

Presentation to Regional Services Committee
June 2013

Rainwater Management in a Watershed Sustainability Context:

*Cowichan Valley Regional District is a
leader by example*

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Tonight I Am Here for 4 Reasons:

1. Thank you for supporting the Partnership
2. Elaborate on how the benefits of inter-regional collaboration flow in both directions
3. **Showcase... the latest tool developed for you**
4. Present you with a framed “letter of recognition”



the partnership
for water sustainability in bc

We develop tools. We develop talent. We focus on outcomes.

Who We Are – “you are we”

What We Do – help you align your local actions with provincial goals

*When the province and your funders ask...
How are you protecting clean water and stream health,
adhering to provincial policies, meeting your gas tax
objectives and protecting your infrastructure?*

*You will have tools and a performance-based
monitoring structure to backstop your response.*

Thanks to your support, we are sharing
resources, information and expertise
within the Georgia Basin bio-region

- 1 Comox Valley: *A Guide to Water-Wise Land Development*
- 2 Nanaimo Region: *Drinking Water & Watershed Protection Program*
- 3 Cowichan Valley: *Development of Regional Integrated Watershed Plans*
- 4 Capital Region: *Integrated Watershed Management Implementation*
- 5 Metro Vancouver: *Integrated Liquid Waste & Resource Management Plan*



Georgia Basin Inter-Regional Collaboration

Because local governments are at different points of understanding along the “Watershed Health Continuum”....



Inter-regional collaboration will help everyone go farther, more efficiently and effectively , to:

- ☐ design **with nature**
- ☐ implement **green infrastructure**
- ☐ mimic the **water balance**

So that local governments can:

- ☐ reduce risk
- ☐ restore stream / watershed health
- ☐ comply with regulatory objectives

Cowichan Valley demonstration applications are foundation pieces for provincial strategies & tools



Since 2007, Cowichan Valley experience has influenced core content for provincial guidance documents and curricula for training sessions, workshops and seminars held around the province

Georgia Basin Inter-Regional Collaboration

Collaboration and consistent application of outcome-oriented actions will accelerate restoration and/or protection of “Watershed Health”



- ❑ Access to strategic information-sharing & professional development program (planning & engineering)
- ❑ Leveraging a \$250,000 investment to develop:
 - *Water Balance Model Express for Landowners*
 - *Drainage Infrastructure Screening Tool*
- ❑ Leveraging a \$2M investment to implement the Agricultural Water Demand Model
- ❑ Leveraging emerging information and tools to develop integrated liquid waste & resource management plans

Georgia Basin Inter-Regional Collaboration



INTER-REGIONAL LEADERSHIP TEAM:

Includes a core group of local government champions representing five regions (Capital, Cowichan, Nanaimo, Comox and Metro Van)

MISSION:

Develop a performance monitoring framework and tools to adjust actions and inform community planning to maintain healthy streams



When land surface is developed,
below-ground flow paths to streams are eliminated

With potential financial liability and sustainability consequences



TOO MUCH WATER:

*Erosion, instability and movement
of gravel and contaminants*

TOO LITTLE WATER:

*Creeks go dry ...
(and fish will not survive)*

What is the Water Balance Model?

A web-based scenario comparison tool that calculates the hydrological impacts of land use patterns



THREE SCALES

- watershed
- development
- site


Now, three user
LEVELS:

- planning
- engineering
- **landowner**

Introducing the WBM Express

WATER
Balance
MODEL *express*

Home Register Login



Welcome to the Cowichan Valley Regional District's
Water Balance Model Express for Landowners!

The "Water Balance" is short-circuited when the land surface is hardened with roads and buildings, and below-ground flow paths to streams are eliminated. This short-circuiting means there will be TOO MUCH WATER during wet weather periods and TOO LITTLE WATER during dry weather periods.

Too much water leads to stream erosion and instability. Too little water means fish will not survive. There are financial liability and sustainability consequences associated with each extreme.

[Get Started!](#)

Click on "Get Started"



Under provincial legislation, the Region and member municipalities are required to implement land development policies and green infrastructure practices that protect watershed and stream health. This outcome can be achieved by preserving and/or restoring the sponge-like capability of the landscape to absorb water. The goal is that developed areas will mimic their natural contribution of flows to streams. In other words, after either development or redevelopment of individual properties, a site will function as it did before, or better!

The Water Balance Model Express is a web-based tool that integrates the SITE with the WATERSHED and the STREAM. The Express integrates three performance targets that have been pre-set by the Region. These targets link rainfall to stream health. This frees users to focus solely on selecting rainfall capture measures that will achieve the pre-set targets.

The Express interface uses modern web technologies to guide the user through a simple and visually oriented set of sizing options, with outcomes displayed in real time. It is colourful, effective, fast and no more complex than the dash board of a typical car, stripping the problem down to a few sliders and gauges.

We anticipate that you will find this interactive tool to be an efficient and enjoyable way to rapidly test alternative rainwater control types and sizes.

Fast Entry

About the
Water Balance

Where Do You Live?

WATER
Balance
MODEL *express*

[Home](#)[Register](#)[Login](#)

Select the watershed of interest to pull up its specific water balance information to get started.

One of the most important resources we have in our community is water. Water exists not just in lakes or in wells, but as part of a larger, connected web called a watershed. Its slow journey through this web includes transforming into various forms such as rain, ground water, surface water and evaporated moisture. Through meeting with other natural features such as trees, aquifers and wetlands, this water is naturally filtered and supports life of all kinds, including fish, wildlife and forests.

At all stages of we benefit from the services that a watershed provides. We protect watersheds so we can continue to access clean water for drinking and recreational use, as well as maintain the natural balance of water to avoid floods and droughts. Each of our regions watersheds is as unique as the communities it supports.

Watershed management is not so much about managing natural resources, but about managing human activity as it affects those resources.

The drainage area of the river provides the natural boundary for managing and mitigating human and environmental interactions. Because human activity includes actions by governments, municipalities, industries and landowners, watershed management must be a cooperative effort. Effective watershed management can prevent community water shortages, poor water quality, flooding and erosion. The expense of undertaking watershed management is far less than the cost of future remediation.


Click on your watershed



Zoom in to the individual watershed...

WATER
Balance
MODEL *express*

Home Register Login

**CVRD**

Shawnigan


Part of the fastest growing electoral area in our region Shawnigan has long been used as a vacation destination. More and more people are choosing to live in the area year-round, increasing pressure on water quality and supply, and the ability of the watershed to effectively maintain its natural water balance.

As vacation cottages are redeveloped and urban expansion increases, the ability of the watershed to buffer its effects are diminished. Forestry is the still the main land use in the watershed, which provides an opportunity to maintain the watershed natural balance -- but only if managed properly. More hard surfaces means less green spaces to absorb rainwater before it enters the lake and creek. Instead, runoff containing everything from road residue to dog feces is carried directly into the water that many residents rely on for drinking.

More run off means higher volume, higher volume means more erosion and destruction the watersheds valuable streams.

Many homes around the lake have septic systems that are failing and/or are located close to the lake's edge. Increased runoff could lead to flooding nearby septic fields and leaking of septic wastewater into the lake. Local and seasonal residents, alike, stand to be affected if the quality of the lake is damaged.

Homeowners can help to reduce stress by managing rain water runoff on their property, while farmers can use best practices to ensure water is not running off their land and carrying with it fertilizer or pesticides.

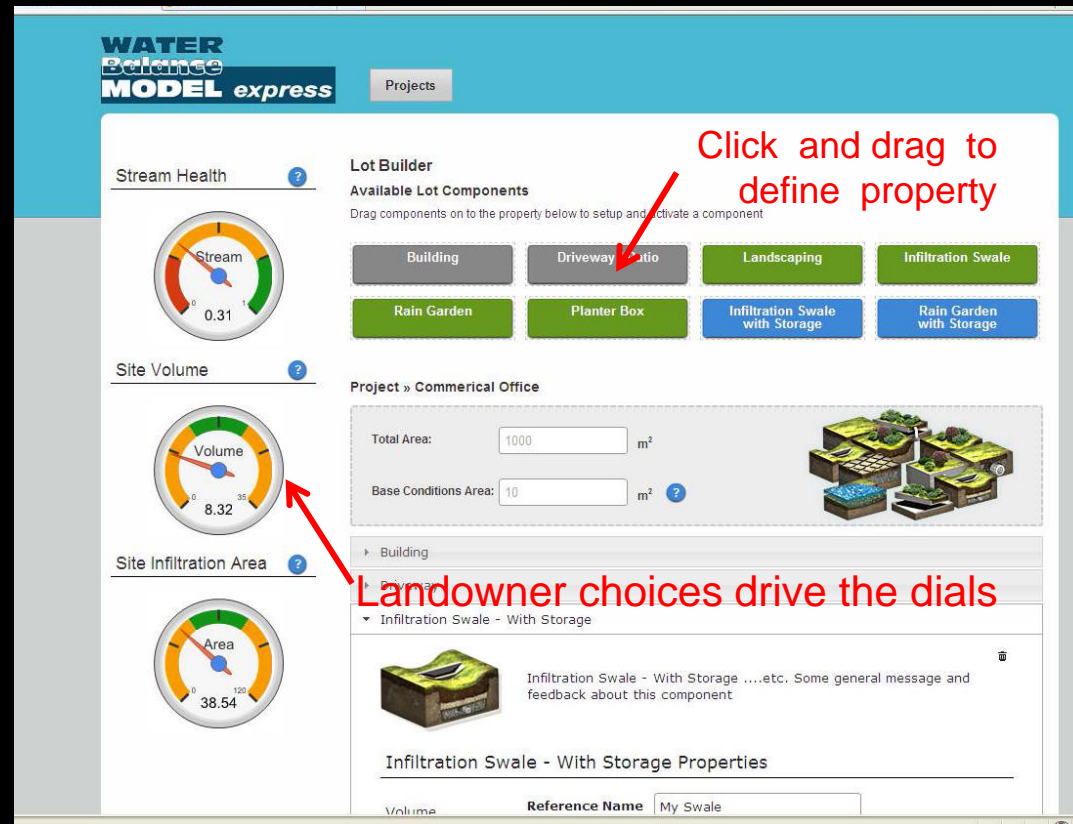


Calculator integrates three watershed-specific performance targets for mimicking the Water Balance and protecting stream health

Target Parameter
Storage Volume
Infiltration Area
Baseflow Release Rate

Water Balance Model Express for Landowners

INNOVATION: *The interface is no more complex than the dash board of a typical car*



The Partnership for Water Sustainability in BC is pleased to recognize the Cowichan Valley Regional District as a **Champion Supporter**

“The Cowichan Valley Regional District’s long-term commitment is helping the Partnership advance the vision for water sustainability through implementation of green infrastructure policies and practices.”

Tim Pringle
President



Did you know that Tim Pringle was the inaugural winner of the Land Champion of BC Award?