



Committee of the Whole

Meeting Date: April 22, 2025

Submitted by: Mark Brown, Woodlands Conservation Officer / Weed Inspector
Durk Vanderwerff, Director of Planning & Development
Paul Shipway, General Manager of Strategic Initiatives & Innovation

Subject: Natural Asset Valuation & Trail Monitoring to Support Asset Management & Forestry Planning

BACKGROUND:

On March 25, 2025, the Council of the Corporation of the County of Middlesex passed the following resolutions:

THAT the 2025 Middlesex County Asset Management Report be received for information;

AND THAT a by-law to adopt the 2025 Middlesex County Asset Management Plan and repeal By-law No. 6996 be introduced at the April 8, 2025, meeting of County Council.

On April 8, 2025, Middlesex County Council passed By-law No. 7325 adopting the 2025 Middlesex County Asset Management Plan.

A key priority in the County's 2025 Asset Management Plan is the inclusion of a dedicated section on natural assets, with a focus on identifying, assessing, and quantifying their value within the County's asset portfolio.

Natural assets—particularly County-owned forest tracts—provide a wide range of intrinsic, environmental, and economic benefits, including but not limited to:

- Stormwater management
- Soil conservation
- Air quality improvement (absorption of pollutants and greenhouse gases (GHG))
- Carbon sequestration
- Wildlife habitat and biodiversity support
- Recreational and tourism value

Despite their critical role in supporting environmental sustainability and community well-being, these values are not currently quantified, aside from historic land acquisition cost, within the County's asset base. This lack of data limits opportunities for evidence-based capital planning, climate accounting, external grant eligibility, strategic land acquisition and advocacy for the protection and enhancement of these assets.

The need to quantify and integrate the value of County forests, beyond historic land acquisition cost, is further underscored by the timing of the County's upcoming 20-Year Forest Management Plan update in 2025, presenting a unique opportunity to align technical inventory work and forest resource analysis with long-range planning and policy development.

ANALYSIS:

The County of Middlesex owns and manages approximately 1,040 hectares (2,500 acres) of forested land across twenty-seven tracts, concentrated in the Dorchester Swamp, Big Swamp, and the Skunk's Misery / Bothwell Forest Complex—one of the largest contiguous forest blocks in Southwestern Ontario. These tracts deliver ecological services, climate benefits, and community value, yet are not currently recognized or valued in the County's financial or asset management frameworks beyond historic acquisition costs.

To address this, the proposed initiative would enable the development of a comprehensive Forest Resource Inventory and install trail counters to quantify and enhance understanding of these assets. This foundational work will allow the County to:

- Quantify canopy cover, basal area, and stem density, providing key indicators of forest health, productivity, and regeneration potential;
- Measure tree diameter at breast height (DBH), species mix, and age-class distribution to inform silvicultural and resilience planning;
- Apply models and tools such as i-Tree Eco to estimate above-ground biomass and carbon sequestration rates per tract;
- Capture and integrate usage data from recreational trail counters to assess public benefit, inform tourism planning, and track human infrastructure interaction;
- Establish a defensible baseline to monitor forest asset condition, ecosystem services, and lifecycle performance over time.

Importantly, this initiative supports the County's broader climate and environmental leadership goals. Forests in Southern Ontario sequester an estimated 2.5–4.5 tonnes of CO₂ equivalent per hectare annually, positioning the County Forests as a major carbon sink. By quantifying sequestration capacity, Middlesex will be able to:

- Incorporate GHG absorption into its corporate climate framework, alongside facilities, fleet, and operational emissions;

- Develop a carbon accounting methodology to model progress toward carbon-neutral targets;
- Strengthen future funding applications for climate adaptation and natural capital grant programs.
- Support sustainable infrastructure development, by advancing climate-resilient infrastructure, valuing natural capital, and supporting long-term environmental and financial sustainability.

This initiative will also help position the County to consider the strategic acquisition of ecologically significant lands should opportunities arise.

This proposed scope of work is timely with the County's 20-Year Forest Management Plan scheduled for update in 2025. Aligning this technical inventory and data collection effort with the planning cycle ensures that the next iteration of the County's 20-Year Forest Management Plan is data-driven, climate-conscious, and asset-integrated.


FINANCIAL IMPLICATIONS:




An allocation of \$25,000 from the Working Capital Reserve is requested to support this initiative. The funding will cover wages for a temporary position over an estimated 16-week term, the procurement and installation of trail counters, and ancillary costs such as travel expenses, and any required software tools (e.g., GPS units or data loggers) necessary to support data collection and analysis.

This initiative was not included in the 2025 Budget as the Asset Management Plan—specifically identifying the need to assess and value natural assets—was approved following budget deliberations. However, initiating this work in 2025 is important to align with the scheduled update of the County's 20-Year Forest Management Plan. Deferring to 2026 would risk misalignment with forestry planning timelines and diminish the opportunity to integrate asset-based and climate-informed data into the County's long-range forest management framework.

ALIGNMENT WITH STRATEGIC FOCUS:

This report aligns with the following Strategic Focus, Goals, or Objectives:

Strategic Focus	Goals	Objectives
Cultivating Community Vitality 	Advance a diverse, healthy, and engaged community across Middlesex County	<ul style="list-style-type: none"> • Promote and support community wellness • Innovate social and community services

Strategic Focus	Goals	Objectives
<p>Connecting Through Infrastructure</p> 	<p>Ensure communities are built on a sustainable foundation that is connected and thriving</p>	<ul style="list-style-type: none"> • Commit to a sound asset management strategy to maintain and fund critical infrastructure • Use County infrastructure in an innovative way to provide a seamless service experience for residents
<p>Strengthening Our Economy</p> 	<p>Encourage a diverse and robust economic base throughout the county</p>	<ul style="list-style-type: none"> • Support opportunities to create a stronger and sustainable agricultural sector • Attract visitors to Middlesex County
<p>Promoting Service Excellence</p> 	<p>Innovate and transform municipal service delivery</p>	<ul style="list-style-type: none"> • Anticipate and align municipal service delivery to emerging needs and expectations • Engage, educate and inform residents, businesses, and visitors of county services and community activities • Strengthen our advocacy and lobbying efforts with other government bodies • Collaborate with strategic partners to leverage available resources and opportunities • Build organizational capacity and capabilities

RECOMMENDATION:

THAT Middlesex County Council receive the Natural Asset Valuation & Trail Monitoring to Support Asset Management & Forestry Planning Report for information;

AND THAT Council approve funding to the upset limit of \$25,000 from the Working Capital Reserve to complete Natural Asset Valuation & Trail Monitoring to Support Asset Management & Forestry Planning.