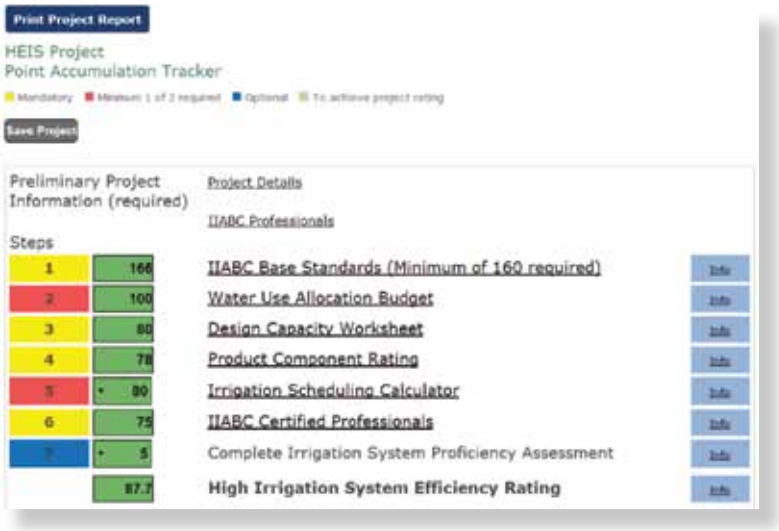
Below: HEIS seal of approval.
Right: Output from HEIS online tool.

IIABC HEIS
High Efficiency Irrigation Standard



SUSTAINABLE Service Delivery:

Watersheds are infrastructure assets

by Glen Brown & Raymond Fung

The Partnership for Water Sustainability is collaborating with the Union of BC Municipalities, Asset Management BC and the Province to profile, raise awareness and advance Asset Management for Sustainable Service Delivery: A Framework for BC. The Partnership is the champion for Step Three as shown on the accompanying Continuum graphic.

BC Framework

Years in the making, the vision for Sustainable Service Delivery became a reality with rollout of the outcome-oriented BC Framework in 2015. Because it is a driver for tackling the unfunded infrastructure liability, the BC Framework has garnered both national and international attention.

The BC Framework is a game-changer because it is strategically aligned with asset management requirements under senior government funding programs, in particular the Gas Tax Program. The BC Framework also points the way to integration of natural systems thinking and climate change thinking into asset management.

Asset Management & Ecosystem Services

The ultimate vision for fully integrated Sustainable Service Delivery is that communities would protect, preserve, restore and manage natural assets in the same way that they manage their engineered assets.

A watershed, and the ecosystem services that it provides, is a fundamental and integral part of a community's infrastructure. This is not to suggest that all ecosystem services provide a municipal function. But as an example, trees, soil, green spaces and water do contribute a valuable municipal function in maintaining the hydrologic integrity of a healthy watershed system.

The Asset Management Journey

Implementation of asset management along with the associated evolution of local government thinking is a continuous quality improvement process, not a discrete task. This ongoing process is incremental and scalable, involving: assessing capacity, demand and results; planning what needs to be done; and implementing the plans. We needed a way to illustrate this diagrammatically, and thus communicate, what the journey by a local government to the eventual Sustainable Service Delivery destination would look like.

This led us to the concept of a continuum. The relevance of this way of thinking is that different local governments will always be at different points and different levels of maturity along the asset management continuum. This is why we focus on outcomes and do not prescribe what to do in BC.

The continuum bridges two pieces. One piece is recognition that the asset management process is founded on an incremental approach. The other piece is integration of natural capital, natural assets and watershed systems thinking. SL

Asset Management Continuum *for* Sustainable Service Delivery

As understanding grows, local governments will progress incrementally along the 'Continuum'

GROUND ZERO: In the beginning, there was no Asset Management Plan and a consequence is the 'unfunded infrastructure liability'

STEP ONE: They will embrace the BC Framework, with an initial focus on core engineered assets (water supply, sewage, roads, etc.) and embark on an Asset Management Strategy / Plan / Program process

STEP TWO: They will think holistically and implement a life-cycle approach to infrastructure decision-making so that Sustainable Service Delivery for engineered assets is standard practice

STEP THREE: For the drainage function, they will integrate natural systems thinking and account for the Water Balance Services provided by watershed systems

INTRODUCING
THE NEW PARADIGM –

Watersheds *as* Infrastructure Assets

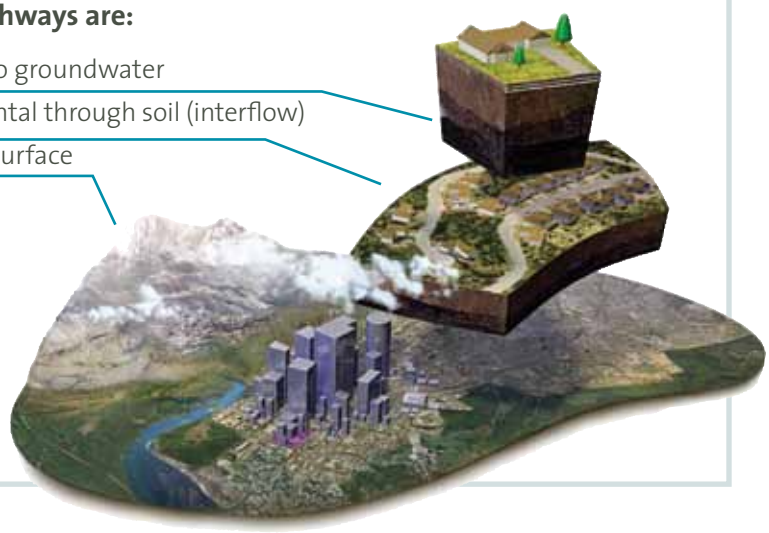
- A watershed is an integrated system.
- The three pathways by which rainfall reaches streams are 'infrastructure assets'.
- The three pathways provide 'water balance services'.

The three pathways are:

Deep vertical to groundwater

Shallow horizontal through soil (interflow)

Over the land surface



Moving Towards "Sustainable Watershed Systems, through Asset Management"

As an example, the District of West Vancouver has been working through asset management tasks for many years. In 2010, the municipality completed its first Storm Infrastructure Asset Management Plan. This work inventoried the District's municipal infrastructure and calculated the replacement value of the storm drainage system at $333 million in 2009 dollars. An estimate of the financial resources required to support the renewal of all of the District's storm drainage assets was provided, and Council endorsed an enhanced capital replacement program, as well as detailed condition assessment efforts to prioritize specific projects.

Meanwhile, the Town of Gibsons has recognized that natural assets (such as creeks, ditches and wetlands) reduce the need for engineered infrastructure for rainwater management. Further, compared to engineered infrastructure, natural assets are potentially more cost-effective to operate and maintain, do not depreciate, and are carbon neutral or even carbon positive. Yet currently, the Canadian Public Sector Accounting Board Standards do not allow for the valuation and recording of natural assets into local government financial statements.

Yet, both the approach of West Vancouver and Gibsons are needed; marrying the asset management process with an acknowledgement of the value of ecosystem services would allow human settlement to be balanced with ecology. To this end, the Municipal Natural Capital Initiative (of which Gibsons is a convening partner) and the Ecological Accounting Protocol (an initiative of the Partnership for Water Sustainability) are two important projects advancing research and practice towards integrating natural capital into an asset management framework, which when refined and normalized would allow local governments to truly move towards Sustainable Service Delivery! SL