

Appendix G

Standard Construction Techniques and Mitigation Measures

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Construction Activity	Standard Construction Techniques and Mitigation Measures
<p>1. Vegetation Clearing and Grubbing</p>	<ul style="list-style-type: none"> • Adhere to terms of licenses, permits and approvals (e.g., Permit to Burn (if required), <i>Migratory Birds Convention Act (MBCA)</i> and Regulations) and relevant guidelines and Ontario Provincial Standards Specifications (OPSS) – OPSS 201 (Clearing and Grubbing), OPSS 503 (Site Preparation), OPSS 565 (Tree Protection), OPSS 182 (Environmental Protection for Construction in Waterbodies and on Waterbody Banks), and Erosion & Sediment Control Guidelines for Urban Construction (December, 2006) and the Waterfront Toronto Environmental Management Plan for Project-Related Activities (November, 2009). • Limit zone of construction impacts (i.e., vegetation removal, soil compaction) to the extent possible. • Hand clear (without grubbing) on steep slopes which do not require grading. • Minimize removal of riparian vegetation, particularly woody vegetation, for the project works. The woody vegetation that will likely require removal should be replaced with appropriate native species. This will be implemented through a comprehensive landscape design contract. • Protect vegetated areas bordering working areas with temporary tree protection and sediment fencing as determined in a grading plan. Equipment, storage of materials, and other construction activities will not be permitted in these working areas. • Restrict tree removal to the working areas. Vegetation removals associated with clearing, site access and staging will occur outside the key breeding bird period identified by Environment Canada for migratory birds (typically April 15 – July 31 for this area) to ensure compliance with the <i>MBCA</i>, 1994 and Migratory Bird Regulations (MBR). • Conduct a nest survey by a qualified avian biologist prior to commencement of works to identify and locate active nests of species covered by the <i>MBCA</i>, if works must be conducted during the breeding bird season. This will include the development of a mitigation plan to address any potential impacts on migratory birds and their active nests. • In the event that a Species at Risk is observed on site, the observation will be immediately reported to the Ministry of Natural Resources (MNR) and, if required, appropriate mitigation measures as determined through consultation with MNR will be implemented. • Restrict tree grubbing to the required working areas. Where possible, tree stumps will be cut flush to the ground and grubbing avoided in order to minimize soil disturbance, particularly in erosion prone areas. • Fell trees to avoid damaging other standing vegetation and away from any watercourse where it is safe to do so. • Check the cleared area edges after clearing has taken place and repair or remove any damaged trees. A certified arborist is to inspect damage to trees. • Dispose of cut and grubbed material through chipping. Where possible, cut material may be piled and reused for wildlife habitat. • Avoid transportation of non-native and invasive species into sensitive vegetation communities due to seed disturbance / dispersal along cleared areas and construction equipment. Indicate the extent of the target invasive species on the contract drawings and in the field by a qualified biologist. Treat the site, prior to construction, with an herbicide application to reduce the size of the population (three applications, three weeks apart). • Thoroughly clean all equipment working in the identified invasive species locations prior to moving away from the site. • Keep soils at their current locations unless they are placed in an area that will be actively managed (e.g., mowed park) or buried below an impervious surface (e.g., road). • Develop a salvage plan for the necessary removal of regionally rare species as part of subsequent design phases, with agency input, prior to construction. This would include retaining a qualified biologist, where regionally rare plants are the target species, to first locate and flag the relevant material.

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	<ul style="list-style-type: none"> • Use soil restoration (possibly reducing soil compaction and increasing organic matter) to facilitate the success of vegetation plantings. • Include wildlife enhancement considerations in site rehabilitation and restoration planning. • Store all vegetative debris in designated areas, ensuring that vegetative debris are covered, and ensure that trucks transporting debris off-site have covers or caps to contain the debris.
<p>2. Earthworks (e.g., soil stripping, stockpiling and storage, grading, excavation, trenching, filling and compacting)</p>	<ul style="list-style-type: none"> • Adhere to applicable brownfield legislation under the <i>Environmental Protection Act</i> and Regulations, e.g., Ontario Regulation (O.Reg.) 153/04 (<i>Records of Site Condition</i>), as well as Waterfront Toronto’s Soils Management Master Plan for Projects within the Designated Waterfront Area. • Minimize vehicle traffic on exposed soils, avoid compacting or other hardening of natural ground surface, and avoid the movement of heavy machinery on areas with sensitive slopes. • Ensure that construction vehicles use wheel washing facilities prior to leaving the site. • Stabilize high traffic areas with clean gravel surface layer or other suitable cover material. • Avoid major earthworks during extremely dry and windy periods, as earthworks activities can contribute to poor air quality and dust generation. Construction contractors must adhere to the site specific Soil Management Master Plan within the Designated Waterfront Area and incorporate it along with Waterfront Toronto Environmental Management Plan provisions for Spill Response (Section 8.2.2), Air Quality and Dust Management (Section 7.1), Groundwater Management (Section 7.6), Stormwater/Surface Water Management (Section 7.10) and worker health and safety. Dust suppression and monitoring will be implemented. • Include construction sites on TRCA’s flood warning system to prepare sites and implement wet weather restrictions to construction activities in advance of possible flood events. • Ensure backfilling is undertaken using suitable materials that meet the <i>Environmental Protection Act’s</i> requirements for soil use as well as applicable land use standards and is free of ice and frozen soils. Also ensure that adequate soil compaction is conducted to avoid ground subsidence. Provide additional backfill where subsidence has occurred. • Periodically undertake representative sampling and laboratory testing of the quality of the fill to ensure that the fill complies with these standards. A testing protocol, consistent with O.Reg. 153/04, will be required. • Ensure that soils susceptible to frost heave (generally fine sands to silty soils) are not used for backfill in areas with high groundwater levels. • If earthworks are not aimed at increasing the stability of slopes, avoid high risk areas with unstable slopes (e.g., steep slopes, soil liquefaction risk areas) and keep site clearing to a minimum to maintain vegetative cover and wind breaks. • Properly contain any temporarily stockpiled material, construction or related materials (e.g., within silt fencing) in areas separated a minimum of 30 metres from any waterbody. • Protect stockpiled soils from exposure to and sterilization by solar radiation (an uncovered shaded area would also achieve this). • Avoid the storage of putrescible material as this may be considered a waste management activity. Such material is also likely to be structurally unsuitable for reuse, as it is unlikely that such organic rich material is to be stockpiled on site. Reduce excavation depths and cuts near wells and sensitive areas, where safe and feasible. • Where possible, limit construction time in flood prone areas and any low-lying shoreline areas to minimize flood risk. • Backfill and compact excavations as soon as possible. Optimize degree of compaction to minimize erosion and allow for re-vegetation.

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	<ul style="list-style-type: none"> • Properly site and contain all debris and potential contaminants (e.g., concrete and structural materials, paint and solvents) generated from construction of the structure to prevent debris from entering the watercourse, and properly disposed of all debris off-site. • If necessary, restore municipal drains, test and repair as required and repair all damages to property due to project activities. • Implement a Health and Safety Plan (HASP) for workers excavating the contaminated soil on site. • Establish a truck ticketing system to ensure that waste soil being disposed off-property will be accounted for at the receiving site. • Ensure that any excavation for utility trenches includes provisions for at least 1.5 metres of clean soil (i.e., meeting Table 3 criteria of the Soil Ground Water and Sediment Standards for Use under Part XV.1 of the <i>Environmental Protection Act</i>) to be placed laterally and vertically as backfill. <p><u>Dust and Real-time Monitoring Program</u></p> <ul style="list-style-type: none"> • Prepare and implement a comprehensive dust and real-time monitoring program during any demolition, excavation or remedial activity to be carried out within the DMNP activities. The dust and real-time monitoring program is to comprise some or all of: <ul style="list-style-type: none"> ▪ The daily, or more if required, wetting of all soft and hard surfaces and any excavation face on the site with water or with the addition of calcium chloride or other recognized materials as a dust suppressant, if required; ▪ The daily, or more if required, wetting of the soil testing / staging stockpiles as a dust suppressant, if required; ▪ The daily cleaning of the road pavement and sidewalks affected by the work at both ingress and egress points and cleanup of any soil tracking beyond that zone on an as-required basis; ▪ The designation of truck loading points, where necessary, to avoid trucks tracking potentially contaminated soil and demolition debris off site and to minimize tracking of soil onto the sidewalk and street. If the loading point becomes contaminated, it should be cleaned or replaced; ▪ Clean all trucks and other vehicles of all loose soil and dust from demolition debris, including the washing of tires and sweeping or washing of exteriors and tailgates on designated decontamination pads; ▪ Tarp all trucks leaving the site which may have been loaded with indigenous soil or demolition debris; and, ▪ Implement an initial air monitoring program with additional test events, if necessary.
<p>3. Dewatering and Flow Management</p>	<ul style="list-style-type: none"> • Groundwater maintenance will be conducted in accordance with the Waterfront Toronto Groundwater Management Master Plan and Waterfront Toronto Environmental Management Plan for Project-Related Activities (November, 2009). Groundwater discharges will comply with the <i>Ontario Water Resources Act (OWRA)</i> and the City of Toronto’s Sewer Use By-law if required. • Develop temporary flow management plans to isolate the construction zones for in-water works and to maintain clean flow downstream. These plans will be developed based on relevant standards and in accordance with permit-to-take-water (PTTW) conditions and any other supporting measures as may be identified by the project hydrogeologists. • Where appropriate, properly site and design withdrawal points from the channel to prevent intake of silt or bed materials. Similarly, properly site and design discharge points to prevent erosion and any sediment release. • Ensure that the discharged water is directed to an appropriately sized energy dissipating outlet device to prevent bed or bank erosion at the point of discharge into the natural waterbody. • Ensure that only material meeting the applicable generic site condition standards or property specific standards derived through a risk assessment, free of fine particulate matter, will be placed in the water for temporary construction measures (e.g., coffer dams will be constructed of ‘pea gravel’ bags, geotextile fabric or other clean material) or permanent works (e.g., substrate material).

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	<ul style="list-style-type: none"> • Ensure that during all temporary dewatering required for works, appropriate energy dissipation and settling / filtration measures will be used for discharge of dewatering water to minimize potential for erosion or sediment release in the watercourses, lake and drainage features. The dewatering plan will include properly sized, designed and sited temporary filtration facilities. Site and design discharge points for release of dewatering discharge to prevent erosion and sucking of sediment from the bottom of the pond, thereby ensuring that only clean flow is released to the watercourses or lake. If sheet piling is used to contain dewatering areas, it will be removed following construction to prevent obstruction of groundwater movement to the streams. • Implement any opportunities identified during construction to divert any exposed groundwater discharge directly to the stream channels, with input from the qualified fish biologist, environmental inspector and / or hydrogeologist, and consultation with agency staff if appropriate. • Screen all hoses drawing water from streams supporting fish use during temporary flow management procedures to prevent potential entrainment of fish. • Remove and relocate any fish stranded within the temporary in-water work zones (including within Reaches 1, 2, and 4) using appropriate techniques by qualified fisheries specialist. • Remove accumulated sediments prior to removing barriers (e.g., cofferdams). • If dredging or releasing sediments, confirm whether sediment is contaminated. If sediment is contaminated, implement more stringent measures to prevent release downstream.
<p>4. General In-water Works (e.g., lake filling, dredging)</p>	<ul style="list-style-type: none"> • Lake filling material will be comprised of construction rubble that is considered suitable as unconfined fill material under the Ministry of the Environment (MOE) Fill Quality Guidelines. • Adhere to terms of licenses, permits and approvals (i.e., <i>Canadian Environmental Protection Act</i>, <i>OWRA</i>, <i>Federal Fisheries Act</i>, etc.) relevant guidelines and procedures (e.g., MOE Guidelines and Procedures for Water Management; Protection and Management of Aquatic Sediment Quality in Ontario; Fill Quality Management; Surface Water Quality Guidelines; and, Department of Fisheries and Oceans Operational Statements). • Conduct all in-water and near-water activities within the applicable in-water construction timing windows, as identified by with the MNR, to protect the resident fishery life functions. • Where possible, limit in-water construction time to minimize flood risk. • Operate heavy machinery from above the top of the stream bank or on shore above the normal water level (where possible). • Ensure that all equipment which comes in contact with water is free of fluid and leaks and is externally cleaned / degreased. • Conduct in-stream work during dry conditions, low flow or under frozen conditions. • Suspend work prior to imminent storm events in order to minimize soil transport. • Make provisions / contingencies for occurrence of high flow or low flow conditions during activity, as applicable. • Remove all dredged material to a location outside of the ordinary high water mark (see definition below) of any water body. Any dredged material that is disposed of on land will meet the Soil, Groundwater and Sediment Standards for use under part XV.1 of the <i>Environmental Protection Act</i>. • Minimize the amount of dredged material removed by only dredging the area and depth required in order to maintain as much aquatic vegetation and as many habitat features as possible.

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	<ul style="list-style-type: none"> • Dispose of contaminated dredged material according to MOE guidelines and O.Reg. 347. It is the proponent's responsibility to determine if the dredged material is contaminated through an appropriate analytical testing program. • During the active filling phase, the confining structure will be designed to withstand the most significant wave that could occur in storms over a 25-year period. • At the end of the filling season or upon completion of the DMNP, the confining structure will be designed to be protected to the estimated 100-year storm significant wave prior to the end of the calm period during which confined fill was first deposited. • Filling should only take place during the defined calm period (June to August or MNR Hindcast Method) in those areas subject to storm / wave damage. • Exposed fill face should not be more than a specified length, usually 15 metres. • In instances where Confined Fill will be used in a lake fill, the outer structure must be constructed of material meeting the Unconfined Fill criteria (e.g., quarried stone, concrete rubble, or other similarly inert material). The outer structure must be completed to provide full protection before commencing placement of material classified as Confined Fill. • All machinery used on-site should be in good repair and free of excess oil and grease. Any fuelling or maintenance of such equipment should occur on the upland well away from the foreshore. • If steel piles are to be used, they must be capped to prevent the entry of wildlife.
<p>5. Handling of Contaminated Soils <i>(Based on Waterfront Toronto's Soils Management Master Plan and Environmental Management Plan and to reflect risk assessment / risk management developed separately by Waterfront Toronto)</i></p>	<ul style="list-style-type: none"> • Construction contractors must adhere to the site specific Soil Management Plan. • Minimize on-site storage. Contaminated soil should be disposed of properly in accordance with all applicable regulations or treated to a standard that allows its reuse either locally or elsewhere within the DWA. The storage of hazardous material will meet the requirements of O.Reg. 347. • Test suspected soils at an approved certified laboratory. • Avoid temporary stockpiling of contaminated soils or hazardous material where possible. • Take the following precautions if temporary stockpiling is necessary: <ul style="list-style-type: none"> ▪ Cover the stockpile with plastic sheeting or tarps. ▪ Install a berm around the stockpile to prevent runoff from leaving the area. ▪ Do not stockpile in or near storm drains or watercourses. • Remove contaminated material and hazardous material on exteriors of transport vehicles and place either into the current transport vehicle or into the excavation prior to the vehicle leaving the site. • Continuously monitor air quality during excavation operations at all locations containing hazardous material. • Take all necessary precautions and preventive measures to prevent the flow of water, including groundwater, from entering excavations. Such preventative measures may consist of, but are not limited to; berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof. If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, shall be discharged to clean, closed top, watertight, transportable holding tanks, and disposed of in accordance with federal, provincial, and local laws. • Collect water from decontamination procedures and treat or dispose of it at an appropriate disposal site. • Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.

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	<ul style="list-style-type: none"> • Install temporary security fence to surround and secure the site. Remove fencing when no longer needed. • Excavate, transport, and dispose of contaminated material and hazardous material in accordance with the rules and regulations of regulatory agencies. • Excavated soil is to be managed to prevent sediment accumulation in stormwater runoff. • Excavated soil that is suspected of being or known to be contaminated is to be placed in cover bins or other sealed containers, or stockpiled and covered with plastic sheeting anchored in place.
<p>6. Erosion, Sediment, and Dust Control</p>	<ul style="list-style-type: none"> • Adhere to terms of licenses, permits and approvals (i.e., <i>Canadian Environmental Protection Act</i>, <i>OWRA</i>, <i>Federal Fisheries Act</i>, etc.) and guidelines (i.e., TRCA Erosion and Sediment Control Guidelines to Urban Construction) and Ontario Provincial Standards Specifications (OPSS) – OPSS 577 (Erosion and Sediment Control Measures), OPSS 503 (Site Preparation), OPSS 206 (Grading), OPSS 506 (Dust Control), the Waterfront Toronto Environmental Management Plan for Project-Related Activities (November, 2009) will be followed. • Install silt fences, blankets, and berms around construction areas, including the laydown area, and across sloping terrain / areas to prevent surface runoff from carrying sediment off-site and into any sewer. • Install sub-drains / catch basins in areas of excavations / trenches or areas sensitive to erosion in order to trap runoff. • Trap sediment using silt traps once sub-drains / catch basins have been installed. • Design and size ditches and stormwater/sediment management ponds appropriately to remove sediment before the water is discharged from the site. • Implement vehicle and equipment cleaning procedures and practices to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain systems or watercourses. • Install and maintain silt fences / curtains, sedimentation ponds, check dams, coffer dams or drainage swales, around soil storage sites and elsewhere, as required. • Install and regularly inspect and maintain perimeter silt fences / curtains between the work areas and all reaches of those watercourses where works are required, including ditch and drainage works that drain to watercourses that support fish habitat. They will be left in place and maintained until all surfaces contributing drainage to these watercourses are fully stabilized. • Appropriately surface all completed ditches (e.g., with sod, stone, riprap or manufactured fibre matting). • Construct ditch checks consisting of straw bales or rock check dams across swales, draws or ditches and / or around inlets to reduce the velocity of stormwater runoff and to intercept silt. • Direct runoff and overland flow away from working areas and areas of exposed soils or contaminated groundwater. Promote overland 'sheet flow' to the maximum extent possible. • Stabilize all exposed and newly constructed surfaces using appropriate means in accordance with the characteristics of the soil material. These surfaces will be fully stabilized and re-vegetated as quickly as possible following completion of the works. Possible stabilization methods can include: 'hard' and 'soft' designs or combinations of designs using rip-rap, armor stone, crib walls, revetments, gabions, erosion control blanket, live fascines, and brush bundles. • Install erosion and sediment control measures prior to construction and maintain them within their effective limits throughout the construction and until the restoration of disturbed vegetation, rock revetments or similar are successfully completed.

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	<ul style="list-style-type: none"> • Design, install, maintain, and remove erosion and sediment control structures according to TRCA Erosion and Sediment Control Guidelines for Urban Construction, Ontario Guidelines on Erosion and Sediment Control for Urban Construction Sites and OPSS Guidelines. • Temporarily stabilize exposed soil areas as soon as possible (or cover with tarps, erosion control blankets, etc.) to control sediment transport and erosion. In addition, retain natural vegetation cover wherever possible (and minimize root grubbing where possible) to provide natural erosion control. Enclose earth stockpiles with appropriate sediment and erosion control fencing. • Filter runoff from material stockpiles or site dewatering through an appropriate device (temporary settling facility, filter bag, etc.) before release. • Regularly inspect sediment control structures, check them after storms and repair, as required. Clean out structures when accumulated sediment reaches half the design height. • Restore soil surfaces immediately following final grading, with surface restoration to include features that minimize erosion (e.g. placing sod). • Re-stabilize and re-vegetate exposed surfaces as soon as possible, using native vegetation seed mixes and plantings or other appropriate cover, in consultation with agencies. • Capture and adequately filter drainage from any un-stabilized surface prior to discharge to natural areas, including receiving drainage features. • Protect catch basins, manholes and other storm sewer features (e.g. ditch inlets) from sediment-laden inflows through installation of sealing covers or geotextile filter media at their inlets. • Where warranted based on project characteristics (e.g., duration, physical extent), build a stormwater management pond to collect and contain runoff for a sufficient period of time to allow for settlement of sediment in suspension. • Ensure all materials placed below the high water mark of the water body are clean and free of silt- and clay-sized particles. All materials must meet relevant lake fill guidelines including the Ontario Ministry of the Environment “Fill Quality Guidelines for Lakefilling in Ontario”. • Make contingency procedures, materials and notification procedures readily available for use in the event of a silt release as well as general application in regular maintenance and repair. • Use dust suppression methods (water or other as appropriate) in dust sensitive areas, as required, to control off-site migration of particulates. The use of calcium chloride as a dust suppression method should be minimized. A dust suppressant license will be required from the MOE for use of registered dust suppressants other than water. <p><u>Dust Control Measures:</u></p> <ul style="list-style-type: none"> • Discourage and, when practical, limit on-site vehicle and equipment idling. • Water spray or similar techniques will be used to control dust generation from construction and demolition activities, storage piles and exposed soils / surfaces. • Minimize the tracking of earth or soil from the site on trucks through the use of mud mats (e.g. granular pads located at site entrance). Where a mud mat is not effective in controlling the tracking of earth or soil onto adjacent roads, the physical removal of earth from vehicles is to be implemented. • Cover vehicles hauling soil, aggregates or fine or dusty material to minimize the generation of dust. • Schedule or plan construction activities to limit areas of exposed soil at any given time.

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	<ul style="list-style-type: none"> • Monitor exposed soil areas and adjacent roads for dust generation potential, with attention paid to areas used for pedestrian walkways and vehicle traffic. • Perform on-site (including roadways) flushing, sweeping and cleaning on a regular basis, with consideration for the containment and management of any wash water. • Cover exposed fill / stock piles that may be a source of fugitive dust with tarpaulins, soil binders or other appropriate means, where practical. • Restore and re-vegetate soil surfaces as soon as possible. • Schedule and plan construction activities such as cutting and grinding to limit the release of dust and noise to adjacent properties. • Schedule transportation and delivery of construction materials to minimize the amount of bulk construction materials stored on-site at a given time. • Make speed limits within the site 20 km/h to control dust generation.
<p>7. Drilling</p>	<ul style="list-style-type: none"> • Adhere to terms of licenses, permits and approvals (i.e., <i>Canadian Environmental Protection Act, OWRA, Federal Fisheries Act, etc.</i>) relevant guidelines and Fisheries and Oceans Canada Operational Statements. • Operate drilling machinery on land above the ordinary high water mark and in a manner that minimizes disturbance to the banks of the watercourse. • Construct a dugout / settling basin at the drilling exit site to contain drilling mud to prevent sediment and other deleterious substances from entering the watercourse. If this cannot be achieved, use silt fences or other effective sediment and erosion control measures to prevent drilling mud from entering the watercourse. Inspect these measures regularly during the course of construction and make all necessary repairs if any damage occurs. • Management of excess drilling mud, cuttings and other waste materials with appropriately licensed off-site disposal or treatment disposal facility located away from the water to prevent it from entering the watercourse. • Monitor the watercourse to observe signs of surface migration (frac-out) of drilling mud during all phases of construction. • Keep all material and equipment needed to contain and clean up drilling mud releases on site and readily accessible in the event of a frac-out. • Implement the frac-out response plan that includes measures to stop work, contain the drilling mud and prevent its further migration into the watercourse and notify all applicable authorities. • Prioritize clean-up activities relative to the risk of potential harm and dispose of the drilling mud in a manner that prevents re-entry into the watercourse. Ensure clean-up measures do not result in greater damage to the banks and watercourse than from leaving the drilling mud in place. • Implement the contingency crossing plan including measures to either re-drill at a more appropriate location or isolate the watercourse to complete the crossing at the current location. • Temporarily stabilize any waste materials removed from the work site to prevent them from entering the watercourse by covering spoil piles with biodegradable mats or tarps or planting them with preferably native grass or shrubs. • Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring. • Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

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<p>8. Stormwater Management and the Waterfront Toronto Environmental Management Plan for Project-Related Activities</p>	<ul style="list-style-type: none"> • For stormwater management during construction, practices shall adhere to existing guidelines which includes the following: <ul style="list-style-type: none"> ▪ Project-related stormwater and surface water is to be managed in a manner that does not adversely affect fish habitat and considers associated requirements of the federal <i>Fisheries Act</i>. ▪ All works are intended to protect and manage the quality and quantity of surface water and groundwater. ▪ A MOE Environmental Compliance Approval for Industrial Sewage Wastewater Discharge may be required as stipulated by the <i>OWRA</i> (sections 33 and 53) to regulate effluent discharge directly to surface water bodies during construction and other project-related works. ▪ The requirements laid out in the City of Toronto Municipal Code on Sewers (Chapter 681-4) are to be followed with respect to the discharge or deposit of matter of any type into a storm sewer, watercourse, and municipal or private sewer connection to any storm sewer. ▪ In addition, the Toronto Green Development Standard provides an integrated set of targets, principles, and practices to encourage sustainable development. A completed Toronto Green Standard checklist may be required as part of the planning approval process. ▪ The Erosion Protection Plan is to ensure the protection of water quality during construction and demolition through adherence to TRCA's on-site erosion and sediment control guidelines and the implementation of an erosion and sediment control plan. • Specific requirements shall include the following: <ul style="list-style-type: none"> ▪ Install silt fences, blankets, and berms around construction areas, including the laydown area, and across sloping terrain / areas to prevent surface runoff from carrying sediment off-site and into any sewer. ▪ Install sub-drains / catch basins with silt traps in areas of excavations / trenches or areas sensitive to erosion in order to trap runoff. ▪ Design and size ditches, oil / grit separators and stormwater management ponds appropriately to remove sediment before the water is discharged from the site. ▪ Discourage on-site washing of equipment and vehicles. Where necessary to control the migration of contaminated soil, an area for the washing of vehicles, which includes containment and treatment of wash water, is to be designated and located away from sensitive receptors. ▪ Only use uncontaminated and / or treated material as fill, as approved by TRCA. ▪ An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.), and other deleterious substances shall be put in place prior to work commencing, and appropriate spill containment and clean-up supplies shall be kept available on-site whenever the works are occurring. Further, all personnel working on the project should be familiar with implementing the spill clean-up plan and the deployment of spill response materials. ▪ All machinery used on-site should be in good repair and free of excess oil and grease. Any fuelling or maintenance of such equipment should occur on the upland, well away from the foreshore.

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<p>9. Operation of Heavy Equipment and Vehicles (e.g., backhoes, bulldozers, bobcats, trucks, trailers, barges, weed harvesters, etc.)</p>	<ul style="list-style-type: none"> • Use new or well-maintained heavy equipment and machinery with mandatory fully functional emission control systems / muffler / exhaust system baffles, engine covers, etc. • Depending on the sensitivity of the surrounding area and the types of contaminants that may be anticipated during the works, regular monitoring may consist of hourly or daily site inspections or perimeter sampling. • Inspect control features, and repair and / or replace on a regular basis, as required. • Construction contractor to conduct daily inspection of all machines before start-up to ensure that no potential exists for contamination of soils and watercourses. Operators are responsible for ensuring that no potential exists for oil, grease or other deleterious substances to enter into the environment. • Install a tarpaulin on haulage trucks as appropriate. • Use heavy equipment and machinery within operating specifications. • Minimize operation and idling of vehicles, and avoid operating and idling vehicles and gas-powered equipment during smog advisories. • Minimize traffic along access roads and maintain safe driving speeds. • Ensure that the contractor develops a Spills Prevention and Response Plan and keeps it on site at all times. • Ensure refuelling and construction staging areas where contaminants are handled are located off-site where possible, or well away from waterbodies and critical wildlife habitat. • Refuel equipment and machinery on impermeable pads or buried liners designed to allow full containment of spills. • Store all oils, lubricants, fuels and chemicals in secure areas on impermeable pads, provide berms if necessary. • Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of all reportable spills. • Maintain an adequate supply of clean-up materials at the work site. • Clean heavy machinery and equipment prior to transport to new construction areas. • Install noise barriers around work areas in close proximity to sensitive receptors (e.g., homes, schools, community facilities). • Conform to local noise by-laws / ordinances. • Notify residents of planned events that may cause disturbance, and schedule these activities to avoid sensitive time periods. • Determine maximum number and tonnage of construction vehicles arriving and departing the site at any one time (hourly or daily rate in peak). • Identify vehicle entry and exit points considering the evolving stages of construction. • Identify queuing locations for arriving vehicles if not solely on-site. • Identify work zones for any area of public land to be occupied, and include plans of the affected area and the duration of occupation. • Provide information concerning oversized vehicles including their location and duration of stay to the proper authorities (municipal authorities, Toronto Police Service, local Ontario Provincial Police office, fire and emergency services). All oversized vehicles must obtain permits from the City of Toronto, Ontario Provincial Police, and Toronto Police Service 72 hours prior to arrival at the site. • Use landscaping or other measures, such as screening walls or berms dressed with plantings, to screen views of equipment.

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<p>10. Operation and Mooring of Vessels</p>	<ul style="list-style-type: none"> • Ensure all vessels are equipped with appropriate safety equipment and comply with Transport Canada’s Small Vessel Regulations. • Employ trained vessel operators. • Ensure workers wear personal protective equipment (i.e., life vests). • Do not operate vessels after dusk, and during fog periods or severe weather events. • Minimize vessel movements. • Moor vessels at marinas or designated locations on-site. • Avoid locating moorings in sensitive aquatic habitats such as known fish spawning areas. • Minimize disturbance to submerged aquatic vegetation when installing mooring structures on the bed of waterbodies. • Moorings (including anchors and floats) are to be made of clean material. If concrete anchors are used, they are to be pre-cast and cured away from water before use to prevent seepage of potentially toxic substances into waterbodies. • Locate moorings at depths that will allow vessels to remain afloat at the lowest possible water levels to prevent propellers from disturbing the beds of waterbodies. • Size mooring anchors to secure vessels or structures and prevent the anchor from shifting or dragging along the beds of waterbodies. • Prevent excess chain or line from collecting and disturbing fish habitat features on the beds of waterbodies. • Avoid using native beach material such as logs, sand, gravel, and boulders (which are important components of fish habitat) as mooring structures or removing this material from the beds or banks of waterbodies. • Keep mooring structures in good repair through a regular inspection and maintenance program.
<p>11. Demolition or Relocation of Existing Buildings</p>	<ul style="list-style-type: none"> • Adhere to the City of Toronto Heritage Impact Assessment (HIA) Terms of Reference for a listed or designated property under the <i>Ontario Heritage Act</i> that will be displaced. • Where provincially owned property is affected adhere to the Standards and Guidelines for the Conservation of Provincial Heritage Properties. Apply the “Criteria for Determining Cultural Heritage Value or Interest” set out in O.Reg. 9/06 under the <i>Ontario Heritage Act</i> as amended or replaced from time to time to determine the cultural heritage value or interest of a property; and apply the “Criteria for Determining Cultural Heritage Value of Provincial Significance” set out in O.Reg. 10/06 as amended or replaced from time to time to determine whether a property is of provincial significance. • Protect built heritage resources prior to displacement from vandalism. Prepare a security program to protect the properties through boarding up and scheduling property security review/supervision. • For non-listed built heritage and cultural heritage landscape resources displaced by the undertaking complete a Photo Documentation Record prior to demolition. Provide copies of the report to the City of Toronto Archives. • Prepare a Salvage Plan of architectural building materials for demolished structures. • Consider reuse of the salvage materials in the design of interpretive or commemorative park elements such as benches, signage bases or pavers. • Comply with all regulatory requirements and Standards including but not limited to: the <i>Canada Explosives Act</i> and Regulations; Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (1998); the Ontario Building Code (2006); the Construction Projects Regulation (O.Reg. 213/91); Regulations for Industrial Establishments (O.Reg. 851); the Ontario Fire Code (O.Reg. 388/97); Performance Standards under the <i>Professional Engineers Act</i> (O.Reg. 260/08); Designated Substances – Asbestos on Construction

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	<p>Projects and in Building and Repair Operations (O.Reg. 278/05); TRCA: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (O.Reg. 166/06 as amended by O.Reg. 82/13); the Water Taking Regulation (O.Reg. 387/04); Ontario Traffic Manual Book 7 – Temporary Conditions; and, CSA Standards S350-M1980 Code of Practice for Safety in Demolition of Structures and Z107.54-M85 (R1999) Procedure for Measurement of Sound and Vibration Due to Blasting Operations.</p> <ul style="list-style-type: none"> • Retain the services of a professional engineer to conduct a preliminary survey and, where recommended, a detailed inspection of the structure and property on which the demolition is to occur and of surrounding structures including dockwalls, properties or shorelines that may be affected by demolition activities. Prepare a Description of Structural Characteristics report, a Demolition Plan report and supporting waste reduction, and source separation, health and safety, hazardous materials and designated substances management, dust control and vibration studies, if required. • Make all required submittals, including but not limited to: a PTTW required by the MOE if more than 50,000 litres of water per day is to be pumped from the demolition site; a Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permit required by the TRCA; a Demolition Permit Application Declaration; an Application for a Permit to Construct or Demolish; an Owner’s Acknowledgement of Demolition Control Conditions; Tree Declarations; and Vibration Declarations required by the City of Toronto. Pay all associated permit fees. • Confirm that above- and below-ground tanks, piping, containers, waste and hazardous materials storage areas and containments have been emptied and decontaminated. Also confirm that all below, at-grade and overhead services have been identified, terminated and locked out, capped-off or diverted, supported or protected prior to commencing demolition activities. • Retain the services of a professional engineer to inspect the demolition works on an as-required basis to ensure that all significant elements of the demolition are observed and that health and safety requirements are met. Prepare General Review reports for distribution to all agreed-upon recipients following each inspection. • Refrain from commencing any demolition work until a demolition permit has been obtained and posted. • All staff shall have and apply appropriate fall arrest, confined space protection and first aid training. • Enclose the site with approved safety barriers and install sidewalk sheds and catch platforms where required. • Protect adjacent buildings, structures, vessels and equipment from damage due to vibrations, lateral pressures and falling debris. • Confirm permissible load limits with the Toronto Port Authority (TPA) before using heavy equipment adjacent or in close proximity to the dockwalls. • Protect tie backs and anchor piles installed as part of dockwall construction from interference or damage or install alternate support measures, as approved by the TPA, before commencing unavoidable interference or removal. • Excavate backfill placed against any dockwall elements such as steel sheet piles or Wakefield Wall timber sheeting. This should be removed to a stable slope to minimize loss to the harbour. • Ensure that steel sheet piles and timber sheeting are securely attached to vibratory extractors, hammers or crane hooks and are equipped with tag lines to avoid injury, loss or damage to surrounding equipment and structures during partial or full length removal. • Install a silt fence, swale and barrier to control the discharge of surface water carrying suspended solids, debris and contaminants and the loss of construction and demolition waste into the harbour. • Where possible, ensure that hazardous materials management and designated substances abatement is completed before commencing demolition.

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	<ul style="list-style-type: none"> • Operate vehicles inside building structures in a safe manner with due consideration for ventilation and carbon monoxide protection. • Construct and operate discharge chutes in accordance with applicable Standards. • Ensure that demolition debris collected on suspended floors do not exceed floor load capacities. • Where possible, avoid swinging demolition balls, grapples, shears, hoe buckets, etc. over open water. • Exhibit due care when demolishing pre-stressed and / or post-tensioned concrete elements. • Exhibit due care when using explosives to facilitate Rapid Progressive Failure. • Apply water spraying to control dust. • Prevent the discharge and / or tracking of dust, mud and debris from the site onto roads and highways. • Provide and use tied-down or roller tarpaulins or equivalent protection to all haulage vehicles leaving the site. • Establish decontamination stations at all demolition site exit gates, inspect for and remove any evidence of soil, contaminants or debris adhering to truck boxes, bodies and wheels of all departing vehicles. • Protect sewers against entry by hazardous materials and debris, and from surface runoff containing suspended solids and chemical parameters exceeding applicable sewer by-law limits. • Minimize noise and avoid the use of noisy machinery beyond regular working hours. Ensure the use of hearing protection by all workers exposed to noise levels exceeding those listed in the Table of Equivalent Noise Exposures in Amendments to Noise Requirements in the Regulations for Industrial Establishments and Oil and Gas Offshore. • Protect excavations resulting from the removal of below-grade structures during demolition work from collapse by the installation of shoring. • Provide structural support for adjacent structures where previously supported by elements of the demolished building. • Protect walls of adjacent structures that have been exposed by demolition from atmospheric environment conditions. • Following the completion of demolition, perform a final inspection of the demolition site and of adjacent structures including dockwalls to ensure that they are left in a safe condition.