
APPENDIX J
EPP FACT SHEETS

Clearing and Grubbing

Description of Activity Clearing and grubbing of vegetation will be required along portions of the ROW to accommodate the roadway construction and interchange work.

- Concerns**
- Clearing can disrupt habitat of plants and animals.
 - Slash, logs and other cleared material may result in a fire hazard, disrupt other standing vegetation and/or watercourses.
 - Grubbing disturbs the ground surface, exposing erodible soils. The roots and stumps removed have the potential to present a fire hazard, may choke other vegetation, or disrupt surface drainage.

The effects can extend beyond the working area in some cases.

Environmental Protection Measures

- Vegetated areas bordering the working area will be protected with temporary tree protection and sediment fencing as determined in the final grading plan. Equipment, materials, and other construction activities will not be permitted in these zones.
- Tree removal will be restricted to the working area. Tree grubbing will be restricted to the required construction zone. Where possible, tree stumps will be cut flush to the ground and grubbing avoided to minimize soil disturbance, particularly in erosion prone areas.
- Trees will be felled to avoid damaging other standing vegetation and trees will be felled away from waterbodies where it is safe to do so.
- Cut and grubbed material will be disposed of through chipping. Where possible, cut material may be bermed and re-used for wildlife habitat.
- After clearing, the edges of the cleared area shall be checked and any trees damaged will be repaired or removed.
- Unnecessary traffic, dumping and storage of materials over tree roots will be avoided.
- Clearing and grubbing should preferably be done outside the peak summer season to minimize disturbance to local resident wildlife.

Permits, Acts, Guidelines • Permit to Burn (if required)

Responsible Personnel • The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental.

Grading

Description of Activity	Grading will take place in the working area for soil stripping, and construction of roadway and intersection areas.
Concerns	<ul style="list-style-type: none">• The exposure of material through grading has potential to cause erosion and sedimentation impacts. Other concerns are noise, dust and air emissions. <p>These impacts may extend beyond the working area.</p>
Environmental Protection Measures	<ul style="list-style-type: none">• The detail design will ensure that drainage from any unstabilized surface is captured and adequately filtered prior to discharge to any watercourse.• Construction activity will adhere to Municipal Noise By-law requirements where applicable.• In dust sensitive areas, dust will be controlled through the use of water or calcium chloride. Calcium chloride will not be used within 30 m of a watercourse.
Permits, Acts, Guidelines	<ul style="list-style-type: none">• Dust suppressant license required from MOE for use of registered dust suppressants other than water.
Responsible Personnel	<ul style="list-style-type: none">• The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental problems.

Dewatering

Description of Activity	Construction requiring excavations may encounter groundwater that seeps into the work area and requires removal for safe working conditions. Removal usually involves pumping the water from the site to another receiving area.
Concerns	<ul style="list-style-type: none">• The water is often turbid (full of suspended solids) and may also contain contaminants (such as oil and grease) from construction activities.• If allowed to discharge untreated, contaminated water can affect water quality and habitat of aquatic features if it reaches a pond or watercourse.• Improper discharging of water can cause ground erosion, leading to sedimentation of vegetated and aquatic areas near the discharge point. <p>The effects can extend beyond the working area.</p>
Environmental Protection Measures	<ul style="list-style-type: none">• Pumped water will be suitably filtered (grass swale, temporary sediment basin with filter cloth, straw bale filter, or equivalent measures) prior to release to any natural area or watercourse.
Permits, Acts, Guidelines	<ul style="list-style-type: none">• Ontario Guidelines on Erosion and Sediment Control for Urban Construction Sites.• Canadian Environmental Protection Act and Ontario Water Resources Act.
Responsible Personnel	<ul style="list-style-type: none">• The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental problems.

Erosion and Sediment Control Installation

Description of Activity	Erosion and sediment control structures will be required for the project to control sediment movement from disturbed areas for the protection of vegetation and water resources.
Concerns	<ul style="list-style-type: none">• The improper installation of erosion and sediment control structures may result in problems with their operation, cleaning, and maintenance.
Environmental Protection Measures	<ul style="list-style-type: none">• Erosion and sediment control structures will be designed, installed, maintained, and removed according to Ontario Guidelines on Erosion and Sediment Control for Urban Construction Sites, OPSS Guidelines, and/or established MTO procedures.• Exposed soil areas will be temporarily stabilized as soon as possible (or tarped) to control sediment transport and erosion. In addition, natural vegetation cover will be retained wherever possible (and root grubbing minimized where possible) to provide natural erosion control.• A 30 m setback from watercourses will be retained where possible.• Runoff from material stockpiles will be filtered through a temporary settling facility before release.• Sediment control structures will be routinely inspected as well as checked after storms and repaired as required. The structures will be cleaned out when accumulated sediment reaches half the design height.
Permits, Acts, Guidelines	<ul style="list-style-type: none">• Canadian Environmental Protection Act and Ontario Water Resources Act.
Responsible Personnel	<ul style="list-style-type: none">• The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental problems.

Equipment Maintenance & Fuelling

Description of Activity

Construction equipment must be repaired and maintained to ensure ongoing operation. Equipment needs to be fuelled. Vehicles are washed to remove dirt and salt. Service and minor repair of small equipment such as mowers, chain saws, chippers etc. are performed by the operators or field crews. Fuel will be available at the construction yards. Mobile refuelling facilities may be required during construction.

Concerns

- Improper handling and disposal of operating fluids (e.g. antifreeze, crankcase and transmission oil, fuels etc.) can result in spills and therefore environmental impact.
- Poorly maintained vehicles can release operating fluids to the environment.
- Wash water from vehicle washing is likely contaminated with suspended solids, oil, grease, salt, and heavy metals. If allowed to enter surface or ground water, it can impair water quality.

Impacts can extend beyond the working areas.

Environmental Protection Measures

- Vehicle maintenance and fuelling will be carried out at the maintenance areas in the works yards or at commercial garages when ever possible.
- Refuelling will only be carried out by trained personnel. The Contractor will have A Fuel and Hazardous Material Spill Contingency Plan in place and emergency spill equipment will be maintained on site.
- Refuelling will not be permitted within 30 m of any watercourse or wetland.
- Vehicles will be maintained to minimize leaks. When detected, leaks will be repaired immediately.
- Care will be taken to prevent the release of fuels to the environment when refuelling small equipment in the field.
- No refuelling will take place in or adjacent to sensitive areas. Refuelling stations must be no closer than 100 m to private residences.
- All spills will be immediately controlled and reported to the authorities having jurisdiction and the Owner's Representative.

Equipment Maintenance & Fuelling

Contact will be made with the MOE Spills Action Centre at 1-800-268-6060.

Permits, Acts, Guidelines

- Fuels and hazardous materials shall be stored and handled in compliance with Ontario Regulation 347 of the EPA, the Gasoline Handling Act, Ministry of Consumer and Commercial Relations, and any license to operate a temporary explosives magazine (if blasting is required).

Responsible Personnel

- The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental problems.

Pile Driving

Description of Activity	Pile driving may be required as part of construction if steel or concrete supports must be advanced into the ground.
Concerns	The pounding of the pile driver causes: <ul style="list-style-type: none">• Noise.• Dust.• Debris.
Environmental Protection Measures	<ul style="list-style-type: none">• Pile driving will be timed to minimize noise impact on adjacent residents.• Dust suppression measures will be used in dust generation conditions.• Debris will be cleaned up and removed from the site.
Permits, Acts, Guidelines	<ul style="list-style-type: none">• Municipal Noise By-law, where applicable.• Occupational Health and Safety Act
Responsible Personnel	<ul style="list-style-type: none">• The Contractor is responsible for ensuring that appropriate measures are implemented and that immediate action is taken to correct any environmental problems.