Public needs to think more about rainwater management

Chris Johnston, an engineer, spoke Thursday at the workshop in Kelowna called From Rain To Resource: Managing Stormwater in a Changing Climate.

Sean Connor/ Capital News

By Judie Steeves - Kelowna Capital News
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The Okanagan is particularly vulnerable to the impacts of rainwater because it all eventually flows into the lake that runs along the bottom of the valley—and it's a drinking water source as well.

That's the warning from Chris Johnston, an engineer who sits on the B.C. Water and Waste Association's climate change committee, as he opened a workshop called From Rain to

Resource: Managing Stormwater in a Changing Climate Thursday afternoon in Kelowna.

He has more than 22 years experience in managing stormwater, and teaches it at his alma mater, UBC. He is also a principal at Kerr Wood Leidal Associates in Burnaby.

More than 100 mayors and councillors, administrative staff, planners, engineers and consultants from around the province have gathered here for the two-day workshop, organized by the BCWWA and the Okanagan Basin Water Board.

As the volume of impervious surfaces such as rooftops, roads, sidewalks, parking lots and concrete increases—replacing soils, grasses, shrubs and trees—the faster water runs off when it rains, and the more runoff there is.

And, managing that runoff so it doesn't carry its load of sediments, hydrocarbons, chemicals, fertilizers and other toxic compounds directly into the lake, becomes more and more important as those impervious surfaces expand over natural areas of the valley.

As the intensity of rainfall events increases with climate change, designing to slow the movement of runoff and allow it to be absorbed into the ground becomes more important, he told delegates. "We must build our cities differently, incorporating less impervious surfaces such as rain gardens," he said.

Rain gardens are depressions, planted with native plants, that can absorb rain runoff from adjacent impervious surfaces and allow it to soak into the ground.

There, many pollutants would be filtered out before the water made its way to a stream or wetland. On the whole, rainwater management is still not considered mainstream, however.

"The public needs to think about it more," he said.

In the Okanagan, there is concern that the impact of climate change could be even more extreme storms than in areas such as the Lower Mainland, he noted.

But, steps have been taken in Okanagan cities such as Kelowna to plan for such events, though it won't happen overnight.

"We can't afford to retrofit. But, we do need to plan for the future," noted Johnston.

He agreed with City of Kelowna environment technician Fred Schaad that individuals need to take responsibility for preventing runoff from their own properties.

"The cities will deal with roads, but not with runoff from lots," he commented.

Schaad said he'd like to see a lot more rainwater harvesting using tanks or cisterns, with the resulting stored water used during dry periods to water landscaping, or even to release the water more slowly into the ground after the rain event is over.

"It's (rainwater) a resource, not something to get rid of. It's not waste. That's a wrong way of thinking," he commented.

There are now 70 detention ponds now in the city, which are designed to flood during rainstorms and prevent runoff, he noted.

The city's water and drainage manager, Don Degen, says there are also huge stormceptors underneath roads in areas such as south of Spall Road on Highway 97, where stormwater is intercepted so it can be treated if necessary, or where a spill can be removed before the water moves into the stormwater system.

"Prevention is big," he commented.

A couple of those have been installed each year for the past several years to help protect the lake from pollutants.

The City of Kelowna considers it a high priority to minimize the impacts of stormwater on Okanagan Lake, he noted.

Historically, he said soak-away strips were installed all along roadways.

These gravel shoulders allowed runoff to soak into the ground, which acted as a natural filtration system as well as slowing the movement of runoff into natural bodies of water.

However, several years ago, the city looked at the cost of the infrastructure needed to retrofit a stormwater management system and found at that time, it would cost over $200 million.

Instead, he said they are prepared to deal with the flooding problems that result from intense stormwater events.

In new development, particularly on hillsides, the city requires that stormwater be captured.

Basins and piping and detention or retention ponds must be installed to ensure the runoff is captured and released at pre-development rates, he explained.

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