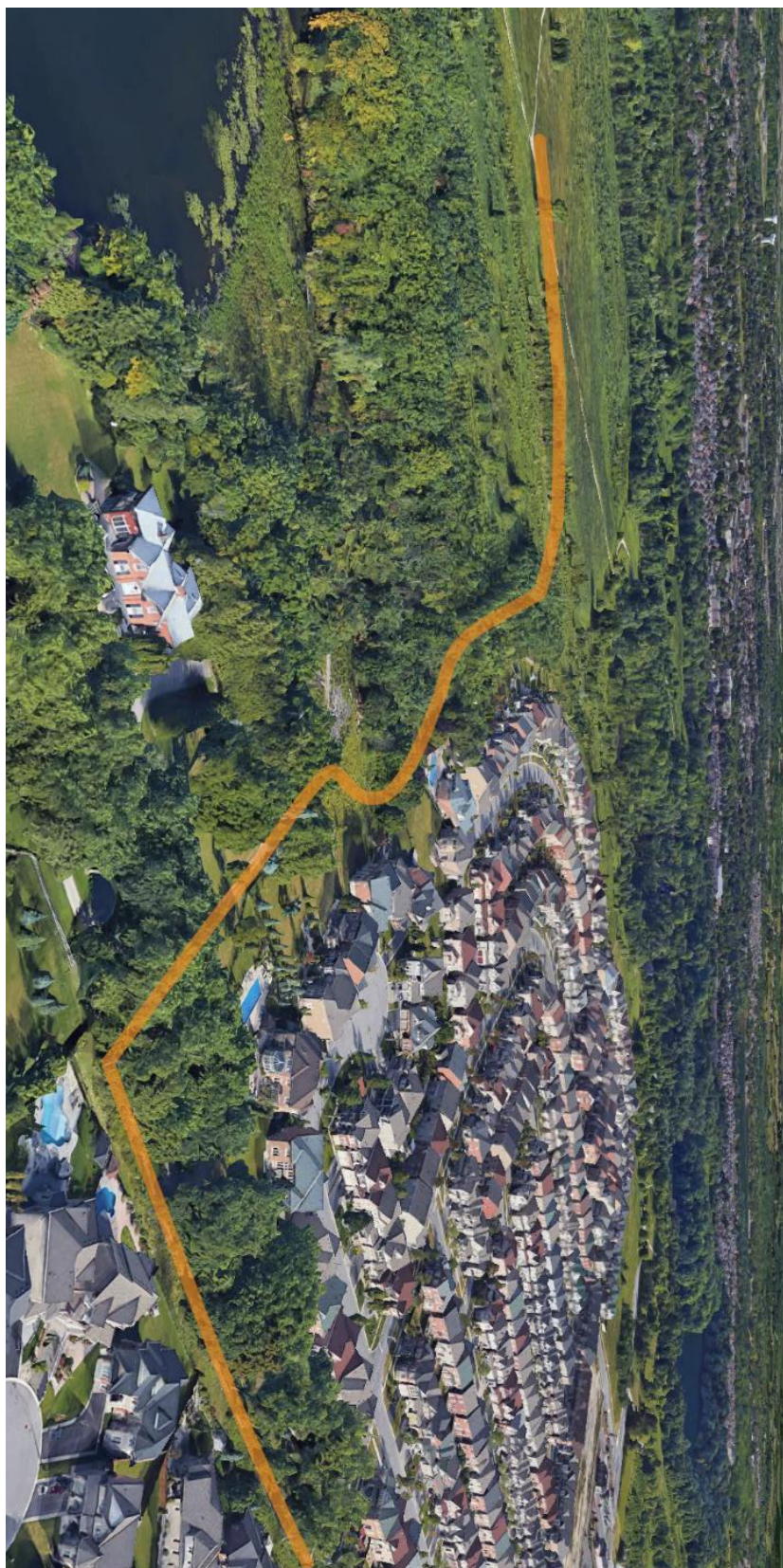


Figure A 17: Macleod Estate Trail Linkage Proposed Trail Map Close Up (Conceptual Alignment).



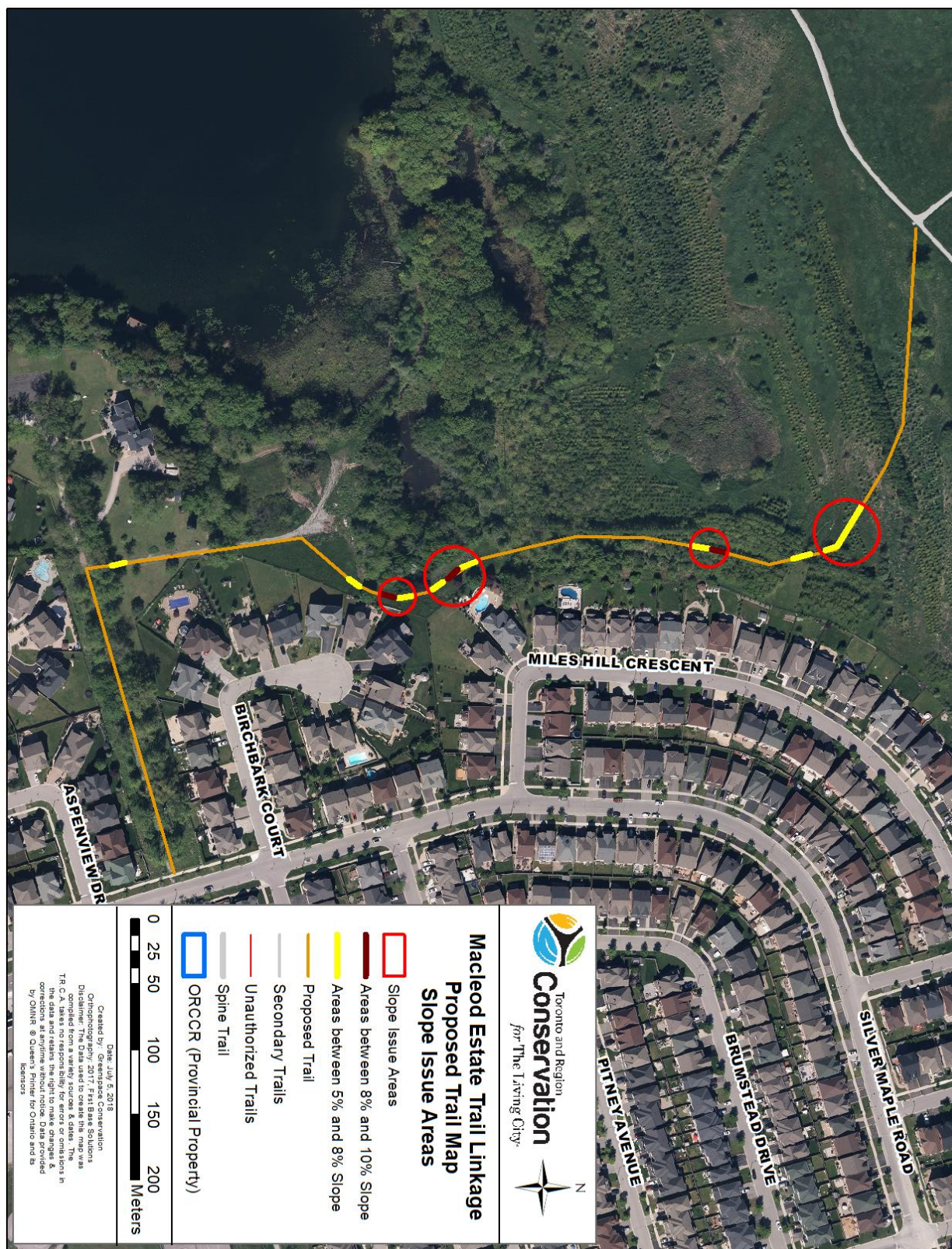
Figure A 18: Macleod Estate Trail Linkage Proposed Trail Map (Conceptual Alignment) Longitudinal Slope Characteristics



Figure A 19: Macleod Estate Trail Linkage Proposed Trail Map (Conceptual Alignment) Property Parcels



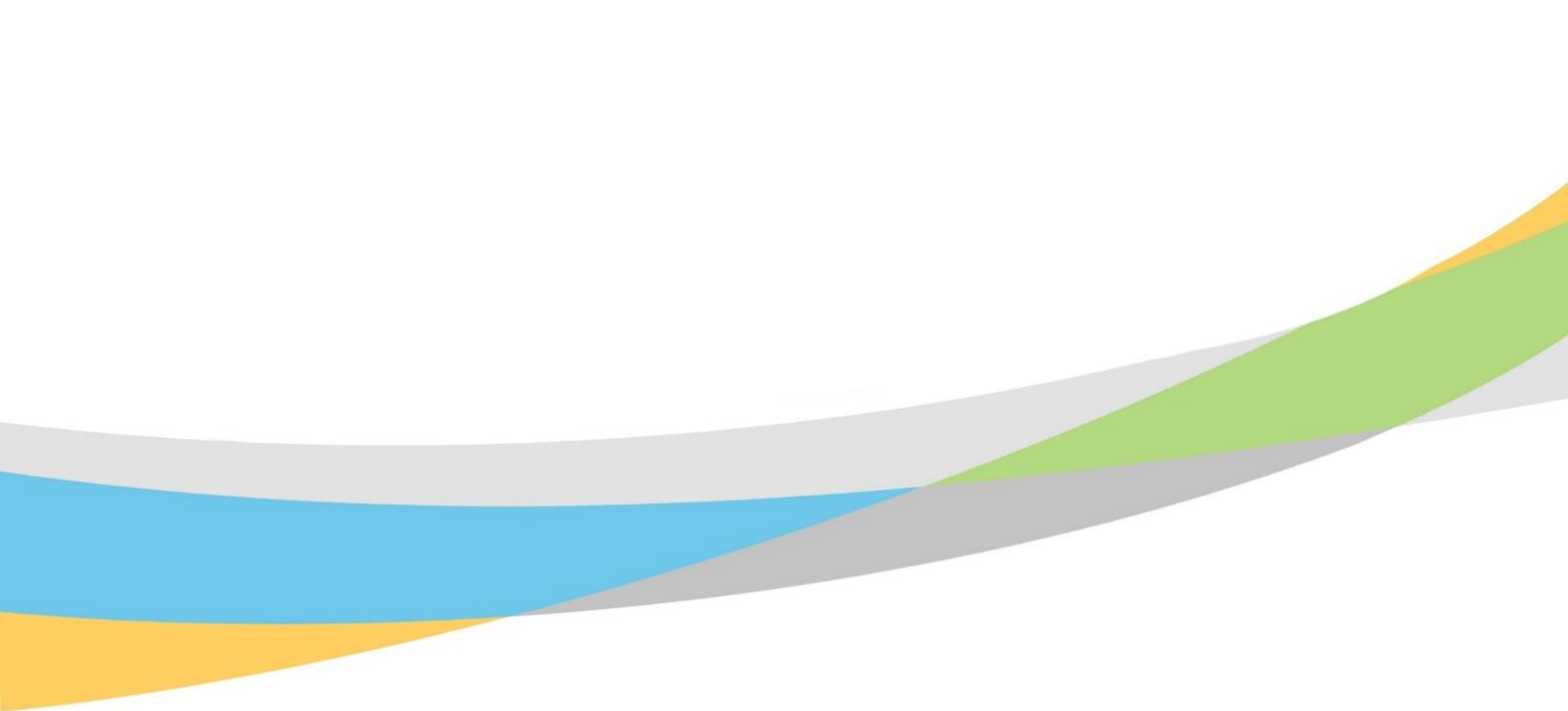
Figure A 20: Macleod Estate Trail Linkage Proposed Trail Map (Conceptual Alignment) Longitudinal Slope Issue Areas



REFERENCES

MBTW Group. 2013. Accessibility Design Guidelines for York Regional Forest Trails.

Richmond Hill, Heritage Richmond Hill. September 13, 2016. Minutes – Heritage Richmond Hill Meeting #05-16.



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