

GLOSSARY OF TERMS

Aggradation: Involves the raising of the streambed elevation and a corresponding decrease in channel capacity.

Alternative Methods/Designs: Alternative methods of carrying out an undertaking.

Alternative Remedial Measures: Alternative ways of approaching a problem situation once it is determined that an undertaking under the Class EA is appropriate. Each type of remedial measure has a number of method/design alternatives that can be considered.

Alternative Solutions: Alternative ways of solving a documented deficiency, including the alternative of doing nothing. An assessment of alternative solutions must precede determination of alternative remedial measures and alternative methods/designs.

Aquatic Vegetation: Plants growing in the water.

Archaeological Potential: The possibility of a previously unidentified archaeological resource existing in an area is evaluated by determining the area's archaeological potential. Geographical and historical factors associated with human settlement are indicators of archaeological potential. In areas of significant archaeological potential, an archaeological assessment should be conducted to check for the existence of an archaeological resource.

Archaeological Resource: The remains of any building, structure, activity, place or cultural feature, which because of the passage of time is on or below the surface of the land or water. Significant archaeological resources are those which have been identified and evaluated and determined to be significant to the understanding of the history of a people or place.

Armour Stone: Quarried rock material that is used in the construction of shoreline or streambank protection devices. When used as shore protection it dissipates wave energy and reduces erosion.

Artificial Nourishment: The provision of additional beach material to areas where there is a deficiency in the sediment supply.

Backwater: Water moved or held back.

Beach: The zone of unconsolidated material that extends landward from the average annual low water level to either the place where there is marked change in material or physiographic form, the line of permanent vegetation, or the high water mark.

Berm: An embankment built around a low lying area.

Bioengineering: see "Soil Bioengineering"

Biophysical: The combination of biological and physical characteristics.

Breakwater: A structure protecting a shore area, harbour, anchorage, or basin from wave action.

Built Heritage Resource: One or more buildings, structures, monuments, installations, or remains associated with architectural cultural, social, political, economic or military history.

Channel: A natural stream that conveys water; a ditch or channel excavated for the flow of water.

Channel Capacity: The maximum flow that is contained within a natural or engineered channel that does not overflow the adjacent lands.

Channel Alterations: The alteration of the flow characteristics of a channel by clearing, excavation, realignment, lining, or other means, in order to increase its capacity.

Class EA Document: A report documenting the EA process for a class of undertakings which is formally submitted for approval under the Environmental Assessment Act. Once the Class EA document is approved, specific projects covered by the Class EA can be implemented by proponents without having to obtain separate approval. This is provided that the approved planning and design process is followed, and there is compliance with the Notice of Approval.

Class Environmental Assessment (EA) Process: A planning and design process used for a group of undertakings which have a generally predictable range of effects, and have relatively minor environmental significance.

Cohesive Shoreline: Many of the shorelines in the Great Lakes are cohesive shores (clay, silt, glacial till) and not sandy shorelines. At first glance they may appear to be like sandy shorelines, but the sand is usually a thin veneer and is not of significant enough thickness to provide protection. The processes along cohesive shorelines are different and it is very important to note when carrying out sediment transport studies.

Conservation: The wise use and management of natural resources to maintain, restore, enhance and protect the quantity and quality of the resources for sustained benefit.

Cultural Heritage Landscape: A geographic area of heritage significance, which has been modified by human activities. Such an area is valued by a community and is of significance to the understanding of the history of a people or place.

Degradation: Involves the lowering of the streambed elevation and a corresponding increase in channel capacity.

Dike: An earthen berm constructed for the purpose of holding back floodwater.

Design Storm: A storm of a magnitude which will generate specified flows given certain conditions. This is used as a design standard for protective measures.

Drop Structures: One, or a series of, erosion resistant steps, constructed across the width of a stream or river.

Dry Dams: A dam designed to retain water upstream only during a specified high flow event. The reservoir of these dams remains dry during periods of normal flow.

Dune: A nearly horizontal part of the beach, formed by the deposition of material by wind action.

Earth Science ANSI (Area of Natural or Scientific Interest): Areas designated by the Ontario Ministry of Natural Resources as containing natural features that have values related to protection, natural heritage appreciation, scientific study or education.

Ecosystem: A dynamic totality comprised of interacting living and non-living components which encompasses the interacting components of sunlight, air, water, soil, plants, and animals (including humans), within the system.

Ecosystem Planning: An approach to planning that considers the interactions between all physical and biological factors.

Environment: As defined in the Environmental Assessment Act subsection 1.(1) “environment” means:

- a) air, land or water,
- b) plant and animal life, including human life,
- c) the social, economic and cultural conditions that influence the life of humans or a community, d) any building, structure, machine or other device or thing made by humans,
- e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or
- f) any part or combination of the foregoing, and the interrelationships between any two or more of them, in or of Ontario

Environmentally Sensitive Area/Environmentally Significant Area: An area which contains significant natural features, ecosystems and/or ecological functions which warrant identification, Conservation and protection in the long term interest of the environment and the public at large.

Erosion: A term used in this document collectively referring to a) The wearing away of the land surface by running water, wind, ice or other geological agents; b) Detachment and movement of soil or rock fragments by water, wind, ice or gravity; c) Instability of a slope.

Exempt Undertaking: Refers to an undertaking for which an exemption from the requirements of the Environmental Assessment Act has been granted by the Minister of the Environment, in consultation with Cabinet.

Factor of Safety: The ratio of the allowed stress of a material or slope to the maximum stress expected.

Fauna: A collective term for animal species present in an ecosystem.

Fill: Any material deposited by any agent so as to fill or partly fill a channel, valley, or other depression.

Fill Regulation: The regulation of the placing of fill by the Authority through the requirement of a proponent to obtain permission as set out under subsection 28 (1) of the Conservation Authorities Act.

Flood: A rise in the water level resulting in the inundation of areas adjacent to a lake or stream channel not ordinarily covered by water.

Flood Event: Riverine A flood occurrence typically measured by return period. (i.e., a 100-year return period has a 1% probability of being equalled or exceeded in any given year.)

Flood Event: Shoreline The 100 Year Flood Level means the peak stillwater level due to the combined occurrences of mean monthly lake levels and wind setup which is equalled or exceeded in one percent of all the years. In connecting channels and the St. Lawrence River, the 100 Year Flood Level is the peak instantaneous stillwater level that is equalled or exceeded in one percent of all the years.

Flood Plain: The area adjacent to a watercourse which is inundated as a result of flows exceeding the channel capacity of the watercourse. Floodplain can be defined according to design storms which inundate specified areas depending on certain conditions.

Flood Proofing: A combination of structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures or properties subject to flooding so as to reduce or eliminate flood damages.

Flora: The collective term for the plant species present in an ecosystem.

Frazil Ice: Surface ice which forms on rapidly flowing rivers, the movement of the water preventing the ice crystals from forming a solid sheet.

Gabion: A rectangular or cylindrical wire mesh cage filled with rock and used in protecting against erosion.

Geomorphology: The physical features of the earth and ongoing processes which shape landforms.

Gradient: Change of elevation, velocity, pressure or other characteristics per unit length; slope.

Grassed Waterway: A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water.

Groundwater: Subsurface water in zone of saturation.

Groyne: A shore protection structure built (usually perpendicular to the shoreline) to trap littoral drift or retard erosion. The resulting beach provides shore protection.

Groyne Field (groyne system): A series of groynes acting together to protect a section of shore.

Habitat: The place or site where an animal or plant community naturally or normally lives. The environment in which the life needs of a plant or animal organism, population, or community are supplied.

Hazardous Lands: Property or lands that could be unsafe for development due to naturally occurring processes. Along shorelines of large inland lakes, this means the lands including that covered by water, between a defined offshore distance or depth and the furthest landward limit of the flooding, erosion, or dynamic beach hazard. Along river and stream systems, this means the land, including that covered by water, to the furthest landward limit of the flooding or erosion hazard limits.

Hazardous Sites: Property or lands that could be unsafe for development and site alteration due to naturally occurring hazards. These may include unstable soils (sensitive marine clays (leda), organic soils) or unstable bed rock (karst topography).

Headland: A hard structure constructed perpendicular to the shoreline, for the purpose of building or protecting a beach by trapping littoral drift.

HEC-RAS: A model used to estimate flow conditions. HEC-RAS is an acronym for Hydrologic Engineering Centers River Analysis System.

Hydraulic: The movement of water through conveyance systems.

Hydrogeology: The occurrence, distribution, and movement of water below the ground surface.

Hydrology: The occurrence, distribution and movement of the waters of the earth and their environmental relationships.

Ice Control Boom: A line of connected floating timbers stretched across a watercourse for

the purpose of modifying ice formation and/or break-up processes.

Impervious/Impermeable Soil: A soil through which water, air or roots cannot penetrate.

Individual Environmental Assessment: Refers to an environmental assessment for a specific undertaking to which Part II of the Environmental Assessment Act applies and which is neither exempt nor covered by Class EA approval.

Island: A method of shoreline protection, viewed as a wide ultimate off-shore breakwater, mostly circular or oval in shape. Islands are used predominantly to provide habitat improvements as well as to protect the shoreline from the erosive forces of wave action by dissipating the wave energy before the wave intercepts the shore.

Jurisdiction: The extent of territory over which authority may be legally exercised.

Landform: A discernible natural landscape, such as a floodplain, stream terrace, plateau, or valley.

Lee: Shelter, or part or side sheltered from wind and waves

Life Science ANSI (Area of Natural and Scientific): Areas designated by the Ontario Ministry of Natural Resources as containing natural features that have values related to protection, natural heritage appreciation, scientific study or education.

Littoral Cell: A self contained coastal sediment system that has no movement of sediment across its boundaries. The longshore limits are defined by natural or artificial barriers where net sediment movement changes direction or becomes zero.

Littoral Drift: The movement of sediment along a shoreline by prevailing currents and oblique waves.

Microclimate: The climatic condition of a small area resulting from the modification of the general climatic conditions.

MNR: Ontario Ministry of Natural Resources.

MOE: Ontario Ministry of the Environment.

Offshore Breakwater: A method of shoreline protection, defined as a shore parallel structure, separated from the shore under all water levels. Offshore breakwaters are used to protect shorelines from the erosive forces of wave action by dissipating the wave energy before the wave intercepts the shore.

Outfall: Point where water flows from a conduit or drain.

Part II Order: The legal mechanism whereby the status of an undertaking can be elevated from an undertaking within a Class EA to an Individual Environmental Assessment.

Permeable/Pervious: Capable of transmitting air or liquid.

Pier: A structure, usually of open construction, extending out into the water from the shore to serve as a landing place, a recreational facility or other use.

Pile: A long, heavy timber or section of concrete or metal to be driven into the ground or lakebed to provide support or protection.

Proponent: For the Class EA document, are the Conservation Authorities of Ontario. For a specific undertaking planned in accordance with the approved Class EA, it is the individual Conservation Authority.

Public: Includes interest groups, associations, and individuals.

Rapid Geomorphic Assessment: A standardized assessment protocol that documents observed indicators of channel instability. Observations are quantified based on evidence of aggradation, degradation, channel widening, and planform adjustment. The index produces values that indicate whether the channel is stable/in regime (score <0.25), stressed/transitional (score 0.26-0.50) or adjusting (score >0.51).

Regulations: Statutory controls, enacted through legislation, for the purpose of controlling land and water use.

Regulatory Erosion Standard: The approved standard(s) used to define shore land erosion limits, based on recession rates, for regulatory purposes.

Regulatory Flood Standard: The approved standard(s) used to define shore land flood limits for regulatory purposes. Currently the regulatory flood standard for Southern Ontario (zone 1) is that flood produced by the Hurricane Hazel storm or the 100 year flood, whichever is greater; for northern Ontario (zone 3) it is that flood produced by the Timmins storm or the 100 year flood, whichever is greater; for Eastern Ontario (zone 2) it is the 100 year flood.

Regulatory Shore Lands: Land, including that covered by water, between the international boundary and the furthest landward limit of the regulatory flood standard, the regulatory erosion standard or the dynamic beach.

Remedial Projects: Non-structural/structural works which are intended to reduce risk of damages to human life and property caused by flooding, erosion and/or other water related hazards.

Reservoir: Impounded body of water or controlled lake in which water is collected or stored.

Revegetation: The provision of plant materials to an area presently devoid of such.

Revetment: A sloped facing of stone, concrete etc. built to protect an embankment or shore structure against erosion and failure by wave action or currents.

Rip-rap: A protective layer of quarrystone, usually of mixed size, graded within wide size limit, placed to prevent erosion, scour, or sloughing of an embankment or bluff.

Riparian Owner: The owner of land containing or directly abutting a natural lake or water course.

Risk: The chance that is associated with any action where harm or loss can be encountered. The risk associated with building in the floodplain can be assigned a percentage value based upon the degree of flood susceptibility of the proposed development.

River Reach: A section of a watercourse containing a set of specified characteristics, depending on the criteria (e.g. geomorphology, aquatic habitat, etc.)

Riverine: Of or pertaining to inland streams or rivers as opposed to lakeshores.

Rock Ramps: Sloped, riffle-like grade control structures made of rocks and installed on the channel bed. Rock ramps are designed to give a natural appearance and provide erosion control, enhanced aquatic habitat, free upstream and downstream movement of aquatic organisms, and oxygenation of stream water.

Runoff: The conveyance of surface water caused by precipitation and/or snowmelt.

Seawalls: Hard, impermeable structures, built parallel to the shore, designed to withstand extreme wave action.

Sediment: Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site or origin by air, water, gravity or ice and has come to rest on the earth's surface either above or below sea level.

Sediment Sink: A point at which sediment settles out in the coastal system.

Sheet Pile: A steel pile with a slender, flat, cross section to be driven into the ground or lakebed and linked or interlocked with like members to form a vertical wall or bulkhead.

Shore: The area of interface between land and water extending from the lakeward limit of the littoral zone landward to the first major change in terrain.

Shore Reach/Shoreline Reach: Portions of the shoreline containing similar physiographic or biological characteristics and shore dynamics such as erosion rates, similar flood elevations, etc., and include shore alignment, offshore bathymetry, fetch characteristics, sediment transport rates, flood susceptibility, land use suitability, and environmental similarity.

Shorewall: A structure separating land and water areas, primarily designed to prevent erosion and other damage due to wave action.

Slope: The degree of deviation of a surface from horizontal, measured in a numerical ratio, percent or degrees.

Slope Failure: Common types of slope failures include transitional slides, rotational slides (circular, shallow, noncircular), successive slips, retrogressive slides, (transitional, rotational) and flows (mud, earth, sheet)

Soil Bioengineering: The use of woody vegetative plants and cuttings often in combination with structural measures, for the purpose of stabilizing eroding slopes. The vegetative matter serves as a structural component, drain, and barrier to earth movement.

Stability Index: Referring to score from the Rapid Geomorphic Assessment (RGA) standardized classification system, used to define a watercourse as stable, in-transition, or unstable.

Stable Slope: The angle a slope would achieve when toe erosion is absent.

Still Water Level: The result of the combined occurrence of the static water level and a storm surge.

Storm Event: A rainfall event where the amount of rain that falls is measured as opposed to the volume of runoff. One storm referred to is the 1:100 Year Storm: the storm that produces an amount of rainfall that based on historical data occurs on the average once in 100 years.

Stratigraphy: Stratigraphy refers to the formation, composition, and sequence of sediments that make up different layers of earth. Distinction of different layers are often visible in channel banks and valley slopes.

Surface Runoff: That component of precipitation that results in overland flow and becomes a temporary part of streamflow.

Storm Surge: A rise above the normal water level on the shoreline due to the action of wind stress on the water surface.

Toe Erosion: The erosion which occurs at the toe of slopes, largely as a result of the continuous removal of earthen material by waves and currents.

Topography: The relative positions and elevations of the natural or built features of an area that describe the configuration of its surface.

Undertaking: An undertaking is an enterprise or activity or a proposal, plan or program in respect of an enterprise or activity which a proponent initiates.

Urban Runoff: Storm water generated from urban or urbanizing areas.

Watershed: The area drained by a river or lake system. A drainage area, drainage basin or catchment area.

Watershed Jurisdiction: The area over which a single Conservation Authority has jurisdiction.

Watershed Planning: Planning developed by a Conservation Authority to set goals, objectives and strategy for the conservation and development of water and land resources within a watershed or watershed jurisdiction. **Weathering:** Mechanical and chemical processes that fragment and decompose rock materials.

Weir: Device for measuring or regulating the flow of water.

Wet Dams: Water control structures, fitted with control gates or other mechanisms that allow adjustments to be made to control the quantity of flow. The dams control some volume of water throughout the year.

Wetlands: Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water-tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens. Land being used for agricultural purposes, that are periodically 'soaked' or 'wet', are not considered to be wetlands in this definition. Such lands, whether or not they were wetlands at one time, are considered to have been converted to other uses.

Wildlife: A term used in this document to refer to all forms of animal life including insects amphibians, reptiles, birds, and mammals.