

# Flooding is the new normal in the Cowichan region. **So is being FloodSmart.**



Flooding risk in the Cowichan Watershed is a reality. Community growth, historic land management, increasing urbanization and changes to our climate have created 'new normal' conditions of winter flooding.

The Cowichan Valley Regional District (CVRD) has developed a plan to minimize flood risk, prevent flood damage and protect properties in the Cowichan Watershed's three floodplains: Cowichan Lake, Sahtlam and the Lower Cowichan/Koksilah (surrounding Duncan). This plan requires that all the affected communities work together — and you have an important role to play as well.

We need your support for these works and programs through Flood Management Service Bylaw No. 3918, which is now at the Alternative Approval Process (AAP) stage. The proposed bylaw is a requirement for the CVRD to receive federal and provincial funding to build critical flood protection infrastructure. The service bylaw will provide a modest annual fund to coordinate plan implementation, inspect and maintain dike infrastructure, remove ongoing gravel build-up in key locations to reduce overall flood risk, and establish an early flood warning system.

## The low cost of prevention

As a region, we have two options for addressing 'new normal' winter flooding.

Option one is to do nothing, and face millions of dollars in short- and long-term costs such as property damage and disaster clean-up. For example, the response cost of the relatively small event of 2009 caused over \$1.5 million in direct costs and unknown personal and business costs. We'll also face millions more in longer-term impacts to key infrastructure (roads, rail and community services), increased home insurance, pressure on our communities' emergency response services, and migration of businesses and residents out of our historic centres.

Option two is to take a prevention planning approach — which, in the long run, costs far less than disaster response. The CVRD is leading long-range planning for changing regional conditions and community resilience. We are working with government and business partners to protect vulnerable areas in our region and prevent property damage.

The Cowichan watershed has three main floodplain areas at risk: the Cowichan Lake flood zone, the Sahtlam/Riverbottom Road floodplain, and the Lower Cowichan/Koksilah floodplain. In 2007 the CVRD Board adopted the Cowichan Watershed Management plan which called for the CVRD to update the floodplain mapping in the watershed, which in 2004 became the responsibility of local governments by provincial legislation. Given the significance of the Lower Cowichan/Koksilah floodplain, it was identified as the first priority.

The plan identified many actions to be undertaken by various groups and partners including the City of Duncan, North Cowichan, Cowichan Tribes and CVRD. It outlines actions the CVRD and partners will take on an ongoing basis to prevent and protect against flooding — including removing gravel build-up in the river, building, maintaining and inspecting dikes in key locations, and developing an early warning system. The CVRD and its partners have received close to \$20 million in federal and provincial funding to build new infrastructure.

For more information, visit [cvrld.bc.ca](http://cvrld.bc.ca) or contact Manager Environmental Services, Kate Miller at (250)-746-2509 or [kmiller@cvrld.bc.ca](mailto:kmiller@cvrld.bc.ca).



## Cowichan River flood risk

The Cowichan River floodplain is approximately 2,200 hectares and crosses multiple jurisdictions: City of Duncan, Cowichan Tribes, Municipality of North Cowichan and Electoral Areas D-Cowichan Bay and E-Cowichan Station/Sahtlam/Glenora.

This flood flow map is the result of extensive surveying, hydrologic studies and ground mapping by the CVRD. It's one of many scenarios developed to illustrate what the flood pattern would look like in a high flow event. The red line indicates the possible reach of the Cowichan River in full flood without dikes or with a dike breach. Updated maps of the Cowichan Lake and Sahtlam floodplains have not been completed to date.



## Cowichan flood of 2009

There have been three significant floods in the floodplain in the past decade — in 2007, 2008 and again in 2009 when over 50 homes were flooded and damage to properties and businesses was extensive.



## Cowichan flood mitigation

Construction of dikes to protect the neighborhoods most affected by the 2009 flood has been completed. But there are still many critical areas that require this level of flood protection in the Duncan area, as well as in the watershed.

The goal is to complete the diking system on the Cowichan River, and the immediate priority is to build-up the section between the Trans-Canada Highway and Allenby Road to protect the area surrounding the City of Duncan and the Koksilah Industrial Park. This work involves building a small section of diking in Electoral Area E. Federal and provincial funding for this flood infrastructure work hinges on getting public approval of Flood Management Service Bylaw No. 3918.





# A plan to prevent and protect against flood damage in the upper and lower Cowichan Basin.

### Why has our risk of flood and drought increased?

Our risk of flooding has increased as population growth and development has occurred in the watershed's natural floodplains. Land use in the upper watershed has also increased the potential flood hazard by changing the watershed mechanics and how it holds water. In the lower reaches of the river, homes were built based on historic flood elevations and standards. Now, with an average of 18,000 cubic meters of gravel moving down the river every winter from the upper portions of the watershed to the floodplains, things are different. Flood elevations have increased and need to be reduced by ongoing gravel removal in key areas.

All of these changes have diminished our watershed's ability to hold, or manage, water effectively. This means that when a big rain event occurs, water simply floods through the watershed and out into the ocean, causing problems along the way. Climate change is also projected to bring more rain than snow, as well as potentially increase the intensity of rain events when they do occur, causing even more erosion and flooding.

### How is the CVRD moving forward on smart solutions?

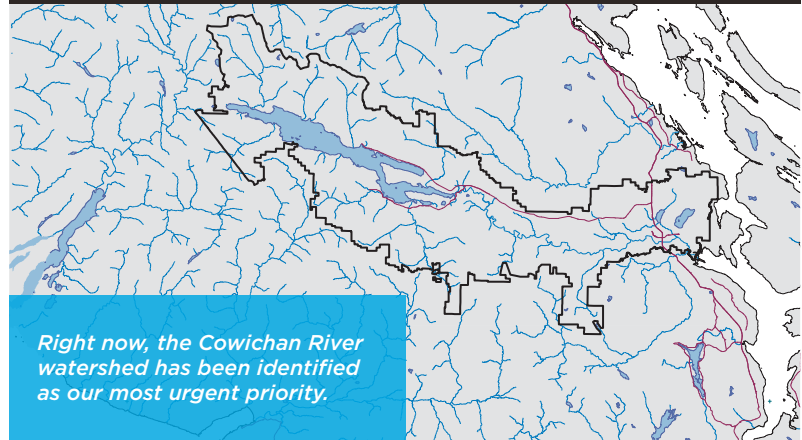
The CVRD is working with all communities in to put in place long-range, cost-effective solutions that keep our economy vibrant and minimize the impacts of extreme weather. Our aim is to make smart investments that save homeowners and business owners money.

### What is needed to manage flood risk?

To achieve better flood management in the watershed, we need to secure funding through the bylaw process, and to dedicate staff time to manage and coordinate flood management activities, leverage provincial and federal resources and work with the public to reduce flood risk.

The CVRD has undertaken much of this work informally under its environmental planning and management program. As we move from planning to implementation it is now necessary to have the approval a formal bylaw.

Cowichan River watershed flood management service plan area.



### How will the funds be used?

Flood Management Service Plan Bylaw No. 3918 could requisition up to a maximum of \$150,000 annually to do all of this important prevention and maintenance work on the Cowichan River Watershed — an amount that translates to an average of to \$2.65 per \$100,000 of residential assessed property value per year.

This includes support to:

- Maintain the diking systems that are built
- Remove gravel and log jams in key areas
- Maintain the early warning flood system

### Why is this bylaw important?

We have received funding from federal and provincial governments and need to establish a flood management authority to undertake ongoing flood infrastructure maintenance and inspection activities throughout the watershed. This is a fundamental requirement of funding, and Flood Management Service Bylaw No. 3918 formalizes this commitment and provides a maximum of \$150,000 per year, including staff time, to fulfil this requirement.

**Important note:** This bylaw has nothing to do with raising the Cowichan Lake weir.

# The AAP is a cost-effective way for the CVRD to get input from the community.

Despite the negative press it sometimes gets, the Alternative Approval Process (AAP) is a very useful, democratic tool for local governments in British Columbia to seek electoral approval without the cost and delays of a referendum. Here is an explanation of how the process works and why the CVRD and a majority of local governments opt to use this tool from time to time.

**CVRD Bylaw No. 3918 –**  
Cowichan Flood Management  
Service Establishment Bylaw, 2015

**AAP deadline:** December 2, 2015



If you are in support of the CVRD establishing a Flood Management Service Plan, **do nothing.**



If you want more information, visit **[cvrd.bc.ca](http://cvrd.bc.ca)** or call **250.746.2506.**



If you are opposed to the CVRD establishing a Flood Management Service Plan, **submit an Elector Response Form by Dec. 2nd, 2015**

### AAP background

The AAP is one of two options that can be used by the CVRD to seek public approval in regard to certain types of proposed bylaws, agreements or other matters. It is most commonly used in relation to long-term borrowing and service establishment bylaws. It is a less expensive option than using a referendum to obtain public approval.

### The AAP must follow these steps:

#### STEP ONE

Local government must publish two consecutive weekly notices in the newspaper outlining the purposes of a proposed bylaw, agreement or other matter where the approval of the electors is required.

#### STEP TWO

After the second notice, electors have at least 30 days in which to advise their local government that they are opposed to the matter. If more than 10% of the electors hold this opinion (i.e. sign an Elector Response Form provided by the CVRD), then the CVRD cannot proceed with the proposed bylaw, agreement, or other matter without holding a referendum.

### A citizen's role in the AAP

If you are **in favour** of a proposed bylaw — *you don't have to do anything.*

If you are **opposed to** a proposed bylaw, *you may indicate your opposition by signing an Elector Response Form.*

Elector Response Forms are available online, by mail and for pick-up at the CVRD Office at 175 Ingram Street, Duncan, from 8:00 am to 4:30 pm, Monday to Friday, excluding statutory holidays.

If more than 10% of eligible electors from the proposed service area submit an Elector Response Form, the Board of Directors cannot adopt the bylaw, unless a referendum is held and the bylaw is supported by more than 50% of the voters.

If you have any questions regarding the Alternative Approval Process, or have signed the form in error, please contact Corporate Secretary Joe Barry by email at [jbarry@cvrd.bc.ca](mailto:jbarry@cvrd.bc.ca) or by phone at 250.746.2506.

Forms can be downloaded here:

[www.cvrld.bc.ca/DocumentCenter/View/67353](http://www.cvrld.bc.ca/DocumentCenter/View/67353)

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