

SEDIMENT AND EROSION CONTROL NOTES

1.0 EROSION AND SEDIMENT CONTROL

- 1.1 Erosion and sediment control (ESC) measures shall be in accordance with the requirements of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of the Environment and Climate Change (MOECC), the Ministry of Natural Resources and Forestry (MNR), the Lower Thames Valley Conservation Authority, and the St. Clair Region Conservation Authority.
- 1.2 The North Kent Wind Project Erosion and Sediment Control Plan Handbook (available under separate cover), prepared by RES, and dated July 16, 2015 provides the requirements of the overall Environmental Management and Protection (EMP) Plan with respect to erosion and sediment control, by outlining the following:
- Roles and responsibilities of environmental management and construction staff;
 - A description of existing site conditions;
 - A strategy for adaptive management and ESC measures;
 - Details regarding the recommended Best Management Practices (BMPs) that should be implemented to provide adequate erosion and sediment control measures during construction; and
 - The required monitoring of ESC measures during construction and reporting duties.

The Contractor must follow the measures as outlined in this handbook and also adhere to the following requirements.

- 1.3 Environmental Monitoring must be conducted in accordance with the Erosion and Sediment Control Plan Handbook to ensure that pre-construction commitments made to regulatory agencies and other stakeholder groups are fulfilled during construction and that preventative and protective environmental measures are in place and functioning properly throughout construction.
- 1.4 Sediment and erosion control objectives include, but are not limited to:
- a) Preventing soil erosion which can result from streaming rainwater or wind erosion during construction;
 - b) Prevent sediment deposit in the storm sewer and/or collecting streams and;
 - c) Prevent air pollution from dust and particulate matter.
- 1.5 ESC measures must be in place prior to stripping the site of vegetation and other materials. Measures such as vegetative filter strips, silt fences, straw bales, interceptor/diversion swales and dykes, rock check dams, sediment bags etc. must be constructed and maintained in order to control sediment and erosion.
- 1.6 Temporary sediment and erosion control measures shall be constructed in accordance with OPSS 805 and more specifically as follows:
- a) Silt fence barriers must be installed in accordance with OPSD 219.110 and

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- the Erosion and Sediment Control Plan Handbook, meeting the most stringent requirements;
- a) Silt fence barriers shall be constructed in accordance with OPSD 219.110 and the Erosion and Sediment Control Plan Handbook, meeting the most stringent requirements;
 - b) Straw bale flow check dams shall be installed in accordance with OPSD 219.180;
 - c) Rock check dams shall be constructed in accordance with OPSD 219.210, 219.211, and the Erosion and Sediment Control Plan Handbook, meeting the most stringent requirements.
- 1.7 When storing soil on site in piles the Contractor must cover each pile with tarps, straw or a geotextile fabric to avoid fine particle transport by wind and/or streaming rain water.
 - 1.8 The Contractor must supply and install the ESC measures as indicated, inspect them frequently, and clean and repair, or replace the deteriorated structures. At the end of the construction period, the Contractor is responsible for removal of the temporary structures and reconditioning the affected areas.
 - 1.9 When sediment and erosion control measures must be removed in order to complete a portion of the work, these same measures must be reinstated.
 - 1.10 All disturbed areas shall be seeded, sodded, or stabilized in some other manner acceptable to the Conservation Authority and the Land Owners as soon as possible, and prior to the expiry of the Conservation Authority permit.
 - 1.11 Construction activities close to streams could increase surface water sedimentation and contamination, disturbing fish habitats. In order to mitigate this issue sedimentation controls measures must be implemented by the Contractor between construction activities and the water body when working within 30 m of surface water crossings, woodlands and wetlands. Construction activities located within 120 m of fish habitat must be conducted outside of the fish spawning and rearing period of March 15 to June 30.
 - 1.12 The increase of heavy truck traffic on local roads during construction could create dust. At all times the Contractor must maintain the municipal access lanes clean and free of sediments. When cleaning the access roads, the Contractor must take the necessary precautions to clear the surfaces covered with sediment prior to cleaning with water. The Contractor must then spray the road surfaces with water or an environmentally friendly dust suppressant and also limit the speed of construction vehicles to reduce the amount of dust created. All construction vehicles must meet provincial emissions regulations.
 - 1.13 Where construction activities occur within 30m of a naturally vegetated feature such as wetlands and woodlands, clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species

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to be retained.

- 1.14 The environmental monitor will be an independent contractor with experience providing environmental recommendations on a large-scale construction site.
- 1.15 Install wind fences, where determined to be necessary by the on-site environmental monitor. Installation of these fences will depend on site specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.
- 1.16 Stockpile shall be stored more than 30 meters away from wetlands, woodland and body of water.
- 1.17 No use of herbicides within significant woodlands during the construction and decommissioning phases.
- 1.18 Surface Water Quality Monitoring:
 - 1.18.1 An Environmental Monitor (EM) shall be designated, who will ensure appropriate construction methods, environmental protection measures, and monitoring programs are utilized throughout construction;
 - 1.18.2 Waterbodies located within 120 m of construction activity shall be sampled prior to construction start in order to determine baseline parameters for turbidity and other applicable parameters in accordance with the Renewable Energy Approval (REA) and the Ministry of Environment and Climate Change (MOECC);
 - 1.18.3 Where deemed necessary by the EM, waterbodies located within 120 m of construction activity shall be sampled for turbidity and other applicable parameters on a daily basis, for comparison with baseline sampling. Monitoring shall be completed upstream and downstream of discharge locations and compared to baseline conditions and the CCME guidelines below. Should the turbidity monitoring indicate exceedance of the CCME guidelines, the EM shall put in place contingency measures to mitigate the impact to the environment;
 - 1.18.4 CCME Guidelines for Turbidity:

Clear Flow:	Maximum increase of 8 NTUs from background levels for a short-term exposure (e.g., 24-h period). Maximum average increase of 2 NTUs from background levels for a longer term exposure (e.g., 30-d period).
High Flow or Tubid Waters:	Maximum increase of 8 NTUs from background levels at any one time when background levels are between 8 and 80 NTUs. Should not increase more than 10%

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of background levels when background is >80 NTUs.

- 1.18.5 Throughout construction weekly monitoring of on-site erosion and sediment control measures shall be conducted. In addition to weekly monitoring, additional inspections shall be completed in the case of rain events and heavy snow melt;
- 1.18.6 The EM shall also implement monitoring measures for all in-water works.
- 1.18.7 In accordance with condition K3 of the REA a record of all inspections and monitoring shall be carried out pursuant to condition K2, and the Contractor shall ensure that the records include the name of the qualified EM who conducted the inspections, date and timing of inspections, and any contingency actions taken.

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