GLOSSARY

Bioswales: Landscaped elements designed to remove silt and pollution from surface runoff water that consist of a swaled drainage course with gently sloped sides (less than six percent) and filled with native vegetation and soil. The water's flow path, along with the wide and shallow ditch, is designed to maximize the time water spends in the swale, which aids the trapping of pollutants and silt. Depending upon the geometry of land available, a bioswale may have a meandering or almost straight channel alignment. Biological factors also contribute to the breakdown of certain pollutants. A common application is around parking lots and or street curbs where substantial automotive pollution is collected by the pavement and then flushed by rain. The bioswale, aids in treating the runoff before releasing it to the watershed or storm sewer.

Climate adaptation: Is making adjustments and preparing for observed or expected change in climate, in order to moderate harm and to take advantage of new opportunities.

Climate Change: Any long-term significant change in the "average weather" that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. It involves changes in the variability or average state of the atmosphere over durations ranging from decades to millions of years. These changes can be caused by dynamic process on Earth (ocean processes, volcanoes), external forces including variations in sunlight intensity, and more recently by human activities.

Climate mitigation: Is action to reduce the emissions of greenhouse gasses (GHGs) – primarily carbon dioxide from combustion.

Creek restoration: A set of activities that help improve the environmental health of a creek. Improved health may be indicated by expanded habitat for diverse species, reduced stream bank erosion, improved water quality (i.e. reduction of pollutant levels and increased dissolved oxygen levels) and achieving a self-sustaining, functional flow regime in the stream system that does not require periodic human intervention, such as dredging or construction of flood control structures. Restoration activities may range from a simple removal of a disturbance which inhibits natural stream function, to stabilization of stream banks to riparian zone restoration.

Daylighting: The act of removing streams from underground pipes and culverts, restoring some of the form and function of historic streams. Daylighting is the most profound form of stream restoration, recreating a surface waterway.

Detention pond: A detention pond is a low lying area that is designed to temporarily hold water while slowly draining to another location. They are generally used for flood control when large amounts of rain could cause flash flooding if it all entered the stormwater system at the same time. When a detention pond is used, the total amount of discharge is the same, but the discharge happens over a longer amount of time. A hydrologist will design a water detention pond to temporarily detain the water and keep the runoff to the desired rate. When the rain ends the water detention pond will be empty shortly afterwards.

Greenbuilding: A systems approach to building design and construction that employs techniques that minimize environmental impacts and reduce ongoing energy consumption while contributing to the health and productivity of its occupants.

Green Roofs: Are building roofs that are purposefully covered with vegetation. Green roofs can store significant volumes of rainwater, prevent runoff in small storm events, and delaying peak runoff for larger storms. The plants also return some of the moisture to the atmosphere through evapotranspiration. Green roofs can reduce the heat island effect in the summer, and provide valuable habitat for birds and insects.

Green Streets: Are streets that are designed to be part of a sustainable stormwater strategy that uses a natural systems approach to manage stormwater, reduce flows, improve water quality and enhance watershed health. Trees and shrubs are an integral component of the stormwater strategy and visual amenity of green streets, ideally located at the side of streets between the street and the sidewalk or in center median plantings. Green streets provide for traffic calming, improved pedestrian and bicycle safety, reduced demand on the city's sewer collection system with attendant reduction in the need for costly infrastructure / pipe system construction, diversion of stormwater from sewer system, reduced impervious surfaces so stormwater can infiltrate to recharge ground water and surface water, increased urban greenspace and enhanced community and neighborhood livability.

Greenways: Are linear corridors that connect green spaces to provide wildlife habitat and recreational and alternative or passive transportation opportunities. The potential greenways proposed in the Bowker Creek Blueprint would perform an important, safe alternative transportation function through busy neighbourhoods as well as providing habitat corridors and (in some cases) enhancing and restoring Bowker Creek aquatic and riparian habitat. Some of the proposed greenway would be shared use on existing roadways (cars, pedestrians and bicycles), while some would be multi-use trails for non-motorized transport, and some areas would provide for pedestrian traffic separate from nearby cycle routes. The ideal greenway would provide tree canopy and habitat.

Impervious surfaces: Are mainly artificial structures--such as pavements (roads, sidewalks, buildings, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone and rooftops. Soils compacted by urban development are also highly impervious.

Invasive Species: Are plants and animals introduced to an environment where they are not native and which they become a nuisance, often to the detriment of native species. Invasive species have the ability to establish quickly and spread rapidly, often displacing native plants, because their new environment has few natural competitors. Many invasive plants are difficult to remove due to deep taproots, high production and longevity of seeds and ability to thrive in unfavorable conditions. Invasive species are increasingly difficult and expensive to control.

Low Impact Development (LID): Is an approach to managing rainwater during the development that imitates the natural hydrology (or movement of water) of the site by using existing site characteristics and engineered or landscaped features to promote infiltration and evapotranspiration. In the natural ecosystems, most all the rainfall (or snowmelt) infiltrates into the ground, is taken up by the roots of plants and trees, or evaporates. Researchers estimate that about less than one percent becomes surface runoff. But when forests and natural open spaces are cleared, and buildings, roads, parking areas and lawns dominate the landscape, rainfall becomes stormwater runoff, carrying pollutants to nearby waters. Much less water infiltrates and is taken up by plants, less evaporates back to the atmosphere, and much more (about 20-30 percent in a suburban neighborhood) becomes surface runoff or stormwater runoff.

Permeable Pavement: Also known as pervious or porous paving, is a type of hard surfacing that allows rainfall to percolate to an underlying reservoir base where rainfall is either infiltrated to underlying soils or removed by a subsurface drain**.** Types of pervious pavements include permeable concrete or asphalt, unit pavers, interlocking bricks, grass pavers or gravel pavers.

Rain Gardens: Also known as vegetated infiltration basins and bioretention areas, are landscape features designed to treat and detain stormwater runoff from hard surface areas such as roofs, roads and parking lots. They consist of depressed garden spaces where runoff can pond and infiltrate into deep constructed soils and then into the native soils below. Components of a rain garden usually include an inlet pipe or sheet flow, compost amended soils, native plants that are appropriate for the moisture conditions, and an overflow drain or outlet.

Retention pond: A pond designed to hold a specific amount of water indefinitely. Usually the pond is designed to have drainage leading to another location when the water level gets above the pond capacity, but still maintains a certain capacity. The pond level may go up and down, but ordinarily the pond has some water in it at all times.

Stewardship: Is an ethic that embodies cooperative planning and management of environmental resources with organizations, communities and others to actively engage in the prevention of loss of habitat and facilitate its recovery in the interest of long-term sustainability.

Stormwater: Is the component of runoff that is generated by human activities. Stormwater is created when land development alters the natural Water Balance. When vegetation and soils are replaced with roads and buildings, less rainfall infiltrates into the ground, less gets taken up by vegetation and more becomes surface runoff that picks up pollution from surfaces, mainly roadways, and carries it into the creeks, lakes and nearshore marine receiving environments via stormwater infrastructure.