

The New Dam Safety Regulation Under British Columbia's *Water Sustainability Act*

The Water Sustainability Act

B.C.'s new ***Water Sustainability Act*** received Royal Assent in May 2014, after more than four years of public engagement and policy development. The new act will provide new tools to help ensure that water stays healthy and secure for future generations of British Columbians. Government plans to bring the new act into force early in 2016, at which time the existing *Water Act* — and regulations under the ***Water Act*** — will be repealed.

In order to implement the *Water Sustainability Act* government is replacing existing regulations authorized under the *Water Act*, updating other regulations, and developing new regulations to be phased over the next several years. This paper describes some of the proposed policies that government will consider for incorporation into a new Dam Safety Regulation.

Why is Government Developing a New Dam Safety Regulation?

The existing **Dam Safety Regulation** under the *Water Act* is a key component of government's **Dam Safety Program** for water storage dams. More than 1,500 dams in British Columbia regulate water levels in streams or create reservoirs to store water for hydro-electric power generation, agricultural irrigation, industrial use, municipal water supplies, or domestic use.

The regulation requires the owners of these dams to inspect their dams, undertake proper maintenance, report incidents, take remedial action, and ensure that the dams meet current engineering standards, all in order to protect public safety, and mitigate damage to property and the environment from a dam failure.

In order to ensure the ongoing implementation of these requirements, government is replacing the existing regulation with a new Dam Safety Regulation authorized under the *Water Sustainability Act*.

WHAT IS THE DIFFERENCE BETWEEN AN ACT AND A REGULATION?

An Act is a law that has been introduced in the Legislative Assembly as a Bill, has passed three readings and committee-study by the Legislative Assembly, and has received Royal Assent. Acts typically state legal requirements to advance the Acts' intent and objectives and establish the overall framework within which the government is expected to act.

A Regulation is "subordinate legislation" (made under the authority of an Act) that provides the details of how the requirements laid out in legislation are to be applied, and must remain inside the boundaries established by the Act. In B.C., the Lieutenant Governor in Council approves regulations



The proposed new regulation would incorporate most existing dam safety policies and closely resemble the existing regulation. It would also be aligned with the *Water Sustainability Act*, and include new policies designed to increase dam safety and awareness.

During the development of the Water Sustainability Act government provided opportunities for British Columbians to share their ideas online and through meetings. British Columbians made it clear throughout this process that dam safety is important to them.

The Water Sustainability Act and Dam Safety

Dam safety is addressed in the *Water Act* and will be addressed in the new *Water Sustainability Act* through water licence terms and conditions, statutory and common law obligations for dam owners, regulatory orders, and other regulatory approaches.

Many of the proposed changes to the Dam Safety Regulation reflect discussions between government officials, dam owners and operators, and engineering professionals over the past years, and changes in operational policies intended to reduce risk to the public, infrastructure, property and the environment.

Highlights of the New Dam Safety Regulation

DEFINITION OF “DAM”

The definition of ‘dam’ in the existing Dam Safety Regulation includes only structures that store water from a stream. The existing Dam Safety Regulation does not currently apply to dams built to capture groundwater. Such dams, however, pose the same risks to public safety, property and the environment, as do dams that impound stream water.

Accordingly, government proposes to amend the definition of ‘dam’ in the new Dam Safety Regulation to include those structures that impound water from an aquifer as well as those that impound water from a stream, and those that do both. The goal is to ensure that all dams that impound stream and/or groundwater are held to the same standard, in order to protect public safety.

DESCRIPTION OF AN EMERGENCY PLAN

The existing Dam Safety Regulation requires dam owners to prepare an Emergency Preparedness Plan that describes the actions the dam owner must take in the event of an emergency at the dam. The Canadian Dam Association recommends that dam owners prepare two emergency plans: an Emergency Response Plan for use by the dam owner and an Emergency Preparedness Plan that local authorities (e.g., local governments, emergency responders) could refer to in developing their own emergency plans.



WOULD THE REGULATION APPLY TO DUGOUTS?

Dugouts are temporary water storage reservoirs built to capture water during times of relative abundance, and to supply water during times of scarcity.

While most dugouts capture surface water runoff, some are designed to capture stream water or groundwater.

Government proposes that the design of a dugout would determine whether or not it is subject to the new Dam Safety Regulation (DSR). For example, while a simple hole in the ground would not be regulated under the DSR, a cut and fill dugout that includes a berm might be subject to the DSR if it meets the definition of ‘dam’ in the DSR.

Government proposes that the new Dam Safety Regulation would direct dam owners to prepare one written plan that describes the actions the dam owner must take in case of an emergency at the dam, and that also includes key information about the dam and emergency contacts. It would also require dam owners to provide information about the dam and emergency contacts to local authorities for emergency planning and response.

REQUIREMENT FOR ONE PRIMARY CONTACT

Where a dam has multiple owners, it is desirable that a single person be designated to be a point of contact in case of an emergency, to provide information and records, and to receive orders and other communications from provincial officials (e.g., Dam Safety Officers).

The new Dam Safety Regulation would include the requirement for a single point of contact for dams with multiple owners. All individual dam owners (even if a single point of contact is designated) would still be required to provide complete contact information and to fulfil their responsibilities under the Dam Safety Regulation and the *Water Sustainability Act*.

POSTING OF SIGNAGE ON DAMS

The existing Dam Safety Regulation sets out a risk classification system based on the consequences of a dam failure – from ‘low’ to ‘extreme’. The existing Dam Safety Regulation requires owners of higher risk dams that are on, or partially on, Crown land to post emergency contact information at either end of the dam. This provision does not currently apply to dams on other lands that the public might access, such as private, federal and municipal government lands.

Government proposes to extend the posting requirement to dams in local, regional or provincial parks to which there is public access, and to dams on other land accessible to the public. In addition, where dam owners are required to post signs, the new Dam Safety Regulation would require those signs to be located where they are most likely to be visible.

REVIEW OF DOWNSTREAM CONDITIONS

The existing Dam Safety Regulation does not currently require the owners of small dams with consequence of failure classified as ‘low’ to review downstream conditions from time to time. The presence of new developments downstream, however, might lead to a change in consequence classification, and subsequently a change of responsibilities for the dam owner.

Government therefore proposes to require all dam owners, regardless of dam height, storage capacity or failure consequence classification, to review downstream conditions on an annual basis, to re-assess the appropriateness of the dam’s classification, to notify the provincial Dam Safety Officer of any change in dam classification, and to meet the safety requirements associated with any new classification.

TYPES OF BARRIERS SUBJECT TO THE DAM SAFETY REGULATION

The existing Dam Safety Regulation (DSR) applies to dams of specified heights that impound specified volumes of water and are constructed to divert and store stream water. These include structures that regulate lake or river levels and that create reservoirs for hydro-electric power generation, agricultural irrigation, industrial use, municipal water supplies, and domestic use. As of February 12, 2015 about 1,560 such dams in British Columbia met the criteria for regulation under the DSR.

These dams are all regulated by the Ministry of Forests, Lands and Natural Resource Operations through the provincial Dam Safety Program. The new DSR would apply to the same set of dams, plus those that impound groundwater.

Not all dams in B.C. are subject to the DSR. Mine impoundments such as sediment control or sludge ponds, diversion channels, or tailings storage facilities (such as the one at the Mt. Polley mine site) are regulated under the *British Columbia Mines Act* and the Health, Safety and Reclamation Code for Mines in B.C., and are regulated by the Ministry of Energy and Mines.

In addition, the DSR does not apply to: dikes and sea walls; particular types of off-stream artificial storage (e.g. tanks, swimming pools, dugouts without berms); underground structures including aquifers, cisterns, caverns and caves; and barriers created by beavers, ice jams, landslides, and other natural causes.

HAZARDOUS CONDITIONS AT A DAM

The existing Dam Safety Regulation requires a dam owner to notify a Dam Safety Officer of hazardous conditions at a dam and of related actions taken by the dam owner. The new Dam Safety Regulation would require a dam owner to submit all relevant records to the Dam Safety Officer within a specific timeframe.

ADDITIONAL OPERATIONAL CHANGES

Government seeks to ensure that the provincial Dam Safety Program is consistent across British Columbia, and functions smoothly, efficiently and transparently for dam owners. To this end, government proposes that the new Dam Safety Regulation would also:

- » Replace the term “professional engineer” with a new term, “engineering professional”; this would allow both licensed professional engineers (P.Eng.) and persons holding an APEGBC limited licence to carry out reviews and oversee invasive dam investigation procedures — the latter only when such actions are acceptable and within the scope of the limited licence;
- » Clarify the distinction between ongoing site surveillance and formal, detailed inspection, and confirm that both are required;
- » Exempt investigations carried out under s. 10(4) (regarding drilling and other invasive activity within or near a dam) from requirements for approvals, licences or orders when appropriate;
- » Clarify the types of information (e.g., site surveillance records; information on hydraulic, hydrologic, seismic, geological and geotechnical conditions or concerns; records of staff training, tests of equipment operation) that the dam owner may need to provide to the Dam Safety Officer;
- » Extend the written notification period for suspension of normal operations, deactivation, decommissioning or removal of a dam from 60 to 90 days;
- » Extend the period of notice required before actual start-up of approved work from 14 to 30 days;
- » Provide clarity regarding the removal or decommissioning of instrumentation that is no longer required;
- » Provide greater discretion to the Comptroller or regional manager on the type of independent expert opinion a dam owner can be required to draw upon under different circumstances;
- » Clarify the minimum frequency of visual inspections in Schedule 2 of the Dam Safety Regulation; and
- » Allow owners of existing but previously unregulated dams (e.g., dams that impound groundwater) a reasonable period of time to transition to new Dam Safety Regulation requirements.



Next Steps

This paper describes new policies that government proposes to incorporate into a new Dam Safety Regulation under the *Water Sustainability Act*. Government will consider these policies in the fall of 2015. They are therefore subject to change, depending on government direction. Pending government review and approval of these policies, the new Dam Safety Regulation would be brought into force along with the *Water Sustainability Act* in 2016.

To support implementation of the new act, government is replacing or updating existing regulations related to essential water management activities, including authorizing stream water and groundwater use, water fees and rentals, changes in and about a stream, well construction and maintenance, and compliance and enforcement. Once work on these initial regulations is completed, government expects to initiate work on other regulatory components required to fully implement the *Water Sustainability Act*.

We invite you to share your ideas about the proposed new dam safety policies and Dam Safety Regulation by visiting the *Water Sustainability Act* blog at:

<http://engage.gov.bc.ca/watersustainabilityact/>

You may also send related questions and comments to government by email at livingwatersmart@gov.bc.ca.

FOR MORE INFORMATION

General Information About the *Water Sustainability Act* and Engagement

<http://engage.gov.bc.ca/watersustainabilityact/>

The *Water Sustainability Act*

http://leg.bc.ca/40th2nd/3rd_read/gov18-3.htm

The *Water Act*

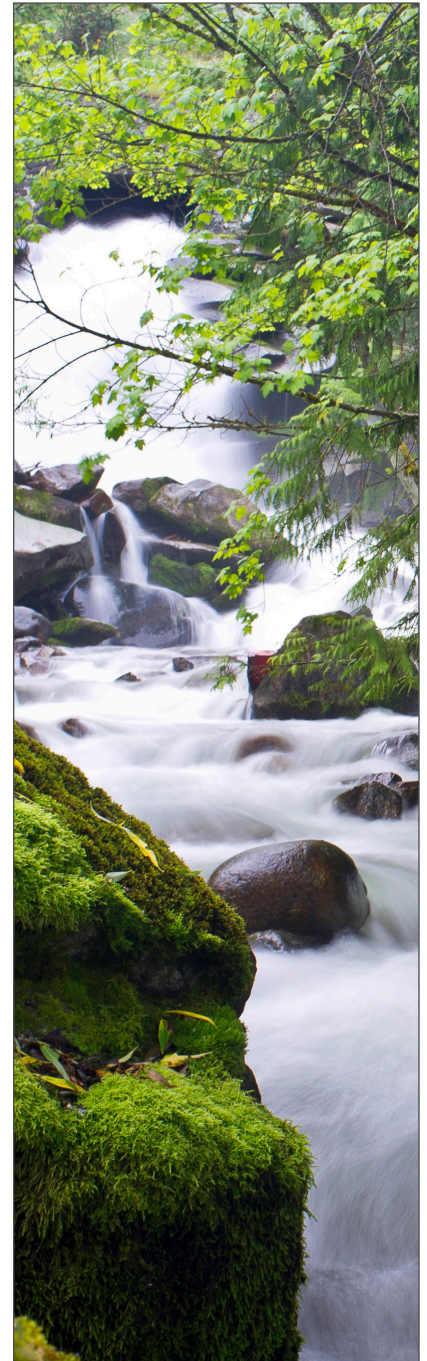
http://www.bclaws.ca/civix/document/id/complete/statreg/96483_01

The Provincial Dam Safety Program

http://www.env.gov.bc.ca/wsd/public_safety/dam_safety/

Dam Safety Regulation

http://www.bclaws.ca/Recon/document/ID/freeside/10_44_2000



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This paper describes proposed policies related to compliance and enforcement and is not intended to support interpretation of the Water Sustainability Act or the Violation Ticket Administration and Fines Regulation. The policies described are subject to review and approval by government.

