

Brock-Lincoln Living Lab Year in Review 2022

Partnership Overview

The Brock-Lincoln Living Lab (BL-LL) is a unique partnership that formally connects Brock University to the Lincoln community, which has provided real benefits to the Town of Lincoln and Brock by leveraging the resources, capacities, and talents from both communities. Launched in 2017, this 5-year partnership has provided in-class and experiential education opportunities for graduate students and faculty working directly with the Town. The focus of this partnership has been on addressing several environmental sustainability challenges the Town faces in the context of a changing climate. The partnership has resulted in several research projects where graduate students have been conducting and sharing research results with the Town. Detailed information about the research activities of the lab is included in our 2017-2022 annual reports [online](#).

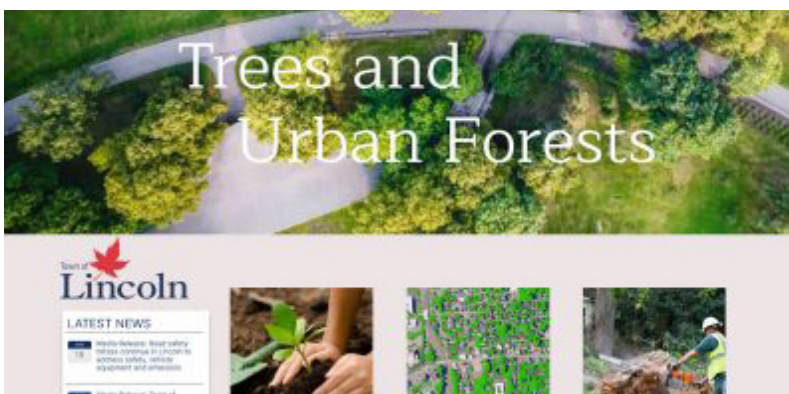
Knowledge Mobilization Activities

Urban Tree Canopy Assessment

Throughout the summer of 2022, Baharak Razaghirad worked as a Research Assistant (RA) under the supervision of Dr. Marilynne Jollineau. The purpose of this research was to assist the Town in realizing its goals of developing a comprehensive tree inventory, conducting an urban tree canopy (UTC) assessment, setting a realistic UTC cover goal using an evidence-based approach, and producing an urban forest management plan (UMFP).



Initially, Baharak added to an [existing tree inventory](#) developed for the Town during this partnership. Characteristics of trees in Rotary Park and Charles Daley Park were recorded and uploaded to an online platform called [OpenTreeMap](#). A detailed assessment of the Town's UTC, based on Baharak's thesis work in 2021, was summarized in a report shared with the town. The report included a map of UTC distribution in the municipality, estimates of UTC cover over the entire municipality, and within each of its urban areas. This information can be used by the Town in setting realistic canopy cover goals and developing a comprehensive UMFP. A field and lab guide was also developed to assist Town staff in adding to the OpenTreeMap database in the future. An ESRI ArcGIS geodatabase of the Town's tree inventory, including 2,648 trees, was also developed and shared with the Town. Training of the Town staff was also provided.



Finally, website content was co-developed with the Town to provide important UTC information to residents and other stakeholders interested in the Town's tree canopy resources.

For more information visit: brocku.ca/esrc/brock-lincoln-living-lab

Experiential Education Opportunities for Brock Students

October Field Trip to Charles Daley Park
On October 24, students enrolled in SSAS 5P13 took a field trip to Charles Daley Park where they added 40 trees to the OpenTreeMap database. It also permitted experiential education opportunities to a few elementary school students who participated in field-data collection while on a PA day from local schools in the Niagara Region.



Project Management Presentation - Winter 2022

Additionally, Shannon McKay was invited to speak with the SSAS 5P03 (Problem Solving in the Environment) course in Winter 2022. Shannon is a certified project management professional (PMP) and shared her knowledge and insights about project management with the students in the course for them to apply in their final project.

Research Activities

Major Research Paper (MRP) and Thesis Research

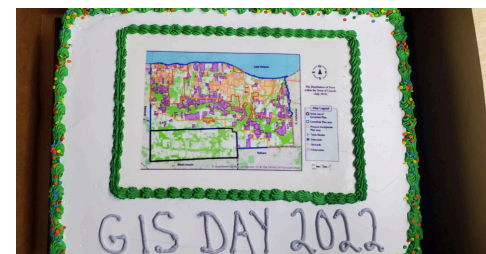
Master of Sustainability student Tyler Thomson is currently conducting a review of existing UFMPs in Ontario to determine best practices and to present a framework to the Town to facilitate the development of its own UFMP. Tyler also worked on a literature review focused on agricultural irrigation best practices, and produced a best practices guidebook for the Town.



In August of 2022, Savannah Stuart successfully defended her thesis, "Exploring people-place relationships through place attachment and wellbeing in the context of the abrupt social and ecological change associated with the COVID-19 pandemic". Savannah's research was supervised by Dr. Ryan Plummer, and her research was conducted in the Town of Lincoln. The research assessed whether or not individuals believed their valuing of assets changed after the onset of the COVID-19 pandemic, why or why not, and which assets contributed the most to their place attachment and subjective wellbeing.



Finally, in Spring 2022, Baharak Razaghirad officially graduated from the Master of Sustainability program. The results of her thesis research have been made available to the Town, and a manuscript is being submitted for publication. A map produced from Baharak's thesis work showing the distribution of trees in the Town was selected in a Geographic Information Systems (GIS) day cake contest. The map was featured on a cake celebrating GIS day at Brock in November 2022!



Upcoming Initiatives in 2023

Current Master of Sustainability student, Zaara Momin, has been developing a series of fact sheets on different agricultural irrigation opportunities for the Town of Lincoln as part of a Research Assistantship that began in 2022. Zaara's fact sheets are based on the irrigation best practices guidebook that was developed by Tyler Thomson earlier this year and these will be made available to the Town in late 2022.

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