APPENDIX D – GLOSSARY OF TERMS

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Aggregate – a broad category of particulate material used in construction, including sand, gravel, crushed stone, slag, recycled concrete and geosynthetic aggregates, and available in various particulate size gradations.

Berm – a compacted earthen wall that diverts runoff or creates shallow ponding of runoff. In some cases, runoff ponds behind the berm and gradually flows through it or is infiltrated.

Biofilter – a bioretention stormwater best management practice featuring an impermeable liner and underdrain that prevents infiltration of runoff into the underlying native soil; provides sedimentation and filtration of urban runoff as it passes through the mulch layer, engineered filter media and vegetation root zone.

Bioretention – a stormwater filtration and infiltration practice. The practice is a shallow excavated surface depression containing a prepared soil mix, mulch, and planted with specially selected vegetation. The system is engineered to temporarily store runoff in the depression and gradually filters it through the mulch, engineered soil mix, and root zone. They remove pollutants from runoff through filtration in the soil and uptake by plant roots and can help to reduce runoff volume through evapotranspiration and infiltration.

Check dam – structures constructed of a non-erosive material, such as suitably sized aggregate, wood, gabions, riprap, or concrete, used to slow runoff water to allow sedimentation, filtration, evapotranspiration, and infiltration into the underlying native soil. Can be employed in practices such as dry and enhanced grass swales.

Cistern – tank used to store rainwater (typically roof runoff) for later use.

Depression storage – a technique for incorporating shallow depressed areas into urban landscaped areas for storing and infiltrating runoff. Typically, depression storage areas are small and have limited capacity and limited duration of retention in order to address property owner concerns relating to insects, damage to structures and inconvenience of ponded water on their property.

Detention – the temporary storage of stormwater to control discharge rates, and allow for sedimentation.

Drawdown time – the period between the maximum water level and the minimum level (dry-weather or antecedent level).

Dry Swale – linear bioretention cells designed to convey, treat and attenuate stormwater runoff; The engineered filter media soil mixture and vegetation slows the runoff water to allow sedimentation, filtration through the root zone, evapotranspiration, and infiltration into the underlying native soil.

Evapotranspiration – The combined loss of water to the atmosphere from land and water surfaces by evaporation and from plants by transpiration.

Enhanced Grass Swale – vegetated open channels designed to convey, treat and attenuate stormwater runoff, also referred to as enhanced vegetated swales. Enhanced grass swales are

not capable of providing the same water balance and water quality benefits as dry swales, as they lack the engineered soil media and storage capacity.

Environmental Impact Report (EIR) – the evaluation of the possible effects that may arise from a proposed project on the environment, together consisting of the natural, social and economic aspects.

Exfiltration – loss of water from a drainage system as a result of percolation or absorption into the surrounding medium (e.g., the infiltration of water into the native soil through a perforated pipe wall as it is conveyed).

Filter Media –the engineered soil bed component of bioretention cell or dry swale designs, typically composed of a sandy soil mixture containing a limited proportion of fine textured material, which provides a growing medium for vegetation, maintains a high rate of infiltration over the lifespan of the practice, and retains contaminants through filtration and adsorption to soil particles.

Filtration – the technique of removing pollutants from runoff as it infiltrates through the soil.

Fines – soil materials with less than a 0.050 mm diameter particle size.

First Flush – initial pulse of stormwater runoff which picks up the pollutants that have settled on surfaces during the dry period. The first flush contains the highest pollutant concentrations.

Forebay – a pretreatment basin at the inlet of a practice that allow settling out of sediment and associated contaminants suspended in urban runoff.

Flow Path Length – the minimum linear distance of water flow across a surface.

Fluvial geomorphology – the study of the processes responsible for the shape and form, or morphology, of watercourses; describes the processes whereby sediment (e.g., silt, sand, gravel) and water are transported from the headwaters of a watershed to its mouth.

Fused grid – a hybrid neighbourhood and district layout model that combines the geometries of inner city grid road patterns with the loop and cul-de-sac road patterns of conventional suburbs.

Grass swales - vegetated, open channels designed to convey, treat and attenuate runoff. Design variations range from simple grass channels, which are designed primarily for conveyance to more complex treatment and volume reduction designs like enhanced grass swales, and dry swales or bioswales.

Geotextile - a filter fabric that is installed to separate dissimilar soils and provide runoff filtration and contaminant removal benefits while maintaining a suitable rate of flow; may be used to prevent fine-textured soil from entering a coarse granular bed, or to prevent coarse granular from being compressed into underlying finer-textured soils.

Granular – gravel, or crushed stone of various size gradations (i.e., diameter), used in construction; void forming material used as bedding and runoff storage reservoirs and underdrains in stormwater infiltration practices.

Gravel diaphragm – is a level spreading device placed at a runoff discharge location, perpendicular to flow, to maintain sheet flow and distribute runoff as evenly as possible across a pervious area or stormwater infiltration practice. A gravel diaphragm acts as a pretreatment device, settling out suspended sediments before they reach the practice.

Green roof – a thin layer of vegetation and growing medium installed on top of a conventional flat or sloped roof, also referred to as living roofs or rooftop gardens.

Green infrastructure - natural vegetation and vegetative technologies in urban settings such as: urban forests; green roofs; green walls; green spaces; rain gardens; bioswales; community gardens; natural and engineered wetlands and stormwater management ponds; and porous pavement systems. These systems are designed to provide multiple benefits, such as moderate temperatures, clean air and water, and improve aesthetics.
Groundwater discharge – The outflow of groundwater to a well, spring, wetland or watercourse.

Groundwater recharge – The inflow of surface water to a groundwater reservoir or aquifer.

Hydraulic conductivity - A parameter that describes the capability of a medium to transmit water.

Hydrologic cycle – the circulation of water from the atmosphere to the earth and back, through precipitation, runoff, infiltration, groundwater flow and evapotranspiration.

Hydrologic regime – the characteristic pattern of precipitation, runoff, infiltration and evaporation affecting the hydrology of a system.

Hydrologic Soil Groups – a soil classification system based on the ability to convey and store water; divided into four groups:
A – well drained sands and gravel, high infiltration capacity, high leaching potential and low runoff potential;
B – Moderately drained fine to coarse grained soils, moderate infiltration capacity, moderate leaching potential and moderate runoff potential;
C – Fine grained, low infiltration capacity, low leaching potential and high runoff potential;
D – Clay soils, very low infiltration capacity, very low leaching potential and very high runoff potential.

Impervious – a hard surface area (e.g., road, parking area or rooftop) that prevents or retards the infiltration of water into the soil.

Infiltration – penetration of water through the ground surface.

Inline – refers to a system that accepts all of the flow from a drainage area and conveys larger event flows through an overflow outlet.

Landform – the natural features of the landscape, dictates flow patterns, runoff velocities and discharge rates.

Landscape-based approach - the principle that development form, servicing and stormwater management strategies should be defined by the biophysical, hydrological and ecological attributes of the landscape.

Lot level – the treatment of urban runoff as close to the source area as possible through application of small scale stormwater management practices on individual properties that are linked to downstream conveyance and end-of-pipe practices.

Low Impact Development – a stormwater management strategy that seeks to mitigate the impacts of increased urban runoff and stormwater pollution by managing it as close to its source as possible. It comprises a set of site design approaches and small scale stormwater management practices that promote the use of natural systems for infiltration and evapotranspiration, and rainwater harvesting.

Master Environmental Servicing Plan (MESP) – is a community-scale planning assessment of servicing and environmental considerations for a development project.

Mulch – shredded woody material or leaf compost used as a top dressing over vegetation beds that provides a source of soil nutrients and helps retain soil moisture; in bioretention cells and dry swales the surface mulch layer provides pollutant removal and improves growing conditions for the selected plants; shredded hardwood bark has been found to work best as it is less likely to float.

Native soil – the natural ground material characteristic of or existing by virtue of geographic origin.

Offline – refers to a system that when full, stormwater will bypass the practice. Offline systems use flow splitters or bypass channels that only allow the water quality volume to enter the facility. This may be achieved with a pipe, weir, or curb opening sized for the target flow, but in conjunction, create a bypass channel so that higher flows do not pass over the surface of the filter bed.

Permeable pavement – is an alternative practice to traditional impervious pavement, prevents the generation of runoff by allowing precipitation falling on the surface to infiltrate through the surface course into an underlying stone reservoir and, where suitable conditions exist, into the native soil.

Physiography – the physical features of the land, including topography, morphology and geologic origin. The physical feature of the land has an influence on the surface water movement and the interactions between surface water and groundwater.

Pollution hot spot – areas where certain land uses or activities have the potential to generate highly contaminated runoff (e.g., vehicle fuelling, service or demolition areas, outdoor storage and handling areas for hazardous materials and some heavy industry sites).

Pollutant load – the total mass of a pollutant entering a waterbody over a defined time period.

Predevelopment – refers to the characteristics and functions of a system prior to urban development.

Pretreatment – initial capturing and removal of unwanted contaminants, such as debris, sediment, leaves and pollutants, from stormwater before reaching a best management practice; Examples include, settling forebays, vegetated filter strips and gravel diaphragms.

Rain garden – a lot level bioretention cell designed to receive and detain, infiltrate and filter runoff, typically used for discharge from roof leaders.

Rainwater harvesting – is the practice of intercepting, conveying and storing rainwater for future use. The captured rainwater is typically used for outdoor non-potable water uses such as irrigation and pressure washing, or in the building to flush toilets or urinals or other uses that do not require potable water.

Recharge – the infiltration and movement of surface water into the soil, past the vegetation root zone, to the zone of saturation or water table.

Riparian – a vegetated ecosystem alongside a waterbody, characteristically have a high water table and are subject to periodic flooding.

Runoff - water from rain, snow melt, or irrigation that flows over the land surface.

Sedimentation – settling-out or deposition of particulate matter suspended in runoff.

Soakaway – an excavated area lined with geotextile filter cloth and filled with clean granular stone or other void forming material, that receives runoff and allow it to infiltrate into the native soil; can also be referred to as infiltration galleries, French drains, dry wells or soakaway pits.

Soil amendment – the practice of adding organic material, such as mulch or compost to topsoil to improve fertility, and tilling of the native soils to reverse compaction and restore its water retaining capacity.

Standing water – water ponded on the ground surface.

Stone reservoir – an underlying aggregate material bed that temporarily stores stormwater before infiltrating into the native soil or being conveyed by an underdrain pipe.

Stormwater planter – a bioretention cell that features an imperveable liner that collects and treats stormwater through sedimentation and filtration only (i.e., no infiltration).

Stream channel – a natural waterway, formed by fluvial processes, that conveys running water.

Treatment train approach – a combination of lot level, conveyance, and end-of-pipe stormwater management practices.

Underdrain – a perforated pipe used to assist the draining of soils.

Urbanization – the changing of land cover and land uses from rural to urban; the growth of urban settlements;

Vegetated filter strip – are gently sloping, densely vegetated areas that treat runoff as sheet flow from adjacent impervious areas. They function by slowing runoff velocity and filtering out suspended sediment and associated pollutants, and by providing some infiltration into underlying soils. Also known as buffer strips and grassed filter strips.

Water balance – the accounting of inflow and outflow of water in a system according to the components of the hydrologic cycle.

Water cycle - The continuous movement of water from the oceans to the atmosphere (by evaporation), from the atmosphere to the land by condensation and precipitation, and from the land back to the sea (via groundwater and stream flow); also referred to as hydrologic cycle.

Water budget – the mathematical expression of the water balance.

Water quality volume – the amount of stormwater runoff from a given area required to be retained by stormwater management practices to reduce pollutant load to an acceptable level.

Water table – subsurface water level which is defined by the level below which all the spaces in the soil are filled with water; The entire region below the water table is called the saturated zone;

Watershed – An area of land that drains into a river or a lake. The boundary of a watershed is based on the elevation (natural contours) of a landscape.