



The importance of nature for a healthy, resilient, post-pandemic world

At the time of writing this article, the world is still in the midst of a health crisis on a scale never experienced in living memory. The priority for all of us, our families, friends, business colleagues and communities, is health and well-being.

We hope to leave the crisis response phase soon and begin the process of recovery and rebuilding our communities, most of which have been hit very hard economically, socially, and from health perspectives. But buried in the recovery and rebuilding process is an opportunity: global disaster management best practice emphasizes ‘building back better’ in disaster response, recovery, rehabilitation and reconstruction to increase community resilience - including with respect to publicly owned, managed or regulated services and infrastructure.¹

Building back better won’t be easy for local governments. The pandemic has shrivelled revenues, yet they must continue providing core services to their residents and businesses. And these service delivery challenges are usually compounded as spring and summer bring snow melt and flooding for many municipalities across Canada - events that are becoming increasingly extreme. Flooding greatly disrupts the lives of residents and businesses and are costly for local governments to manage, control and rebuild.

Those of us who have recently spent some self-isolation and physical-distancing time in nature have been reminded of the growing body of evidence of its health benefits.² Fortunately, the benefits of nature also include the core infrastructure services – such as stormwater management – that it provides to local governments, and often at lower capital, operating/ maintenance, and renewal costs than engineered alternatives, and, they are resilient to climate change effects. The resilient infrastructure service benefits of nature could play an important role in helping local governments recover from the pandemic.

With this in mind, the Municipal Natural Assets Initiative (MNAI) continues to work with communities that wish to explore a natural asset management approach to managing their infrastructure, an approach that would help them deliver essential services while being cost-effective, resilient and sustainable.

¹ This is a guiding principle of the Sendai Framework https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

² E.g. Twohig-Bennet and Jones (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research* 166: 628-637.

To-date, 11 communities have completed projects with MNAI relating to their existing natural assets and how to incorporate them into their budgets and planning, with numerous other projects underway. In February 2020, MNAI published the project results from the most recent six communities. The participating communities were the City of Courtenay and District of Sparwood in British Columbia, the Town of Florenceville-Bristol, Village of Riverside-Albert, and Town of Riverview in New Brunswick, and the City of Oshawa in Ontario.

“Natural assets - such as forests, wetlands, rivers, creeks, ponds – could be all around us and, historically, we haven’t looked at them in terms of how they’re already working hard to filter our drinking water or soak up storm water,” says Michelle Molnar, MNAI’s Technical Director. “With these projects, we work with communities to put hard data on the quantity and quality of these natural resources and determine how they’re contributing to infrastructure services.”



City of Courtenay, BC, project

While each of the six recent communities focussed on different types of local natural assets and each had their own specific goals, they all assessed the value of services their local rivers, creeks, ponds, wetlands, and forests provide. They also considered scenarios of future climate conditions, such as more extreme storm events or earlier snow melt. While the results were individualized, some common themes also emerged:

- Natural assets are providing local communities with millions of dollars of service value that is rarely accounted for.
- The value of the assessed benefits to the community rises under scenarios of more extreme rainfall or intensified development.
- Natural asset solutions can play an important role in flood management and can be essential in stretching construction dollars, but sometimes are not sufficient on their own.
- It is fiscally responsible to include natural assets in the scope of asset management policies.
- ... and a multitude of other benefits such as recreational space for residents, improved human health and well-being, increased local property prices, and habitat for aquatic and terrestrial wildlife.

In New Brunswick, the Southeast Regional Service Commission (SRSC) conducted two of the MNAI projects with the Town of Riverview and the Village of Riverside-Albert. The projects took an inventory of the existing forest and wetlands, determined their health, then placed a value on the stormwater and drinking water services they were providing for the communities.



Town of Riverview, NB, project

The SRSC projects also examined how much it would cost if the communities replaced the natural assets with engineered infrastructure, and found values up to \$2.3 million. “Being able to calculate the dollar value that natural assets provide in an equivalent way to engineered assets enables us to make more resilient and lower-cost service delivery decisions,” said James Bornemann, Geomatics Manager at SRSC. “The MNAI team provided valuable experience and leadership in natural asset management. Through its guidance we were not only able to conduct these projects, but also to gain in-house capacity to expand this work with communities across our region.”

In Ontario, the Oshawa Creek project examined natural assets along the southernmost, highly urbanized, 7-kilometre segment of the Creek that provides a necessary stormwater management service to the City of Oshawa. The project found that natural assets along this segment of the Creek currently provide a stormwater management value of \$18.9 million. When including the full Oshawa Creek watershed and the surrounding floodplain, this value increases to between \$392 million and \$414 million.



City of Oshawa, ON, project

“Oshawa respects the existing condition of our watersheds and treasures the natural features within them,” says Patrick Lee, Manager of Water Resources Services at the City of Oshawa. “With the provision and implementation of all appropriate stormwater management measures, we ensure there will be no adverse impact to the surrounding and downstream areas and that the significant natural features are protected.”

The results from these six communities (2nd cohort) reinforced that the municipal natural asset methodology that MNAI piloted with the first five communities in 2016 (1st cohort) was consistent and robust. The cohort 2 projects also added practical examples to the evidence base, and now evidence and experience from 11 projects is available for local governments to access as they make decisions about sustainable service delivery.

While all 11 community projects are now complete, they also underscore the extent to which municipal natural asset management is a multi-year process. Even the Town of Gibsons, where this all began in 2013, continues to learn about the value of its natural assets, how to integrate them into the strategic level of local government decision-making, and test and refine new approaches to sustainable service delivery. For these projects, MNAI always chooses communities that can continue building their infrastructure capacity on their own, using the MNAI approach and framework developed for them.

MNAI's long-term objective is to elaborate all of its guidance, tools and templates to a point where it is an authoritative norm across Canada. Doing so would help make natural asset management, including inventories, be comparable, replicable and effective across local governments, regions and provinces. MNAI is continuing to broaden and strengthen its methodology to include more services, developing more tools that can be configured for local contexts, initiating a long-term monitoring framework, and shaping more supportive normative and enabling frameworks for natural asset management.

As we collectively look ahead at what recovering and rebuilding from the pandemic might look like, nature is here for us and the Municipal Natural Assets Initiative will continue to support communities in building and enhancing their infrastructure through natural asset management in order to regain resilient, long-term, economic, social and environmental health.

** All 11 (cohorts 1 and 2) MNAI project reports and periodic updates on their municipal natural asset management journeys are available at MNAI.ca.*