

INFORMATION SHEET

APPLICATION OF THE DAM SAFETY REGULATION

The **Dam Safety Regulation (B.C. Reg. 40/2016)** came into effect on February 29, 2016. This Information Sheet provides general information however dam owners are responsible for familiarizing themselves and complying with the regulation in its entirety. The regulation is available at www.gov.bc.ca/damsafety. In case of discrepancy between information contained herein and the regulation, the regulation takes precedence.

INTRODUCTION

The objective of the Dam Safety Regulation (O.I.C. 114, B.C. Reg. 40/2016) under the *Water Sustainability Act*, is to mitigate loss of life and damage to property and the environment from a dam breach by requiring dam owners to inspect their own dams, undertake proper maintenance on them, and ensure that these dams meet ongoing engineering standards.

WATER SUSTAINABILITY ACT

The *Water Sustainability Act* (Act) has authority over dams (considered works) and holds owners of dams liable for any damage caused by the construction, operation or failure of their dam. Under the Act, owners of dams are responsible for obtaining a water licence and complying with its terms and conditions.

TO WHOM THE REGULATION APPLIES

The regulation applies to owners of dams that store or divert water from a stream or aquifer or both. The height, live storage capacity and dam failure consequence classification of the dam determines which parts of the regulation, if any, apply.

1. Owners of **Minor Dams**, that meet the following criteria are **exempt** from the entire regulation unless the Comptroller of Water Rights (comptroller) or water manager determines otherwise:
 - less than 7.5 metres in height, and
 - able to impound no more than 10,000 m³ of water.
2. With the exception of the exempt minor dams above and regardless of consequence classification, dam height, or storage volume **all** dam owners must comply with all parts of the regulation except Part 3.
3. The entire regulation applies to owners of dams that meet the criteria specified in Part 3, Section 7:
 - 1 metre or more in height and capable of impounding a volume of water greater than 1,000,000 m³ live storage

- 2.5 metres or more in height and capable of impounding a volume of water greater than 30,000 m³ live storage,
- 7.5 metres or more in height, or
- Classified as significant, high, very high or extreme failure consequence.

CLASSIFICATION SYSTEM

All dams are classified according to their potential consequence of failure. Owners of dams have varying levels of obligations under the regulation which are directly related to the dam's failure consequence classification (see Schedule 1 of the regulation).

REGULATION REQUIREMENTS

All owners of dams, other than owners of *minor dams*, must satisfy the requirements specified in Part 2, and may also need to meet requirements in Part 4 and Part 5.

1. The ongoing regulatory requirements for all dams, except the exempt *minor dams* include:
 - determine the dam failure consequence classification, and annually review and if necessary revise and submit to the Dam Safety Officer for acceptance,
 - comply with the provisions of the regulation that apply to a dam having that consequence classification,
 - properly inspect, maintain and repair their dam in a manner that keeps the dam in good operating condition, and
 - prevent unauthorized operation of their dam.
2. Owners of dams meeting the criteria set out in Part 3, Section 7 of the regulation must undertake the following:
 - prepare, review and update the operation, maintenance and surveillance plan and dam emergency plan (except for low consequence dams) and submit to the Dam Safety Officer for acceptance,

- as part of the Dam Emergency Plan, prepare a record containing information to be submitted to the local emergency authorities.
 - prepare and erect signage at all dams located on Crown Land (except for low consequence dams) notifying passersby to report any problems to authorities,
 - obtain authorization under the Act when alternations or improvements to, or replacement of their dam is considered,
 - operate their dam in a manner, and initiate remedial actions, that will safeguard the public and the dam.
 - prepare a plan in response to any potential safety hazard,
 - notify and obtain authorization from the Dam Safety Officer prior to removing, decommissioning, deactivating or stopping normal operation of their dam,
 - report all significant findings resulting from inspections and/or dam safety reviews to the Dam Safety Officer,
 - install any instrumentation necessary to adequately monitor the performance of a dam,
 - carry out dam safety reviews (except for low and significant consequence dams), and
 - submit to the Dam Safety Officer, upon request, records relating to the inspection, test or review carried out in relation to their dam.
3. Additional requirements for all dam owners may include:
- where there are two or more owners of a dam, these owners must designate one of the owners for the purpose of receiving, providing and retaining information and records in relation to the dam,
 - where there are two or more owners of a dam, an owner may be exempt from the requirements of this regulation if the comptroller is satisfied that proper arrangements have been made for one or more of the other owners to take on responsibility for their dam and the owner holds no more than 5% of the total storage rights in respect of the dam, and
 - an owner of a dam may be required to obtain independent expert advice in relation to an issue respecting their dam, with qualifications and experience in dam safety analysis.

MINIMUM FREQUENCY OF SAFETY ACTIVITIES

All owners of dams, other than owners of *minor dams*, must carry out safety activities corresponding with the

dam's failure consequence classification at a minimum frequency as set out in Schedule 2 of the regulation.

ROLE OF THE RESPONSIBLE MINISTRY

The comptroller instituted the Provincial Dam Safety Program in 1967. The program's goal is to set design, construction, maintenance, and surveillance standards, and assist dam owners in meeting these standards.

Dam Safety Officers, located in each region and in Victoria, protect public safety by monitoring and auditing the activities of dam owners, providing education and awareness training and taking compliance and enforcement action when necessary.

The Dam Safety Regulation is an important component of the Provincial Dam Safety Program's objective to minimize the impact of dam failures.

MORE INFORMATION

The regulation and more information on dam safety can be obtained from the Dam Safety Program website: www.gov.bc.ca/damsafety

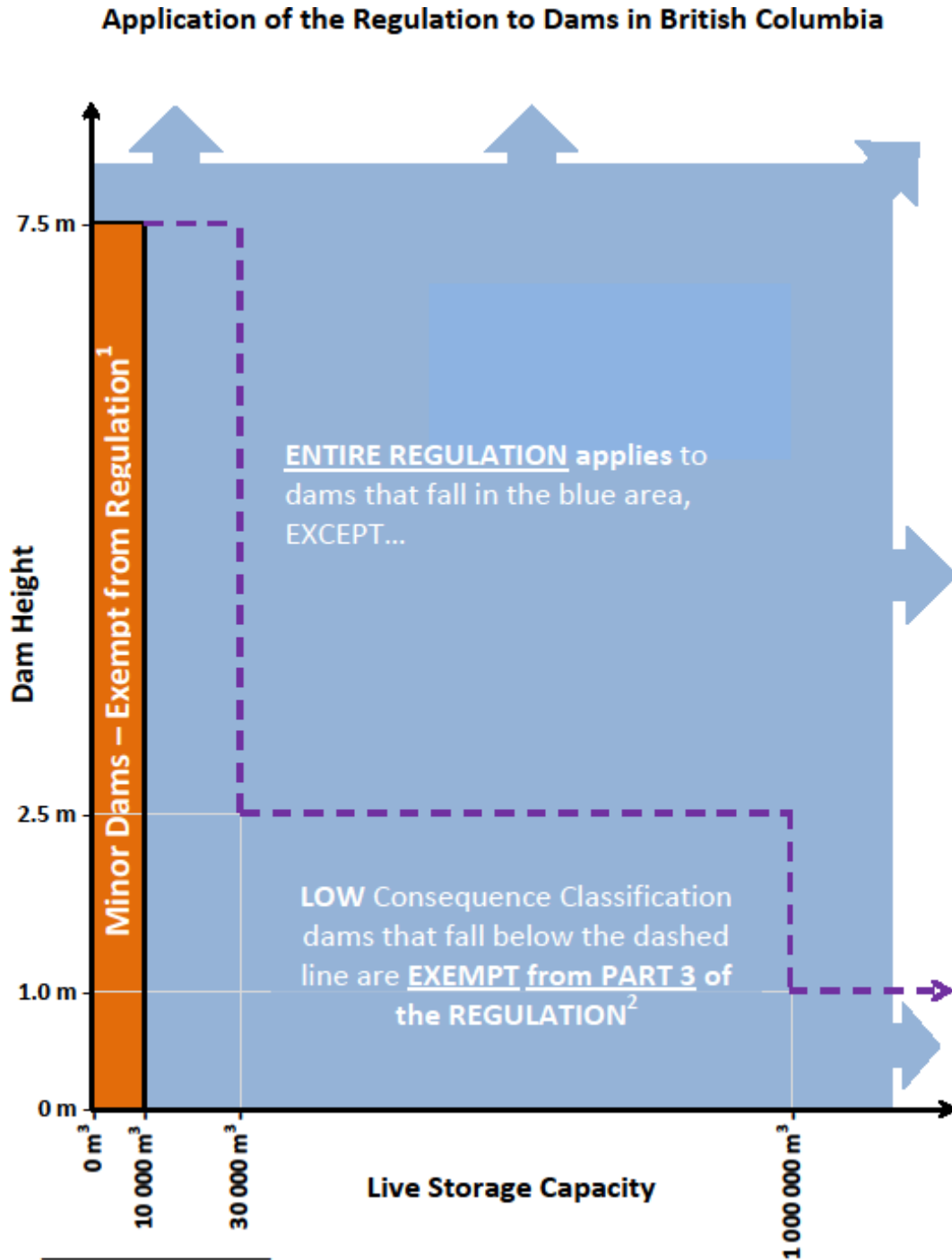
Or by contacting:

Dam Safety Section
Water Management Branch
PO Box 9340 Stn Prov Govt
Victoria B.C. V8W 9M1

Email: dam.safety@gov.bc.ca

Visit the Canadian Dam Associations' Dam Safety Guidelines and website at www.cda.ca

Figure A. Graph of dam height vs. dam live storage capacity which, along with dam failure consequence classification, determines what parts of the regulation applies. Height of dam is defined in S.1(4) of the regulation. Storage volume in the regulation refers to live storage capacity where “live” for the purpose of the regulation refers to the volume of water that would be released if the dam were removed and the ground returned to the natural grade. The storage volume upper elevation is at full supply level which is the spillway crest elevation. Note that for water licencing purposes the definition of live storage is different and specific to the licence.



1. Dam Safety Regulation 40/2016, Part 1, Section 2
 2. Dam Safety Regulation 40/2016, Part 3, Section 7

Table (Schedule 1)

Item	Column 1	Column 2	Column 3	Column 4	Column 5
	Dam failure consequences classification	Population at risk	Consequences of failure		
			Loss of life	Environmental and cultural values	Infrastructure and Economics
1	low	none ¹	no possibility of loss of life other than through unforeseeable misadventure	minimal short-term loss or deterioration and no long-term loss or deterioration of (a) fisheries habitat or wildlife habitat, (b) rare or endangered species, (c) unique landscapes, or (d) sites having significant cultural value	minimal economic losses mostly limited to the dam owner's property, with virtually no pre-existing potential for development within the dam inundation zone
2	significant	temporary only ²	low potential for multiple loss of life	no significant loss or deterioration of (a) important fisheries habitat or important wildlife habitat, (b) rare or endangered species, (c) unique landscapes, or (d) sites having significant cultural value, and restoration or compensation in kind is highly possible	low economic losses affecting limited infrastructure and residential buildings, public transportation or services or commercial facilities, or some destruction of or damage to locations used occasionally and irregularly for temporary purposes
3	high	permanent ³	10 or fewer	significant loss or deterioration of (a) important fisheries habitat or important wildlife habitat, (b) rare or endangered species, (c) unique landscapes, or (d) sites having significant cultural value, and restoration or compensation in kind is highly possible	high economic losses affecting infrastructure, public transportation or services or commercial facilities, or some destruction of or some severe damage to scattered residential buildings
4	very high	permanent ³	100 or fewer	significant loss or deterioration of (a) critical fisheries habitat or critical wildlife habitat, (b) rare or endangered species, (c) unique landscapes, or (d) sites having significant cultural value, and restoration or compensation in kind is possible but impractical	very high economic losses affecting important infrastructure, public transportation or services or commercial facilities, or some severe damage to residential areas
5	extreme	permanent ³	more than 100	major loss or deterioration of (a) critical fisheries habitat or critical wildlife habitat, (b) rare or endangered species, (c) unique landscapes, or (d) sites having significant cultural value, and restoration or compensation in kind is impossible.	extremely high economic losses affecting critical infrastructure, public transportation or services or commercial facilities, or some severe damage to residential areas

1 There is no identifiable population at risk.

2 People are only occasionally and irregularly in the dam-breach inundation zone, for example stopping temporarily, passing through on transportation routes or participating in recreational activities.

3 The population at risk is ordinarily or regularly located in the dam-breach inundation zone, whether to live, work or recreate.

Table (Schedule 2)

Item	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Activity	Frequency of Activity				
		Extreme classification	Very high classification	High classification	Significant classification	Low classification
Requirements under Part 2						
1	redetermine classification of dam and, if necessary submit to DSO written notice of proposed new classification	annually	annually	annually	annually	annually
Requirements under Part 3						
2	conduct site surveillance	weekly unless otherwise specified in the OMS manual	weekly unless otherwise specified in the OMS manual	weekly unless otherwise specified in the OMS manual	monthly unless otherwise specified in the OMS manual	quarterly
3	conduct formal inspection	semi-annually	annually	annually	annually	annually
4	test operation of mechanical components of dam, and electrical and communication equipment	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	annually
5	collect readings from instrumentation and analyze and interpret the readings	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	annually unless otherwise specified in the OMS manual	if and when required by a dam safety officer
6	review contact information in DEP, revise if necessary and report to DSO	annually	annually	annually	annually	not applicable
7	review emergency contact information and, if necessary, revise and submit revision to DSO	not applicable	not applicable	not applicable	not applicable	annually
8	review OMS manual and DEP, revise if necessary and report to DSO	every 7 years	every 7 years	every 10 years	every 10 years	not applicable
9	ensure dam safety review carried out and submit report to DSO	every 7 years	every 10 years	every 10 years	not applicable	not applicable