



*Rain and Snow:
"Stormwater" Free For All?*

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A 3D graphic of the words "THANK YOU" in a light blue, blocky font. The letters are arranged in two lines, with "THANK" on top and "YOU" below it. The text is set against a black, slightly tilted rectangular background. The letters have a slight shadow and a 3D effect, giving them a sense of depth.

Overview of Identified Issues

1. What is the difference between precipitation and storm drainage?
2. Is the diversion and use of precipitation or storm drainage as new water supply sources currently prohibited, or regulated and controlled in Alberta under the *Water Act*? What about under EPEA?
3. Is it currently within the jurisdiction of the Province to require a person who wants to divert and use storm drainage to apply for a water allocation license?
4. What is the impact of unregulated diversion and use of precipitation or storm drainage on senior licensees under FITFIR?
5. A word about using non-potable water as a means to achieve “water conservation”.
6. Recommendations to the provincial government.

What is the difference between precipitation and storm drainage?

“Precipitation” is rain or snow etc. falling to the ground.^[1]



“Storm drainage” means storm drainage, which may include industrial runoff, resulting from precipitation in a city, town, new town, village, summer village, hamlet, settlement area within the meaning of the *Metis Settlements Act*, municipal development or privately owned development.^[2]

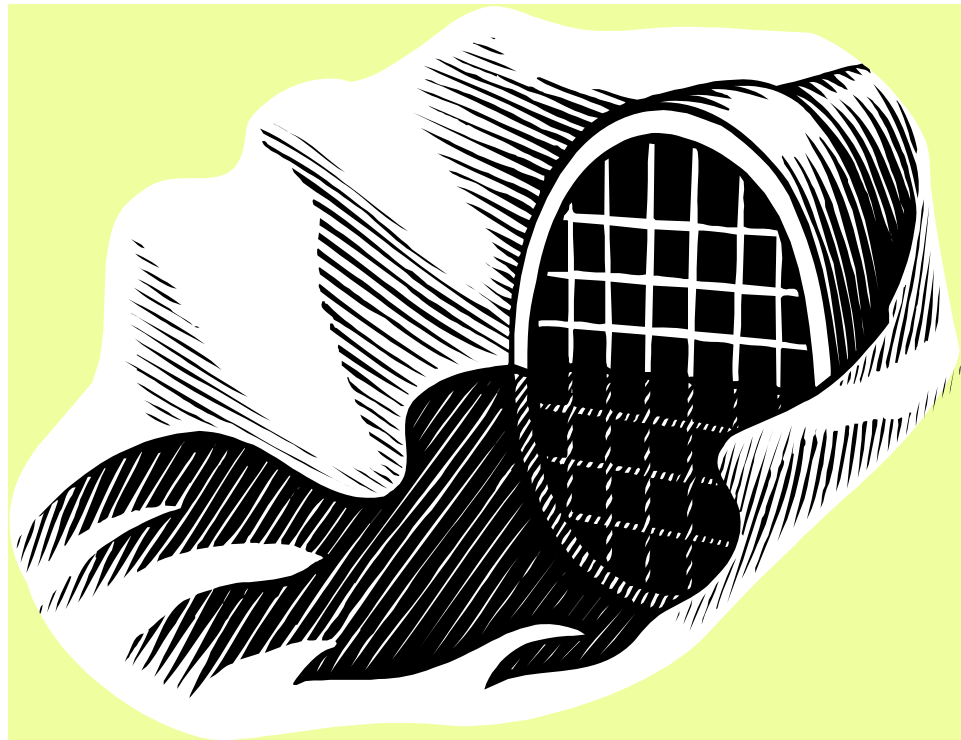
[1] Oxford English Reference Dictionary

[2] Wastewater and Storm Drainage Regulation, Alta. Reg.137/96, s.1(o).

Storm drainage results from precipitation

after it falls on the surface of the ground.

Storm drainage is simply a form of “surface water”. It is water on the surface of the ground.



Is diversion and use of precipitation currently prohibited, or regulated and controlled under the *Water Act*?

No. Precipitation is currently is not included in the definition of “water” under the *Water Act*. It is “falling to the ground”, but, it is not on or under the surface of the ground.

“water” means all water on or under the surface of the ground, whether in liquid or solid state.” (*Water Act*)

The government did not intend to prohibit, or regulate and control the diversion and use of precipitation.

In 1994, the following definition of “water” was proposed in the “*Discussion Draft of Legislation: Water Conservation and Management Act*”:^[1]

“water” means all water on, above or under the surface of the ground, whether in liquid, gaseous or solid state, including but not limited to ice.”

If the Legislature intended to include precipitation as water for the purpose of the *Water Act*, they could have done so. They deliberately chose not to when they changed the definition before they enacted the *Water Act* in 1999.

^[1] Alberta Environmental Protection, *Discussion Draft of Legislation: Water Conservation and Management Act* (Edmonton: Alberta Environmental Protection, 1994).

1999 definition of “water” and why is this important?

“water” means all water on or under the surface of the ground, whether in liquid or solid state.” (*Water Act, 1999*)

This definition deliberately omits precipitation or water in a gaseous state in the atmosphere.

What is the difference between precipitation and storm drainage?

Precipitation is water above the surface of the ground.

Precipitation on a rooftop is not on the surface of the ground anymore than a bird in a tree is on the surface of the ground.

Storm drainage is surface water. It is water that results from precipitation after it falls on the surface of the ground.

Is the diversion and use of storm drainage as a water supply source currently prohibited, or regulated and controlled under the *Water Act*?

Diversion and use of storm drainage as a water supply source *distinct from other surface water* was not contemplated in 1999 when the *Water Act* was enacted.

But, storm drainage is surface water: therefore the property in storm drainage is vested in the Province and the diversion and use of storm drainage as a water supply source requires a license under the *Water Act*, *unless exempt*.

Does the diversion and use of storm drainage for any purpose require a license under the *Environmental Protection and Enhancement Act*?

No. An applicant who wants to construct a “storm drainage collection system” needs a “registration”* under EPEA for an activity, and must follow design, construction and maintenance standards and the guidelines provided by the government.

An “approval” to construct and operate a storm drainage collection system granted prior to 2003 may include authority to divert and use storm drainage for specified purposes (see previous regulation 119/93)*. Those previous “approvals” are deemed to be “registrations” with no expiry date under Alta Reg. 276/2003, s.11(1.1)(2).

* *Wastewater and Storm Drainage Regulation*, 119/93 amended to 137/96.

* *Activities Designation Regulation*, Alta. Reg. 276/2003

“Storm Drainage Treatment Facilities”

- The *Wastewater and Storm Drainage Regulation* was amended by Alta. Reg. 273/2003 and section 6.1 was added to address storm drainage treatment facilities, which were previously defined, but never addressed by regulation.
- All new facilities, and all modifications to facilities in existence in 2003, now require written authorization from the Director.

Storm drainage treatment facilitiescontinued

“Storm drainage treatment facility” means any structure or thing used for the physical, chemical or biological treatment of storm drainage, and includes any of the storage or management facilities which buffer the effects of the peak runoff.”

The new regulatory provisions for storm drainage treatment facilities do not authorize the diversion and use of storm drainage for any purpose.

Amendment to *Wastewater and Storm Drainage Regulation*

(An old *Wastewater and Storm Drainage Regulation** provision enabled the Director to provide a written authorization or a “letter of authority” to authorize the use of both storm drainage and “wastewater” in a manner and for purposes other than irrigation. (Section 9.1(1)).

The Regulation was amended, and now only “wastewater” diversion and use for purposes other than irrigation may be “authorized” under section 9.1(1).

Storm drainage was deliberately removed from the provision and there is no new regulatory provision to enable authorization of diversion and use of storm drainage for irrigation.

* Alta. Reg.137/96

What aspect of storm drainage does EPEA Regulate?

The diversion and use of storm drainage as a water supply source is not prohibited, or regulated and controlled under EPEA.

EPEA regulates the quality of water in the storm drainage collection system, design standards for construction and replacement of infrastructure, and the operation of systems to store or convey storm drainage.

What is a “storm drainage collection system”?

“storm drainage collection system” means any system of sewers, valves, fittings, pumping stations and appurtenances that is used to collect storm drainage, up to and including the service connection.^[1]

There is usually no “service connection” from buildings to a storm drainage collection system.

Precipitation flows from rooftops, into eave troughs, and downspouts onto the surface of the ground and the water runs off the surface into storm drainage sewers which collect and channel the runoff to receiving water bodies.

[1] Alta. Reg. 137/96, s.1(p). Also see the Activities Designation Regulation.

Is it currently within the jurisdiction of the Province to require a person who wants to divert and use storm drainage to apply for a water allocation license?

Yes. The diversion and use of all surface water in Alberta requires a license under the *Water Act*, *unless exempt.*

Storm drainage removed from the hydrological cycle in a watershed may impact the quantity of water in a receiving water body, or in a groundwater aquifer.

No-one knows for sure what the potential impact would be.

What is the impact on senior licensees under FITFIR of unregulated diversion and use of precipitation or storm drainage?

Under Alberta's first-in-time-first-in-right water allocation licensing system, a senior licensee is entitled to divert all of his/her licensed allocation before any licensee with a junior priority can access any of its allocation.

Unregulated diversion and use of large quantities of precipitation or storm drainage ahead of senior licensees may diminish the water supply such that senior licensees are unable to access their full entitlements under the current law.

No-one knows for sure.

Potential quantities of rainfall that could be harvested annually in the Calgary area between May and September

“Applying these numbers to the average rainfall in a given area, over a period of time helps to quantify just how much rainwater a harvesting system can collect. For instance, according to the Weather Network, the average rainfall in Calgary, Alberta totals 283 millimetres in its peak rain season between the months of May and September. Based on the aforementioned numbers and taking into account an efficiency rate of 75 to 90 percent, an installer of a rainwater harvesting system with a 1000 square-foot (.93 square dekametre) catchment surface in Calgary can anticipate collecting anywhere between 5,161.5 gallons (9,538 litres) and 6,193.8 gallons (23,447 litres) of rainwater over the same five month period.”

That's a Lot of Storm Drainage

If every householder with 1,000 sq. ft. of roof catchment area, **AND** every business and industrial rooftop owner (could be much larger than 1,000 sq. ft. of catchment area) all start to divert and use precipitation before it becomes storm drainage, that's a lot of storm drainage that might never evaporate, infiltrate, or runoff the landscape. The delay between precipitation events and normal functions of the hydrological cycle might have negative impacts on the natural ecosystem and senior licensees.

No-one knows for sure.

Diversion and Use of Precipitation and Storm Drainage as a new water supply source is not “Water Conservation”

Water conservation the way ordinary people describe it means that people demand less water from the hydrological cycle for their human needs-not more.

Diversion and use of precipitation and storm drainage as additional water supply sources to existing water allocation licenses in developing areas increases the demands for water for human needs within the hydrological cycle.

For example, the City’s water allocation license already includes a sufficient quantity of water for full build out of the city including the human demands for water for non-potable uses that might be satisfied by use of untreated waters. If the City is enabled to divert and use these additional waters, it will have more water than it applied for in its license.

This is not water conservation-it is decreasing the need and costs to acquire more licensed allocation and to treat water in community water supply treatment plants. It does not promote the responsible decrease of demand on the hydrological cycle per person.

Recommendations to Provincial Government

Alberta government should:

- Amend the *Water Act* definition of “water” to include water above the surface of the ground and water in a gaseous state as proposed in 1994.
- Exempt the requirement for a license for a limited amount of precipitation that can reasonably be diverted and used by householders through standard rooftop precipitation collection systems-perhaps 2 rain barrels per household can be kept full throughout the May to September season.
- Require that a commercial or industrial user of precipitation or storm drainage as a new water supply source obtain a license to divert and use those waters. They are not “free”. We should discourage free-riders on the current water allocation system.

Recommendations Continued

- **Exempt from licensing the diversion and use of specified amounts of treated storm drainage in storm drainage treatment ponds or “constructed wetlands” that have been approved and registered for irrigating lands in new subdivisions in urban residential and commercial developments.**
- **Fund more scientific study and modeling to understand the total amount of precipitation and storm drainage required to sustain healthy aquatic ecosystems within the watersheds of major river basins before allowing any storm drainage to be licensed as a water supply source.**

Questions?

