



the partnership
for water sustainability in bc

Waterbucket eNews on March 21, 2023
<https://waterbucket.ca/wscblog/>

Living Water Smart in British Columbia:

*Communities need annual
budgets to tackle the
Riparian Deficit along streams*

Note to Reader:

Waterbucket eNews¹ celebrates the leadership of individuals and organizations who are guided by the vision for [Living Water Smart in British Columbia](#)².

The edition published on March 21, 2023 featured the story behind the story of the Nested Concepts graphic. The Partnership created it to help local governments move past rhetoric, address the disconnect between oversight of land use and responsibility for stream condition, and establish annual budgets for stream and riparian area restoration.

The umbrella for Partnership initiatives and programs is the [Water Sustainability Action Plan for British Columbia](#)³. In turn, the Action Plan is nested within [Living Water Smart, British Columbia's Water Plan](#).



Cover Image Credit: photo by David Mackenzie,
a *Lifetime Member* of the Partnership for Water Sustainability

¹ <https://waterbucket.ca/wscblog/>

² https://waterbucket.ca/wcp/wp-content/uploads/sites/6/2017/11/livingwatersmart_book.pdf

³ <https://www.waterbucket.ca/cfa/sites/wbccfa/documents/media/81.pdf>

Editor's Perspective

Partnership for Water Sustainability experience is that effective knowledge sharing is facilitated by communication tools that make it easy for audiences to grasp and absorb foundational concepts.

At the conclusion of the 6-year program of applied research to evolve the methodology and metrics for [EAP, the Ecological Accounting Process](#), Tim Pringle and I identified the need for a clear and compelling graphic that would encapsulate the essence of EAP.

Consequences of weak oversight are measurable: As the EAP methodology and metrics evolved, we landed on the concept of the **Riparian Deficit**. In the local government context, the Riparian Deficit shows the magnitude, a measurable consequence, of the disconnect between land use oversight and direct responsibility for maintenance and management (M&M) of stream corridor conditions.

In the report series, [Striking a Balance](#), the BC Ombudsperson identified failure by local government to employ adequate oversight of stream systems. Historical land use decisions often have resulted in stream systems being “leftovers” in development that alters watersheds and stream corridors.

The Riparian Deficit shows the magnitude or measurable consequence of weak oversight and failure to manage stream corridors and adjacent riparian areas.

How we change what we are doing on the landscape: It required a process for us to develop the **Nested Concepts graphic**. How will the graphic be used, we asked ourselves? How do we communicate with a range of audiences, from academics to political folks, about core concepts?

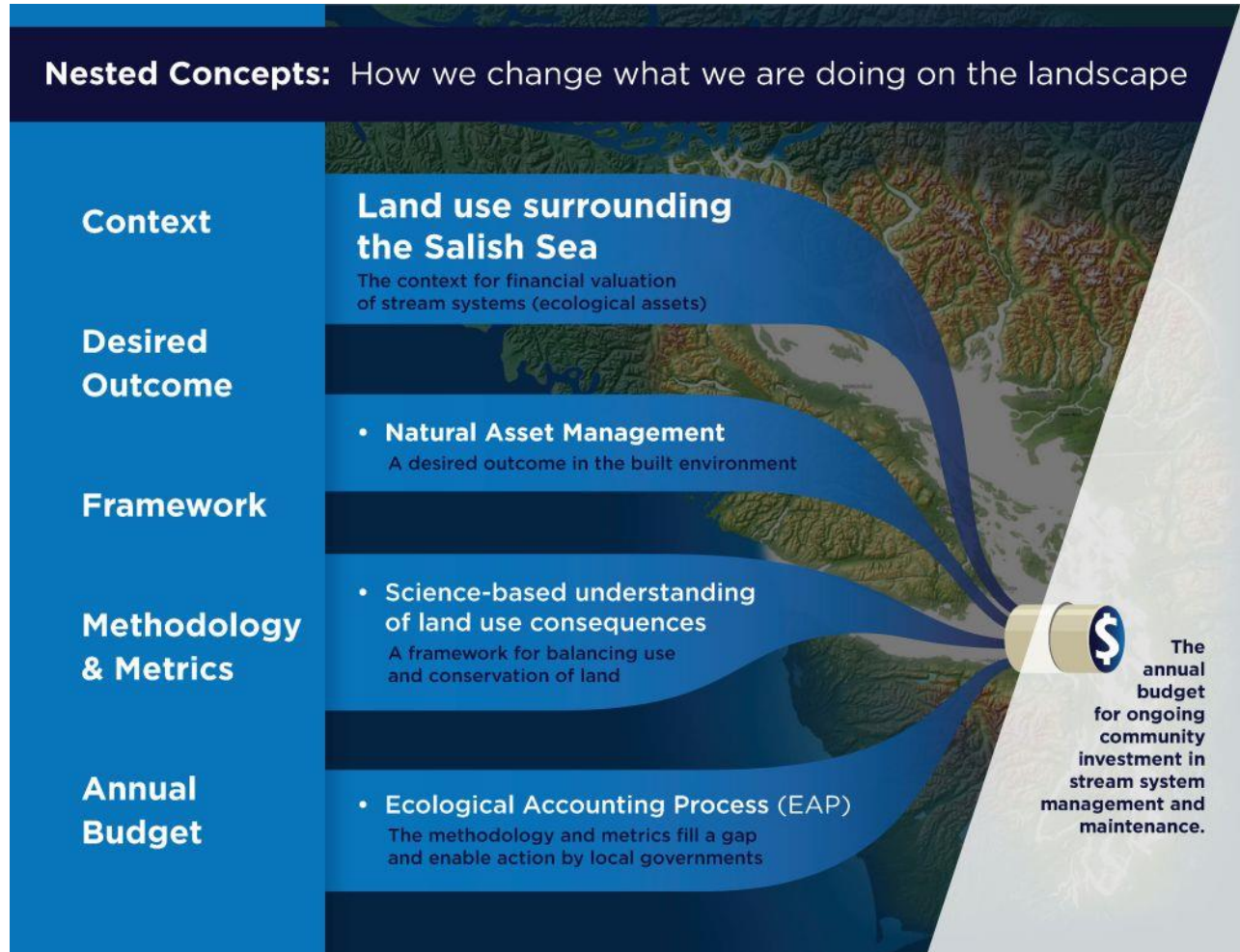
When the smoke cleared, we had distilled the essence of EAP into a set of succinct statements that we believe paint a picture and thus tell a story. In a very real sense, it is a case of less being more. We knew we had to keep it simple. Once we had the words right, a graphics designer brought our words to life in a visual way.



*Kim A. Stephens, MEng, PEng (non-practising),
Executive Director
Partnership for Water Sustainability in BC
March 2023*



Communities need annual budgets to tackle the Riparian Deficit along streams

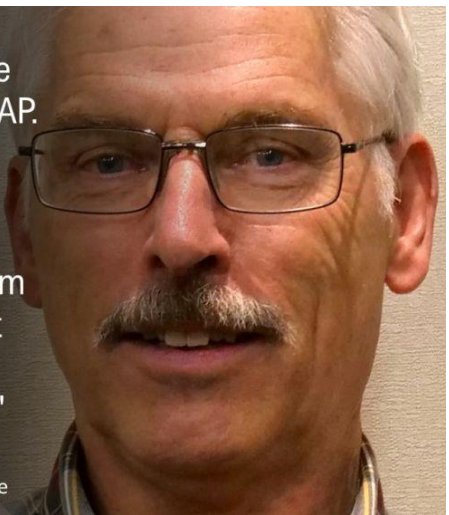


One-Minute Takeaway

The requirement that local governments have an Asset Management Plan addresses the disconnect between land use oversight and direct responsibility for maintenance & management of stream corridor condition

"The oversight question is one that we are addressing with EAP. Local governments have real data to quantify the financial value of streams as physical assets. This metric allows them to put streams into the basket of local government asset management responsibilities."

Tim Pringle, Chair, EAP Initiative



If we know how to do a much better job of protecting ecological features and stream systems in our communities and on our landscape, then why aren't we doing a better job? Why are streams still being degraded?

Why do we still see policies and practices that compromise the integrity of stream corridor systems and impose a financial liability upon communities? How do we change that?

These and other questions have driven development of the methodology and metrics for **EAP, the Ecological Accounting Process⁴**. The methodology and metrics focus on the land underlying the natural asset. In the case of stream systems, this is the setback zone defined in B.C. provincial legislation - namely, the **Riparian Areas Protection Regulation**.

⁴ <https://waterbucket.ca/gi/category/ecological-accounting-process/>

Challenges of using a professional reliance model in environmental protection

The 2014 investigation and [Striking a Balance report](#)⁵ by the BC Ombudsperson identified “significant gaps between the process the provincial government had established when the Riparian Areas Protection Regulation was enacted and the level of oversight that was actually in place.”

[Investigative Update: Striking a Balance \(2022\)](#)⁶ states that “many of the issues we identified remain as pressing as they were in 2014; there is work ahead to ensure that the systemic issues are fully addressed.”

How do we change what we are doing on and to the landscape?

In 2019, UBCM and the Ministry of Municipal Affairs formalized an expectation that local governments applying for provincial grants would integrate “natural assets” into their asset management processes. EAP shows them how to do it for stream systems and wetlands.

EAP provides local governments with the real numbers they need to deliver outcomes. In addition, effective communication tools are essential to convey core concepts in a way that is easy for audiences to absorb.

Eliminating the disconnect between oversight of land use and responsibility for stream condition comes down to this question:

What is the number for the line item in a local government annual budget for community investment in maintenance and management (M&M) of stream systems?

The Partnership for Water Sustainability created the [Nested Concepts graphic](#)⁷ to help local governments understand how they can re-frame their thinking and address the disconnect. The spotlight is on funding actions that achieve restoration of streamside protection zones.

⁵ <https://bcombudsperson.ca/assets/media/Public-Report-No-50-Striking-a-Balance.pdf>

⁶ <https://bcombudsperson.ca/assets/media/StrikingABalance-Report-Jan5.pdf>

⁷ https://waterbucket.ca/gi/wp-content/uploads/sites/4/2023/03/Nested-Concepts_horizontal-version_Dec-2022.pdf

STORY BEHIND THE STORY:

Nested Concepts graphic illustrates how we change what we are doing on the landscape

The essence of the challenge as Tim Pringle and I saw it was figuring out how we would communicate a mix of ideas and place, with **‘the place’** being the Salish Sea and the lands surrounding and draining into it.

In broad terms, this place in the southwest corner of British Columbia is called the Georgia Basin Bio-Region. But it is more than just British Columbia because the bioregion includes the tributary land that is situated in the northwest corner of Washington State.

The Salish Sea itself is made up of two bodies of water – Puget Sound in Washington State and the Strait of Georgia in British Columbia. We call it the Salish Sea. But it is more like a big lake. In fact, and in terms of size, the [Salish Sea has dimensions comparable to Lake Champlain in the state of Vermont⁸](#) in the eastern United States.



⁸ <https://waterbucket.ca/rm/category/showcasing-british-columbias-watershed-based-approach/at-events-outside-canada/2015-leahy-environmental-summit/>

Could Today's Problems be Tomorrow's Opportunities?

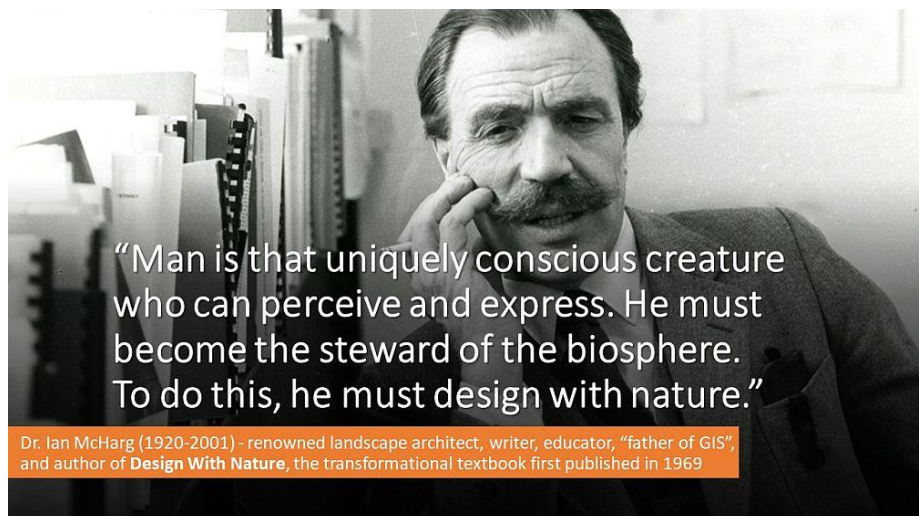
We concluded that the Nested Concepts graphic need not explain things in great detail. It just had to engage the attention of the reader who then would want to learn more.

So, we asked ourselves, how do we frame what the issue is and what communities need to do? Well, the issue is that **the way we develop land has adverse consequences** for the health of the streams and rivers flowing into the Salish Sea. And those consequences impose a financial liability upon communities.

The flip side of a problem is an opportunity. So, what must communities do to turn today's problems into tomorrow's opportunities? The answer is to begin the process of changing what we are doing on the landscape, one property at a time, to move from cumulative *impacts* to cumulative *benefits*.

Simply put, that means change our development practices by **designing with nature**. This means respecting natural systems. This is not a new idea. The legendary Ian McHarg introduced it in the 1960s. This way of thinking has been embedded in our convening for action language in British Columbia for the past two decades. The Partnership develops tools and resources to support and enable designing with nature.

With these thoughts as the backdrop, the structure for the Nested Concepts graphic nicely fell into place.



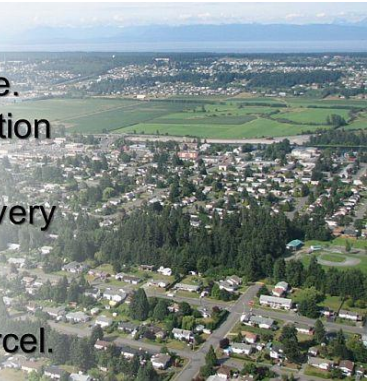
Five Nested Concepts tell a story

Five ideas tell the ‘story behind the story’ of EAP, the Ecological Accounting Process through the lens of Nested Concepts. Expressed as soundbites, the five nested ideas are **Context, Desired Outcome, Framework, Methodology & Metrics, Annual Budget**. The five create a visual mind-map. Next, we explain what each means in broad terms.

CONTEXT – Land use surrounding the Salish Sea:

The Salish Sea is our geographic context, and the salmon and Orca whales are the canaries in the coal mine! More pointedly, the land use surrounding the Salish Sea is the context for financial valuation of stream systems which are ecological assets of primary concern in a local government setting. The starting point for turning things around is that local governments need real numbers to make the financial case for doing business differently.

Decisions by elected Councils and Boards are made at the parcel scale. Getting it right about financial valuation of ecological services starts at the parcel scale and recognizing that every parcel is interconnected within a system. EAP is the only ecological methodology that deals with the parcel.



DESIRED OUTCOME – natural asset management in the built environment:

We manage what we measure. We can manage engineering infrastructure because we have hard numbers. We know, for example, what it costs to supply and install buried pipe. Yet we have an **Infrastructure Deficit** because historically communities have not done a good job in planning ahead for renewal or replacement.

But that ‘failure to manage’ is now being remedied through implementation of [Asset Management for Sustainable Service Delivery: A BC Framework](https://www.assetmanagementbc.ca/wp-content/uploads/Asset-Management-for-Sustainable-Service-Delivery-A-BC-Framework-.pdf)⁹.

⁹ <https://www.assetmanagementbc.ca/wp-content/uploads/Asset-Management-for-Sustainable-Service-Delivery-A-BC-Framework-.pdf>

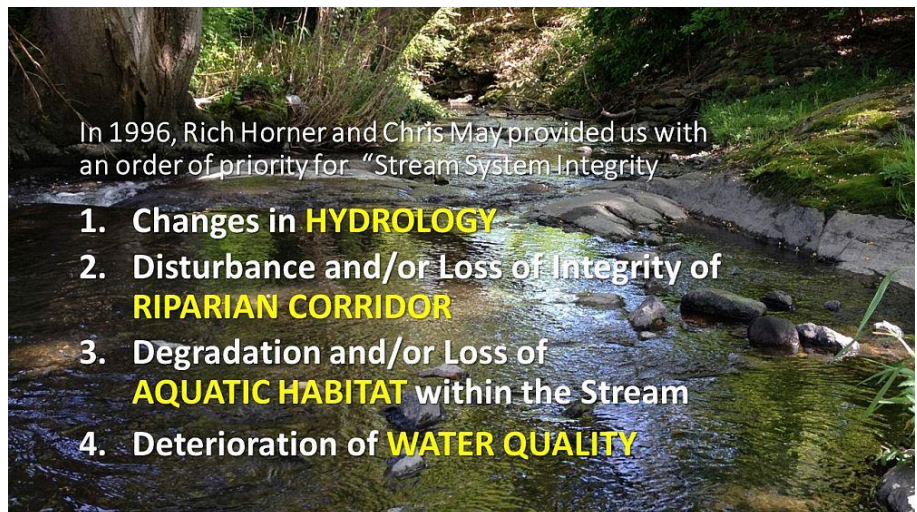
Success in moving forward with Engineered Asset Management gives us confidence that we can do the same for Natural Asset Management. But success will only follow if we get three elements right. In order of priority, the three are: **guiding philosophy**, **pragmatic methodology**, and **defensible metrics**.

The Partnership for Water Sustainability describes the progression as a journey along the Asset Management Continuum. The local government reality is that it is one step at a time and incremental progress takes time.



FRAMEWORK – science-based understanding of land use consequences:

Rich Horner and Chris May are the Washington State researchers who correlated changes on the landscape with the consequences for streams. In the mid-1990s, their findings were transformational. Their work shook the foundations of traditional engineering practice. Horner and May provided us with a science-based framework for balancing use and conservation of land.



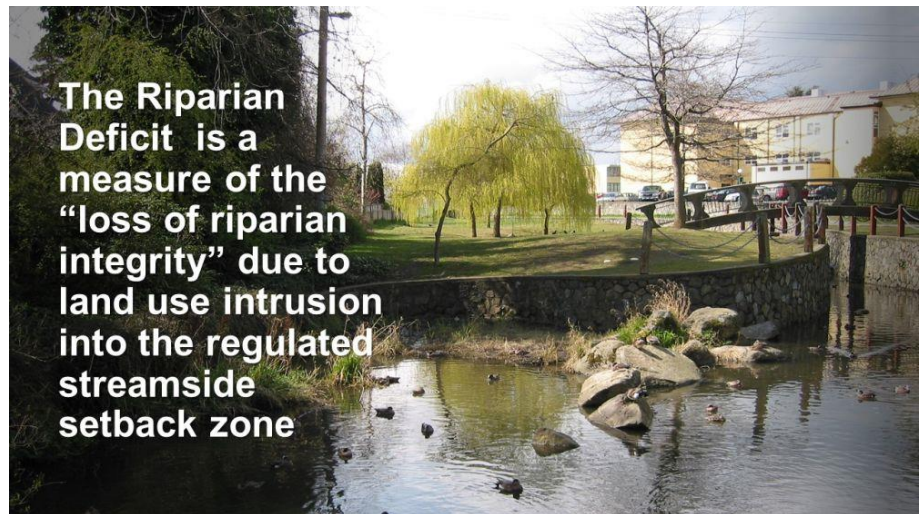
The Partnership calls this the [Roadmap for Protecting Stream System Integrity](#)¹⁰. We must stay true to the science if we hope to make a difference. The problem is the gap or disconnect between what communities know should be done versus what they allow to continue. That is an ever-present challenge.

METHODOLOGY & METRICS – Ecological Accounting Process (EAP):

Streams in urban, suburban and rural settings are assets that require maintenance and management (M&M). [EAP provides an original way to analyze and present data from existing sources as well as field observations](#)¹¹. The EAP methodology and metrics fill the gap and would thus enable action by local government.

[The Riparian Deficit is a measure of land use intrusion along streams](#)¹². A comparatively low value is a positive indicator of the effectiveness of streamside setback regulation. The Riparian Deficit is equivalent to the well-known Infrastructure Deficit that currently drives **Asset Management for Sustainable Service Delivery**.

Having a number for the Riparian Deficit provides environmental planners with a point of departure for balanced inter-departmental conversations about the services that natural and constructed assets each provides.



¹⁰ https://waterbucket.ca/gi/wp-content/uploads/sites/4/2023/03/Road-Map-for-Stream-System-Integrity_2022_v1.pdf

¹¹ <https://waterbucket.ca/gi/2023/02/23/program-of-applied-research-to-test-refine-and-mainstream-methodology-and-metrics-for-cological-accounting-process/>

¹² <https://waterbucket.ca/gi/2023/03/05/cascading-concepts-create-a-mind-map-for-eap-the-ecological-accounting-process/>

ANNUAL BUDGET - how much:

There are two basic questions that drive **Asset Management for Sustainable Service Delivery**. One, what does maintenance and management (M&M) of stream systems cost? Two, where does the money come from?

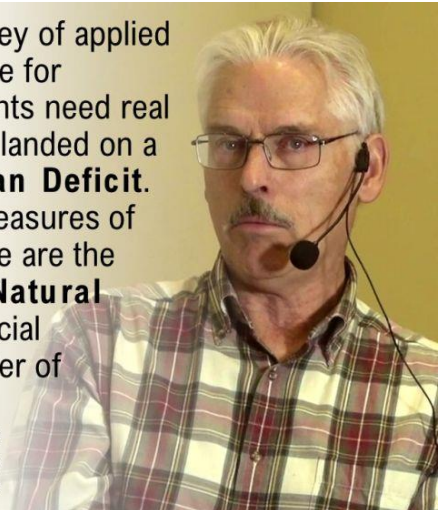
With EAP, local governments have the tool they need to populate line items within Asset Management Budgets for ongoing investment in stream system M&M, just as they would do for an engineered asset.

Realistic, affordable and acceptable – those three attributes describe a defensible budget.

“The story of EAP is about a journey of applied research to make the financial case for streams. Because local governments need real numbers to deliver outcomes, we landed on a concept which we call the **Riparian Deficit**. This allows us to express three measures of value in a single number. The three are the value of the stream corridor as a **Natural Commons Asset (NCA)**, the social and ecological values, and the order of financial magnitude.”

Tim Pringle

Chair, Ecological Accounting Process Initiative
Partnership for Water Sustainability in British Columbia



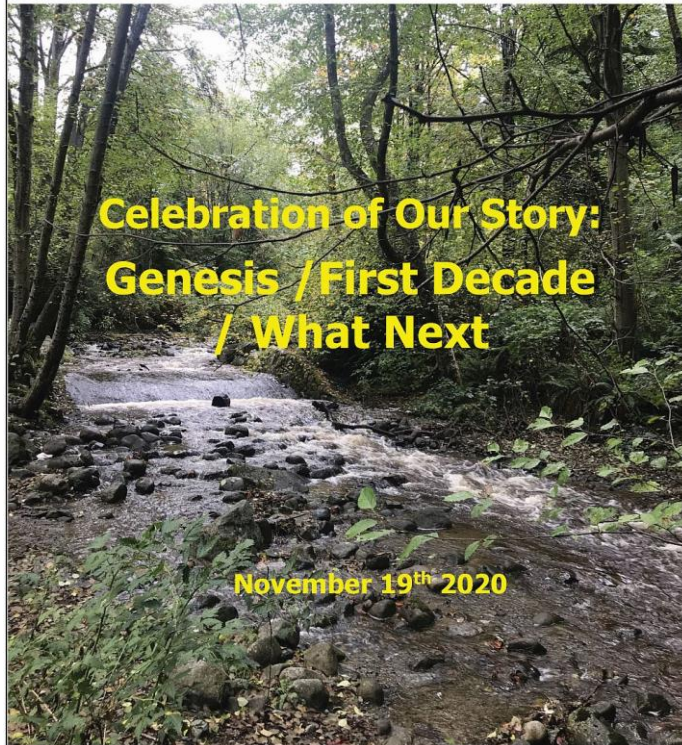
“Nested Concepts is a mix of ideas and place. How will the graphic be put in play? The Partnership will use it in documents and presentations to communicate core concepts to a range of audiences, from academics to political folks.”

Kim Stephens, Partnership for Water Sustainability in BC





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TO LEARN MORE, VISIT:

<https://waterbucket.ca/about-us/>

About the Partnership for Water Sustainability in British Columbia

Incorporation of the Partnership for Water Sustainability in British Columbia as a not-for-profit society on November 19, 2010 was a milestone moment. Incorporation signified a bold leap forward.

Over two decades, the Partnership had evolved from a technical committee in the 1990s, to a “water roundtable” in the first decade of the 2000s, and then to a legal entity. The Partnership has its roots in government – local, provincial, federal.

The Partnership has a primary goal, to **build bridges of understanding** and pass the baton from the past to the present and future. To achieve the goal, the Partnership is growing a network in the local government setting. This network embraces collaborative leadership and **inter-generational collaboration**.

The Partnership believes that when each generation is receptive to accepting the inter-generational baton and embracing the wisdom that goes with it, the decisions of successive generations will benefit from and build upon the experience of those who went before them.



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