

Section I – Items for Board of Directors Action

TO: Chair and Members of the Board of Directors
Meeting #11/19, Friday, January 24, 2020

FROM: Sameer Dhalla, Director, Development and Engineering Services

RE: GTA WEST TRANSPORTATION CORRIDOR INDIVIDUAL ENVIRONMENTAL ASSESSMENT
Stage 2 Update

KEY ISSUE

To highlight TRCA concerns and recommendations regarding the Ministry of Transportation (MTO) technically preferred route for the Greater Toronto Area (GTA) West Transportation Corridor being developed in Stage 2 of the environmental assessment study process.

RECOMMENDATION

WHEREAS on June 19, 2019 the Minister of Transportation resumed the GTA West Transportation Corridor Route Planning and Environmental Assessment Study (GTA West) and subsequently updated their comprehensive evaluation, identified MTO's technically preferred route, and sought public input;

WHEREAS in June 2019 the Ministry of Energy, Northern Development and Mines and the Independent Electricity System Operator initiated the Northwest GTA Transmission Corridor Identification Study to identify a transmission corridor in order to protect for future transmission infrastructure required to support increasing electricity demand;

WHEREAS the GTA West technically preferred route within TRCA's jurisdiction crosses multiple TRCA-owned properties, multiple significant natural heritage features, including valley and stream corridors, headwater streams, forests, wetlands, and will impact core features, habitats, species and wildlife connectivity; could create or exacerbate flood and erosion hazards; will increase chloride contamination in natural features; and reduces the ability of our natural areas to be resilient to the impacts of climate change;

WHEREAS on October 28, 2016 the TRCA Board of Directors in its Resolution #A171/16, as amended, recommended that the environmental assessment (EA) be completed and that the Advisory Panel take into account numerous sustainability, natural heritage and compensation considerations (see link to previous TRCA reports as provided in the body of this report);

WHEREAS TRCA has not yet been provided with detailed technical information that supports the Province's technically preferred route, or has not yet been engaged in any detailed technical discussions regarding the technically preferred route;

AND WHEREAS following provincial confirmation of the final preferred route, we are informed that MTO will develop preliminary design alternatives, seek public input prior to finalizing the preferred alternative for the highway design, and will then seek approval of the EA from the Minister of the Environment, Conservation and Parks;

THEREFORE, LET IT BE RESOLVED THAT TRCA staff continue to work with MTO staff and municipal partners through the Regulatory Agency Advisory Group, through the

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Greenbelt Transportation Advisory Group, and through an established working group with TRCA, other affected conservation authorities, municipalities and provincial and federal ministries, to address concerns related to potential alignment changes to the technically preferred route to accommodate development and community interests, as well as concerns related to the preferred design alternatives, including concerns related but not limited to: watercourse and wildlife crossings and trail connections, flood and erosion control, stormwater management, vegetation removals, natural heritage restoration and compensation, land acquisition and archaeology, and climate resiliency;

THAT the 32 Recommendations contained within this report and in Appendix 1 to this report be approved for review by MTO;

THAT MTO be requested to provide written responses to all TRCA letter comments and Board recommendations; hard copies of all technical studies in support of the technically preferred route and any proposed modifications for review and comment; hard copies of technical studies in support of preliminary and preferred design alternatives for review and comment; and hard copies of the draft EA and associated appendices for review and comment, in accordance with TRCA service delivery standards;

THAT the Ministry of Transportation; Ministry of the Environment, Conservation and Parks; Ministry of Natural Resources and Forestry, Ministry of Energy, Northern Development and Mines, the Independent Electricity System Operator; Regional Municipalities of Peel and York; Town of Caledon, City of Brampton and City of Vaughan; Credit Valley Conservation and Halton Conservation, be circulated a copy of this staff report;

AND FURTHER THAT TRCA staff report back to the Board of Directors and seek further direction once the preliminary design alternatives and technical appendices are provided to staff for review and comment.

BACKGROUND

In January 2007, the Ministry of Transportation (MTO) announced the commencement of the Individual Environmental Assessment (EA) Study for the GTA West Corridor. The purpose of the study is to examine long-term transportation problems and opportunities, while considering alternatives to provide better linkages to Urban Growth Centres. The Terms of Reference was approved by the Ontario Minister of the Environment on March 4, 2008.

STAGE 1 OF THE INDIVIDUAL EA STUDY

Stage 1 of the EA process evaluated various transportation modes and their ability to address future transportation demands to the year 2031, an almost 25-year horizon from when the project was initiated. While there have been significant delays in the planning timeline for this project, the transportation demand study was not updated to extend this planning horizon. The Stage 1 Study concluded with a recommended solution of a multimodal Transportation Development Strategy to optimize the existing highway network, provide transit and rail improvements such as widening existing highways, and to construct a new transportation corridor, the GTA West Highway.

The Stage 1 Study identified the Preliminary Route Planning Study Corridor for the GTA West Highway as extending from Highway 400 in the east and terminating at the Highway 401/407 interchange to the west. Within TRCA's jurisdiction, the Study Corridor extends from Highway

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400 in the City of Vaughan, west through the Town of Caledon and City of Brampton to approximately Heritage Road, crossing the Humber River and Etobicoke Creek watersheds. Preliminary analysis indicated that the new highway would consist of an alignment with a right-of-way width of 110 m for the highway, plus a 60 m right-of-way for the adjacent transitway including transit stations (Figure 1). This would consist of six lanes (three in each direction) between Highway 400 and the Highway 427 extension, and four lanes (two in each direction) between Highway 427 and the connection at Highway 401/407. A report that provided an update on the EA work completed to that date was brought to the TRCA Authority Board on June 24, 2011 ([Meeting #6/11, RES #A122/11](#), p.297). As a great deal of time has passed, TRCA is concerned that additional growth beyond 2031 projections could result in the need for highway expansions that will additionally impact the natural heritage system and TRCA-owned lands in the future. TRCA in discussion with some of our municipal partners want to ensure that the planning horizon to the year 2031 remains an appropriate planning horizon for the EA study. As a result, TRCA staff propose the following recommendations.

Recommendation:

1. **MTO be requested to confirm whether the transportation demand study completed to the year 2031 remains an appropriate planning horizon.**

STAGE 2 OF THE INDIVIDUAL EA STUDY

The Stage 2 Study of the EA commenced in early 2014 and built upon the recommendations from the Stage 1 Study. In 2015, MTO provided long and short lists of route alternatives. MTO presented an update to the TRCA Authority Board on April 24, 2015 and TRCA staff brought forward a report to the same meeting with an update on the Stage 2 work ([Meeting #4/15, RES #A64/15](#), p.148).

Suspension of the Study

In December 2015, MTO suspended work on the EA in order to ensure the project aligned with changes in government policy and emerging technologies. An advisory panel of industry experts was formed and tasked with conducting a strategic assessment of the alternatives to meet future transportation demand, and other transportation infrastructure needs for passenger and goods movement in the GTA West Corridor. On October 21, 2016, TRCA recommendations were presented to the panel, in coordination with Conservation Halton and Credit Valley Conservation. On October 28, 2016, TRCA staff presented to the Authority Board and brought forward a report on the Recommendations to the GTA West Advisory Panel ([Meeting #8/16, RES #A171/16](#), p.534).

In February 2018, after reviewing advice from the Panel, MTO announced they would not proceed with the new highway in the GTA West Corridor. However, to ensure demands for a growing region were met, MTO and the Independent Electricity System Operator (IESO), with support from the Ministry of Energy, jointly initiated the Northwest GTA Corridor Identification Study to identify a smaller corridor to be protected for future infrastructure needs including utilities, transportation and transit.

Resumption of the Study

In June 2019, MTO announced resumption of the GTA West Transportation Corridor Study and that it would no longer be participating in the Northwest GTA Corridor Identification Study. In turn, the Ministry of Energy, Northern Development and Mines (ENDM), and the IESO announced that they were initiating the Northwest GTA Transmission Corridor Identification Study, separate from MTO's GTA West Transportation Corridor Route Planning and Environmental Assessment Study.

Northwest GTA Transmission Corridor Identification Study

Currently, to support growing electricity demand in the western GTA and protect for future transmission infrastructure, the ENDM and IESO are leading the Northwest GTA Corridor Identification Study (Figure 2). In February 2020, TRCA staff participated in the first meeting of the Central/GTA Regional Electricity Network. Going forward, TRCA staff will seek to confirm if and how this study is being coordinated with the GTA West Highway that is being planned along a similar path. To assess the potential for cumulative impacts, staff recommend the studies consider each other's findings and be coordinated to the extent possible or as one initiative, similar to the Parkway Belt West Plan initiative in the 1970's.

Recommendation:

- 2. MTO and ENDM/IESO confirm efforts to coordinate their independent studies and ensure negative impacts are fully assessed and minimized wherever practicable.**

Technically Preferred Route

Following MTO's resumption of the GTA West Corridor study, a second round of Public Information Centres (PIC) was held in September and October 2019 at which time MTO presented the technically preferred route (Figure 3) based on high-level evaluations of the short-listed alignment alternatives. To date, TRCA has not received the required detailed technical reports to support these evaluations. The Town of Caledon, the City of Vaughan and the Regional Municipality of York have all provided a response through their councils, requesting future work and route modifications related to interchanges, development areas and community interests, prior to confirming the preferred route.

Preliminary Design Alternatives

In November 2019, TRCA staff attended a joint Municipal and Regulatory Agency Advisory Group meeting, as well as the Greenbelt Transportation Advisory Group meeting where it was identified that MTO plans to confirm the preferred route and "focused analysis area" in Spring 2020. Following this, MTO will commence development of the preliminary design alternatives, including field investigations and consultation with property owners impacted by the preferred route. A separate meeting is scheduled in January 2020 with TRCA, MTO and their consultants to provide a study update, review 2020 fieldwork plans and gather information on habitat mapping and Species at Risk.

Final Environmental Assessment

In late 2022, MTO plans to submit the final EA to the Minister of the Environment, Conservation and Parks for review. The Minister is responsible for making a decision on the EA based on the recommendations of Ministry of the Environment, Conservation and Parks (MECP) staff. If the approval is granted, it is typical that such approvals are made with conditions.

DETAILED DESIGN AND VOLUNTARY PROJECT REVIEW

If approved, the next stage in the project is to commence detailed design, whereby MTO is obligated to satisfy all Ministerial conditions, as well as to obtain all permits and approvals. As a Crown agency, MTO is exempt from obtaining a permit pursuant to TRCA's section 28 regulation under the *Conservation Authorities Act*. In such circumstances, TRCA offers proponents the option of submitting a Voluntary Project Review (VPR) application.

The VPR is submitted at the design stage and allows staff to complete a comprehensive review and provide an opinion as to whether the interests, objectives, and tests of TRCA's Ontario Regulation 166/06 will be satisfied. Fees are charged as per the TRCA Fee Schedule and the standard TRCA review process is followed. Once TRCA comments are satisfied, a VPR letter is

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issued confirming that our interests have been met.

Unless required to consult with TRCA as a Condition of Approval by MECP, MTO is under no obligation to seek further input at the detailed design stage. While the VPR process is used by other Crown agencies, such as Metrolinx, to date, it has not been pursued by MTO in other projects.

Recommendation:

- 3. MTO commit to receiving VPR signoff at the design stage as it relates to TRCA's regulatory and policy interests, as well as provincially delegated responsibilities.**
- 4. MTO and MECP work with TRCA to draft Conditions of Approval that reflect TRCA interests and concerns, and that these conditions be forwarded to the Minister for review and consideration at the appropriate time in the EA process.**

ANALYSIS

TRCA is a commenting agency under the *Environmental Assessment Act* and reviews and comments on EA's where the proposed project has the potential to affect our areas of interest, or our delegated responsibility of representing the provincial interest on natural hazards as identified under Section 3.1 of the Provincial Policy Statement 2014. TRCA staff reviewed mapping, as well as the draft Evaluation of the Short List of Route Alternatives (Draft, September 2019) for segments 3 to 9, located within TRCA's jurisdiction, which included the technically preferred route. This information was available on the [MTO website](#).

The following analysis focuses on specific areas of concern and key staff recommendations based on a high-level evaluation of the technically preferred alignment using only available TRCA mapping and data, as the MTO's detailed studies that support their technically preferred route were not provided. The following analysis should not be used in place of a comprehensive study and evaluation to be completed by MTO. It should be noted that staff concerns remain consistent with those provided in past reports and comment letters.

WATER MANAGEMENT

Flood Hazards and Stormwater Management

MTO's evaluation matrix identifies the introduction of approximately 397 hectares (ha) of impervious surface within TRCA's jurisdiction as a result of the new proposed highway, in addition to approximately 85 new watercourse crossings within the Etobicoke Creek and Humber River Watersheds for the technically preferred route. It is imperative that the preferred route not alter the natural hydrological and hydraulic regimes within each of the watersheds or increase the flood hazard at the proposed crossing locations. This is of particular importance to established and planned communities surrounding a new highway that may be at risk of flooding due to changes to water conveyance or flow regimes from the highway's impact to watercourses and wetlands. TRCA's 2015 Crossings Guideline for Valley and Stream Corridors document outlines the requirements for designing new or replacement crossing structures to prevent flood and erosion hazard impacts.

TRCA's 2012 Stormwater Management Criteria document lays out TRCA's stormwater management criteria for work within the TRCA jurisdiction, consistent with provincial and municipal requirements. The Humber River Hydrology and Etobicoke Creek Hydrology models were updated after 2012. It is important to note that the Humber River Hydrology Update only considered urban expansion as identified in the municipal Official Plans that were approved at

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the time and did not consider the land use change proposed by the GTA West Corridor project. Water quality, quantity, erosion and water balance controls will all need to be met. The Humber River Watershed Plan dictates that a Regional control assessment will be required for any urban expansion beyond approved Official Plans that were included in the recent Humber River Hydrology update.

Additional property needed to address and meet stormwater management criteria for the new highway as well as the future transitway, stations and any other associated hardened surfaces, should be identified in the EA. This identification of required land for green infrastructure will ensure the most effective level of stormwater treatment is achieved, prior to release to the Natural Heritage System (NHS). TRCA recommends if the EA is approved, and the project moves to detailed design, MTO acquire updated modeling from TRCA and come to TRCA for model verification through the VPR process. Historically, MTO has not requested TRCA verify these models, nor have they requested a VPR at the design stage. If the GTA West Highway is approved, in order to engage TRCA at the detailed design stage the Minister would need to make specific conditions as part of the approval process. Through such a process, TRCA would then be able to comment on changes to the drainage/flow regimes, be involved with mitigation to flood plain impacts, and ensure we receive accurate updated information and data that would inform decisions in municipal and development review applications.

Recommendations:

- 5. MTO consider the TRCA 2015 Crossings Guideline for Valley and Stream Corridors in designing new crossing structures in order to prevent flood and erosion hazard impacts.**
- 6. MTO clearly show on a figure in the EA, each watercourse and headwater drainage feature crossing, together with a corresponding table that shows proposed sizing at each crossing location that considers wildlife passage, fluvial geomorphic, and flood conveyance requirements, and any associated modeling, where necessary. Proposed crossing sizes presented in the EA should clearly reflect the sizing that will move forward to the design and construction stages.**
- 7. MTO undertake a comprehensive stormwater management strategy at the EA stage based on TRCA's 2012 Stormwater Management Criteria document that demonstrates how provincial and TRCA criteria for water quality, quantity, erosion and water balance will be met.**
- 8. MTO contact TRCA for updated modeling and stormwater requirements at the detailed design stage and then update the modeling, based on the proposed highway design, according to TRCA standards.**

Source Water Protection

The *Clean Water Act*, 2006 ensures communities protect their drinking water supplies through prevention by developing collaborative, watershed-based source protection plans that are locally driven and based on science. Within the Regional Municipality of Peel, the proposed alignments transect Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas as identified in the [Credit Valley - Toronto and Region - Central Lake Ontario Source Protection Plan \(CTC SPP\)](#). Within the Regional Municipality of York, the proposed alignments transect Highly Vulnerable Aquifers, Significant Groundwater Recharge Areas and a Wellhead Protection Area for quality and quantity (WHPA-Q). All alignments will have some level of impact to these resources. Further analysis will need to take place within the EA to determine the level of impact through consultation with each municipality.

Recommendations:

9. MTO consult with each municipality transected by the preferred route and design to confirm conformity with the CTC SPP.
10. MTO conform with Policy SAL-6 in the CTC SPP, in particular clause (d) which encourages the consideration of information in the Toronto and Region Assessment Report for the siting and prioritization of future assessments related to road salt application.
11. MTO work with the Ministry of the Environment, Conservation and Parks to ensure the implementation of Policy SAL-11 in the CTC SPP.

NATURAL HERITAGE SYSTEM

The GTA West Corridor project will have extensive and widespread impacts on the NHS, including significant loss in the number, form and function of natural features and species. There will be significant fragmentation of valleylands, conservation lands, and the few remaining natural corridors within TRCA's jurisdiction. To minimize these impacts a very thorough ecological study of the area must be completed, the results of which must direct the siting, design, and construction of the highway, including ecosystem compensation measures to help replace impacted natural features and function.

Wildlife Connectivity, Flora, Fauna and the Natural Heritage System

To highlight the extent of the anticipated major ecological impacts, TRCA staff completed a rapid assessment. A detailed ecological study by MTO is required to confirm impacts and identify mitigation, restoration and compensation requirements. The key findings include:

- Over 1000 ha of land identified as important for local wildlife movement, some of which is also important at a regional scale, will either be removed or intersected by the proposed highway. Of note is the section located to the east of Bramalea Road, through an area classified as important for regional wildlife movement.
- Approximately 85 watercourses will be impacted. Of these crossings, TRCA ranks 10 as "high priority" locations ecologically, as they are in deep valleys with relatively high quality existing or potential habitat, high regional connectivity, or high local connectivity. Of the remaining crossings, 58 are ranked as "medium priority" locations located in shallow valleys that have high quality existing or potential habitat, high regional connectivity, or high local connectivity.
- Over 110 occurrences (representing 10 different species) of federal and/or provincial Species at Risk have been found in the study area: These species are found in a variety of habitat types including meadow (e.g., Bobolink), forest (e.g., Eastern Wood-Pewee, Butternut), wetland (e.g., Snapping Turtle, Western Chorus Frog) and within specific watercourses.
- 35 different fauna species of local concern (with approximately 240 separate occurrences) have been found inhabiting the proposed study area.
- 74 different flora species of local concern (with approximately 275 separate occurrences) have been found inhabiting the proposed study area.
- Approximately 220 wetlands covering 130 ha, will be impacted.
- Approximately 680 ha of habitat representing 224 separate habitat patches (forest, wetland, meadows) will be directly removed or indirectly impacted. This includes 240 ha (representing 40 separate habitat patches) of high-quality habitat (based on TRCA's landscape analysis model assessing size, shape and surrounding land use) and over 300 ha (representing 206 separate habitat patches) of habitat deemed highly vulnerable to impacts of climate change.

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An example of a high priority wildlife crossing location is the eastern end of segment 8-3 located north of Kirby Road between Kipling Avenue and Pine Valley Drive where there is a high probability of forest to forest wildlife movements. Crossing structures should not only accommodate wildlife movements between wetlands and valley systems for example, but also be considered for areas that are not along stream corridors.

Recommendations:

- 12. MTO complete seasonally appropriate field surveys along the preferred route to identify where and when wildlife passages are required and will be most effective, based on the type of species and migration patterns, to facilitate safe wildlife movement under or over the highway.**
- 13. MTO design habitat connectivity and wildlife passages for provincial and regional species of concern, including installing appropriate wildlife passages, fencing structures, and extensive habitat restoration.**
- 14. MTO consider the TRCA 2015 Crossings Guideline for Valley and Stream Corridors to inform the design of new crossing structures for wildlife movement and habitat connectivity.**

Core Features

MTO's Comparative Evaluation of Net Effects and Ranking of alternatives does not appear to consider the significance, sensitivities, or quality of all the natural heritage features within the alternative routes, which significantly diminishes the weighting of individual natural features. All natural heritage features should be evaluated using these criteria so that the review of alternatives considers natural heritage features equally and ensures overall impacts for each evaluation criterion is weighted appropriately.

- Some unevaluated wetlands may in fact be Provincially Significant Wetlands (PSW) but may not have been classified as such in the table. Once they have been evaluated, the significance of each natural feature can better inform the Route Evaluation.
- Woodlands should be assessed using standardized criteria for significance in such a way that they are compared on equal footing. Many of the unevaluated woodlands may in fact prove to be significant, particularly the larger features connected to valleys.
- There are several locations where natural features have not been identified. For example, there are extensive riverine wetlands located adjacent to Airport Road where segments 6-1 and 6-2 are located. The proposed intersection 6-1 will remove a large proportion of these wetlands.

Once all natural heritage features have been assessed in terms of their significance, sensitivities and/or quality, they should be categorized such that the significant, most sensitive and highest quality features are considered "Core Features". These features are the core elements of the NHS, including ecologically significant groundwater recharge areas, should be protected and enhanced because they provide critical ecosystem functions.

While municipal Official Plans identify both natural heritage systems and many significant natural features, not all the features have been assessed. The GTA West study should reference these planning documents to assess the features that have not yet been evaluated. Once a comprehensive evaluation has been completed, slight shifts in alignment, such as shifting segment 4-1 to the north to avoid cutting through the "potentially significant woodlands" associated with watercourses, among others, should be considered. In addition, MTO's technically preferred route section 7-3 will connect the new highway to Highway 427. This route runs parallel to and on top of long reaches of permanent watercourse (approximately 2.1 km within the Robinson Creek Natural Heritage System), which will result in permanent impacts to

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the form and function of the NHS. Fragmentation of the valley corridor is anticipated as well as wetland removals including a mature deciduous swamp. As with the other highway segments, options to adjust the Highway 427 extension and interchange should be analyzed to first avoid impacts to sensitive habitat and minimize impacts to the NHS. MTO should respect the work done under the completed Highway 427 EA and detailed design processes to protect these features. If the EA is approved and a commitment to follow the TRCA VPR process is made, MTO would be committed to acquire updated data from TRCA and to ensuring TRCA standards are applied.

Recommendations:

- 15. MTO complete a comprehensive evaluation for the technically preferred alternative of the proposed highway, associated interchanges and future transit right-of-way and stations and use the information to consider hybrid alignments (shifts) that will avoid and minimize impacts to the natural heritage system, including watercourses and core features.**
- 16. MTO commit to mitigation measures at the EA stage, such as edge management plans and measures to ensure that the function of ecologically significant groundwater recharge areas are maintained, and then develop these measures further at the detailed design stage.**
- 17. MTO work with TRCA to develop and implement an environmental monitoring plan in the EA stage, and use the plan to inform the planning and design of wildlife crossing locations, as well as to address issues related to species sensitivities, such as noise, light, pollutants, invasive species, habitat and groundwater changes.**

Restoration and Compensation

MTO has examined a range of alignment alternatives and due to the magnitude of the proposed work, impacts to the NHS including habitat connections are unavoidable in some locations. Given the complexity of this work and the unavoidable impacts to significant and sensitive areas throughout the TRCA jurisdiction, it will be imperative that losses to core features and their functions, as well as losses to lands required for connectivity and buffers be restored. The loss of restorable lands as a result of the new highway and associated transitway should also be considered and compensated for, to the extent possible, with the intent to preserve and improve the ecological integrity of the area.

Recommendations:

- 18. MTO work with TRCA to determine an appropriate restoration and compensation plan in the EA that ensures a net benefit, depending on the ecological communities impacted, to ensure fragmentation is minimized, connections between sensitive ecological features remain open allowing for wildlife movement, and to ensure the NHS is protected and enhanced.**
- 19. MTO work with TRCA to identify locations in which restoration activities can take place either using the TRCA 2018 Guide for Determining Ecosystem Compensation or developing a compensation strategy similar to that adopted by Metrolinx for their expansion projects and applying an approximate value to future restoration and compensation efforts.**

Salt Application, Noise and Light Impacts

Salt application and salt spray as well as increased noise and light impacts should be considered when choosing the preferred route and preliminary design. Currently, the proposed corridor crosses numerous cold and cool water streams that provide habitat to sensitive aquatic species. These species cannot tolerate urban influences of salt and other pollutants that would

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enter the habitat via runoff. Stormwater management has not yet been proven as an effective mitigation tool for salt management. Natural heritage features are affected by salt spray, which can have profound effects on terrestrial systems and can penetrate to large forest blocks causing tree and shrub losses far removed from the road right-of-way. Conifer species are particularly prone to dieback due to salt spray. In terms of invasive species, such as phragmites, these often take root in rights-of-way and can cause long, linear disturbances to the NHS. Noise and light pollution can also cause adverse effects to forest and wetland species and must be considered in alternative selection, detailed design options and long-term maintenance.

Recommendation:

20. MTO consider in the EA the potential long-term impacts of salt loading to surface and groundwater features, salt spray to terrestrial habitats, the spread of invasive species along transportation corridors, and fragmentation of habitats and migration corridors.

CLIMATE CHANGE

The MECP requires that all projects going through the EA process, including Individual EAs, consider impacts to and opportunities for climate change mitigation and adaptation, and consider the vulnerability of projects to climate change. The 2014 Provincial Policy Statement also requires that infrastructure projects consider impacts from climate change.

Impacts to Natural Features and Wildlife

The proposed routes cut through natural features and areas that are deemed to be highly vulnerable to climate change, which may exacerbate the impacts to these features (for example drying effects on vegetation and changes to hydrology). The proposed route also cuts through habitat patches used by sensitive species including terrestrial and aquatic Species at Risk Ontario (SARO) which are considered highly vulnerable to the impacts of climate change. Furthermore, habitat connectivity is becoming increasingly important, especially from a climate change perspective, where the loss of habitat will result in further isolation of species and limit species' movements.

Stormwater Management

Stormwater management strategies and crossing structures will need to demonstrate resilience to the effects of climate change. One methodology to evaluate impacts is to test the strategy against the rainfall estimates provided on the MTO Intensity Duration Frequency (IDF) Curve website for the 2080s time period, as defined in the 2015 Ministry of Natural Resources and Forestry (MNRF) document "Climate Change Projections for Ontario: An updated synthesis for policymakers and planners".

Green Infrastructure

In addition to the recommendations in this report, the EA should also include encouraging green infrastructure and strengthening stormwater management requirements; requiring consideration of energy conservation and efficiency, reduced greenhouse gas emissions and climate change adaptation (e.g. tree cover). Furthermore, the climate change section should also include information related to vehicular emissions and prescribed construction technologies and consider the potential impacts of climate change that may increase the risk associated with natural hazards (for example flooding due to severe weather).

Recommendations:

21. MTO evaluate climate change risks and impacts based on the transition of natural heritage lands to paved surfaces, together with the removal of trees

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and wetlands be included in the EA document to ensure impacts are minimized and clearly explained.

- 22. MTO's stormwater management strategy and crossings be confirmed against the impacts of a changing climate.**
- 23. MTO investigate and incorporate green infrastructure into the design.**

TRCA-OWNED LANDS

Conservation Lands

TRCA lands will be impacted in multiple locations throughout this study corridor as a new highway will result in fragmentation as well as partial and complete losses to the land base. Impacts of the alternative options on TRCA-owned lands range from approximately 8 to 78 ha, depending on the various combinations of alternatives. While some highway segments will have either no impact or a nominal impact to TRCA-owned lands, of notable concern are the sections of the technically preferred route within the Highway 410 area and through the TRCA Nashville Conservation Reserve (NCR).

Recommendations:

- 24. MTO closely coordinate with TRCA throughout the planning and design stages to further review options to avoid and mitigate impacts to TRCA-owned lands.**
- 25. MTO and TRCA enter into negotiations regarding land base compensation once the preferred route has been finalized and MTO include future TRCA land acquisition costs within its costing analysis.**

Highway 410 Extension

Impacts based on the various alternatives for this segment of highway range from having no impact to significant impacts, such as with the technically preferred route. The routes that use the existing Highway 410 alignment have a similar overall impact (1.9 to 2.5 ha) to TRCA properties. The most significant impact is MTO technically preferred route 5-10 which involves construction of a new north-south connection and interchange which will impact two TRCA parcels affecting most of a parcel north of Mayfield Road and east of Heart Lake Road. According to the MTO Evaluation Table, the proposed Highway 410 interchange and extension will also result in the removal of 6.81 ha of wetland, 11.71 ha of potentially significant woodland, and will require 10 potential watercourse crossings.

TRCA and municipal staff have worked to protect many of these features through the Mayfield West Master Environmental Servicing Plan (MESP) and draft plan review processes. While the technically preferred route appears to avoid the TRCA-owned central woodlot, a new interchange and extension will result in the removal of at least two PSW's, TRCA-owned lands, woodlots and the stream corridors that connect them as part of the Heart Lake Wetland Complex. The Heart Lake Wetland Complex has already been subject to significant impacts as a result of the Highway 410 extension, which has altered drainage patterns and permanently changed the hydrology of some of the wetlands. Impacts to features along those routes will need to be reviewed once further detail is provided.

Recommendation:

- 26. MTO work closely with TRCA, the City of Brampton, Town of Caledon and Regional Municipality of Peel and reconsider the interchange that would allow for the extension at Highway 410 to use existing Highway 10 infrastructure.**

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Nashville Conservation Reserve

The NCR is TRCA-owned land which extends from King Road south to Kleinberg and serves as an integral part of the TRCA's NHS. The NCR supports a wide variety of wildlife, conveys the federally designated Humber River (Canadian Heritage River), is an important migratory corridor, provides important recreational and natural resource for users and TRCA has identified future plans for this important greenspace in the Nashville Conservation Reserve Management Plan (2015).

MTO's technically preferred route section 8-3 through the southern section of the NCR, will fragment these lands resulting in impacts to almost 8 ha (based on TRCA data), approximately 58 ha of woodland and vegetation, approximately 10.3 ha of wetland habitat (based on the MTO evaluation table), and will pass through conservation lands at the narrowest portion of the tract. This route represents one of the alternatives with the smallest area of impact to TRCA-owned lands within the NCR.

In comparison, although alignment 8-1 through the northern section of the NCR, as recommended by the City of Vaughan in a letter to the Regional Municipality of York, dated November 25, 2019, would result in the most significant impact to TRCA-owned lands. This route could be selected but only if appropriate measures were applied to minimize negative impacts and achieve ecological and other benefits outside of this impacted area. This alignment would see approximately 55 ha of land impacted together with the removal of approximately 87.8 ha of forest, meadow and treed swamp and 11.7 ha of wetland (based on the MTO evaluation table). It should be noted that the Regional Municipality of York in their Council report of January 16, 2020, requested MTO to review alignments in the North Kleinburg-Nashville Secondary Plan Area and to reduce impacts to existing and approved community areas. It is recommended that TRCA, Vaughan, York and MTO staff continue to work together to find a solution to these concerns.

Recommendations:

- 27. MTO work with TRCA, the City of Vaughan and Regional Municipality of York to determine an alignment that will minimize and/or mitigate impacts through the NCR.**
- 28. MTO recognize trail networks in the preliminary design alternative and ensure connectivity, parking and access is maintained.**
- 29. MTO ensure signage identifying the NCR and the Humber River's Canadian Heritage River System status be included in an area along the highway within the boundary of the NCR and in the vicinity of the Humber River.**

Archaeology

Once a preferred route has been chosen and development limits identified, TRCA archaeologists will need to complete archaeological investigations for any work on TRCA lands as per TRCA policy and at costs to be borne by MTO. Based on a review of TRCA information for the area, there is high potential for both Indigenous and Euro-Canadian archaeological sites and artifacts specifically in the NCR, and potentially in other TRCA-owned lands. Should sites or artifacts be encountered, further work will be needed to ensure the sites or artifacts are recognized and preserved in accordance with the objectives of the Etobicoke Creek and Humber River Watershed plans, the Humber River Canadian Heritage Rivers System designation, and the affected Indigenous communities. It should be noted that through the EA process, MTO is required to consult with Indigenous peoples and consider and incorporate the findings of those investigations.

Recommendation:

- 30. MTO closely coordinate with TRCA archaeology staff to complete investigations as per TRCA and provincial policy on TRCA-owned lands once a preferred route has been identified.**

LAND USE

Greenbelt Plan Area

MTO's technically preferred route appears to minimize impacts to the Protected Countryside designated area within the Greenbelt Plan.

Development

For several years, TRCA has worked closely with municipalities on development applications within the focused corridor width that was identified by MTO and the IESO in February 2018. We note that many of the municipal Secondary Plans, Block Plans and Official Plan Amendments in support of future development were approved based on the reduced Focused Analysis Area.

Through the planning process, TRCA has worked with the development industry and municipal staff to protect significant features and, through these municipal planning processes convey lands into public ownership. Significant time, effort and cost have been invested by TRCA and other parties to coordinate the approvals in conjunction with the reduced Focused Analysis Area Corridor Protection Area.

The GTA West Technically Preferred Route crosses future block plan areas, such as Block 62 West in the City of Vaughan, where preliminary work started several years ago, including staking of natural features. Other locations along the route are subject to Ontario Municipal Board (OMB) decisions or current Local Planning Appeal Tribunal (LPAT) hearings, set for 2020. In Block 66 West within the City of Vaughan, the technically preferred route could also potentially impact a site in which the valleylands were to be restored and dedicated to TRCA.

Recommendation:

- 31. MTO be requested to work with TRCA, municipalities, landowners and developers, and community and environmental organizations recognizing the shared concerns with particular alignments and interchanges, lands to be conveyed to TRCA through the development process, as well as TRCA and partner efforts in protecting natural features through the municipal planning process to establish a routing which respects the various concerns.**

Terminus Points at Highway 410, Highway 427 and Highway 400

The proposed highway includes several key connections to existing major highways 410, 427 and 400. It is unclear at this time whether extensions of these highway networks will be required in the future and how those extensions will impact features beyond areas examined through this study.

Recommendation:

- 32. MTO include projections for possible future extensions in the EA to ensure proposed terminus points at each of these locations to avoid or minimize impacts to TRCA properties, conservation lands and the NHS to the north and east.**

RELATIONSHIP TO BUILDING THE LIVING CITY, THE TRCA 2013-2022 STRATEGIC PLAN

This report supports the following set forth in the TRCA 2013-2022 Strategic Plan:

Item 7.8

Strategy 2 – Manage our regional water resources for current and future generations

Strategy 4 – Create complete communities that integrate nature and the built environment

Strategy 7 – Build partnerships and new business models

Strategy 8 – Gather and share the best sustainability knowledge

Strategy 12 – Facilitate a region-wide approach to sustainability

FINANCIAL DETAILS

- Should the province pursue approvals through the TRCA VPR process, fees for these services will be charged based on service delivery requirements that are consistent with the TRCA Fee Schedule. If the VPR process is not followed, TRCA will charge fees for all updated data and mapping.
- Monetary requirements for natural heritage compensation will be negotiated.
- Acquisition of TRCA-owned property will require negotiation of land-based monetary compensation.

DETAILS OF WORK TO BE DONE

- TRCA staff will continue to work with MTO staff through the Regulatory Agency Advisory Group, the Greenbelt Transportation Advisory Group and separate working groups.
- TRCA staff will report back to the TRCA Board of Directors once the preliminary design alternatives and technical appendices are provided to TRCA staff for review and comment and provide an update as to how TRCA recommendations have been addressed.
- Should the project be approved with a condition that requires the TRCA VPR process be implemented, TRCA staff will work with MTO through the detailed design and construction stages to ensure TRCAs regulatory, restoration and compensation concerns and objectives are addressed.

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Attachments: 4

Attachment 1: Cross Section

Attachment 2: Focused Analysis Area

Attachment 3: Technically Preferred Route Roll Plan

Attachment 4: Summary of Recommendations