NCC CCN Canada

February 20, 2015

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City of Ottawa
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Subject: Preliminary Design–Hope Side Road/Old Richmond Road/West Hunt Club Road Widening

Ms. Taylor,

Further to recent discussions between the City of Ottawa and the National Capital Commission (NCC) regarding the above-referenced project, I am writing to inform you of the NCC's interests in this matter so that the City can properly structure the design work to come now that the Ontario Ministry of the Environment has issued its denial of the Part II order request for the Municipal-Class Environmental Assessment for this project.

Our comments are based on the information presented in the City's Environmental Study Report (January 2014) and Value Engineering Study (September 2014) and are intended to confirm our shared understanding of federal interests to be protected as the project evolves.

These comments are intended to enable the design phase of your project with clear and proactive guidance as to NCC and federal requirements on all aspects of the project. They will serve as a common reference point for assessing the final design selected for the project.

General

In order to minimize adverse environmental impacts on sensitive Greenbelt lands, the NCC is guided by the joint cumulative effects assessment approach undertaken recently with the City of Ottawa, which requires careful and responsible management of project activities and impacts. It is based on our understanding of the evidence provided on environmental risks, values and objectives. The approach is framed by the following hierarchy of principles that should always inform project development:

1) Avoidance
2) Mitigation
3) Compensation

As you know, the intention of this approach is to firstly avoid and then minimize – or otherwise, manage appropriately – possible impacts from development and other projects on federal lands. Impacts that cannot be avoided will need to be appropriately mitigated and/or compensated. These principles will continue to guide our review of this project so we encourage you to develop your detailed design accordingly to ensure success and expedite the process as much as possible.

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The information provided in no particular order below, identifies the most significant NCC concerns and interests. They are distilled into **eight key performance outcomes** to allow the City of Ottawa to better understand and respond to these challenges. In some cases we have identified **key recommended actions** to help achieve the performance outcomes. These provide you with a clearer indication of the NCC's priorities; we hope to continue providing iterative feedback regarding options you will be putting forward to address the performance outcomes identified.

These actions are not prescriptive requirements. Instead they are indicative of the NCC's preference in these matters so that the City can be informed proactively as to whether certain design considerations are advancing in a manner that respond to federal interests. Design attributes that differ from the proposed actions should be rationalized with indications of why an alternative choice was made and how it serves to achieve the performance outcome. To facilitate such discussions we suggest the establishment of regular technical meetings with key stakeholders from both organizations, as the preliminary design process unfolds.

POLICY FRAMEWORK – GREENBELT MASTER PLAN

The NCC's Greenbelt Master Plan (2013) provides strategic guidance for land use in the Greenbelt. It places paramount importance on natural heritage and ecological features including Core Natural Areas such as Stony Swamp, and more broadly the long term ecological health of the Greenbelt. It is available on the NCC website [http://www.ncc-ccn.gc.ca/planning/master-plans/greenbelt-master-plan].

The NCC's role in reviewing this project is to ensure that it meets all applicable federal legislative requirements and conforms to the Greenbelt Master Plan and supporting policies. The lands impacted by this project area located in the Stony Swamp Sector and are primarily designated Core Natural Area. This designation is intended to signify that such lands serve the highest value ecological function. A key objective of the Greenbelt Master Plan is to ensure a **net ecological gain** from initiatives within Core Natural Areas (GMP Table 5.1, Policy 2). Policies specific to transportation projects (Section 6.7) emphasize, among other elements, that projects should preferably result in a net gain in environmental condition and apply context-sensitive design best practices to conserve natural and visual resources.

NATURAL ENVIRONMENT

Stony Swamp is the most ecologically diverse protected area in the Ottawa Valley. The swamps bedrock dates back to Precambrian times, the earliest geologic age. Stony Swamp is classified as a Provincially Significant Wetland (PSW) and an Area of Natural and Scientific Interest (ANSI). The area has over 700 species of plants — the largest total of any area in Canada's Capital Region. This includes 63 species of regionally rare plants, 11 of which exist nowhere else in the Greenbelt. A variety of reptiles, amphibians, mammals and birds make their home in Stony Swamp. The area has 251 regionally rare bird species and several species at risk (Flooded Jellyskin, Butternut, Blanding's Turtle, Snapping Turtle, Western Chorus Frog, Milksnake, Common Nighthawk, etc.). It also features many interesting habitats, such as: a Sugar Maple forest, small alvar clearings, boggy wetland and regenerating pastures.

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Key performance outcome: That road design and construction demonstrate a net gain in environmental condition.

There are several categories of environmental impacts that will need to be addressed by the City, not limited to those identified in the City's Environmental Screening Report.

Species at Risk (General)
At least three fauna species at risk protected under the federal *Species at Risk Act* are using the area adjacent to the existing road: the Western Chorus Frog (Threatened), the Milksnake (Special Concern) and the Snapping Turtle (Special Concern).

Key recommended actions include:

- Using Environment Canada's Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada [http://publications.gc.ca/collections/collection_2014/ec/CW66-237-2004-eng.pdf], provide the NCC with a thorough analysis of the potential effects of the project on these three species and others for which potential habitat in the area was identified.
- Integrate in the road design, construction and operation mitigation measures to protect or enhance these species and their habitat. The measures selected must be consistent with any applicable recovery strategy and action plans (e.g., draft recovery plan for the Western Chorus Frog and draft management plan for the Milksnake both available on the official *Species at Risk Act* Registry web site).

Species at Risk (Western Chorus Frog)
Under separate cover we will provide Canadian Wildlife Services comments on the Western Chorus Frog. Because of its level of protection (Threatened) and the fact that Stony Swamp has been identified as one of its critical habitat, particular efforts should be put towards protection and enhancement of the Western Chorus Frog and its habitat.

Key recommended actions include:

- Complete species specific surveys in the appropriate period following a survey protocol pre-approved by the Canadian Wildlife Services. The objective is to delineate the species' critical habitat as defined in the species' draft recovery strategy [http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1312] and identify mitigation measures to protect or enhance it through this project.

  The survey's recommended spatial scope should include all potential habitat areas within 300m of the proposed project as the draft recovery plan identifies that: *"For stages taking place on land, areas of suitable habitat are incorporated up to 300 m from the boundaries of breeding wetlands to allow for the completion of the species' annual life cycle."* Environment Canada recommends a minimum of three surveys per site during the breeding period (late March – end of April/early May), undertaken during appropriate conditions, to increase the likelihood of the frog detection.

Migratory Birds
The 6 ha of Greenbelt land that is required for this project is classified as a core natural area by the NCC and serves as important nesting and breeding grounds for multiple species of birds protected under the *Migratory Birds Act*. To that end, the design should identify more than simply *when* vegetation can be cut but seek to first identify the possible impacts from that proposed activity (e.g., changing abundance, demography and behavior, habitat loss and alteration, etc.) so that it may be defined as narrowly as possible to permit the project, without causing significant adverse environmental effects on the flora and fauna in the area.

Key recommended actions include:

- Complete an assessment of the potential negative effects of the project on birds following the guidelines identified by Environment Canada: A Framework for the Scientific Assessment of Potential Project Impacts on Birds [http://publications.gc.ca/site/fra/367511/publication.html].

  This assessment should focus on all migratory birds protected under the *Migratory Birds Convention Act*, with particular efforts directed at the bird species identified at risk, and the bird species identified as priorities in the Bird Conservation Strategy for Bird Conservation Region 13 in Ontario Region: Lower Great Lakes/St. Lawrence Plain [http://www.ec.gc.ca/mbc-com/default.asp?lang=En&n=5E5EAC0C-1].

Specific actions to avoid, minimize or compensate these effects on birds will depend on the nature of effects identified through this assessment. The City is recommended to refer to the link above to better understand expectations in this regard from Environment Canada.

Wildlife
Road kill in Stony Swamp has most likely reduced the populations of amphibians and reptiles (frogs, toads, turtles, snakes). In 2014, 69 observations of road mortality were recorded over a 10-week survey completed by the NCC. The Snapping Turtle and Milksnake (the two species at risk found during the survey) accounted for 24 of the observations. Snapping Turtles and Milksnakes are both listed as Special Concern under the *Species at Risk Act*.

The NCC's objective is to reduce road related mortality of wildlife, protect species at risk, and reduce associated risks to public safety.

In addition to specific requirements under various federal and provincial statutes, wildlife habitat connectivity should be considered and assessed for **all wildlife** susceptible to be impacted (ungulates, carnivores, low-mobility medium-sized mammals, small mammals, semi-arboreal mammals, semi-aquatic mammals, reptiles, amphibians, etc.), not only for turtles to ensure a robust and prudent approach to our shared stewardship of this sensitive natural environment.

Under separate cover we will provide comments from the Canadian Wildlife Services regarding missing information to assess proposed location and type of wildlife crossings, including descriptions of potential habitat, detailed elevation mapping showing high and low water levels, and surveys of use of area (including estimates of wildlife road mortalities). Environment Canada indicated that The Road Ecology Group, associated with the Toronto Zoo, is widely regarded as a good source of expertise in this area and should be able to provide specific design recommendations.

Key recommended actions include:

- Pursue methods to minimize wildlife mortality along the roads and reduce risks to public safety. This will include:
    - Establishing dedicated amphibian and reptile crossings at mortality hotspots and installing exclusion fencing (based on wildlife road mortality data to be provided by NCC).
    - Providing wildlife passages for large ungulates, primarily white-tailed deer.
    - Designing and installing complementary signage alerting drivers of wildlife and crossing structures and distinguishing Stony Swamp as an important and sensitive Greenbelt natural area.
- Incorporate appropriate road wildlife mortality mitigation measures early in roadway design and construction (NCC to provide design suggestions).
- Monitor and measure the effectiveness of wildlife mortality mitigation measures by conducting collaborative research to evaluate whether the crossings/passages and other measures have mitigated the effects on wildlife.

Habitat

The roads themselves, including the shoulders, represent lost habitat to wildlife and indirect habitat degradation due to noise and fragmentation. This includes known habitats supporting species at risk. To conform to the Greenbelt Master Plan's transportation policies, the project must at least demonstrate that existing ecological impacts will not be made worse. Preferably, they should result in a net gain in environmental conditions.

The NCC's objective is to effectively restore habitat condition and function where it has been impaired by the roads.

Key recommended actions include:

- Develop a wetland mitigation and compensation plan. This should include measures to:
    - Increase open water component for turtles, birds and frogs (NCC can provide priority wetland enhancement areas in Stony Swamp) using techniques such as channel cutting.
    - Enhance the function of ephemeral wetlands that have been "choked out" by vegetation.

- Examine the possible closure of Moodie Road north of West Hunt Club, and unopened road allowances where appropriate and feasible based on the policies of the Greenbelt Master Plan and subject to consideration of transportation management requirements, with a view to increasing habitat patch size and reducing fragmentation.
- Provide options and implement measures to restore habitat connectivity on either side of the roads.
- Apply species at risk habitat recovery initiatives for known species at risk in Stony Swamp (NCC can provide mapping).
- Provide artificial nesting sites for species at risk and other sensitive species including turtles, frogs and bird species.
- Rehabilitation of abandoned pasture and non-native successional species to create grassland habitat.

Wetlands

The objectives of the Federal Policy on Wetland Conservation ('the Policy') guide federal resource management requirements in these matters and must therefore be attained. These include achievement of "no net loss" of wetland functions and any unavoidable losses of wetland functions must be compensated. The Policy's strategies also have to be taken into consideration when relevant (e.g., Strategy 3: *"The federal government will continue to manage the use of National Parks, National Wildlife Areas, Migratory Bird Sanctuaries, National Capital Commission lands and other federal areas established for ecosystem conservation purposes so as to sustain their wetland functions and natural processes."*).

The strict sequence of mitigation alternatives identified in the Policy (avoidance, minimization and compensation) must be implemented, as outlined earlier in this letter. The City is strongly encouraged to communicate any choices made in the detailed design phase through this framework in order that those choices and recommendations can be properly assessed.

In other major transportation projects requirement NCC land where the loss of wetland functions was an issue, the NCC applied a differentiated compensation ratio based on the degree of uncertainty with respect of the performance of the proposed replacement of the lost functions to ensure that the *"no net loss of wetland ecological functions"* principle was respected. The ratios range from 3:1 to 5:1 and were previously applied on the Autoroute 5 and Rapibus projects in Quebec and LeBreton Flat Interim use project in Ontario. The NCC would be pleased to negotiate the ratio to be applied in this case, based on project's identified loss of wetland functions and ecological value of the proposed mitigation measures/compensation plan for this component of the project.

<u>Key recommendation actions</u> include:

- Prepare a wetland ecological function assessment following one of the approaches recommended in the following Canadian Wildlife Services document: Wetland Ecological Functions Assessment: An Overview of Approaches [http://publications.gc.ca/collections/collection_2010/ec/CW69-5-497-eng.pdf].

- The assessment shall identify measures that would be taken to integrate the sequence of mitigation alternatives into the project design, construction and operation and, if required (i.e. unavoidable loss of wetland functions identified), propose compensation using federal guidance provided in the following documents:
    - The Federal Policy on Wetland Conservation: Implementation Guide for Federal Land Managers [http://nawcc.wetlandnetwork.ca/Fed%20Policy%20Wetland%20Conserv_Implement%20Guide%20for%20Fed%20Land%20Mgrs.pdf]
    - Wetland Mitigation in Canada: A Framework for application [http://nawcc.wetlandnetwork.ca/Wetland%20Mitigation%202000-1.pdf]

Hydrology and Stormwater Management
The Stony Swamp hydrological network is not well known and can be affected by changes in drainage in the site's surrounding areas. Reducing to a minimum the impacts of land use changes and drainage modifications that could in turn modify Stony Swamp's hydrology and wetland habitats is one general conservation recommendation in the management recommendations prepared by WSP for the NCC's Valued Natural Ecosystems and Habitats.

The NCC's objective is to reduce the hydrological barrier effects of the roads, and where possible, enhance natural hydrological regimes.

Key recommended actions include:
- Restore and maintain hydrological balance by implementing measures to mitigate existing barrier effects of the roads (NCC to provide design suggestions).
- Provide stormwater management plan demonstrating how the City will reach the objective of protecting or enhancing surface water quality and ensuring no negative effects to the hydrogeology of a provincially significant wetland.

Fish Habitat
The City must be able to demonstrate that the project design, construction and operation would be in compliance with the *Fisheries Act* regarding allowance of fish passage and negative effects on fish and its habitats, including potential release of deleterious substances in a fish habitat.

Contaminated Soils and Groundwater
The City's Environmental Site Assessment (ESA) did not review the NCC's ESA documents for lands adjacent to and included in the road widening. Under separate cover we will provide a spreadsheet that includes the ESAs that are relevant to the project and the conclusions that are provided in the studies.

The City should review these documents prior to proceeding with the Phase II ESA. Several of the NCC ESA reports highlight areas of potential environmental concern if there is a change of land use or a divestiture of the site. Please note that the list may not be exhaustive and should the City request copies of the relevant ESA documents the NCC will conduct a more thorough review at that time. The City should conduct its own review of the documents.

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Environmental Health Effects
Indirect effects of the project on human health are matters that need to be considered in any federal decision taken under the *Canadian Environmental Assessment Act*, 2012 (CEAA, 2012). Recognizing that the intent is to transact these lands prior to construction, a formal CEAA determination will not be undertaken. It is advisable, however, for the City to assess these impacts as outlined below and indicate how they are being managed through the design. The NCC is particularly concerned as to the potential effects of the project on the residents of the units the organization leases along Old Richmond Road and West Hunt Club.

Potential negative effects on human health include:

- Increase in environmental noise levels. All NCC residential buildings and farms along Old Richmond Road and West Hunt Club should be identified as sensitive receptors and be included in the noise mitigation measures investigation that was completed for the other receptors by RWDI for the City.
- Increase in air contaminants. This should include a discussion regarding why baseline data used for the class environmental assessment air quality modelling is coming from stations that are outside of the existing roads zone of influence that is define by the MTO as 500 m from the transportation facility; and
- Decrease in potable water quality and quantity. As mentioned at ACG no. 1 and 2, NCC residences within Greenbelt are generally on well and septic tank and these may be impacted even if the house is not. Further analysis completed by the NCC indicates that on the units along Old Richmond Road and West Hunt Club, 9 have their well in the front yard only a few meters away from the existing right-of-way. Therefore, as identified in the Environmental Study Report, appropriate studies should be pursued as soon as possible to identify how the construction and operation of the new road alignment and associated drainage system could impact these wells water quality and quantity and identify mitigation measures to ensure NCC tenants provision in potable water that meet applicable guidelines for quality and quantity.

For guidance on how federal authorities would be expected evaluate these indirect human health effects, please refer to Health Canada Useful Information for Environmental Assessments available on their website: http://www.hc-sc.gc.ca/ewh-semt/pubs/eval/environ_assess-eval/index-eng.php

Road Pollutants
The NCC's objective with regards to road pollutants, including road salt, heavy metals and other contaminants, is to reduce their effect on natural lands.

Due to concerns about the large quantities of chlorides being released to the environment, road salts underwent a comprehensive five-year scientific assessment under the *Canadian Environmental Protection Act, 1999* beginning in 1995.The road salts assessment covered the chloride salts – sodium chloride (NaCl), calcium chloride ($CaCl_2$), magnesium chloride ($MgCl_2$) and potassium chloride (KCl) – as well as brines used in road de-icing/anti-icing and dust suppression, the salt portion of abrasive mixtures and ferrocyanide additives. Road salts enter the environment through losses at salt storage and snow disposal sites and through runoff and splash from roadways. The assessment report, published on December 1, 2001 concluded that high releases of road salts have an adverse effect on freshwater ecosystems, soil, vegetation and wildlife. Moreover, provincially significant wetlands adjacent to roadways have been identified by Environment Canada as being a salt vulnerable area [https://www.ec.gc.ca/sels-salts/default.asp?lang=En&n=82FAD3D4-1].

The City should determine the level of vulnerability of Stony Swamp to pollutants and in particular the need to implement salt management measures. The City should also demonstrate how they would integrate Environment Canada's Road Salts Code of Practice [https://www.ec.gc.ca/sels-salts/default.asp?lang=En&n=F37B47CE-1] and Transportation Association of Canada Syntheses of Best Practices – Road Salt Management (2013) [http://tac-atc.ca/en/bookstore-and-resources/free-resources-and-tools/syntheses-practice] into the project design and operation.

Key recommended actions include:

- Demonstrate how the design mitigates the effects of pollutants such as road salt, heavy metals and other contaminants coming from the road.
- Demonstrate (modelling, best practices, experience in other projects, etc...) how the design serves to maintain or improve water quality in water bodies in Stony Swamp.

REAL ESTATE

The project will require a land transaction between the NCC and the City. As the lands to be transferred to the City are within the National Interest Land Mass (NILM), in return the NCC prefers to acquire City-owned land in the Greenbelt.

> *Key performance outcome: Achieve no net loss with regards to the land exchange.*

As such, it is anticipated that similarly designated lands will be sought (i.e., Core Natural Area). Further discussions will be necessary to confirm the proposed exchange at a staff level, as a pre-condition to subsequent, formal, approvals to come.

The transaction will require approval from the NCC Board of Directors and the Governor in Council. Governor in Council approval may take between 6 and 12 months from NCC Board approval. Land access for commencement of the works can only be provided upon transfer of real property rights, following Governor in Council approval.

ARCHAEOLOGY

The NCC pre-contact archaeological potential study indicates that lands of medium and high potential for pre-contact archaeological resources are located within the corridor. As well, based on other studies conducted in the general vicinity, it is highly likely that certain areas of the corridor have an elevated potential for historical archaeological resources.

> *Key performance outcome: Appropriately manage potential archaeological resources.*

As land will be transferred to the City prior to construction taking place, the provincial *Ontario Heritage Act* will apply to the physical works. However archaeological investigations will likely occur prior to construction on federal lands, in which case provincial regulations do not apply. Further discussions will be required regarding the scope of such work as it can have a significant impact on our lands. The NCC wishes to review all draft archaeological reports produced in support of the project and obtain copy of the final reports.

ABORIGINAL CONSULTATION

Both the approval for the project and the likely, eventual, sale of lands to enable it trigger the "Crown conduct" that is the basis for aboriginal consultation requirements of the federal Crown.

> *Key performance outcome: Meet the federal duty to consult with Aboriginal groups.*

More information on the nature and scope of this legal duty will be provided shortly. We understand that the City may have undertaken consultation with some Aboriginal communities in support of its Environmental Screening Report. Please provide any information regarding this consultation as it may assist the NCC in meeting our legal obligations. The City is advised that its own consultation activities may not be sufficient to meet federal requirements in this regard.

LEASED PROPERTIES

The NCC leases 14 properties along Old Richmond Road and West Hunt Club Road (11 residential, 2 agricultural, 1 commercial).

> *Key performance outcome: Minimize adverse impact on NCC tenants.*

Impacts that cannot be avoided will require appropriate mitigation and compensation. It is the NCC's preference to retain as many properties to the extent possible.

In some cases the buildings themselves are located within the proposed widened right-of-way and will require demolition. Should this be unavoidable, key recommended actions include:

- Undertake demolition in accordance with NCC standards (e.g., green demolition, appropriate tenant notification in collaboration with the City, post-demolition reports, site reinstatement, environmental determination under the *Canadian Environmental Assessment Act*, Federal Land Use Approval, etc.). The NCC anticipates that the City will be responsible for all direct and indirect costs associated with such demolitions (including compensation for lost revenue).

For all other properties, key recommended actions include:

- Explore design solutions to mitigate impact on quality of life due to increased noise and traffic.
- Undertake pre and post-assessment of building condition to monitor impact due to vibrations. Compensation will be sought for costs directly related to the project's effects on these properties.
- Undertake pre and post-assessment to monitor impact on wells and septic tanks (water quality and quantity) in proximity to the construction site. Compensation will be sought for related costs.
- Access:
    - During construction: maintain continued access to all properties.
    - Post-construction: accommodate full turning movement to and from all leased properties. Currently the proposed median would limit access to right-in/right-out, generating up to 2km of additional travel. Access may also be more difficult due to increased volumes of traffic. Of particular note, the Lone Star Ranch (4420 West Hunt Club) is a busy location with frequent visitors and group events. Design options that should be investigated for all properties include a median cut and/or turning lanes if necessary.

Two agricultural tenants access their farm property from West Hunt Club Road via four separate entrances. We are concerned with the limited right-in/right-out access that is proposed and any access restrictions that may be imposed during construction. Note that slow farming vehicles are frequently used along this corridor to access these properties and this must be taken into consideration in the design.

We also seek confirmation on whether the City plans on constructing new water and sewer lines along this corridor as part of this project or in the future.

VISITOR EXPERIENCE AND RECREATION

There are three trailhead NCC parking lots located within the proposed corridor, providing access to the Greenbelt trail network:

1) P6 on the west side of Old Richmond Road, south of West Hunt Club Road;
2) P11 on the south side of West Hunt Club Road, east of Moodie Drive; and
3) P7 on the west side of Old Richmond Road, north of West Hunt Club Road.

Stony Swamp's diversity and accessibility make it a popular location for visitors.

> *Key performance outcome: Reduce the adverse impacts to Greenbelt visitor experience and public safety risks of recreational users.*

Key recommended actions include:

- Relocate NCC parking areas and realign trails to maintain access, reduce environmental impact, and reduce risks to public safety. Measures to be explored could include:
    - Closing P6 and relocating the parking area south-east on Old Richmond Road (near Lime Kiln-south of Stonehaven Drive) and establishing new trails that link to the existing Greenbelt trail network.
    - Providing safe pedestrian crossing at the Rideau Trail (trail 25) to cross Old Richmond Road.
    - Providing safe pedestrian crossing at P11 parking area to address safety concerns crossing West Hunt Club Road, including a pedestrian underpass crossing structure.
    - Ensuring safe vehicular access and egress at all parking areas including full turning movement.

CULTURAL LANDSCAPE

The Greenbelt Master Plan identifies the protection of cultural heritage and landscape character as a priority. Moreover Old Richmond Road and West Hunt Club Road are identified as 'Scenic Routes' in the Greenbelt Master Plan. The intent of such corridors is to provide scenic access to a variety of attractions through a diverse range of Greenbelt landscapes. Negative impacts to the character of the landscape, views and significant landscape features should be avoided and mitigated as part of a context-sensitive design approach. Appendix F of the Environmental Study Report submission provides a useful overview of the key features to be considered.

Lighting

Within the Greenbelt the NCC supports the reduction of lighting to the minimum required for safety purposes, consistent with rural practices, in order to help achieve a night sky quality and protect the scenic and visual character of the Greenbelt.

Under separate cover we will provide comments from the Canadian Wildlife Services with regards to lighting in the context of impact on wildlife. Based on these comments, the NCC do not see the need to conduct a study to assess lighting effects on wildlife if it is in the best possible location (median lighting as proposed) and has the minimum intensity required to ensure road users safety.

> *Key performance outcome: Mitigate negative impacts to significant landscape features and views.*

Key recommended actions include:

- Prepare a Heritage Impact Assessment of different options, evaluating their impacts on the views and features identified in Appendix F, in order to inform the selection of preferred options (for example intersection location and design).
- Consider opportunities to optimize and enhance key stationary and kinetic views.
- Use strategic roadside plantings.
- Use a low-impact lighting strategy and explore options to reduce lighting to the minimum required for safety purposes.
- Apply context-sensitive best practices in infrastructure design.

TRANSPORTATION INFRASTRUCTURE AND ROADWAY DESIGN

According to the designed presented in the Environmental Study Report approximately 6 hectares of NCC lands are required for the project.

Key performance outcome: Minimize requirements for NCC land.

This can be achieved in a number of ways, including consideration for the following elements.

Roadbed

A reduction in the total width of the roadbed will help reduce the impact on sensitive NCC land.
Key recommended actions include:

- Reduce width of travel lanes.
- Reduce design speed and maximum posted speed.

These recommendations are not intended to supplant regulatory requirements from the Ontario Ministry of Transportation but rather to indicate that variation allowed for with regard to acceptable land widths should fall to the minimum side of the range, subject to safety requirements.

Cyclist & Pedestrian Infrastructure

The design presented in the Environmental Screening Report proposes 2.5m paved shoulders to accommodate cyclists and pedestrians. The Value Engineering Report examines other design options such as a two-directional multi-use pathway along one side of the roadway corridor, providing a safer and more enjoyable experience for users.

While we recognize the City policy advocating cycling and walking facilities associated with roadway projects, we feel that a balance must be struck between providing appropriate infrastructure to encourage active transportation (walking and cycling) within and across the Greenbelt while minimizing environmental impact. Our interest lies in ensuring that the scale and impacts of the proposed active transportation infrastructure design are sensitive ecological nature of the lands being proposed for this use. The design solution should, therefore, carefully consider this balance and reference how impacts have been properly mitigated, according to the guidance provided herein.

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Key recommended actions include:

- Provide data to support the scope of proposed cyclist and pedestrian facilities, including current and expected use.
- Undertake an impact assessment of each option (e.g., footprint, drainage, fragmentation, impact of winter maintenance if facilities are to be winter maintained, etc.). This additional information will assist the NCC in providing feedback on design options.

Intersections

Minimizing the footprint of intersections will help reduce impacts on sensitive lands. A 2-lane roundabout is proposed at the T-intersection at Stonehaven Drive and Old Richmond Road, extending significantly into a wetland, whereas the signalized intersection proposed at Moodie Drive and West Hunt Club Road requires significantly less land.

Key recommended actions include:

- Carefully consider each intersection design to minimize footprint and adverse impact on NCC lands.

Site Investigations

We anticipate the City will pursue a range of site investigations prior to the lands being transferred. Land Access Permits are required to access federal lands for such purposes. More information can be found on the NCC website: http://www.ncc-ccn.gc.ca/property-management/permits/land-access-permit.

Summary of Key Performance Outcomes

To summarize the guidance provided herein, the following key performance outcomes are presented in no particular order:

1) Achieve no net loss with regards to the land exchange.
2) Appropriately manage potential archaeological resources.
3) Meet the federal duty to consult with Aboriginal groups.
4) Minimize adverse impact on NCC tenants.
5) Reduce the adverse impacts to Greenbelt visitor experience and public safety risks of recreational users.
6) Mitigate negative impacts to significant landscape features and views.
7) Minimize requirements for NCC land.

8) That road design and construction demonstrate a net gain in environmental condition. This includes consideration for:
   - Species at risk
   - Migratory birds
   - Wildlife
   - Habitat
   - Wetlands
   - Hydrology and stormwater management
   - Fish habitat
   - Contaminated soils and groundwater
   - Environmental health effects
   - Road pollutants

We recognize that the comprehensive nature of this letter may require additional clarification or support and so the NCC is available to meet as required to address any and all such inquiries. Further, we look forward to continued collaboration between the NCC and the City as the design process unfolds and are available for detailed discussions as required in order to develop appropriate solutions that meet our respective policies and objectives.

Sincerely,

Fred Gaspar, Director
Federal Approvals and Environmental Management

c.c: Steve Willis
Sophie Acheson
Marie Boulet
Nancy Schepers

<u>Referred to in this letter and enclosed under separate cover</u>:

- Email correspondence (February 3, 2014): Canadian Wildlife Services comments on the Western Chorus Frog, wildlife crossings, and lighting
- Excel spreadsheet: List of NCC Environmental Site Assessments (ESA)
- Study of wildlife road mortalities in Stony Swamp (2014)
- NCC Species at Risk database (Feb 2014)
- Priority wetland enhancement areas in Stony Swamp (2014)
- Mapping of pre-contact archaeological potential