MINISTRY OF TRANSPORTATION

Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance

Version: October 2006
MINISTRY OF TRANSPORTATION

Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance

Part of the Environmental Standards and Practices

ISSUED BY:

PROVINCIAL AND ENVIRONMENTAL PLANNING OFFICE
MINISTRY OF TRANSPORTATION
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L2R 7R4

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This document was developed under the direction of the Environmental Standards Project (ESP) team comprised of MTO staff in the Provincial and Environmental Planning Office (Jamie Dougall – Project Director and Brenda Carruthers – Project Manager) and the lead consultant firm of Ecoplans Limited (Bob Hodgins - Project Director and Clark Gunter – Project Manager).

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Comments and Suggestions

The Ministry of Transportation welcomes comments and suggestions on ways to improve the document with the objective of providing a practical and pragmatic approach to Environmental Management in the Province of Ontario. MTO anticipates that changes will be warranted to clarify, improve and incorporate new information.

The format of the document is designed to accommodate such changes. Such revisions and amendments will be incorporated in later editions of this document. MTO will not formally respond to unsolicited comments submitted in response to the document.

## VERSION HISTORY

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<th>DESCRIPTION OF MAJOR CHANGE</th>
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<td></td>
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<td>Addition of headings and notes for Niagara Escarpment and Greenbelt.</td>
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<td>2</td>
<td>Oct-2006</td>
<td>Consolidation of Section 1, 2 and 3</td>
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<td>Updated EPRs to reflect current provincial legislation.</td>
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<td>Fish and Fish Habitat EPRs updated to reflect new Protocol.</td>
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<td>Noise EPRs updated to reflect new approach as documented in MTO’s Environmental Guide for Noise</td>
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1 INTRODUCTION

The Ministry of Transportation of Ontario recognized a need to develop a consistent, systematic approach to environmental management by improving how the ministry assesses environmental risk and controls the environmental impacts resulting from its activities. The approach will meet the ministry’s commitment to the environment by recognizing both ministry business processes, and the complex interactions between the environment and the numerous activities undertaken for transportation planning and highway design, construction, operation and maintenance. The Environmental Protection Requirements is the first step in developing a systematic approach to environmental management.

1.1 Development of the Environmental Protection Requirements

Over sixty separate federal and provincial statutes, regulation and formal policies have been identified as applicable to the environmental aspects of transportation planning and highway design, construction, operation and maintenance activities. Some of these statutes supporting regulations, and/or formal policy have overlapping or complementary requirements. To clarify its legislative obligations, the ministry reviewed and synthesized the statutes and the supporting regulations and formal policies, interpreted how each is applied to the transportation planning and highway design, construction, operation and maintenance activities and developed Environmental Protection Requirements.

The Environmental Protection Requirements have been developed with the participation of Environmental Regulatory Agencies. The ministry has consulted with the various agencies mandated with the statutes to ensure a common interpretation and have solicited public input through the Ontario Environmental Bill of Rights Registry.

1.2 References

The information in this document is taken from the sources listed in Table 1.
**Table 1 References for the Environmental Protection Requirements**

<table>
<thead>
<tr>
<th>Acts* and Other Documents</th>
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<td>Significant Wildlife Habitat Technical Guide</td>
<td>2000</td>
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* includes regulations under the Acts

### 1.3 Disclaimer

The information in this document is provided as a convenience only and should not be relied on as authoritative. For the authoritative text of the law, see the official volumes and office consolidations printed by Publications Ontario and the Department of Justice of Canada.
2 GENERAL

**GEN-1** During transportation planning and the design of new or modified highways, the requirements as set out in the *Class Environmental Assessment for Provincial Transportation Facilities* must be met prior to the commencement of construction.

**GEN-2** In the event that a federal trigger is identified during the transportation planning or highway design, the requirements of the *Canadian Environmental Assessment Act* shall be met prior to the commencement of construction.
3 FISH AND FISH HABITAT

FISH-1 Crossings of a waterbody that provide fish habitat at any time of the year shall be designed, constructed, operated and maintained such that no new barriers to fish passage, including physical, chemical or flow impediments (including maintaining minimum flows and depths), are created so that fish can pass and the ability for fish to pass is not reduced over time, unless authorized by Fisheries and Oceans Canada. (*Fisheries Act* s.20 (1), s.22 (1), s.22 (2), s.35).

FISH-2 If highway construction must proceed during a period when fish are moving between different areas of their habitat, their safe passage shall not be restricted for an unreasonable amount of time. The relevant period shall be determined by a qualified fisheries specialist, as defined in the MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings, for the target species/community, in consultation with Ministry of Natural Resources and Fisheries and Oceans Canada (*Fisheries Act* s.20 (1)).

FISH-3 Fish screens, guards, netting or other barriers shall be installed and maintained across any water intake withdrawing water from any waterbody that contains fish (e.g. for the purposes of water-taking, dewatering, bypass pumping, etc.) or across the entrance to any channel constructed for the purposes of conducting water temporarily from any waterbody that contains fish so as to prevent fish access until the water intake or diversion has been decommissioned (*Fisheries Act* s.30 (1), s.32).

FISH-4 Any area of a waterbody containing fish that is temporarily isolated by guards, screens or other barriers shall be inspected for the presence of fish, and all fish shall be captured using appropriate means and released unharmed in adjacent fish habitat beyond the barriers. This fish transfer shall be conducted under the direction of a qualified fisheries biologist, with the appropriate permit (*Fisheries Act* s.30 (1), s.32).

FISH-5 Fish shall not be harmed in any manner unless authorized by Fisheries and Oceans Canada (*Fisheries Act* s.32 Authorization), or Ministry of Natural Resources in accordance with a valid Scientific Collectors Permit. Fish species, or parts or derivatives of fish species listed as extirpated, endangered or threatened shall not be killed, harmed,
harassed, captured, taken, possessed, collected, bought, sold or traded (Species At Risk Act s.32 (1)(2)(3)) except under a valid Scientific Collectors Permit.

**FISH-6**  
No harmful alteration, disruption or destruction of fish habitat is permitted unless authorized Fisheries and Oceans Canada (Fisheries Act s.35 (2) – A). Destruction of any part of the critical habitat of any listed endangered or threatened aquatic species, or an extirpated species where a recovery strategy recommends reintroduction of that species to the wild, is not permitted (Species At Risk Act s.58 (1)(b)) and No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada. (Species At Risk Act s.33).

**FISH-7**  
Where a harmful alteration, disruption or destruction of fish habitat is authorized by Fisheries and Oceans Canada, appropriate compensation shall be developed by a Qualified Fisheries Assessment Specialist, as per the MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings), to the satisfaction of Ministry of Natural Resources and Fisheries and Oceans Canada, to ensure no net loss of the productive capacity of the habitat occurs.

**FISH-8**  
Where the use of explosives is required during construction in the vicinity of a waterbody that contains fish, they shall be used in such a manner as to ensure no harmful effects to fish occur (Fisheries Act s.32).

**FISH-9**  
No substance of any type that is deleterious shall be deposited in water frequented by fish, or be released or placed such that the deleterious substance could enter the water (Fisheries Act s.36(3)).

**FISH-10**  
Plans and specifications for highway construction that may affect fish habitat shall be provided to Ministry of Natural Resources and Fisheries and Oceans Canada, and modified as required (Fisheries Act s.20, s.22, s.35) as per the MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings (2006).

**FISH-11**  
Where a substance is released and/or deposited into water such that fish and/or their habitat could be harmed, it shall be reported to the
appropriate agencies (Ministry of Natural Resources, Fisheries and Oceans Canada, Ministry of the Environment) *Fisheries Act* s.38 (4)).

**FISH-12** Where a substance is released and/or deposited into water such that fish and/or their habitat are harmed or likely to be harmed, all reasonable measures to remedy the situation shall be undertaken as soon as possible *Fisheries Act* s.38 (5)).
4 TERRESTRIAL ECOSYSTEMS

4.1 Wildlife

**WLD-1** Transportation planning shall be done in a manner that avoids Migratory Bird Sanctuaries and National Wildlife Areas in Ontario as listed on the Environment Canada website: [www.cws-scf.ec.gc.ca/hww-fap/nwambs/nwambs.html](http://www.cws-scf.ec.gc.ca/hww-fap/nwambs/nwambs.html). Transportation planning and highway design, construction, operation and maintenance activities shall consider the conservation of wildlife on federal public lands that are administered by the Federal Minister of the Environment, and in any protected marine areas (*Canada Wildlife Act* s.1-19).

**WLD-2** Transportation planning and highway design, construction, operation and maintenance activities shall be carried out to prevent the destruction of migratory birds, their eggs or their nests and minimize the release of oil, oil wastes or any other substance harmful to migratory birds to any waters or any area frequented by migratory birds (*Migratory Birds Convention Act* s.5, *Migratory Bird Regulations* s.6 and s.35).

**WLD-3** Transportation planning and highway design shall be done in a manner that avoids impact on federal lands that provide critical habitat for listed wildlife species unless certain areas are excluded by the Minister, and on other lands that provide critical habitat for listed migratory and aquatic species under the federal *Species At Risk Act* s.32, s.33, s.34, s.58.

**WLD-4** Transportation planning and highway design, construction, operation and maintenance activities shall be done in a manner that avoids habitat for species designated by regulation under the Ontario *Endangered Species Act* (s.5).

**WLD-5** Transportation planning and highway design shall be done in a manner that avoids, or if avoidance is not possible minimizes, encroachment on significant portions of the habitat of threatened and endangered species, unless approved through the Environmental Assessment approval process (*Provincial Policy Statement*, s.2.1.3, 2.1.4).

**WLD-6** Transportation planning and highway design, construction, operation and maintenance activities shall recognize the need to protect other
wildlife species identified in the schedules in the *Fish and Wildlife Conservation Act* (s.5(1) & s.7(1))

**WLD-7** Transportation planning shall be done in a manner that avoids significant wildlife habitat, as defined in the *Significant Wildlife Habitat Technical Guide* (Ministry of Natural Resources, 2000) unless approved through the Environmental Assessment approval process. Where intrusion is unavoidable (i.e. avoidance is not feasible or practical) and has been approved through the Environmental Assessment approval process, the highway shall be designed, constructed, operated and maintained so that there will be no negative impacts on the natural features or the ecological function of significant wildlife habitat (*Provincial Policy Statement* (s.2.1)).

**WLD-8** Transportation planning and highway design, construction, operation and maintenance activities shall be carried out in a manner that maintains the diversity of wildlife habitat in an area and natural connections between them, unless otherwise approved through the Environmental Assessment approval process (*Provincial Policy Statement* s.2.1.2).

**WLD-9** Transportation planning and highway design, construction, operation and maintenance activities shall have regard to policies, plans, strategies and programs at the local/regional level dealing with other wildlife species of local or regional significance. Such species and associated habitats may be identified by a local planning body such as a municipality or conservation authority, or identified as being of conservation concern through initiatives such as the *North American Bird Conservation Initiative*. For such resources the descending order of priority will be: 1) avoidance; 2) minimizing impact; and 3) mitigation/restoration.

### 4.2 Wetlands

**WET-1** Transportation planning and highway design, construction, operation and maintenance activities shall achieve no net loss of wetland function for wetlands where loss has reached critical levels, and the wetland is located on federal lands or the transportation initiative requires federal approvals or is receiving federal funding (*Federal Policy on Wetland Conservation, Strategy 2*).
Transportation planning and highway design, construction, operation and maintenance activities shall avoid the loss of wetland features and functions, unless approved through the Environmental Assessment approval process (Provincial Policy Statement s.2.1.1, s.2.1.2, s.2.1.3, s.2.1.4).

4.3 Vegetation

VEG-1 Transportation planning and highway design, construction, operation and maintenance activities shall avoid impact on federal lands that provide critical habitat for listed species under the federal Species At Risk Act s.32, s.33, s.34, s.58.

VEG-2 Transportation planning and highway design, construction, operation and maintenance activities shall avoid habitat for designated vegetation species protected under the Ontario Endangered Species Act s.5.

VEG-3 Transportation planning and highway design, construction, operation and maintenance activities shall maintain the diversity of native vegetation in an area and natural connections between them, unless approved through the Environmental Assessment approval process (Provincial Policy Statement s.2.1.2).

VEG-4 Transportation planning and highway design shall be done in a manner that avoids significant woodlands and significant valleylands, including woodlands providing habitat for area sensitive species, unless approved through the Environmental Assessment approval process (Provincial Policy Statement s.2.1.4 and Natural Heritage Reference Manual).

VEG-5 Transportation planning and highway design, construction, operation and maintenance activities shall consider municipal objectives for woodland forestry management (Forestry Act s.11).

VEG-6 Transportation planning and highway design, construction, operation and maintenance activities shall have regard for policies, plans, strategies and programs at the local/regional level dealing with vegetation resources of local or regional significance. Such vegetation resources or specific species may be identified by a local planning body such as a municipality, conservation authority, or other resource agency. For such resources the descending order of priority will be: 1) avoidance; 2) minimizing impact; and 3) mitigation/restoration.
**VEG-7**  Highway design, construction, operation and maintenance activities shall be done in a manner that protects where practical, the features and functions of retained vegetation areas.

**VEG-8**  Where required as a condition of Environmental Assessment approval, the restoration of terrestrial ecological features shall utilize ecological restoration principles where the right-of-way crosses or is adjacent to significant wildlife habitats, woodlots, wetlands and/or valley lands.
5 GROUNDWATER

GW-1 Boreholes, test holes, dewatering wells and water wells shall be drilled and installed with due regard for the subsurface environment, protection of groundwater resources from surface contamination, and prevention of aquifer cross connection (Ontario Water Resources Act, O. Reg. 903, amended to O.Reg. 128/03, s. 11).

GW-2 All boreholes, test holes and dewatering wells that are no longer in use, are no longer needed due to location in the right-of-way, or no longer needed for water supply due to highway construction shall be properly decommissioned. Proper abandonment procedures are to be specified and followed as per regulations (Ontario Water Resources Act, O.Reg. 903, amended to O.Reg. 128/03 s.21, and all other amendments as they occur). In practical terms all boreholes, test holes and dewatering wells shall be effectively sealed at surface and at depth as appropriate.

GW-3 Transportation planning and highway design, construction, operation and maintenance activities shall be carried out in a way that protects groundwater supplies on adjacent lands for any reasonable use that can be made of them. Typically the assumed use is potable, therefore the supply and water quality parameters set in the Ministry of the Environment Ontario Drinking Water Standards (O.Reg. 169/03, amended to O.Reg. 248/06 under the Safe Drinking Water Act) shall be maintained or alternative supply provided of equal or better quality.

GW-4 Transportation planning and highway design, construction, operation and maintenance activities shall be carried out in a way that maintains the function of groundwater such as baseflow and availability for water supply in natural systems, consistent with watershed planning of the area.

GW-5 Transportation planning and highway design, construction, operation and maintenance activities shall provide for groundwater source protection in terms of both quality and quantity and recognize vulnerable or sensitive (highly vulnerable) aquifer zones and wellhead protection zones as defined by the Ministry of the Environment (designated Director) and in Municipal Official Plans. (Ontario Water Resources Act s.33, and Oak Ridges Moraine Conservation Plan O. Reg. 140/02, s. 29 and s. 42 (1).)
GW-6  A Permit-To-Take-Water from the Ministry of the Environment shall be obtained for the taking of water over 50,000 l/day from any given source, whether temporary or permanent for any purpose including but not limited to; diversion, potable water supply, cleaning, flushing and dewatering during highway construction, operation and maintenance (Ontario Water Resources Act s.34, and O.Reg. 387/04 under the Act).
6 NOISE

**NOISE-1** During design of a new or modified highway, a noise assessment by a qualified acoustical specialist is required for the Most Exposed Side and the Outdoor Living Areas of Noise Sensitive Areas. As an initial screening, future sound levels shall be assessed with and without the proposed improvements for the Most Exposed Side. The objective for outdoor sound levels is to achieve the future predicted ambient that would occur without the proposed highway. The significance of a noise impact will be quantified by using this objective in addition to the change in sound level above the ambient (i.e. the future sound level without the proposed improvements is compared to the future sound level with the proposed improvement).

The determination of the provision of mitigation is based on the analysis of the predicted noise level at the Outdoor Living Areas. The mitigation efforts to be applied for various noise level increases are as follows:

<table>
<thead>
<tr>
<th>Change in Noise Level Above Ambient / Projected Noise Levels with Proposed Improvements</th>
<th>Mitigation Effort Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 dBA change &amp; &lt; 65 dBA</td>
<td>None</td>
</tr>
<tr>
<td>≥ 5 dBA change OR ≥ 65 dBA</td>
<td>Investigate noise control measures on right-of-way.</td>
</tr>
<tr>
<td></td>
<td>Introduce noise control measures within right-of-way and mitigate to ambient if technically, economically and administratively feasible.</td>
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<tr>
<td></td>
<td>Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation, over first row receivers.</td>
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</table>

**NOISE-2** Highway construction shall be undertaken in a manner to minimize noise levels and identify a process for dealing with public complaints during construction. Pile driving and blasting operations shall be in accordance with *Ontario Provincial Standard Specifications (OPSS 120)* and Ministry of the Environment *Publication NPC-119*.
7 LAND USE FACTORS

7.1 Agriculture

**AGR-1**
Transportation planning and highway design, construction, operation and maintenance activities shall be done in a manner that avoids lot creation and lot adjustments on prime agricultural lands and prime agricultural areas where possible and practical. *(Provincial Policy Statement, s.2.3.4.1)* Where avoidance is not practical then highways may be located in Prime Agricultural Lands and Prime Agricultural Areas where it has been demonstrated through an environmental assessment that:

1. there is no reasonable alternative location which avoids prime agricultural lands and areas;
2. consideration has been given to lower priority agricultural lands (lower capability lands) within the prime agricultural lands and areas;
3. the detrimental impacts from the location, design, construction operation and maintenance of a new highway on surrounding agricultural communities, existing operations and lands are minimized to the extent feasible; and
4. consideration has been given to Nutrient Management and Minimum Distance Separation requirements of affected farming operations *(Nutrient Management Act, s. 6(2)).*
8 CONTAMINATED PROPERTY, WASTE AND EXCESS MATERIALS MANAGEMENT

**CON-1** There shall be no release, discharge or addition to: 1) the natural environment (land, surface water, groundwater or air) of a contaminant that may cause adverse effects as defined by the Ontario *Environmental Protection Act* (Part II s. 14(1)); 2) surface water or groundwater, of a contaminant that may impair water quality as defined by *Ontario Water Resources Act* s.29 or a substance deleterious to fish or fish habitat (*Fisheries Act* s.34); and 3) the natural environment of a toxic substance as defined by the *Canadian Environmental Protection Act* s.64).

**CON-2** Any property being considered for acquisition or disposition for the purposes of highway construction shall be screened for potential site contamination.

**CON-3** Any potentially contaminated properties shall be assessed and managed in accordance with *Ministry of the Environment Guidelines*, *Canadian Council of Ministers of the Environment Guidelines* (for federal properties) and *Canadian Standards Association Guidelines*, and in consultation with the appropriate agencies.

**CON-4** No land or land covered with water, which was used for the disposal of waste within the past 25 years, may be used for the construction of a highway without first receiving approval from the Minister of the Environment (Ontario *Environmental Protection Act Part V* s.46). Sites known to have been used for the disposal of wastes more than 25 years ago shall be investigated to determine whether or not waste is still present on the site. The site’s current environmental condition including the potential for residual contamination will be assessed and appropriate cleanup or other actions shall be taken.

**CON-5** Vehicle fuelling operations shall be carried out by persons trained as per the requirements in the *Liquid Fuels Handling Code* (*Technical Standards and Safety Act, O.Reg 217/01* s.6).

**CON-6** Any fuelling facility and associated equipment, such as temporary aboveground storage tanks, shall conform to *Technical Standards and Safety Association Guidelines*. 
CON-7 Any storage of petroleum products (e.g. motor and hydraulic oils, and lubricants) and propane or other compressed gas tanks shall be conducted in conformance with the Technical Standards and Safety Association Guidelines, in order to prevent any potential environmental impacts from product spillage, leakage, explosions or fires.

CON-8 Any abnormal discharge (spill) of a substance into the natural environment shall be reported to the Ministry of the Environment Spills Action Centre (SAC), and cleaned up as quickly as possible, given the circumstances surrounding the discharge, by the person(s) having control of the discharge. Every practicable effort shall be taken to prevent, eliminate and ameliorate the adverse effect and to restore the natural environment (Ontario Environmental Protection Act Part X s.91, s.92 and s.93).

CON-9 Any contaminants or wastes encountered during transportation planning and highway design, construction, operation and maintenance activities shall be assessed and managed in accordance with the appropriate Ministry of the Environment Acts and Regulations, Ministry of the Environment Guidelines, Canadian Council of Ministers of the Environment Guidelines (for federal properties) and Canadian Standards Association Standards, and in consultation with the appropriate agencies.

CON-10 Stockpiling of contaminants or wastes shall be avoided where possible. However, if stockpiling of contaminants or wastes is required the stockpiling shall not exceed 90 days without approval from the Ministry of the Environment Regional Director (Ontario Environmental Protection Act O.Reg 347 s.17.2).

CON-11 Transportation of wastes shall only be carried out by waste haulers with a Ministry of the Environment Certificate of Approval for a Waste Management System valid for the type of waste being transported (Ontario Environmental Protection Act Part V s.41).

CON-12 Any solid and liquid wastes or excess materials generated during highway construction, operations and maintenance activities shall be managed through reuse wherever possible and in accordance with Ontario Provincial Standard Specifications (OPSS 180) and Ontario Environmental Protection Act Part V and Regulation 347 (amended to O.Reg. 461/05).
CON-13 Wastes generated by highway construction, operation and maintenance activities shall be taken for off site disposal to either a site with a Ministry of the Environment Certificate of Approval for a Waste Disposal Site valid for the type of waste to be disposed or to a treatment facility with a valid Certificate of Approval for a Waste Management System (Ontario Environmental Protection Act Part V).

CON-14 Prior to disposing of a subject waste (i.e. liquid industrial waste and hazardous waste), the generator of that waste shall classify the subject waste, register it in the Ministry of the Environment Hazardous Waste Information Network (HWIN System) and in accordance with the Ontario Environmental Protection Act (O.Reg 347 s.18) and shall have a valid generator registration number. Generators of waste shall ensure that wastes are stored, handled and disposed of in accordance with the Ontario Environmental Protection Act (O.Reg 347 s.18).

CON-15 Generators of subject waste (i.e. liquid industrial waste and hazardous waste), shall ensure that waste manifests are completed correctly for each waste transferred and that all waste movements are properly identified and tracked through the Ministry of the Environment Hazardous Waste Information Network (HWIN System). (Ontario Environmental Protection Act O.Reg 347, amended to O.Reg. 461/05)

CON-16 For any existing utility lines broken or ruptured during highway design investigations, construction, operations and maintenance activities, timely action shall be taken to minimize the potential for soil and water contamination.

CON-17 Pesticides shall only be used in accordance with the requirements of the Ontario Pesticides Act and applied by a person licensed under the Ontario Pesticides Act s.5 (1).

CON-18 Earth borrow material and other imported fill material to be used for highway construction, operation and maintenance activities shall be free from contaminants and wastes.
9 BUILT HERITAGE AND CULTURAL HERITAGE LANDSCAPES

**HER–1** The services of a cultural resource heritage specialist experienced in environmental assessment work for built heritage and cultural heritage landscapes shall be engaged for transportation planning and highway design. (*Guideline for Preparing the Cultural Heritage Component of Environmental Assessments, 1992*)

**HER–2** Removal or demolition of cultural heritage resources designated under the *Ontario Heritage Act, Part IV or V*, recognized or protected by the Ontario Heritage Foundation, the Canadian Register of Historic Places, the National Historic Sites and Monuments Board, the Federal Heritage Building Review Office (FHBRO) and/or listed on municipal heritage inventories shall not occur unless approved through the Environmental Assessment approval process. (*Guideline for Preparing the Cultural Heritage Component of Environmental Assessments, 1992; Ontario Heritage Act*).

**HER–3** Cultural heritage resources that are of heritage value and are considered to be important in defining the overall character of an area, but which are not designated, listed or recognized by government, shall not be removed or demolished, unless approved through the Environmental Assessment process. (*Guideline for Preparing the Cultural Heritage Component of Environmental Assessments, 1992*).

**HER–4** Character-defining elements of built heritage features and cultural heritage landscapes, shall be conserved unless it is demonstrated through the Environmental Assessment approval process that it is not possible. (*Guideline for Preparing the Cultural Heritage Component of Environmental Assessments, 1992*).

**HER–5** Isolation of built heritage features and cultural heritage landscapes in the affected area due to the introduction of new project-related features shall be avoided as much as possible in highway design. (*Guideline for Preparing the Cultural Heritage Component of Environmental Assessments, 1992*).
**HER–6** A property may be designated under Section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:

1. The property has design value or physical value because it,
   i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,
   ii. displays a high degree of craftsmanship or artistic merit, or
   iii. demonstrates a high degree of technical or scientific achievement.

2. The property has historical value or associative value because it,
   i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
   ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
   iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.

3. The property has contextual value because it,
   i. is important in defining, maintaining or supporting the character of an area,
   ii. is physically, functionally, visually or historically linked to its surroundings, or
   is a landmark. O. Reg. 9/06, s. 1 (2).

**HER–7** A property may be designated under section 34.5 of the *Ontario Heritage Act* if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest of provincial significance:

1. The property represents or demonstrates a theme or pattern in Ontario’s history.

2. The property yields, or has the potential to yield, information that contributes to an understanding of Ontario’s history.

3. The property demonstrates an uncommon, rare or unique aspect of Ontario’s cultural heritage.

4. The property is of aesthetic, visual or contextual importance to the province.
5. The property demonstrates a high degree of excellence or creative, technical or scientific achievement at a provincial level in a given period.

6. The property has a strong or special association with the entire province or with a community that is found in more than one part of the province. The association exists for historic, social, or cultural reasons or because of traditional use.

7. The property has a strong or special association with the life or work of a person, group or organization of importance to the province or with an event of importance to the province.

8. The property is located in unorganized territory and the Minister determines that there is a provincial interest in the protection of the property. O. Reg. 10/06, s. 1 (2).
10 ARCHAEOLOGICAL RESOURCES

ARC-1 Archaeological resources that may be disturbed by highway design investigations, construction, operation or maintenance shall be identified and conserved to the satisfaction of the Ministry of Culture, in accordance with the *Ontario Heritage Act*.

ARC-2 Archaeologists shall perform all research, fieldwork, data processing, report preparation and any site investigations and field-testing required in accordance with the *Ontario Heritage Act O.Reg 8/06*.

ARC-3 Avoid conducting any land-disturbing activity that could alter known archaeological sites for which there are remaining archaeological concerns as identified by the Ministry of Culture as per the *Ontario Heritage Act*, the *Environmental Assessment Act*, and the *Planning Act*.

ARC-4 No land-disturbing activity or any land-covering or capping activity shall be carried out in areas that have not been subject to archaeological assessment by an archaeologist licensed by the Province of Ontario to undertake such assessments, unless the relevant federal and/or provincial authorities in charge of heritage preservation have determined that archaeological assessment is not required, as per the *Ontario Heritage Act*, the *Ontario Environmental Assessment Act*, and the *Ontario Planning Act*.

ARC-5 Archaeological assessment, test excavation, and mitigative excavation shall be conducted by an archaeologist licensed by the Ministry of Culture to perform the work required, in accordance the *Ontario Heritage Act*.

ARC-6 Archaeological assessments shall be conducted with the intention to provide complete identification and description of deposits to be impacted by soil disturbance associated with construction, operation, or maintenance; to produce a thorough evaluation of the deposits; to generate recommendations for impact mitigation; and to produce in a timely fashion reports which clearly document the methods, results, and recommendations of the assessment as per the *Ontario Heritage Act*, the *Ontario Environmental Assessment Act*, and the *Ontario Planning Act*.
11 AIR

Note:
The Environmental Protection Requirements for Air are currently being developed in consultation with provincial and federal government stakeholder agencies. They will be posted here in the near future.
12 SURFACE WATER

**SW-1** Current procedural directives, policies and protocols of the Ministry of Transportation shall be used to ensure that the transportation planning and highway design, construction, operation and maintenance of highway surface water conveyance and management measures (i.e. culverts, bridges, ditches, erosion protection, stormwater management basins, etc.) proceeds in a consistent, efficient, safe and responsible manner.

**SW-2** The design of the highway surface water conveyance and management works that will be implemented during the construction, operations and maintenance of a highway should integrate both temporary and permanent measures representing the best available technologies that are economically achievable, such that:

1. Impacts to the existing water balance in the vicinity of the highway are maintained to the extent that is technically, physically and economically practicable, as defined through the Environmental Assessment approval process. *(Canada Water Act; Conservation Authorities Act (s.21, s.28); Planning Act; Provincial Policy Statement (s.2.2.1); Common Law)*;

2. Upstream and downstream human and non-human (e.g. wildlife, vegetation, etc.) land and water uses are protected to the extent that is technically, physically and economically practicable, as defined through the Environmental Assessment approval process *(Conservation Authorities Act (s.21, s.28); Lakes and Rivers Improvement Act (s.2, s.3, s.14, s.16); Planning Act; Common Law; Ministry of Transportation Drainage Directives)*;

3. Impacts to the quality of surface water are mitigated to the extent that is technically, physically and economically practicable, as defined through the Environmental Assessment approval process *(Canada Water Act; Canadian Environmental Protection Act; Ontario Environmental Protection Act; Fisheries Act; Ontario Water Resources Act, (s. 29); Conservation Authorities Act (s.21, s.28); Lakes and Rivers Improvement Act (s.2, s.3, s.14, s.16); Planning Act (s. 34, s. 41))*;

4. Changes in erosion potential and flood risk for features of the natural environment upstream and downstream of the transportation corridor are minimized to the extent that is technically, physically and economically practicable, as defined through the Environmental Assessment approval process.
SW-3 Where feasible, surface water conveyance and management works on a highway, such as culverts, bridges, ditches, stormwater management facilities, etc., shall be designed, constructed, operated and maintained in a manner that preserves or where reasonable, enhances ecological linkages.

SW-4 A Certificate of Approval shall be acquired from the Ontario Ministry of the Environment prior to construction, for any surface water conveyance or management works not being constructed under either the Drainage Act or the Public Transportation and Highway Improvement Act. (Ontario Water Resources Act s.53).

SW-5 As part of the design of a highway, any works crossing, or in a waterbody designated as navigable waters, must receive approval from Fisheries and Oceans Canada under the Navigable Waters Protection Act s.5, s.10.

SW-6 Any structures crossing a waterbody designated as navigable waters shall be designed, constructed, operated and maintained to provide a minimum acceptable clearance as specified by Fisheries and Oceans Canada. (Navigable Waters Protection Act s.5, s.10)

SW-7 Any channel works proposed in a waterbody designated as navigable waters shall be designed, constructed, operated and maintained in a manner that will ensure that the geometric characteristics of the existing watercourse are maintained or approximated. (Navigable Waters Protection Act s.5, s.10)

SW-8 During the construction, operation and maintenance of a highway, any material that may sink, such as stone, gravel, earth, etc., shall not be placed into navigable waters where there is not at least 36.6 metres of water at all times. (Navigable Waters Protection Act (s.22))

SW-9 Surface water conveyance and management measures designed, constructed, operated and maintained by a private company in a
waterbody governed by the *Lakes and Rivers Improvement Act* should not temporarily or permanently dam a waterway or alter a watercourse’s bed or banks. Any measures that will create a temporary or permanent dam across a waterbody governed by the *Lakes and Rivers Improvement Act*, or alter the said waterbody’s bed or banks, must receive a permit from the Ministry of Natural Resources prior to construction (*Lakes and Rivers Improvement Act* s. 2.3.1, 2.3.2, 2.3.3; *O.Reg. 454/96 under the Act*).

**SW-10**

Highway construction by a private company which crosses a waterbody that falls under the jurisdiction of a Conservation Authority, requires a “Fill, Construction and Alterations to Waterways Permit” to be obtained prior to the construction of any works that will result in alterations to the waterbody, construction of a structure in an area susceptible to flooding and/or the placement of fill such that the control of flooding or pollution, or the conservation of land will be affected (*Conservation Authorities Act*, s.28; and all applicable regulations under the Act).
13 DESIGNATED AREAS

**DA-1** Designated Areas are defined by resource agencies, municipalities, the government and/or the public, through legislation, policies, or approved management plans, to have special or unique value. Such areas may have a variety of ecological, recreational, and/or aesthetic features and functions that are highly valued. Examples of Designated Areas include the following: Niagara Escarpment; Bruce Trail; Trans Canada Trail; Oak Ridges Moraine; National and Provincial Parks; Designated federal wildlife/marine Areas; RAMSAR wetlands; Remedial Action Plan areas (RAP); International Biological Program areas; World Biosphere Reserves; Designated heritage rivers; Environmentally Sensitive Areas (ESA); Environmentally Sensitive Policy Areas (ESPA); Provincially Significant Areas of Natural and Scientific Interest (ANSI); Conservation Authority parks/Open Space lands; Stewardship lands; and Land trust areas (such as Nature Conservancy of Canada and others).

**DA-2** Information on Designated Areas shall be identified and integrated as a key factor during transportation planning and highway design.

**DA-3** Transportation planning and highway design, construction, operation and maintenance activities shall have regard to the specific features and functions of Designated Areas that make them unique as articulated in legislation, policies, or approved management plans.

**DA-4** In Designated Areas with approved management plans (e.g. Niagara Escarpment Plan and Oak Ridges Moraine Conservation Plan) transportation planning and highway design, construction, operation and maintenance activities shall comply with the relevant policy requirements of the plan.

**DA-5** Where Designated Areas cannot be avoided as demonstrated by the Environmental Assessment approval process, transportation planning and highway design, construction, operation and maintenance activities will be done in a manner that minimizes the extent of intrusion, minimizes visual impacts, maintains access to Designated Areas (i.e. trail or roadway access), and buffers adjacent Designated Areas.
13.1 Oak Ridges Moraine

The following Environmental Protection Requirements for the Oak Ridges Moraine are based on the Oak Ridges Moraine Conservation Act, S.O. 2001, c. 31, Designation of Oak Ridges Moraine Area, O. Reg. 1/02, and the Oak Ridges Moraine Conservation Plan, O. Reg. 140/02. In addition to the above Environmental Protection Requirements, during planning, design, construction, operation and maintenance of highways located in the Oak Ridges Moraine Conservation Plan Areas as mapped in Map 208 to the Plan Regulation, the Ministry shall comply with the following:

ORM-1 In Natural Core Areas, maintain and, where possible, improve or restore the ecological integrity of the Plan Area by;

- a) maintaining and, where possible, improving or restoring the health, diversity, size and connectivity of key natural heritage features, hydrologically sensitive features and the related ecological functions;
- b) maintaining or restoring natural self-sustaining vegetation and wildlife habitat;
- c) maintaining the quantity and quality of groundwater and surface water;
- d) maintaining groundwater recharge;
- e) maintaining natural stream form and flow characteristics; and
- f) protecting landform features.

(O. Reg. 140/02, s. 11 (1)).
ORM-2 In Natural Linkage Areas, maintain and, where possible, improve or restore the ecological integrity of the Plan Area, and to maintain, and where possible, improve or restore, regional-scale open space linkages between Natural Core Areas and along river valleys and stream corridors, by;

a) maintaining, and where possible improving or restoring, the health, diversity, size, and connectivity of key natural heritage features, hydrologically sensitive features and the related ecological functions;
b) maintaining, and where possible improving or restoring natural self-sustaining vegetation over large parts of the area to facilitate movement of plants and animals;
c) maintaining a natural continuous east-west connection and additional connections to river valleys and streams north and south of the Plan Area:
d) maintaining the quantity and quality of groundwater and surface water,
e) maintaining groundwater recharge,
f) maintaining natural stream form and flow characteristics; and
g) protecting landform features.
(O. Reg. 140/02, s. 12 (1)).

ORM-3 In Countryside Areas, encourage agricultural and other rural uses that support the Plan’s objectives, by,

a) protecting prime agricultural areas;
b) providing for the continuation of agricultural and other rural land uses and normal farm practices; and
c) maintaining the rural character of the Rural Settlements.

Also encourage ecological integrity in the Countryside Areas by,

a) maintaining and, where possible, improving or restoring the ecological integrity of the Plan Area;
b) maintaining and, where possible, improving or restoring the health, diversity, size and connectivity of key natural heritage features, hydrologically sensitive features and the related ecological functions;
c) maintaining the quantity and quality of groundwater and surface water;

d) maintaining groundwater recharge;

e) maintaining natural stream form and flow characteristics;

f) protecting landform features;

g) accommodating a trail system through the Plan Area and trail connections to it; and

h) providing for economic development that is compatible with the above.

(O. Reg. 140/02, s. 13 (1) and (2)).

ORM-4 The planning, design, construction, operation, and maintenance of all highway projects shall be consistent with Municipal watershed plans as required by O. Reg. 140/02, s. 24 (1).

ORM-5 Any application for a mineral aggregate operation or wayside pit operation shall demonstrate that it will:

a) maintain and, where possible, improve or restore the quantity and quality of groundwater and surface water in the Plan Area;

b) rehabilitate as much of the site as possible;

c) maintain and, where possible, improve or restore the health, diversity, size and connectivity of any key natural heritage features on the site or on adjacent land; and

d) protect the geological or geomorphological attributes of any areas of natural and scientific interest (earth science) on the site or on adjacent land.

(O. Reg. 140/02, s. 35. (1)).

ORM-6 All service and utility trenches for transportation, infrastructure and utilities shall be planned, designed and constructed so as to keep disruption of the natural groundwater flow to a minimum. (O. Reg. 140/02, s. 41 (6)).
ORM-7 All stormwater management plans shall have the objective of:

a) maintaining groundwater quantity and flow and stream baseflow;
b) protecting water quality;
c) protecting aquatic species and their habitat;
d) preventing increases in stream channel erosion; and
e) preventing any increase in flood risk.

(O. Reg. 140/02, s. 46 (1)).

ORM-8 During the planning of highways in Natural Linkage Areas and Natural Core Areas, the need for the project shall be demonstrated. Where the need for the project has been demonstrated it shall also be demonstrated that there is no reasonable alternative (O.Reg 140/02, s. 41(2) (a)). The federal and provincial Environmental Assessment processes are the ways by which the above are demonstrated.

ORM-9 In Natural Linkage Areas and Natural Core Areas, highway undertakings shall be planned, designed and constructed to keep required right-of-way widths and associated construction disturbance to the minimum possible (O.Reg 140/02, s. 41 (2) (b) 1,2).

ORM-10 In Natural Linkage Areas and Natural Core Areas, Highway undertakings shall be planned and designed to coincide to the extent possible with existing transportation, infrastructure or utility corridors such that the number of corridors is kept to a minimum – (O.Reg 140/02, s. 41 (2) (b) 2)

ORM-11 In Natural Linkage Areas and Natural Core Areas, Highway undertakings shall be planned, designed and constructed to facilitate wildlife movement – (O.Reg 140/02, s. 41 (2) (b) 3).

ORM-12 Where required along the highway, lighting shall be designed to minimize light intrusion into Natural Core Areas – (O.Reg 140/02, s. 41 (2) (b) 4).
ORM-13 Highway planning, design, and construction practices that are adopted shall minimize adverse effects on the ecological integrity of the Plan Area. Where avoidance is not possible, and has been permitted through the Environmental Assessment process, the highway will be designed, constructed, and operated/maintained to minimize effects on Natural Core Areas and Natural Linkage Areas – (O.Reg 140/02, s. 41 (2) (b) 5).

ORM-14 Future highway interchanges or transit stations shall not be located within a Natural Core Area – (O.Reg 140/02, s. 41 (3) (b)).

ORM-15 Highways shall be planned and designed to protect Natural Core Areas by either avoidance, or if avoidance is not possible and has been permitted through the Environmental Assessment process, by locating the project as close to the edge of the Natural Core Area as possible – (O.Reg 140/02, s. 41 (3) (c)).

ORM-16 Highway planning, design, construction, operation and maintenance practices that are adopted shall maintain, and where possible improve or restore, key ecological and recreational linkages, including the ORM recreational trail system that will be established as described in Section 39 of the ORMCP – (O.Reg 140/02, s. 41 (5) (c)).

ORM-17 Highway design shall implement a landscape design that is compatible with adjacent natural areas and site conditions and that utilizes native plant species as much as possible, especially along rights-of-way – (O.Reg 140/02, s. 41 (5) (d)).

ORM-18 Highway long-term landscape management approaches that are adopted shall maintain, and where possible improve or restore the health, diversity, size and connectivity of the key natural heritage feature or hydrologically sensitive feature – (O.Reg 140/02, s. 41 (5) (e)).

ORM-19 Highway surface water conveyance and management works shall be planned and designed, constructed, and operated and maintained to:

a) Keep any adverse effects on the ecological integrity of the Oak Ridges Moraine Conservation Plan Area to a minimum;
b) Maintain the ecological integrity of hydrological features, key natural heritage features and related vegetation protection zones;

c) Maintain the quantity and quality of groundwater and surface water;

d) Maintain stream baseflows;

e) Protect aquatic species and their habitat;

f) Prevent increases in stream channel erosion;

g) Prevent any increase in flood risk; and

h) Be consistent with the applicable watershed plan, water budget and conservation plan.

(O.Reg 140/02, s. 41, s. 43, s. 45 and s.46).

ORM-20 To the extent that is technically, physically, and economically practical, highway planning, design and construction practices that protect water resources should be used such that:

a) The removal of vegetation, grading and soil compaction is kept to a minimum;

b) Soil migration from the construction area is prevented;

c) Exposed soils are stabilized as soon as is possible;

d) Chemical applications to suppress dust and control pests are kept to a minimum; and

e) Areas of impervious land use are minimized, while areas retained in a natural, undisturbed state are maximized.

(O.Reg 140/02, s. 42, s. 43 and s. 45 (2)).

ORM-21 To the extent that is technically, physically, and economically practical, highway surface water conveyance and management systems should integrate a variety of measures to form a “treatment train” that provides a total, long-term suspended solids removal efficiency of at least 80-percent – (O.Reg 140/02, s. 45 (6), s.46).

ORM-22 The disposal of stormwater into kettle lakes is strictly prohibited – (O.Reg 140/02, s.45(7)).

ORM-23 Stormwater management ponds shall not be located in key natural heritage features and hydrologically sensitive features or related vegetation protection zones – (O.Reg 140/02, s.45 (8)).
ORM-24 Rapid infiltration basins and/or columns are strictly prohibited (O.Reg 140/02, s.47).

ORM-25 The following uses are prohibited in wellhead protection areas:

a) Storage of petroleum fuels, solvents and chlorinated solvents, pesticides, herbicides, fungicides, construction equipment, inorganic fertilizers, road salt and contaminants listed in Schedule 3 (Severely Toxic Contaminants) to Regulation 347 (RRO 1990);

b) Generation and storage of hazardous waste or liquid industrial waste; and

c) Snow storage and disposal facilities.

(O.Reg 140/02, s. 28).

ORM-26 The following uses are prohibited in areas of high aquifer vulnerability as shown on the map entitled Reference Map for Ontario Regulation 140/02:

a) Generation and storage of hazardous waste or liquid industrial waste;

b) Snow storage and disposal facilities; and

c) Underground and above-ground storage tanks that are not equipped with an approved secondary containment device.

(O.Reg 140/02, s. 29).

ORM-27 Highways that will be used to transport chemicals or volatile materials should be planned and designed to avoid wellhead protection areas and areas of high aquifer vulnerability (O.Reg 140/02, s. 42 (1) (c)).

ORM-28 Highway planning, design, construction, operation and maintenance activities shall provide for groundwater source protection in terms of both quality and quantity and recognize vulnerable or sensitive (highly vulnerable) aquifer zones and wellhead protection zones as defined by the MOE (designated Director) and in Municipal Official Plans. (Ontario Water Resources Act s.33. and ORMCP O. Reg. 140/02, s. 29 and s. 42 (1).)
13.2 Niagara Escarpment


The Niagara Escarpment Planning and Development Act established a planning process to ensure that the area would be protected. From this emerged the Niagara Escarpment Plan (NEP) which serves as a framework of objectives and policies to strike a balance between development, preservation and the enjoyment of the Niagara Escarpment. The NEP is comprised of, among other things, a purpose statement, objectives and development criteria. The purpose of the NEP is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment. The NEP allows for transportation facilitates and has objectives and criteria for such facilities in order to meet the NEP purpose. The NEP is flexible. It recognizes that transportation facilities have other constraints and that some criteria may not be feasible in every situation. The EPR for the NE were developed to clarify these objectives and criteria and recognize the flexibility of the NEP. Three groups ERP’s have been developed for the NE:

- The first is the objectives of NEP
- The second and third groups are criteria that should be met if feasible. These groups are Development Criteria for Transportation and Utilities (2.15); and other applicable Development Criteria.

**NEP Objectives:**

**NE-1** In addition to the other Environmental Protection Requirements, during planning, design, construction, operation and maintenance of highways located in the Niagara Escarpment, the following shall be complied with (NEPDA s.8 Objectives):

a) Protect the unique ecologic and historic areas;

b) Maintain and enhance the quality and character of natural streams and water supplies;

c) Maintain and enhance the open landscape of the Niagara Escarpment by preserving the natural scenery.
Development Criteria for Transportation and Utilities (Section 2.15)

**NE-2** All new and expanded transportation facilities must be located and designed to minimize the impact on the Escarpment environment. (NEPlan, 2.15 Transportation and Utilities, 2.15)

**NE-3** Transportation facilities will only permitted in Escarpment Natural Area when deemed necessary to the public interest after all alternatives have been considered. (NEPlan, 1.3 Escarpment Natural Areas and 2.15 Transportation and Utilities)

**NE-4** Blasting, grading and tree removal should be minimized through realignment and/or the use of mitigation measures such as curbs and gutter, retaining walls and tree wells. (NEPlan, 2.15 Transportation and Utilities)

**NE-5** Finished slopes should be graded to a slope of 2:1 or less and re-vegetated. (NEPlan, 2.15 Transportation and Utilities)

**NE-7** Large cuts or steeper slopes should be avoided. If not avoidable, then terracing or other measures should be considered. to ensure that transportation facilities affecting steep slopes (e.g., Escarpment slopes, rock faces, and talus slopes) and ravines do not result in environmental damage. (NEPlan, 2.15 Transportation and Utilities and 2.5 New Development Affecting Steep Slopes And Ravines)

**NE-8** Native species of vegetation should be used for the protection of earth surfaces, and blended into the surrounding landscape. (NEPlan, 2.15 Transportation and Utilities)

**NE-9** Vegetation screens should be used. (NEPlan, 2.15 Transportation and Utilities)

**NE-10** The visual impact of highways including structures and facilities should be minimized by measures such as structural design, colouration and landscape planting (NEPlan, 2.15 Transportation and Utilities)

**NE-11** Transportation facilities should be sited and designed to avoid or minimize the impacts on parks, open space and the Bruce Trail and to avoid creating severances that could result development pressures..
Where impacts to the Bruce Trail cannot be avoided, an acceptable, safe alternative must be provided. (NEPlan, 2.15 Transportation and Utilities)

Other Applicable Development Criteria

**NE-12** During the planning, design, construction, operation and maintenance of highways, changes to the natural drainage should be avoided. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-13** Where a potential ground or surface water pollution problem exists from highway design, construction, or operation and maintenance, the detrimental effects and how they will be minimized shall detail through appropriate studies. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-14** During the construction and/or operation and maintenance of highways, the following sediment and erosion control practices should be carried out:

a) Only the smallest practical area of land should be exposed at any time;

b) When land is exposed, the exposure should be kept to the shortest practical period of time;

c) Natural features such as tree groves, grades and waterways should be preserved;

d) Temporary vegetation and/or mulching should be used to protect critical areas exposed;

e) Final landscaping and vegetation should be installed as soon as practical following completion of construction;

f) Topsoil should not be removed from the site, but rather, should be stored and redistributed as a suitable base for seeding and planting;

g) Sediment control devices should be installed to remove sediment from run-off due to changed soil surface conditions during and after construction; and

h) Construction in or across a watercourse or wetland should be appropriately timed to minimize impacts on fish and wildlife habitat. (NEPlan, 2.6 New Development Affecting Water Resources)
**NE-15** Water taking or stream diversions must be demonstrated to be an essential part of construction and shall be of a scale and intensity that will not adversely affect water quality, quantity and the Escarpment environment. The need and amount of water taking and/or diversions will be justified and the impact on the Escarpment environment will be mitigated. (NEPlan, 2.6 New Development Affecting Water Resources)

**NE-16** Wetlands including a setback should be avoided during the planning, design, construction, operation and maintenance of highways. (NEPlan, 2.6 New Development Affecting Water Resources)

**NE-17** The limits of the wetland and setback shall be determined by NEC (NEPlan 2.6, New Development Affecting Water Resources)

**NE-18** The wetland set-back should be a natural vegetative buffer.

**NE-19** Highways may be located and constructed adjacent to wetlands provided it does not result in any of the following:

a) Loss of water quality;
b) Loss of wetland functions;
c) Subsequent demand for future development that will negatively affect existing wetland functions;
d) Conflict with existing site-specific wetland management practices; and
e) Loss of contiguous wetland area. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-20** Highways may be located and constructed adjacent to significant fishery resources provided the following is demonstrated:

a) Net gain/no net loss of productive capacity of fish habitat;
b) Maintenance of minimum baseflow of watercourses;
c) Maintenance of existing watercourses in a healthy, natural state;
d) Maintenance of vegetative buffers in accordance with the sensitivity of the fishery resource and development criteria;
e) Best available construction and management practices shall be used to protect water quality and quantity, both during and after construction; and

f) Treatment of surface run-off to maintain water quality and hydrological characteristics in receiving watercourses shall meet the standards established by the Ministries of Environment and Natural Resources where feasible. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-21** Public access to fishery resource areas shall be maintained or, wherever practicable, improved during the planning, design, construction, operation and maintenance of highways. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-22** Storm water management ponds shall be designed and located to avoid streams, wetlands, Areas of Natural and Scientific Interest (Life Science), source areas, Escarpment slopes and significant watercourses. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-26** Storm water management ponds should be designed to be off-stream with bottom draw-off control structures (NEPlan 2.6, New Development Affecting Water Resources).

**NE-23** The water resource management policies/activities of the Ministry of Environment, Ministry of Natural Resources and Conservation Authority shall be considered during the planning, design, construction, operation and maintenance of highways. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-24** Natural vegetative buffers shall be maintained or established where feasible during the planning, design, construction, operation and maintenance of highways. (NEPlan 2.6, New Development Affecting Water Resources)

**NE-25** The highway design shall not adversely affect downstream water quality, quantity, adjacent lands and riparian rights. (NEPlan 2.6, New Development Affecting Water Resources)
Disturbance of wooded areas should be minimized during the planning, design, construction, operation and maintenance of highways (NEPlan 2.7, New Development Within Wooded Areas).

Trees to be retained should be protected by means of snow fencing, wrapping, or other acceptable means during construction (e.g. tree wells) (NEPlan 2.7, New Development Within Wooded Areas).

Existing tree cover or other stabilizing vegetation shall be maintained on slopes in excess of 25 per cent (1 in 4 slope), as feasible (NEPlan 2.7, New Development Within Wooded Areas).

New highways are not permitted in identified habitat of endangered (regulated) plant or animal species (NEPlan 2.8, Wildlife Habitat).

Highways shall be planned, designed, constructed, operated and maintained so as to:

a) Minimize the impacts upon wildlife habitat, in particular, habitats of endangered (not regulated), rare, special concern, and threatened plant or animal species, as identified by on-site evaluation;

b) Maintain wildlife corridors and linkages with adjacent areas (NEPlan 2.8, Wildlife Habitat).

Significant and Regionally Significant Life Science ANSIs and set-backs should be avoided during the planning, design, construction, operation and maintenance of highways. (NEPlan 2.14, Areas of Natural and Scientific Interest (ANSIs)).

The ANSI set-back should be a natural vegetative buffer.

In Provincially Significant Earth Science ANSIs highway development will be considered, provided that:

a) Development does not significantly alter the natural topography or geological features of the Earth Science ANSI; and

b) Methods are employed to minimize the impact of the use on the values for which the site has been identified. (NEPlan 2.14, Areas of Natural and Scientific Interest (ANSIs)).
NE-35 In Agricultural Areas (as defined in the NEP), transportation planning and highway design, construction, operation and maintenance activities shall be done in a manner consistent EPR AGR-1 for prime agricultural lands and prime agricultural areas.
13.3 Greenbelt

The following Environmental Protection Requirements (EPR's) for the Greenbelt (GB) are based on the Greenbelt Act (Act), S.O. 2005, c. 1, Designation of Greenbelt Area, O. 2005, Reg. 59/05 and Prescribed Applications, Matters, Proceedings, and Policies for the Purpose of Subsection 24 (3) of the Act, O. Reg. 61/05 (amended to O.Reg. 13/06) and the Greenbelt Plan (concurrency with which is required by s(7) of the Act). Lands in the Greenbelt Plan encompass lands within the Niagara Escarpment (NE) Plan Area, the Oak Ridges Moraine (ORM) Area, the Parkway Belt West Plan Area and lands designated as Protected Countryside (PC).

The Greenbelt Area, as defined by Ontario Regulation 59/05, is governed by this Greenbelt Plan, which includes lands within the Niagara Escarpment Plan Area and the Oak Ridges Moraine Area (discussed in previous subsections), the Parkway Belt West Plan Area, and lands designated as Protected Countryside by the Greenbelt Plan.

The Greenbelt Plan balances the protection of greenspace and support for vibrant rural communities in the greenbelt. The plan contains provisions for a wide range of uses, including the permission for existing uses to continue and expand, as the plan allows.

The greenbelt protects environmentally sensitive and important areas and agricultural land while allowing infrastructure\(^1\) necessary to support vibrant rural communities in the greenbelt, where it meets the criteria of required environmental assessments.

The Greenbelt Plan is flexible. It recognizes that transportation facilities have other constraints and that some criteria may not be feasible in every situation. The EPR for the greenbelt were developed to clarify the objectives and criteria and recognize the flexibility of the Greenbelt Plan. Three groups ERP’s have been developed for the NE:

- The first is the Plan Objectives
- The second and third groups are polices that should be met if feasible. These groups are Infrastructure, and other applicable polices

The Greenbelt Plan contains policies specific to infrastructure. These polices in turn refer to specific lands within the Protected Countryside:

1. Agricultural System: a continuous and permanent land base necessary to support long-term agricultural production and economic activity and is comprised of:
   a) specialty crop areas are specifically the Niagara Peninsula Tender Fruit and Grape Area and the Holland Marsh,
   b) prime agricultural areas as designated within municipal official plans.

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\(^1\) Means physical structures (facilities or corridors) that form the foundation for development or resource use and includes transit and transportation corridors and facilities
c) rural areas are those lands outside of settlement areas which are not prime agricultural areas and are typically characterized by a mixture of agricultural lands, natural features and recreational and historic rural land uses.

2. Natural System: provides a continuous and permanent land base necessary to support human and ecological health in the Greenbelt and beyond and is comprised of:
   a) The Natural Heritage System includes areas with the highest concentration of the most sensitive and/or significant natural features and functions.
   b) The Water Resource System is made up of both ground and surface water features and their associated functions, which provide the water resources necessary to sustain healthy aquatic and terrestrial ecosystems and human water consumption.

3. Settlement Areas: provide significant economic, social and commercial functions to prime agricultural areas and rural areas.

General

**GB-1** In addition to the other Environmental Protection Requirements, during planning, design, construction, operation and maintenance of highways located in the Greenbelt Plan, the ministry shall, comply with the following Environmental Protection Requirements for the Greenbelt.

Plan Objectives

**GB-2** Wherever feasible, during the planning, design, construction, and operation and maintenance of transportation facilities, the following shall be done:

a) Maintain the network of countryside and open space areas which supports the Oak Ridges Moraine and the Niagara Escarpment;

b) Sustain the countryside, rural and small towns and contribute to the economic viability of farming communities;

c) Preserve agricultural land;

d) Maintain connections between lakes and the Oak Ridges Moraine and Niagara Escarpment;
e) Maintain or restore and improve as practical, linkages between ecosystems and provincial parks or public lands; and

f) Ensure that the development of transportation infrastructure proceeds in an environmentally sensitive manner. (GBA s.5 Plan Objectives)

GB-3 For lands falling in the **Prime Agricultural Areas**, a designation within the **Agricultural System** of the **Protected Countryside**, planning, design, and construction of transit, highway and transit corridors are permitted provided the Ministry complies with the certain requirements as reiterated by Environmental Protection Requirements GB-3 to 7. (GB Plan, 3.1.3 #3)

GB-4 For all proposed expanded or new transportation corridors and facilities in the **Protected Countryside**, it must be demonstrated that the undertaking meets one of the following objectives:

a) it supports agriculture, recreation and tourism, rural settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or

b) it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centres and between these centres and Ontario's borders. (GB, GB Infrastructure, .1 #1)

GB-5 In the **Protected Countryside**, wherever feasible, during the planning, design, construction, and operation and maintenance of transportation facilities, the following shall be done:

a) minimize the amount of the **Greenbelt**, and in particular the **Natural Heritage System**, that is traversed and/or occupied;

b) minimize the negative impacts and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise and road salt;

a) optimize existing capacity and coordination with different infrastructure services so that the rural and existing character of the **Protected Countryside** and the overall urban structure for southern Ontario established by the Greenbelt and any provincial growth management initiatives are supported and reinforced;
b) avoid key natural heritage features or key hydrologic features for new and expanding transportation infrastructure; and

c) minimize negative impacts and disturbance on the features or their related functions, and where reasonable, maintain or improve connectivity for instances where infrastructure does cross the Natural Heritage System or intrude into or result in the loss of a key natural heritage feature or key hydrologic feature, including related landform features, (GB, GB Infrastructure, .1 #1, 4.2.1 #2a) b) c) d) e) and #3))

**GB-6**

In the **Protected Countryside**, elements of the highway or transit corridor or facility within a *key natural heritage feature or key hydrologic feature* or its associated *vegetation protection zone* may be established if the highway or transit corridor or facility:

d) serves the agricultural sector; and

e) all reasonable efforts are made to keep such infrastructure out of key natural heritage features or key hydrologic features or the vegetation protection zones. (GB, GB Infrastructure, .1 #1, 4.2.1 #2a) b) c) d) e) and #3))

**GB-7**

Storm water management ponds are prohibited in *key natural heritage features* or *key hydrologic features* or their vegetation protected zones in the **Protected Countryside**, except for those portions of the **Protected Countryside** that define the major river valleys that connect the Niagara Escarpment and Oak Ridges Moraine to Lake Ontario. In these areas, naturalized stormwater management ponds are permitted provided they are located a minimum of 30 metres away from the edge of the river/stream and in the vegetation protection zones of any abutting *key natural heritage features* or *key hydrologic features*. (GB, 4.2.3, #1, Stormwater Management Infrastructure Policies)

**GB-8**

In the **Protected Countryside**, stormwater management plans shall be designed and carried-out in a manner that avoid, minimize and/or mitigate stormwater volume, contaminant loads and impacts to receiving water courses in order to:

f) Maintain groundwater quality and flow and stream baseflow;

g) Protect water quality;

h) Minimize the disruption of pre-existing (natural) drainage patterns wherever possible;
i) Prevent increases in stream channel erosion;

j) Prevent any increase in flood risk; and

k) Protect aquatic species and their habitat. (GB, 4.2.3 #3 Stormwater Management)