



**Credit Valley  
Conservation**  
inspired by nature

# **Reducing Heat Vulnerability in Priority Neighbourhoods – Moving from Science to Action**

Latonnell Conservation Symposium

October 18, 2022

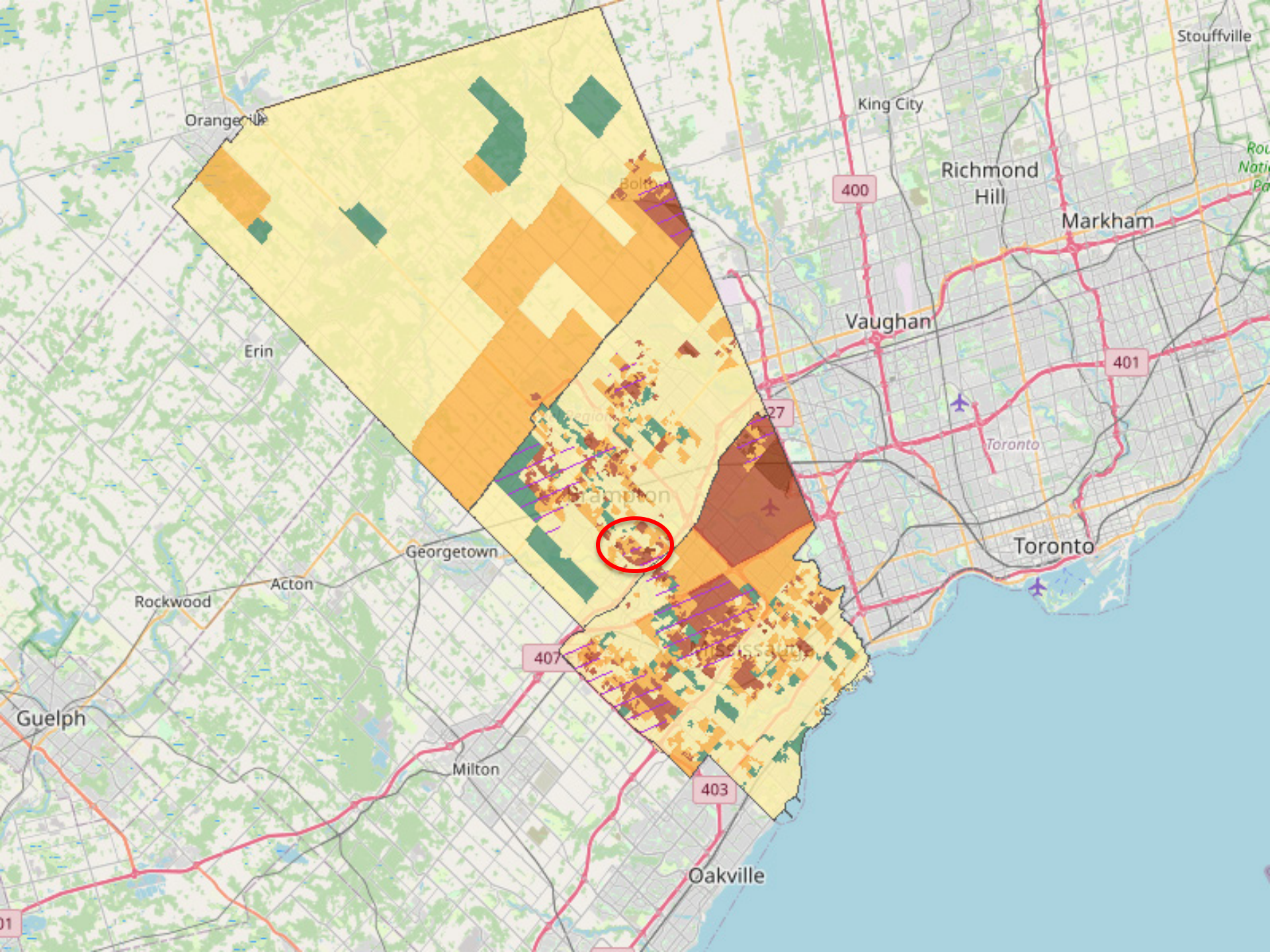
Shannon Lem, Senior Coordinator,  
Sustainable Neighbourhoods



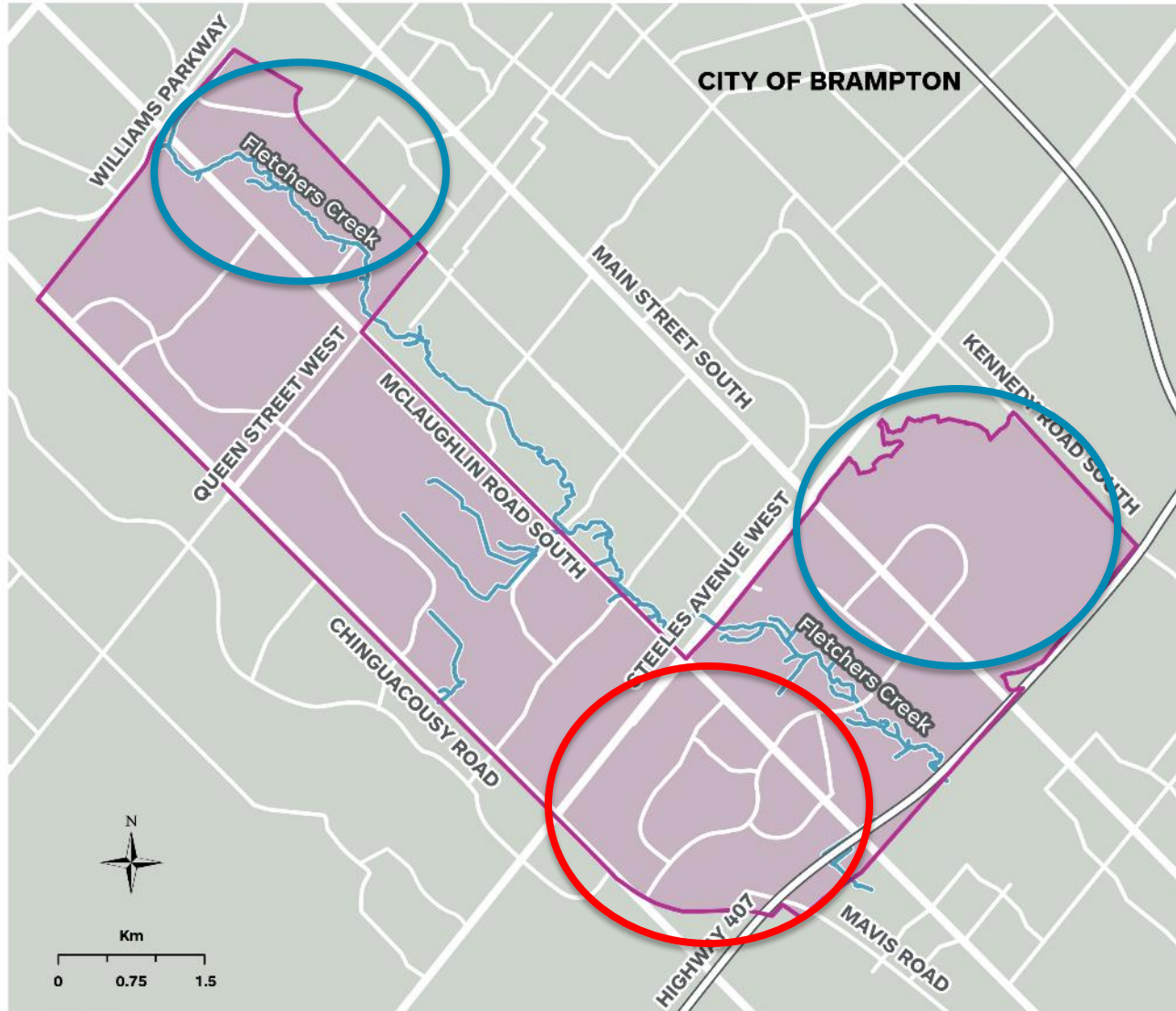
# Heat Vulnerability Index



**FIGURE 1 ADAPTATION OF RINNER, ET AL. (2010) THE ROLE OF MAPS IN NEIGHBORHOOD-LEVEL HEAT VULNERABILITY ASSESSMENT FOR THE CITY OF TORONTO. CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE (37)1: 31-44**



# Heat Vulnerable Neighbourhood – Brampton, Ontario



## **Climate Action and Awareness Fund**

- Federal funding program – applied in fall 2020
- Invested up to \$206 million over five years to support Canadian-made projects that help to reduce Canada's greenhouse gas emissions
- Designed to support projects that can create middle class jobs for Canadians who work in science and technology, academia, and at the grassroots community level

# The Community Tree Project

- Applied for \$466,131
- In-kind contributions of \$310,208
- Total project cost of \$776,339
- Two years
- 6 new staff

# Project Goals and Objectives

## **Goal 1. Increase community knowledge about climate change and awareness of the risks of extreme heat.**

- Develop multi-channel communications campaign
- Deliver curriculum-connected climate change literacy programming and teacher resource packages
- Deliver climate change literacy programming for New Canadians and visible minorities through local LINC/ESL Adult Education Programs and other community organizations such as seniors and faith-based groups

# Project Goals and Objectives

## **Goal 2. Build community capacity to reduce heat vulnerability by planting trees and increasing green natural infrastructure.**

- Provide residential homeowners with training focused on understanding, planting and caring for urban trees and residential tree planting
- In partnership with the City of Brampton, provide community volunteers the opportunity to plant trees in public spaces
- Provide institutions, multi-residential properties and places of worship with the tools and skills to implement sustainable landscaping projects on their properties

# Project Goals and Objectives

## **Goal 3. Sequester carbon and contribute to Canada's climate goal of net zero GHG emissions by 2050.**

- Sequester GHG emissions through planting 1,600 trees and indirectly reduce emissions through co-benefits such as increasing shade and decreasing energy use during extreme heat events

# Project Communications

## The Community Tree Project

Is coming to your neighbourhood

Together, we can make our community cleaner, greener and ready for climate change.  
**Plant trees with us!**



### What is the Community Tree Project?

A community project to cool your neighbourhood from the impacts of climate change. Participate in tree planting, virtual presentations, neighbourhood walks and more.

### Benefits of Trees

- Make your community beautiful
- Provide important cooling shade
- Clean the air and water

### Where Can I Plant Trees?

There is space to plant more trees in your community:

- In your garden or backyard
- In your neighbourhood park during community planting events
- At work
- At local schools and places of worship

### How Do I Plant Trees?

Get involved in our upcoming free events and activities. Visit

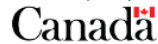
[cvc.ca/CommunityTreeProject](http://cvc.ca/CommunityTreeProject)



### connect with us

Phone: 905-670-1615 ext. 436  
Email: [stewardship@cvc.ca](mailto:stewardship@cvc.ca)  
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## Plant Trees to Improve Your Community

### get involved!

Participate in upcoming virtual events and stay tuned for more activities this spring, summer and fall. Visit our website [cvc.ca/CommunityTreeProject](http://cvc.ca/CommunityTreeProject) to learn more and to register.



### Plant Trees at Your Home

Receive a **free tree** planted by CVC when you attend\*:

**Landscaping for Birds** | Tues, Jun 1, 7-8:30 p.m.

Discover the birds that visit your neighbourhood and the trees and shrubs they love most. Learn what you can do to keep birds safe.

**Beautiful Trees, Shrubs and Wildflowers for Your Yard** | Thurs, Jun 17, 7-8:30 p.m.

Learn how to use beautiful local plants to brighten your yard. Discover how they can improve your health and your home.

**Keeping Your Trees & Shrubs Healthy** | Thurs, Jul 22, 7-8:30 p.m.

Is your yard healthy and thriving? Discover top tips to keep your trees and shrubs happy, including watering, mulching, and pruning.

**Neighbourhood Walk: Butterflies, Caterpillars, Birds & Trees** | Thurs, Aug 26, 6-7 p.m.

Join us for a walk to explore the hidden wildlife in your neighbourhood. Discover how these creatures depend on trees to thrive.

\*Trees available only to residents in the Community Tree Project neighbourhood.



### Plant Trees in Your Community

Let's plant trees to build a greener future.

#### Events for Families

We're planning community tree planting events in neighbourhood parks.

#### Activities for Youth

Teens between 14-18 years old can sign up for upcoming tree and shrub planting events in the local community.



### Learn about Trees

Connect with nature virtually.

#### Programs for Schools, Workplaces and Community Groups

Students and adults will learn about the importance of trees and how they keep our communities cool in virtual presentations.

Events and tree delivery will follow COVID-19 safety protocols and are subject to change and will take place in accordance with provincial and local public health guidelines.



# Project Communications

## The Community Tree Project is in your neighbourhood

Together, we can make our community cleaner, greener and ready for climate change. Plant trees with us!



### Learn how trees benefit us!

#### Climate change affects your health and wellness



In this region, climate change will increase the number of extreme heat days (30° Celsius or hotter).



Extreme heat increases the number of asthma attacks, heart attacks and ambulance calls.

#### Trees cool cities and protect us from extreme heat



Trees are nature's air conditioners. Shade from trees can help us feel up to 12° Celsius cooler on hot summer days.



Planting trees in your neighbourhood can help reduce the number of extreme heat days.



If every resident in Brampton planted one tree, the city could save millions in health care costs.

#### Trees make our cities better



Trees add value and beauty to your home.



Trees relieve stress and improve our mental health.



Trees help prevent flooding and make our communities more climate resilient.

Visit [cvc.ca/CommunityTreeProject](http://cvc.ca/CommunityTreeProject) to register.

#### Plant Trees at Home

##### Beautiful Trees for Fall and Spring Colour Webinar

Wed., Sept. 16, 7 - 8 p.m.

Discover the best trees to plant for fall colour and spring blooms.\*

##### Tree Walk: Fall Colours

Wed., Oct. 6, 3 - 4 p.m. and 5 - 6 p.m.

Experience the beautiful fall colours in your neighbourhood. Join us for a guided walk to learn about the trees, flowers, and wildlife in your community.\*

\* Participants can sign up to receive a free tree that we'll deliver and help plant. Free trees are available only to residents in the Community Tree Project neighbourhood.

#### Learn More About Trees

##### Caring for Your Green Yard in Fall Webinar

Sat., Sept. 18, 9:30 - 11 a.m.

Keep your yard flourishing year-round. Learn proper pruning and mulching techniques and other best practices for preparing your yard and garden for winter.

##### Guide to Exploring Your Urban Forest Webinar

Wed., Sept. 22, 7 - 8 p.m.

Discover your local urban forest. Learn about the benefits of trees and how they protect us from the impacts of climate change.

##### Fletchers Creek Neighbourhood Walk

Sat., Oct. 16, 10 a.m. - 12 p.m.

See the beautiful fall colours on a guided walk through parks and pathways along Fletchers Creek as you discover local nature gems and learn about the benefits of trees in your neighbourhood. Starting point: Chris Gibson Recreation Centre.

##### Virtual Classroom Presentations

We're delivering free virtual presentations to kindergarten to grade eight classes on climate change and how trees cool our communities. You can pre-register your class for fall 2021.

#### Plant Trees in Your Community

Join us at these community tree planting events to help cool and add beauty to your neighbourhood.

##### Youth & the Credit

Every weekend from Sept. 11 to Oct. 31, 9 a.m. to 2 p.m.

Youth aged 14 - 18 years old can participate in environmental stewardship projects. Various locations.

##### Community Tree Planting

Sat., Oct. 2, 10 a.m. to 12 p.m.

An opportunity for families to get outside and connect with nature. Join us at Fred Kline Park.

##### Community Tree Project Celebration Planting

Sat., Oct. 23, 9 a.m. - 12 p.m.

Join us at Chris Gibson Park to celebrate the success of the Community Tree Project.

#### connect with us



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Twitter: [@CVC\\_CA](https://twitter.com/CVC_CA)

Facebook: [@CreditValleyConservation](https://www.facebook.com/CreditValleyConservation)

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Funded in part by:  
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Events and tree delivery will follow provincial and local public health guidelines and are subject to change.



# Project Communications

The  
**Community Tree Project**  
Is greening your neighbourhood

Together, we can make our community cleaner, greener and ready for climate change.  
**Plant trees with us!**



## Celebrate Your Success



**Climate change is making our cities hotter.** Extreme heat (30° Celsius or hotter) can have negative impacts on you and your family's health.



**Planting trees is an easy way to cool cities.** Shade from trees can help us feel up to 12° Celsius cooler on hot summer days.



**Trees make our cities better.** Neighbourhoods with more healthy trees are less vulnerable to the effects of extreme heat and more resilient to climate change.

## Community Tree Project Accomplishments

There are more trees in your community thanks to you and your neighbours! In 2021, the Community Tree Project:

- Planted 2,877 trees and shrubs
- Held 72 community events
- Worked with 1,871 community members
- Planted trees that will capture 28 tonnes of carbon per year

Visit [cvc.ca/CommunityTreeProject](https://cvc.ca/CommunityTreeProject) to learn more.

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ਫਾਇਲ ਫਾਰਮੈਟ ਵਿੱਚ ਕਿਸੇ ਤਕਨੀਕੀ ਸਮੱਸਿਆ ਦੇ ਕਾਰਨ ਇਸ ਪਰਚੇ ਦੇ ਆਖਰੀ ਰੂਪਾਂਤਰ ਵਿੱਚ ਅਨੁਵਾਦ ਵਿੱਚ ਗਲਤੀ ਸੀ।  
ਅਸੀਂ ਇਸ ਭੁਲੇਖੇ ਲਈ ਦਿਲੋਂ ਮੁਆਫੀ ਚਾਹੁੰਦੇ ਹਾਂ।

## ਕਮਿਊਨਿਟੀ ਟ੍ਰੀ ਪ੍ਰਾਜੈਕਟ ਤੁਹਾਡੇ ਆਲੇ-ਦੁਆਲੇ ਨੂੰ ਹਰਿਆ-ਭਰਿਆ ਕਰ ਰਿਹਾ ਹੈ

ਰਲ ਕੇ ਅਸੀਂ ਆਪਣੇ ਸ਼ਹਿਰ ਨੂੰ ਸਾਫ਼-ਸੁਥਰਾ, ਵਧੇਰੇ ਹਰਿਆ-ਭਰਿਆ ਤੇ ਵਾਤਾਵਰਨ ਦੀਆਂ ਭਬਦੀਲੀਆਂ ਸਹਿਣ ਕਰਨ ਲਈ ਤਿਆਰ ਕਰ ਸਕਦੇ ਹਾਂ। ਆਓ, ਸਾਡੇ ਨਾਲ ਰਲ ਕੇ ਰੁੱਖ ਲਗਾਉਂ!



## ਆਓ, ਆਪਣੀ ਕਾਮਯਾਬੀ ਦੀ ਖੁਸ਼ੀ ਮਨਾਈਏ



**ਵਾਤਾਵਰਨ ਦੀ ਤਬਦੀਲੀ ਸਾਡੇ ਸ਼ਹਿਰਾਂ ਨੂੰ ਗਰਮ ਕਰ ਰਹੀ ਹੈ।** ਅੰਤ ਦੀ ਗਰਮੀ (30° ਸੈਲਸੀਅਸ ਜਾਂ ਵਧੇਰੇ) ਦਾ ਤੁਹਾਡੀ ਅਤੇ ਤੁਹਾਡੇ ਪਰਿਵਾਰ ਦੀ ਸਿਹਤ ਉੱਤੇ ਮਾੜਾ ਅਸਰ ਪੈ ਸਕਦਾ ਹੈ।



**ਸ਼ਹਿਰਾਂ ਨੂੰ ਠੰਢਾ ਰੱਖਣ ਦਾ ਇੱਕ ਸੌਖਾ ਤਰੀਕਾ ਰੁੱਖ ਲਗਾਉਣਾ ਹੈ।** ਰੁੱਖਾਂ ਦੀ ਡਾਂ ਗਰਮੀਆਂ ਦੇ ਗਰਮ ਦਿਨਾਂ ਵਿੱਚ ਸਾਨੂੰ 12° ਸੈਲਸੀਅਸ ਅਸ ਤਕ ਘੱਟ ਗਰਮੀ ਮਹਿਸੂਸ ਕਰਾਉਂਦੀ ਹੈ।



**ਰੁੱਖ ਸਾਡੇ ਸ਼ਹਿਰਾਂ ਨੂੰ ਬਿਹਤਰ ਬਣਾਉਂਦੇ ਹਨ।** ਵਧੇਰੇ ਤੰਦਰੁਸਤ ਰੁੱਖਾਂ ਵਾਲੇ ਇਲਾਕੇ ਅੰਤ ਦੀ ਗਰਮੀ ਦਾ ਅਸਰ ਘੱਟ ਮਹਿਸੂਸ ਕਰਦੇ ਹਨ ਅਤੇ ਵਾਤਾਵਰਨ ਦੀ ਤਬਦੀਲੀ ਨੂੰ ਵਧੇਰੇ ਸਹਿ ਸਕਦੇ ਹਨ।

## ਕਮਿਊਨਿਟੀ ਟ੍ਰੀ ਪ੍ਰਾਜੈਕਟ ਦੀਆਂ ਪ੍ਰਾਪਤੀਆਂ

ਤੁਹਾਡੇ ਅਤੇ ਤੁਹਾਡੇ ਗਵਾਂਢੀਆਂ ਦੇ ਸਹਿਯੋਗ ਸਦਕਾ ਤੁਹਾਡੇ ਸ਼ਹਿਰ ਵਿੱਚ ਵਧੇਰੇ ਰੁੱਖ ਮੌਜੂਦ ਹਨ। ਸੰਨ 2021 ਵਿੱਚ ਕਮਿਊਨਿਟੀ ਟ੍ਰੀ ਪ੍ਰਾਜੈਕਟ (ਸ਼ਹਿਰ ਵਿੱਚ ਰੁੱਖ ਲਗਾਉਣ ਦੀ ਪ੍ਰੀਯੋਜਨਾ) ਤਹਿਤ:

- 2,877 ਰੁੱਖ ਅਤੇ ਬਾੜੀਆਂ ਲਗਾਈਆਂ ਗਈਆਂ
- 72 ਨਾਗਰਿਕ ਸਮਾਗਮ ਕੀਤੇ ਗਏ
- ਤਾਈਂਚਰੇ ਦੇ 1,871 ਮੈਂਬਰਾਂ ਨਾਲ ਰਲ ਕੇ ਕੰਮ ਕੀਤੇ ਗਏ
- ਹਰ ਸਾਲ 28 ਟਨ ਕਾਰਬਨ ਸੇਖਣ ਵਾਲੇ ਰੁੱਖ ਲਗਾਏ ਗਏ

ਵਧੇਰੇ ਜਾਣਕਾਰੀ ਲਈ ਵੈੱਬਸਾਈਟ  
[cvc.ca/CommunityTreeProject](https://cvc.ca/CommunityTreeProject) ਵੇਖੋ।

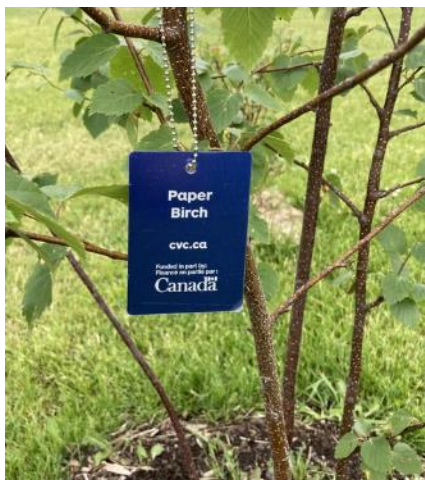
### ਸਾਡੇ ਨਾਲ ਸੰਪਰਕ ਕਰੋ




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# Project Communications






**Credit Valley Conservation**  
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**Grow beautiful trees at home**



**Ask us how**  
**Let's make our community cleaner, greener and ready for climate change.**  
[cvc.ca/CommunityTreeProject](https://cvc.ca/CommunityTreeProject)

Funded in part by:  **Canada**  
 With support from:  **BRAMPTON**  
 Flower City

ਆਪਣੇ ਘਰ ਵਿੱਚ ਸੌਹਣੇ ਪੇੜ ਲਗਾਓ



ਵਧੇਰੇ ਜਾਣਕਾਰੀ ਲਈ ਸਾਨੂੰ ਮਿਲੋ  
 ਆਓ ਆਪਣੇ ਸ਼ਹਿਰ ਨੂੰ ਸਾਫ਼, ਹਰਿਆ ਭਰਿਆ ਅਤੇ ਹੋਰ ਚੰਗੇ ਮੌਸਮੀ ਬਦਲਾਵ ਲਈ ਤਿਆਰ ਬਣਾਈਏ  
[cvc.ca/GreenYourProperty](https://cvc.ca/GreenYourProperty)

Funded in part by:  **Canada**  
 Credit Valley Conservation  inspired by nature

**Your neighbourhood just got cooler.**

Your neighbours are planting these beautiful urban shade trees in their yards to help reduce the impacts of climate change. You can too.

**Get a free tree when you attend one of our free webinars.**

---

 **Paper birch**  
 Beautiful white, peeling bark and bright yellow fall colour.

---

 **White spruce**  
 Year-round needles provide privacy, winter colour and shelter for birds.

---

 **Northern red oak**  
 Best tree to plant for birds and butterflies. Grows well in most sunny locations.

---

**Register for a free webinar.**  
 Visit [cvc.ca/CommunityTreeProject](https://cvc.ca/CommunityTreeProject).

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 inspired by nature

# Projects on Private Properties



# Projects on Institutional Properties

## Credit Valley Conservation helps local seniors' residence build community resilience to climate change



CVC and Extendicare staff prepare for the installation of a native habitat garden.

In July, Hannah Okseberg from Extendicare seniors' residence received an opportunity that sounded too good to be true. Deborah Kenley, calling on behalf of Credit Valley Conservation's (CVC) Greening Corporate Grounds (GCG) program, told Okseberg she wanted to plant trees—hundreds of them—on Extendicare's property.

The Community Tree Project, a community-based initiative to help build local resilience to climate change by planting trees, is funded in part by the Government of Canada. Extendicare's property provided an opportunity to improve the landscape, and also the health and happiness of the Brampton seniors' home residents.

CVC selected plants that would attract birds and provide opportunities to experience nature year-round. In total, 150 native trees and shrubs were planted with a goal of planting over 400 more.

"At a time when going out or engaging with loved ones is limited," says Kenley, "landscaping the property was an opportunity to provide joy, improve the environment and support residents' well-being."

CVC's Greening Corporate Grounds program helps businesses and institutions in the Credit River Watershed build climate change resilience. Visit [cvc.ca/gcg](https://www.cvc.ca/gcg) to learn more.



# Educational Programming

## IMPACTS ON AVAILABILITY OF TRADITIONAL FOODS AND MENTAL HEALTH IN THE NORTH

Due to a lack of warming in the Arctic Circle?

### WILDFIRE-RELATED ASTHMA & EVACUATION

Healthcare facilities evacuated

- East of Hudson Bay, 155 patients
- Interior BC, 2000 BSA patients
- Alberta & PSTO following evacuations

### FLOOD-RELATED DEATHS AND DAMAGE

2013 Alberta flood

- 3 deaths
- Healthcare facilities closed due to flooding

### ALLERGIES

Increased severity & duration of pollen seasons

### TICK-BORNE DISEASE

2017: 3x higher rate than 2012-2016 average

### HEAT-RELATED ILLNESS

50 people died in Montreal during 2018 heat wave

### RELOCATION & STRESS FROM COASTAL EROSION

1.1 homes at risk

### DISPLACEMENT

Climate change has increased drought and forest fires and is one factor in the loss of homes

## CLIMATE CHANGE ITS IMPACT ON HEALTH IN CANADA

Climate change is the biggest global health threat of the 21st century.

J. Prabhakaran

Torina Shakeri

Ashwin Arora

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## Why Trees Are Important?

### Increase Life Expectancy

Trees help us live longer, healthier lives.

According to research, exposure to nature helps **reduce stress, speeds healing and improves mental health.**

Adding 10 trees to a city block offers mental and health benefits similar to **getting a \$10,000 salary raise or being seven years younger.**

1 long-term tree **lowers the risk of mortality** in urban communities and of death by up to 12%.

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VULNERABLE GROUPS

**Low-income populations** may be exposed to climate change threats, such as drought, floods, air events, etc. For example, people who cannot afford air conditioning are more likely to suffer from unsafe indoor air temperatures.

**Pregnant women** are sensitive to health risks from extreme weather such as hurricanes and floods. These events can affect their mental health and the health of their unborn babies by contributing to low birthweight or preterm birth.

**Older adults** may have limited ability to cope with extreme weather if, for example, they have difficulty accessing cooling centers or other support services during hot waves. Heat-related deaths are most commonly reported among adults ages 65 and over.

**Occupational groups** such as first responders and outdoor workers are more likely and/or longer exposed to climate change threats. For example, extreme heat and disabling air quality may affect emergency medical and first responders. First responders are sensitive to extreme heat.

**People with pre-existing medical conditions**, such as asthma, are particularly sensitive to climate change impacts on air quality. People who have disabilities or who take medications that make it difficult to regulate body temperature are sensitive to extreme heat.

**People with disabilities** face challenges in responding to and recovering from extreme weather events. For example, emergency or evacuation instructions are often not accessible to people with hearing, hearing, or visual disabilities.

**People in certain locations** may be exposed to climate change threats, such as drought, floods, air events, etc. For example, people living in coastal areas at increased risk from hurricanes, sea level rise, and storm surge.

**Children** are more sensitive to heat-related health risks than adults because of their lower body weight. Higher levels of physical activity, and their developing lungs. Longer outdoor seasons may result in more asthma episodes.

**Indigenous people** who rely on traditional food have limited options to adapt to climate change threats to traditional food sources. Rising temperatures and changes in the growing season affect the quality, availability, and nutritional value of some traditional foods, and increase the energy

**Occupational Groups**

**Pre-Existing Conditions**

**Disabilities**

**Certain Locations**

**Children**

**Indigenous People**

**SHERINE-5**

# Public and Youth Events



# Pre and Post Project Survey

Randomized sample size of 400

Third-party administered phone survey

- 9% increase in respondents who are “very concerned” about climate change
- 7% increase in respondents who are “very concerned” about extreme heat
- 11% increase in respondents who think that trees in gardens, yards and along streets are “very effective” at addressing extreme heat
- 20% increase in respondents who think that natural areas and greenspaces are “very effective” at addressing extreme heat

## Final KPIs

- # of people reached through communication and outreach efforts: **17,483** (target was 16,000)
- # of participants involved or engaged in project activities **3,619** (target was 2,830)
- # of activities/events: **146** (target was 90)
- # of native trees & shrubs planted: **2,878** (target was 1,600)
- Tonnes of GHG emissions reduced annually: **28** (target was 16)

## Key Learnings

- *Work as closely with the community as possible*
- *Slow down the pace of work*
- *Triple check translations*
- *Making changes to be more inclusive in communications may attract negative attention*
- *Caliper trees make a big difference*
- *Implementing a large public engagement project during a pandemic is hard...*

# Thank you to our project partners



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