



The Future is Green: Phase 1 Climate Action Plan for Amherstburg

“The best time to plant a tree was 20 years ago. The second best time is now.”

-Chinese Proverb

BACKGROUND

For years now, stories about climate change have largely been about faraway melting icebergs, hurricanes in Florida and wildfires in California. Those headlines have been recently replaced by extreme temperatures killing people in B.C. and Oregon, devastating fires in Siberia, Algeria and Greece, droughts in the Midwest, and extreme flooding in Europe.

Closer to home, Essex County has not escaped its impact. Our storms are warmer, wetter, and wilder with future forecasts predicting even more dramatic increases. These storms are already costing the community money. For the period 2016 and 2017 the Insurance Bureau of Canada reported insurance losses in our region of \$124 million respectively. Daily temperatures of 30C+ are forecast to increase from 10.4 days to 63.1 days per year by the year 2050. Local flooding will continue to increase. In 2020, days under flood watch increased from 147 to 198. All of this is putting pressure on municipal infrastructure (sewers, parks, roads), local businesses, and residents of Amherstburg.

Climate change also imposes financial and liability risks on municipal governments. Litigation related to climate change is on the rise all over the world, and the most frequent targets are governments and public authorities (Solana 2020).

Wildfires, heat, droughts, and flooding are no longer “exclusively” natural disasters. Nor are they just impacting distant lands. They are the new normal in a world threatened by the climate crisis. And as bad as it is today, tomorrow is only going to get worse. The Inter Government Panel on climate change recently published a report, supported by 195 member countries, that forecast a dire future for the planet and humanity if immediate action is not taken. The report was very sobering to say the least, but it does not mean we should give up and not do our part. Even small communities like Amherstburg NEED to step up and address the climate crisis.

The T.H.R.I.V.E. team that created this White Paper:

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CLIMATE CHANGE IMPACTS THE HEALTH & WELLNESS OF OUR COMMUNITY

Climate change has both direct and indirect effects on human health. Climate imbalance and extreme weather events result in injury and premature death. Environmental toxins and declining air and water quality fuel cardiovascular, respiratory, and chronic diseases such as cancer. Climate change alters the prevalence and geographical distribution of food, affecting food safety and nutrition which can have impacts on the overall health and well-being of our society. Climate change fuels adaption and spread of several water- and vector-born illnesses and other infectious diseases. All have consequences on mental health ranging from minimal stress to clinical disorders, such as anxiety, depression, post-traumatic stress, and suicidality.

Notably, vulnerability to these health effects is not evenly distributed. Our aged population is increasingly vulnerable. Across Canada our population demographics are shifting toward an increase in seniors which presents new challenges for our healthcare system. Amherstburg is a retirement locale and has a larger population of seniors than our provincial average. This is a fundamental concern to our region.

Other *populations of concern* include those with low income, some communities of colour, immigrant groups (including those with limited English proficiency), Indigenous peoples, children and pregnant women, vulnerable occupational groups (ex. migrant workers depend upon our agriculture industry), persons with disabilities, and persons with pre-existing or chronic medical conditions.

Our strategies to address climate change must include health as a strategic component and this must be done in a way that considers the unique challenges of individual populations within Amherstburg. The following proposal provides one example of this.

“The greatest threat to our planet is the belief that someone else will save it”

Robert Swan

EXISTING CLIMATE ACTION IN AMHERSTBURG

Climate action is woven through a number of T.H.R.I.V.E's initiatives.

For instance:

- Increasing cycling infrastructure to move personal travel away from cars.
- Our first white paper, Open Air, recommends that more opportunities are created to encourage residents to walk more and be less dependent on transportation by vehicle. Further Papers will talk to Amherstburg's street use and design.

Separately Amherstburg has many other things that it can do to go beyond T.H.R.I.V.E's focus. For instance:

- More energy efficient new construction
- Encourage energy retrofits of businesses and residential buildings
- Green the town's fleet and dramatically increase the number of recharging stations
- Recycling biodegradables
- Eliminate single use plastic
- Put all the town's purchasing decisions through a "green" lens
- Encourage infill and housing density over sprawl
- Pursue certifications like Bird Friendly City and Bee City
- Develop an invasive species strategy to protect natural assets from costly economic and social impacts
- Create a by-law to encourage naturalized front-yards
- Invest in community gardens and edible landscapes

With a concrete Climate Crisis action plan, the town can become a credible voice to encourage residents to take their own personal steps to help address this issue.

Over the next twelve months T.H.R.I.V.E. will submit White Papers on the Climate Crisis because Amherstburg should no longer sit on the sidelines.

EXISTING BEST PRACTICES: TREE PLANTING

Communities around the world are investing in climate action. Tree planting is a relatively easy way to make significant progress on climate action. Trees provide bird and animal habitat while sequestering carbon, producing oxygen, and removing air pollution. For homeowners trees provide shade which conserves energy, they prevent soil erosion, detail and retain storm water, absorb sound and increase property values (Bolund and Hunhammar 1999) (Alvey 2006) (Dobbs, Escobedo, and Zipperer 2011) (Elmqvist et al. 2015).

In Essex County, the Essex Region Conservation Authority offers a subsidized tree program for restoration projects greater than one acre. However, there is currently no incentive program for landowners with less than 1 acre to plant, or who wish to plant just one or two trees on their urban properties.

In a survey of 1600 residents in four communities in the Carolinian Zone of Canada (London, Hamilton, Oakville, Markham), over 64% of respondents agreed that their municipality should be planting more trees, with 73-81% of respondents believing their municipality is responsible for maintaining natural heritage (Almas and Conway 2018).

The **Greene Legacy Program** in Wellington County is one local-to-Ontario example. The program distributes trees to landowners in the County regardless of project size. The 2021 Green Legacy program distributed 150,000 trees. If a landowner orders 500+ trees, they have the option of incorporating youth and schools for a planting day, which opens learning and work opportunities.

Re-forest London is a non-profit organization that provides free trees to incentivize Londoners to plant trees on their private properties and businesses. They also host park naturalization days where residents help plant trees in parks, and they encourage residents to pot-up trees that emerge on their property, and they will pick them up to ensure they are planted somewhere else in the City.

Local Enhancement and Appreciation of Trees (LEAF) is another non-profit organization that offers native trees and shrubs to homeowners within and around the Greater Toronto Area at subsidized costs and connects homeowners with arborists and other educational resources to teach people about tree care. LEAF is involved in several initiatives promoting greater involvement in urban forest stewardship, providing resources to learn more about local natural areas, and educational campaigns to raise awareness about environmental issues and empower youth and community leaders to make positive contributions to local ecosystems.

RECOMMENDATIONS

1. Launch a phased in climate campaign to champion climate action in Amherstburg using a technique called “tactical urbanism” to test the concept in 2022. This will be a 5-year project, where data collected from 2022 will advise years 2-5.

A formal definition of tactical urbanism is: “an approach to neighborhood building using short-term, low-cost, and scalable interventions and policies” (Green 2015).

As described by Green and many others, tactical urbanism has benefits for many different stakeholders. *For citizens*, it allows the “immediate reclamation, redesign, or reprogramming of public space”. *For developers or entrepreneurs*, it “permits collecting design intelligence from the market they intend to serve”. *For government*, “it puts best practices into practise – quickly”.

Tactical urbanism efforts are not dependent upon the size of the community, it has in fact been hailed as the way forward to build “Strong Towns” (Taylor A. 2021).

T.H.R.I.V.E has already been putting tactical urbanism into action in Amherstburg with Play Amherstburg (safe streets for kids). The research gathered is now included in the Open Air White Paper.

2. For the Town of Amherstburg to make 200 trees available for planting on residential properties.

Mindful of Amherstburg’s size and financial ability, we are recommending a limited pilot program be included in the 2022 budget. If the program hits its agreed upon criteria, it would be rolled out more broadly beginning in 2023 and potentially expand to include other program components, such as those that are already showing benefits for programs like ReForest London and LEAF.

This program will be measured for effectiveness, full execution costs and public acceptance.

‘Best carbon capture is a tree. When scaled up it’s a forest’.

Let’s make an urban forest in Amherstburg!

RATIONALE

It is time Amherstburg acted on its 2019 Climate Emergency declaration and its recent approval of the Essex Region Energy Plan. If Council fails to act, its credibility regarding climate action will continue to ring hollow with residents. As outlined above, polls indicate that Canadians support climate action. It is tough to imagine that Amherstburg residents' attitudes are any different.

Increasing forest cover is one of the most effective things we can do to combat climate change. Essex County has an incredibly low natural cover and our town tree canopy is very low. Despite aggressive plantings by ERCA, our county forest cover is only 5.7% (Saxe 2018). From McGregor to the downtown core there is an urgent need for Amherstburg to correct this. We recommend deploying a pilot program that involves residential properties in the Amherstburg region to help prove the recommended concept merits a full rollout involving residential properties from McGregor to the downtown in 2023.

If Amherstburg executes this idea it will get recognition as a small community that took creative action to address the climate crisis. This concept can become a best practice for other small communities to follow.

PROJECT IMPLEMENTATION

T.H.R.I.V.E. will work in collaboration with the Town of Amherstburg in the implementation of the phase 1. An overview is as follows:

- A. The town will offer 1 or 2 free trees to residents who have property to plant them on. Species options are a first-come-first serve basis for year one; in future years order forms could be used to ensure residents receive the species they prefer to plant and are best suited for a warming county.
- B. The town will hire 4 youth leaders who will have full time availability for April 22-24, April 29-May 1 and May 6, 2022. Those hired must have their G2 license and are able to drive a truck. They will work full time hours – 7 days x 7 hr. x \$15/hr + hrs available for project education and follow up (a \$750 contract will be made to each leader to cover this work).
- C. The town will also hire 2 of these youth for part-time work from March 7 – Aug 26th. These individuals could work with THRIVE on the launch of advertising, disseminating sign-up sheets, recruitment and organization of youth volunteers and marking of volunteer hours, and follow up monitoring of the trees. This will require approx. 2 hrs of work each week for 26 weeks (varying depending on the weeks). These students will also work with Drs. Cameron and Porter on the write up the results of analysis. They would receive a contract worth \$1500/each for these components of the project. Future iterations of this program could include government-paid summer students.

Program Advertising:

Online advertising will begin March 7, 2022 and will be open to all residents in the Amherstburg region. Advertising will instruct residents to pick trees up during specified times. Future iterations of the program will expand advertising with the help of partner organizations such as the Field Naturalists and local businesses.

Seniors (65+) can request a planting service and the Youth Climate Action Team will arrange to stop by their property to plant their tree(s).

Education:

Dr. Cameron Proctor, University of Windsor, School for the Environment and Karen Alexander, Conservation Coordinator for Lake Erie/Essex will educate the youth team prior to the event to provide information to residents about tree species available (e.g., soil preferences, characteristics) and instructions on planting methods and regular care. We will provide hard copies of instructions for residents to have on hand and a contact number for follow up questions and help.

Pick up event:

Pick-up days will take place over 2 weekends (April 23-24 and April 30-May 1) from 10-3 at a pre-arranged pick-up location such as Town Hall or the high school parking lot. The pick-up event would be led by Youth leaders but will also involve teams of youth volunteers. 100 of the trees will be given with a 20-gallon tree watering bag, whether the additional investment results in improved tree survival and growth will be measured.

Tree planting for senior residents:

The youth team would kick off Earth Day on April 22nd with the planting of trees for seniors. Using two vehicles, trees will be driven to the residence of seniors requiring assistance and planted on April 22, April 29 and May 6th (if needed). Seniors will be provided care information, and if needed the team will mark follow up visits for these residents.

Monitoring of planting:

This event will be noted as a research project and will request participating residents to contribute to data collection via 2 different methods. 1) In-person follow up – here residents will agree to provide their location, information about when and how they planted the tree and to allow 2-3 follow up visits to monitor tree growth. 2) Online follow up - residents will provide an email address which will allow us to follow up with information about planting online and will agree to send pictures of the tree and note their own data. The last week of monitoring will be the week of August 29, 2022 to allow for data analysis and synthesis of a report for council.

Trees:

In spring 2022, trees approximately 3' tall will be sourced from a local partner with capacity to deliver ~200 trees.

Species that will be available in 2022 may include:

- Basswood (*Tilia americana*)
- Bitternut Hickory (*Carya cordiformis*)
- Black Cherry (*Prunus serotina*)
- Black Oak (*Quercus velutina*)
- Red Maple (*Acer rubrum*)
- Red Oak (*Quercus rubra*)
- Silver Maple (*Acer saccharinum*)
- Tulip Tree (*Liriodendron tulipifera*)
- White Oak (*Quercus alba*)

BUDGET FOR 2022

Item	Description	Total
200 Native Trees	3' stock, ready to plant from pots	\$6,000
Human Resources	4 Student Climate Action Team members	\$6,000
100 watering bags	20 gallon \$22/each purchased in bulk	\$2,200
Delivery of Trees	Delivery to pick up events will be arranged with local nursery (delivery charge estimated) Delivery to senior residences - truck rentals and gas	\$1,000
Equipment and Materials	Shovels Wagon Wood chips and flagging tape Health and Safety kit Hats and T-shirts PPE for hired Youth (Steel-toed boots, high visibility vests, masks) Clipboards, monitoring pages, clinometers Printed handouts to go with trees	\$3,000
TOTAL		\$18,200

Note commitment to the project now will ensure that this pricing per tree is available. Late purchase will not ensure that this number of trees are grown for this project and will result in increased costs.

POTENTIAL ROLL OUT IN 2023

Data collected from this event will advise budget and roll out in 2023, to be provided to Town Council in early October 2022. This will be a 4-year plan building on data collected. Year 2 will include additional data collection with tree checkups and online support but not as detailed data collection as conducted in year 1.

Goals for 2023:

- 500 trees – Purchased in bulk reducing cost/tree (\$15/tree). Est. \$12,500
- Staff support – 6 paid individuals over 3 weekends. Tree checkups and online support, 2 full-time students. Students recruited as part of government program. \$9,000
- Transport of trees - \$3000
- Equipment and materials (non-perishables will also be used from prior years) - \$5,000
- Printed materials - \$750
- *Estimated budget - \$30,250*

Goals for Years 3-5:

We will scale to 1000 trees in 2024, 2000 trees in 2025 and 4000 trees in 2026. We will work with local nurseries to plant for 2025 and 2026 from seed thereby saving the initial costs of the trees. Trained staff and program materials will support bringing on more student volunteers through the schools to avoid high staff costs. The budget details for each year will be brought to council the October prior.

METRICS COLLECTED/FOLLOW UP DATA

Several metrics will be collected to be incorporated into a research paper and provided to council. The following points will be gathered either via hard numbers or via a survey provided to each of the residents participating in the program.

Data collected with regard to community interest and satisfaction:

Numbers of residents signed up for program or indicating interest in this program will be measured from sign up lists both online and hard copies. Number of residents who sign up for in person vs. online monitoring and those that follow through with online reporting. Follow up survey to participants will measure program satisfaction assessing each component of outreach information provided, student involvement, impact on climate change awareness and the value of trees. Attitudes about city involvement in climate change.

Data about the trees:

The survival and growth of each tree species used will be monitored. The presence of any disease will also be recorded over the duration of the summer with endpoints taken in August. We will also note the condition of the land around the tree. Comparisons will be made between those trees planted by residents (with any variances noted about how the tree was planted and the instructions provided) and those planted by our trained youth troop. We will also compare the survival and growth of those trees planted with a tree watering bag as compared to those without. As well differences in the details about data provided online vs. in person data collection will be noted. The temperature and precipitation will be recorded on and around the days of planting and any variances in survival and condition of the tree linked to climate will be noted.

Youth leaders and volunteer data:

Numbers and types of student work hours will be recorded. A survey will also be conducted which will measure student satisfaction with the experience and it will also measure the impacts on awareness about climate change and the value of trees. We will ask questions about their likelihood to participate again and encourage youth to recommend the program to friends and family.

Data reporting:

Drs. Porter and Cameron will provide a full report to Amherstburg Town Council by October 2022 outlining the data collected from year 1. This data will advise best practices for years 2-5 of this program. Metrics collected will be valuable data for the Town to demonstrate positive steps forward on the 2019 Climate Emergency declaration and the Essex Region Energy Plan.

Town of Amherstburg will be credited in the writing of a best practices publication, and this will be advertised widely. To our knowledge Amherstburg would be the first municipality to use rigorous data driven processes to ensure fiscal responsibility in addressing climate change locally.

“A people without children would face a hopeless future. A country without trees is almost as hopeless.”

Theodore Roe

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