

APPENDIX E: LCTS Implementation Framework

September 2021

Purpose of this Document

The Implementation Framework provides guidance for the near-term implementation of the LCTS. It is not a comprehensive list. Many of these actions have the potential for greater efficiency and effectiveness if done in collaboration with other neighbouring municipalities, levels of government, and organizations. These opportunities should always be explored first.

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Acronyms

CAP	Clean Air Partnership
CCAM	The Town's Climate Change and Asset Management division
EV	Electric Vehicle
GHG	Greenhouse Gas
HEN	Halton Environmental Network
KPI	Key Performance Indicator
LCTS	Low-Carbon Transition Strategy
LCTS-SC	Low-Carbon Transition Strategy Steering Committee
MSGC	Multi-Stakeholder Governance Committee
SMEs	Small and Medium Enterprises
TAF	The Atmospheric Fund
ToHH	Town of Halton Hills

Scope + Approach

This Implementation Framework provides a recommendation for the LCTS implementation oversight structures as well as series of tables that systematically address the key near-term implementation actions included in the Low-Carbon Transition Strategy (LCTS) for the following six focus areas:

1. Administration and oversight;
2. Community energy efficiency and green development;
3. Low-carbon mobility;
4. Local renewable energy;
5. Natural asset management; and
6. Waste.

Each table provides information related to the action's potential:

- timing;
- leads and partners;
- resources required;
- immediate next steps; and,
- reporting metrics.

This framework is informed by feedback provided by the LCTS Multi-Stakeholder Governance Committee (MSGC), in particular the Implementation and Governance Subcommittee, as well as the Low-Carbon Transition Steering Committee. The MSGC and its membership, and the project's engagement process, are outlined in the body of the Final Report.

It is expected that the LCTS as well as this accompanying Implementation Framework would be reviewed, revised and updated at regular intervals (i.e., every 2-3 years).

The municipal corporation's internal net-zero program's implementation will be guided by the Town's internal decision-making process.

LCTS Implementation

A specific focus of the LCTS development process was long-term implementation oversight. The Town, with input from the MSGC and the LCTS-SC, identified the following priorities for the LCTS' long-term implementation:

- community oversight,
- innovation/nimbleness/flexibility,
- ability to turn to action as soon as possible,
- access to funding (from the public and private sectors), and
- access to municipal government powers and resources.

In the Short Term...

The Town's CCAM division will continue to lead LCTS implementation. This includes Town and community energy use and GHG reporting. This reporting will expand to include reporting on LCTS program KPIs.

The Town will be the lead of LCTS implementation, as soon as possible after Council approval of the LCTS, Town staff will report back to Council with a work plan for a new community-wide governance strategy.

Based on inspiration from the UK cities of Bristol and Preston, the Town will adopt a flexible LCTS program RFP process to enable local innovative solutions that prioritize local prosperity.

Medium Term (2-5 years)...

The Town will continue to lead implementation and partner with the private sector to deliver certain programs.

Meanwhile, the Town will assess via a feasibility study whether a third-party organization would be better placed to support the implementation priorities outlined above by providing the oversight and implementation of certain LCTS programs. This study will include consideration of regional collaboration opportunities.

Longer Term (5+ years)...

Subject to the results of the third-party implementation oversight body feasibility study, initiate a third-party implementation body to implement and oversee certain LCTS initiatives.

1. Administration and Oversight

Action & Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
<p>Establish an updated community-wide governance strategy</p> <p>ASAP after Council approval</p>	<p>ToHH, CCAM</p> <p><u>Partners</u></p> <ul style="list-style-type: none"> - LCTS-SC 	<ul style="list-style-type: none"> - CCAM staff - Guidance from the LCTS-SC and the MSGC Implementation + Governance Subcommittee - Advice from other municipalities that have undertaken similar initiatives (e.g., Oakville, Guelph, Bristol, UK) 	<ul style="list-style-type: none"> - Based on input from the MSGC and LCT-SC, Town to establish a workplan for a community-wide governance strategy. 	<ul style="list-style-type: none"> - Annual reporting on program implementation
<p>Continue to provide annual GHG and energy use reporting (for Town and broader community)</p> <p>ongoing</p>	<p>ToHH, CCAM</p>	<ul style="list-style-type: none"> - Continued staffing commitments 	<ul style="list-style-type: none"> - Post the most recent year's energy use and emissions inventory 	<ul style="list-style-type: none"> - Annual reporting, by sector and fuel - Tracking changes over time
<p>Develop and implement a climate lens for</p>	<p>ToHH, CCAM</p>	<ul style="list-style-type: none"> - staff dedicated to developing the lens and providing staff 	<ul style="list-style-type: none"> - Council approval and direction to Senior Management 	<ul style="list-style-type: none"> - Annual reporting on direct GHG emissions associated with the

<p>all Town budget decisions</p> <p>2022: Staff training</p> <p>2022-onwards: Implementation</p>	<p><u>Partners:</u></p> <ul style="list-style-type: none"> - CAP - FCM - TAF 	<p>training</p> <ul style="list-style-type: none"> - Other municipalities that have developed and implemented climate lenses and carbon budgets (e.g., Edmonton, City of Toronto) 	<ul style="list-style-type: none"> - Undertake staff training program 	<p>Town budget, by department (shown in comparison to the Town's carbon budget)</p>
<p>LCTS public education campaign</p> <p>2022- onwards</p>	<p>ToHH, CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - HEN - Conservation Halton, Climate Action Committee, Councillors - ToHH, Economic Development Division - Chamber of Commerce - Halton Hills Hydro 	<ul style="list-style-type: none"> - Dedicated staff - Federal funding campaign for the Green Recovery 	<ul style="list-style-type: none"> - Build on existing CCAM work (e.g., Sustainability Champions campaign) - Contact local businesses and property owners to communicate the benefits of relevant LCTS programs - Identify points of influence - Showcase new technologies (e.g. EV days, and passive house open houses) - Understand barriers and opportunities so messages can be effectively tailored 	<ul style="list-style-type: none"> - TBD
<p>Prepare request for proposals for key partnerships opportunities</p> <p>2022- onwards</p>	<p>ToHH, CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - ToHH, Economic Development 	<ul style="list-style-type: none"> - Examples from other communities, including Bristol, UK; Preston, UK; and Ithaca, New York 	<ul style="list-style-type: none"> - Make contact with net-zero by 2030 communities that have recently published large climate action RFPs to learn best practices, e.g., how to ensure local and small business participation, equitable program design and delivery. 	<ul style="list-style-type: none"> - Number of businesses that bid on RFPs, including local, minority-owned, and cooperative

	Division		<ul style="list-style-type: none"> - Based on these best practices, develop RFPs for the major LCTS programs, i.e., building retrofits and community energy systems 	businesses
Feasibility study for the development of a third-party implementation body 2023-2025	ToHH, CCAM	<ul style="list-style-type: none"> - examples from other communities with various implementation body structures 	<ul style="list-style-type: none"> - Study examples of and seek advice from other communities with various implementation body structures - Consult with local stakeholders that are likely to be involved, e.g., as directors - Based on these best practices, develop a formal recommendation for Council. 	-completion of feasibility study
Undertake regular reviews and updates of the LCTS Every 5 years	ToHH, CCAM	<ul style="list-style-type: none"> - annual reporting of GHGs - annual reporting of program KPIs - feedback form stakeholders - research on best practices in climate action (technologies, policies, regulations, and program design) 	<ul style="list-style-type: none"> - Ensure annual reporting of community-wide GHG's and LCTS program KPIs - Track stakeholder feedback on program implementation - Track and research opportunities for new programs, technologies, policies, regulations to improve existing programs and to address the carbon gap <ul style="list-style-type: none"> - On an ongoing basis seek to pilot new solutions, the climate emergency does not wait for the 5-year review cycle - In 2025, draft a public-facing report, that clearly summarizes annual progress to date from implementing the LCTS, lessons learned, any new solutions that have been explored in the interim period, and changes to the LCTS going forward to improve implementation and address the carbon gap for 2025-2030. 	-completion of LCTS review and update in 2025

2. Energy Efficiency and Green Development

Action + Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
<p>Residential retrofit program</p> <p>2022: Feasibility study (underway)</p> <p>2022-2023: Pilot</p> <p>2024: Program deployment</p>	<p>ToHH, CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - ToHH Economic Development Division - Halton Hills Hydro - Halton Environmental Network (e.g., educational campaigns, funding applications, engagement, community facilitating, program management and implementation projects) - Energy auditors - Builders - Contractors/ suppliers - Community groups - Canadian Homebuilders Association - Chamber of Commerce - Building Industry and Land Development Association - Real estate agents 	<ul style="list-style-type: none"> - HEN's retrofit study - PACE financing - Government funding (e.g., \$40k and \$5k zero-interest federal government loans) - Utility incentives 	<ul style="list-style-type: none"> - Complete feasibility study (building on HEN's retrofit study) - Undertake pilot study, based on feasibility study, including financing and education campaign for homeowners and landlords - Based on learnings from the pilot study, expand program - Provide associated home-owner educational campaign, to ensure awareness of the program, the costs and benefits of participation, and depending on how the program is designed, a list of vetted service providers and a preliminary self-assessment tool - ToHH Economic Development Division to work with local partners to help attract and 	<ul style="list-style-type: none"> - Resident volunteers for pilot - GJ and GHGs saved per household or m2

			grow the Town's CleanTech sector (and increase awareness) which is one of the focus areas of the Town's Economic Development and Tourism Strategy	
Commercial retrofit program 2022-3: Feasibility Study 2023: Pilot 2024: Program development	ToHH, CCAM <u>Partners:</u> - ToHH, Economic Development Division - Halton Hills Hydro - HEN - SMEs - Energy auditors - Builders - Contractors/ suppliers - Chamber of Commerce - Building Industry and Land Development Association - Commercial real estate agents	- PACE financing - Government funding - Utility incentives - The Town's Economic Development and Tourism Strategy as well as Community Improvement Plan	- Complete an evaluation with 8-10 SMEs that outline concrete actions to achieve sustainability/ climate actions - Start to map out ecosystem of business that can support transformation - Undertake pilot study, including financing and education campaign for business owners and building managers - Based on learnings from the pilot study, expand program	- Number of participants - GJ and GHG saved per commercial space m2
Industrial process efficiency working group 2022- onwards	ToHH, CCAM <u>Partners</u> - ToHH, Economic Development Division - Local utilities - Local industry	- Federal government funding - Utility incentives - The Town's Economic Development and Tourism Strategy	- Establish an industrial working group with the aim of sharing best practices and resources (incl. funding)	- Local industry net-zero targets - GHG emissions reductions

<p>Industrial retrofit program</p> <p>2023: Pilot + Feasibility Study</p> <p>2023: Pilot</p> <p>2024: Program development</p>	<p>ToHH, CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - Industrial process efficiency working group - ToHH, Economic Development Division - Halton Hills Hydro - HEN - SMEs - Energy auditors - Builders - Contractors/ suppliers 	<ul style="list-style-type: none"> - PACE financing - Government funding - Utility incentives - The Town's Economic Development and Tourism Strategy as well as Community Improvement Plan 	<ul style="list-style-type: none"> - Complete an evaluation with 3-6 local businesses that outline concrete actions to achieve sustainability/ climate actions, where possible, apply learnings from the commercial retrofit program - Start to map out ecosystem of business that can support transformation - Undertake pilot study, including financing and education campaign for industrial business owners and their energy managers - Based on learnings from the pilot study, expand program, leveraging any opportunity to link with the commercial retrofit program 	<ul style="list-style-type: none"> - Number of participants - GJ and GHG saved per industrial space m2
<p>New Construction Green Development Standards</p> <p>ongoing</p>	<p>ToHH, CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - ToHH, Economic Development Division - The Atmospheric Fund - Clean Air Partnership 	<ul style="list-style-type: none"> - Green Development Standards - The Town's Economic Development and Tourism Strategy as well as Community Improvement Plan 	<ul style="list-style-type: none"> - Start to reach out to developments as early as possible, highlight long-term costs and savings 	<ul style="list-style-type: none"> - Number of developments achieving net zero

3. Low-Carbon Mobility

Action + Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
Expansion of EV charging infrastructure 2022-2025	<ul style="list-style-type: none"> - ToHH <u>Partners</u> - Halton Hills Hydro - Local businesses 	<ul style="list-style-type: none"> - Halton Hills Hydro capital investment - Federal funding 	<ul style="list-style-type: none"> - Assess current EV charging infrastructure and identify priority gaps in the system 	<ul style="list-style-type: none"> - Number of publicly accessible EV charging stations - Number of EV charging stations per km2 in urban areas
Develop a Clean Transportation Education Program 2022- onwards	<ul style="list-style-type: none"> - ToHH <u>Partners</u> - Halton Hills Hydro - Local businesses - Plug & Drive 	<ul style="list-style-type: none"> - In-kind staffing from all three partners - Space loaned from one partner - Vehicles from local dealers 	An education program to encourage and incentivize zero emissions travel will include: <ul style="list-style-type: none"> - A first of a series of regular EV days is already being planned by MSGC members <ul style="list-style-type: none"> - Lessons learned from this session can be applied to ensure greater success of future session - An education program for resident personalized transportation planning, will also be developed 	<ul style="list-style-type: none"> - Number of residents that attend and/or interact with staff - Number of test rides - Number of vehicles sold
Commercial fleet decarbonization working group 2022-ongoing	<ul style="list-style-type: none"> - ToHH <u>Partners</u> - Region - Local Conservation Authority (e.g., Credit Valley, Halton, and 	<ul style="list-style-type: none"> - The Credit Valley Conservation Authority has developed a fleet decarbonization tool and associated training, and 	ToHH &/or IOB to establish: <ul style="list-style-type: none"> - A series of workshops on commercial fleet decarbonization planning (incl. access to and training on the tool) - Encourage the adoption of fleet decarbonization targets in line with the Town's net-zero by 2030 target 	<ul style="list-style-type: none"> - Number of businesses setting fleet decarbonization targets - Number of zero-carbon fleet vehicles in use

	<p>Toronto Region)</p> <ul style="list-style-type: none"> - Chamber of Commerce - Local car dealerships - Local car and truck mechanics 	<p>would be willing to share these resources with local organizations and enterprises</p>		
<p>Bike share program</p> <p>2022-2023: Complete a feasibility study.</p> <p>2023-2024: Pilot Bike Share, based on outcome of feasibility study.</p> <p>2024-2025: Evaluate the level of service of the program, based on the outcomes, consider expansion.</p> <p>2026: Based on evaluation of level of service, explore the opportunity of</p>	<ul style="list-style-type: none"> - ToHH <u>Partners</u> - Bike manufacturer - Bike mechanics - School board 	<ul style="list-style-type: none"> - Neighbouring municipalities that have already undertaken bike-share programs (e.g., Hamilton) - Funding from the Town's climate action fund &/or from climate action funds available from the federal government or TAF 	<ul style="list-style-type: none"> - Complete a feasibility study - Undertake a pilot program, with associated marketing campaign - Based on learnings from the pilot, and public feedback, expand the program 	<ul style="list-style-type: none"> - Number of bikes in circulation - Number of bike rides and average duration - Individual interviews of bike share users

<p>a program expansion (possibly more bikes itself, e-bikes or e-scooters).</p>				
<p>Local e-bus deployment</p> <p>2022-2023: study (incl. identifying funding sources)</p> <p>2023-onwards: deployment</p>	<p>ToHH & Region</p>	<ul style="list-style-type: none"> - Federal funding 	<ul style="list-style-type: none"> - Based on the results of the WSP study undertaken for the Town on the most effective local e-bus system routes (within and between the Town's major population and employment hubs, with a focus on connections to active transportation and regional transit networks), consult on proposed solutions with key stakeholders (i.e., Region, residents, major employers, etc.) 	<ul style="list-style-type: none"> - Transit ridership
<p>Expansion of walking and biking trails</p> <p>2021-onwards</p>	<p>ToHH & Region</p>	<ul style="list-style-type: none"> - Town (esp. the Town's road infrastructure budget) 	<ul style="list-style-type: none"> - Prioritize the Town's active transportation plan implementation - Prioritize connections between existing trails - Prioritize road diets rather than expanding roads in order to include active transportation infrastructure - Instead of looking for new budget, first reallocate road budgets where possible to active transportation 	<ul style="list-style-type: none"> - Trail use data - kms of trails

4. Local Renewable Energy

Action + Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
<p>Ensure electricity system is planning to manage new demand and new supply mix</p> <p>2022-onwards</p>	<p>IESO &/or Halton Hills Hydro</p> <p><u>Partners</u></p> <ul style="list-style-type: none"> -IESO or HHH -Town -Region 	<ul style="list-style-type: none"> - Consultant with hourly electricity system planning expertise 	<ul style="list-style-type: none"> - Hire a consultant to undertake an hourly analysis of how the energy efficiency improvements and electrification included in the LCTS will affect the electricity system, and how the demand can be balanced to ensure a stable, reliable grid 	<ul style="list-style-type: none"> - Completion of study
<p>Large-scale solar</p> <p>2022- onwards</p>	<p>ToHH (CCAM & Ec. Dev.) & Halton Hills Hydro</p> <p><u>Partners (ideally local)</u></p> <ul style="list-style-type: none"> - Developers - Suppliers - Manufacturers - Landowners 	<ul style="list-style-type: none"> - A list of criteria for ideal large-scale solar sites (already developed by an MSGC working group) - a list of potential sites based on the above criteria (already developed by an MSGC working group) - ToHH Economic Development and 	<ul style="list-style-type: none"> - Initiate a community energy mapping exercise to identify suitable locations and opportunities/barriers to implementation. - Publish an RFP for a project developer 	<ul style="list-style-type: none"> - Express modelled ground mount capacity in clear layman terms

		Tourism Strategy		
Renewable natural gas potential and anaerobic digester feasibility study 2023	Region <u>Partners</u> - ToHH (CCAM & Ec. Dev.) - HEN - Enbridge	- local organic waste from residences, businesses, agriculture - ToHH Economic Development and Tourism Strategy	- Town to meet with Region to discuss aligning the Region's organic waste management policies with the Town's net-zero target - Town collaborate with the Region undertake a feasibility and economic analysis of developing a centralized anaerobic digestion facility and gas refining facility, or potentially a gas sharing arrangement with a neighbouring facility like a greenhouse	- Study completion
Renewable energy cooperative (REC) public education campaign & search for local leads 2022- onwards	ToHH (CCAM & Ec. Dev.) & Community LCTS Committee <u>Partners</u> - Local groups (TBD) - Halton Hills Hydro	Existing RECs, e.g.: - Toronto REC - Ottawa REC - Lake of Bays REC - ToHH Economic Development and Tourism Strategy	- Town to provide public education campaign - Community LCTS Committee to support search for potential local groups to establish REC - Town to design renewable energy RFPs to enable participation by RECs	- Establishment of web page featuring key information/resources - Memo summarizing results of Committee search

5. Natural Asset Management

Action + Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
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<p>Ensuring appropriate density targets are established in new and existing urban areas, while investigating options to minimize additional settlement boundary expansions and policies to offset, where possible, any impacts of urban development in line with the LCTS</p> <p>2022-onwards</p>	<p>ToHH Planning Department & Region of Halton</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - Local community organizations 	<ul style="list-style-type: none"> - ToHH and Region's land planning expertise 	<ul style="list-style-type: none"> - Town to identify opportunities to influence the Region's current land planning process to better align with the LCTS - Building local support for density/intensification by providing a vision of what this looks like and why it is good, while maintaining the small-town characteristics of Halton Hills - revise planning policies and others that prevent/obstruct development of walkable communities. ie. minimum parking requirements, zoning, etc. - Ensure enabling active transportation and transit networks are in place (per the ToHH Transportation Master Plan) 	<ul style="list-style-type: none"> - People per hectare (urban areas) - Jobs per hectare (urban areas) - number of zoning applications to convert single family dwellings to multi-family dwellings - Km2 of greenfield development (with the aim of avoiding as much new greenfield development as possible)
<p>Low-Carbon Vision Georgetown</p> <p>2022-onwards</p>	<p>ToHH Planning Department</p> <p><u>Partners</u></p> <ul style="list-style-type: none"> - Developers - Local utilities 	<ul style="list-style-type: none"> - Municipal capital budget - Neighbouring municipalities that have recently developed low-carbon communities (e.g., Markham and 	<ul style="list-style-type: none"> - Hire a consultant to develop a study of energy solutions for the community that are aligned with the net-zero by 2030 target (in progress) - Speak with staff contacts from neighbouring communities to gather information on best practice and key resources 	<ul style="list-style-type: none"> - The development of an net-zero aligned energy plan for the community

		Brampton)	<ul style="list-style-type: none"> - Hold a developer workshop(s) - Develop an energy plan for the community that is aligned with the LCTS (underway) 	
Tree planting program 2022-onwards	ToHH <u>Partners</u> <ul style="list-style-type: none"> - Local Conservation Authority (e.g., Credit Valley, Halton, and Toronto Region) - Trees 4 Halton Hills 	<ul style="list-style-type: none"> - Town tree inventory (in development) - Conservation Authority funding (or advice on other sources of funding) - Local experience of Trees 4 Halton and Halton Conservation planting millions of trees with federal funding 	<ul style="list-style-type: none"> - Develop a tree planting target and associated planting program 	<ul style="list-style-type: none"> - Number of trees planted
Soil health program assessment 2021-onwards	ToHH <u>Partners</u> <ul style="list-style-type: none"> - Province - Local Conservation Authority (e.g., Credit Valley, Halton, and Toronto Region) - Farming associations - Ontario Ministry of Agricultural, Farming and Rural Affairs 	<ul style="list-style-type: none"> - Local sustainable soil management expertise (e.g., retired University of Guelph Prof. Ralph Martin) - Ontario Ministry of Agricultural, Farming and Rural Affairs 	Town to contact the Province, local Conservation Authorities, and farming associations to: <ul style="list-style-type: none"> - Identify applicable sustainable soil management programs and related carbon sequestration monitoring; and then, - Strategize key opportunities for the Town and local partners to build on this work 	<ul style="list-style-type: none"> - Soil carbon measurement, over time

6. Waste

Action + Timing	Potential leads + partners	Resources	Next steps	Reporting metrics
<p>Collaborate with the Region to help align the Region's waste management plan with the LCTS net zero by 2030 target and the goal of increasing local renewable energy production (incl. solutions for commercial and industrial facilities)</p> <p>2022- onwards</p>	<p>CCAM</p> <p><u>Partners:</u></p> <ul style="list-style-type: none"> - Region - HEN - Local businesses - Enbridge 	<ul style="list-style-type: none"> - Regions' waste management department expertise - Regional, provincial and federal funding - HEN study on ToHH food waste, where it comes from, its impacts, and opportunities to reduce it - Enbridge's expertise and potential funding for anaerobic digester capacity potential studies 	<ul style="list-style-type: none"> - Collaborate with Region to discuss their plans and how to collaborate to achieve net-zero and maximize production of local emissions-free energy 	<ul style="list-style-type: none"> - Diversion rates - GJ of local RNG produced (if applicable)