

### **3.0 SCOPE OF ASSESSMENT**

The Scope of the Assessment includes those factors that need to be considered in a screening level assessment:

- a) The environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- b) The significance of the effects referred to in paragraph (a);
- c) Comments from the public that are received in accordance with this Act and the regulations;
- d) Measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and,
- e) Any other matter relevant to the screening... that the responsible authority... may require to be considered.

It should also be noted that that the definitions of environment and environmental effect under the Act are as follows:

**"Environment"** means the components of the Earth, and includes:

- a) Land, water and air, including all layers of the atmosphere;
- b) All organic and inorganic matter and living organisms; and
- c) The interacting natural systems that include components referred to in paragraphs (a) and (b).

**"Environmental effect"** means, in respect of a project:

- a) Any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the Species at Risk Act;
- b) Any effect of any such change referred to in paragraph (a) on:
  - o Health and socio-economic conditions;
  - o Physical and cultural heritage;
  - o The current use of lands and resources for traditional purposes by aboriginal persons;
  - o Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance; or,
- c) Any change to the project that may be caused by the environment.

The scope of the assessment includes:

- Environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project, and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out, and any effect that the environment may have on the project, such as from extreme weather events.

### **3.1 Environmental Assessment Method**

Recognizing the past provincial planning and environmental assessment work that has been undertaken in regards to this project, as well as for the lands adjacent to the project, this CEAA screening has recognized and integrated this past work as much as possible. In particular, this screening has taken into account the previously established, traffic-related need for the Terry Fox Drive extension and previous decisions of the City of Ottawa Council to extend the urban boundary to the proposed alignment for the TFD extension, to set aside some natural areas to be protected and to develop the remainder of the lands inside this boundary. The following expands on what this screening has taken into account and considered in its completion:

- That the previously established justification for project need, the road route planning and preliminary design for the Terry Fox Drive extension was based on a previously conducted process under the requirements of the Ontario Municipal Class Environmental Assessment process. The justification for the road extension is to provide future needed road capacity to support urban growth in the larger community of North Kanata;
- That the current limits to the Urban Boundary have been defined by the Terry Fox Drive extension alignment, through an Amendment to City of Ottawa's Official Plan, under the principles of the Ontario Planning Act and the Provincial Policy Statement of 2006; Further, it has been recognized that:
  - The four preliminary draft plans of subdivision for residential areas remain relatively consistent from those reviewed by the City in 2006 and that a significant rezoning for other land uses does not occur prior to build-out;
  - That previous decisions by the Ontario Municipal Board, who have taken into regard comments by the public, regulatory agencies, property owners and the City are respected;
- That the assessments of impact or net effects in this CEAA screening be judged against the 'current baseline' condition of the project study area. The assessment of net effects of the project will take into consideration that the planned residential communities will be built out in the near future and that this roadway will ultimately be an incremental extension to the proposed development scenario for this region. Further, it is noted that:
  - There will be a transitional period between building the Terry Fox Drive extension and the construction of the adjacent residential areas (inside of the roadway arc), with the timing based on market demands and demographic changes within the City of Ottawa;
  - Temporary (< 10 years), interim mitigation measures will therefore be necessary to reduce impacts on some environmental components until such time as the area becomes fully built-out. At that time lands on the north side of the road alignment will be outside of the urban boundary and are expected to be similar to current conditions (i.e. remain in a rural/natural state) while lands inside the road alignment will be largely converted from a natural state to urbanized.
- In recognition of the Ontario Endangered Species Act, passed in 2007, and the federal Species at Risk Act of 2004, the lands currently proposed for future development on the inside of the TFD extension alignment, as defined in the City's Official Plan and in some cases through draft Plans of Subdivision, may need to be subject to further review to define possible areas for protection of certain species and habitats. As each plan of subdivision comes forward for approval, the City will be responsible to have regard for the protection of species at risk, or their habitat, as they are found to occur on each property.

This environmental assessment is intended to meet the requirements of Section 16(1) of the *CEAA* and the INFC Scoping Document and take into regard the previous planning decisions made by the City. The environmental assessment approach actively engaged regulators, City planning staff, major land owners

and the public early in the integrated study to gain concurrence on these issues, with the goal of maximizing environmental protection while minimizing review time and the potential for regulatory delays. The objectives of the assessment were to:

- Consider the potential for both positive and negative changes judged against the current baseline of the environment and the future development scenario;
- Outline the mitigation and impact management measures to be used on this project, and to a lesser extent on the residential community developments that interface with the roadway;
- Assess the effects of the environment on the project;
- Assess the residual and incremental cumulative environmental effects of the roadway at the edge of the approved limits of the urban boundary;
- Seek approvals from various levels of government agencies for specific parts of the project; and,
- Identify the compliance requirements, the interim measures, conditions of approval and the long-term effects or monitoring needs associated with the roadway project considered together with the expected land developments.

The assessment approach focused on the construction and operational impacts of the proposed project and progressed through the following stages:

- Description of the Project;
- Identification of Valued Environmental Components (VECs);
- Establishment of Study Boundaries (spatial and temporal);
- Description of Baseline Environmental Conditions;
- Assessment of Environmental Effects;
- Proposed Mitigation Measures, Prediction of Residual Impacts;
- Assessment of Cumulative Effects; and,
- Proposed Compliance, Effects Monitoring, and Follow-up Programs.

It is noted that protection measures include those that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project. Some measures have been identified for implementation during the road construction as a condition of approval through the Official Plan Amendment (OPA) and OMB hearings. The structural and environmental protection measures indicated, if appropriate, have been included in the design of the project as a condition of the environmental permitting process through the various regulatory agencies. With the practice of proactive, integrated environmental planning and land use management, the mitigation activities to be added between impact identification and evaluation of residual impacts are expected to be minimized. Only the mitigation that must be developed for the particular project, such as site-specific challenges or new regulatory requirements need be described in detail.

## **3.2 Valued Environmental Components**

In order to focus on valued, vulnerable or representative components of the environment, the assessment will focus on valued environmental components (VEC's) for potential interactions with the project. The VEC's were evaluated to determine if potential pathways or linkages exist by which the project activities or works may affect the VEC. In identification of VEC's, only species or environmental components present or known to exist within close proximity to the project are considered. Those species or

components which are not present are not included as there is no potential for project effects. The first step in the assessment was the identification of environmental issues through VEC scoping. The scoping was based on:

- Review of applicable legislation and regulations;
- Review of existing data with respect to the proposed project;
- Public consultations;
- Concerns of regulatory agencies, stakeholders, scientific community; and,
- The proponent’s knowledge of highway planning, construction and operation.

Table 3-1 provides this evaluation.

**Table 3-1 – Terry Fox Drive Part B:  
Valued Environmental Components Scoping and Pathway Analysis**

<b>Component of Concern</b>	<b>Values</b>	<b>Possible Source or Pathway</b>	<b>Rationale for Inclusion or Exclusion</b>	<b>Direct or Indirect Effect</b>
Land Use and Land Use Designations	<ul style="list-style-type: none"> <li>• Valued by the public as important food-producing lands.</li> </ul>	Additional loss of 8.6 ha over approved residential developments.	Included, valued by community.	Direct
Land Use - Agricultural	<ul style="list-style-type: none"> <li>• Valued by owner/ farm operators.</li> </ul>	Isolate 25 ha Alter 18.2 ha in floodplain.	Included, valued by community.	Direct
Land Use - Historical	<ul style="list-style-type: none"> <li>• Valued by public and regulated;</li> <li>• Physical and cultural heritage, structures/sites or things; historical, archaeological, paleontological or architectural significance.</li> </ul>	Loss or disturbance of archaeological, historical, paleontological or architectural resources.	Included, valued, provincial responsibility, public concern.	Direct
Land and Resource Use by Aboriginal Peoples	<ul style="list-style-type: none"> <li>• Federal ‘duty to consult’;</li> <li>• Valued by public and regulated.</li> </ul>	No known resource or use on road alignment.	Included, valued, federal responsibility, public concern.	Indirect
Bedrock Geology, Surficial Geology and Soils	<ul style="list-style-type: none"> <li>• Landscape-scale feature;</li> <li>• Quaternary geology of overburden soils above the bedrock layers;</li> <li>• Surface soils role in potential for sediment generation or other contaminant release.</li> </ul>	Contamination of surface water/ground water.	Included – protected by law; valued.	Direct
Groundwater quantity and quality	<ul style="list-style-type: none"> <li>• Importance in the hydrologic cycle and ecological function (e.g., surface water discharge);</li> <li>• Importance as a water supply to rural users but there are no users along the road alignment.</li> </ul>	Contamination, spills; potable water supply disruption; source of water for habitat.	Included – protected by law; valued as source water, yet municipal water taken from Ottawa River for consumption.	Indirect

<b>Component of Concern</b>	<b>Values</b>	<b>Possible Source or Pathway</b>	<b>Rationale for Inclusion or Exclusion</b>	<b>Direct or Indirect Effect</b>
Air quality and Dust	<ul style="list-style-type: none"> <li>• Important component of the environment, supporting the health and well being of human and other ecosystem components;</li> <li>• Emissions of gaseous and particulate emissions considered in the relevant legislation, and commonly associated with roadway construction projects.</li> </ul>	Vehicle emissions, dust, fugitive emissions, greenhouse gas emissions.	Included, protected by law, valued.	Direct
Noise	<ul style="list-style-type: none"> <li>• Considered due to potential for disturbance of human and wildlife.</li> </ul>	Air and vibration pathways.	Included, protected by law, valued.	Indirect
Designated Natural Features: – Primary & Secondary Natural Lands ANSI, deer yards	<ul style="list-style-type: none"> <li>• Valued by the public, government and scientific community.</li> </ul>	Subject to loss of contiguous area & fragmentation.	Included, valued.	Direct
Provincially Significant and Other Wetlands	<ul style="list-style-type: none"> <li>• Role in ecological, hydrological and hydrogeological function;</li> <li>• Valued by public and Provincially regulated.</li> </ul>	Pathways affecting water quality, fish, amphibians, migratory birds and at-risk species.	Included – protected by provincial legislation and federal policy, valued.	Indirect
Vegetation	<ul style="list-style-type: none"> <li>• Landscape feature of value to humans and wildlife (Species of Special Concern considered separately).</li> </ul>	Subject to removal.	Included, valued.	Direct
Wildlife (including mammals, amphibians, & reptiles)	<ul style="list-style-type: none"> <li>• Ecological function (Species of Special Concern considered separately);</li> <li>• Valued by public and regulated;</li> <li>• Related commercial / recreational values.</li> </ul>	Subject to habitat removal; Pathways affecting surface water or groundwater; direct habitat loss from construction.	Included, - habitat and disturbance of Species at Risk, protected by law, valued.	Direct and Indirect
Migratory Birds	<ul style="list-style-type: none"> <li>• Ecological function (Species of Special Concern considered separately);</li> <li>• Valued by public and regulated;</li> <li>• Related commercial / recreational values.</li> </ul>	Direct habitat loss from construction; Pathways affecting surface water or groundwater; direct habitat loss from construction.	Included – Federally protected by Migratory Bird Convention Act.	Direct and Indirect
Surface water quantity and quality	<ul style="list-style-type: none"> <li>• Importance in the hydrologic cycle and ecological function (e.g., surface water discharge);</li> <li>• Flood protection of private property and human safety;</li> <li>• Importance as contributing to flow supporting fish habitat and wetlands.</li> </ul>	Flood flow alterations Construction sediment generation; accidental release of contaminants; Stormwater drainage included in design.	Included – Regulatory - protected by Water Resources Act and other provincial legislation; Valued by public.	Direct

<b>Component of Concern</b>	<b>Values</b>	<b>Possible Source or Pathway</b>	<b>Rationale for Inclusion or Exclusion</b>	<b>Direct or Indirect Effect</b>
Fish and Fish Habitats	<ul style="list-style-type: none"> <li>• Supports commercially valuable food fisheries;</li> <li>• Valued by public and regulated.</li> </ul>	Destruction of fish habitat Deleterious substances entering water courses.	Federally Regulated Will be altered by project.	Direct and Indirect Effects
Species at Risk or Special Concern	<ul style="list-style-type: none"> <li>• Endangered and Threatened Species at Risk;</li> <li>• Ecological function (Species of Special Concern considered separately);</li> <li>• Valued by public and regulated.</li> </ul>	Pathways affecting habitat, or individual mortality.	Included – protected by ESA (Ont.), SARA (Federally).	Direct and Indirect Effects

### **3.3 Project Interactions**

The project component/activity and environment interaction matrix for the entire project is provided in **Table 3-2**. These are the potential impacts that may occur in relation to the construction of the Terry Fox Drive roadway.

Table 3-2 – Potential Project to Environmental Interaction Matrix

COMPONENTS AND ACTIVITIES	Land Use and Land Use Designations	Land Use - Agricultural	Land Use - Historical	Land & Resource Use - Aboriginal	Geology/ Soils	Groundwater Quality/Quantity	Air Quality & Dust	Noise	Designated Natural Features Primary and Secondary Lands, ANSI, Deer Wintering Yards Natural Lands	PSW's and Other Wetlands	Vegetation	Wildlife	Migratory Birds	Surface Water Quality & Quality / Hydrology	Fish and Fish Habitats	Species at Risk or Special Concern
<b>Construction:</b>																
Site Preparation – Clearing, Grubbing and Blasting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Realignment of a section of East Shirley's Brook (blasting required)					✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Compensation of floodplain impacts along the Carp River		✓	✓	✓	✓	✓				✓	✓	✓	✓	✓		✓
Construction of new and temporary roadways	✓						✓	✓	✓					✓	✓	
Construction of a new pedestrian pathway/sidewalk	✓						✓	✓	✓					✓		
Installation of traffic control signals, road signs and street lighting	✓													✓		
Construction, installation or modification of stormwater management structures							✓	✓						✓		
Temporary construction lay-down areas	✓	✓							✓					✓		
Disposal of waste materials														✓		
Site restoration – landscaping and edge management	✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
Use and storage of construction vehicles and equipment							✓	✓						✓		
Transportation and storage of construction materials							✓	✓						✓		
<b>Interim:</b>																
New Intersections and Four-Lane Paving	✓						✓	✓	✓							
<b>Operational Period:</b>																
Operation: presence of ROW; vehicular traffic		✓					✓	✓	✓			✓	✓	✓		✓
<b>Maintenance:</b>																
General Repair and Maintenance								✓		✓	✓		✓	✓		✓
Winter Maintenance: de-icing salt application; snow ploughing						✓			✓	✓				✓		

### **3.4 Evaluating Significance**

Following the direction provided in the Scoping Document, to determine whether the project is likely to cause significant adverse environmental effects against the current baseline, a significance framework has been applied to the evaluation of the VEC's. The framework also includes as mitigative measures, the considerations of the future scenario where the subdivisions are fully built out and Terry Fox Drive lies around the outer perimeter of the urban boundary:

- Magnitude - the predicted amount or level of disturbance to an existing condition;
- Geographic extent - the area over which the effect is likely to occur or be noticeable;
- Duration - the length of time the effects of a project will last and includes when the future scenario is expected to occur;
- Frequency - the rate of re-occurrence of the effect and /or the phenomenon or event causing the effect;
- Reversibility - the time the environment will take to recover from the initial effect after the source of the disturbance is removed or ceases; and,
- Ecological context - the sensitivity of the environment.

When a significant adverse environmental effect is considered likely it is based on:

- Probability of occurrence: the likelihood that adverse effects will occur;
- The duration that the adverse effect will occur given current the state of flux of the environment;
- Scientific uncertainty: the confidence level associated with results; and,
- Is supported by the description of the existing environment, the description of project activities, the potential interactions (environmental effects) and the mitigation measures.

### **3.5 Boundaries for Environmental Effects Assessment**

Study boundaries set the limits of the area (spatial) and period of time (temporal) examined in the assessment. Boundaries were defined by good practice and professional judgement, as well as through discussions with other stakeholder agencies.

#### **3.5.1 Spatial Boundaries**

The spatial boundaries of the study, which represent the area in which potential effects could occur, were selected by professional judgement and scientific literature review, considering the potential for effects. The assessment considers interactions and potential effects of the project relating to the current baseline, local and regional study areas.

The *project study area* is a 100 m wide corridor along either side of the center line of the proposed median of the future roadway. In cases where designated features or VECs may be affected outside of this area, the study area was expanded to include the description of such features. For example, wetlands and watercourses were included within 100 m downstream of the proposed road-works.

The *regional study area* varies with the component addressed and is based on administrative or political boundaries for indirect socio-economic effects or natural system boundaries for cumulative biophysical effects. Indirect effects of the project are considered in a regional context; however, the limited extent of the project provides little potential for indirect effects to interact regionally. Cumulative effects are



considered within a regional study area within the Kanata portion of the City of Ottawa, where appropriate and do consider the future development scenario. The regional study area extends to include other past, existing or reasonably foreseeable projects that contribute to cumulative effects with this project.

### **3.5.2 Temporal Boundaries**

The temporal boundaries of the assessment include three periods:

1. The duration of the construction period, as the road is constructed;
2. The interim period as the road is operated as a two lane arterial facility while the adjacent subdivisions are constructed; and,
3. The long-term operations and maintenance period as a full four-lane arterial facility.

While decommissioning is considered as part of the project assessment, the duration of operation of the project is indefinite and the timing and nature of decommissioning is therefore not predictable.

Temporal boundaries vary according to project phase. In the construction phase, specific construction-related effects are short. Effects associated with the operational period are long term, as the roadway is intended to be operational indefinitely. Interim effects and mitigation measures are intended to provide a buffering period where the effects on certain flora and fauna, or on stream-flow dynamics, will need to be managed as the land development applications proceed through the build-out process.