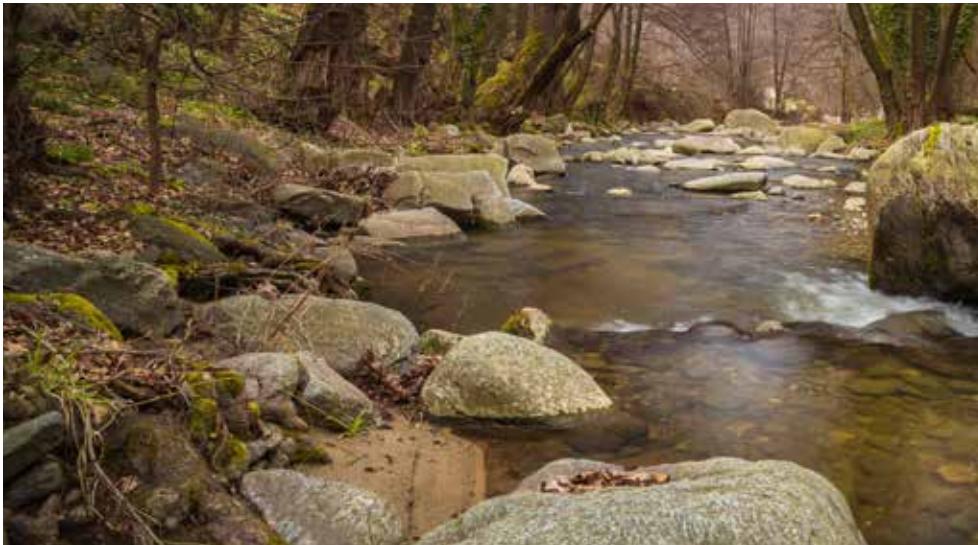


Stream Corridor Management

Are streams worth the same as constructed assets?

BY BY KIM STEPHENS, TIM PRINGLE, AND RAY FUNG



Builders and those in the construction industry make things: buildings and infrastructure. Considered hard assets, we derive services or benefits from those things. Traditionally, we have considered nature as providing the raw materials or natural resources, from which these hard assets are created.

In the last decade or so, increasing attention has been given to natural systems as assets in their own right. They provide ecological services, such as trees cleaning the air (like an HVAC system) or a creek filtering the impurities in water (like a water or sewage treatment plant). Often, these services are provided by nature at a cost lower than the comparable engineered asset.

Meanwhile, the age of much of the hard assets in our community, especially infrastructure, necessitates replacement and upgrading, which can create a huge financial burden for society. So, while the industry's interest is to continue constructing, the infrastructure burden encourages consideration of the services ecosystems provide, at the very least as a complement to engineered assets.

WHAT IS MEASURED GETS MANAGED

At best, the ecological services provided by "green infrastructure" have been considered as an add-on. They are not intuitively understood by the public, elected representatives and asset managers. Unless communities measure the effects of impacts, degradation of riparian assets and streamside setback zones will continue.

EAP, the Ecological Accounting Process, is an approach that aims to recognize the **worth** of natural assets. Accounting in this sense means taking stock and understanding the worth of ecological services as the community uses them. On a practical basis, this approach has been

applied to real estate, in other words, land, and specifically to stream corridors.

Land supports assets that provide services, and the decisions about land are made at the parcel scale. Communities are tied to the past through historical subdivision of land. Restoring the health of natural systems within the built environment means we must understand the "biology of land use." The human analogy is DNA.

The EAP methodology focuses on the historical and current land use practices that have changed landscapes, modified hydrology, and have led to present-day community perceptions of the worth of a stream and/or other water assets, such as a wetland, and the ecological services those assets provide. The EAP methodology is the only ecological methodology that deals with the parcel.

What happens on the land matters; what is measured gets managed. Thus, EAP bridges a gap. It provides local governments with a methodology and metrics to determine financial values for ecological services and the natural assets that deliver them.

EAP IS A LAND USE PERSPECTIVE

The strength of EAP is in how it looks at and values streams as systems and as a land use. A stream corridor is a land use because it satisfies two criteria: it is defined in the *Riparian Areas Protection Regulations Act*, and it has a financial value.

A stream corridor is a "natural commons" and its financial value is defined as the Natural Commons Asset (NCA) value. EAP uses BC Assessment data to find the financial value of a stream. BC Assessment parcel data are accurate, recent, and reflect the motivations of buyers and sellers over time. This means parcel values include social, ecological, and financial trend information.

Essentially, EAP metrics describe and quantify the combined range of uses (package of ecological services) desired and supported by the community, namely - drainage, habitat, recreation, and enjoyment of property. This is a land use perspective.

ASSET MAINTENANCE AND MANAGEMENT

The other benefit of assigning worth to a stream corridor as an asset is that it leads to consideration of efforts needed to maintain that asset. To borrow a framework from the financial world, a Maintenance and Management (M&M) budget needs to be assigned to keep up the performance of ecological services beyond the natural asset's initial "capital" costs.

For the most part, the formal responsibility for the services that stream corridors provide, as equivalents to engineered assets, lies with local government. EAP then, puts M&M of stream corridors and wetlands on an equal footing with say, pipes and pumps. The methodology and metrics recognize the importance of the stream in the landscape.

EAP supports local governments that intend to include stream systems in asset management calculations and the M&M of drainage services. Through EAP, local governments have a guiding philosophy, methodology and metrics to make a financial case for stream systems. Beyond local government, the provincial umbrella for EAP is Asset Management for Sustainable Service Delivery: A BC Framework. The BC Framework operationalizes one of 45 actions in *Living Water Smart, British Columbia's Water Plan*.

The driver for EAP is degradation of stream channels and streamside riparian setback zones. Over the last six years, the EAP methodology and metrics have been tested, refined and mainstreamed through a set of nine demonstration application projects in the Lower Mainland and on Vancouver Island.

The methodology has allowed consideration of opportunities taken or missed and risks avoided or incurred. On an ongoing basis, it allows for the question, how well are we doing? In short, EAP provides local government with a path forward to address loss of riparian integrity along streams.

But as a professional in the building industry, don't think that it's an either/or choice between constructed assets and natural assets. Given the state of our buildings and infrastructure, there's going to be a need for both. There's plenty of work to keep everyone busy! **CB**

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