City of Hamilton

GENERAL ISSUES COMMITTEE ADDENDUM

Meeting #:	22-022(b)
Date:	January 20, 2023
Time:	9:30 a.m.
Location:	Council Chambers Hamilton City Hall 71 Main Street West

Angela McRae, Legislative Coordinator (905) 546-2424 ext. 5987

Pages

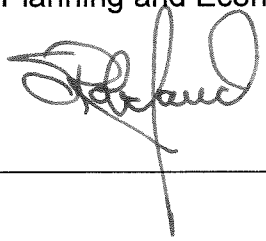
7. DISCUSSION ITEMS

*7.4 Ecosystem Services Study (PED23048) (City Wide) *2*

Note: This item will be addressed prior to Item 7.3.

Hamilton

INFORMATION REPORT

TO:	Chair and Members General Issues Committee
COMMITTEE DATE:	January 20, 2023
SUBJECT/REPORT NO:	Ecosystem Services Study (PED23048) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Christine Newbold (905) 546-2424 Ext. 1279
SUBMITTED BY: **SIGNATURE:**	Steve Robichaud Director, Planning and Chief Planner Planning and Economic Development Department 

COUNCIL DIRECTION

The purpose of this Information Report is to respond to Council's request during the 2023 Capital Budget process for information related to the estimated cost and potential approach to undertaking an Ecosystem Services Study.

INFORMATION

Ecosystem services are generally considered benefits to humans which are derived from nature. The valuation of ecosystem services is of growing interest in communities globally as a stronger understanding that natural assets play a role in climate change mitigation and adaption, stormwater management, air quality, recreation and the health and wellness of the population.

Ecosystem valuation studies can be undertaken for the purposes of information and insight or for guiding land management activities, asset management approaches, land acquisition decisions, policy development and future strategies and initiatives. Most valuation studies have addressed smaller land geographies including at a watershed level, for a specific feature or service theme (e.g. stormwater management or climate change adaptation). There are few ecosystem service valuation studies completed at a city-wide level although the interest in city-wide studies is growing.

The importance of healthy, functioning ecosystems and the benefits they provide is increasingly being recognized around the world. These benefits are framed around the concepts of ecosystem services and natural capital or 'assets'. Natural assets refer to the features that make up the natural ecosystems such as water, forests, wetlands, grasslands, air, soil, and the flora and fauna that are part of ecosystems. In addition to the natural heritage feature assets, other natural features such as urban parks, open spaces, the urban forest, stormwater ponds, permeable services and green roofs also provide benefits and are part of a community's green infrastructure. From these assets flow valuable goods and services. These services are typically referred to as ecosystem services, generally more broadly defined as the benefits (services) that people obtain from nature.

It is widely understood that nature has benefits for our society. Those benefits include recreation and improved physical and mental health, pollution mitigation and air quality benefits, heat mitigation, lower energy bills, flood protection, biodiversity, jobs and social connection. Understanding the benefits and value of natural assets can help municipalities, land owners, agencies understand how investments in natural assets can help meet climate change goals, enhance quality-of -life, resiliency and equity goals.

Hamilton has an extensive network of natural heritage features that are identified and protected through the Provincial policies and planning frameworks and through local policies in the City's official plans. The Biodiversity Action Strategy and forthcoming strategy actions will provide further understanding and support for on-going protection of the City's natural heritage system. Natural heritage mapping and data is an important resource to understand natural assets and ecosystem services. Hamilton's Natural Heritage System mapping is currently being updated through Phase 2 of the City's Municipal Comprehensive Review which addresses the Rural Hamilton Official Plan conformity but also includes updates for the entire Natural Heritage System in both urban and rural areas.

There are an increasing number of studies that have addressed ecosystem services valuation in Canada. Local data collection is a critical input to valuation methodologies. In Canada, however, staff have been unable to identify municipalities that have undertaken a City-wide study other than Gibson, BC which was the first municipality to incorporate natural assets into its city-wide asset management work.

In Hamilton, two recent experiences with ecosystem service valuation have been completed, each having a different purpose and scope therefore using different methodologies in estimating values.

In 2021, the Cootes to Escarpment EcoPark commissioned Green Analytics to undertake an Ecosystem Services project on partner-owned lands in the EcoPark Area. The project was completed in 2022. The intent of the project was to understand the value of EcoPark partner-owned lands within the EcoPark and the direct and indirect

benefits to human well-being and quality of life. The study took an economics approach, establishing the value of the services to those who benefit, as opposed to an asset management/lifecycle approach. Across all EcoPark partner-owned lands, the value of ecosystem services was determined to range from $112 to $232 million per year ($150 to $330 per person) comprising service value of natural assets from carbon sequestration, stormwater management, recreation, education, habitat preservation, air quality and urban heat reduction.

In 2019, the City of Hamilton partnered with the Municipal Natural Assets Initiative (MNAI), Conservation Halton, City of Burlington and Royal Botanical Gardens to undertake ecoservices valuation of the Grindstone Creek Watershed. The project estimated the total value of the natural assets, for stormwater management, within the Grindstone Creek Watershed at approximately $2 billion in terms of capital costs of equivalent engineered infrastructure assets to provide that same service. Operational costs were not estimated. $34 million in co-benefits, including recreation, erosion control, habitat biodiversity, atmospheric regulation and climate mitigation were also estimated. The project was completed in the fall of 2022 and also used the services of Green Analytics.

Hamilton has applied to the MNAI's Natural Asset Road Map Program to develop a high-level natural asset roadmap towards integrating natural asset management considerations into overall asset management practices. The City is awaiting confirmation of acceptance in the program. The next cohort of the program runs from April to September 2023.

Valuation of Ecosystem Services is an evolving field and valuation approaches and frameworks will vary depending on the end goal of a project. It is therefore critical that the purpose of a study be clearly defined to ensure the appropriate methodologies are used. Outcomes of an Ecosystem Services Study could inform land and asset management activities, land acquisition decisions, policy development and future strategies and initiatives and can assist in communicating the importance and benefits of the natural environment to the public, agencies and other organizations. Ecosystem service valuation and assessment will be part of development of an Asset Management Plan for natural assets scheduled for completion as part of O.Reg 588/17(Asset Management for Municipal Infrastructure) by July 1 2023 for current levels of service. The scope and depth of this plan have yet to be defined. Given the variability in purpose of the evaluations, a phased approach to an Ecosystem Services Study is recommended as follows:

Phase 1: Project identification and preparation of a Terms of Reference.
Phase 2: Procurement and Undertaking the Study.

Phase 1 scope would include hiring of a consultant to determine options for a study scope, engaging City departments to understand service area needs and specific

interests in ecosystem valuation work; engaging the community, stakeholders, and non-governmental organizations; and preparing a Terms of Reference to direct the development of an Ecosystem Services Study. An estimated budget of $75,000 would be required for consulting services for this phase of work. Phase 1 could be completed in six to eight months once consulting services are secured.

Phase 2 scope would be determined through Phase 1 and would include internal and external consultation as well as public engagement. The duration of Phase 2 would likely be two years following the completion of Phase 1. It is anticipated that the cost of a city-wide study would approach or exceed $250,000 and would involve staff time across the corporation to provide data on natural assets, review and comment on project deliverables and provide input throughout the project. Staff time would also be required to manage the project and coordinate community engagement.

While staff anticipate that project management for an Ecosystem Services Study could be managed by existing City staff (assuming the consulting services described above), there may be risk that given the recent changes to the responsibilities of Conservation Authorities, the capacity of natural heritage planning staff in the Planning Division may be reduced in 2023, creating a risk to this project.

APPENDICES AND SCHEDULES ATTACHED

N/A

CN:ab