

Metro Vancouver Regional Engineers Advisory Committee (REAC)

Presentation on June 7, 2013

## **Rainwater Management in a Watershed Sustainability Context:**

---

***Collaborative Initiatives Will Help Municipalities  
Better Deliver on Regulatory Compliance***

Kim A Stephens, M.Eng., P.Eng., Executive Director



**the partnership  
for water sustainability in bc**

# Today I Am Here for 3 Reasons:

---

1. Thank REAC for your past support  
*(\$50,000 grant from Metro Van triggered federal funding)*
2. Inform you about the benefits of collaboration  
*(Monday marked the launch of an inter-regional initiative)*
3. Ask that you flag this date: September 19

# The Province is going down a pathway that integrates regulatory compliance and collaboration

---



“Regulatory requirements provide a driver for local governments to protect and/or restore watershed health over time. We also recognize that solutions will be achieved through partnerships, collaboration and regional alignment of efforts.”

October 2011

**Avtar Sundher**

Government and Compliance Section Head  
Environmental Protection Division, South Coast  
Ministry of Environment

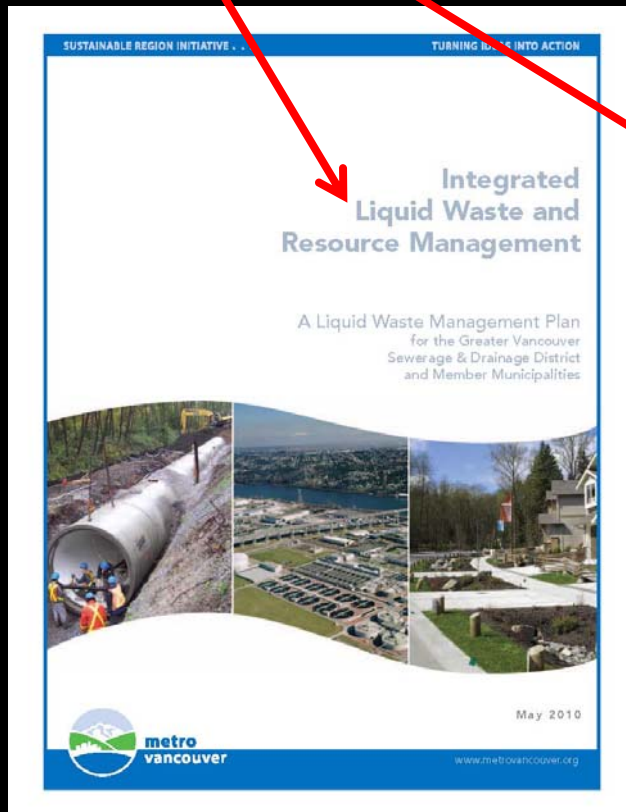
# Rainwater Management in a Watershed Sustainability Context

---

1. **WHY:**  
Frame the Regulatory Context
2. **WHAT:**  
Describe the Collaborative Model
3. **SO WHAT:**  
Elaborate on How Everyone Benefits

## Metro Vancouver and municipalities will:

*Integrated Plan spells out actions for “on-site rainwater management” that will protect and/or restore “watershed health”*



1.1.12 - Facilitate region-wide strategies and actions

1.1.20 - Update bylaws

1.1.21 - Update neighbourhood design guidelines

3.4.7 - Develop & implement ISMPs

*NOTE: use of the term “watershed blueprint” helps to create a picture (mind-map) of how to achieve the vision (desired future condition)*

3.5.9 - Report out annually to MOE

## **Metro Vancouver and municipalities will:**

---

*In May 2011, the Minister of Environment's 'conditions of approval' connected the dots between land use planning and watershed health because....*



There are financial liability & sustainability consequences

**TOO MUCH WATER:**  
*stream erosion and instability*

**TOO LITTLE WATER:**  
*fish will not survive*

# A GUIDING PRINCIPLE: Stream health depends on ALL properties in a watershed



**THE SOLUTION:** After development, each site will function hydrologically as it did before, or better!

# Rainwater Management in a Watershed Sustainability Context

---

1. **WHY:**  
Frame the Regulatory Context
2. **WHAT:**  
Describe the Collaborative Model
3. **SO WHAT:**  
Elaborate on How Everyone Benefits



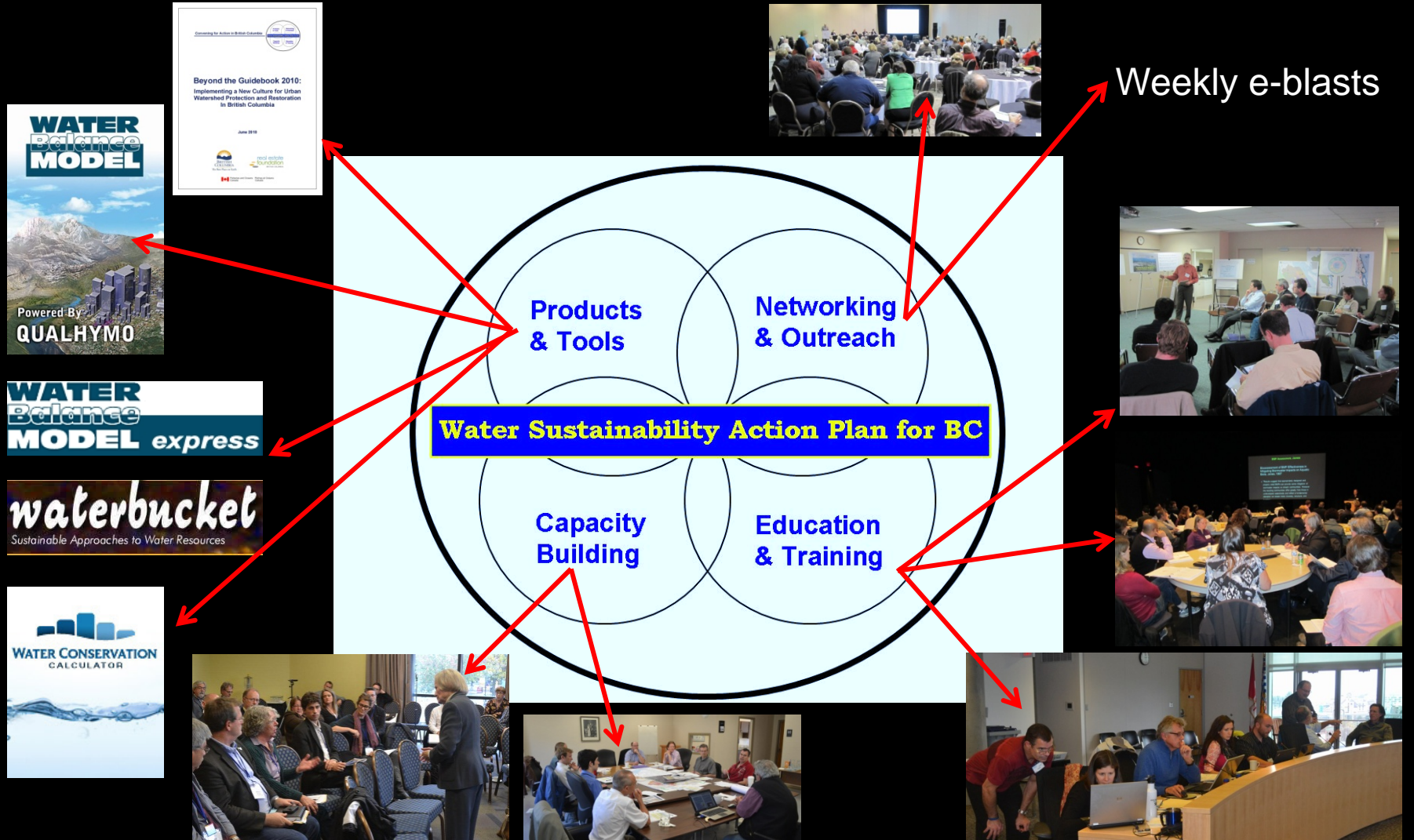


## the partnership for water sustainability in bc

- A not-for-profit society.....we are volunteers!
    - Majority of Metro Van members are charter members
    - Legal entity for Water Balance Model
  - Bridging role between Province, local government and community:
    - Foster alignment of regional and local actions with provincial goals
    - Facilitate inter-regional collaboration in local government setting
  - We are building on the 'collaborative model' to implement *Living Water Smart* and *Green Communities*:
    - Deliver *Water Sustainability Action Plan* through partnerships
    - Stewards of *Stormwater Planning: A Guidebook for BC*
    - Hub for "convening for action" network in local government setting
- Who we are
- What we do
-

# WHAT IS: Water Sustainability Action Plan for BC

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



## ***WHAT IS: Convening for Action in BC***

---

*Align workloads. Share tools and experience.  
Achieve more with the same resources.*

“Thanks to the recommendation from REAC,  
the \$50,000 grant from Metro Vancouver  
leveraged ~\$250,000 cash and in-kind to  
develop the *WBM Express* and  
*Drainage Infrastructure Screening Tool*”



Ted van der Gulik, Chair  
(Province of British Columbia)  
WBM Partnership



# Rainwater Management in a Watershed Sustainability Context

---

1. **WHY:**  
Frame the Regulatory Context
2. **WHAT:**  
Describe the Collaborative Model
3. **SO WHAT:**  
Elaborate on How Everyone Benefits

# Georgia Basin Inter-Regional Education Initiative

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



## **ACTION:**

We have brought together a core group of local government champions representing five regions

## **MISSION / DESIRED OUTCOME:**

Develop a performance monitoring framework that can be used to adjust actions and inform community planning that maintains healthy streams

# Rainwater Management in a Watershed Sustainability Context

---

*Core content for “Georgia Basin Inter-Regional Education Initiative” is founded on the experience of those who are leading change, including...*



- City of Surrey

- District of North Vancouver

*Hastings Creek Blueprint is the demonstration application for:*

1. *WBM Express for Landowners*
2. *Drainage Infrastructure Screening Tool*

- City of Coquitlam

# Water Balance Model Express for Landowners

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

The screenshot displays the 'Water Balance Model Express' interface. On the left, three circular gauges represent performance targets: 'Stream Health' (0.31), 'Site Volume' (8.32), and 'Site Infiltration Area' (38.54). A red arrow points from the 'Stream Health' gauge to the 'Driveway Ratio' component in the 'Lot Builder' section. A red arrow also points from the 'Site Volume' gauge to the 'Volume' dial in the 'Infiltration Swale - With Storage' component. The 'Lot Builder' section includes 'Available Lot Components' such as Building, Driveway Ratio, Landscaping, Infiltration Swale, Rain Garden, Planter Box, Infiltration Swale with Storage, and Rain Garden with Storage. The 'Project' section shows 'Commercial Office' with 'Total Area: 1000 m²' and 'Base Conditions Area: 10 m²'. The 'Infiltration Swale - With Storage' component is expanded, showing 'Infiltration Swale - With Storage Properties' with a 'Volume' field set to 'My Swale'.

Click and drag to define property

Landowner choices drive the dials

The targets for each ZONE are pre-set by the WBM Partner:

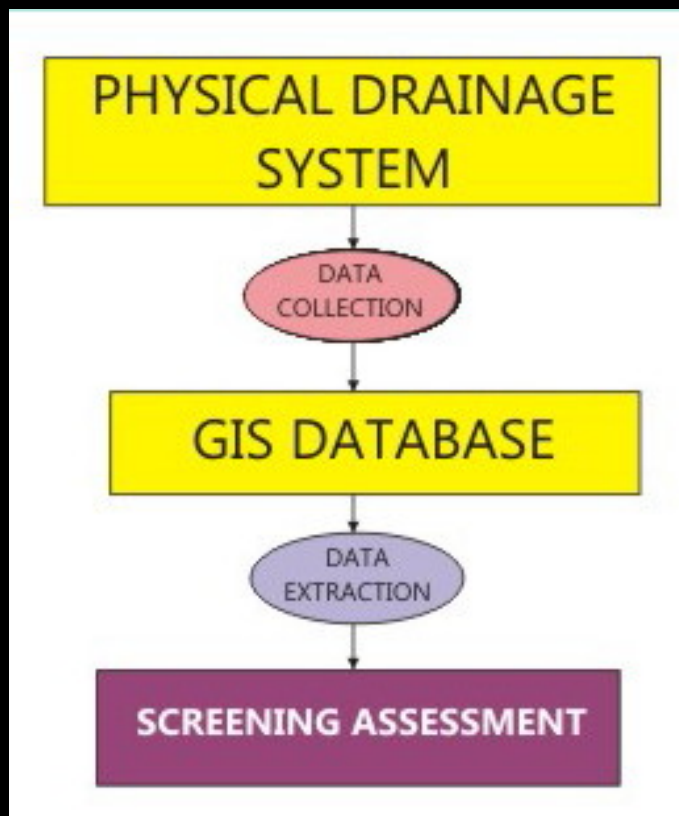
Baseflow Release Rate  
(i.e. Interflow Replicator Rate)

Storage Volume  
(i.e. Interflow Storage Replicator)

Infiltration Area  
(i.e. Groundwater Recharge)

# Drainage Infrastructure Screening Tool

INNOVATION: *A guiding principle is to provide an equal Level-of-Service or access to the drainage system for all properties within a drainage catchment*  
(where LOS ratio =  $Q_{\text{installed capacity}} / Q_{\text{design discharge}}$ )



## □ KEY BENEFITS are:

- ✓ Applies common-sense engineering
- ✓ Easy to use
- ✓ No need for expensive studies
- ✓ Ideal for scenario comparisons

## □ AND FURTHERMORE, municipalities can:

- ✓ Do analyses in-house
- ✓ Generate immediate answers
- ✓ Establish priorities & capital budgets quickly
- ✓ Assign financial responsibilities
- ✓ *Focus effort on environmental opportunities!*



# Georgia Basin Inter-Regional Education Initiative

*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

*Flag this Date* → September 19

The Partnership and APEGBC are  
partnering to hold a seminar titled:

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

Please encourage your staff, your colleagues and their staff to attend  
to learn about the Express, the Screening Tool, Watershed Health  
AND  
what North Vancouver District and Coquitlam are doing