

PROGRESS REPORT

2019/
2020



TeachingCity
Oshawa

- ✓ Applied Research
- ✓ Innovation
- ✓ Collaboration
- ✓ Knowledge Transfer
- ✓ Experiential Learning

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TeachingCity

TeachingCity Oshawa brings together the City of Oshawa and its education and research partners – the Canadian Urban Institute (CUI), Durham College, Ontario Tech University, Trent University Durham GTA (Trent Durham), and the University of Toronto's Faculty of Applied Science & Engineering.

The City and its partners focus on addressing Oshawa's urban issues through innovation, collaboration, applied research and shared experiential learning opportunities with the aim to position Oshawa as a local, national and global community of urban research and learning.

TeachingCity Hub

The TeachingCity Hub is located in Downtown Oshawa and is a central location for the partners to meet, plan and implement collaborative projects.

The Hub is home to City Idea Lab during the school year, where students meet with faculty and City staff. See more about City Idea Lab on page 2.



Message from the Partners

“TeachingCity is transforming our city and positioning Oshawa as a leading city of urban research and post-secondary learning. In Oshawa, the campus is the community. Together, students, faculty and City staff collaborate and work together to find innovative solutions. The City of Oshawa is amazed at the progress and results this partnership has achieved in just three years, and we are excited about the many TeachingCity Oshawa projects that are underway and upcoming.”

- Mayor Dan Carter and CAO Paul Ralph, City of Oshawa

“Canada needs initiatives like TeachingCity that bring together academia, local government, business and civil society to tackle urban challenges. This is even more true in cities like Oshawa that are undergoing significant transitions as the economy, climate and social structures are changing. This learning benefits of this program aren’t only accruing to the students – we all need to learn from each other.”

- Mary Rowe, President and CEO, Canadian Urban Institute

“At the intersection of academia, industry and local government, TeachingCity brings to life Durham College’s vision of inspiring learners to create success for themselves and their communities through the best in innovative and transformative education. Through this initiative, the spirit of collaboration, creativity and civic leadership provides students with an unparalleled experiential learning opportunity. DC is proud to be part of TeachingCity Oshawa, a unique environment that is solving real-world problems to improve the lives of Oshawa’s residents.”

- Don Lovisa, President, Durham College

“Through its focus on experiential learning and research, TeachingCity plays a key role in inspiring and equipping Ontario Tech University students and graduates to make a positive impact on our community. We are proud of the innovative solutions we’ve been able to uncover, thanks to our partnership with the City of Oshawa and generous support from the RBC Foundation, and we’re excited to see how this collaboration will lead to even more improvements in quality of life for Oshawa’s residents.”

- Dr. Steven Murphy, President and Vice-Chancellor, Ontario Tech University

“A focus on collaboration with our TeachingCity partners and providing quality experiential learning opportunities to our students is always a priority - now more than ever. By working together through our TeachingCity initiatives and being innovative with our approach we’re working towards our goal of building an even stronger community designed to support and uplift all those who live, work and study here.”

- Dr. Scott Henderson, Head and Dean, Trent University Durham GTA

“U of T Engineering strives to develop the whole engineer – experiential learning is a significant part of that. By partnering with TeachingCity Oshawa, our students are able to understand the impacts of what they are learning. This past year, we have been proud to offer our expertise in environmental systems, including water and air systems, to benefit the community of Oshawa. We look forward to continued collaboration with TeachingCity Oshawa.”

- Dr. Brent Sleep, Chair, Department of Civil & Mineral Engineering, University of Toronto

City Idea Lab



City Idea Lab

City Idea Lab is a collaborative, course-based project between the City of Oshawa, Durham College, Ontario Tech University and Trent Durham that offers experiential learning opportunities to post-secondary students via credit courses. Throughout the semester, the students apply their academic learning and work in a lab environment to collaborate with City staff and faculty to co-design possible solutions to their challenge questions. Courses focus on a City-identified challenge question that is embedded into the teaching practices and academic curriculum.

Challenge Questions 2019-2020: How Might the City of Oshawa...

- Engage art to tell the stories of Oshawa's 55+ residents?
- Communicate and map the cultural assets in the community?
- Tell the stories of economic change?
- Design a Wi-Fi network in the downtown area?
- Develop a local GDP metric strategy and explore how can it be used to inform economic development strategy and policy?
- Reduce the real and/or perceived risk in Oshawa's downtown core?
- Encourage small community projects that would create a change that helps to develop or support the priority neighbourhoods in Oshawa?
- Sustain and increase independence of the Oshawa Youth Council?



2019-2020 saw a growth in the program.

2018-2019 Stats



9 Courses



3 Post-Secondary Educational Partners

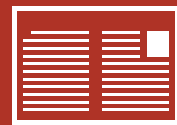


256 Students



43 City-Building Project Ideas Generated

2019-2020 Stats



14 Courses



3 Post-Secondary Educational Partners



261 Students



33 City-Building Project Ideas Generated

✓ Experiential Learning



Durham College Journalism students attended the Greater Oshawa Chamber of Commerce's Annual Mayor's Luncheon as part of their City Idea Lab course. The Mayor delivered a State of the City Address to a packed audience.

Building Our Future

Through City Idea Lab, students work together and with city staff to propose city-building project ideas that could be implemented in the future. Where possible, these ideas are implemented and have tangible impacts on the community. An example of such a project implementation through City Idea Lab are the temporary art murals produced by Durham College students through their City Idea Lab course and installed at Alexandra Park.

Alexandra Park

A partnership between the City and Durham College saw a new public art mural installed on the retaining wall in front of City Hall, through the Community Collaboration Course in Durham College's school of Media, Art and Design. The artwork focuses on human rights, which augments the City's Diversity and Inclusion Plan. It was designed by 16 Durham College Fine Arts students, who gained first-hand experience working with City staff on creative placemaking, public art projects and community consultation. Moving forward the Community Collaborations Course will be a regular offering through City Idea Lab.



New, temporary public art pieces produced by Durham College have been completed at Alexandra Park, through a partnership with the City, Durham College and Lakeridge Health Oshawa.

✓ Experiential Learning



What Happens in City Idea Lab:

Post-secondary Course includes a City Challenge Question: Challenge questions are chosen by City staff and relate to a current urban issue/challenge. Challenge questions are embedded into both the academic curriculum, and guide group assignments.



Introductory Presentation by City Staff: City staff conduct an in-class presentation which gives an overview of local government, and highlights differences between the role and responsibilities of the local, regional, provincial and federal government, serving to enhance students' civic literacy. City staff also introduce the students to Oshawa's changing economy and demographics, highlight key issues facing the municipality and provide background information necessary to frame the specific challenge question.

Generation of City-Building Ideas and Co-Design: Students work in class in groups to generate ideas, and form proposals to 'pitch' to City staff. City staff attend several course dates throughout the semester to meet with student groups. They help design solutions, give feedback and provide additional resources and guidance to the students as they complete their projects.

Final Student Presentations: Toward the end of the semester, students present their projects to City staff. Student presentations highlight how their project relates to the challenge question and how it could be implemented.

Showcase of Student Ideas:

Pre-COVID-19, student work was showcased through an in-person event. This was an opportunity for students and faculty involved in City Idea Lab to interact with members of Oshawa City Council, City staff, staff and faculty from Durham College, Ontario Tech University, Trent University Durham GTA, and community members. Going forward, the city-building ideas generated by the students will be showcased on the Internet at:

www.oshawacityidealab.squarespace.com

Student Showcases

The Fall Idea Showcase occurred in December 2019 at the Civic Recreation Complex. Students from Durham College, Ontario Tech University and Trent Durham displayed their project posters that illustrated their active research.

A summary of the Winter 2020 Project ideas can be viewed online at www.oshawacityidealab.squarespace.com.



RBC Helps Launch the Future

TeachingCity Oshawa partners are grateful for

the generous gift of \$322,000 from RBC Foundation as part of the RBC Future Launch program, which will continue to fund the City Idea Lab until the end of the 2020-2021 academic year.



✓ Experiential Learning



Co-op/Placement Students

The City provided a number of co-operative education placements and other learning experiences to post-secondary students at Durham College, Ontario Tech University and Trent Durham from Spring 2019 to Spring 2020.

This included students from the schools/faculties of:

- Business Administration
- Business and IT
- Business, IT and Management
- Computer Systems Technology
- Executive Office Administration
- Justice and Emergency Services
- Fitness and Health Promotion
- Health and Community Services
- Horticulture
- Management
- Media, Art and Design

2017-2018



15 Students

2018-2019



22 Students

2019-2020



26 Students

Access to Justice Hub

The Access to Justice Hub is a collaboration between the Durham Community Legal Clinic (DCLC), Durham College, the Region of Durham and many service providers. The goal of the Access to Justice Hub is to expand free legal services to Durham residents who do not qualify for Legal Aid Services provided by DCLC.

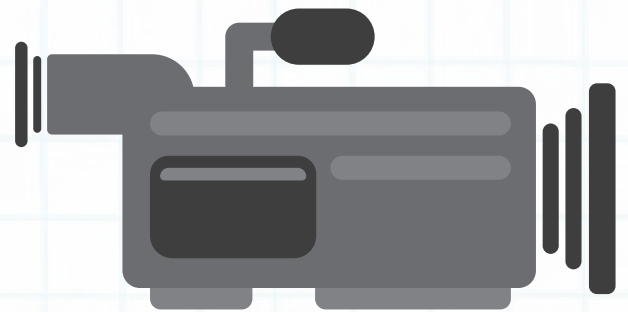
The free legal services are provided by Durham College students enrolled in the School of Justice & Emergency Services' Paralegal program. This experiential learning provides students with an opportunity to learn while doing and also brings valuable services to local residents. TeachingCity Oshawa partners Durham College, Ontario Tech University and Trent Durham envision a future research project at the Access to Justice Hub around the areas of social equity and inclusion.



TeachingCity Video Project

Students from Durham College's School of Media, Art & Design assisted the City of Oshawa in the development of promotional videos highlighting the TeachingCity partnership. The videos focused on the unique collaboration and shared commitment of the TeachingCity partners to help improve the lives of Oshawa's residents by engaging the best and brightest minds in education, research, public policy and municipal government. They can be viewed on the City's YouTube channel @oshawacity.

The project demonstrates how partners are breaking down barriers, sharing ideas and coming together to address urban issues and solve real-world challenges while students gain hands-on experience and the opportunity to move beyond theory to practical applications.



Annual Student Artwork Exhibitions

Artwork created by students in Durham College's Fine Arts – Advanced program is being exhibited at City Hall on an ongoing, rotating basis. Exhibits are designed and installed by student artists, with guidance from Cultural staff at the City of Oshawa.

Following each exhibit at City Hall, the artwork will be on display at the Station Gallery in Whitby.



Examples of the work produced by Durham College students that are on display at City Hall.

Applied Research

Stormwater Management Pond Water Quality Study

Under the supervision of Dr. Andrea Kirkwood, Ontario Tech University graduate student Alex Johnston, along with undergraduate students Denin Grey and Jesse Killoran, studied 15 stormwater management ponds across Oshawa to assess their water quality and determine the role of aquatic plants in stormwater treatment between May 2018 and April 2020.

Highlights from the study include confirmation that stormwater management ponds:

- vary in their ability to remove nutrients from stormwater; and,
- can sometimes be a source of phosphorus to receiving waters.

It was also determined that submerged aquatic plants may play a role in trapping nutrients, which ultimately improves stormwater treatment.

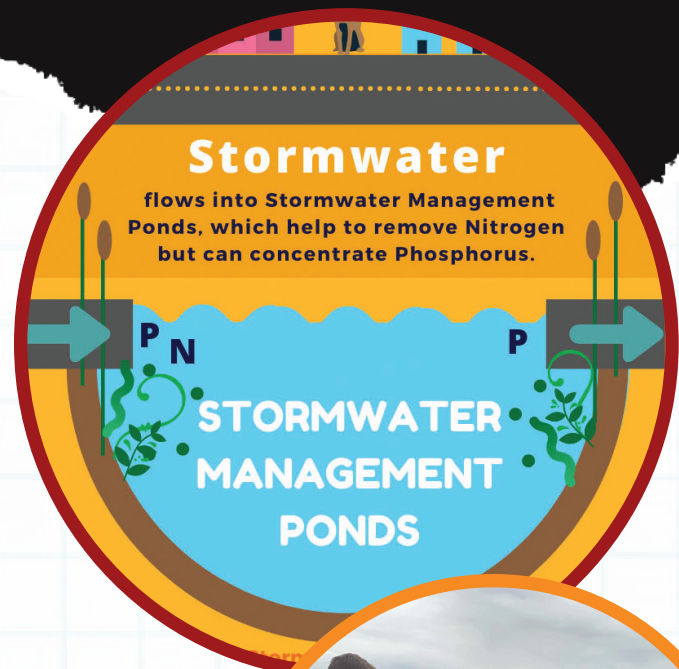
Conclusions and recommendations from this study will be used by the City to guide its stormwater management pond policies.

Municipal Natural Assets Initiative

The City of Oshawa was one of five municipalities selected to team up with the Municipal Natural Assets Initiative (M.N.A.I.) in 2018-2019 to study how to apply an asset management perspective to natural assets in order to value and account for the services they provide.

The study specifically explored how to increase the quality and resilience of the banks along a section of the Oshawa Creek, located south of the downtown core, which is experiencing the effects of erosion from more frequent storms. Faculty and student researchers from the University of Toronto's Civil & Mineral Engineering Department undertook the necessary modeling of a number of stormwater scenarios that may impact the Oshawa Creek.

Project findings show 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, including the surrounding floodplain, this increases to between \$392 million and \$414 million.



It was determined that replacing the natural assets with an engineered asset would reduce the ability to retain water, leading to the potential for more flooding.

Full results of this project can be found at: www.mnai.ca.

Active Transportation for an Age-Friendly Community Study

The City collaborated with the Oshawa Senior Community Centres (OSCC55+) and Dr. Shilpa Dogra from Ontario Tech University on a research study to understand barriers to active transportation for Oshawa's older adult community. Study outcomes include an overview of the barriers older adults face when it comes to active transportation (cycling, walking, etc.) in our community and recommendations on how to address the identified barriers. The results of the study will help advance the City's Integrated Transportation Master Plan and the Oshawa Age-friendly Strategy and help inform the City's planning policies.

Congratulations are in order for Dr. Dogra as the study has been published in the International Journal of Environmental Research and Public Health.



Dr. Shilpa Dogra presents her final research findings to City of Oshawa staff.



Downtown Oshawa Air Quality and Traffic Monitoring Project

The City has joined the Southern Ontario Centre for Atmospheric Aerosol Research at the University of Toronto, under the supervision of Dr. Greg Evans, as well as A.U.G. Signals and North Line Canada in a research study to monitor air quality and traffic movements in Oshawa's downtown core.

Launched in May 2019, the one-year assessment uses compact sensors to monitor air quality and traffic movements with an aim to increase the City's understanding of environmental issues in downtown Oshawa. Findings will also help identify options and opportunities for improving the pedestrian experience.

Eight compact sensors have been installed by the City's Operations team on light standards in the downtown core along King, Bond, Centre and Simcoe streets.

✓ Knowledge Transfer



Indigenous Cultural Workshop

In 2019-2020, City staff received Indigenous Cultural Training from the Chanie Wenjack School for Indigenous Studies at Trent University, which facilitated the sessions as part of the TeachingCity Oshawa partnership.

The training was in response to the City's Diversity and Inclusion Plan and the Truth and Reconciliation Report, Action #57 that calls for all public servants to receive training and professional development.

In seven half-day sessions, approximately 25 percent of the City's permanent staff participated in the training. The City hopes to continue to build on this partnership to continue to offer this important training to more staff and expand it in the future.

Testimonial from a City staff person:

"I think of this session as more of an enlightenment than a training. Content and presenters were excellent and illustrated the history of Indigenous Peoples and how we have arrived where we are and the need for Truth and Reconciliation. I am thankful I took part."

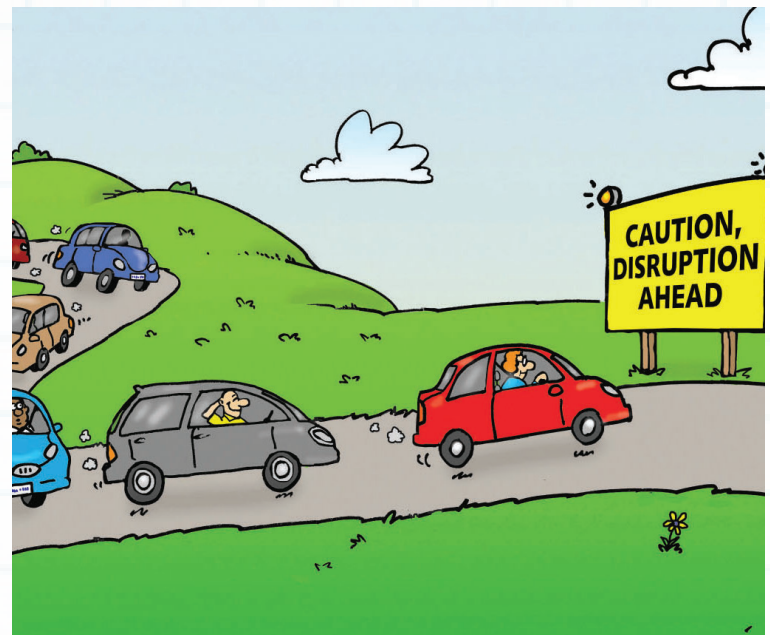
Transportation Workshop

TeachingCity Oshawa was pleased to be involved in Ontario Tech University's 2019 Transportation Workshop. In a session entitled "Transportation for Healthy, Inclusive Communities," panelists Dr. Shilpa Dogra and Dr. Meghann Lloyd of Ontario Tech University, Dr. Greg Evans of the University of Toronto and Ranjit Gill of the City of Oshawa highlighted insights from TeachingCity projects as they related to active transportation, age-friendly and barrier-free communities and air quality.

In addition to presenting TeachingCity highlights, the workshop aimed to inspire additional planning and research projects around issues of transportation in years to come.



CHANIE WENJACK SCHOOL FOR
INDIGENOUS STUDIES



Innovation

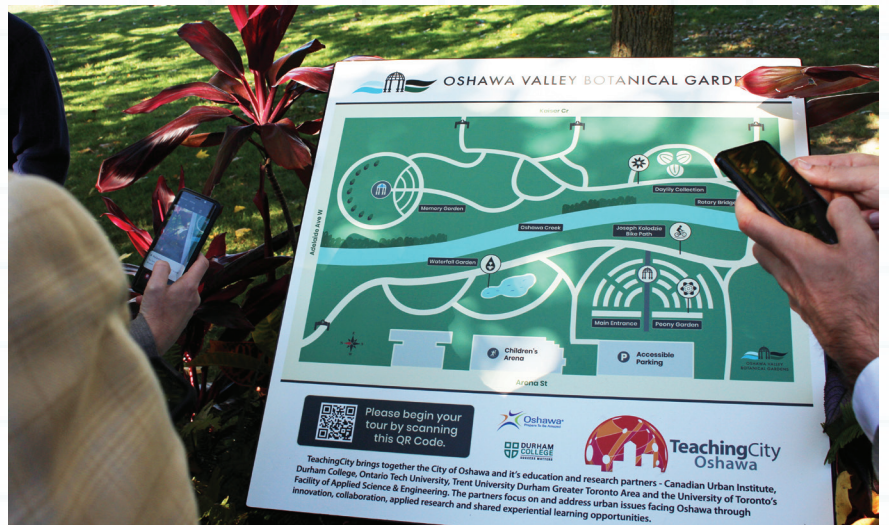
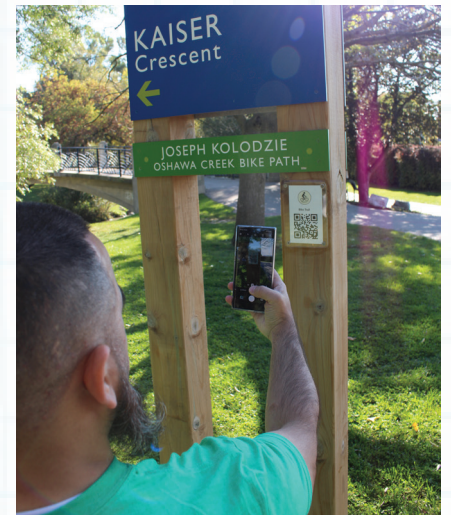


Augmented Reality Project in Oshawa Valley Botanical Gardens

Durham College students, under the supervision of Durham College faculty member Linda Cheng, designed new Augmented Reality (AR) technology to enhance visitor experience at one of Oshawa's exceptional parks, the Oshawa Valley Botanical Gardens. The community can use the technology to learn about the gardens, identify points of interest and launch a navigation guide between landmarks.

This was a partnership between the City of Oshawa and Durham College's Office of Research Services, Innovation and Entrepreneurship and School of Media, Art & Design. The City is excited to see this pilot project enhanced and expanded through future collaborations with Durham College students.

QR codes have been placed at six points of interest at OVBG, for the public to access the augmented reality experience through the park.



Knowledge Transfer



Fire Navigation Systems Project

Engineering students from Ontario Tech University, under the supervision of Dr. Carlos Rossa, are undertaking the design and development of a tactile feedback navigation system for firefighters to assist them in navigating unfamiliar surroundings during an emergency call.

The prototype saw sensors and wireless communication technology attached to a firefighter's helmet to generate a map of their surrounding area. The map and associated data was sent wirelessly to an external team using Wi-Fi. The project also includes a haptic guidance system that would use vibration to stimulate the sense of touch. This would allow for a firefighter to more easily guide themselves out of a hazardous area through the use of vibrating motors embedded in their clothing.

The prototype was tested in the Oshawa Fire Services training facility in 2019 and provided additional learning for the students in order to improve their technology. Future students will be engaged in the project during the 2020-2021 school year to bring this technology closer to reality.

Helmet Generated Map



This floor plan of Ontario Tech's Software and Informatics Research Centre was generated by the helmet which travelled along both the blue and green lines. The markers on this map indicate the position of the person wearing the helmet.



Innovation

Future Areas of Interest for Collaboration

TeachingCity Oshawa is interested in exploring projects or initiatives that fall into one of the following broad categories:

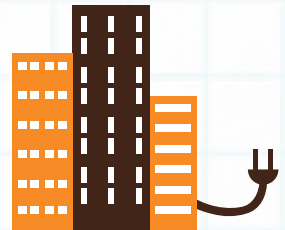
Social



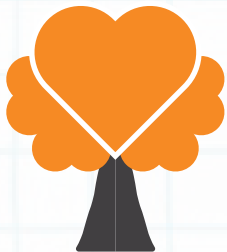
TeachingCity Oshawa is interested in exploring research, initiatives or solutions aimed at meeting the social needs of the community and in particular to advance the City of Oshawa's strategic goals of Social Equity and Cultural Vitality. Possible areas of study could include addressing diversity and inclusion, poverty reduction, and community or cultural development.

Technology/Smart City

TeachingCity Oshawa is interested in exploring research, initiatives or solutions that use data and technology to create efficiencies, improve sustainability, create economic development, and enhance quality of life factors for people living and working in the city.



Environmental



TeachingCity Oshawa is interested in exploring research, initiatives or solutions aimed at promoting the City of Oshawa's strategic goal of Environmental Responsibility. Possible areas of study could include, but are not limited to climate change mitigation and adaptation, invasive species, and water and air quality.

If you have an idea for research, collaboration, or student experiential learning, please contact us at teachingcity@oshawa.ca.



TeachingCity Oshawa



TeachingCityOshawa.ca - #OshTeachingCity
905-436-3311 - email: TeachingCity@Oshawa.ca

If this information is required in an accessible format, please contact Service Oshawa at:
905-436-3311 or email: service@oshawa.ca.