

March 2, 2021

## **NEWS RELEASE**

# **OKANAGAN AT RISK OF EXTREME FLOODING IF PROVINCE DOESN'T UPDATE LAKE LEVEL MANAGEMENT**

**Kelowna, B.C.** – The Okanagan Basin Water Board (OBWB) has sent a letter to the Province of B.C., requesting a review of how it manages Okanagan lake levels in an effort to address the worst effects of climate change. The correspondence is backed up by letters of support from municipal governments throughout the valley.

“We’re very concerned about the current lake level management and the risks of extreme flooding in the future,” explains OBWB Executive Director Anna Warwick Sears. “This is a serious problem we are facing. This is not hype.”

At issue is the current management plan which was designed in the 1970s and which doesn’t accommodate for climate change. The Okanagan has experienced severe flooding in recent years and recent flood mapping for the valley has signaled that the way the lake is managed needs to change.

The lake level issue was raised by the District of Peachland a few months back and has since been echoed by other valley municipalities. That, paired with the results shown by the maps, prompted the OBWB letter.

“There is an urgent need to have this review,” the letter states. “While preparing Okanagan mainstem lakeshore flood maps (published in 2020), Northwest Hydraulic Consultants found that the frequency of flooding would be unacceptably high if the Okanagan Dam at Penticton continued to be operated in the same manner, given the expected increase in flows due to climate change.... The technical report for this effort found that as a result of climate change, floods will ‘exceed the capacity of existing infrastructure if operational rules are not adjusted.’

“We are asking the Government of B.C. to, in the next five years, comprehensively review and update the Okanagan Lake Regulation System (OLRS) and its operating plan to prevent damaging floods of increasing severity, while protecting Okanagan fisheries and minimizing the risk of water shortages. We are also asking for the management and control structures of Kalamalka Lake to be formally designated as part of the OLRs, and included in the review.”

“We are asking that the plan be expanded to include Kalamalka because it has also been affected by high water levels and we know that all the water in this valley is connected,” Sears explained. “What affects one lakeside community can impact the next.

“Scientific modeling shows that we are going to experience more precipitation – both rain and snow – but it’s going to be unpredictable. At the same time, we’re also at heightened risk for drought because of climate change,” added Sears. “If we just manage the lake for flooding and draw it down too far, and then have less precipitation than expected in spring and summer, we could create an even greater water shortage.”

Adjusting lake levels can have significant impact on water availability for agriculture, residential use, and have severe consequences for fish. “We need to look at what is the best way to manage lake levels with the least impact,” she noted. As such, the OBWB is recommending that the province work closely with the Okanagan Nation Alliance, as well as affected stakeholders and the public.

“We believe the Okanagan Nation will be important leaders in this given their immense work to bring back sockeye and chinook salmon and the values they place on water.”

The OBWB has initiated a gap analysis, working with the provincial water manager who operates the dam in Penticton, to evaluate completed studies from recent years and determine what additional studies are needed. A recommended plan of studies will be released in April as well as a recommendation to include public engagement.

“It’s extremely important the public be provided information and be consulted because they will be impacted,” Sears concluded. “How we address lake levels into the future will affect each of us directly.”

Last May, the OBWB introduced new valley-wide flood maps and launched its “Okanagan Flood Story” website, helping residents and local governments understand flood concerns and prepare. To see the current flood maps, as well as to find a history of flooding in the Okanagan, learn how climate change is influencing flooding, and find out how residents and local government can reduce risk, prepare, respond, and recover, visit [www.OkanaganFloodStory.ca](http://www.OkanaganFloodStory.ca).

-30-

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February 25, 2021

**Honourable Katrine Conroy**; Minister of Forests, Lands; Natural Resource Operations and Rural Development ([FLNR.Minister@gov.bc.ca](mailto:FLNR.Minister@gov.bc.ca));

**Honourable Nathan Cullen**; Minister of State for Lands and Natural Resource Operations ([nathan.cullen.MLA@leg.bc.ca](mailto:nathan.cullen.MLA@leg.bc.ca));

## **RE: Okanagan flooding and the review of the Okanagan Lake Regulation System**

Dear Ministers Conroy and Cullen,

The Okanagan Basin Water Board (OBWB) is calling for the B.C. government to review how it manages Okanagan lake levels, including lake level targets, current flow management models and climate forecast methods. It is urgent to review the entire Okanagan Lake Regulation System (OLRS) and its operating plans, given the accelerating impacts of climate change on the watershed. This review will help reduce flood risk to Okanagan communities while still protecting Okanagan salmon restoration and minimizing the risk of water shortages.

I have attached the letters of support we have received to date from local communities. There will likely be more to follow. The Okanagan Nation Alliance and Chiefs of Okanagan bands have also been contacted and encouraged to take a leading role in the process.

### **Background**

Updating the OLRs involves considering the operations of the whole system of lakes from Kalamalka/Wood Lake to Osoyoos. The process of changing the plan for lake level operations is complicated, and it is essential to review and update the physical systems and operations plan within the next few years. Some of the issues include:

- If the lake level management is not changed, many Okanagan communities will be at extreme risk of flooding within the next several decades as a result of climate change.
- We need a comprehensive review of the management options and upgrades to the system of dams and control structures because protecting communities from flooding along the lakeshores and river channel could inadvertently increase the risk of water shortages in dry years.
- Changes to the operation of dams could either harm or benefit sockeye, kokanee, and chinook, as well as other aquatic species, depending on what decisions are made.
- We need to understand all the relative risks, as well as other opportunities to reduce the impacts of flooding – such as opportunities to increase setbacks from the water, and restore shorelines and disappearing wetlands.

There is an urgent need to have this review. While preparing Okanagan mainstem lakeshore flood maps (published in 2020), Northwest Hydraulic Consultants found that the frequency of flooding would be unacceptably high if the Okanagan Dam at Penticton continued to be operated in the same manner, given the expected increase in flows due to climate change. Working with the provincial dam operator, they modified the operational rules in the computer model to be more protective against flooding. This

means that floods will be higher and more frequent than the modeled flood levels noted on the new maps unless changes are made. According to the consultant's report:

*“Preliminary modifications to the OLRs Operating plan and guidelines were developed to mitigate projected future increases in floods. **If these modifications, or similar mitigations, are not implemented, the resulting flood flows and levels of the design events are expected to be more severe than mapped.**”<sup>1</sup>*

The modifications to the operating rules in the flood mapping project were only done for the purpose of modelling. The old rules are still in place. In order to make changes to the rules, additional work is needed to evaluate the relative risk of drought and flooding under climate change, associated environmental impacts, and how to manage for both extremes while minimizing harm. The consultant's report further states:

*“Prior to implementation, any change to the operational plan is expected to require review initially with the Okanagan Nation Alliance and Canadian Okanagan Basin Technical Working Group (COBTWG) and then with a wider stakeholder group. Given the currently projected rate of change in floods due to climate change, **review and subsequent implementation of revised operating rules is recommended within the next five years.**”<sup>2</sup>*

The Okanagan Basin Water Board has initiated a gap analysis, working with the provincial water manager who operates the dam in Penticton, to evaluate completed studies from recent years, and what additional studies are needed. This gap analysis should be completed by March 31, 2021.

The OBWB is specifically asking the Government of B.C. to undertake and/or fund the necessary studies identified by the gap analysis, and move forward with a review of the OLRs and its operating plan – with a goal to completing the review within the next five years.

### Information Related to the Review of the Okanagan Lake Regulation System

- We are asking the Government of B.C. to, in the next five years, comprehensively review and update the Okanagan Lake Regulation System (OLRS) and its operating plan to prevent damaging floods of increasing severity, while protecting Okanagan fisheries and minimizing the risk of water shortages. We are also asking for the management and control structures of Kalamalka Lake to be formally designated as part of the OLRs, and included in the review.
- The B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) manages the level of Okanagan Lake by operating the Okanagan Dam in Penticton, and other control structures that make up the OLRs, as well as the outlet of Kalamalka/Wood Lake.
- The OLRs operating plan was created in the mid-1970s and has only had minor modifications since that time. Under the current OLRs operating plan, the provincial dam operator has limited ability to manage water levels during spring freshet – and this is becoming more difficult as a result of climate change.

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<sup>1</sup> Okanagan Mainstem Floodplain Mapping (2020); Northwest Hydraulic Consultants; Chapter 7 Preliminary Recommendations: <https://www.obwb.ca/docs/2020-okanagan-floodplain-mapping-nhc-finalreport-highres-chapter7.pdf>

<sup>2</sup> Same as above.

- Recent modelling shows that climate change is already significantly affecting the timing of inflows to the Okanagan Lake system, and causing high year-to-year variability. In recent years, we have had increased early-season snowmelt, exacerbated by heavy spring rains, followed by prolonged dry periods. These trends are expected to continue to worsen into mid-century and beyond.
- The lakeshores of the mainstem Okanagan lakes and the Okanagan River channel have experienced flooding and high water events in three of the past four years, with particularly destructive and costly floods in 2017 and 2018.
- In 2020, the three Okanagan regional districts, and the OBWB published flood maps for the Okanagan mainstem lakes and river channel. The technical report for this effort found that as a result of climate change, floods will “exceed the capacity of existing infrastructure if operational rules are not adjusted...” *A primary recommendation of the report is that, to avoid high flood risk, the current operating rules should be comprehensively reviewed and amended within the next five years.*
- The Okanagan Nation must be a central partner in this review. The Okanagan Valley is the unceded and traditional territory of the Syilx/Okanagan People. The Okanagan Nation is the leading force behind the restoration of Okanagan salmon populations. All species of Okanagan salmon will be affected by changes in OLRs management, and any proposed changes to the OLRs and its operating plan must consider risks to salmon populations and aquatic habitats.
- The Okanagan is also at increased risk of drought from climate change, leading to potential shortages of water for agricultural irrigation and municipal water supplies, and harm to lakeshore environments. Any proposed changes to the OLRs and its operating plan must consider drought risks as well as flood risks.
- *The technical studies required for the review should be initiated as soon as possible, given that they will take time, and each year that goes by increases the risk that the Okanagan will experience another significant flood.*
- The management of the OLRs has international implications. Osoyoos Lake is managed under the Boundary Waters Treaty, following operating orders by the International Joint Commission. Flood waters and water shortages on the Okanagan system affect communities in Washington State.
- The previous OLRs operating plan was developed by a joint Federal, Provincial and Local initiative, the Okanagan Basin Study (1974)<sup>3</sup>. The full review and update of the OLRs and its operating plan should be done in partnership with the Okanagan Nation, and include extensive engagement and consultation with local communities, affected sectors and stakeholders; as well as the relevant provincial and federal ministries.
- The review and update of the OLRs is a provincial responsibility; however, there are many opportunities for partnerships and collaboration moving forward.

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<sup>3</sup> The Comprehensive Framework Plan of the Canada-British Columbia Okanagan Basin Agreement (1974): <https://www.obwb.ca/library/1974-okanagan-basin-study/>

Thank you for giving these matters your urgent attention, and I look forward to working with your ministries to bring the Okanagan Lake Regulation System into the 21<sup>st</sup> Century.



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### CC: Other Provincial Ministers:

- **Honourable Mike Farnsworth**; Minister of Public Safety and Solicitor General ([PSSG.Minister@gov.bc.ca](mailto:PSSG.Minister@gov.bc.ca));
- **Honourable George Heyman**; Minister of Environment and Climate Change Strategy ([ENV.Minister@gov.bc.ca](mailto:ENV.Minister@gov.bc.ca));
- **Honourable Lana Popham**; Minister of Agriculture, Food and Fisheries ([AGR.Minister@gov.bc.ca](mailto:AGR.Minister@gov.bc.ca));
- **Honourable Murray Rankin**; Minister of Indigenous Relations and Reconciliation ([IRR.Minister@gov.bc.ca](mailto:IRR.Minister@gov.bc.ca));
- **Jennifer Rice, MLA**; Parliamentary Secretary for Emergency Preparedness ([jennifer.rice.MLA@leg.bc.ca](mailto:jennifer.rice.MLA@leg.bc.ca));
- **Fin Donnelly, MLA**; Parliamentary Secretary for Fisheries and Aquaculture ([fin.donnelly.MLA@leg.bc.ca](mailto:fin.donnelly.MLA@leg.bc.ca));
- **Kelly Greene, MLA**; Parliamentary Secretary for the Environment ([kelly.greene.MLA@leg.bc.ca](mailto:kelly.greene.MLA@leg.bc.ca));

### Okanagan MLAs:

- **Harwinder Sandhu, MLA**; Vernon-Monashee ([harwinder.sandhu.MLA@leg.bc.ca](mailto:harwinder.sandhu.MLA@leg.bc.ca));
- **Norm Letnick, MLA**; Kelowna-Lake Country ([norm.letnick.MLA@leg.bc.ca](mailto:norm.letnick.MLA@leg.bc.ca));
- **Renee Merrifield, MLA**; Kelowna-Mission ([renee.merrifield.MLA@leg.bc.ca](mailto:renee.merrifield.MLA@leg.bc.ca));
- **Ben Stewart, MLA**; Kelowna West ([ben.stewart.MLA@leg.bc.ca](mailto:ben.stewart.MLA@leg.bc.ca));
- **Dan Ashton, MLA**; Penticton ([dan.ashton.MLA@leg.bc.ca](mailto:dan.ashton.MLA@leg.bc.ca));
- **Roly Russell, MLA**; Boundary-Similkameen ([roly.russell.MLA@leg.bc.ca](mailto:roly.russell.MLA@leg.bc.ca));

### Okanagan Indigenous Leaders:

- **Executive Director**; Okanagan Nation Alliance ([director@syilx.org](mailto:director@syilx.org));

- **Chief and Council;** Okanagan Indian Band ([stacy.yow@okanagan.org](mailto:stacy.yow@okanagan.org));
- **Chief and Council;** Westbank First Nation ([Christopher.Derickson@wfn.ca](mailto:Christopher.Derickson@wfn.ca));
- **Chief and Council;** Penticton Indian Band ([rim@pib.ca](mailto:rim@pib.ca));
- **Chief and Council;** Osoyoos Indian Band ([chief@oib.ca](mailto:chief@oib.ca));
- **Chief and Council;** Upper Nicola Indian Band ([chief@lsib.net](mailto:chief@lsib.net));
- **Chief and Council;** Lower Similkameen Indian Band ([chief@uppernicola.com](mailto:chief@uppernicola.com));

## Okanagan Local Governments:

- **Chair and Board of Directors;** Regional District of North Okanagan ([david.sewell@rdno.ca](mailto:david.sewell@rdno.ca));
- **Chair and Board of Directors;** Regional District of Central Okanagan ([brian.reardon@cord.bc.ca](mailto:brian.reardon@cord.bc.ca));
- **Chair and Board of Directors;** Regional District of Okanagan-Similkameen ([bnewell@rdos.bc.ca](mailto:bnewell@rdos.bc.ca));
- **Mayor and Council;** City of Armstrong ([kbertles@cityofarmstrong.bc.ca](mailto:kbertles@cityofarmstrong.bc.ca));
- **Mayor and Council;** Township of Spallumcheen ([doug.allin@spallumcheentwp.bc.ca](mailto:doug.allin@spallumcheentwp.bc.ca));
- **Mayor and Council;** City of Vernon ([wpearce@vernon.ca](mailto:wpearce@vernon.ca));
- **Mayor and Council;** District of Coldstream ([tseibel@coldstream.ca](mailto:tseibel@coldstream.ca));
- **Mayor and Council;** District of Lake Country ([adefeo@lakecountry.bc.ca](mailto:adefeo@lakecountry.bc.ca));
- **Mayor and Council;** City of Kelowna ([dgilchrist@kelowna.ca](mailto:dgilchrist@kelowna.ca));
- **Mayor and Council;** City of West Kelowna ([paul.gipps@westkelownacity.ca](mailto:paul.gipps@westkelownacity.ca));
- **Mayor and Council;** District of Peachland ([jmitchell@peachland.ca](mailto:jmitchell@peachland.ca));
- **Mayor and Council;** District of Summerland ([gstatt@summerland.ca](mailto:gstatt@summerland.ca));
- **Mayor and Council;** City of Penticton ([Donny.vanDyk@penticton.ca](mailto:Donny.vanDyk@penticton.ca));
- **Mayor and Council;** Town of Oliver ([ccowan@oliver.ca](mailto:ccowan@oliver.ca));
- **Mayor and Council;** Town of Osoyoos ([achabot@osoyoos.ca](mailto:achabot@osoyoos.ca)).

## Okanagan Members of Parliament:

- **Mel Arnold;** Okanagan – Shuswap ([Mel.Arnold@parl.gc.ca](mailto:Mel.Arnold@parl.gc.ca));
- **Tracy Gray;** Kelowna – Lake Country ([Tracy.Gray@parl.gc.ca](mailto:Tracy.Gray@parl.gc.ca));
- **Dan Albus;** Central Okanagan – Similkameen – Nicola ([Dan.Albas@parl.gc.ca](mailto:Dan.Albas@parl.gc.ca));
- **Richard Cannings;** South Okanagan – West Kootenay ([Richard.Cannings@parl.gc.ca](mailto:Richard.Cannings@parl.gc.ca)).



File: 0360-20-26

THE CORPORATION OF THE CITY OF VERNON

3400 - 30TH STREET VERNON, BRITISH COLUMBIA V1T 5E6  
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OFFICE OF THE MAYOR

February 9, 2021

Via email: [anna.warwick.sears@obwb.ca](mailto:anna.warwick.sears@obwb.ca)

Anna Warwick Sears  
Executive Director  
Okanagan Basin Water Board  
1450 KLO Road  
Kelowna, BC V1W 3Z4

Dear Ms. Sears:

**RE: Okanagan Flooding and the Review of the Okanagan Lake Regulation System**

Council, at their Regular Meeting held on February 8, 2021 passed the following resolution:

"THAT Council authorize the Mayor to execute a Letter of Support to the Okanagan Basin Water Board in support of a review and update of the Okanagan Lake Regulation System (OLRS) as detailed in the Memorandum from the Executive Director, Okanagan Basin Water Board, dated December 15, 2020.

CARRIED".

City of Vernon Council is in support that a review and update of the Okanagan Lake Regulation System (OLRS) be undertaken as soon as possible, given the accelerating impacts of climate change. We believe that this review could help reduce flood risks to the Okanagan communities while still protecting Okanagan fisheries and minimizing the risk of water shortages. We further support that the management and control structures of Kalamalka Lake be included in the review and to be included as part of the OLRs.

Sincerely,

Victor I. Cumming  
Mayor

Copy: Council





**Office of the Mayor**

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February 3, 2021

The Honourable Katrine Conroy  
Minister of Forests, Lands, Natural Resource  
Operations and Rural Development  
Province of British Columbia  
PO Box 9049 Stn Prov govt  
Victoria, BC V8W 9E2

The Honourable Nathan Cullen  
Minister of State for Lands and  
Natural Resource Operations  
Province of British Columbia  
Parliament Buildings  
Victoria, BC V8V 1X4

Dear Ministers:

**Re: Okanagan flooding and the review of the Okanagan Lake Regulation System**

The City of West Kelowna was subject to historic flooding in 2017 and 2018 along Okanagan Lake. The associated costs and impacts related to these events have had a major impact on our community. Recovery works from these extreme events have been on going since 2017 and are just now reaching completion.

With climate change accelerating the frequency of extreme events; it would be prudent to conduct a review of the Okanagan Lake Regulation System (OLRS) in the short term. A review of the OLRs could help reduce flood risk in the future while also considering Okanagan fisheries, water shortages and impacts to existing infrastructure. The review will need to be complex and will cross many jurisdictions and will therefore take some time. This further highlights the urgency to get started as quickly as possible.

The City of West Kelowna is writing in support of the Okanagan Basin Water Board's request to have the Okanagan Lake Regulation System reviewed with new operating procedures implemented within five years.

Sincerely,

A handwritten signature in blue ink that reads "Gord Milsom".

Gord Milsom  
Mayor

cc: Minister of Public Safety  
Minister of Environment and Climate Change Strategy  
Minister of Agriculture, Food and Fisheries  
Minister of Indigenous Relations and Reconciliation  
Parliamentary Secretary for Emergency Preparedness  
Parliamentary Secretary for Fisheries and Aquaculture  
Harwinder Sandhu, MLA, Vernon-Monashee  
Norm Letnick, MLA, Kelowna-Lake Country  
Renee Merrifield, MLA, Kelowna-Mission  
Ben Stewart, MLA, Kelowna West  
Dan Ashton, MLA, Penticton  
Roly Russell, MLA, Boundary-Similkameen  
Okanagan Basin Water Board



# The Corporation of the District of Peachland

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February 11, 2021

The Honourable Katrine Conroy  
Minister of Forests, Lands, Natural  
Resource Operations and Rural  
Development  
Province of British Columbia  
PO Box 9049 Stn. Prov. Govt.

The Honourable Nathan Cullen  
Minister of State for Lands and Natural  
Resource Operations  
Province of British Columbia  
PO Box 9049 Stn. Prov. Govt.

Dear Ministers:

RE: Okanagan flooding and the review of the Okanagan Lake Regulation System

Okanagan Lake flooding has become an annual occurrence of significant expense and irreparable damage to the Okanagan lakeside communities. The Okanagan Lake Regulation System (OLRS) was created in the mid-1970's and has only had minor modifications since that time. Recent modelling shows that climate change is already significantly affecting the timing of inflows to the Okanagan lake system, and causing high year-to-year variability. In recent years, we have had increased early-season snowmelt, exacerbated by heavy spring rains, followed by prolonged dry periods. These trends are expected to continue to worsen into mid-century and beyond.

The lakeshores of the mainstream Okanagan lakes and the Okanagan River channel have experienced flooding and high water events in three of the past four years, with particularly destructive and costly floods in 2017 and 2018.

The full financial impact of flood events are difficult to determine, however the following are direct financial impacts that the District of Peachland has experienced in the three most recent flood years:

Year	Flood Costs
2017	\$1,090,000
2018	\$93,000
2020	\$17,000

The costs above do not accurately express the total costs due to the flood events, as Provincial aid costs, private resident's costs and District resources are not included.

The flood events utilized significant staff resources ranging from administrative support to boots on the ground personnel and equipment. This resulted in substantial delays to District operations on annual operating project and capital project timelines. The events also drew a substantial number of hours from our paid-on call fire department. In each of 2017, 2018 and 2020, the flood response and recovery consumed in excess of 300 hours of District of Peachland fire fighter labour.



BEACH AVENUE - PEACHLAND, JUNE 2017

The flood events also have a major impact on businesses within the District of Peachland. In 2017, Beach Avenue, Peachland's main arterial road, was partially closed for almost a month and had hose bridges and pumps set up for almost 2 months. Similarly, boat traffic to Peachland was restricted due to boat launches and docks being closed or destroyed. This had a direct impact on many businesses, both during the flood events, but also following the event during the cleanup.



BEACH AVENUE - PEACHLAND, JUNE 2017

Our advocate, the Okanagan Basin Water Board is asking the Government of B.C. to, in the next five years, comprehensively review and update the Okanagan Lake Regulation System and its operating plan to prevent damaging floods of increasing severity, while protecting Okanagan fisheries and minimizing the risk of water shortages. They are also asking for the management and control structures of Kalamalka Lake to be formally designated as part of the OLRs, and included in the review.

The technical studies for the review should be initiated as soon as possible, given that they will take time, and each year that goes by increases the risk that the Okanagan will experience another significant flood.

Peachland Council urges the Province of British Columbia to conduct a comprehensive review of the Okanagan Lake Regulation System and its operating plan.

Yours truly,

Mayor Cindy Fortin

c. Minister of Public Safety  
 Minister of Environment and Climate Change Strategy  
 Minister of Agriculture, Food and Fisheries  
 Minister of Indigenous Relations and Reconciliation  
 Parliamentary Secretary for Emergency Preparedness  
 Parliamentary Secretary for Fisheries and Aquaculture  
 Harwinder Sandhu, MLA Vernon-Monashee  
 Norm Letnick, MLA Kelowna-Lake Country  
 Renee Merrifield, MLA Kelowna-Mission  
 Ben Stewart, MLA Kelowna West  
 Dan Ashton, MLA Penticton  
 Roly Russell, MLA Boundary-Simikameen  
 Peachland Council  
 Okanagan Basin Water Board



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February 8, 2021  
File No.: 0530-02

Minister Katrine Conroy  
Forests, Lands and Natural Resource Operations  
and Rural Development  
Province of BC  
Victoria, BC

Via Email: [FLNR.Minister@gov.bc.ca](mailto:FLNR.Minister@gov.bc.ca)

Dear Minister:

Re: Okanagan Lake Flooding and Review of the Okanagan Lake Regulation System

The Regional District of Central Okanagan (RDCO) is writing to express support of the Okanagan Basin Water Board's call for the Province to review how they manage Okanagan lake levels, including lake level targets, current flow management models, and climate forecast methods. This review could help reduce flood risk to Okanagan communities while still protecting Okanagan fisheries and minimizing the risk of water shortages.

Most municipalities within the Central Okanagan are focused on densifying urban areas, but many of these (notably Kelowna) have high population density on flood plains. In rural RDCO, there is flood risk during freshet to homes and infrastructure along creeks flowing from high-elevation areas to the main valley lakes. The distribution of our population along lakeshores and creeks makes our communities particularly vulnerable to flooding, requiring urgent consideration and planning of flood mitigation options.

As noted in the RDCO Regional Emergency Flood Plan 2013, the Region may experience flooding throughout the entire year due to natural or human made conditions and geography. In addition, ice jams, reservoir releases, and mechanical failure of flood protection works may also cause flooding. The **RDCO Strategic Priorities 2019-2022** identifies hazard management as priority with a need for a regional coordinated approach to efforts aimed at risk assessment, mitigation, and emergency planning. The **RDCO Regional Growth Strategy** provides overall direction to work with local governments and provincial agencies to assess and mitigate risks in floodplains.

During the spring of 2017 the Central Okanagan experienced extensive flooding resulting from unusually heavy spring precipitation. In 2018, flooding resulted from a late build-up of snow pack in the headwaters of watersheds throughout the region. In each year, the Emergency Operations Centre was activated to assist many private property owners to address the high water levels. There were significant losses and damage to private property, public spaces, infrastructure, fisheries resources and huge private and public costs for the response.

Recently completed modelling and flood hazard mapping shows that climate change is already significantly affecting the timing of inflows to the Okanagan Lake system, and causing high year-to-year variability. In recent years, we have had increased early-season snowmelt, exacerbated by heavy spring rains, followed by prolonged dry periods. These trends will continue to worsen into mid-century and beyond.

We are asking the Province of B.C. to, in the next five years, comprehensively review and update the Okanagan Lake Regulation System (OLRS) and its operating plan to prevent damaging floods of increasing severity, while protecting Okanagan fisheries and minimizing the risk of water shortages. The technical studies required for the review should be initiated as soon as possible, given that they will take time, and each year that goes by increases the risk that the Okanagan will experience another significant flood.

Thank-you for your timely consideration of this request.

Respectfully,



Gail Given  
Chair

cc:

Minister of State, Nathan Cullen, Nathan.cullen.MLA@leg.bc.ca

Minister of Public Safety, The Honourable Mike Farnsworth, PSSG.Minister@gov.bc.ca

Minister of Environment and Climate Change Strategy, The Honourable George Heyman,  
ENV.Minister@gov.bc.ca

Minister of Agriculture, Food and Fisheries, The Honourable Lana Popham, AGR.Minister@gov.bc.ca

Minister of Indigenous Relations and Reconciliation, The Honourable Murray Rankin,  
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Parliamentary Secretary for Emergency Preparedness, Jennifer Rice, MLA, Jennifer.rice.MLA@leg.bc.ca

Parliamentary Secretary for Fisheries and Aquaculture, Fin Donnelly, MLA, fin.donnelly.MLA@leg.bc.ca

Central Okanagan MLAs: Norm Letnick (norm.letnick.MLA@leg.bc.ca); Ben Stewart  
(ben.stewart.MLA@leg.bc.ca); Renee Merrifield (renee.merrifield.MLA@leg.bc.ca)

# COPY



29 December 2020

The Honourable Katrine Conroy  
Minister of Forests, Lands, Natural Resource  
Operations and Rural Development  
Province of British Columbia  
PO Box 9049 Stn Prov Govt  
Victoria, BC, V8W 9E2

The Honourable Nathan Cullen  
Minister of State for Lands and Natural  
Resource Operations  
Province of British Columbia  
Parliament Buildings  
Victoria, BC, V8V 1X4

Dear Ministers

**RE: Okanagan flooding and the review of the Okanagan Lake Regulation System**

The Okanagan Valley has been subject to historic floods in the valley bottom over the past few years. Whether this be an impact of climate change, or other factors, we believe it to be a harbinger of things to come. The cost to local governments and harm to our mutual constituents affected by flooding along our lakes has been catastrophic and is anticipated to continue. We know the Province of British Columbia takes climate change seriously and, we hope, that the evidence now available from the Okanagan Valley will make the whole system of lakes, from Kalamalka to Osoyoos, a priority for a management review.

Key to the success of any future endeavour to mitigate climate change and the resulting impact of lake levels in the Okanagan will be the management of the Okanagan Lake dam and control structures throughout the system. The Okanagan Lake Regulation System (OLRS) should be reviewed and updated, taking into consideration new modelling and the projections around climate change. We already know that our regional district is at the bottom of a much larger system and that if not addressed in advance, the results will end up as our problem.

We understand this proposed OLRS review will not be a simple matter. Our advocate, the Okanagan Basin Water Board, suggests that it will cross many jurisdictions and take years. It would be important, therefore, for the Ministry to take the leadership role and get the process started now. If the Okanagan Lake Dam at Penticton continues to be operated under the current plan, given the expected impact of climate change, the status quo is not acceptable. Our current research suggests that unless changes are made, flooding in our communities along the lakes will increase, fish stocks may suffer; or, on the other hand, if not managed properly we may experience periods of drought.

Our request is that, within the next five years, the Province of British Columbia conduct a comprehensive review of the Okanagan Lake Regulation System and its operating plan.

Sincerely,

A handwritten signature in black ink that reads "Karla Kozakevich". The signature is fluid and cursive.

Karla Kozakevich  
Chair

c. Okanagan Basin Water Board





13211 Henry Ave, Box 159  
Summerland BC V0H 1Z0  
Tel: 250-494-6451 Fax: 250-494-1415  
[www.summerland.ca](http://www.summerland.ca)

February 5, 2021

File #: 0530-50

The Honourable Katrine Conroy  
Minister of Forests, Lands, Natural Resource  
Operations and Rural Development  
PO Box 9049 Stn Prov Govt  
Victoria, BC V8W 9E2

The Honourable Nathan Cullen  
Minister of Lands and Natural Resource  
Operations  
PO Box 9352 Stn Prov Govt  
Victoria, BC V8W 9M1

Attention: Minister Conroy [FLNR.Minister@gov.bc.ca](mailto:FLNR.Minister@gov.bc.ca) and  
Minister Cullen [nathan.cullen.MLA@leg.bc.ca](mailto:nathan.cullen.MLA@leg.bc.ca)

**Re: Okanagan Flooding and the review of the Okanagan Lake Regulation System**

Dear Ministers,

On behalf of Council, I am requesting that, over the next five years, the Government of B.C. comprehensively review and update the Okanagan Lake Regulation System (OLRS) and its operating plan to prevent damaging floods of increasing severity, while protecting Okanagan fisheries and minimizing the risk of water shortages. We are also asking for the management and control structures of Kalamalka Lake to be formally designated as part of the OLRs, and included in the review.

The B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) manages the level of Okanagan Lake by operating the Okanagan Dam in Penticton and other control structures that make up the OLRs, as well as the outlet of Kalamalka/Wood Lake.

The existing OLRs operating plan was created in the mid-1970s and has only had minor modifications since that time. Under the current OLRs operating plan, the provincial dam operator has limited ability to manage water levels during spring freshet; this is becoming more difficult as a result of climate change.

Recent modelling shows that climate change is already significantly affecting the timing of inflows to the Okanagan Lake system and causing high year-to-year variability. In recent years, we have had increased early-season snowmelt, exacerbated by heavy spring rains, followed by prolonged dry periods. These trends will continue to worsen into mid-century and beyond.

The lakeshores of the mainstem Okanagan lakes and the Okanagan River channel have experienced flooding and high water events in three of the past four years, with particularly destructive and costly floods in 2017 and 2018. In Summerland, these flood events had major impacts to our waterfront facilities and infrastructure. As a result, the District had to undertake repairs to the following:

- Powell Beach Park & Parking Lot - \$585,000
- James & Mary Gartrell Trail - \$125,000

- Peach Orchard Beach and Rotary Beach Pathway - \$540,000
- Rotary Beach Docks - \$120,000
- Lakeshore Drive - \$485,000
- Eneas Creek - \$785,000

*(Note – the budget amounts include the total cost of the repairs as well as amounts contributed through Disaster Financial Assistance.)*

In 2020, the three Okanagan regional districts and the OBWB published flood maps for the Okanagan mainstem lakes and river channel. The technical report for this effort found that as a result of climate change, floods will “exceed the capacity of existing infrastructure if operational rules are not adjusted...” **A primary recommendation of the report is that, to avoid high flood risk, the current operating rules should be comprehensively reviewed and amended within the next five years.**

The Okanagan Nation must be a central partner in this review. The Okanagan Valley is the unceded and traditional territory of the Syilx/Okanagan People. The Okanagan Nation is the leading force behind the restoration of Okanagan salmon populations. All species of Okanagan salmon will be affected by changes in OLRs management, and any proposed changes to the OLRs and its operating plan must consider risks to salmon populations and aquatic habitats.

The Okanagan is also at increased risk of drought from climate change, leading to potential shortages of water for agricultural irrigation and municipal water supplies, and harm to the lakeshore environments. Any proposed changes to the OLRs and its operating plan must consider drought risks as well as flood risks.

The technical studies required for the review should be initiated as soon as possible, given that they will take time, and each year that goes by increases the risk that the Okanagan will experience another significant flood or drought.

The management of the OLRs also has international implications. Osoyoos Lake is managed under the Boundary Waters Treaty, following operating orders by the International Joint Commission. Flood waters and water shortages on the Okanagan system affect communities in Washington State.

The previous OLRs operating plan was developed by a joint federal, provincial and local initiative, the Okanagan Basin Study (1974)<sup>1</sup>. The full review and update of the OLRs and its operating plan should be done in partnership with the Okanagan Nation, and include extensive engagement and consultation with local communities, affected sectors and stakeholders, as well as the relevant provincial and federal ministries.

The review and update of the OLRs is a provincial responsibility; however, there are many opportunities for partnerships and collaboration moving forward. The District of Summerland is looking forward to the review and update of the OLRs management system.

Sincerely,



Mayor Toni Boot  
District of Summerland

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<sup>1</sup> The Comprehensive Framework Plan of the Canada-British Columbia Okanagan Basin Agreement (1974): <https://www.obwb.ca/library/1974-okanagan-basin-study/>



Cc: Dr. Anna Warwick-Sears, Okanagan Basin Water Board  
**Honourable Mike Farnsworth**, Minister of Public Safety and Solicitor General  
**Honourable George Heyman**, Minister of Environment, Climate Change Strategy and Translink  
**Honourable Lana Popham**, Minister of Agriculture, Food and Fisheries  
**Honourable Murray Rankin**, Minister of Indigenous Relations and Reconciliation  
**Jennifer Rice, MLA**, Parliamentary Secretary for Emergency Preparedness  
**Fin Donnelly, MLA**, Parliamentary Secretary for Fisheries and Aquaculture  
**Kelly Greene, MLA** Parliamentary Secretary for the Environment

January 14, 2021

Anna Warwick Sears, Executive Director  
Okanagan Basin Water Board  
1450 KLO Road  
Kelowna BC V1W 3Z4

Dear Ms. Sears:

**Re: Okanagan flooding and the review of the Okanagan Lake Regulation System**

Thank you for your correspondence dated December 15, 2020 seeking valley-wide support for a review and update of the Okanagan Lake Regulation System (OLRS) which includes the Okanagan Lake Dam, and control structures throughout the system; as well as the OLRs operating plan.

Lake level management decisions on Okanagan Lake propagate downstream, influencing the Okanagan River, and lakes in the South Okanagan. The Okanagan River flows through the Town of Oliver and is critical to our community. Climate change and the variable and unpredictable weather that impacts the water levels in Okanagan Lake are of great impact to all residents of the South Okanagan.

The technical studies required for the OLRs review should be initiated as soon as possible, given that they will take time, and each year that goes by increases the risk that the Okanagan will experience another significant flood.

Council supports OBWB's call for the Province of British Columbia to review the OLRs.

Yours truly,



Martin Johansen, Mayor  
cc Council



January 5, 2021

**Honourable Katrine Conroy**; Minister of Forests, Lands; Natural Resource Operations and Rural Development ([FLNR.Minister@gov.bc.ca](mailto:FLNR.Minister@gov.bc.ca))

and

**Honourable Nathan Cullen**; Minister of State for Lands and Natural Resource Operations ([nathan.cullen.MLA@leg.bc.ca](mailto:nathan.cullen.MLA@leg.bc.ca))

Dear Ministers Conroy and Cullen,

RE: Okanagan flooding and a review of the Okanagan Lake Regulation System

I am writing on behalf of the Town of Osoyoos, its residents, home and business owners and Town Council in regards to the need for a review of the Okanagan Lake Regulation System.

With increasing frequency, recent years have seen heightened risk of flooding and drought in the Okanagan Valley and South Okanagan including the Osoyoos region and lake. In 2018 the level of Osoyoos Lake reached flood levels that damaged public infrastructure (foreshore retaining walls, parks and beaches and sanitary sewer lift stations) and private properties. We are only now just completing recovery efforts from that event and tallying the costs to the community.

Improved management and new operating guidelines for the Okanagan Lake Regulation System (OLRS) may have many benefits including reducing the risk of flooding and protection Okanagan fisheries and reducing the risk of water shortages. The resurgence of salmon in the Okanagan lakes and river system in the past few years is remarkable and should remain a target goal supporting the Okanagan Nation's cultural traditions and food supply.

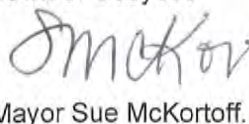
Protecting agricultural production and municipal water supplies from drought are also anticipated benefits of an updated operating plan and review of the OLRs. Protecting our freshwater resources is critical to the health of our local economy and community.

The management of the OLRs has international implications. Osoyoos Lake is managed under the Boundary Waters Treaty, following operating orders by the International Joint Commission. Flood waters and water shortages on the Okanagan system also affect communities in Washington State. The review of the OLRs must be done in partnership with the Okanagan Nation, affected communities, citizens, stakeholders as well as relevant provincial and federal ministries.

Respectfully we support the Okanagan Basin Water Board's call for a review of the OLRs and we look forward to having the technical studies needed being commenced as soon as possible.

Thank you for considering our request.

Yours truly,  
Town of Osoyoos

  
Mayor Sue McKortoff.

c. (all via email)

**Honourable Mike Farnsworth**; Minister of Public Safety and Solicitor General  
(PSSG.Minister@gov.bc.ca)

**Honourable George Heyman**; Minister of Environment and Climate Change Strategy  
(ENV.Minister@gov.bc.ca)

**Honourable Lana Popham**; Minister of Agriculture, Food and Fisheries (AGR.Minister@gov.bc.ca)

**Honourable Murray Rankin**; Minister of Indigenous Relations and Reconciliation  
(IRR.Minister@gov.bc.ca)

**Jennifer Rice, MLA**; Parliamentary Secretary for Emergency Preparedness  
(jennifer.rice.MLA@leg.bc.ca)

**Fin Donnelly, MLA**; Parliamentary Secretary for Fisheries and Aquaculture (fin.donnelly.MLA@leg.bc.ca)

**Kelly Greene, MLA**; Parliamentary Secretary for the Environment (kelly.greene.MLA@leg.bc.ca);

**Harwinder Sandhu, MLA**; Vernon-Monashee (harwinder.sandhu.MLA@leg.bc.ca)

**Norm Letnick, MLA**; Kelowna-Lake Country (norm.letnick.MLA@leg.bc.ca)

**Renee Merrifield, MLA**; Kelowna-Mission (renee.merrifield.MLA@leg.bc.ca)

**Ben Stewart, MLA**; Kelowna West (ben.stewart.MLA@leg.bc.ca)

**Dan Ashton, MLA**; Penticton (dan.ashton.MLA@leg.bc.ca)

**Roly Russell, MLA**; Boundary-Similkameen (roly.russell.MLA@leg.bc.ca)

10 February 2021

Anna Warwick Sears, Ph.D. – Executive Director  
OBWB  
K. James Littley, CD. M.A.  
OBWB

Subject: Okanagan Lake Levels 2021

We are writing you on behalf of the Green Bay Property Owners Association at the request of the membership living in Green Bay and on the Okanagan Lake side. We have, as you know, been subject to the lake rising above "Full Pool" three of the last four years and this has caused quite a bit of damage to the residential area of Green Bay and in particular residential docks and beach fronts. We realize that we are voicing an opinion that we know is shared by all residents living on the Okanagan lakes. Water levels above "Full Pool" are unacceptable.

We are concerned and have written letters to the Premier and all MLA's that have residents on the lakes from the north tip on Okanagan Lake to Osoyoos Lake about the water rising above "Full Pool". We received a positive response from the office of Premier Horgan, who had an explanation on the current issues which was sent to us on [30 July 2020](#) on behalf of Mr. Gerry MacDougall.

The purpose of this letter is to express our concern again this year with the current snow pack and the possibilities of the lakes rising above "Full Pool". We need to find a solution and be very proactive to keep the lake levels at or below "Full Pool" given the climate dilemma we all face.

We as the Green Bay Property Owners Association are offering our services to the management team for the Okanagan Lakes to attain this goal.

Please feel free to contact us, if we can be of assistance in communicating further to other property owner associations and concerned Mayors.

Respectfully,

Wayne Heal, Co-President, Green Bay Property Owners Association  
3581 Wigg Road, West Kelowna, BC, V4T 2B7  
604-866-8915

And

Bea Kline, Co-President, Green Bay Property Owners Association  
1359 Green Bay Road, West Kelowna, BC, V4T 2B7  
250-801-1590