



the partnership
for water sustainability in bc

IREI - Inter-Regional Education Initiative

Sustainable Rainwater Management: Mimic the Water Balance to Protect Watershed and Stream Health!

A Seminar on Integrating the Site with the Watershed and Stream



Hosted by the Association of Professional Engineers and Geoscientists of BC
on September 19, 2013
and featuring District of North Vancouver and City of Coquitlam experience

Sustainable Rainwater Management: Mimic the Water Balance!

About the Seminar Teaching Team

Biographical Sketches for the Rainwater Management Teaching Team

Kim Stephens, M.Eng., P.Eng. Executive Director - *Partnership for Water Sustainability in BC*

Kim Stephens is an engineer-planner. His four decades of experience cover the spectrum of water resource and infrastructure engineering issues and applications, from master planning and modelling to implementation of capital projects. He specializes in public policy and has played a leadership role in a series of initiatives in British Columbia related to water sustainability, rainwater management and green infrastructure.

More than a decade ago, Kim Stephens looked at rainfall differently and developed the Water Balance Methodology that the Province subsequently incorporated in *Stormwater Planning: A Guidebook for British Columbia*. Since 2003, Kim has been responsible for developing and delivering the *Water Sustainability Action Plan for British Columbia*, the partnership umbrella for a water-centric approach to community planning and development.

Kim Stephens has been invited to speak on “the BC experience” and make keynote presentations at forums in Australia and throughout North America. His work related to the UniverCity sustainable community at Simon Fraser University on Burnaby Mountain is featured in the book *Dancing with the Tiger: Learning Sustainability Step by Natural Step*, by Brian Nattras and Mary Altomare (2002).

Richard Boase, P.Geo, Environmental Protection Officer - *District of North Vancouver*

Richard Boase is a geoscientist, and is the District of North Vancouver’s Environmental Protection Officer. He is also Co-Chair of the Water Balance Model Partnership. Richard is an innovator and is the District’s project manager for case study demonstration applications that have been driving the evolution of the Water Balance Model for the past decade.

Land redevelopment and densification to create the Lynn Valley Town Centre resulted in an applied research and implementation opportunity. The District of North Vancouver is pioneering the integrated application of performance targets for runoff management, at the neighbourhood scale, to protect stream health. Under Richard’s leadership, the District has also demonstrated the cost-effectiveness and power of imagery analysis as a rainwater management tool.

Richard Boase is the Water Balance Model Partnership’s lead for development of the web-based *Water Balance Model Express for Landowners*, and the District of North Vancouver’s Hastings Creek Watershed Blueprint is the demonstration application for this web-based tool. The Express has pre-set performance targets that are watershed-specific. This means that landowners will then be able to focus on the choices and the geometrics of fitting appropriate rainfall capture measures onto their properties.

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Melony Burton, Watersheds & Drainage Coordinator - *City of Coquitlam*

Melony Burton is the Watersheds & Drainage Coordinator for the City of Coquitlam. She has been with the City for 10 years. Previously, she worked for the City of Victoria Engineering Department. She has a Diploma of Technology in Civil and Structural Engineering from BCIT as well as an Associate Degree of Science from Thompson Rivers University.

Melony Burton is responsible for Coquitlam's Capital Drainage program which includes utility planning, infrastructure management, facility expansion, and rehabilitation projects. She has worked on 9 Integrated Watershed Management Plans as well as several large projects coming out of the recommendations. She has been actively involved in developing and implementing the City's rainwater management policy and promoting stormwater initiatives.

Melony Burton is the Alternate Chair for the Metro Vancouver inter-municipal Stormwater Interagency Liaison Group (SILG). In this capacity, she has played a lead role as a member of the inter-governmental and multi-disciplinary working group that was tasked with developing a *Monitoring & Adaptive Management Framework* that will meet the Minister of Environment's conditions of approval for the watershed management component of the *Metro Vancouver Integrated Liquid Waste & Resource Management Plan*. These conditions link land use planning to stream health. Also, Melony is a member of the BCWWA Stormwater Committee.

Jim Dumont, P.Eng., P.Ag., Engineering Applications Authority - *Water Balance Model Partnership*

Jim Dumont is the Engineering Applications Authority for the Water Balance Model Partnership. He is a recognized specialist in hydrologic modeling and infrastructure engineering. For many years, he has been teaching water resource and modelling seminars as part of the professional development program provided by APEGBC.

Jim Dumont evolved the Water Balance Methodology to address the relationship between rainfall volume control and resulting flow rates in streams; and developed the Stream Health Methodology as the technical foundation for the provincial 'Beyond the Guidebook' initiative in 2007. This methodology correlated stream erosion as a measure of stream health.

Jim Dumont's innovation and many accomplishments as Engineering Applications Authority encompass creation of the technical foundation for both the *Water Balance Model Express for Landowners* and *Drainage Infrastructure Screening Tool*. The latter is web-based and embeds a common-sense engineering methodology that allows local governments to quickly and efficiently assess the hydraulic performance of storm sewer systems, carry out redevelopment and climate change scenario comparisons, generate immediate answers and establish priorities for detailed analysis and capital planning purposes.

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Quotable Quote:

"The output from a model-centric process is a report that mainly deals with hydrotechnical matters. These go on a shelf when local governments cannot afford to implement them. In contrast, the outcome of a landscape-based and action-oriented process is a truly integrated plan to restore watershed function over time. Agree on the vision. Set the targets. Provide planners with the detail necessary to guide site level decisions as opportunities arise. Then implement."

Jody Watson, Chair
Bowker Creek Initiative
October 2011

