

APPENDIX A

Generic Table of Assessment and Evaluation Factors and Indicators

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<p align="center">HWY 407 EAST COMPLETION ROUTE PLANNING ENVIRONMENTAL ASSESSMENT STUDIES 1989 TO 1994 - ASSESSMENT AND EVALUATION FACTORS</p>		
FACTOR GROUP	FACTOR	INDICATOR
Natural Environment	Ecosystem Integrity	Severance of/encroachment on identified upland ecosystems. Severance of/encroachment on identified aquatic ecosystems. Severance of/encroachment on identified wetland ecosystems.
	Surface Water Quality and Quantity	Watercourse crossings. Encroachment on headwater areas. Realignment/channelization required. Effects on surface drainage/flood plain. Nature/extent of management programs (MOEE, Conservation Authorities).
	Fisheries (Aquatic Biology)	Warmwater fisheries crossings. Coldwater fisheries crossings. Extent of riparian vegetation removal. Altered/displaced habitat spawning areas. Effects on recreational, rare/ endangered/threatened species. Migratory runs affected. Nature/extent of habitat rehabilitation programs (MNR, Conservation Authorities).
	Vegetation (Terrestrial Biology - to be identified in terms of Vegetation Units)	Degree of access to/encroachment on/ severance of identified Environmentally Significant Areas (ESA's) and/or Areas of Natural and Scientific Interest (Life and Earth Science ANSI's). Effects on unique or rare herbaceous species or communities. Degree of encroachment on/severance of woodlots/forest areas. Nature/extent of forest management/ research programs (WIA, plantation, ASA, research plots).
	Wildlife	Effects on wildlife species. Effects on rare/endangered wildlife species. Displaced wildlife habitat. Barrier effects on travel corridors.
	Hydrogeology	Effect on ground water resource areas (high water table, recharge areas, significant overburden aquifers). Private/municipal/shallow/deep wells within 150 m of R.O.W.
	Waste Management	Encroachment on abandoned/existing waste sites.

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FACTOR GROUP	FACTOR	INDICATOR
Social Environment	Communities	Encroachment on/severance of established and proposed settlement areas. Influence in defining settlement areas. Residences displaced. Access to/displacement of community facilities (major institutional uses). Delivery of community services (emergency, school bus). Inter-urban and rural-urban barrier effects.
	Recreation	Access to/displacement of recreational uses.
	Visual Aesthetics (View from the facility)	Total aesthetic value of visibly accessible landscape components. Total scenic value based on composition, arrangement and sequence of landscape components Total potential visual impact on sensitive viewer groups based on sensitivity, proximity and frequency of viewer groups.
	Noise	Noise sensitive receivers experiencing changes (+/-) in sound levels (5 dB ranges) over pre-existing conditions. Noise sensitive receivers experiencing resultant absolute noise level over 55 dBA.
Economic Environment	Provincial/Municipal Private Land Use Development Strategies	Degree of compatibility with municipal development goals/objectives. Capability to provide transportation service/stimulate development of major development initiatives (Seaton, Pickering Airport). Compatibility with Provincial/Federal planning goals/objectives/policies. Constraints/opportunities for designated settlement area expansion. Population/employment redistribution effects. Effects on approved private development proposals.
	Non-Farm Commercial Activities	Businesses displaced. Employees displaced. Changes (+/-) in business exposure. Changes in site access/internal circulation.
Agriculture	Physical Resource Consumption	Loss of Class 1 and Class 2 land. Loss of Class 3 and Class 4 land. Total farm property required.
	Facility Resource Consumption	Farm buildings/structures displaced. Specialty crop (rootstocks) displaced. Total owned land required. Improved land required.
	Farm Operation Impacts	Total farm properties directly affected. Livestock operations (field/facility) affected. Specialty operations affected. Farm properties >20 ha affected. Severed parcels >20 ha. Severed parcels <20 ha. Intra-property movement patterns affected.
	Area Operation Impacts	Transportation routes affected. Division of agricultural community areas.

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FACTOR GROUP	FACTOR	INDICATOR
Cultural Environment	Historical Resources	Features within 100 m of R.O.W. Features within R.O.W.
	Cultural Landscape	Degree of disruption to landscape units.
	Archaeological Resources	Registered sites within R.O.W. Potentially significant sites/resource areas affected.
Transportation and Engineering	Network Configuration and Traffic Service	Interchange conditions. Degree of compatibility with provincial road system (existing/proposed). Degree of compatibility with municipal road system (existing/proposed).
	Network Configuration and Traffic Service (cont'd)	Degree of compatibility with protection for transit objectives. Degree to which existing/future travel demand is satisfied (Overview Study/ traffic modelling).
	Geometrics	Horizontal alignment (radii/sequence of curves). Vertical alignment (maximum grades and lengths, height of fills and cuts).
	Geotechnical	Potential engineering/environmental problem due to geotechnical conditions. Effects on aggregate resources.
	Staging Options	Ease of construction staging.
	Construction Considerations	Major impacts during construction (road/access closures, detours, utilities/ rail conflicts).
	Cost	Length. Construction cost (earth-works, roadworks, structures). Relocation cost. Public property affected. Private property affected. Property cost. Construction, utilities and property.