New construction flood level may be needed all around Okanagan Lake

By John McDonald

Okanagan Lake during the 2017 flood.
Image Credit: Contributed

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OKANAGAN - Anna Warwick Sears doesn't like the term "new normal" at least as it's been applied to climate change and the last two years of flooding in the Okanagan Valley.

"New normal implies a static condition but the problem here is there's a high level of unpredictability with the weather," the executive director of the Okanagan Basin Water Board says.

Even though outwardly similar — localized flooding followed by a sharp rise in Okanagan Lake — Warwick Sears points out they were both completely different events, despite similar outcomes: high water and damaging floods.

"Last year it was mostly rain driven whereas this year is was mostly snow-driven with a record snow pack," she says. "Things are not becoming obvious, things are not that easy to predict."

Both years fit the general model of climate change for the Okanagan with an increase in annual precipitation but a decrease in rainfall over the summer, leading to wilder swings in the weather and more damaging weather events.

As a scientist, Warwick Sears would never count one flood as demonstrative of climate change but one thing that has become clear is the continued viability of the "flood construction level", the point above sea level where lakeshore construction is supposed to be safe.

"343.66 metres is supposed to be safe but last year the level was 343.25 and that doesn't include the minimum freeboard allowance to account for wave action," she points out.

The question has now become whether it should continue as foundational number, one that guides design and planning decisions all along the shores of Okanagan Lake.

"Should we change the flood construction level requiring people to build differently? Should we be asking the province to lower lake level targets even with the risk of drought?" Warwick Sears says.

"What is the relevant number now? What do you do if we know the lake is going to go higher periodically, not this year, maybe not next year but eventually," she adds.

What will inform that discussion is the results of flood plain mapping which intensified earlier this year with the beginning of a $1.45-million high-tech effort to identify the areas most at risk of flooding the valley.

Mapping of the entire lake and its watersheds began earlier this year using Light Detection and Ranging (LiDAR) equipment aboard light aircraft and is to wrap up sometime soon.

Once complete, the maps will project how far inland lake water can reach depending on what level it reaches, amongst other things.

Flooding has been described as a "land use problem" where communities build into areas where water wants to go and will not be denied, but Warwick Sears says the detailed flood plain maps will leave no doubt as to where vulnerabilities exist in communities all around Okanagan Lake.

"Once you have those maps, then you can begin having those conversations about what kind of development should be on the lakeshore and along flood-prone creeks and streams," she adds.

The Okanagan Basin Water Board is comprised of members from the three regional district boards surrounding Okanagan Lake.

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