



# the partnership for water sustainability in bc

## Parallel Journeys to a Resilient Future: Water Cycle / Water Balance Approaches in Australia and British Columbia – 2001 to 2016 and Beyond

by

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### ABSTRACT for KEYNOTE PRESENTATION

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**CONTEXT:** *In 2001, Kim Stephens was keynote speaker for a conference and workshop organized by a coalition of seven local governments in the Hunter Valley and Central Coast Region in New South Wales. The event was titled **Challenges and Opportunities for Water Sensitive Urban Development**. It was a seminal moment for cross-pollinating Australian and British Columbia experience, and for relationship-building. This has led to ongoing sharing and learning from each other.*

*At that 2001 conference, Kim Stephens remarked on our parallel worlds and how they revolve around a shared vision for Water Cycle (or Water Balance) management. His keynote presentation at **Stormwater 2016** is an opportunity for Kim Stephens to reflect on our parallel journeys during the period 2001 through 2016, and to look ahead. He will explain how British Columbia is responding to the impacts of a changing climate, and he will compare Australia's "top-down" type of governance with BC's "top-down & bottom-up" approach to implementing changes in water and asset management practices.*

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### A BRITISH COLUMBIA PERSPECTIVE ON A CHANGING CLIMATE

Western North America may be crossing an invisible threshold into a different hydro-meteorological regime. Annual volumes of water entering and exiting regions are not necessarily changing. Instead, what is changing is how and when water arrives and leaves – it is feast and famine, flood and drought! This is the 'new normal'.

Throughout 2015, an unprecedented winter-spring-summer drought extended from Mexico north to British Columbia (BC), and east across four Canadian provinces (BC, Alberta, Saskatchewan and Manitoba) to the centre of the North American continent.

In BC, the weather in 2015 has impacted on how the public views the climate and their understanding of how it is changing. There is now growing awareness that the summer dry season has extended on both ends. BC communities can no longer count on a predictable snowpack and reliable precipitation to maintain a healthy water balance in their watersheds.

After a period of relative hydro-climatic stability, changes in the composition of the Earth's atmosphere have resulted in the acceleration of the global hydrologic cycle with huge implications. We can expect deeper, more persistent drought punctuated by flooding.

We had no idea until recently of how much influence the hydrological cycle has on our day to day lives or on the broader conditions that define the distribution and diversity of life on this planet. It has been very difficult even for experts to grasp the full extent of what the loss of relative hydrological stability means.

## **MOVING TOWARDS WATER AND WATERSHED SUSTAINABILITY IN BRITISH COLUMBIA**

During the late 1960s, BC began its multi-faceted and ongoing journey towards sustainability. It has taken the past decade to begin implementing a policy, program and regulatory framework that makes 'Water-Resilient Communities' achievable.

Milestone years in this journey are 2003 ('the teachable year'), 2008 ('the call to action') and 2014 ('game-changers'). A unifying theme for these three milestone years is design with nature and build greener communities. 2015 is another teachable year.

Droughts, forest fires and floods in 2003 created a 'teachable year' for change. The province's year of weather misery and misfortune earned it a place at the top of Canada's weather stories for 2003.

In 2008, former Premier Gordon Campbell launched two transformational initiatives – **Living Water Smart, British Columbia's Water Plan**; and **Green Communities**. These established expectations vis-à-vis how land will be developed and how water will be used. The two constituted a call to action to prepare communities for a changing climate, choose to live water smart, and strive to build greener communities.

The 2008 'call to action' resulted in three landmark initiatives. These came to fruition in 2014. The new **Water Sustainability Act** connects land and water, and makes the link to desired water balance outcomes. **Develop with Care 2014**, an internationally acclaimed document, makes the link between environmental function and resilience as communities grow. **Asset Management for Sustainable Service Delivery: A Framework for BC** makes the link between local government services, the infrastructure that supports the delivery of those services, and watershed health.

BC is at a tipping point. The three game-changers are drivers for an approach that the Partnership for Water Sustainability in BC is branding as **Sustainable Watershed Systems, through Asset Management**. The Living Water Smart vision is to move beyond traditional infrastructure asset management and also account for nature's services. The asset management requirements for the Province's capital grants program provide the financial incentive for local governments to integrate 'watershed systems thinking' into asset management.

Watershed systems thinking covers the continuum from water supply to drainage, and encompasses human and/or ecosystem needs.

In BC, government enables outcomes. It does not prescribe solutions. The Province has long recognized that communities are in the best position to develop solutions which can be tailored to local needs and capacities. Hence, the three game-changers in 2014 **enable** implementation of necessary actions by local governments that would protect and/or restore the natural pathways by which rainfall reaches streams. Over time, this would achieve the goal of redistributing the seasonal water balance to restore hydrologic integrity in urban areas where local government regulates land use.

Watershed systems are infrastructure assets. Thus, a desired outcome in protecting and restoring hydrologic integrity in urban watersheds is to avoid incurring expensive fixes and/or an unfunded liability.

## SHARED DISCOVERY OF A KEY UNDERSTANDING

A commonality of understanding between BC and Australia is that we are managing a water balance in a connected system of human endeavour and ecosystem processes. This is a shared discovery. Systems analysis of water balances is a key shared process. Integration of urban planning and water resources management is a key issue.

Canadians have made a strong contribution to urban forests and natural watershed management. Canadians and Australians share the journey of needing to recognise the value of green and engineered infrastructure in this context. This is a departure from a view that only grey “concrete & metal infrastructure” has value or function. Ecosystem services are real and Canada in general and BC in particular may be more advanced than Australia in the early stages of this journey.

There is close collaboration between the Institute of Public Works Engineering Australasia and Asset Management BC. The BC approach to infrastructure asset management has learned from and built upon Australian experience, and is now taking asset management to another level with *Asset Management for Sustainable Service Delivery: A Framework for BC*. Holistic in approach, the BC Framework has garnered both Canada-wide and international attention.

Sustainable Service Delivery is defined in the BC Framework as: a collection of practices that enables continuous delivery of current community services in a responsible manner that does not compromise the ability of future generations to meet their needs.

Sustainable Service Delivery *is* the “New Paradigm”. It is the singular aim. Asset Management is the means to achieve the aim. BC is at the dawn of a new era for local governments in terms of how communities service urbanizing and redeveloping areas, and define how infrastructure is planned, financed, implemented and maintained.

## A CULTURAL DIFFERENCE

The easy going ‘she’ll be right mate’ culture of Australians masks strong aversion to change ‘we’ve always done it this way’. Australian water management is, mostly, a centralised top-down (driven by institutions) process. Management of water supply is separated from community as statutory monopolies govern by bureaucracy. In contrast, British Columbia is characterized by a bottom-up (driven by people) discussion ‘let’s talk about this’ about ideas - consensus via non-government organisations and community governance.

The graphic on the next page shows how the work of the Partnership for Water Sustainability fits within the provincial framework for Living Water Smart and Building Greener Communities in British Columbia.



A GOAL: **Build Greener Communities**

LIVING WATER SMART Deal with Uncertainty  
 CASCADING OBJECTIVES: Manage the Water Balance  
 Adapt to a Changing Climate

AN OUTCOME: **Settlement, Economy and Ecology in Balance**

