

# Partnership for Water Sustainability in BC and Mount Arrowsmith Biosphere Research Institute

## Information Package for the Regional District of Nanaimo about the “3-Year Transition Strategy” for EAP, the Ecological Accounting Process

**OVER-ARCHING CONTEXT:** The Partnership and MABRRI share a vision to train the next generation of land use, GIS and drainage professionals in the use and application of EAP, the Ecological Accounting Process. Our commitment is to help local governments operationalize Natural Asset Management seamlessly and effectively over time.

The Partnership’s 4-step process is conceptualized on Attachment A. We are currently in Step 3 which is to embed the EAP program in MABRRI. Beginning in 2023, and over a 3-year period, we will partner with three willing local governments to undertake a cohort of EAP projects as a collaborative effort to share with, learn from, and support each other.

In addition to the RDN, we are engaged in conversational processes with the City of Nanaimo and Municipality of North Cowichan to bring together an inter-governmental team of collaborators.

### A Readers’ Guide to Understanding “EAP, THE ECOLOGICAL ACCOUNTING PROCESS” and How It Would Support *the RDN Strategic Plan*

<p><b>What is EAP?</b></p>	<p>EAP is a methodology and metrics for: 1) integrating Natural Assets, notably stream systems, into <b>Asset Management for Sustainable Drainage Service Delivery</b>; and 2) establishing annual budgets.</p> <p>NOTE: <i>A municipal Drainage Service has two interconnected components – one is the constructed infrastructure, and the other is the stream system.</i></p>
<p><b>What is the context for EAP?</b></p>	<p>EAP puts environmental planners on an equal footing with engineers and accountants and provides a starting point for a <i>balanced conversation</i> about the <b>services</b> that natural and constructed assets both provide.</p> <p>NOTE: <i>Every settled creekshed comprises a <b>Constructed Commons</b> (roads and utilities) and a <b>Natural Commons</b>. Each “commons” is a system</i></p>
<p><b>What are EAP core concepts?</b></p>	<p>Attachment B is a mind-map. It distils five key ideas that underpin EAP.</p> <p>NOTE: <i>A stream is a land use because it is defined in regulation and a financial value can be assigned using BC Assessment data (i.e., real numbers)</i></p>
<p><b>Why is EAP important?</b></p>	<p>EAP adds to conceptual framework for a riparian area maintenance and management (M&amp;M) strategy with new insights about financial metrics.</p> <p>NOTE: <i>Ecological services are not intuitively understood by the public, elected representatives, and asset managers. At best, they have been considered as an add-on. It helps to define ecological services in terms of drainage, recreation, habitat / biodiversity, and enjoyment of property uses</i></p>

<p><b>How is EAP a game-changer?</b></p>	<p>EAP interweaves financial, social, and ecological perspectives within a single number to establish the financial case for a stream system. This aggregate number is the <b>Natural Commons Asset (NCA)</b> value.</p> <p>NOTE: <i>The NCA value is a measure of the <b>Riparian Deficit</b>. This is the environmental equivalent of the <b>Infrastructure Gap (Liability, Deficit)</b> for constructed assets such as underground utilities and buildings.</i></p>
<p><b>How is EAP relevant to the RDN Strategic Plan?</b></p>	<p>Local government has multiple pathways to achieve the goal of “natural asset management”. These pathways are in the form of planning and environmental initiatives that are challenged to bridge from high-level policy statement to on-the-ground realities. Because we manage what we can measure, success ultimately depends on having a measurable metric.</p> <p>EAP aligns with several policies outlined in the RDN Strategic Plan, including:</p> <p><b>Goal 2: Environmental Stewardship</b> - <i>Protect and enhance the natural environment, including land, water, and air quality for future generations.</i></p> <p><b>Goal 4: Growth Management</b> - <i>Provide effective regional land use planning and responsible asset management for both physical infrastructure and natural assets.</i></p> <p><b>Goal 7: People and Partnerships</b> – <i>Improve the governance and awareness of RDN activities for citizens across the region</i></p> <p><i>Specifically:</i></p> <p><i>7.5 - Seek opportunities to partner with the provincial and federal governments, other government agencies, and community stakeholder groups in order to advance strategic plan goals and initiatives</i></p> <p>The RDN’s DWWP Action Plan outlines numerous objectives that support the EAP process and links to key themes that guide DWWP services such as:</p> <ul style="list-style-type: none"> <li>• Analyzing and interpreting data to generate richer understanding of the region’s water through quantifying natural assets and ecosystem services and,</li> <li>• Facilitating the integration of water information into planning processes through collaboration across RDN departments, municipalities, and external agencies.</li> </ul>
<p><b>How would the 3-Year Transition Strategy for EAP be funded?</b></p>	<p>Refer to Attachment C for the <b>Project Partnership Overview</b>.</p> <p>NOTE: <i>Each local government would contribute \$30,000/year for three years for a total financial commitment of \$90,000.</i></p> <p><i>VIU would waive all institutional overhead commitments for the first three years. This VIU standard equals 25% above project costs.</i></p>

# Attachment A – Build Capacity to Mainstream EAP

## Asset Management for Sustainable Drainage Service Delivery

GOAL: *connect constructed and natural components of the Drainage Service*

HOW: apply the 4-step “BC process” to mainstream EAP, the Ecological Accounting Process

### 1. WHAT is the issue?

The science behind the “twin pillars of stream system integrity” is not well understood, and the Riparian Deficit grows as streams continue to degrade

### 2. SO WHAT can be done?

Provide local governments with a GIS-based process, EAP, that can be applied effectively and inexpensively using in-house and/or student resources, to develop realistic M&M budgets

### 4. THEN WHAT will we do?

Replicate the EAP program in other university-based regional hubs to help local governments across BC tackle the Riparian Deficit

### 3. NOW WHAT can we do?

Embed EAP in a university-based centre to ensure consistency of understanding and application of EAP, and train the next generation of practitioners





## Attachment B – Cascading Concepts



**A stream is a natural system and a land use**

**Land use decisions are made at the parcel scale**

**Drainage infrastructure and the stream system together provide the municipal “Drainage Service”**

**“Twin Pillars” for stream system integrity are Ecological and Water Balance Accounting**

**“Riparian Deficit” is a measure of land use intrusion**

## Attachment C – Project Partnership Overview

### Background:

The Ecological Accounting Process (EAP) was created by the Partnership for Water Sustainability in British Columbia (PWSBC) over the last couple decades. Over the past six years EAP has been piloted through nine trials with municipal partners and is currently at a point where it has proven itself to be an effective and efficient measure for monetizing commitments to supporting riparian areas for ongoing maintenance and management. The Mount Arrowsmith Biosphere Region Research Institute (MABRRI) a Vancouver Island University (VIU) entity has supported the last six pilot studies that the PWSBC has undertaken. The PWSBC has identified the need to embed the knowledge of the EAP process into a British Columbian University to ensure knowledge of EAP is not only maintained but also trained amongst the next generations of planners and municipal staff.

### 3-Year Plan:

The PWSBC has agreed to provide in-kind support to MABRRI to embed the EAP program into VIU. At VIU students across educational disciplines including Master of Community Planning (MCP), Master of Geographic Information Systems (MGIS), Advanced Diploma in GIS (ADGIS), Biology, Geography, etc. will be able to be involved in future EAP studies advancing the knowledge and understanding of EAP and bringing these skill sets into the local communities (often times with local municipalities) through applied experiential learning and training. The desired plan is to work closely with three municipal partners over the next three years completing three EAP studies for each municipal government as chosen by each municipal government respectfully for a total of nine EAP studies. During this time the PWSBC will directly support MABRRI to ensure all knowledge is passed over and the studies adhere to the standards of past studies through rigorous training in methodology. The end of the three years and nine EAP studies will result in MABRRI being fully trained to execute EAP studies across BC in the future, and students graduating from VIU with experience supporting EAP studies.

### Municipal Government Partners:

While actual partnership development is in progress the proposed municipalities that will make up the three-year partnership include: the City of Nanaimo, the Regional District of Nanaimo, and the Municipality of North Cowichan.

### Financial and In-Kind Partner Commitments:

It is expected that each municipal government will contribute \$30,000/year for three years for a total financial commitment of \$90,000 to VIU. Further to this, each Municipal Government will be expected to support the project with staff time to determine their individual EAP study sites, co-develop EAP research questions, and support data mining. All training, mentorship and support from the PWSBC will be provided in-kind. VIU will waive all institutional overhead commitments (standard = 25% above project costs) for the first three years to keep costs as minimal as possible to the partner municipalities while embedding EAP into MABRRI.

### Budget:

MABRRI intends to use the funding received for 0.33 FTE/yr GIS Technician salary, 0.75 FTE/yr Project Coordinator salary, student interns as needed, and travel and other research related costs.