Convening for Action on Vancouver Island Leadership in Water Sustainability

Presents

Showcasing Green Infrastructure Innovation on Vancouver Island: The 2007 Series

In partnership with

Regional District of Nanaimo

Cowichan Valley Regional District

Comox Strathcona Regional District

City of Nanaimo

District of North Cowichan

City of Courtenay

City of Duncan

Connecting People – We Make It Easy!
The CAVI Partnership is pleased to announce that it is collaborating with three regional districts and their member municipalities to present:

**Showcasing Green Infrastructure Innovation On Vancouver Island: The 2007 Series**

*How land is developed determines how water is used, and how water runs off the land*

**WHY:**

The purpose of the *Showcasing Innovation Series* is to celebrate... and build on...the on-the-ground successes that are enhancing the ways communities are being developed and water is being managed.

The goal is to promote networking, build regional capacity, and move ‘from awareness to action’ --- through sharing of approaches, tools, experiences and lessons learned.

**WHAT:**

Green infrastructure is associated with how water is used and how water use impacts on the *sustainability of water supply*.

Green infrastructure is also associated with the management of water that runs off the land and how water runoff impacts on the *sustainability of both terrestrial and aquatic habitat and resources*.

**WHEN & WHERE:**

- **Friday, September 14, 2007**
  - Regional District of Nanaimo
- **Friday, September 28, 2007**
  - Cowichan Valley Regional District
- **Friday, October 12, 2007**
  - Regional District of Comox-Strathcona

Each event comprises presentations in the morning and a tour of project sites in the afternoon.

**WHO:**

The Series will be of interest to Engineering, Planning, Public Works, Development Services, Parks and Environment Departments in Regional Districts and Municipalities.

**For more information:**

Kim Stephens, PEng, Program Coordinator, Water Sustainability Action Plan for BC sustainabilitycoordinator@shaw.ca OR www.conveningforaction.ca
Showcasing Innovation in the Nanaimo Region: ‘Designing with Nature’

The Regional District of Nanaimo and City of Nanaimo will showcase their over-arching ‘green development’ policies and how they are being implemented on the ground. The combination of presentations in the morning and a tour of project sites in the afternoon will provide some insight into strengths and limitations in trying to develop in a more sustainable manner.

Three policies each address public concerns on different scales: a regional Climate Change policy (which led to Community Action Plans for Greenhouse Gas Reduction); a Steep Slope subdivision development policy, and two site-specific approaches: a Green 'Sustainable' building construction policy for City buildings and an alternative rainwater treatment approach taken at a commercial industrial site. Each policy and application represents a ‘first’ for either the region or the City of Nanaimo.

In the City, the site tour will feature Cottle Creek Estates (Steep Slope Development), the Oliver Road Community Centre (LEED Silver Green Building), and the ‘Island Kenworth’ site on Northfield Road. In the Regional District, the tour will feature the Fairwinds Green Solutions Demonstration Home, a rainwater infiltration pond at the RDN offices, and creek channel daylighting at the Greater Nanaimo treatment plant.

Showcasing Innovation in the Cowichan Basin: ‘Partnerships and Collaboration – Moving from Concept to Reality’

The Cowichan Valley Regional District, District of North Cowichan and City of Duncan will showcase the role of partnerships – first, in developing a shared vision of what the ‘valley future’ can look like; and next, in implementing actions that will bring the vision to fruition. The unifying theme is: to make things happen, local governments need to partner and pool resources.

The Cowichan Basin Water Management Plan has been developed through a uniquely inclusive consultation process; and provides the umbrella for aligning community development policies with emerging best practices. Featured projects will cascade down in scale from the basin….to a neighbourhood and subdivision…. to an industrial park….and to the site/house.

The setting for an interactive experience will be O.U.R. Ecovillage, located near Shawnigan Lake. The theme is blending urban with rural to achieve quality of life. Participants will be challenged to brainstorm what aspects of the Ecovillage experience can local governments transfer to an urban development setting?

Showcasing Innovation in the Comox Valley: ‘Connecting to Sustainability’

The Regional District of Comox-Strathcona and the City of Courtenay will showcase on-the-ground benefits that result when local governments collaborate to integrate their efforts, and are guided by an holistic way-of-thinking and acting. Case studies will demonstrate how to ‘connect the dots’ to achieve integrated and sustainable outcomes.

Featured projects will range from the Comox Lake Watershed Assessment, the first to be completed pursuant to the Province’s new ‘Comprehensive Drinking Water Source to Tap Assessment Guideline’…to servicing of the Home Depot site and surrounding commercial development area. Home Depot is the first application of deep-well injection in BC for returning rainwater runoff to the ground. Also, the innovative design of the water supply system serving the surrounding area is saving everyone money while reducing greenhouse gas emissions.
### Showcasing Green Infrastructure Innovation On Vancouver Island: The 2007 Series

| WHEN & WHERE: | Regional District of Nanaimo  
|               | Cowichan Valley Regional District  
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<th>Regional District of Comox-Strathcona</th>
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| AGENDA: | Refer to page 2 for details of October 12 program |

| TO REGISTER ON SEPT 28: |  
| Contact Sheila Van Nus at Comox-Strathcona Regional District at svanus@rdcs.bc.ca  
| or Tel: 250-334-6057 Toll free: 1-800-331-6007  
|  
| There is a Registration Fee of $25 to cover bus transportation and lunch costs. Please make cheques payable to the Regional District.  
|  
| Attendance will be capped once all seats on the bus are filled. First come, first served. So respond quickly! Payment will guarantee your seat on the bus. To accommodate lunch arrangements, the deadline for registration is Wednesday, October 10, 2007  
|  
| Bring safety boots and reflective vest because we will be walking along roadways: and wear clothing suitable for a walk through the forest - rain or shine. |

### Showcasing Innovation in the Comox Valley: ‘Connecting to Sustainability’

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Showcasing Innovation in the Comox Valley: ‘Connecting to Sustainability’

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<thead>
<tr>
<th>Time</th>
<th>Program for Friday, October 12, 2007</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>0830</td>
<td>Meet &amp; Greet at the offices of Comox-Strathcona Regional District (600 Comox Rd, Courtenay)</td>
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<tr>
<td>0900</td>
<td><strong>CONTEXT PRESENTATIONS</strong> (Kim Stephens, Moderator)</td>
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<td>0900</td>
<td><strong>Context &amp; Overview</strong></td>
<td>Mayor Starr Winchester, Eric Bonham, CAVI, Susan Rutherford</td>
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<td></td>
<td>• Opening Remarks</td>
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<td>• Convening for Action on Vancouver Island: Leadership in Water Sustainability</td>
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<td>• Green Infrastructure Partnership: Convening for Action in British Columbia</td>
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<td>0920</td>
<td><strong>Municipal Collaboration – Making it Happen at the Operational Level</strong></td>
<td>Kevin Lagan, City, &amp; Graeme Faris, CSRD</td>
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<td>The Regional District, Courtenay and Comox are making progress on the ground because they communicate and collaborate. Examples will be provided to illustrate how efforts are being integrated and resources are being pooled.</td>
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<td>0945</td>
<td><strong>Comox Lake Watershed Assessment – from Awareness to Action</strong></td>
<td>Graeme Faris &amp; Ron Neufeld, CSRD</td>
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<td>Continued urbanization within the Comox valley coupled with competing land uses and recreational interests within the Comox Lake watershed have led to shared concerns and co-operative actions aimed at managing watershed uses to ensure water quality is preserved. Completed in accordance with provincial drinking water source to tap assessment guidelines, the watershed assessment process shows how a range of interested parties – including numerous governments - can work cooperatively towards common watershed protection objectives.</td>
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<td>1030</td>
<td><strong>Innovation in the Comox Valley: First Wal-Mart, Then Home Depot</strong></td>
<td>Kevin Lagan, City</td>
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<td>Both Wal-Mart and Home Depot capture rainwater runoff, treat it and retain it in the catchment area. Wal-Mart was the first big box store to come to Courtenay. This development precipitated the beginning of a major change in how the City administers the zoning/development/approval process, collaborates with other agencies and also manages the rainwater resource. Home Depot established a BC precedent when it implemented a deep deep-well system for injecting rainwater runoff and recharging the underlying groundwater aquifer. Also, a unique partnership with other commercial property owners resulted in an innovative plan for sustaining water supply pressures without relying on BC Hydro.</td>
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<td>1115</td>
<td><strong>Absorbent Soil for Rainwater Management - Lessons Learned</strong></td>
<td>Sandy Pridmore, City</td>
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<td>The City of Courtenay was the first BC municipality to adopt a policy requiring developers to provide a minimum soil depth on building sites as a rainwater management tool. The challenge is in how to ensure that developers and house builders fulfil their obligations to provide and preserve the minimum required depth</td>
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<tr>
<td>1145</td>
<td>Lunch will be provided</td>
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<td>1230</td>
<td><strong>Field tour on a transit bus that has Internet access!</strong></td>
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<td>1. Veterans Memorial Parkway: engineered detention pond; Findley Creek tributary stormwater separation; and habitat compensation for the Red Legged Frog</td>
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<td>2. Muir Road Development: Findlay Creek flow augmentation and community detention ponds</td>
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<td>3. Comox Lake</td>
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<td>4. Compost/Skyrocket Plant</td>
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For more information on the Showcasing Innovation Series, contact sustainabilitycoordinator@shaw.ca
CAVI Explained

Roundtable of partnerships provides leadership in water sustainability

CAVI is the acronym for Convening for Action on Vancouver Island. CAVI is a regional pilot program that is being implemented under the umbrella of the Water Sustainability Action Plan for British Columbia. By 2010, the CAVI vision is that Vancouver Island will be well on its way to achieving water sustainability. CAVI was formally launched in September 2006 by means of a consultation workshop held as an adjunct to the Water in the City Conference.

Who is CAVI?

The CAVI Partnership comprises these five organizations:

- British Columbia Water & Waste Association (BCWWA)
- Real Estate Foundation of British Columbia
- Ministry of Environment
- Ministry of Community Services
- Green Infrastructure Partnership

CAVI is co-funded by the Province and the Real Estate Foundation of British Columbia. The Water Sustainability Committee of the BCWWA is the managing partner and is providing program delivery.

CAVI is an inclusive partnership. CAVI is reaching out to groups that share a vision for Vancouver Island, with the goal of creating a roundtable of partnerships.

What does CAVI do?

The purpose of CAVI is to provide leadership, coordination, research and education for practitioners (primarily local government administrators, engineers, planners and elected officials) so that they can plan for sustainable water resources in the context of burgeoning settlement activity.
What does CAVI want to do?

Between now and 2010, the CAVI mission is to:

1. Provide leadership on water sustainability
2. Integrate with other groups
3. Bring together local government and the development community
4. Provide access to expertise
5. Encourage introduction of a ‘design with nature’ way-of-thinking in local government decision processes
6. Celebrate examples of green infrastructure that achieve ‘design with nature’ outcomes
7. Evolve a framework for water-centric planning that is keyed to accepting and managing risk, learning by doing, and rewarding innovation

The operative words are vision, partnerships, communication, ecological integrity, human well-being, sustainability, water-centric…and simply put…a desire to work together for Vancouver Island

What is the role or involvement of local government with CAVI?

To learn from the experience of others in implementing green infrastructure, local government elected officials and/or staff can:

- **Showcasing Green Infrastructure Innovation on Vancouver Island** – Attend the three seminar/field tour events that will be held in Nanaimo (September 14), Cowichan Valley (September 28), and Courtenay (October 12). These events are designed to promote networking and sharing of on-the-ground experience.

- **Green Infrastructure Leadership Forum** – Attend a ‘learning event’ for elected representatives and senior managers that CAVI is organizing in collaboration with AVICC (Association of Vancouver Island Coastal Communities) on December 3, 2007. This event will build on the Creating Our Future Workshop that was held as a shoulder event to the Gaining Ground Summit Conference in June.

- **Water Balance Model Training Workshop** – Attend a hands-on training session that will be held in a computer lab at the Cowichan Valley campus of Malaspina College in early 2008. The Water Balance Model is a web-based tool for ‘green design’. The main focus is on source controls for reduction of rainwater runoff volume.

How do I learn more about CAVI?

For more information, contact Kim Stephens at sustainabilitycoordinator@shaw.ca or go to the Convening for Action community-of-interest on the WaterBucket Website at: www.conveningforaction.ca
Green Vocabulary Defined

Projected growth and resulting cumulative impacts are the driver for implementing changes in where and how we develop land and use water.

To help advance a new way-of-thinking about land development, CAVI has developed and is promoting use of the following hierarchy of ‘green’ vocabulary:

- **Green Value** means land use strategies will accommodate settlement needs in practical ways while protecting the ecological resources upon which communities depend. At the heart of a *Green Value* approach is the valuation methodology that provides the business case for reconciliation of short-term versus long-term thinking related to risk and profit.

- **Design with Nature** is one approach to achieve *Green Value*, and is supportive of community goals that relate to building social capacity.

- **Green Infrastructure** is the on-the-ground application of *Design with Nature* standards and practices.

- **Water Sustainability** is achieved through *Green Infrastructure* practices that reflect a full and proper understanding of the relationship between land and water.

This cascading vocabulary was unveiled at the *Creating Our Future Workshop* that was held in conjunction with the *Gaining Ground Summit* in Victoria in June 2007. The Creating Our Future Workshop was a consultation opportunity for Vancouver Island local governments that are interested in implementing infrastructure practices and regulation that result in *green value*. 
Beyond the Guidebook:
Water Balance Model powered by QUALHYMO

One of the tools developed under the umbrella of the Water Sustainability Action Plan is the Water Balance Model for British Columbia.

Developed by an Inter-Governmental Partnership (IGP) as an extension of Stormwater Planning: A Guidebook for British Columbia, the Water Balance Model enables users to visualize how to implement green infrastructure solutions that achieve rainwater runoff source control at the site scale.

The Guidebook's premise that land development and watershed protection can be compatible represented a radical shift in thinking in 2002. The Guidebook recognized that water volume is something over which local government has control through its infrastructure policies, practices and standards.

Beyond the Guidebook is an initiative that builds on this foundation by advancing a runoff-based approach and tool – the ‘Water Balance Model powered by QUALHYMO’ – to help local governments achieve desired urban stream health and environmental protection outcomes at a watershed scale.
To sustain the early success of the Water Balance Model for British Columbia, and to advance ‘sustainable drainage’ initiatives across Canada, the Inter-Governmental Partnership (IGP) is expanding the capabilities of this web-accessible decision support and scenario modelling tool.

At present, the main focus is on the use of source controls for runoff volume reduction to protect property, habitat and water quality. According to Kim Stephens, Project Coordinator, “Less volume means less flooding of agricultural and/or suburban lowlands. This is one reason why the WBM has emerged as the rainwater management tool of choice in making sustainable land development decisions - it demonstrates how to achieve a light hydrologic footprint. Drainage engineers, however, want to simulate what happens to overflows once source controls have reached capacity during sustained wet weather periods. To provide the engineering community with ‘one-stop shopping’, we decided to enhance the WBM calculation capabilities plus add water quality. This means engineers will be able to hydraulically model the storage and routing of outflows from a subdivision and/or neighbourhood through a detention pond or down a stream channel.”

A TOOL THAT ENGINEERS WILL USE

The challenge is to provide expanded functionality for engineers yet at the same time avoid self-defeating complexity that would make the WBM unattractive to other target audiences. The concept of enhancing only the calculation engine rather than altering the user interface is key to maintaining the user friendly WBM while providing added capabilities. Merging the WBM calculation engine with QUALHYMO (QUALity HYdrologic Model) has been determined to be the most appropriate next step because:

- Both are Canadian.
- Both are based on a philosophy of ‘keeping it simple’.
- Both are non-proprietary.
- Both bring complementary strengths.
- QUALHYMO contains routines that incorporate many features requested by current WBM users.
- QUALHYMO has gone through numerous verification and testing processes, and the model is a proven piece of software.
- The resulting synergies create an opportunity to more effectively promote use of the WBM throughout Canada, and within the engineering community.

“...the WBM has emerged as the rainwater management tool of choice in making sustainable land development decisions...”
In 2002, the Province of British Columbia published *Stormwater Planning: A Guidebook for British Columbia*. The Guidebook formalized a science-based understanding to set performance targets for reducing rainwater runoff volumes and rates. At the heart of the Guidebook is the Water Balance Methodology. Recognizing that practitioners and others needed a tool so that they could readily apply the Methodology, the Inter-Governmental Partnership then developed the Water Balance Model for British Columbia.

The WBM quantifies the effectiveness of site designs that incorporate rainwater source controls such as rain gardens, tree canopy, green roofs, absorbent soil, and infiltration facilities. It does a continuous simulation over one or more years to test facility performance under different combinations of land use, soil and rainfall. The modeling process is illustrated by the graphic below. The key point to note is that the merging of tools will take place in the box labelled Calculation Engine.

“The IGP believe that use of the WBM will promote integration of perspectives through a collegial and interdisciplinary approach that enables planning and design professionals to collaborate to achieve community liveability objectives”, commented Kim Stephens.

**National Portal and Inter-Provincial Partnerships**

The success of the Water Balance Model in British Columbia, particularly in promoting an understanding of how to improve the built environment and protect the natural environment, generated interest in expanding the focus of the tool to reach a national audience. This led to the decision in 2004 by Environment Canada, Canada Mortgage & Housing Corporation, and the Province of British Columbia to create the national portal at www.waterbalance.ca and foster the formation of inter-provincial partnerships as a means to pool sources of funding for model enhancement.

An inter-provincial dialogue with Alberta began in August 2004 and provided the catalyst for formation of the Alberta Low Impact Development Partnership (ALIDP), co-chaired by the Cities of Calgary and Edmonton. “The purpose in forming an inter-provincial partnership is to collaborate and share resources in order to facilitate improvements in land development practices in both provinces,” according to Liliana Bozic, ALIDP Co-Chair.
**Convening for Action in British Columbia**

In 2004, **Convening for Action in British Columbia** was one of the six elements in the ‘puzzle piece’. Over the last three years, it has evolved into a ‘made in BC’ process for moving British Columbians from awareness to action.

“Convening for Action is our mantra”, states Raymond Fung, Chair of the Water Sustainability Committee. “When we gather, it is for a purpose. There must be an action item or an outcome. Our aim is to move from talk to action by developing tools, building capacity, and providing training.”

There are three regional pilots for Convening for Action. “In the South Okanagan, we have helped bring a voice to water issues. In Greater Vancouver, practitioners working for local governments told us they did not want more documents that simply go on a shelf; rather, they wanted to network and share their experiences. On Vancouver Island, we have an ambitious program to bring people together and apply/adapt what we have learned in the Okanagan and in Greater Vancouver”, explains Ray Fung.

The Convening for Action vision is that water sustainability in British Columbia will be achieved through implementation of green infrastructure policies, practices and standards.
Partnerships, partnerships, partnerships! This was the key message at a half-day reporting out session on ‘Water Sustainability – Convening for Action in British Columbia’, held as part of the 2007 Annual Conference of the British Columbia Water & Waste Association (BCWWA).

The British Columbia landscape is being transformed by settlement and economic growth. While the Province has been experiencing enhanced social and economic well-being, the need to mitigate pressures on land and water resources has provided a driver for a ‘green infrastructure’ movement that is:

- water-centric,
- founded on a natural systems approach, and
- keyed to partnerships.

Water-centric means planning with a view to water – whether for a single site or the entire Province.

Infrastructure design is changing. Cumulative benefits are achievable, one property at a time, through changes in the policies, programs, practices and standards that determine how land is developed and water is used. By implementing design with nature infrastructure practices and regulation, the ‘convening for action’ vision is that British Columbia will be well on the way to achieving water sustainability by 2010.

The objective when ‘convening for action’ is to influence practitioners to learn about and use practices that better balance the necessary relationships of settlement activity and ecological assets in local and regional landscapes. Practitioners are defined as those whose professions, vocations and volunteer tasks relate to use and conservation of water, land and real estate.

**Water Sustainability Action Plan for British Columbia**

The Convening for Action session at the BCWWA Conference provided implementation updates on how a water-centric approach to community planning and development is being advanced under the partnership umbrella of the ‘Water Sustainability Action Plan for British Columbia’.

The Action Plan comprises inter-connected program elements that give local governments and practitioners the tools and experience to do things differently. The program elements are categorized as shown on Figure 1 and as listed below:

- Products and Tools
- Networking and Outreach
- Education and Training
- Capacity Building

*continued overleaf...*
Water Supply

The Convening for Action presentations addressed each of these elements. First, context was provided by explaining how the Water Sustainability Action Plan is being delivered by the BCWWA Water Sustainability Committee through a partnership with the BC Ministry of Environment. Then, three regional pilot programs were described. The final presentation was about the Water Bucket Website, which was a unifying thread through all the presentations.

Water – choosing sustainability for life and livelihoods

The BCWWA Water Sustainability Committee is a roundtable of organizations that have a specific interest or mission in implementing the Action Plan.

In 2006, the BCWWA Water Sustainability Committee borrowed the phrase 'water for life and livelihoods' from the United Kingdom in order to focus British Columbians on what is at stake over both the short and long terms. The phrase conveys the fundamental principles of sustainability of natural systems in their own right and in relation to the health and well-being of people who benefit from the use of water for basic life needs and economic activity.

In the lead-off co-presentation, Raymond Fung (Chair of the Water Sustainability Committee) and Lynn Kriwoken (Director of the Ministry of Environment's Water Stewardship Division) elaborated on the relationship between the Ministry of Environment and the BCWWA Water Sustainability Committee in delivering the Action Plan.

In her part, Lynn Kriwoken emphasized that the Ministry of Environment views its partnership with the Water Sustainability Committee as an essential element in implementing the Ministry's Water Stewardship Outreach Strategy. In his part, Raymond Fung described what Convening for Action means in practice.

According to Lynn Kriwoken, "water is the piece that integrates everything that we care about. You will note that we are using the phrase water stewardship, not water management. Stewardship is about replacing self-interest, dependency and control with service, responsibility and partnership."

"Stewardship is an obligation that we all have", stated Raymond Fung, "and the key to moving from awareness to action is to form partnerships. Partnerships provide a good way to share risks. The Water Balance Model is a prime example of spreading the risk by banding together."

Developed by an Inter-Governmental Partnership as an extension of 'Stormwater Planning: A Guidebook for British Columbia', the Water Balance Model is a web-based decision support and scenario modeling tool that is found at www.waterbalance.ca. It enables users to visualize how to implement green infrastructure solutions that achieve rainwater runoff source control at the site scale. Published in 2002, the Guidebook was a catalyst for change that has resulted in British Columbia achieving international recognition as a leader in implementing a natural systems approach to rainwater management.

Fung provided context for each of the three regional pilots for Convening for Action: "In the South Okanagan, we have helped bring a voice to water issues. In Greater Vancouver, practitioners working for local governments told us they did not