Brock Lands Restoration

A critical component of strengthening regional resilience to the impacts of climate change is the strategic investment in natural assets, like wetlands and forests. This natural or "green" infrastructure can help us mitigate some of the largest threats facing our region, including flooding, water quality issues and rising temperatures.

By understanding what services our natural assets provide, we can better plan for and manage them – just as we would any other municipal asset.

Building an Economic Case

The former Brock North and South landfill sites were acquired by the Toronto and Region Conservation Authority (TRCA) from the City of Toronto in 2011. The two properties make up over 400 hectares that adjoin Greenwood Conservation Area. In the past, the properties were used for aggregate extraction, as well as agricultural and landfill operations. About 1.12 million people live within 20 km of Brock Lands. The population of this region is relatively young and growing, suggesting an increased need for recreational greenspaces.

In addition to the recreational amenity investments outlined in the Greenwood Conservation Land Master Plan, the TRCA developed a plan for ecological restoration of the former Brock Lands. The original cost estimate for this restoration work was $4.3 million, with the expected result of this investment being improved terrestrial habitat, enhanced wetland habitat, restored groundwater catchments, improved stream-edge habitat, improved headwater streams and self-sustaining natural cover.

To build the economic case for this project, the recreational services of the Brock Lands were valued using local and recent information. Annual values associated with recreational trips will increase over time as the population around Brock Lands increases. As a result, population growth was incorporated into the valuation of these services. Other ecosystem services expected as co-benefits of the project, including improved air quality, biodiversity (habitat) and carbon storage and sequestration, are likely to accrue over the 50-year period and were valued using a benefit-transfer approach.

Annual Value of Ecosystem Services

RECREATION[1]	OTHER SERVICES[2]	TOTAL
$603,514	**$2,585,747**	**$3,189,261**

50-year Net Present Value (NPV) Range[3] of Services in million $

RECREATION[1]	OTHER SERVICES[2]	TOTAL
$25.0 - 36.1	**$35.6 - 56.1**	**$60.5-92.3**

1 Primary valuation. 2 Benefit transfer value.
3 Using 0.5% and 2% discount rates and 1-2% increase in flood incidence

Estimated Natural Infrastructure Value by Habitat (50-year net present value) in million $

FORESTS	MEADOWS	WETLANDS
$7.8 - 12.3	**$3.7 - 5.8**	**$24.1 - 38.0**

GREEN BELT

Possibility grows here.

Toronto and Region Conservation Authority

After accounting for capital and operating costs, the estimated net value of recreational benefits from this project range from $18.2 to 28.6 million; around 3.6 to 4.5 times greater than net present value of estimated capital and operating costs for the project ($7.0 to 8.1 million). This suggests that the investment in this natural capital asset by the TRCA would generate a very positive return-on-investment.

Even by conservative estimates, the proposed natural infrastructure investments needed to restore and maintain Brock Lands will pay for themselves over time through ecosystem services. Given mounting pressure on greenspaces for recreational use, and with growing need for natural infrastructure to help mitigate climate impacts like flooding and extreme heat, the benefits of this project are likely to increase over time.

The Brock Lands are expected to provide important recreational opportunity and improved habitat in close proximity to Rouge National Park, Canada's first urban national park

Beyond the Economic Case

In addition to the services that restored natural areas can provide as infrastructure, they provide communities with more intangible benefits as well. Natural settings can improve moods, lower blood pressure and increase reported happiness.

The Greater Golden Horseshoe is seeing increased demand for large parks as the population grows. The Brock Lands will provide new and needed parkland, offering residents new opportunities for restoration and recreation, which benefit physical and mental health.

1 Green Infrastructure Ontario Coalition. 2019. State of Large Parks in Ontario's Golden Horseshoe