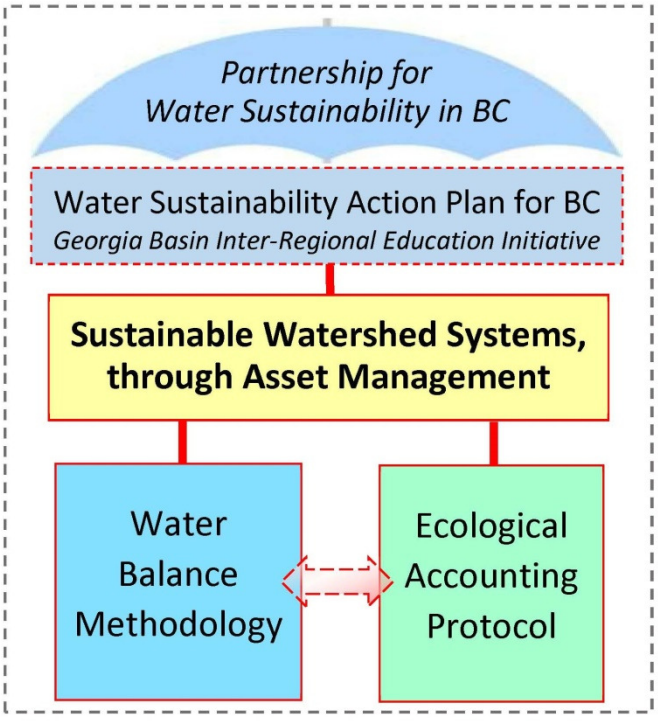
UPDATE: Ecological Accounting Protocol – A Tool to Calculate the Opportunity Cost of Drainage Infrastructure

By Tim Pringle, Chair, Ecological Accounting Initiative, Partnership for Water Sustainability in BC

*This article is a companion to **Vision for "Sustainable Watershed Systems" resonates with audiences in BC and Beyond**. It is a progress report on the ongoing development of the Ecological Accounting Protocol (EAP) by the Partnership for Water Sustainability in BC ("the Partnership").*

In November 2015, and with release of *Beyond the Guidebook 2015: Moving Toward "Sustainable Watershed Systems, through Asset Management"*, the Partnership launched a process to introduce EAP into standard practice. EAP is one of the twin technical pillars for the whole-system, water balance approach that would refocus business processes to properly manage **watershed systems** within the built environment.

EAP is a method of ascertaining economic values of services drawn from natural assets. It is a tool for practitioners in the local government setting. The purpose of EAP is to help practitioners calculate the opportunity cost of drainage infrastructure.



Synopsis

The purpose of this progress report to the Asset Management BC readership is to inform as follows:

- Provide a perspective on how the thinking behind the EAP pillar, and awareness of the EAP process, unfolded over the course of 2016.
- Draw attention to the significance of the EAP presentation at the FLOWnGROW workshop, co-hosted with the Okanagan Basin Water Board and Irrigation Industry Association in November, as a milestone moment in rolling out the concept.
- Foreshadow how the upcoming Comox Valley Eco-Asset Symposium fits into a bigger picture.

The EAP approach begins by first recognizing the importance of a stream in a natural state and then asking: how can we maintain those ecological values while allowing the stream to be used for drainage.

What Gets Measured Can Be Managed

If natural assets and derived services variables are not measured, they will not be managed in the context of drainage infrastructure.

This lesson is manifest in the persistent problems in the quality of infrastructure and unfunded liabilities associated with over-reliance on engineered measures (and other factors).

Getting the Logic Right: Over the past year, we have improved the logic of EAP. In a nutshell, it is about specific values (pricing) - not imputed, generalized values.

Since cost-avoidance, at least perceived cost-avoidance, motivates much of the decision-making process about infrastructure, and development in general, why has the obvious role of natural assets been omitted to date?

EAP suggests it is the lack of measurement.

Big Ideas & Details: The big ideas about imputed values are part of the sales pitch, but they are not the details needed for implementation.

EAP is about the details. What is the defined drainage system work offered by a natural asset worth? What is the price?

To fully appreciate how we have arrived at this logic, one needs to understand how a green infrastructure way-of-thinking has evolved over the past 15 to 20 years. It has been a building blocks process.

Green Infrastructure in Context

Policy and practices that recognize the value of natural assets began to attract widespread attention in BC communities circa Year 2000 when green infrastructure concepts were first introduced.

Macro versus Micro: Green infrastructure concepts and practices continue to evolve; the interest in eco-asset designations is the most recent stage (also "regenerative design"). However, these perspectives are rather macro.

Communities still need to deal with the micro realities. What does a stream do? Can it be drawn on to support infrastructure? Will such a process improve sustainable service delivery and the cost of doing it?

Increasingly, communities are expressing interest in the process of valuing natural assets as part of managing settlement growth. The Town of Gibsons, for example, is a leader in policy about eco-assets. The Municipal Natural Asset Initiative, a multi-partner initiative is sponsoring several projects to illustrate strategies to value natural assets and influence policy.

In March 2017, the conservation community in the Comox Valley is hosting an Eco-Asset Symposium. The Partnership is participating to explain the detailed method of the EAP to establish actual prices for civil services drawn from natural assets.

A Tale of Two Watersheds: Under the umbrella of the Georgia Basin Inter-Regional Education Initiative, later in 2017 the Partnership is planning to undertake two watershed case studies – one within a municipality (Town of Comox); the other within a regional district electoral area (Cowichan Valley) – to apply, test and refine EAP

Looking ahead, the Comox case study is envisioned as a tale of two watersheds. One would expose the price of not recognizing or using the services of the watershed. It is the negative cost case. The other would illustrate the price of the work needed to incorporate protection and use of natural assets for drainage infrastructure.

FLOWnGROW Workshop: The event was the fourth in an annual series organized by the Partnership. The series is designed to draw attention to leading thinkers and to 'big ideas' that would transform how communities tackle critical issues.

Throughout 2016, the presentations described in the companion article touched lightly on the vision for EAP. It was the FLOWnGROW forum that "made EAP authentic".

A Measure of True Value

EAP is a tool to help calculate the opportunity cost of drainage infrastructure to measure the true value of the natural system as an item of infrastructure.

The measurement and pricing process will build an index that quantifies and prices civil services drawn from natural assets that may be and, if possible, should be included in infrastructure design, construction, maintenance and operations.

As more projects are analyzed, the index will provide measures of the financial value of specific hydrological functions and services in a drainage context.

As for an approach to outreach and professional development, we believe that audiences would appreciate a conversation rather than a presentation. We hope they would be curious and gladdened to know that the Partnership has thought long and hard about the need for EAP and the role it would play in accurately valuing the existence of natural assets and the price/cost of the services that may derived from them for drainage infrastructure design, construction, and life-cycle management.

What Gets Measured Can Be Managed: This is an inclusive and logical approach. Recognize all of the variables in the equation. They must be measured, so we have figured out how to do it.

Communities and the practitioners that shape them will be glad to know that optimum infrastructure design and construction can and ought to equal watershed health. This is fundamental to sustainability.

Accepting this reality and dealing with it positively (measure and manage) contributes fundamentally to other challenges in the landscape - including climate change, food security, protecting property values, supporting healthy environments (air quality, proximity to nature, etc.), adding accessible natural amenities to the "urban" fabric, etc.

Finally, sustainability also means apply cathedral thinking; build basic settlement assets that will last. Drainage infrastructure and other infrastructure are realistic targets for greatly improved longevity and reduced life-cycle costs.

EAP will contribute significantly to such sustainability.

Let the taxpayers and politicians applaud!

To learn more: www.ecologicalaccountingprotocol.ca