Public Education

Canadian Children’s Groundwater Festival celebrates 20 years
By Peter Gray

How do we go about changing the way our youth are taught when it comes to water, a life-force so vital to our existence, in the midst of different governments, and changing teaching methods and curriculum?

This article looks back at a movement in Ontario that started more than 20 years ago in which thousands of people have been involved, all equally or more passionate and capable about educating our young people about water than I am. I just happen to be writing from the perspective of someone who has been there from the beginning.

It was spring 1993 when two of my Canadian industrial clients were going to be fined under the Environmental Protection Act for spills at their facilities. While brainstorming with legal counsel and clients, a novel idea came...
forward - to appeal to the Crown for the opportunity to allocate the proceeds of the fines to an environmental cause, instead of the money going to the general government coffers. The only problem was that we didn’t have a unique cause that we could all agree on to present to the Crown as a viable or worthy candidate for funding.

So, after doing some research, in April 1993 a small group of us headed down to Lincoln, Nebraska to check out an event called the Children’s Groundwater Festival. This was being put on by the Groundwater Foundation. What we witnessed was spellbinding – a few thousand school kids, from Grades 4 to 6 from across the state, were bused to a university campus, where they would spend the day in some 50 or more different activity centres. The kids were excited, inquisitive and engaged for the whole day, while being encouraged to explore, experiment, play and get wet, all while learning about the mysterious world of groundwater. We all looked at each other and said, “we need to do this back home!”

First Canadian Children’s Groundwater Festival

We presented the idea to the Crown and, after receiving a positive response, reached out to anyone who would listen, or who was remotely interested in being involved. Then, we started planning for what would be the first ever Canadian Children’s Groundwater Festival.

The week-long event, held in 1994, was a huge success, with support from the two initial industrial companies, drillers, regional and provincial government, health units, the University of Waterloo, environmental consultants, local businesses, conservation authorities, and staff from the Agricultural Museum in Milton, where the event was held. That week, more than 5,000 kids from Grades 4 to 6 participated in the event, along with approximately 750 parent volunteers, and 500 other volunteers needed to staff the more than 40 activity centres and help run the event.

When the fines were issued to the industrial companies, their cheques were directed to help fund the 1994 Children’s Groundwater Festival – a one of a kind in Canada. The event was such
a huge success that the team committed to, and successfully pulled off the second Children’s Groundwater Festival in Milton in 1995.

A watershed moment

After two successful festivals and seeing the potential for this type of water education beyond the classroom take place in communities elsewhere, we faced a watershed moment. How could this volunteer-led educational initiative not only survive, but become a mainstream method of education for a new generation of water savvy kids across the province?

After much debate, the original steering committee decided to approach new potential partners in their home communities, along with support from some of the initial team members. Thus, the concept of children’s groundwater, or water festivals expanded to communities in Waterloo, York, Durham and Peel Regions.

Thanks to continued support from all the partners, these festivals are heading into their 21st consecutive year in more than 27 communities across Ontario. They have reached more than 500,000 elementary students, and each festival is constantly evolving and growing to meet the ever-changing educational needs and expectations.

The success of the children’s water festivals across the province has been based on numerous factors, including:

- Each festival is designed to be fun and interactive. If students learn in a fun setting, the message will have a lasting effect.
- People are becoming more concerned about the environment, especially water. They want to be more aware about water conservation and protection for future use, as these concepts can be discussed and managed right in the home.
- Teachers appreciate the opportunity to have experts educate their students about water in a fun setting, with teaching at all activity centres linked to the Ontario curriculum.
- The festival takes a hands-on approach from which all benefit.

After 20 years, there have been students who have attended a water festival as an elementary student, come back and volunteer to instruct at an activity centre as a high school or university student. Then they graduate from university to work in the water/environmental/engineering field and come back and sit as a member of a local festival steering committee! Now that’s full circle – just like water makes its way through the water cycle!

More water education beyond the classroom

As the children’s water festival model continued to expand across Ontario, the need also developed for the sharing of ideas and resources for other educational opportunities.

In 2001, the not-for-profit organization, the Children’s Water Education Council (CWEC) was formed as a group of education and water professionals. Its mandate was to respect our water sources, and preserve it for future generations through greater awareness of, and appreciation for, this vital life force. The organization, which received
its charitable status in 2007, is governed by a volunteer board of directors to serve as an umbrella organization for a variety of water-based educational programs, including children’s water festivals and numerous others.

Science program – field course
To expand from educating students in Grades 3 to 6 at the water festivals, a hydrologie field course was designed and implemented in 2003 by CWEC for Grade 7 and 8 students. Utilizing a series of monitoring wells and a nearby cold water stream, students gather data to better understand the interaction between groundwater and surface water.

Four stations are set up to deliver key messages that meet the Ontario curriculum. Students measure water levels in the drilled and monitoring wells, water is pumped from the drilled well and water flow is measured. Students gain a better understanding that the volume of water pumped from an aquifer has a direct impact on the quantity of our water resource.

A comparison of surface water and groundwater quality is determined on-site, through measuring water quality parameters from both sources. Students learn water science measurements of conductivity, temperature, pH and total dissolved solids. They also create a water table profile from collected data and learn to demonstrate a groundwater flow model, to reinforce the water science concepts that they have learned.

Environmental leadership camp
Since high school students represent an invaluable resource as instructors for the children’s water festival model, the Environmental Leadership Camp was created by CWEC in 2010. This is an overnight camp with a series of hands-on learning centres which enhance each youth’s leadership skills, and provide resources for them to be used once camp is completed.

The fun-filled overnight camp is designed for students in Grades 9 through 12. Learning about protecting our water... continued overleaf...

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Public Education

resources and understanding more about the science of water, participants also interact with their peers in university and young professionals in the water industry. Mentoring opportunities are provided, allowing them to gather information about various career options.

World Water Day celebration

This networking event allows attendees to sample soup, enjoy a buffet of breads and desserts, and cast a ballot for their favourite soup. The winner takes home the coveted Soup Fest trophy.

Water careers presentation
In 2012, CWEC developed a program to provide an in-class presentation to high school students about potential water careers. Through numerous demonstrations, students learn about the importance of water science and understand the source of the water that is delivered to their tap. The concept is reinforced with a hands-on demonstration of an edible aquifer using ice cream, syrup, pop and nuts to replicate what lies beneath their feet.

An overview of the water industry provides the resources for students to make an informed decision when choosing their career path.

Summary
We have all heard that it takes a village to raise a child; well, it takes a changed and engaged society to manage and protect our most precious resource, water. Wars are fought over it, people die without enough of it and yet in some places it is contaminated, overused and wasted.

Hopefully, some of the more than 500,000 and growing students, who have been exposed to a water education initiative beyond the classroom, will continue to contribute significantly to the changed society that is required to ensure that future generations will be blessed with the water supply that the students have grown up with.

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ES&E NEWS

2015 Allen D. Williams Scholarship accepting nominations
The Allen D. Williams Scholarship Award is presented each year to a young employee of an Association of Consulting Engineers Canada (ACEC) member firm who has demonstrated involvement with, or contribution to, priorities identified by an ACEC Member Organization or ACEC itself.

The scholarship was first awarded in 2009 and honours Allen Williams, ACEC Chair from 2004-2005 and founder of A. D. Williams Engineering. The annual award serves as an incentive for young professionals of member firms to get involved with their respective Consulting Engineering Industry Associations to advance the priorities identified by these organizations.

Nominations must be submitted by a senior partner or principal to a member organization. The intent to nominate deadline is March 3, 2014 and the official submission deadline is March 24, 2014. The award will be presented on June 20, 2014 and the winner will attend the FIDIC conference in Amman, Jordan in September 2015.

WERF researching cooperative management of water from all sources
The Water Environment Research Foundation is researching the institutional issues and governance structures impacting established water, wastewater and stormwater management agencies. “Institutional Issues for Green-Gray Infrastructure Based on Integrated ‘One Water’ Management and Resource Recovery,” aims to understand what institutional challenges have faced organizations engaged in the One Water approach, and more importantly what strategies and actions were adopted to overcome them.

One Water is the concept that water from all sources must be managed cooperatively to meet economic, social, and environmental needs. WERF is seeking to:

• Understand the current state of institutional barriers or opportunities for more integrated planning and management of water services.
• Illustrate the institutional issues identified, furthering discussion about how barriers may have been overcome.
• Capture key institutional challenges and associated solutions confronting the development of a One Water approach in a useful framework.
• Organize a series of workshops to engage international experts on this topic.

WERF Program Director Theresa Connor said that water management governance systems and institutions developed over the past century, may now be barriers to effectively meeting current and future challenges.

“Since institutions are difficult to change, it is critical to look at how communities are overcoming these barriers, so that we can learn from each other and find ways to collectively manage our water resources for the needs of our communities, our economy and our environment,” said Connor.

The contract for this research was awarded to the Institute for Sustainable Futures at University of Technology in Sydney. WERF is collaborating with the Water Research Foundation and Water Research Australia in this effort.

www.werf.org

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