GLOSSARY OF TERMS RELATED TO WATER AND WATERSHED MANAGEMENT IN ALBERTA

1ST EDITION

Partnerships & Strategies Section
Alberta Environment

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Copies of this glossary can be downloaded from the Management and Planning Resources section of the Toolkit page of the following website:

Water for Life: Alberta’s Strategy for Sustainability
http://www.waterforlife.alberta.ca/
PREFACE

Purpose
This glossary was prepared at the request of water stewards across Alberta, both within and outside of government. They desired an easy-to-understand glossary of common Alberta-based water and watershed management-related terms to aid communication and understanding between the numerous water/watershed stewardship organizations and partnerships in Alberta.

Method
The definitions found in this glossary are compiled from previously published sources; both government and non-government (see the References section). Many of the terms included here were found to have several different published definitions. Since printing all of the definitions for each term would have made this document completely unwieldy, it was thought best to include one definition for each term, wherever possible. In cases where published definitions were deemed to provide a significantly different context to use of the term, multiple definitions have been included.

Specific rules were applied in choosing between similar definitions. In all cases, definitions from Alberta were selected over those from other jurisdictions due to the specific meaning that many water words have within the provincial regulatory context. In cases where several Alberta-specific definitions existed, the definition found in a piece of legislation, regulation, code of practice, etc. was selected preferentially over those from non-regulatory sources, unless a definition existed that included the legislative definition plus additional information. In other cases where several non-regulatory, Alberta-specific definitions existed, it was left to the discretion of the compiler to select the most appropriate definition, or list multiple definitions. For the few cases where no definition existed for a term, or where the definition was out-of-date, Alberta Environment experts were enlisted to provide a current definition. Finally, in the interest of readability, many of the definitions in this document have been edited for brevity and clarity, while retaining their original intent as closely as possible.

Use
Because the purpose of this glossary is to aid communication and understanding within and between water/watershed stewardship organizations, it and the definitions contained within are not intended for legal use. If there are specific legal questions regarding the definition of a water-related term, please refer to the relevant referenced piece of legislation or contact Alberta Environment directly for clarification. This glossary is provided for general information only.

The definitions are laid out as follows:
1. The term being defined is in bold in the top line.
2. Common acronyms or synonyms for the term are in brackets following the term.
3. Related terms are printed in italics to the far right of the listed term.
4. The definition is printed below each of the terms.
5. An abbreviation of the term’s source is found in brackets at the end of the definition. The complete reference to which the abbreviation refers can be found at the end of the glossary in the References section.

An alphabetical list of the terms included is located at the beginning of the glossary. A list of the terms, organized by subject, is found near the end of the glossary, just before the References section.
Suggestions
This glossary should be considered as a working document and will be updated periodically. Feedback is welcome for consideration in future versions. Comments and/or suggestions pertaining to the glossary can be forwarded to Curtis Horning at curtis.horning@gov.ab.ca or by fax at (780) 422-5120.
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**Acute Effect**
Stimuli severe enough to rapidly induce a response. In aquatic toxicity tests, a response observed in 96-hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality. (WQLM)

**Adaptive Management**
A dynamic system or process of task organization and execution that recognizes the future cannot be predicted perfectly. Planning and organizational strategies are reviewed and modified frequently as better information becomes available. Adaptive management applies scientific principles and methods to improve management activities incrementally as decision-makers learn from experience, collect new scientific findings, and adapt to changing social expectations and demands. (SEM)

**Administrative Penalty**
A monetary penalty assessed by the regulator. An administrative penalty has a specific and general deterrent effect. The legislation specifies the contraventions for which administrative penalties are available. (G&G glossary)

**Adverse Effect**
Impairment of or damage to the environment, human health or safety, or property. (EPEA)

**Alberta Water Council**
A provincial advisory body, including sector representatives from industry, non-government organizations (NGOs), the Government of Alberta and Provincial Authorities, and other governments, established as part of the *Water for Life* strategy to provide advice to the Government of Alberta regarding water issues. (WCAG)

**Algae**
Simple single-celled (phytoplankton), colonial, or multi-celled, mostly aquatic plants, containing chlorophyll and lacking roots, stems and leaves. Aquatic algae are microscopic plants that grow in sunlit water that contains phosphates, nitrates, and other nutrients. Algae is either suspended in water (plankton) or attached to rocks and other substrates (periphyton). Their abundance, as measured by the amount of chlorophyll a (green pigment) in an open water sample, is commonly used to classify the trophic status of a lake. Algae are a essential part of the lake ecosystem and provides the food base for most lake organisms, including fish. (NALMS)

**Algal Bloom**
A heavy growth of algae in and on a body of water that is often triggered by environmental conditions such as high nitrate and phosphate concentrations. The decay of algal blooms may reduce dissolved oxygen levels. (NSWA)

**Alkalinity**
The acid-neutralizing capacity of water. (SWOG)

**Ambient**
Surrounding or occurring before a location or before an activity occurs. Ambient temperature is the temperature of the surrounding air. Ambient water quality is the water quality in a river, lake, or other water body, as opposed to the quality of water being discharged. In a river or stream, ambient water quality usually refers to the water upstream of a discharge point. (BRBC)

**Anoxic**
Denotes the absence of oxygen, as in bodies of water, lake sediments, or sewage. Anoxic conditions generally refer to a body of water sufficiently deprived of oxygen to where *Zooplankton* and fish would not survive. (NALMS)
Apportionment Agreement
An inter-provincial or international contract specifying the sharing of water resources from trans-boundary sources. For example, Alberta and Saskatchewan share the resources of the North and South Saskatchewan Rivers through apportionment agreements. (WCAG)

Appropriation
The amount of water a user has the legal right to withdraw from a water source. (HWUC)

Approval Water Withdrawal Licencing Process
Under the Water Act, an approval provides authority for constructing works or undertaking an activity within a water body. The approval includes conditions under which the activity can take place. (WFL)

Approvals Manager Designated Director
An Alberta Environment Administrator responsible for issuing Water Act licences within a specified area of Alberta. (WCAG)

Approved Water Management Plan Water Management Plan
Under the Water Act, a water management plan that must be considered by a Director when making licence and approval decisions. (Partnerships)

Aquatic Ecosystem
An aquatic area where living and non-living elements of the environment interact. This includes the physical, chemical, and biological processes and characteristics of rivers, lakes, and wetlands and the plants and animals associated with them. (GWMT)

Aquatic Environment
The components of the Earth related to, living in, or located in or on water or the beds or shores of a water body including (but not limited to) all organic and inorganic matter, living organisms and their habitat (including fish habitat), and their interacting natural systems. (WCAG)

Aquatic Macrophyte
Large (in contrast to microscopic) plants that live completely or partially in water. (NALMS)

Aquatic Species
The plants and animals living in, or associated with, water bodies, wetlands, and riparian areas. (FWMP)

Aquifer
An underground water-bearing formation that is capable of yielding water. Aquifers have specific rates of discharge and recharge. As a result, if groundwater is withdrawn faster than it can be recharged, the underground aquifer cannot sustain itself. (WFL)

Artificial Wetland
A man-made wetland in an area where a natural wetland did not exist before. (WRCG)

Assimilative Capacity
The ability of a water body to purify or remove contaminants from wastewater. (BRBC)

Assurance
Confirmation and public confidence that management systems are producing the desired resource and environmental outcomes. (SEM)
Bacteria
A diverse group of microorganisms that occur naturally in aquatic environments. Bacteria that occur naturally in surface water generally are not harmful to humans, but pathogenic bacteria can be introduced into surface waters from wastewater, particularly from municipal sewage effluents. (SWQG)

Base Flow
The fair-weather or sustained flow of streams; that part of stream discharge not attributable to direct runoff from precipitation, snowmelt, or a spring. Discharge entering streams channels as effluent from the groundwater reservoir. Also referred to as Groundwater Flow. (NALMS)

Baseline Data
An initial set of observations or measurements used for comparison; a starting point. (US-EPA)

Benchmarking
The process of identifying best practices indicating superior performance. Benchmarks are adopted as targets for optimal organizational performance, and may include standards or environmental management processes. (G&G glossary)

Benthic Invertebrates (Zoobenthos)
Animals that live on river and lake bottoms. Many of these inhabitants are immature stages of insects such as mayflies, stoneflies, caddisflies, and midges. Other types of animals include aquatic earthworms or bristleworms, roundworms, snails and leeches. The variety and abundance of benthic invertebrates in a river reflects the habitat the river provides. (SWQG)

Best Management Practices (BMPs) (Beneficial Management Practices)
Techniques and procedures that have been proven through research, testing, and use to be the most effective and appropriate for use in Alberta. Effectiveness and appropriateness are determined by a combination of: (1) the efficiency of resource use, (2) the availability and evaluation of practical alternatives, (3) the creation of social, economic, and environmental benefits, and (5) the reduction of social, economic, and environmental negative impacts. (BRBC)

Biochemical Oxygen Demand (BOD) (Biological Oxygen Demand)
A measure of the amount of oxygen consumed by aquatic organisms in the degradation of organic material. This is important because it is an indicator of how much oxygen will be removed from the water and the resulting stress on the aquatic ecosystem. (BRBC)

Biocriteria
The biological characteristics that quantitatively describe a water body with a healthy community of fish and associated aquatic organisms. Components of biocriteria include the presence and seasonality of key indicator species; the abundance, diversity, and structure of the aquatic community; and the habitat conditions required for these organisms. (US-EPA)

Biological Diversity (Biodiversity)
The variability among living organisms and the ecological complexes of which they are a part. This includes the diversity found within and between species and ecosystems. (WA)

Biosolids
Treated solid or semi-solid residues generated during the treatment of domestic sewage in a wastewater treatment facility. Primarily an organic product produced by wastewater treatment processes that can be beneficially used. (NSWA)
Blue-Green Algae
A group of phytoplankton which often cause nuisance conditions in water. Some produce chemicals toxic to other organisms, including humans. They often form floating scum as they die. Many can fix nitrogen (N\(_2\)) from the air to provide their own nutrient. (NALMS)

Bog
A wetland characterized by peat deposits, acidic water, and extensive surface mats of sphagnum moss. Bogs receive their water from precipitation rather than from runoff, groundwater, or streams, with decreases the availability of nutrients needed for plant growth. (WCW)

Canadian Heritage River
Designation assigned to a river by the Minister of Canadian Heritage and the equivalent provincial or territorial minister, with the objective of conserving and protecting the best examples of Canada's river heritage, giving them national recognition, and encouraging the public to enjoy and appreciate them. (CHRS)

Case-Specific Technology Limit
A subcategory of technology-based limits. It is a limit based on existing performance, or performance from similar facilities. Unlike a sector-specific technology limit, it is not a published limit. It is derived using best professional judgment. (WQLM)

Check Dam
A small dam constructed in a gully or other small watercourse to decrease the streamflow velocity, minimize channel erosion, promote deposition of sediment, and to divert water from a channel. (NALMS)

Chlorophyll \(\alpha\)
A photosynthetic pigment found in most algae. Concentrations of chlorophyll \(\alpha\) in a water sample provide a good estimate of the amount of algae suspended in the water. Chlorophyll \(\alpha\) may also be extracted from algae growing on rocks in the river. (SWQG)

Chronic Effect
A stimulus that lingers or continues for a relatively long period of time, often one-tenth of the life span or more. Chronic effects should be considered a relative term depending on the life span of the organism and could appear as reduced growth, reduced reproduction, lethality or other measures. (WQLM)

Cistern
A tank for storing water or other liquids, usually placed above the ground. (BRBC)

Code of Practice
A document governing an activity or a portion of an activity. One example is the Code of Practice for Pipelines and Telecommunication Lines Crossing A Water Body. (EPEA)

Coliform Bacteria
Micro-organisms that typically inhabit the intestines of warm-blooded animals. Drinking water quality assessments commonly include tests for coliform bacteria to determine if water has been polluted by human or animal waste. (AAFWeb)

Collaboration
A process through which parties who see different aspects of a problem can explore constructively their differences and search for (and implement) solutions that go beyond their own limited vision of what is possible. Collaboration is a mechanism for leveraging resources; dealing with scarcities; eliminating duplication; capitalizing on individual strengths; building internal capacities; and increasing participation and ownership strengthened by the potential for synergy and greater impact. (SEM)
Combined Sewer
Older drainage systems that carry both sanitary waste and storm water runoff. During heavy rain, the capacity of the combined sewer to carry wastewater to the sewage treatment plant may be exceeded, and a discharge of the untreated waste to the river may occur. In Alberta, plans are underway to improve these older systems. (SWQG)

Command and Control Approach
A method of environmental management by government that involves specific statutory controls and associated regulatory offences which are generally prescriptive in terms of outcomes and behaviours. Examples of this approach include: acts, regulations, approvals, licenses, authorizations, Codes of Practice, and orders. (G&G glossary)

Compliance Assessment
An activity undertaken to determine whether a regulated party's activity/operation complies with a statute, regulation, authorization or Code of Practice. Compliance assessments educate the regulated party on legislative requirements and also identify current or potential non-compliance. Compliance assessments include inspections, reviews, and audits. (G&G glossary)

Compliance Assurance
Activities that ensure regulated parties comply with legislation, including the Water Act. These activities include promoting compliance through education and prevention initiatives, and compelling compliance through enforcement responses. (G&G glossary)

Concentration
The amount of a substance in a given volume of water. For most substances, the concentration is expressed as milligrams per litre (mg/L), which is the same as parts per million (ppm). Technology now exists that can measure substances at the parts per trillion or quadrillion level! (SWQG)

Confined Aquifer
An aquifer which is bounded above and below by formations of impermeable or relatively impermeable material. (NALMS)

Conjunctive Use
The use of more than one water source, systematically, to reduce overall environmental impacts. For example, someone might use groundwater instead of surface water during a drought period, and then return to using surface water when runoff became abundant again. (WCAG)

Consensus
When a group of individuals in a decision-making process work towards general agreement by all involved. (GWMT)

Conservation
1. The planning, management, and implementation of an activity with the objective of protecting the essential physical, chemical, and biological characteristics of the environment against degradation. (EPEA)
2. The process of managing biological resources (e.g., timber, fish) to ensure replacement by re-growth or reproduction of the part harvested before another harvest occurs. A balance between economic growth and environmental and natural resource protection. (G&G glossary)

Consumptive Use
The balance of water taken from a source that is not entirely or directly returned to that source. For example, if water is taken from a lake to feed cattle, it is considered a consumptive use of water. (GWMT)

Contaminant
A substance that, in a sufficient concentration, will render water, land, fish, or other things unusable or harmful. (BRBC)
Continuous Improvement

Performance Assessment, Performance Measures

The ongoing improvement of performance in achieving environmental and resources outcomes, as well as improvements in the management systems used to achieve the outcomes (i.e., policies, delivery performance assessment, and information systems). Continuous improvement is based on the need to continuously monitor performance and success and to strive for improvement at all levels, across all activities and sectors, with all participants. (SEM)

Control Dam

A dam or structure with gates to control the discharge from the upstream reservoir or lake. (NALMS)

Crown Reservation

The Water Act states, “The Minister may by order reserve water that is not currently allocated under a licence or registration or specified in a preliminary certificate in order to (1) determine how the water should be used, or (2) for any other purpose.” Water reserved by the Minister for future use. (SSRB)

Cubic Feet per Second (cfs)

A measure of the volume of water passing a particular point each second. This volume of water is called the “rate of flow” or simply the “flow.” (BRBC)

Cumulative Effects

The combined effects on the aquatic environment or human developments arising from the combined environmental impacts of several individual projects. (WCAG)

D

Dam

A barrier constructed on a water body for storage, control, or diversion purposes. A dam may be constructed across a natural watercourse or on the periphery of a reservoir. Natural barriers formed by ice, landslides, or earthquakes are excluded. (ISDG)

Dam³

A measure of water volume, short for decameters cubed. One dam³ is equal to 1,000 cubic metres or 0.81 acre-feet. (SSRB)

Deep-Well Injection

Deposition of raw or treated, filtered hazardous waste by pumping it into deep wells, where it is contained in the pores of permeable subsurface rock. (NALMS)

Deleterious Substance

According to the Canadian Fisheries Act:

1. any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, or
2. any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, (CFA)

Demand Management

Supply Management

1. An approach that aims to conserve water by using a variety of policy instruments to reduce water use and increase efficiency. This approach recognizes that water is a finite resource. (NSWA)
2. Water management aimed at reducing the demand for water, such as water conservation, drought rationing, rate incentive programs, public awareness and education, drought landscaping, etc. (NALMS)
Designated Director
For purpose of administering the Water Act, certain Alberta Environment staff (such as Approvals Managers) are named as Directors. Under the Water Act, a Director has sole authority to make decisions concerning a number of specified subjects such as water transfers, holdbacks, and establishing Water Conservation Objectives. (SSRB)

Dike (levee)
A long low embankment dam. The term is usually applied to auxiliary dams used to close off areas that would otherwise be flooded by the reservoir. (ISDG)

Discharge
Refers to the outflow, and is used as a measure of the rate at which a volume of water passes a given point. Therefore, the use of this term is not restricted as to course or location, and it can be used to describe the flow of water from a pipe or a drainage basin. (NALMS)

Disposal Well
A deep well used for the disposal of liquid wastes. (NALMS)

Directly Affected Person
A person whose personal interests are affected or potentially affected by the water diversion proposed in a water licence application. Directly affected persons have special rights and responsibilities under the Water Act. (WCAG)

Disinfection
A process that has as its objective destroying or inactivating pathogenic micro-organisms in water. (EPEA)

Disposal Water
Produced water from oil, gas, and crude bitumen production that is injected into deep underground formations for disposal. The Energy and Utilities Board must approve this activity. (WCAG)

Dissolved Oxygen
A measurement of the amount of oxygen available to aquatic organisms. Temperature, salinity, organic matter, biochemical oxygen demand, and chemical oxygen demand affect dissolved oxygen solubility in water. (NSWA).

Ditchrider
A person who delivers water to a portion of an irrigation district. (BRBC)

Diversion of Water
1. The impoundment, storage, consumption, taking or removal of water for any purpose. This does not include removal for the sole purpose of removing an ice jam, drainage, flood control, erosion control or channel realignment. (WFL)
2. The transfer of water from a stream, lake, aquifer, or other source of water by a canal, pipe, well, or other conduit to another watercourse or to the land, as in the case of an irrigation system. Also, a turning aside or alteration of the natural course of a flow of water, normally considered physically to leave the natural channel. (NALMS)

Domestic Wastewater
A composite of liquid and water-carried wastes associated with the use of water for drinking, cooking, cleaning, washing, hygiene, sanitation or other domestic purposes, together with any infiltration and inflow wastewater, that is released into a wastewater collection system. (ADR)

Domestic Water Use
Water used for drinking, cooking, washing, and yard use. (GWMT)
Drain
A conduit, channel, or other structure constructed or used to carry water or wastewater by gravity or pumping. (BRBC)

Drainage Basin
The total area of land that contributes water and materials to a lake, river, or other water body, either through streams or by localized overland runoff along shorelines. (SWQG)

Drainage District
Farmer-led cooperative groups, established under the Drainage Districts Act, that work to improve agricultural water management within a specific area of the province. Districts are formed by Order-in-Council or Ministerial Order at the request of local landowners. Once formed, the district has the power to set and collect taxes, to construct water management works and to enact bylaws. In Alberta, nine drainage districts exist. (AENVWeb)

Drawdown
1. A reduction in the water level of a water well when the pump is operating. (WCAG)
2. The lowering of the water surface level of a reservoir due to a release of water from the dam. (ISDG)

Driller
A person who is authorized under The Water Act to drill or reclaim a water well. (WA)

Drinking Water
Potable Water
Water that has been treated to provincial standards and is fit for human consumption. (WFL)

Drought
Periods of less than average precipitation over a certain period of time. Drought is naturally occurring and can cause imbalances in the hydrologic system. (NSWA)

Dry Pond
Wet Pond
Relief systems that provide a diversion of excess flow from a storm sewer trunk to an impoundment for temporary storage. A dry pond is often a playground or other open space not normally covered by water. A dry pond reduces flooding downstream. (BRBC)

Ecological Integrity
An ecosystem exhibits integrity if, when it is subjected to stress, it is able to sustain a state that allows that ecosystem to thrive. (FWMP)

Economic Instruments
Market-Based Instruments
Policies, programs, or initiatives that provide financial motivation to achieve environmental and resource management objectives. Economic instruments encourage firms and/or individuals to undertake pollution control efforts that are in their own interests and that collectively meet policy goals by provide monetary or near-monetary rewards for polluting less or by imposing costs for polluting more, thus supplying the necessary motivation for polluters to change their behaviour. A few examples of economic instruments include pollution taxes, tax credits, and deposit refund systems (like the beverage container recycling program), among many others. (G&Gglossary)

Ecosystem
A community of interdependent organisms together with the environment they inhabit and with which they interact. (BRBC)
Ecosystem Functions
Processes that are necessary for the self-maintenance of an Ecosystem such as primary production, nutrient cycling, decomposition, etc. The term is used primarily as a distinction from values.  (NALMS)

Effluent
1. The liquid waste of municipalities, industries, or agricultural operations. Usually the term refers to a treated liquid released from a wastewater treatment process. (BRBC)
2. The discharge from any on-site sewage treatment component.  (PSSSPH)

Effluent Plume
Mixing Zone
When effluent is discharged into a river, it often has a different water chemistry than the river. This discharge maintains its integrity for some distance downstream before it mixes completely with the river water. This relatively un-mixed effluent is detectable by sampling across the river and is called a plume.  (SWQG)

Emergency Spillway
Service Spillway, Spillway
A secondary spillway designed to operate only during large floods. The emergency spillway crest is higher than the service spillway crest. (ISDG)

End-of-Pipe Limit
Case-Specific Technology Limit, Sector-Specific Technology Limit
End-of-pipe limits are either technology or water quality based. If they are water quality based, then the limits are calculated to support a wasteload allocation value, the value required to maintain in-stream guidelines. A technology limit is formulated on some statistical derivation of existing performance, or published sector-specific limits. The average monthly limit (AML) and the maximum daily limit (MDL) are end-of-pipe limits that are calculated either to ensure that the wasteload allocation is not exceeded at some specified frequency, or they are based on technological capability (i.e., the limits are either sector-specific or case-specific technology based). (WQLM)

Endorsement
The act of partners within a partnership formally expressing their assent, publicly and definitively, to proceed with a policy, plan, or initiative.

Enforcement
Those activities that compel and/or force adherence to legal requirements. (G&Gglossary)

Enforcement Order
Under the Environmental Protection and Enhancement Act and the Water Act, an enforcement order is a legal document requiring a person to stop an activity, fix a problem, or restore the environment. (BRBC)

Enforcement Response
Actions taken in response to a determination of non-compliance in order to remedy the non-compliance, deter future non-compliance, or punish the offender. (G&Gglossary)

Enhanced Oil Recovery
Oilfield Injection, Secondary Recovery
A process in which a substance, typically water (saline, non-saline, produced or recycled), is injected into oil reservoirs to increase and maintain the reservoir pressure so more oil can be extracted. The two main types of enhanced oil recovery are water flooding, in which water is pumped into conventional oil field reservoirs, and steam injection, where steam is forced into heavy oil deposits. Enhanced oil recovery operations do not include oil sands mining operations.  (WCAG)

Environment
The components of the earth, including air, land, and water, all layers of the atmosphere, organic and inorganic matter, living organisms, and their interacting natural systems. (EPEA)
Environmental Assessment
A formal review of the impacts of a proposed development project to support the goals of environmental protection and sustainable development, as required by the *Environmental Protection and Enhancement Act*. (WCAG)

Environmental Appeals Board (EAB)
An independent board established by the Government of Alberta to hear appeals, as mandated by the *Environmental Protection and Enhancement Act* and the *Water Act*. (WCAG)

Environmental Indicator
A measurement, statistic or value that provides a proximate gauge or evidence of the effects of environmental management programs or of the state or condition of the environment. (NALMS)

Environmental Outcome
The desired environmental end state defining the specific conditions or functions that one expects for the environment. An outcome is an event, occurrence, or condition that results from an activity or program that has an actual effect on resources, the environment, or Albertans. (IHCR)

Environmental Protection and Enhancement Act (EPEA)
Provincial legislation that takes an integrated approach to the protection of Alberta's air, land, and water. One of the Act's cornerstones is the guarantee of public participation in decisions affecting the environment. This public involvement includes increased access to information, participation the Environmental Assessment and Approval Processes, and the right, when directly affected, to appeal certain decisions. (WFL)

Environmental Protection Order
Under EPEA, a legal document issued by AENV that is intended to prevent environmental problems or, failing that, to ensure that action is taken to fix environmental problems. (BRBC)

Environmental Quality
A measure of the status of the environment, overall or in relation to a media (air, water, land) or the needs of its inhabitants, including humans. (G&Gglossary)

Ephemeral wetland
An area that is periodically covered by standing or slow moving water and that has a basin typically dominated by vegetation of the low prairie zone, similar to the surrounding lands. Because of the porous conditions of the soils, the rate of water seepage from these areas is very rapid, and surface water may only be retained for a brief period in early spring. (WCW)

Erosion
The natural breakdown and movement of soil and rock by water, wind, or ice. The process may be accelerated by human activities. (AARDWeb)

Eutrophic
Pertaining to a lake or other body of water characterized by large nutrient concentrations such as nitrogen and phosphorous and resulting high productivity. Such waters are often shallow, with algal blooms and periods of oxygen deficiency. (NALMS)

Eutrophication
The process by which lakes and ponds become enriched with dissolved nutrients, either from natural sources or human activities. Nutrient enrichment may cause an increased growth of algae and other microscopic plants, the decay of which can cause decreased dissolved oxygen levels. Decreased oxygen levels can kill fish and other aquatic life. (NSWA)
Evapotranspiration
The combination of evaporation from the surface of soils and vegetation, plus the transpiration of water through plant leaves and vegetation. (GWMT)

Fen
A wetland characterized by slow internal drainage from groundwater movement and seepage from upslope sources. Fens are characterized by peat accumulation, but due to the seepage of nutrient-rich water, fens are typically less acidic and more nutrient-rich than bogs. (WCW)

First-in-Time, First-in-Right
The principle used to prioritize water rights in Alberta. This principle, established in 1894, means that water rights are prioritized according to how senior (old) the licence is, regardless of its use. The older the licence, the higher the user is on the priority list to receive water. (WFL)

Fishery
An area of water inhabited by fish. (BRBC)

Fish Habitat
Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. (CFA)

Fish Ladder (Fishway)
A series of small pools arranged in an ascending fashion to allow the migration of fish upstream past construction obstacles, such as dams. It may also be an inclined trough which carries water from above to below a dam so that fish can easily swim upstream. (NALMS)

Flexible Regulatory and Non-Regulatory Tools
A set of adaptable compliance assurance tools and incentives. They include both regulatory and non-regulatory instruments.
1. Regulatory instruments use a rules-based system that typically focuses on enforcing compliance with minimum standards. Their goal is compliance with the law and their driving mechanism is deterrence. Regulatory tools include laws and regulations.
2. Non-regulatory instruments use a performance-based system that promotes improvement through incentives. Their goal is to move “beyond compliance” and to foster continuous improvement by creating the flexibility for parties to innovate. Its driving mechanisms are financial incentives and stewardship. Non-regulatory tools include economic instruments, cooperative management agreements, and voluntary stewardship. (SREM)

Flood
An overflow of water onto lands that are used or usable by man and not normally covered by water. Floods have two essential characteristics: it is temporary; and the land is adjacent to and inundated by overflow from a river, stream, lake, or ocean. (NALMS)

Flood, 100-Year
A 100-year flood does not refer to a flood that occurs once every 100 years, but to a flood level with a 1 percent or greater chance of being equaled or exceeded in any given year. (NALMS)

Flood Fringe
The part of a floodplain where, during a flood, the water is shallower (<1m in depth) and moves more slowly (<1m/sec). Contrast floodway. (BRBC)

Floodplain
An area adjoining a body of water that has been or may be covered by flood water. (ISDG)
Floodway
The part of floodplain that, during a flood, has the deepest, fastest, and most destructive flow of water. Contrast flood fringe. (BRBC)

Fluvial
Of or pertaining to rivers and streams; growing or living in streams ponds; produced the action of a river or stream. (NALMS)

Framework
An organized structure of policies, legislation, programs and tasks created to achieve a specific outcome. There can be frameworks for broad policies and strategic initiatives at various scales (e.g. provincial, regional, sector, media); programs and program delivery; and short-term tasks and projects. (SEM)

Freeboard
The vertical distance between the top of a dam and a particular water level. For example, "freeboard above maximum surface" or "freeboard above normal reservoir level." (ISDG)

Full Supply Level
The maximum storage level of a reservoir when it is full. This level usually corresponds to the level of the spillway crest for an un-gated spillway, or to the water level for which the dam is designated. (ISDG)

G

Governance
The process and structure that brings together capable people and relevant information to achieve goals. Governance defines an organization’s accountability systems and ensures effective use of public resources. Governance is the process where elements in society hold power and authority, and influence and enact policies and decisions about public life, and economic and social development. Provincial governance refers to the processes by which a Minister, or agency of a ministry, oversees the management of public resources and/or delivery of public programs across the province. Governance can refer to the framework or processes by which a ministry assures accountability for achieving outcomes and for the management system and decisions. In these instances, the ministry remains accountable even when partners, delegates, or contractors deliver the programs or services that produce the outcomes. (SEM)

Grassroots
Originating from the local community or ordinary people. (BRBC)

Green Area (Green Zone)
The mainly public, forested lands of northern Alberta and the Eastern Slopes that are not available for agricultural development, other than grazing. (GWMT)

Grey Water
Untreated, used water from a household or small commercial establishment (excluding that from toilets or other fixtures and appliances whose wastewater might have come into contact with human waste. (HWUC)

Groundwater
All water under the surface of the ground whether in liquid or solid state. It originates from rainfall or snowmelt that penetrates the layer of soil just below the surface. For groundwater to be a recoverable resource, it must exist in an aquifer. Groundwater can be found in practically every area of the province, but aquifer depths, yields, and water quality vary. (WFL)
Groundwater Recharge
Inflow of water to a ground water reservoir (zone of saturation) from the surface. Infiltration of precipitation and its movement to the water table is one form of natural recharge. Also, the volume of water added by this process. (NALMS)

Guideline
A specific performance measure that is not legally binding unless designated in legislation. It is a guide or indication of a future course of action. It describes how something will be accomplished. It may contain numerical performance measures and may deal with multiple uses of water. (BRBC)

Habitat
The natural home of a living organism. The three components of wildlife habitat are food, water, shelter. (WFL)

Hardness
A measure of the amount of certain dissolved substances in water, primarily calcium and magnesium. Concerns with hardness relate mainly to encrustation and excessive soap consumption in water supplies, although it can also influence the form and toxicity of numerous heavy metals. (SWQG)

Headwaters
The source and upper tributaries of a stream or river. (BRBC)

Headworks
All structures and associated facilities located at the beginning (upstream end) of a water management project. In the case of the headworks owned by Alberta Environment, this includes structures for diverting water from the river (e.g. dams or weirs) and facilities for carrying and storing water (e.g. canals or reservoirs). (BRBC)

Height of Dam
The difference in elevation between the crest elevation and the lowest point at the downstream toe of a dam. (ISDG)

Household Purposes
Water used for human consumption, sanitation, fire prevention, and watering animals, gardens, lawns and trees. (WFL)

Hydrologic Cycle (Water Cycle)
The process by which water evaporates from oceans and other bodies of water, accumulates as water vapor in clouds, and returns to oceans and other bodies of water as rain and snow or as runoff from this precipitation or groundwater. (WFL)

Hydrology
The science dealing with the properties, distribution, and flow of water on or in the Earth. (AARDWeb)

Hydrophytic
In relation to vegetation, plants that grow in water or in saturated soils that are periodically deficient in oxygen as a result of high water content. (NALMS)

Hypereutrophic
Pertaining to a lake or other body of water characterized by excessive nutrient concentrations such as nitrogen and phosphorous and resulting high productivity. Such waters are often shallow, with algal blooms and periods of oxygen deficiency. (NALMS)
Impervious Surfaces
Land where water cannot infiltrate back into the ground such as roofs, driveways, streets, and parking lots. Total imperviousness means the actual amount of land surface taken up with impervious surfaces, often stated as a percentage. Interestingly, a site with a total imperviousness of 60% can act like a site with only 10% imperviousness if strategies such as channeling roof runoff into a garden and using swales to capture rainwater are used. (NSWA)

Impoundment
Storage of water (BRBC)

In-Situ Surface Water Treatment
The in-situ application of a substance other than a pesticide to surface water, except in a dugout, for restoration, enhancement or other purposes. (ADR)

Inactive Water Well
A water well that is not currently being used, but is being maintained for future use. (WA)

Indicator
A direct or indirect measurement of some valued component or quality in a system, including an ecosystem or organization. For example, an indicator can be used to measure the current health of the watershed or to measure progress toward meeting an organizational goal. (EPA)

Industrial Runoff
Surface water resulting from precipitation that falls on a plant or facility. (ADR)

Industrial Wastewater
The composite of discarded liquids and unwanted water-carried substances resulting directly from a process carried on at a plant or facility. (ADR)

Injectant
A fluid (water, wastewater, solvent, steam, gas, etc.) approved by the Energy and Utilities Board for injecting into an enhanced oil recovery project or disposal well. (GWMT)

In-Stream Flow Needs (IFN)  In-stream Objectives, Water Conservation Objective
The scientifically determined amount of water, flow rate, or water level that is required in a river or other body of water to sustain a healthy aquatic environment or to meet human needs such as recreation, navigation, waste assimilation, or aesthetics. An in-stream flow need is not necessarily the same as the natural flow. (WFL)

In-Stream Objectives  In-Stream Flow Needs, Water Conservation Objective
Regulated flows that should remain in the river via improved dam operations or restrictions on licences. The term was common prior to 2002 when replaced by In-Stream Flow Needs. In-Stream Objectives were usually set in response to fish habitat in-stream needs and/or water quality requirements. (SSRB)

Intake
Any structure on the upstream face of a dam or within a reservoir created for directing water into a confined conduit, tunnel, canal, or pipeline. (ISDG)

Inter-Basin Transfer  Intra-Basin Transfer, Water Allocation Transfer
1. A transfer or diversion of water (either groundwater or surface water) from one basin to another. This may also be referred to as water export/import. (NALMS)
2. Constructing facilities to transport water from the basin it naturally occurs in, to another river basin. In Alberta this means between the 7 major basins identified in the Water Act. (McGee)
Intra-Basin Transfer  
Inter-Basin Transfer, Water Allocation Transfer  
1. The diversion of water within a drainage basin. (NALMS)  
2. Constructing facilities to transport water between sub-basins within a major basin. This water would have ended up in the same downstream place under natural conditions. (McGee)

Irrigation  
The controlled application of water for agricultural purposes through man-made systems to supply water requirements not satisfied by rainfall. (NALMS)

Irrigation District  
An organization that owns and manages a water delivery system for irrigating a given region. In Alberta, there are 13 irrigation districts used for agriculture. Some districts also convey water for other purposes, such as municipal use or stockwatering. (SSRB)

Lagoon  
A shallow pond or lake. In Alberta, the term often refers to a small, artificial body of water usually composed of several cells or compartments used to treat wastewater to a secondary level of treatment. (BRBC)

Leachate  
A liquid that has been in contact with waste in a landfill or other porous substrate and may have undergone chemical or physical changes as a result, and has subsequently seeped out. (NSWA)

Leaching  
The movement of water carrying dissolved or suspended substances through soil. (AARDWeb)

Legislation  
Laws such as Acts and Regulations that are established by an elected official. (G&Gglossary)

Load Discharge  
Release of contaminants, usually expressed as kg/day, at levels or concentrations above that which can be removed though application of best available technology economically achievable. (IHCR)
Local Authority
1. In Alberta, refers to a municipal government or other public organization to which the provincial
government, through an act of the legislature, has granted decision-making power over a part of the
province. The specific definition of what is considered to be a local authority differs from one piece of
legislation to another. (BRBC)
2. Refers to:
   i. The corporation of a city, town, village, summer village, municipal district or specialized
      municipality.
   ii. In the case of a special area, the Minister responsible for the Special Areas Act or the Special
       Areas Board.
   iii. In the case of an improvement district, the Minister responsible for the Municipal Government Act
       or the council of the improvement district.
   v. A regional services commission established under the Municipal Government Act.
   vi. The board of directors of an irrigation district.
   vii. The board of trustees of a drainage district
   viii. The regional health authority under the Regional Health Authorities Act.
   ix. Any other entity defined as a local authority in the regulations. (WA)

Long-Term Yield
The expected sustainable yield of a water well over a 20 year period (neglecting aquifer recharge) in
accordance with the Alberta Environment Groundwater Evaluation Guidelines. (WCAG)

Low Level Outlet (Bottom Outlet)
An opening near the bottom of a reservoir, generally used for emptying the reservoir or for scouring
sediment. (ISDG)

M

Mainstem
1. The primary channel of a river.
2. The primary river in a drainage basin. (BRBC)

Major Ions
Molecules or atoms missing one or more electrons that occur naturally in water as a result of the
geochemical weathering of rocks, surface runoff, and atmospheric deposition. The eight major ions
(calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulphate, and chloride) account for
most of the total dissolved solids in surface waters. (SWQG)

Major River Basin
Alberta’s Water Act subdivides the province into seven “Major River Basins” within which water is to be
managed. The major basins are: The Peace/Slave River Basin, the Athabasca River Basin, the North
Saskatchewan River Basin, the South Saskatchewan River Basin, the Milk River Basin, the Beaver River
Basin, and the Hay River Basin. The transfer of water between these river basins is restricted and
requires a special Act of the legislature. (WA)

Make-Up Water
Produced Water, Start-Up Water
Water (not including produced water) that is injected into an oil-bearing zone to improve the operation of
an enhanced oil recovery project. It is new water used to replace the volume of oil and gas produced in
conventional enhanced oil recovery projects. It is also used to replace the volume of produced water that
is lost in treatment and steam generation processes for thermal in-situ projects (oil or crude bitumen).
(GWMT)
Market-Based Instruments
Economic Instruments
Economic tools that focus on providing incentives to encourage desired behaviour as opposed to threatening punishment for undesired behaviour. (G&G glossary)

Marsh
Bog, Fen, Marsh, Shallow Open Water, Swamp
A water body covered by water for at least part of the year and characterized by aquatic and grass-like vegetation, especially without peat-like accumulation. (BRBC)

Master Agreement on Apportionment
Apportionment Agreement
Signed in 1969, this Agreement between Canada, Alberta, Saskatchewan, and Manitoba outlines the quantity of water that each province is allowed to divert, store and/or consume and the quantity and quality of water that each province must allow to pass to its downstream neighbour. Under the general terms of this agreement, Alberta is allowed to “divert, store or consume” up to one-half of the natural flow volume of each watercourse that flows into Saskatchewan (as measured at the Alberta-Saskatchewan border) and must allow at least one half of the natural flow volume to pass downstream to Saskatchewan. The Prairie Provinces Water Board regulates the Agreement. (SSRB)

Maximum Daily Limit (MDL)
Total Maximum Daily Load
The absolute maximum allowable load or concentration of a substance in a facility’s effluent. This limit may be based on water quality constraints, sector-specific technology limits, or case-specific technology considerations. The value is typically calculated based on the 99th percentile of existing or required performance. (WQLM)

Mesotrophic
Eutrophic, Hypereutrophic, Oligotrophic
A descriptive term for water bodies that contain moderate quantities of nutrients and are moderately productive in terms of aquatic animal and plant life. (US-EPA)

Microorganism (microbes)
Tiny living creature that can be seen only with the aid of a microscope. Some micro-organisms cause acute health problems when consumed in drinking water. (WFL)

Ministerial Order
A legal document issued by a provincial or federal cabinet minister that order grants authority or requires action to be taken. (BRBC)

Mixing Zone
Effluent Plume
Water-quality-based effluent limits allow, where necessary, limited zones for the initial dilution of effluent where in-stream objectives may be exceeded, called mixing zones. These are areas are small enough so as not to interfere with other water uses. They are established to limit the acute lethality of organisms passing through the effluent plume and ensure the protection of the water body as a whole from chronic toxicity. (WQLM)

Multi-Barrier Approach
Approach used to ensure that safe drinking water is provided to all Albertans. In the past, the term ‘multi-barrier’ referred only to the barriers involved in the actual treatment of raw water to provide quality drinking water. This approach has now been expanded to include a number of key elements that are an integral part of a drinking water program to ensure delivery of safe, secure supplies of drinking water. Barriers may be physical (eg: filter) or administrative (eg: planning) in nature. In Alberta, a 5-pronged multi-barrier approach consists of legislation; protection; drinking water systems; performance assurance; and knowledge. (ADWP)

Municipal Water
Water under a deemed licence that is processed through a treatment plant of a local authority of Alberta, where water under the deemed licence is transferred from within the province to a location outside of Canada. (EPEA)
Municipal Water Use
Purposes usually served by water within a city, town, or village such as household and sanitary purposes, watering of lawns and gardens, and fire protection. (BRBC)

N

Natural Capital
The stock of environmental resources that yields many goods and services that are essential to the sustained health of our environment, communities, and economy. (NSWA)

Naturalized Flow (Re-constructed Flow)
The river flow that would have occurred in the absence of any man-made effects. For the purposes of water management, natural flow is a calculated value based on the recorded flows of contributing rivers; a number of factors concerning the river reaches (e.g. evaporation, channel losses, etc.); and water diversions. (SSRB)

Naturally Occurring Wetland
An area where water has or does accumulate to the water elevations documented to have occurred under natural conditions. (WRCG)

Navigable Water
A body of water that is deep and wide enough for a boat or other floating object to be transported from one place to another. Navigable water includes any body of water capable, in its natural state, of being navigated by floating vessels of any description for the purposes of transportation, recreation, or commerce; as well as any waterway where the public right to navigation exists by dedication of the waterway for public purposes, or by the public having acquired the right to navigate through long use. (BRBC)

Net Diversion of Water
A water licence that allows the licencee to receive credit for returning water to the source of the diversion. The water must be of a reasonable quality and be returned with suitable timing. The credit permits increased diversion equivalent to the volume returned, provided the net diversion does not exceed the total licence allocation. (SSRB)

Non-Compliance
Where legislative requirements, such as those found in an Act, regulation, Code of Practice, or authorization are not met. (G&Gglossary)

Non-Consumptive Use
A use of water in which all of the water used is directly returned to the source from which it came. For example, water used in the production of hydroelectricity is a non-consumptive water use. (WFL)

Non-Point Source Pollution
Contaminants that enter a water body from diffuse or undefined sources and are usually carried by runoff. Examples of non-point sources include agricultural land, coal mines, construction sites, roads, and urban areas. Because non-point sources are diffuse, they are often difficult to identify or locate precisely, and are therefore difficult to control. (SWQG)

Non-Regulatory Instruments
Performance-based tools that promote improvement through incentives. Their goal is to move "beyond compliance" and to foster continuous improvement by creating the flexibility for parties to innovate. Non-regulatory tools include economic instruments (e.g: financial incentives), cooperative management agreements, and voluntary stewardship. (SREM)

Non-Saline Water
Water with less than 4000 mg/L of total dissolved solids. Often referred to as fresh water. (GWMT)
Nutrient
An element essential for plant or animal growth. Major plant nutrients include nitrogen, phosphorus, carbon, oxygen, sulphur, and potassium. (AARDWeb)

Offsets
Innovative water supply improvements or replacement options at other projects that can mitigate the impacts of an oilfield injection site’s use of non-saline water. (WCAG)

Offstream Use
Water withdrawn from a surface water source for uses such as irrigation, municipal and industrial water supply, steam electric power generation, etc. (NALMS)

Oilfield Injection
Processes in which water, with or without another injectant (such as a hydrocarbon solvent or CO₂), is injected through oil wells into conventional oil reservoirs to increase or maintain the reservoir pressure so that oil recovery is increased. Oilfield injection also includes processes in which water is injected as steam through a well into oilsands deposits or conventional heavy oil pools to lower the viscosity of the crude bitumen so it can flow to a production wellbore. (WCAG)

Oligotrophic
Eutrophic, Hypereutrophic, Mesotrophic
Pertaining to a lake or other body of water characterized by extremely low nutrient concentrations such as nitrogen and phosphorous and resulting very moderate productivity. Oligotrophic lakes are those low in nutrient materials and consequently poor areas for the development of extensive aquatic floras and faunas. Such lakes are often deep, with sandy bottoms and very limited plant growth, but with high dissolved-oxygen levels. This represents the early stages in the life cycle of a lake. (NALMS)

Organic Contaminants
Carbon-based chemicals, such as solvents and pesticides, which can get into water through runoff from cropland or discharge from factories. (WFL)

Outcome
Shared Outcome
The result of either planned or unplanned actions. For planning purposes, “outcomes” are the desired endpoint and should guide the development and implementation of related programs. Outcomes can be broad and long-term in nature or focused. They are used in both direction setting and performance measurement. (G&G glossary)

Outfall
The point at which a pipe or channel discharges to a water body. (BRBC)

Outlet
Spillway
A discharge opening lower than the spillway crest designed to release reservoir water through or around a dam. (ISDG)

Outlet Gate
Any gate designed to control the flow of water through a reservoir outlet in or around a dam. (ISDG)
Partnership
A relationship in which individuals or organizations share resources and responsibility to achieve a common objective, as well as any resulting rewards or recognition. It often includes a formal contract, new resources and shared risks and rewards. The structure includes a central body of decision-makers whose roles are defined. The links are formalized. Communication is frequent, the leadership is autonomous and the focus is on specific issues. Partnerships are a form of collaboration. (SEM)

Pathogen
A disease-causing biological agent such as a bacterium, parasite, virus or fungus. (AARDWeb)

Peatland
Permanent wetlands characterized by a bed made of highly organic soil (>50% combustible) composed of partially decayed plant material. (BRBC)

Performance Assessment
The linkage of inputs (e.g., funding, staff, equipment, supplies), actions (e.g., advice, projects, programs, services) and outputs (e.g., reports, plans, policies) to outcomes or results (e.g., an increase in awareness, a change in behaviour, or the achievement of an outcome or end result, such as a healthy environment). (SEM)

Performance Measure
A qualitative or quantitative measure of an outcome, intended to gauge the performance of the organization, its initiatives, policies, and/or activities. A performance measure tracks the degree to which the organization’s performance can influence change (i.e., the progress towards a target). (SEM)

Permanent Water Licence
A water diversion licence issued in perpetuity (no specified term) under the Water Resources Act (i.e., prior to 1999). (WCAG)

Pesticide
Any chemical compound used to control unwanted species that attack crops, animals, or people. This diverse group of chemicals includes herbicides, fungicides, and insecticides. (SWQG)

pH
A measure of the intensity of the acid or base chemistry of the water. A pH of 7 is neutral, while below 7 is acidic and above 7 is basic. pH in surface water is regulated by the geology and geochemistry of an area and is affected by biological activity. The distribution of aquatic organisms and the toxicity of some common pollutants are strongly affected by pH. (SWQG)

Place-Based Approach
A method that recognizes the widely varying circumstances in different regions of the province rather than prescribing a “one-size-fits-all” province-wide solution. The boundaries for describing a “place” may be physical (e.g. watershed, airshed), environmental (e.g. badlands, foothills), or geopolitical (e.g. county, municipality). (SEM, altered)

Point-Source Pollution
Pollution that originates from one, easily identifiable cause or location, such as a sewage treatment plant or feedlot. (WFL)
Policy
1. A governing principle, plan, or consistent course of action developed in order to meet recognized needs and to achieve specific measurable outcomes. Policies are normally broad, conceptual documents that outline approaches and/or considerations to be taken into account by decision makers. Policies do not act as constraints, but provide information. (SEM)
2. A statement of intent that is not legally binding. It sets direction and expectations for activities. (BRBC)

Policy Analysis
The comparison of the viability and effects of an existing or proposed set of operating rules to the impact of some other option. (G&G glossary)

Policy Development
The process of shaping policy, from issue recognition and analysis to implementation and evaluation. While the Alberta Public Service’s role is to undertake the necessary steps to develop policy options, it is the role of elected officials to decide policy. This process includes defining the roles of government, citizens (individuals and corporate), communities and markets will a given policy of policy field. (SEM)

Policy Instruments
Regulatory Instruments, Non-regulatory Instruments
The means and tools available to achieve policy goals, including both regulatory and non-regulatory tools. (SEM)

Polycyclic Aromatic Hydrocarbons (PAHs) (Polynuclear Aromatic Hydrocarbons)
Hydrocarbons with two or more benzene rings formed by the incomplete combustion of organic materials such as wood, coal, and refuse. They are found in petroleum products and creosote and include such compounds as naphthalene, anthracene, and benzo-a-pyrene. When carried in water, they can pose a threat to human health and aquatic life. (SWQG)

Pollutant
A contaminant in a concentration or amount that adversely alters the physical, chemical, or biological properties of the natural environment. (USA - EPA)

Pollutant Load
The amount of pollutant entering a water body. Loads are usually expressed in terms of a weight and a time frame, such as kilograms per day (kg/d). (USA - EPA)

Potable Water
Drinking Water
Water that is provided by a waterworks system (private or municipal) and is used for drinking, cooking, dishwashing, or other domestic purposes requiring water that is suitable for human consumption. (EPEA)

Potentially Water-Short Area
Water-Short Area
An area considered relatively dry (low natural runoff) or where the watershed has a high level of allocation compared to natural supply. (WCAG)

Preliminary Certificates
An authorization issued by the Director to certify that a licence will be issued if certain conditions are met. (SSRB)

Preventive Order
A legislation-based command to prevent environmental, natural resource, or safety problems. Examples of preventive orders include Environmental Protection Orders, Directions of an Inspector (under the Environmental Protection and Enhancement Act), and Water Management Orders (under the Water Act). (G&G glossary)
Primary Wastewater Treatment  Secondary Wastewater Treatment, Tertiary Wastewater Treatment
The removal of particulate materials from domestic wastewater, usually done by allowing the solid materials to settle as a result of gravity. Typically, the first major stage of treatment encountered by domestic wastewater as it enters a treatment facility. Primary treatment plants generally remove 25 to 35 percent of the Biological Oxygen Demand (BOD) and 45 to 65 percent of the total suspended matter. Also, any process used for the decomposition, stabilization, or disposal of sludges produced by settling. (NALMS)

Prior Appropriation
A water law doctrine under which users who can demonstrate earlier use of a particular water source are given right that take precedence over all future users of water. (HWUC)

Priority
The concept that the person first using water has a better right to it than those commencing their use later. An appropriator is usually assigned a "priority date". However, the date is not significant in and of itself, but only in relation to the dates assigned other water users from the same source of water. Priority is only important when the quantity of available water is insufficient to meet the needs of all those having a right to use water. (NALMS)

Priority Number  First-in-Time, First-in-Right
The number that has been assigned to a water licence or registration in accordance with the Water Act. The priority number of a water licence indicates its seniority relative to other water licences. (WA)

Probable Maximum Flood (PMF)
An estimate of the flood that would result from the most severe combination of critical meteorological and hydrological conditions possible in the region. (ISDG)

Produced Water
Water that is released with hydrocarbons (oil, gas, and crude bitumen) from an oil or gas well. Produced water is separated from the oil and gas and is measured and reported to the Energy Resources Conservation Board. Produced water volumes from every oil and gas production well are included in the Energy Resources Conservation Board Production Injection Database. (WCAG)

Prosecution
A punitive measure, which has general and specific deterrence effects, which occurs through the courts and to which the only option of appeal is to the courts. Prosecution types include mandatory court appearance and specified penalty tickets. (G&Gglossary)

Public and Stakeholder Involvement
The process used by government to obtain advice or recommendations from a community and engage them in decision-making. Public and stakeholder involvement is an umbrella term that includes a range of interactive approaches including information and education, consultation, collaboration, partnerships, and delegated authority. (SEM)

Q

Qualified Wetland Aquatic Environment Specialist
An expert with detailed knowledge of the aquatic environment, wetland soils, wetland species, hydrology, and wetland margin habitat and their management or assessment. (WRCG)

R

Raw Water
Water in its natural state, prior to any treatment for drinking. (WFL)
Reach
A group of river segments with similar biophysical characteristics. Most river reaches represent simple streams and rivers, while some reaches represent the shorelines of wide rivers, lakes and coastlines. (GWMT)

Reclaimed Water
Water that is utilized after it has fulfilled its primary purpose as identified in a Water Act licence and before it becomes return flow (leaves the wastewater treatment plan back to a watercourse). (IHCR)

Recycled Water
1. Water that is used more than one time before it passes back into the natural hydrologic system. (NALMS)
2. A type of reuse water typically run repeatedly through a closed system. (HWUC)
3. Produced water that is re-used for conventional water flooding or enhanced recovery steam injection, after its recovery (with hydrocarbons) from production wells. It is the total quantity of water injected at a project, minus the make-up water. (WCAG + GWMT)

Regime
The length, width, depth, slope, or other physical condition that define a body of water. (BRBC)

Registration
See Traditional Agricultural Registration.

Regulation
Created under authority granted by a law, a regulation presents more specific requirements than the legislation itself. (BRBC)

Regulator
An entity delegated the power to regulate a specific activity or set of activities. (G&G glossary)

Regulatory Instruments
Rules-based tools that focus on enforcing compliance with minimum standards. Their goal is compliance with the law and their driving mechanism is deterrence. Regulatory tools include laws and regulations. (SREM)

Release
Under the Environmental Protection and Enhancement Act, “release” refers to the many ways that contaminants can enter the environment, such as spills, discharges, leaks, spraying, and throwing something away, among others. (BRBC)

Relief Stormwater Trunk
A pipeline designed to receive an excess volume of water, stormwater, or wastewater. Its purpose is flood protection. (BRBC)

Remedial Order
An order used to compel a person to remedy a contravention and, as appropriate, to undertake actions to prevent future contraventions. Examples of remedial orders include enforcement orders, eviction orders, and stop orders. (G&G glossary)

Reservoir
A man-made lake that collects and stores water for future use. During periods of low river flow, reservoirs can release additional flow if water is available. (WFL)
Reservoir Area
The total surface of a reservoir measured in a horizontal plane at an elevation corresponding to the full supply level of the reservoir. The area that would be flooded due to backwater elevations or surcharge is not included. (ISDG)

Reservoir Capacity
The total volume of water a reservoir is capable of holding when filled up to the full supply or normal water level. Storage derived from temporary flashboards, surcharge, or backwater curve is not included. Reservoir capacity usually is reported as of the date of construction of the dam. (ISDG)

Resource Trade-Off
A situation where a resource objective and/or strategy is written in a way to give priority to a particular resource value over other resource value(s) or use(s). (SEM)

Retrofit Provision
Water licences issued in recent years contain a condition indicating that once a water conservation objective is established, the licence may be amended to include the water Conservation Objective. The licence holder would then not be permitted to withdraw water when river flow is less than the objective. (SSRB)

Return Flow
Water that has been diverted under the terms of a Water Act licence for a specific purpose but does not get consumed in the process and is returned to the environment. Typically, this is water that results from a temporary use, such as water cycling through a cooling pond, but it can also result from consumptive uses, such as municipal wastewater, that are treated and returned to the environment. (GWMT)

Riparian
Pertaining to the banks of a river, stream, waterway, or other, typically, flowing body of water as well as to plant and animal communities along such bodies of water. (NALMS)

Riparian Area
The area of water-loving vegetation beside a stream, river, lake, or pond. Riparian areas are critical in reducing the negative effects of various land-uses on adjacent waters. (AARDWeb)

Riparian Health Assessments
An educational tool used by the Cows and Fish Program. It involves using visual observation to interpret the health of a riparian area and making comparisons over time. (Partnerships)

Riparian Outlet
A structure designed to pass water through a dam for the benefit of downstream water users. (ISDG)

Riparian Owner
One who owns land bounding upon a river or water course. (NALMS)

Riparian Rights
The legal ability of a person owning or leasing land along a waterbody to use water and protect the quantity and quality of water in the waterbody. Riparian rights have been restricted by legislation in Alberta. (BRBC)

Riprap
A layer of stone, pre-cast blocks, bags of concrete, or other suitable materials, generally placed on the upstream slopes of an embankment or along a watercourse as protection against wave action, erosion, or scour. Riprap is usually placed by dumping or other mechanical methods, but is occasionally hand placed. (ISDG)
Risk
The uncertainty that surrounds future events and outcomes; the expression of the likelihood and impact of an event with the potential to influence the achievement of an organization’s objectives. (SEM)

Risk Management
The process of identifying, analyzing, assessing, and evaluating risks; assigning ownership; taking actions to mitigate or anticipate them; and monitoring and reviewing progress. (SEM)

River Basin
Major River Basin

Runoff
Water that moves across (or through) soils on the land during snowmelt or rainstorms. (SWQG)

Saline Groundwater
Groundwater that has more than 4000 mg/L of total dissolved solids. (WCAG)

Saline Water
Water that has a total dissolved solids content exceeding 4,000 milligrams per litre (mg/L). (WCAP)

Sanitary Sewer Overflow (SSO)
An occasional unintentional discharge of raw sewage from a municipal sanitary sewer. (US-EPA)

Secondary Recovery
Enhanced Oil Recovery, Oilfield Injection
Injecting water into an oil pool to maintain pressure and displace oil. (WCAG)

Secondary Wastewater Treatment
Primary Wastewater Treatment, Tertiary Wastewater Treatment
Treatment (following Primary Wastewater Treatment) involving the biological process of reducing suspended, colloidal, and dissolved organic matter in effluent from primary treatment systems and which generally removes 80 to 95 percent of the Biochemical Oxygen Demand (BOD) and suspended matter. Secondary wastewater treatment may be accomplished by biological or chemical-physical methods. Activated sludge and trickling filters are two of the most common means of secondary treatment. (NALMS)

 Sector-Specific Technology Limit
End-of-Pipe Limit, Case-specific Technology Limit
Technology limits often form the minimum effluent restrictions for industrial or municipal discharges. These limits are based on the capabilities of proven pollution control technologies and are applied uniformly across an industrial sector consistent with the age and type of facility. Economic considerations are always factored into the development of a technology limit. Common “technology limit” designations are: Best Practicable Technology (BPT - applied to older facilities), and Best Available Demonstrated Technology (BADT - generally applied to new facilities). Technology limits do not inherently consider ambient constraints, except to the extent that good technology limits will offer some level of protection by virtue of the use of modern pollution control technology. (WQLM)

Sediment
Eroded soil, rock and plant debris, transported and deposited by water. (AARDWeb)

Sedimentation
The process of material settling out of water. (BRBC)
Seepage
The flow or movement of water through a dam, its foundation, or abutments. (ISDG)

Self-Regulation
An industry sector assumes responsibility for environmental protection because it addresses their long-term interests and prevents more onerous external (government) regulation. (G&G glossary)

Septage
1. Septic tank sludge that is a combination of raw primary sludge and an anaerobically produced raw sludge. (NALMS)
2. Wastewater removed and hauled from a septic tank, holding tank, pit toilet, or similar system that receives only domestic wastewater. This does not include wastes from grease traps, industrial processes, commercial processes or agricultural processes. (SMAC)

Septic System
A combination of underground pipe(s) and holding tank(s) which are used to hold, decompose, and clean wastewater for subsurface disposal. (BRBC)

Service Spillway
The main spillway for normal and flood flows. (ISDG)

Settling Pond
An open lagoon into which wastewater contaminated with solid pollutants is placed and allowed to stand. The solid pollutants suspended in the water sink to the bottom of the lagoon and the liquid is allowed to overflow out of the enclosure. (NALMS)

Sewage
1. The liquid waste from domestic, commercial, and industrial establishments. (NALMS)
2. Human excreta, or the water-carried wastes from drinking, bathing, laundering, or food processing. (PSSSPH)

Sewage Treatment
The processing of wastewater for the removal or reduction of contained solids or other undesirable constituents. (NALMS)

Sewer
Any system of pipes, drains, pumping works, equipment, structures, and other things used for the collection, transportation or disposal of wastewater, but does not include any building drain, plumbing, or building sewer. (ADR)

Shallow Open Water
Small bodies of standing water less than 2m deep that act as transitional areas between lakes and marshes. Shallow open water do not contain emergent aquatic vegetation like cattails and reeds, but may support floating vegetation like lily pads. (WCW)

Shared Governance
1. A governance structure in which government and external parties share responsibility for policy development and delivery of planning, programs, or services, but where government retains accountability. The extent of government involvement varies with the level of control that is desired and/or the capacity of the external parties to carry out the functions. Shared governance requires a clear accountability framework with clear roles, responsibilities, and relationships. (SEM)
2. A collaborative, goal-setting, and problem-solving process built on trust and communication where both government and stakeholders share responsibility for setting and achieving shared outcomes. (SP)
Shared Outcome
An outcomes that is developed and defined using a collaborative approach. Shared governance, accountability, responsibility, and stewardship start with an agreement on what the parties, representing various interests, want to see as the end result. Development of shared outcomes requires decisions on who needs to be involved and the best process to use. (SEM)

Shared Responsibility
The recognition that resource and environmental management is not solely the responsibility of government. Good resource and environmental management is based on cooperation, collaboration, and partnerships among parties that have an interest in achieving resource and environmental outcomes. Shared responsibility recognizes the role that parties outside of government can play in resource and environmental management, but understands that management must be done within clear governance and accountability frameworks. (SEM)

Shore
The edge of a body of water and includes the land adjacent to a body of water that has been covered so long by water as to wrest it from vegetation or as to mark a distinct character on the vegetation where it extends into the water or on the soil itself. (PSSSPH)

Siltation
The deposit of material in a waterbody by sedimentation. (BRBC)

Slough (Marsh)
A marshy or reedy pool, pond, inlet, or backwater. (BRBC)

Sludge
The accumulated wet or dry solids that are separated from wastewater during treatment. This includes precipitates resulting from the chemical or biological treatment of wastewater. (ADR)

Source Water
Raw/untreated water received for treatment to provide potable water to municipal, industrial or private users. Sources may include high quality groundwater, groundwater under the influence of surface water and surface water from lake, stream, river or watercourse. (WinTun)

Source Water Protection
1. The prevention of pollution of the lakes, reservoirs, rivers, streams, and groundwater that serve as sources of drinking water. Wellhead protection would be an example of a source water protection approach that protects groundwater sources, whereas management of land around a lake or reservoir used for drinking water would be an example for surface water supplies. Source water protection programs typically include: delineating source water protection areas; identifying sources of contamination; implementing measures to manage these changes; and planning for the future. (NALMS)
2. Action taken to control or minimize the potential for introduction of chemicals or contaminants in source waters, including water used as a source of drinking water (SGMW).

Specific Conductance
Also called conductivity. A measure that indicates water’s ability to conduct an electrical current. It provides an indication of the amount of dissolved substances in the water. When conductivity is high, the concentration of dissolved material is also high. (SWQG)

Spillway
A chute, weir, conduit, tunnel, channel, or other structure designed to permit discharges from a reservoir. The primary purpose of a spillway is to discharge flood flows safely past a dam, but they may also be used to release water for other purposes. A spillway may be gated (controlled) or not. Gates are used to regulate the level of the reservoir above the spillway crest. In an un-gated (uncontrolled) spillway, the discharge occurs automatically when the water level rises above the level of the spillway crest. (ISDG)
Spillway Capacity
The maximum flow a spillway is capable of discharging when the reservoir is at its highest water surface elevation. (ISDG)

Stakeholder
An individual, organization, or government with a direct interest in a particular process or outcome. (SEM)

Start-Up Water
Produced Water, Make-Up Water
The large initial water volume required for injection to a new conventional enhanced oil recovery project to replace oil and gas removed. The large volumes of water needed at steam plants to initiate the thermal recovery of bitumen are also referred to as start-up water. The ongoing requirements for make-up water in conventional and thermal enhanced oil recovery projects are usually at lower rates than are needed during start-up of the project. (GWMT)

Standard
A definite rule established by authority. They are legally enforceable numerical limits or narrative statements found in a regulation, statute, contract, or other legally binding document, which have been adopted from a criterion or objective. Environmental standards often take the form of prescribed numerical values that must be met. (G&Gglossary)

State of the Watershed Report
A document that identifies the current condition of a watershed including the physical, chemical, and biological characteristics of its surface and groundwater and the pressures acting on it. (Partnerships)

Statement of Concern
A written objection to a Water Act licence application. (WCAG)

Steam Injection
Enhanced Oil Recovery
A process in which steam is pumped into oilsand deposits to reduce the bitumen’s viscosity so it can flow and be produced to surface. Steam injection methods of enhanced oil recovery include Steam-Assisted Gravity Drainage (SAGD) and Cyclic Steam Stimulation (CSS). (GWMT)

Stewardship
A principle or approach whereby citizens, industry, communities, and government work together as stewards of the province’s natural resources and environment. In general terms, stewardship means managing one’s life, property, resources, and environment with regard for the rights or interests of others. This can apply to a person, company, community, government or group. Stewardship is an ethic and a value that results form public education and partnerships. It is people-focused in the sense that it relies on the desire and ability of people to make good decisions on their own accord that help resource and environmental outcomes. (SEM)

Stilling Basin
A pond or reservoir, riprapped or in a natural state, formed downstream of a dam, usually by means of a small auxiliary dam or weir. Its purpose is to protect the streambed from scouring caused by spillway and outlet discharges. The basin serves to dissipate energy. (ISDG)

Stormwater
Water discharged from a surface as a result of rainfall or snowfall. (PSSSPH)

Stormwater Drainage System
Any structure for collecting, storing, or disposing of stormwater and the connections between them as outlined in the Environmental Protection and Enhancement Act. The system includes stormwater sewers, pumping stations, storage areas, management facilities, treatment facilities, and outfall structures. (EPEA)
Strategy
A perspective, position, or plan developed and undertaken to achieve goals. It is the bridge between policy and concrete actions that outlines how a policy will be implemented to achieve its goals. (SEM)

Sub-Basin
Part of a river basin drained by a tributary or with significantly different characteristics than the other areas of the basin. (BRBC)

Sub-Watershed
A smaller watershed that is a piece of a much larger watershed. (NSWA)

Supply Management
Managing the supply of water to change the timing of water availability such as water storage, or other measures to increase the supply of water to meet the quantity of water demanded. (McGee)

Surface Water
Water bodies such as lakes, ponds, wetlands, rivers, and streams, as well as groundwater with a direct and immediate hydrological connection to surface water (for example, water in a well beside a river). (SSRB)

Suspended Solids
Material, such as fine particles of soil, that neither dissolve nor settle out of water, but instead are held or carried along in the water. (BRBC)

Sustainability
The balancing of opportunities for growth with the need to protect the environment. It reflects a vision of a vibrant economy and a healthy environment. Regarding renewable resources (eg: water, timber, fish, and wildlife), sustainability involves managing renewable natural resources so that their status, condition, or use is maintained over time. In this context, the use of a renewable resource, or impacts on it from other human activities, should not exceed its capacity to maintain itself through re-growth, reproduction, and management practices. Regarding non-renewable resources (eg: coal, oil, gas, and minerals), sustainability involves the development of resources in a responsible manner. This means protecting the environment during the construction and operation phases and ultimately reclaiming the land disturbed by development. In this context, non-renewable resource development is a temporary land use. (SEM)

Tailings
The waste material remaining after metal is extracted from ore. (NALMS)

Target
A value that reflects a desirable outcome. (IHCR)

Temporary Diversion License (TDL)
A license for the temporary diversion of water, for a specified period of time of one year or less. (WA)

Term Water Licence
A water diversion licence issued under the Water Act for a specified term two to five years for Enhanced Recovery (ER) projects. (WCAG)
Tertiary Wastewater Treatment  
**Primary Wastewater Treatment, Secondary Wastewater Treatment**
Selected biological, physical, and chemical separation processes to remove organic and inorganic substances that resist conventional treatment practices. **Tertiary Treatment** process consists of flocculation basins, clarifiers, filters, and chlorine basins or ozone or ultraviolet radiation processes. Tertiary techniques may also involve the application of wastewater to land to allow the growth of plants to remove plant nutrients. (NALMS)

Threshold
The value of an indicator that reflects a problem condition. (IHCR)

Top of a Dam
The elevation of the uppermost surface of a dam, usually the roadway or walkway or the non-overflow section of the dam. (ISDG)

Total Dissolved Solids (TDS)  
**Total Suspended Solids**
1. A measure of the concentration of dissolved matter in water. Total Dissolved Solids measurements are often used to estimate a water body’s salinity, which may affect the distribution of aquatic organisms. (SWQG)
2. Calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, and silica are typical dissolved solids. (AARDWeb)

Total Maximum Daily Load (TMDL)
The amount, or load, of a specific pollutant that a waterbody can assimilate and still meet the water quality standard for its designated use. For impaired waters, the TMDL reduces the overall load by allocating the load among current pollutant loads (from point and non-point sources), background or natural loads, a margin of safety, and sometimes an allocation for future growth. (EPA)

Total Suspended Solids (TSS)  
**Total Dissolved Solids**
A measurement of the quantity of matter suspended, but not dissolved, in a unit of water. Suspended solids include a wide variety of materials such as silt, decaying plant matter, industrial wastes, and sewage. (NSWA)

 Tradable Water Rights  
**Water Allocation Transfer, Water Marketing**
In Alberta, people who have been allocated the right to a certain amount of water can sell conserved portions of their allocations. This provides an incentive for those rights holders to conserve and use less water than their allocation provides. (WFLWeb)

Traditional Agriculture Registration
Provides the authority for diverting and using groundwater to an agricultural landowner for the purpose of raising animals or applying pesticides to crops, as part of a farm unit. A registration of a diversion of water may not exceed 6250 cubic metres of water per year or the maximum amount specified in an applicable approved water management plan. The landowner must prove first diversion of such water occurred prior to January 1, 1999. (WA)

Treat
To apply any method, technique, or process (including neutralization and stabilization) that is designed to change the physical, chemical, or biological character or composition of a substance, including water. (EPEA)

Treated Wastewater
Effluent/discharge from wastewater treatment plant that meets the quality outlined in the wastewater treatment plant approval prior to discharge to the receiving environment or the quality specified for reuse. (IHCR)

Triple Bottom Line
Fiscal responsibility, environmental responsibility, and social responsibility. (G&Gglossary)
Trophic Status

The overall level of biological productivity (or fertility) of a lake. It is usually defined by the concentrations of key nutrients (phosphorus and nitrogen) and the algae present. Alberta is a province with very diverse ecoregions and as a result our lakes vary widely in trophic state. Some lakes, such as those in the foothills and mountains, tend to have low nutrient concentrations while others, like those in the central plains area, tend to have very high nutrient and algal concentrations. Lakes in Alberta are categorized into four trophic levels: Oligotrophic (low productivity), Mesotrophic (moderate productivity), Eutrophic (high productivity), and Hypereutrophic (very high productivity). (SWQG)

Turbidity

The cloudiness of water. It is determined by the presence of suspended matter such as clay, silt, organic matter, and living organisms. High turbidity may reduce light transmission, and therefore reduce photosynthesis of aquatic plants. (SWQG)

Turnover, Fall

A physical phenomenon that may take place in a body of water during early autumn. The sequence of events leading to fall overturn include: (1) the cooling of surface waters; (2) a density change in surface waters producing convection currents from top to bottom; (3) the circulation of the total water volume by wind action; and (4) eventual vertical temperature equality. The overturn results in a uniformity of the physical and chemical properties of the entire water body. Also referred to as the fall overturn. (NALMS)

Turnover, Spring

A physical phenomenon that may take place in a lake or similar body of water during the early spring, most frequently in lakes located in temperate zones where the winter temperatures are low enough to result in freezing of the lake surface. The sequence of events leading to spring overturn include: (1) the melting of ice cover; (2) the warming of surface waters; (3) density changes in surface waters producing convection currents from top to bottom; (4) circulation of the total water volume by wind action; and (5) vertical temperature equality. The overturn results in a uniformity of the physical and chemical properties of the entire water mass. Also referred to as the spring overturn. (NALMS)

U

Upland

An area of dry land surrounding or upstream of a waterbody. (WCW)

V

W

Waste

Any solid or liquid material, product, or combination of them that is intended to be treated or disposed of or that is intended to be stored and then treated or disposed. This does not include recyclables. (ADR)

Wastewater

A combination of liquid and water-carried pollutants from homes, businesses, industries, or farms; a mixture of water and dissolved or suspended solids. (NALMS)

Wastewater Collection System

A system of sewers, valves, fittings, pumping stations, and accessories that is used to collect wastewater and transfer it to a wastewater treatment plant. (ADR)
Wastewater Lagoon
A wastewater treatment plant that consists of one or more designed and constructed surface impoundments used for biological and physical treatment of wastewater, but does not include such a plant where it uses mechanical aeration. (ADR)

Wastewater System
An organized process and associated structures for collecting, treating, and disposing of wastewater. It includes any or all of the following:
1. Sewers and pumping stations that make up a wastewater collection system.
2. Sewers and pumping stations that transport untreated wastewater from a wastewater collection system to a wastewater treatment plant.
3. Wastewater treatment plants.
4. Facilities that provide storage for treated wastewater.
5. Wastewater sludge treatment and disposal facilities.
6. Sewers that transport treated wastewater from a wastewater treatment plant to the place where it is disposed of.
7. Treated wastewater outfall facilities, including the outfall structures to a watercourse or any structures for disposal of treated wastewater to land or to wetlands (EPEA)

Wastewater Treatment
Any of the mechanical or chemical processes used to modify the quality of waste water in order to make it more compatible or acceptable to man and his environment. (NALMS)

Wastewater Treatment Plant
Any structure, thing, or process used for the physical, chemical, biological, or radiological treatment of wastewater before it is returned to the environment. The term also includes any structure, thing, or process used for wastewater storage or disposal, or sludge treatment, storage, or disposal. (ADR)

Water Act
A piece of provincial legislation in Alberta used to protect the quality of water and manage its distribution. The Water Act regulates all developments and activities that might affect rivers, lakes, or groundwater. (WFL)

Water Allocation
The permitted volume, rate, and timing of a diversion of water outlined in a water licence. When water is permitted to be redirected for a use other than for domestic purposes, it is referred to as an allocation. Agricultural, industrial, and municipal water users must apply to AENV for a licence to use a set allocation of water. (GWMT)

Water Allocation Transfer
A water allocation transfer occurs after the holder of an existing water withdrawal licence agrees to provide all or part of the amount they are allocated to another person or organization and Alberta Environment approves the transfer. When this occurs, the allocation is separated from the original land, and a new licence, with the seniority of the transferred allocation, is issued and attached to the new location. Under the Water Act, Alberta Environment can place conditions on the new licence. Water allocation transfers can occur only if authorized under an approved water management plan, or by the Lieutenant Governor in Council. (GWMT)

Water Balance
(1) A measure of the amount of water entering and the amount of water leaving a system. Also referred to as Hydrologic Budget. Also see Hydrologic Equation. (2) The ratio between the water assimilated into the body and that lost from the body; also, the condition of the body when this ratio approximates unity. (NALMS)
Water Body
Any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent, or occurs only during a flood. This includes, but is not limited to, wetlands and aquifers. (WFL)

Water Conservation
Any beneficial reduction in water use, loss, or waste. Water management practices that improve the use of water resources to benefit people or the environment. (WCEP)

Water Conservation Holdback
The Director may withhold up to 10 percent of the water from a licence being transferred, to protect the aquatic environment or implement a water conservation objective. This holdback applies to permanent and temporary transfers, but only to the volume of water being transferred. The holdback does not apply where a temporary transfer reverts to the original licence. (WA)

Water Conservation Objective
As outlined in Alberta’s Water Act, a water conservation objective is the amount and quality of water set by a Director for the protection of a natural water body or its aquatic environment; the protection of tourism, recreational, transportation or waste assimilation uses of water; or the management of fish or wildlife. (GWMT)

Water Co-op
An organization formed by consumers of water to divert and distribute water for their mutual benefit. (BRBC)

Water Cycle
See Hydrologic Cycle.

Water Distribution System
An organized process and associated structures of pipes, valves, fittings, and accessories, including associated pressure reducing stations, that are used to convey potable water in a waterworks system to a service connection. (EPEA)

Water Efficiency
1. Accomplishment of a function, task, process, or result with the minimal amount of water feasible.
2. An indicator of the relationship between the amount of water needed for a particular purpose and the quantity of water used or diverted. (WCEP)

Water Flooding
A conventional enhanced recovery process in which water is pumped into a well to maintain the reservoir pressure so hydrocarbon recovery is enhanced. Also referred to as Secondary Recovery. (WCAG)

Water for Life: Alberta’s Strategy for Sustainability
The Government of Alberta’s new water management approach, outlining a comprehensive set of strategies and actions that will ensure Albertans have safe, secure drinking water, healthy aquatic ecosystems, and a reliable quality water supply for a sustainable economy. (GWMT)

Water Harvesting
The capture and use of runoff from rainfall and other precipitation (e.g: the collection of rainwater in cisterns). (HWUC)

Water Licence (water diversion licence)
A water licence provides the authority for diverting and using surface water or groundwater. The licence identifies the water source, the location of the diversion site, an amount of water to be diverted and used from that source, the priority of the “water right” established by the licence, and the conditions under which the diversion and use must take place. (WFL)
**Water Licence Conditions**
Water licence provisions that specify monitoring, reporting, diversion timing, or diversion volume requirements and site or project restrictions. (WCAG)

**Water Licence in Good Standing**
This term is used in Alberta’s Water Act, but is not defined in it. Before a water allocation can be transferred, a Director must consider whether the allocation is “held under a licence in good standing.” The licence has to be in good standing at the time the Director considers the application (that is, it already exists in good standing or the licence holder brings the licence into good standing prior to the time when the Director considers the application to transfer.) Examples of a licence not in “good standing” are a licence that is: (1) in breach of the Water Act, (2) subject to an investigation under the Water Act, (3) subject to enforcement and prosecution, (4) in breach of terms and conditions of the licence, (5) in non-compliance with the terms and conditions of the licence (e.g. did not build the diversion site within the specified period). (SSRB)

**Water Licence Renewal**
A process specified in the Water Act for the review and continuation of a water diversion licence whose term is nearly finished. (WCAG)

**Water Licence Term**
The length of time for which an allocation of water is granted under a Water Act licence. (WCAG)

**Water Licence Transfer**
See Water Allocation Transfer.

**Water Management**
The protection and conservation of water and aquatic ecosystems, including their associated riparian area. In Alberta, several agencies have a mandate in this area. Alberta Environment is responsible for water quality, quantity monitoring, and water allocations. Under the Water Act a Director can set Water Conservation Objectives to protect minimum flow and aquatic ecosystem health. Stakeholders can recommend Water Conservation Objectives to a Director via a Water Management Plan or an Approved Water Management Plan. Alberta Sustainable Resource Development (SRD) manages crown lands including the bed and shores of all water bodies. SRD, through its Fish and Wildlife Division, is also responsible for fisheries and wildlife management. In addition, the Federal Department of Fisheries and Oceans upholds a no-net-loss policy in its mandate to protect fisheries habitat under the Federal Fisheries Act. (Partnerships)

**Water Management Plan**
A document developed under the Water Act that provides broad guidance regarding water conservation and management, sets clear and strategic directions regarding how water should be managed, or results in specified actions. Alberta’s Framework for Water Management Planning outlines the process for water management planning and the components required for water management plans. The process applies to all water bodies in Alberta, including streams, rivers, lakes, aquifers, and wetlands. The plans may be considered by a Director when making licence and approval decisions. An Approved Water Management Plan must be considered by a Director when making licence and approval decisions. (FocusOn)

**Water Marketing**
A concept of water use borne out of increased demand by urban populations for water whereby a holder of water rights is allowed to sell or lease those rights in an open market to the highest bidder. (NALMS)
Water Mastering
The monitoring and enforcement of the Water Act’s “first-in-time, first-in-right” priority allocation system by Regional AENV staff responsible for water management. This is done for the purpose of limiting water withdrawals when diversions exceed the water supply during low water periods. Depending on the availability of water, water licenses with low (most recent) priority numbers (date at which a water license is issued) are requested to either limit their water withdrawals or refrain from withdrawals of any amount. (FFFAQ)

Water Meter
A device that measures the quantity of water used at a house, business, factory, etc. Cities that have implemented a water meter system and charge people according to the amount of water consumed use less water than those cities that charge a flat rate for water. (WFLWeb)

Water Power Development
The works required for the storage or diversion of water for the production of power. (WA)

Water Pricing
The placing of a dollar value on an amount of water. Most Albertans currently pay a price, based on volume, for having water treated and delivered to their homes, but not for the actual water itself. (WFLWeb)

Water Productivity
The amount of water that is required to produce a unit of any good, service, or societal value. (WCEP)

Water Quality
The chemical, microbiological, and physical characteristics of water. (FWMP)

Water Quality Based Effluent Limits
An effluent limit that is derived by calculating how much of a given contaminant can be discharged under certain restrictive (worst case) conditions while still maintaining in-stream objectives or water conservation objectives. These worst case conditions are chosen to occur infrequently enough that if water quality objectives are exceeded, it will not cause undo stress on the receiving environment (i.e. the ecosystem can rapidly recover). (WQLM)

Water Quality Guidelines
The allowable contaminant concentration in water. Guidelines are used to define water quality according to the use of the water source. For example, water quality guidelines are developed for drinking water, agricultural, industrial, and recreational water use and for the protection of aquatic life. (AARDWeb)

Water Quality Indicators
 Constituents or characteristics of water that can be measured to determine its suitability for use. (NALMS)

Water Quality Management Area
Under the Canada Water Act, an area designated for restoring, maintain, or improving the quality of water in rivers or other bodies of water. For water outside of federal jurisdiction, a water quality area is only designated if water quality management planning is of urgent national concern and if there is an agreement with the directly affected province(s). No water quality management areas have been designated in Alberta. (BRBC)

Water Quality Standard
The allowable contaminant concentration in a water supply that is enforceable under environmental control laws set by provincial or federal governments. Water quality standards are site-specific. For example, the quality of an industrial effluent that is emptied into a body of water must maintain a certain standard so that it does not significantly change the receiving water body’s quality. (AARDWeb)
Water Quantity
The volume or amount of water. (FWMP)

Water Rights
A legal claim to water when the water is available. (BRBC)

Water Table
The top of the saturated zone in the ground, where water fills the spaces in the soil and rock. (AARDWeb)

Water Treatment Plant
The physical components of the waterworks system that are used to produce potable (drinkable) water. (ADR)

Water Well
An opening in the ground, whether drilled or altered from its natural state, that is used for the production of groundwater, obtaining data on groundwater, or recharging an underground formation from which groundwater can be recovered. By definition in the provincial Water Act, a water well also includes any related equipment, buildings, and structures. (WFL)

Water Withdrawal Licensing Process
Under the Water Act, a system for managing water used for human and industrial consumption while protecting the water body. (Partnerships)

Watercourse
The bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh or other natural body of water, or a canal, ditch, reservoir or other artificial surface feature made by humans, whether it contains or conveys water continuously or intermittently. (EPEA)

Watercourse Crossing
A permanent or temporary crossing and any associated permanent or temporary structures that are or will be constructed to provide access over or through a waterbody. (EPEA)

Watering Point
A waterworks system that provides potable water in bulk to the public. (ADR)

Watershed
The area of land that catches precipitation and drains into a larger body of water such as a marsh, stream, river, or lake. A watershed is often made up of a number of sub-watersheds that contribute to its overall drainage. (WRCG)

Watershed Approach
A way of thinking and acting that focuses efforts within a watershed, taking into consideration both ground and surface water flow. This approach recognizes and plans for the interaction of land, water, plants, animals, and people. Focusing efforts at the watershed level gives the local watershed community a comprehensive understanding of local management needs and encourages locally led management decisions. (WFL)

Watershed Management
The protection and conservation of water and aquatic ecosystems, including their associated riparian area. Because land use activities on the uplands of a watershed can affect ground and surface water quality and quantity, a broader, more comprehensive approach to planning is often required. A Watershed Management Plan may look at water quantity, water quality, aquatic ecosystems, riparian area, as well as a variety of land use issues as they impact water. Watershed management plans require water and land use managers to work together to ensure healthy watersheds. (Partnerships)
Watershed Management Plan
A comprehensive document that addresses many issues in a watershed including water quantity, water quality, point and non-point-source pollution, and source water protection. It may or may not include a Water Management Plan. It may also examine ways to better integrate land and resource management within a watershed. (Partnerships)

Watershed Management Planning
A comprehensive, multi-resource management planning process involving all stakeholders within the watershed, who, together as a group, cooperatively work toward identifying the watershed’s resource issues and concerns as well as develop and implement a watershed plan with solutions that are environmentally, socially and economically sustainable. (NSWA)

Watershed Planning and Advisory Council (WPAC)
Collaborative, independent, volunteer organizations with representation from all key partners within the watershed. Their mandate is to engage governments, stakeholders, other partnerships, and the public in watershed assessment and watershed management planning, while considering the existing land and resource management planning processes and decision-making authorities. (Partnerships)

Water Re-use
Any beneficial use of the treated wastewater directed to a specific purpose other than the general release to the surface or subsurface environments. (PSSSPH)

Watershed Stewardship Group (WSG)
Community-based groups made up of volunteer citizens, often supported by local businesses and industries, who have taken the initiative to protect their local creek, stream, stretch of river, or lake. These proactive groups develop on-the-ground solutions to ensure the protection of their specific watersheds. (WFL)

Water-Short Area
A region where natural conditions or development pressures limit the availability of surface water and groundwater for future sustainable development and protection of the aquatic environment. (WCAG)

Waterworks System
Any scheme providing potable water to a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the Métis Settlements Act, municipal development, industrial development, or privately owned development or private utility. The term also includes the following parts: water wells, surface water intakes, water supply lines, water storage facilities, water pumphouses, water treatment plants, potable water transmission mains, potable water storage facilities, potable water pumping facilities, water distribution systems, and watering points. (EPEA)

Weir
An overflow structure frequently used for measuring discharge.
1. In dam terminology, the crest of a spillway controlling the upstream surface level.
2. A structure in a water body over which water flows, and whose prime purpose is to raise the water level, usually to divert water into a watercourse. (ISDG)

Wet Pond
Located at the end of a storm sewer trunk line, this storage area remains full of water. During a storm, the water in the pond rises above its normal level, allowing water to be retained for a sufficient time for downstream flooding to be reduced and water quality improvement to occur prior to the discharge of the stormwater to a stream or other waterbody. (BRBC)

Wetland
Land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, water-loving vegetation, and various kinds of biological activity which are adapted to a wet environment. (WRCG)
Wetland Banking
A term used to describe actions required to be taken on the part of developers to mitigate and replace the loss of wetlands. The replacement process allows for the creation or restoration of any number of wetlands to provide replacement credit for future wetlands impacts or debits, i.e., reductions in existing wetlands. Wetland banking not only insures successful wetland restoration, but also typically requires that replacement occurs before targeted wetlands are removed, thereby at least temporarily increasing the overall amount of wetlands. Also, wetland banking credits may frequently be sold in an open market arrangement thereby facilitating both more efficient land use planning and habitat preservation. (NALMS)

Wetland Compensation
Payment into a fund for wetland restoration work. (WRCG)

Wetland Loss
Includes infilling, altering, or physically draining a wetland, any impact to the riparian area or buffer strips, and any type of interference with the hydrology to and from a wetland. (WRCG)

Wetland Margins
The ordinarily dry land adjacent to a wetland (e.g. marsh, bog, fen, or pond) that depends on the presence of a wetland to provide water and habitat for plants and animals. (BRBC)

Wetland Mitigation
A process to reduce the loss of wetlands, focusing on avoiding loss, minimizing impact, and compensating for unavoidable wetland loss. (WRCG)

Wetland Restoration
The re-establishment of a naturally occurring wetland with a functioning natural ecosystem whose characteristics are as close as possible to conditions prior to its drainage or alteration. (WRCG)

Wetland Restoration Agency
An organization responsible for restoring drained wetlands to near natural conditions. Their responsibilities include securing land rights, obtaining approvals/licences under authority of the Water Act, completing restoration works, operating and monitoring the restored wetlands, keeping records, and reporting to Alberta Environment. (WRCG)

White Area (White Zone)
1. The settled regions of Alberta where agriculture is the most significant land use, including the grasslands and parklands of southern and central regions, and the Peace Country in the north. (WCAG)
2. The White Area includes nearly 40% of the total area of Alberta. (BRBC)

Works
With regard to water, any structure, device or contrivance made by persons, or part of it, including a dam and canal, and the land associated with it. The term also includes its associated mitigative measures. (WA)
TERMS LISTED BY CATEGORY

Biology

Algae
Algal Bloom
Anoxic
Aquatic Ecosystem
Aquatic Environment
Aquatic Macrophyte
Aquatic Species
Bacteria
Baseline Data
Benthic Invertebrates
Blue-Green Algae
Biochemical Oxygen Demand
Biocriteria
Biological Diversity
Chlorophyll a
Cumulative Effects
Dissolved Oxygen
Drought
Ecological Integrity
Ecosystem
Environment
Environmental Quality
Eutrophic
Eutrophication
Evapotranspiration
Fish Habitat
Fishery
Flood
Flood, 100-Year
Fluvial
Groundwater Recharge
Habitat
Hydrologic Cycle
Hydrophytic
Hypereutrophic
Indicator
Mesotrophic
Microorganisms
Natural Capital
Nutrient
Oligotrophic
Pathogen
Pesticide
pH
Pollutant
Riparian
Riparian Health Assessments
Trophic Status
Turnover, Fall
Turnover, Spring
Water Body
Water Cycle

Enforcement & Compliance

Administrative Penalty
Adverse Effect
Apportionment Agreement
Approval
Assurance
Code of Practice
Command and Control Approach
Compliance Assessment
Compliance Assurance
Designated Director
Directly Affected Person
Economic Instruments
Enforcement
Enforcement Order
Enforcement Response
Environmental Assessment
Environmental Protection and Enhancement Act
Environmental Protection Order
Flexible Regulatory and Non-Regulatory Tools
Guideline
Legislation
Market-Based Instruments
Ministerial Order
Non-Compliance
Non-Regulatory Instruments
Preventative Order
Prosecution
Referral
Regulation
Regulator
Regulatory Instruments
Remedial Order
Self-Regulation
Standard
Statement of Concern
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Water Act
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Glossary of Water Terms Used in Alberta

Alberta Environment

November 2008
Mixing Zone
Multi-Banner Approach
Municipal Water Use
Non-saline Water
Outfall
Potable Water
Primary Wastewater Treatment
Raw Water
Recycled Water
Relief Stormwater Trunk
Saline Groundwater
Saline Water
Sanitary Sewer Overflow
Secondary Wastewater Treatment
Septage
Septic System
Settling Pond
Sewage
Sewage Treatment
Sewer
Sludge
Stormwater
Stormwater Drainage System
Surface Water
Tertiary Wastewater Treatment
Treat
Treated Wastewater
Waste
Wastewater
Wastewater Collection System
Wastewater Lagoon
Wastewater System
Wastewater Treatment
Wastewater Treatment Plant
Water Co-op
Water Distribution System
Water Meter
Water Pricing
Water Re-Use
Water Treatment Plant
Water Well
Watering Point
Waterworks System
Wet Pond

**Water Licensing**

Apportionment Agreement
Approval
Approvals Manager
Approved Water Management Plan
Conjunctive Use

Consumptive Use
Crown Reservation
Cubic Feet Per Second
Dam³
Designated Director
Diversion of Water
Domestic Water Use
First-in-Time, First-in-Right
Groundwater
Household Purposes
In-stream Flow
In-stream Flow Needs
In-stream Objectives
Inter-Basin Transfer
Intra-Basin Transfer
Major River Basin
Master Agreement on Apportionment
Municipal Water
Naturalized Flow
Net Diversion of Water
Non-Consumptive Use
Non-Point Source Pollution
Non-Saline Water
Off-Stream Use
Outfall
Permanent Water Licence
Point Source Pollution
Potable Water
Potentially Water Short Area
Preliminary Certificates
Prior Appropriation
Priority
Priority Number
Registration
Regulator
Release
Retrofit Provision
Return Flow
Riparian Owner
Riparian Rights
Runoff
Temporary Diversion License
Term Water Licence
 Tradable Water Rights
Traditional Agricultural Registration
Water Allocation
Water Allocation Transfer
Water Conservation
Water Conservation Holdback
Water Conservation Objective
Water Co-op
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### Water Operations

- Berm
- Check Dam
- Control Dam
- Dam
- Dam³
- Dike
- Drawdown
- Emergency Spillway
- Fish Ladder
- Flood
- Flood, 100-Year
- Floodway
- Freeboard
- Full Supply Level
- Headworks
- Height of Dam
- Impoundment
- Intake
- Low Level Outlet
- Outlet
- Outlet Gate
- Probable Maximum Flood
- Reservoir
Reservoir Area
Reservoir Capacity
Riparian Outlet
Riprap
Seepage
Service Spillway
Spillway
Spillway Capacity
Stilling Basin
Top of Dam
Weir

Water Quality
Acute Effects
Alkalinity
Ambient
Assimilative Capacity
Bacteria
Biochemical Oxygen Demand
Biocriteria
Case-Specific Technology Limit
Chlorophyll a
Chronic Effects
Coliform Bacteria
Concentration
Contaminant
Deleterious Substance
Discharge
Effluent Plume
End-of-Pipe Limit
Erosion
Guideline
Hardness
Leachate
Leaching
Load Discharge
Major Ions
Maximum Daily Limit
Mixing Zone
Organic Contaminants
Pesticide
pH
Point Source Pollution
Pollutant
Pollutant Load
Polycyclic Aromatic Hydrocarbons
Release
Runoff
Sector-Specific Technology Agreement
Sediment
Sedimentation
Siltation
Specific Conductance
Suspended Solids
Threshold
Total Dissolved Solids
Total Maximum Daily Load
Total Suspended Solids
Turbidity
Water Quality
Water Quality Based Effluent Limits
Water Quality Guidelines
Water Quality Indicators
Water Quality Management Area
Water Quality Standard
Water Quantity

Wetlands
Aquifer
Artificial Wetland
Bog
Ephemeral Wetland
Fen
Groundwater Recharge
Marsh
Naturally Occurring Wetland
Peatland
Qualified Wetland Aquatic Environment Specialist
Riparian Area
Shallow Open Water
Slough
Wet Pond
Wetland
Wetland Banking
Wetland Compensation
Wetland Loss
Wetland Margins
Wetland Mitigation
Wetland Restoration
Wetland Restoration Agency
# REFERENCES

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<td>ADWP</td>
<td><em>Alberta’s Drinking Water Program: A ‘Source to Tap, Multi-barrier’ Approach</em> Alberta Environment, 2008 Unpublished</td>
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<td>CHRS</td>
<td>Canadian Heritage River Society <a href="http://www.chrs.ca/Main_e.htm">http://www.chrs.ca/Main_e.htm</a></td>
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<td>SREM Office, 2006</td>
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Alberta NAWMP Partnership & Alberta Environment, 2007
http://www.environment.alberta.ca/documents/Provincial_Wetland_Restoration_Compen-

WRPG  Wetland Restoration Program Guide
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