

Hosted by Metro Vancouver Stormwater Interagency Liaison Group

November 5, 2015

# A Water Balance Model Partners Forum on “Sustainable Watershed Systems, through Asset Management

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*The Forum is the ‘event of record’ for release of “Beyond the Guidebook 2015”*

**Teaching Team:** Kim Stephens, Ted van der Gulik,  
Jim Dumont and Richard Boase





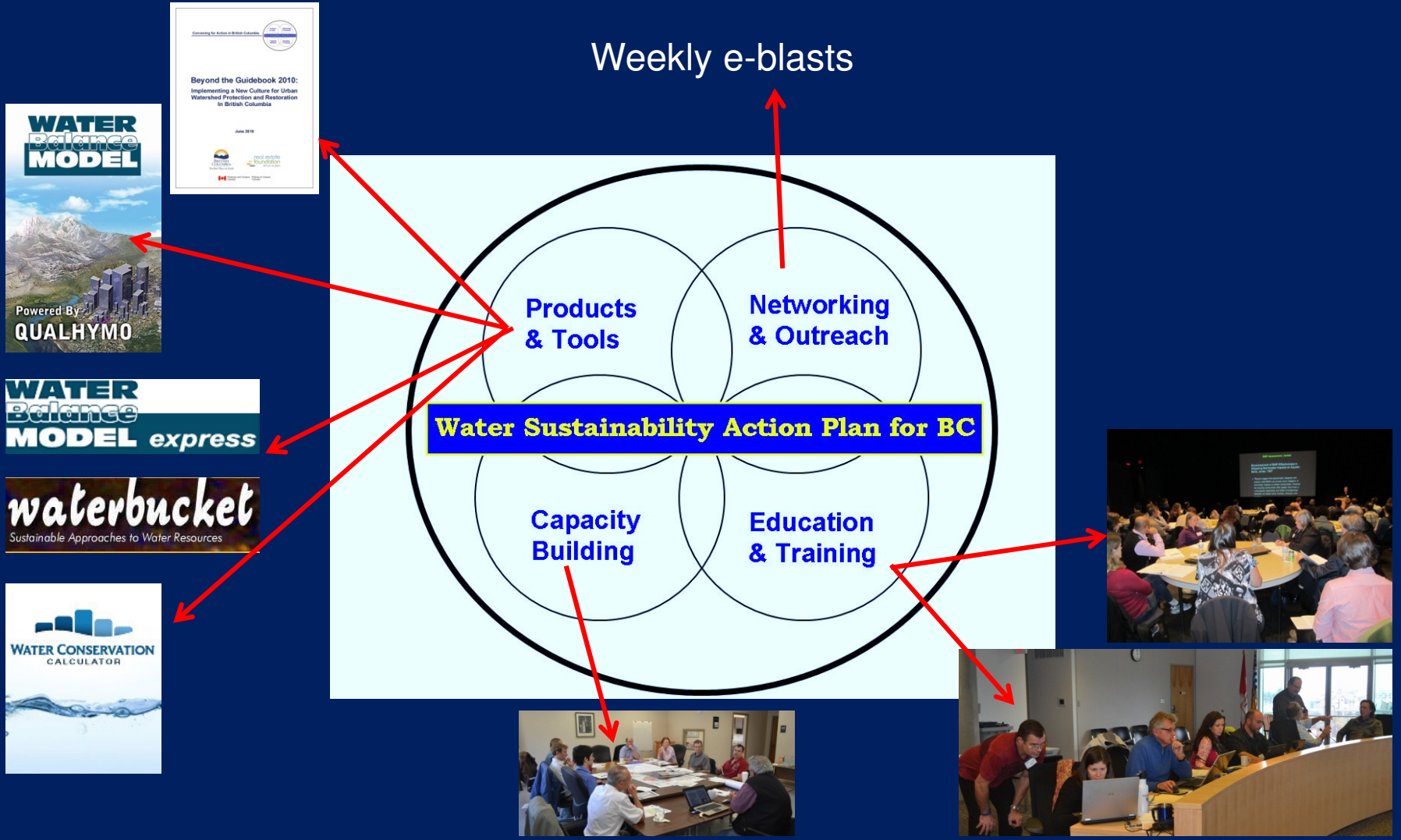
**The climate in BC is changing:**  
wetter, warmer winters; longer, drier summers.

**“Design With Nature” & “Maintain the Water Balance”**  
to ensure water supply in dry weather and  
prevent drainage impacts in wet weather.

# OUR MISSION:

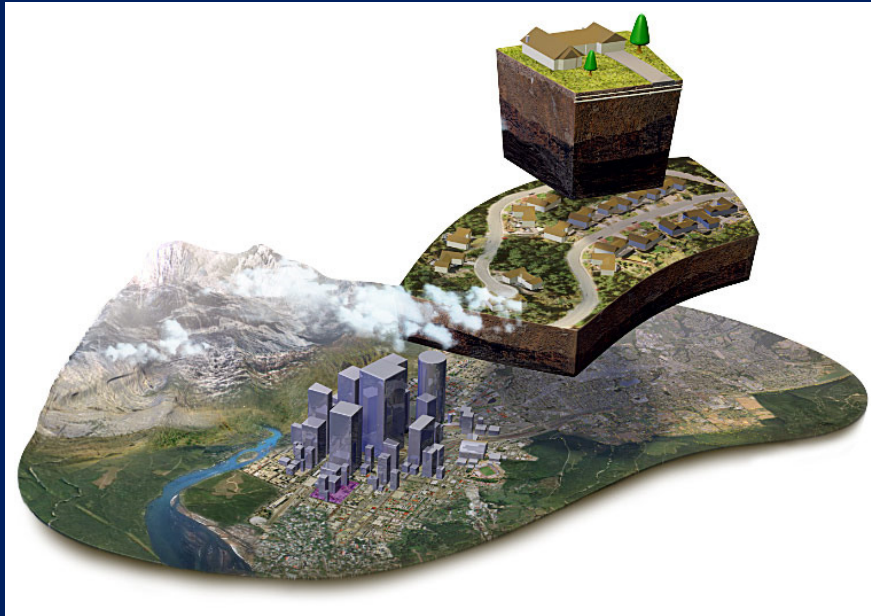


# Develop Tools. Develop Talent. Focus on Outcomes



# NEW PARADIGM –

## *“Watersheds as Infrastructure Assets”*



A watershed is an **integrated system**.

The **three pathways** by which rainfall reaches streams are ‘infrastructure assets’.

The three pathways provide **‘water balance services’**.



# Agenda

- ❑ **Why a Water Balance Forum** – *introduce framework for water-resilient communities*
- ❑ **Water Balance Express for Landowners** –
  - *unveil the first three to be implemented in this region:*
    - ✓ North Van District
    - ✓ Surrey
    - ✓ Coquitlam
  - *process to operationalize the Express for more partners in BC and beyond*
- ❑ **Water Balance Methodology** – *explain how to implement lessons learned over past 15 years and establish watershed targets to mimic water balance*
- ❑ **Sustainable Watershed Systems, through Asset Management** – *previews IREI work plan thru 2017*

*Background Photo: 2011 WBM Partners Forum hosted by Metro Vancouver*

The Forum is about the Cascading Objectives for Watershed Health, Resilient Rainwater Management and Sustainable Service Delivery such that....

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**By the end of the forum, we hope you will be inspired by what you have learned. So, it will help us if we understand what is important to each of you:**

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What is your passion?  
What do you wonder?  
What are your expectations?

## What will you do differently after you leave this forum? Will you be guided by these Key Messages?

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1. Embrace the Cascading Objectives for “Sustainable Watershed Systems’
2. Align your efforts with provincial “Game-Changers that Enable Action”
3. Learn from other champions who are “Leading Changes in Practices”

## About the Inter-Regional Educational Initiative...

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- Launched in 2012
- The Partnership is the secretariat
- Endorsed by 5 Regional Boards, including Metro Vancouver – in April, all recommitted through 2017
- Coquitlam and Surrey represent region on the Inter-Regional Leadership Team
- **By 2017**, a program goal is that all local governments would *understand* how to achieve 'Sustainable Watershed Systems, through Asset Management'



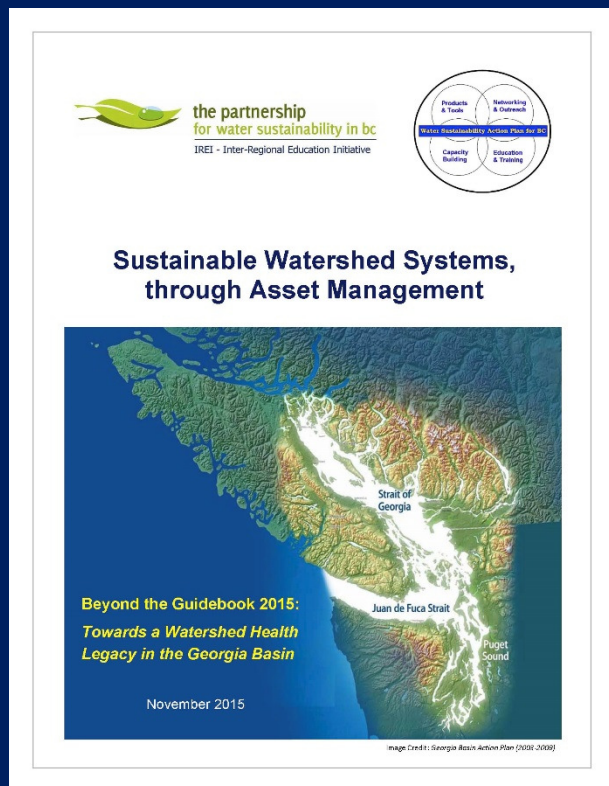
A group of people are seated around a large table covered with a white tablecloth in a meeting room. They appear to be in a collaborative discussion. The room has a whiteboard on the left and a framed picture on the wall in the background. The text is overlaid on the center of the image.

**“Through sharing & learning,  
ensure that where we are going is  
indeed the right way”**

Jody Watson  
Capital Regional District  
June 2013

*'Beyond the Guidebook 2015' is the third in a series, celebrates work by local government champions, and...*

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Defines “cascading objectives” for Watershed Health, Resilient Rainwater Management and Sustainable Service Delivery

Explains three provincial “game-changers” (in 2014) that enable local government action to restore watershed health

Tells five “regional stories”, including Metro Vancouver as viewed through a SILG lens, to showcase how everyone benefits from “sharing & learning” through inter-regional collaboration

## Cascading Objectives

### Watershed Health

*Protect and/or Restore Hydrologic Integrity*

### Resilient Rainwater Management

*Mimic the Natural Water Balance*

### Sustainable Service Delivery

*Integrate Natural Systems Thinking & Adaptation to a Changing Climate into Asset Management*

Create a Legacy

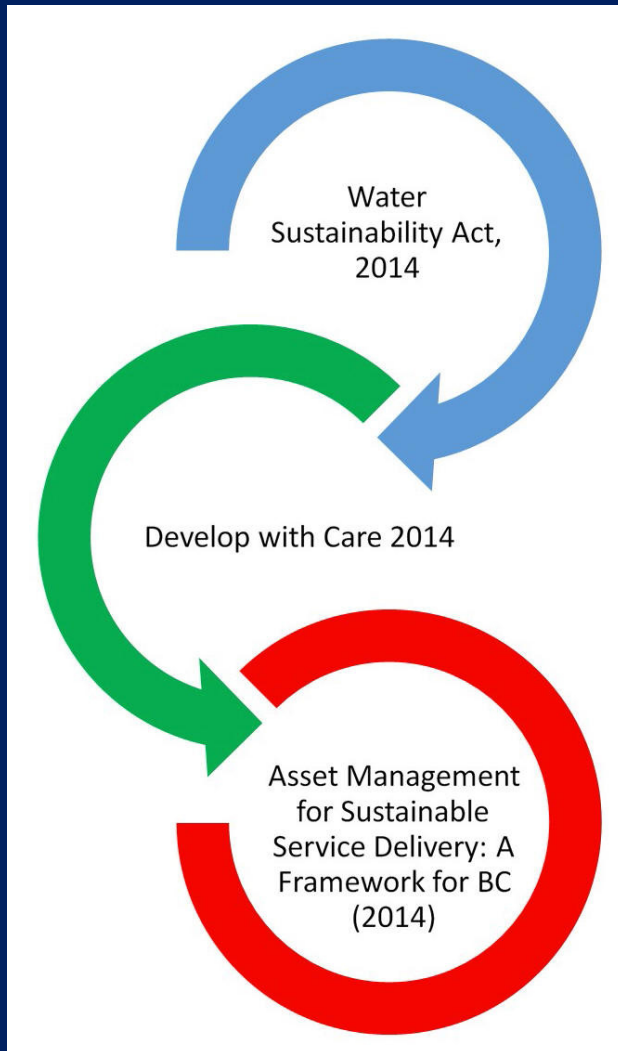
## Definitions

**Watershed Health** is a function of how the landscape is altered by humans. A primary measure is the condition of aquatic ecosystems in stream corridors. Altering the land surface short-circuits the water cycle. The result: either too much or too little flow in streams. **'Design with Nature'** requirements for land development maintain a watershed's hydrologic integrity.

**Resilient Rainwater Management** accounts for all rainfall-days per year. Emphasis is on soil-water interaction, how rainwater reaches streams via three pathways in a watershed (i.e. surface runoff, lateral interflow in shallow soils, deep groundwater), and performance targets for 'design with nature' solutions. These address both water supply and drainage. The technical foundation is the **Water Balance Methodology**.

**Sustainable Service Delivery** builds on the principles of Asset Management. It integrates land use, infrastructure servicing, financial and ecological planning. Emphasis is on the **Levels-of-Service** that assets provide, and 'what level is affordable' over time. Nature is an asset and provides 'services'. The benefits and value of 'design with nature' solutions grow over time.

*It has taken more than a decade to move from the 'teachable year' to an implementation framework .....*



*“Water-Resilient Communities” -  
What happens on the land matters!*

2003 – The Teachable Year

2008 – Call to Action

2014 – Game-Changers Enable Action

## Regional Water Sustainability Plans

### What We Want Our Regions to Look Like in 50 Years

*We define our communities based on what we allow on the ground*

*Every community has a different motivation and is working at different levels towards sustainability. There are various points of entry depending on where a community is with its water planning efforts.*

### Other Land & Water Planning Processes

Such as:

- Local and senior government initiatives
- Land use, zoning and development directives
- Water management plans
- Watershed protection initiatives

### Partnership for Water Sustainability in BC

Water Sustainability Action Plan for BC

### Sustainable Watershed Systems, through Asset Management

Water Balance Methodology

Ecological Accounting Protocol

## Looking ahead....

*“Collaboratively developed plans can integrate water and land use planning and can be combined with other local, regional or provincial planning processes to address water-related issues...”*



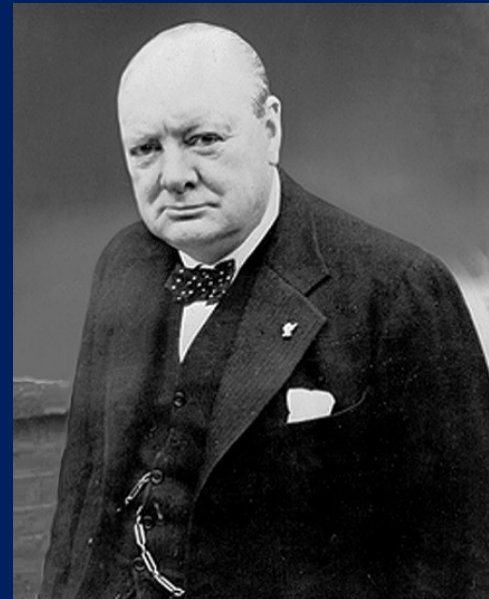
Jennifer Vigano  
Water Policy  
Ministry of Environment

*The five 'regional stories' are important because they create an understanding of Context, Intent and Results*

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“The farther back you can look, the farther forward you are likely to see.”

Sir Winston Churchill  
(1874-1965)



# In 1995, Dr. Daniel Pauly coined the phrase “Shifting Baseline Syndrome”

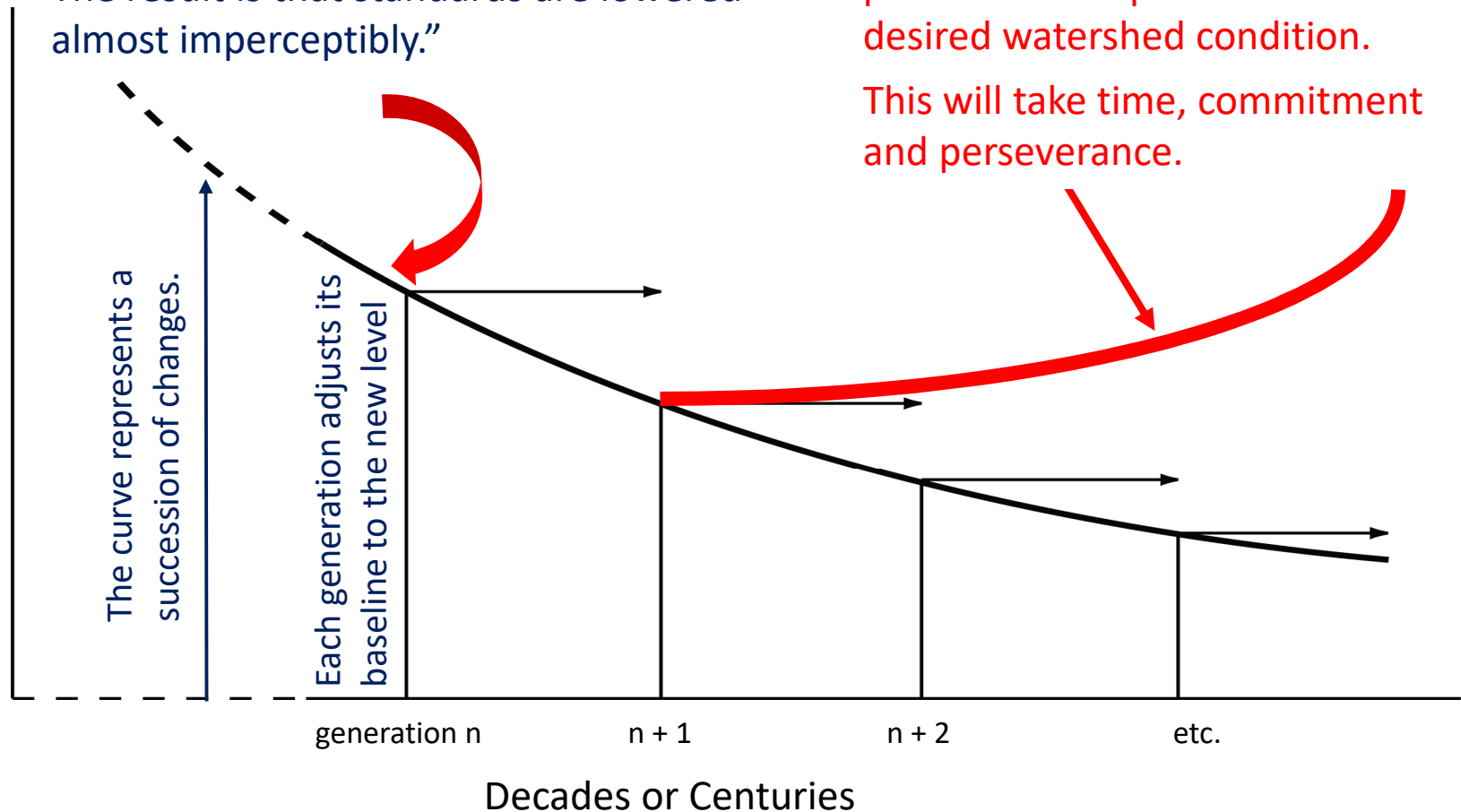


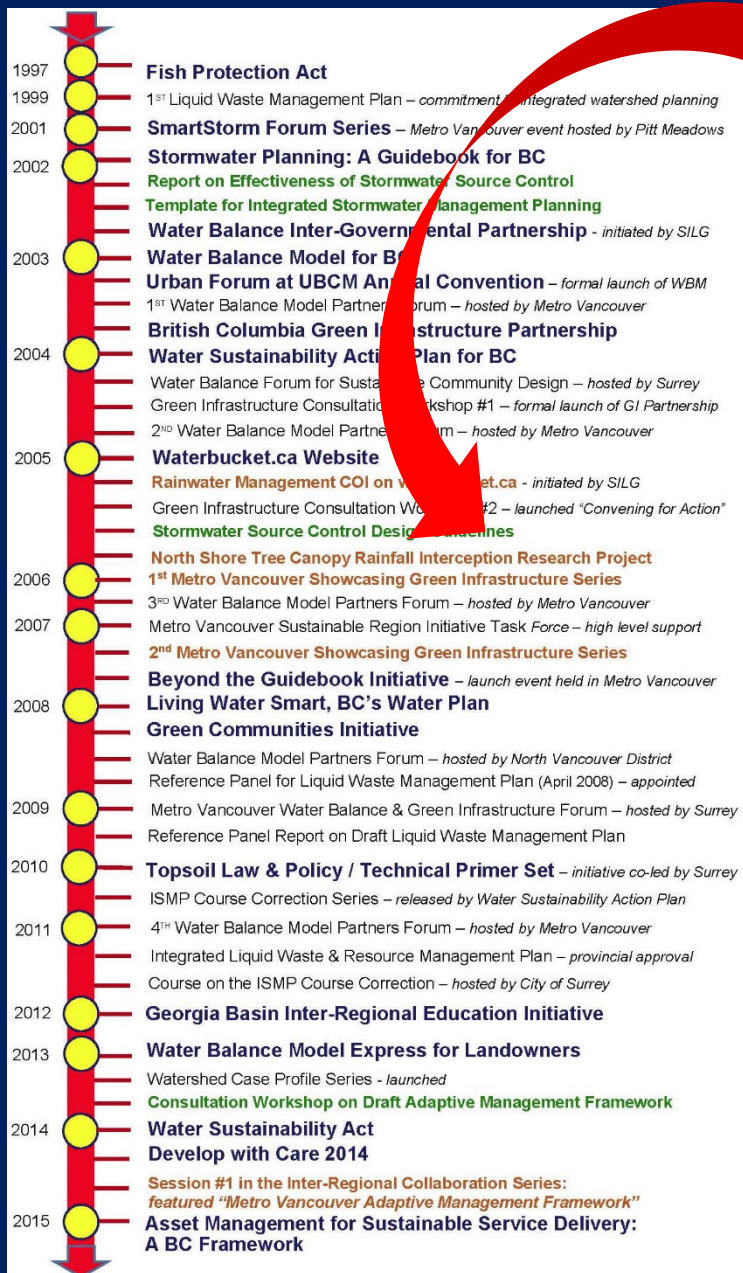
“With each new generation, the expectation of various ecological conditions shifts. The result is that standards are lowered almost imperceptibly.”

Communities can shift the baseline by implementing standards of practice that replicate and restore a desired watershed condition.

This will take time, commitment and perseverance.

Some Good Thing = Driver for Action  
(Aquatic Habitat, Salmon, Clean Water or...)





## Convening for Action in Metro Vancouver: Time-Line & Milestones

For almost three decades,  
the LWMP process has  
been a regulatory driver for  
watershed-based action

*This has been a cumulative  
building blocks process*

### COLOUR CODE:

BLUE = provincial milestone

BLACK = Metro Vancouver regional milestone

GREEN = SILG milestone

BROWN = SILG in collaboration with *Water Sustainability Action Plan*



*In May 2005, the Green Infrastructure Consultation Workshop hosted by the City of Surrey resulted in a 'watershed moment'*

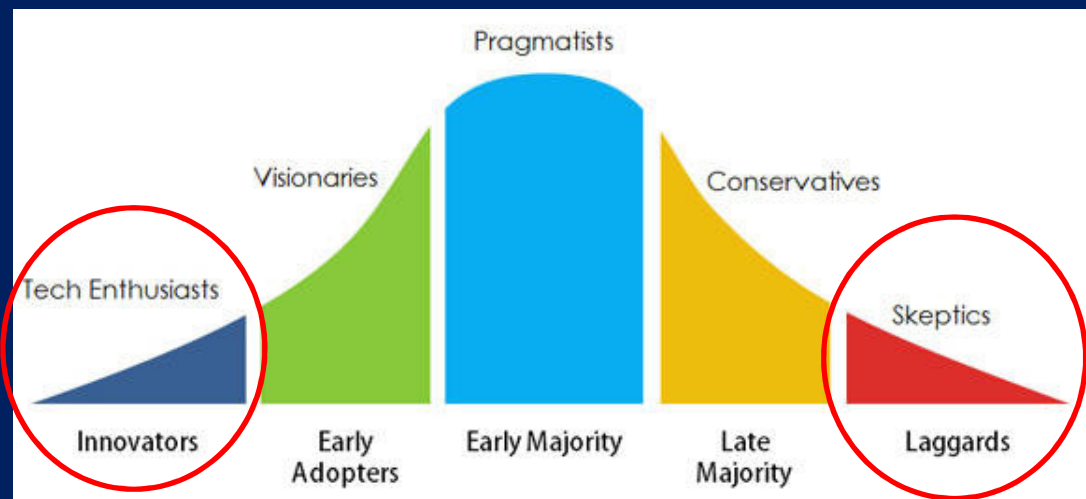
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The Surrey event was transformational.



We made the decision to celebrate the champions and ignore the laggards

The 'convening for action' program emphasis shifted from 'informing and educating' to 'showcasing and sharing'



How ideas are adopted over time

*By 2017, our goal is that those working in local government will understand how to achieve.....*

## **“Sustainable Watershed Systems, through Asset Management”**

*Applies to land uses that local government regulates and is founded on an understanding of how the **Water Balance Methodology** integrates the **Site with the Watershed, Stream and Groundwater Aquifer***

