Solving Problems Through Partnerships and Education

As the Senior Manager of Water and Energy with the Toronto and Region Conservation Authority, IECA member Glenn MacMillan, C.E.T., Ontario representative for IECA's Great Lakes Chapter, is involved with a wide variety of stormwater management and erosion and sediment control programs and initiatives. His experience ranges from watershed-scale analysis down to site-specific monitoring and evaluation of stormwater and erosion control best management practices.

What he likes best about his role is the opportunity to do what he calls the fun stuff—"Things like helping to educate others, establishing partnerships with other organizations, and developing tools, best practice guides, and standards related to stormwater management end erosion and sediment control," he says. "I enjoy working with like-minded people identifying problems and finding solutions."

As Chair of Conservation Ontario's Integrated Watershed Management Technical Committee for stormwater and erosion control, he coordinates the dissemination of water management research, technical information, and training across Ontario. He partners with federal, provincial, and local government agencies as well as the development industry, which help fund the TRCA's Sustainable Technologies Evaluation Program (STEP) *www.sustainabletechnologies.ca*.

Field training offers a wide range of hands-on experience.

Clearing Obstacles

"Much of what we do involves overcoming barriers that prevent the most effective use of BMPs and other available technologies," MacMillan says. "We monitor and evaluate various methods of controlling erosion and sediment control practices on construction sites as well as post-construction practices like rainwater harvesting and bioretention swales. Also, we develop new policies and best practices guidelines and get involved with technology transfer through seminars, workshops, and conferences."

Glenn MacMillan

For example, earlier this year, his group produced a guide for using anionic polymers on urban construction projects and a guide for restoring and preserving healthy soils. As a result of their work in evaluating different types of permeable pavement, MacMillan is now participating on an American Society of Civil Engineers' committee to develop a standard for permeable interlocking concrete pavement.

This past spring, he organized a two-day conference for expert insight on innovative stormwater management and the latest in erosion and sediment control practices. Co-hosted by the TRCA and the Great Lakes Chapter, this second annual event attracted more than 350 consultants, contractors, developers, and municipal, provincial, and federal government representatives. Participants also included product manufacturers from Ontario, other provinces, and the United States. One manufacturer from Germany, looking to introduce its products to the Canadian market, also attended, MacMillan reports.

Shortly after that conference, MacMillan hosted an Erosion and Sediment Control Design course targeting those responsible for preparing effective erosion and sediment control plans. In June of this year, he and his staff put on a Polymer Enhanced Best Management Practices workshop and hosted the third annual Erosion and Sediment Control Field Training Workshop held at the Living City Campus at Kortright, Ontario. Last year 200 people attended a similar field training workshop that focused on the installation, operation, maintenance, and inspection of various erosion and sediment control practices.

"These field days have been really popular," MacMillan says. "There's nowhere else in Canada that you can receive this type of hands-on training."

Educational Leverage

The desire to improve opportunities for

Field day participants work with mats to stabilize a slope.

the local building community to learn about and use the latest stormwater and erosion and sediment control best management practices was a primary reason MacMillan joined IECA five years ago. It's the same reason he's since taken an active role in the Great Lakes Chapter.

At the time he became an IECA member, controlling erosion and sediment effectively was proving a challenge on many local construction sites, he reports.

Lack of maintenance was a big issue. So was lack of knowledge about basic principles. Some contractors didn't understand that controlling erosion was the key to minimizing sediment problems, MacMillan notes.

"I figured that, if no one else was going to help provide the necessary education and training, I would," he says. "So, I got involved with IECA to learn about the industry. I made it a priority to network with leaders, people who could help us do a better job of controlling erosion and sediment."

That approach continues to pay off. The professional contacts he's developed through IECA have enabled him to leverage resources in promoting sound erosion and sediment control practices in his area.

"As budgets continue to tighten, it's more and more difficult for people to travel to distant conferences to get the training they need," he says. "Because of my involvement with IECA, I've been able to get other members to come here to share their expertise with us and provide that training in a much more cost-effective manner."

Last year, more than 800 people in the construction industry attended the various classroom courses he put on, with individual classes often attracting about 40 to 50 participants.

Through his network of IECA colleagues, MacMillan also has led the way in bringing the Certified Inspector of Sediment and Erosion Control (CISEC) program to Canada in 2012. The CISEC training sessions and exams are now being offered twice a year in the Toronto area. In addition, by April of this year, they had been presented once in Ottawa, Quebec, and twice in Calgary, Alberta.

"We're working with people across the country to offer this program in all the provinces, eventually," he says.

Going International

MacMillan's career in the erosion control industry dates back to 1985. That was shortly after he earned his engineering degree from Ryerson University and he began working for a water resources engineering consulting firm in the Toronto area. His assignments ranged from calculating runoff rates and designing stormwater detention ponds to doing hydrologic modeling and submitting applications related to subdivision developments.

In 1989, he moved to the other side of the construction process, accepting a position with the TRCA reviewing ero-

Familiarity with all types of equipment is a major training objective.

sion and sediment control plans for land development projects.

For the past few years, he's broadened his work to include water resources management as part of the overall sustainable development process. His department has partnered with the Building Research Establishment, based in the United Kingdom, to develop a show-and-tell mini-subdivision for evaluating and highlighting the best in water and energy conservation and green building practices.

To be called Canada's Innovation Park and located on the Living City Campus in Vaughn, Ontario, it's part of a network of similar BRE field training facilities—one in England, west of London in the town of Wales, and the other in Scotland, in Ravenscraig, south of Glasgow. Currently, another is under construction in China, and another is being planned in Brazil.

"The key objectives of the TRCA's Watershed Management Division include maintaining healthy rivers and shorelines, increasing regional biodiversity, promoting sustainable communities, and achieving business excellence," MacMillan says. "Working with the BRE Innovation Park network will help us take what we're already doing in these areas to the next level by gaining international recognition."

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Canada's Innovation Park represents a partnership among the area's academic, construction, and other private sectors, MacMillan notes. Construction is scheduled to begin next year. The park will include eight buildings, four of them LEED certified, he notes.

"Each will feature different performance standards," MacMillan says. "One, for example, may be designed to be carbon neutral. Others would minimize use of resources, such as water or energy.

"The park is designed primarily to educate the construction industry. Much of it will feature research by universities and colleges across the country on how various products and materials actually perform in the real world. We'll offer tours for the general public as well as grade and high school students."