



# Retrofit Halton Hills

## Pilot Program Design Report

**Prepared for:**

Town of Halton Hills



## Submitted to:

### Climate Change & Asset Management Town of Halton Hills

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## About Dunsky

Dunsky provides strategic analysis and counsel focused exclusively on helping our clients accelerate the clean energy transition, effectively and responsibly.

### Overview

#### Expertise



**Buildings**



**Renewables**



**Mobility**

#### Services



**QUANTIFY**  
Opportunities



**DESIGN**  
Strategies



**EVALUATE**  
Performance



### Clients

With a focus on buildings, renewables and mobility, our 30+ experts support our clients – governments, utilities and others – through three key services: we **assess** opportunities (technical, economic, market); **design** strategies (programs, plans, policies); and **evaluate** performance (with a view to continuous improvement).

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# 1 Pilot Context and Overview

## 1.1 – Context

The Town of Halton Hills (the Town) displayed climate leadership in 2015 when they developed their first Mayor's Community Energy Plan (MCEP) providing a framework to move toward a low-carbon community. **After declaring a climate emergency in 2019 a new, more ambitious target to achieve net-zero by 2030 was set.** The new Low-Carbon Transition Strategy will guide the Town's path, actions, and implementation strategies to achieve this new goal. **The residential building sector is the Town's second largest source of greenhouse gas (GHG) emissions representing 22% of total GHG emissions<sup>1</sup>,** and thus encouraging home energy retrofits is important to meet the Town's GHG reduction goals.

While the benefits of energy efficiency and renewable energy (EE and RE) are significant (e.g., energy and utility bill savings, improved air quality, increased comfort and health, increased property values, etc.) there are several barriers that prevent or slow adoption of EE and RE improvements. These include high upfront costs, difficulty managing contractors, lack of awareness and knowledge about which retrofits to prioritize and whether savings will materialize. In addition, homeowners often face competing capital priorities, are limited in their ability to access financing, have limited time to navigate the application process or implement a project and are concerned about possible disruptions. There can also be supply-chain constraints where technologies are poorly understood among key market actors (e.g., contractors) who are often the first point of contact for homeowners seeking to make home improvements. Effective programs can be instrumental in addressing these barriers, and thereby encouraging homeowners to undertake GHG reducing retrofits.

In response, The Town sought Dunsky Energy Consulting's (Dunsky) assistance to design the Retrofit Halton Hills pilot program (the Pilot). The Pilot aims to test an attractive financing option via the local improvement charge (LIC) mechanism to encourage deep home energy retrofits and address homeowner barriers.

This report provides a summary of the Retrofit Halton Hills Pilot design and record of:

- Key Pilot design elements and the rationale for specific design decisions
- The Pilot theory and logic to enable deep GHG reductions and address homeowner barriers.
- The process to effectively implement and evaluate the Pilot.
- Future considerations for transitioning from a pilot to program.

In addition to supporting the Town's institutional memory and program evolution over time, documenting the design elements, decisions and processes will support the development of Pilot materials (e.g., bylaws, application forms, marketing, outreach content) as well as the eventual Pilot evaluation.

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<sup>1</sup> Sustainability Solutions Group & Whatif? Technologies Inc. 2020. Town of Halton Hills Reference Scenario Results supporting the Low Carbon Transition Strategy

## 1.2 – Pilot Overview

### 1.2.1 – Pilot Objectives

The pilot is expected to run for 2-3 years or until 20 homes are enrolled and complete retrofits, whichever comes first. The pilot is designed to develop and test the approaches, processes, systems, and resources needed to deliver an LIC program and how it can contribute to the Town's ambitious climate goals. While the Town has set the long-term objective of achieving net zero by 2030, the pilot has five key short-term objectives described in the table below.

*Table 1: Pilot objectives and key questions*

Pilot Objectives	Evaluation Questions
<b>1. Demonstrate the need for &amp; benefits of financing</b>	<ol style="list-style-type: none"> <li>Has the pilot addressed a need for and demonstrated benefits for: <ol style="list-style-type: none"> <li>Homeowners (larger projects, flexible underwriting, etc.)</li> <li>Internal stakeholders, e.g., Economic Development Strategy &amp; green economy</li> </ol> </li> <li>External stakeholders, e.g., contractors (e.g., recognize financing as a tool to sell larger, higher efficient projects, close the deal, etc.)</li> </ol>
<b>2. Set up program infrastructure &amp; optimize internal processes</b>	<ol style="list-style-type: none"> <li>Was the pilot administered internally (across all relevant departments) with assigned resources and reasonable effort?</li> <li>Can the pilot be administered at a reasonable cost to the Town and homeowners with the aspirational goal of being cost neutral?</li> <li>How will budget be impacted if the pilot expands to a full program (as is and with enhancements)?</li> <li>Should the Town or 3rd party administer a future program? If it is a 3rd party model, what elements does the Town keep and what do they hand off?</li> <li>Were Pilot participants satisfied with their experience and are the costs/time/effort to participate deemed reasonable?</li> </ol>
<b>3. Engage/coordinate external stakeholders</b>	<ol style="list-style-type: none"> <li>Has the Town effectively engaged/coordinated activities with external stakeholders?</li> <li>Has the pilot clearly defined external stakeholder's role (delivery support, ally, promote)?</li> <li>What Town support is needed to continue if the program scales up?</li> </ol>
<b>4. Test model to help close the gap between existing home performance &amp; net-zero carbon</b>	<ol style="list-style-type: none"> <li>How deep are participants retrofitting homes (measured by energy and GHG emissions reductions) &amp; what is required to close the gap to net zero?</li> <li>What is the limiting factor for achieving near net-zero; the financing available, or the technical/market barriers?</li> <li>What adaptations need to be made to the Pilot design to scale the program up and enable homeowners to achieve near/net zero?</li> <li>What other external factors should be considered (e.g., provincial/federal incentives, future existing building retrofit codes, etc.) that financing can support/complement?</li> </ol>
<b>5. Test the pilot's ability to attract external funding sources</b>	<ol style="list-style-type: none"> <li>Has the Pilot provided sufficient proof of concept to attract private investment (e.g., FCM, Regional government, 3rd party program administrators, and/or private financial institutions)?</li> <li>What is required to attract private investment (e.g., volume, loan loss reserve to mitigate risk)?</li> </ol>

### 1.2.2 – Summary of Pilot Offer

The Pilot will target all existing single-family homes in Halton Hills, aiming to enroll and upgrade up to 20 homes within 2-3 years. Table 2 provides a high-level summary of the major Pilot design features. The detailed design elements and delivery strategies are described in the following sections. The Pilot (and any future program) will apply an adaptive approach to adequately respond and adjust to market needs.

Table 2: Summary of Pilot features

Eligibility	Description
<b>Participant Eligibility</b>	<ul style="list-style-type: none"><li>• All property owners on title must consent to participate</li><li>• Property tax and utilities must be in good standing</li></ul>
<b>Home Eligibility</b>	<ul style="list-style-type: none"><li>• Single family home (detached and attached (e.g., duplex, semi-detached, town/row house))</li><li>• Mobile home on a permanent foundation</li><li>• Occupied year round</li><li>• Existing home (at least 3 years old from date of occupancy permit)</li><li>• All fuels (natural gas, electric, oil, propane, wood, other)</li></ul>
<b>Local Improvement Charge (LIC) Financing Mechanism</b>	<ul style="list-style-type: none"><li>• Homeowners access long-term financing (up to 10 years)</li><li>• Fixed interest rate (3% or less)</li><li>• Financing is secured by a special assessment on the property (vs. owner)</li><li>• The loan is repaid through the municipal property tax bill</li><li>• Energy savings can help offset monthly financing costs</li></ul>
<b>Project value</b>	<ul style="list-style-type: none"><li>• Minimum \$10,000 and up to 10% of property value</li></ul>
<b>Eligible Measures</b>	<ul style="list-style-type: none"><li>• Energy efficiency and renewable energy technologies</li><li>• Up to 15% of project value can be used for non-energy related home improvements</li></ul>
<b>Requirements</b>	<ul style="list-style-type: none"><li>• Pre &amp; post EnerGuide evaluation conducted by an NRCan Registered Energy Advisor</li><li>• Work must be completed by a qualified contractor</li></ul>
<b>Enabling Strategies</b>	<ul style="list-style-type: none"><li>• Marketing and outreach strategy</li><li>• Links with other complementary programs (e.g., rebate programs)</li><li>• Engaging with key market actors</li></ul>

### 1.2.3 – Pilot Justification

The Pilot design is the product of detailed analysis and a highly iterative and consultative approach including:

- **Business Case and Economic Analysis.** An energy and economic analysis was conducted to support the program rationale and design decisions. An in-depth analysis using housing stock and energy use data considering housing type, date of construction, energy source by end uses and other variables helped to assess the achievable market potential.
- **Town Staff Consultation.** Town staff were engaged through two virtual workshops. The first workshop aligned Staff on the Town's climate objectives, introduced the LIC concept, and reviewed how an LIC program may affect operations to identify opportunities, maximize program success and address

multiple department goals. The second workshop recapped project milestones and ‘what we heard’ at the first workshop, reviewed proposed pilot design and gathered Staff feedback.

- **Internal and External Stakeholders Interviews.** Seven targeted one-on-one interviews were conducted with internal external stakeholders including Finance, Halton Region, Enbridge, Halton Hills Hydro, BILD (Halton Region Chapter), City of Toronto, and the West End Home Builders Association.
- **Town-led Homeowner Survey.** The Town launched a homeowner survey in early March 2021 to gauge homeowner’s experience with home energy improvements, their interest in and/or plans for future home energy improvements and their interest in financing. At the time of this report, 108 responses were received (representing a 95% confidence level and 10% margin of error). The results thus far have been incorporated into this report and influenced pilot design.
- **Project Team’s experience.** The Dunsky Team applied their expertise and experience in market assessments, building science, financing, and program design.

Research revealed five key findings that influenced the Pilot design:

1. **Most homes in Halton Hills are using fossil fuels for space and water heating.** Residential space and water heating constitutes 84% of home energy use offering significant opportunity to reduce greenhouse gas emissions. The predominant fossil fuel is natural gas (less than 10% use propane and diesel) for space and water heating.
2. **An LIC financing mechanism can reduce barriers to EE and RE technology adoption and will contribute to the Town’s goal to reduce energy use and associated GHG emissions in the residential building sector.** Additionally, an LIC can address other municipal goals like improving the building stock, increasing affordability, growing the economy, and improving the comfort, health, and safety of the community. The Retrofit Halton Hills survey showed that almost 50% of homeowners are interested in an LIC, while ~35% are not sure. Most homeowners surveyed (~74%) are interested in learning more about an LIC offer.
3. **To increase success, an LIC must be part of a broader ecosystem.** The Pilot design must maximize coordination and collaboration with other policies and programs (e.g., building codes and standards, rebates, etc.).
4. **Financing programs can be challenging to deliver, requiring flexibility and iteration to get right.** The Town can leverage the experience of others and should consider how several program design decisions (e.g., eligibility, underwriting criteria, marketing, cross-department coordination, program complexity (to administer and participate), contractor engagement, etc.) may influence Pilot uptake and impact. The Pilot offers an opportunity for the Town to evaluate design decisions and how to optimize going forward.
5. **There is interest in home energy improvements and support.** The Retrofit Halton Hills survey showed that many homeowners described their current home energy use as “high, expensive, in-efficient or needs improvement”. While over 70% have made home energy improvements, most were low-cost measures (e.g., lighting, appliances) followed by energy efficient furnace or boiler or energy efficient window/doors. Most homeowners have not conducted high impact measures like insulation and air sealing. For those that have not undertaken home energy improvements, high cost was the largest reason followed by uncertainty about what measures to install. Homeowners want support with finding capital, scheduling an EnerGuide evaluation and finding a contractor to undertake home improvements.

Links to supporting documents are in Appendix A.

## 1.3 – Transition from pilot to program

The Town has budgeted for up to 20 homes with the average LIC estimated to be \$20,000. The Pilot is expected to run for 2-3 years, or once the maximum homes have enrolled and completed projects. The Business Case Energy and Economic Analysis 'Low Adoption Scenario' estimated that approximately 20 homes will participate over three years. However, under the 'Medium Adoption Scenario', 20 homes could participate in the first year and a total of 83 over three years. The 'High Adoption Scenario' estimates over 200 participants over three years. See Section 3.3 for more information. The Medium and High Scenarios will demonstrate demand and result in earlier than anticipated transition to a full program or expanded pilot.

**The Town should develop a contingency plan immediately to bridge the gap between the time the 20<sup>th</sup> home is enrolled, and more long-term funding can be secured.** An evaluation will be triggered once 20 homes have enrolled and completed projects. It is recommended that the Town continue with the Pilot while the evaluation is performed due to the cost and complexity of setting up a financing initiative and the high levels of commitment required from external stakeholders (e.g., contractors, Registered Energy Advisors). The Town could consider three options for additional funding:

1. **Use contingency reserve funds.** This will require internal discussions and Council approval.
2. **Re-apply to FCM.** The Town could re-apply for additional CEF grant/loan funding. However, FCM funding is a competitive application process; funding is not guaranteed, and the process takes approximately 9 – 12 months from application to award.
3. **Engage local third-party credit unions.** Local credit unions are often nimbler and more willing to participate in innovative programs compared to larger banks that require large volume to attract interest. As local, mission-driven, non-profit lenders, they offer value-alignment, community focus and customer familiarity. The Town could also leverage a credit enhancement (loan loss reserve (LLR) or loan guarantee) from FCM to help to mitigate lender risk and enable better terms and conditions. See text box.

During this time, the Town should also consider investigating whether there is anything about the pilot design that may be too attractive and alter design to slow enrollment until sufficient funding can be obtained.

### FCM Credit Enhancement

FCM offers a partial loan guarantee of up to \$2M and grant of up to \$5M to support municipalities with the setup, operation, and funding of a loan loss reserve to leverage private capital.

### Pilot Objective 1: Demonstrate the Need for and Benefits of Financing.

The Pilot aims to test the LIC's ability to attract homeowners, reduce barriers and accelerate adoption of energy efficiency (EE) and renewable energy (RE) technologies.

### Pilot Objectives 5: Test the Pilot's Ability to Attract Private Investment.

The Pilot is funded by the Town and an FCM CEF grant to demonstrate proof of concept. To minimize the use of public funds, and ensure long-term program sustainability, the Town will explore third party funding opportunities (e.g., FCM, private financial institutions, 3<sup>rd</sup> party administrators).



## 2 Pilot Design

### 2.1 – Pilot Theory and Logic Model (PTLM)

The logic model is a visual representation of the Pilot theory and logic to achieve the Pilot's objectives and address barriers linking all inputs and activities to short, medium, and long-term outcomes. Figure 1 visually shows the pilot theory and logic followed by participant eligibility and Pilot details.

#### RETROFIT HALTON HILLS PILOT GOALS

Set up program infrastructure and optimize processes to test whether the pilot can be administered at a reasonable cost to the Town and homeowners, and attract private investment. Test the local improvement charge (LIC) mechanism to address homeowner barriers and encourage deep home energy retrofits that close the gap between existing home performance and net zero carbon.

#### INTERNAL AND EXTERNAL INPUTS

- Internal resources: 1.25 full time equivalents across multiple departments (CCAM, Finance, Communications, Economic Development, Planning and Development, Building Services)
- Financial resources: \$600,800 (The Town contribution is \$300,000 and FCM's grant contribution is up to \$300,800)
- External resources: NRCAN, Licensed Service Organizations/Registered Energy Advisors, Utilities, Contractors, Industry Associations

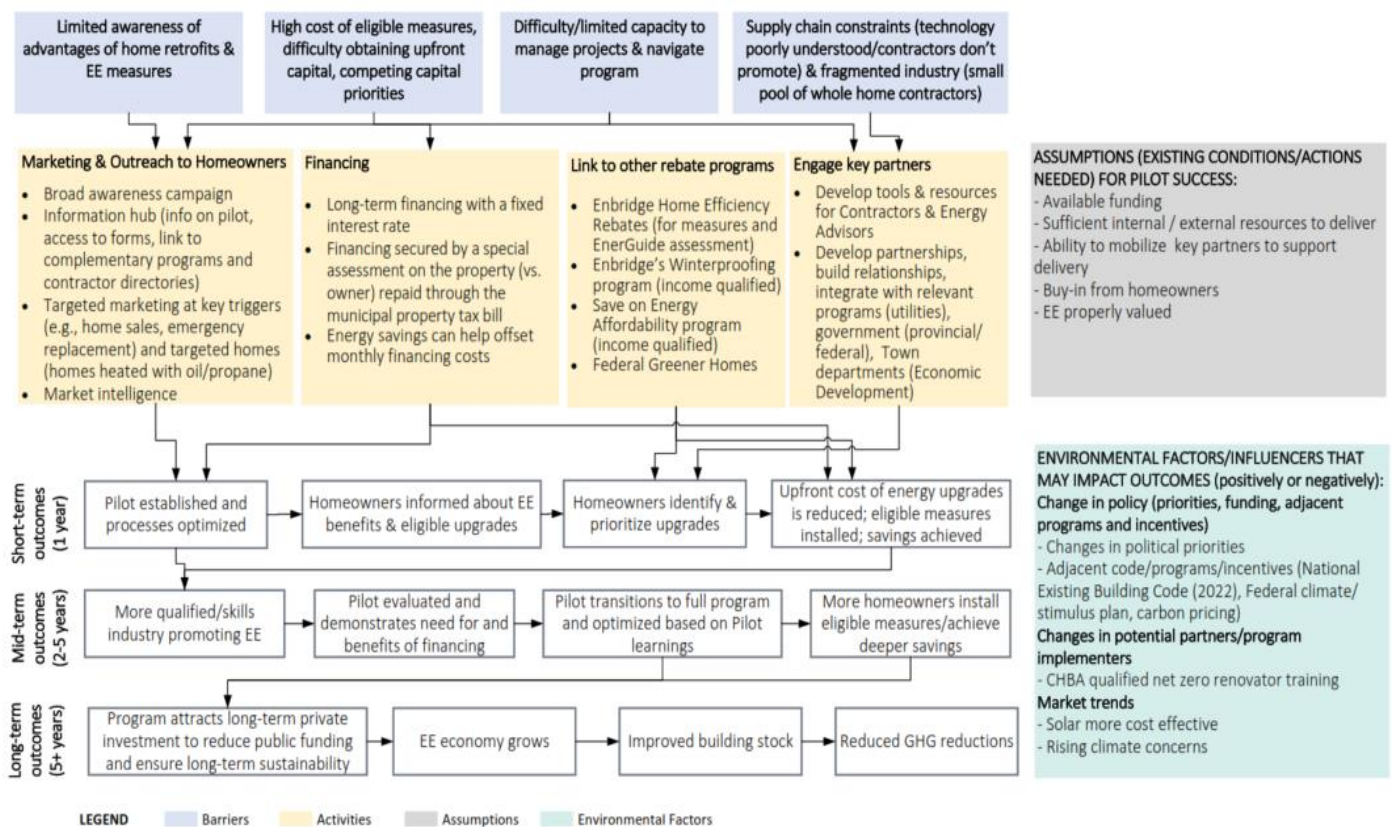


Figure 1: Pilot theory and logic model

### Pilot Objective 1: Demonstrate the Need for and Benefits of Financing.

The Pilot will test the LIC's ability to attract homeowners, reduce barriers and accelerate adoption of energy efficiency (EE) and renewable energy (RE). The Pilot will assess whether design features, i.e., participant and measure eligibility, LIC mechanism and terms and conditions, and other Pilot features, address the market's needs and align with and contribute to the Town's 2030 net zero goal.

## 2.2 – Participant Eligibility

To be eligible for the program, participants must own the home and equipment and their home must meet the conditions outlined in Table 3.

Table 3: Eligible participants, building and conditions.

Eligibility	Description
Ownership	All property owners on title must consent to participate
Location	Town of Halton Hills
Single Family Home*	Residential home 3 storeys or less with a building area less than 600m <sup>2</sup> Detached and Attached (e.g., duplex, semi-detached, town/row house) Mobile home on a permanent foundation Existing home that are five (5) years or older from date of occupancy**
Occupancy*	Occupied year round
Energy Use	All fuels (natural gas, electric, oil, propane, wood, other)
Property tax & utilities	Property tax and utilities must be in good standing

\*The single-family home, occupancy and existing home criteria are defined by the ability to perform an EnerGuide home evaluation and/or align with available rebate programs to ensure homeowners can take advantage of rebates and participate in the Pilot.

\*\* Homes that are 5 years or older were constructed under less stringent building codes, thus offer greater opportunity for energy and GHG reductions.

**Low-income homeowners:** The pilot is not designed for truly low-income homeowners, but they are eligible to participate. There are other programs available like Enbridge's Winterproofing Program, Save on Energy Energy Affordability program, & the AffordabilityFund (currently not accepting applications). While low-income homeowners can benefit from these free programs, they are limited to specific measures. The Pilot allows homeowners to participate in these income-eligible programs and to do more.

### Exclusions

The following buildings are not eligible for the program:

- New construction (homes that are <3 years old from the date on the occupancy permit)
- Homeowners with insured mortgages
- Social housing
- Rooming houses
- Multi-residential buildings greater than 3 storeys and condominiums
- Commercial buildings

## 2.3 – Financing Offer

The Pilot offers a simple approach that includes an LIC repayment mechanism, information hub to link homeowners to other complementary programs (Town, federal and utility incentives, etc.), and contractor directories. Each are described below. Halton Hills will also undertake a marketing and awareness campaign, which is described in more detail in section 3.1.6.

**LIC financing** provides capital to accelerate adoption of energy efficiency (EE) and renewable energy (RE) technologies. A LIC program is where:

- Homeowners **access long-term financing** with a fixed interest rate
- Financing is secured by a **special assessment on the property** (vs. owner)
- The loan is repaid through the **municipal property tax bill**
- **Energy savings** can help offset monthly financing costs.

The Pilot capital is provided by an FCM grant through the Community Efficiency Financing funding stream and the pilot is fully administered by the Town of Halton Hills. Future program capital can be provided by the municipality or by a partner in a third-party financial institution and the program administrators can be the municipality or a third-party, as showed in Figure 2.

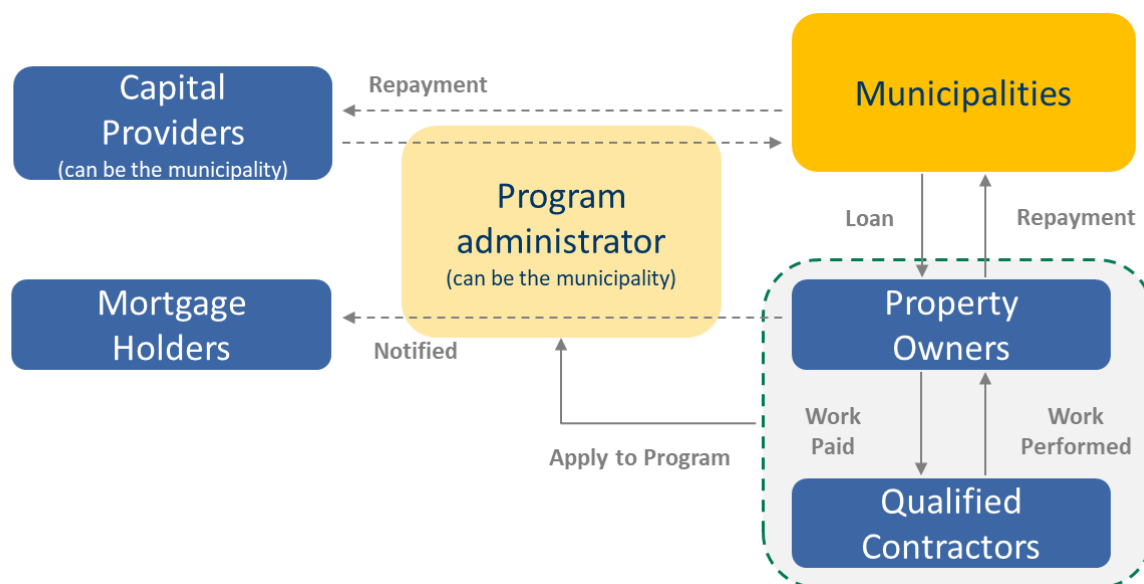


Figure 2: LIC administration and funding

## 2.3.1 – LIC Terms and Conditions

The preliminary LIC terms and conditions are presented in Table 4. The proposed terms and conditions are subject to change following legal review, Staff discussions as internal processes are refined, potential pilot partner negotiations and Council approval.

Table 4: Proposed LIC Pilot Terms and Conditions

Terms and Conditions	Details
Loan Amount	<ul style="list-style-type: none"> <li>Minimum \$10,000 and up to 10% of property value</li> </ul>
Terms	<ul style="list-style-type: none"> <li>Up to 10 years<sup>2</sup></li> </ul>
Interest Rates	<ul style="list-style-type: none"> <li>4.1%, which aligns with the Town's current rate</li> </ul>
Underwriting Criteria	<ul style="list-style-type: none"> <li>All property tax &amp; Town utility bills (e.g., water/sewer) are in good standing</li> </ul>
Homeowners with mortgages	<ul style="list-style-type: none"> <li>Mortgages will be in subordinate position to LIC in event of default</li> <li>Homeowner encouraged to notify lender of LIC (but not required)</li> <li>Insured mortgages are not eligible</li> </ul>
Processing Fee	<ul style="list-style-type: none"> <li>\$450<sup>3</sup> processing fee that will be rolled into the LIC</li> </ul>

<sup>2</sup> We've suggested a term up to 10 years because of the Pilot size. While this is not ideal from a balance of payment perspective, the Town may not want to manage 20 LICs beyond 10 years. If the pilot shifts to sustained program, the Town can consider longer terms. The term, along with other Pilot features, will be assessed in evaluation.

<sup>3</sup> \$450 is consistent with charges to administer programs in other jurisdictions. City of Toronto includes an administrative charge of two per cent of loan value (average loan value is approximately \$22,000). Clean Foundation in NS charges a \$450 administration fee (\$150 for initial registration, \$200 to review quotes/project plans, \$100 for closing file).

Terms and Conditions	Details
EnerGuide Evaluation	<ul style="list-style-type: none"> <li>Pre &amp; post evaluation required by an NRCan Registered Energy Advisor</li> </ul>
Eligible Energy Measures	<ul style="list-style-type: none"> <li>EnerGuide evaluation, space heating and cooling (central, ductless heat pumps, geothermal), efficient water heating, electrification, insulation &amp; air sealing, efficient windows and doors, renewables (solar PV, solar water heating), LED lighting, Energy Star appliances, connected thermostats</li> <li>*Work must be completed by a qualified contractor</li> </ul>
Non-Energy Measures	<ul style="list-style-type: none"> <li>Up to 15% of project value can be used for non-energy related home improvements, including health &amp; safety measures, measures needed before eligible energy measures can be completed, heritage homes consultants, building permit costs (e.g., fuel switching).</li> </ul>
Time to complete work	<ul style="list-style-type: none"> <li>Homeowners have 12 months to complete the approved project. The Town has discretion to extend this term if a homeowner requests an extension.</li> </ul>
Early Payments	<ul style="list-style-type: none"> <li>Payments greater than the amount due monthly are automatically applied to principle</li> <li>No penalty for early repayment</li> </ul>
Payment Frequency	<ul style="list-style-type: none"> <li>LIC is put on the final tax bill based on annual amount required to pay.</li> <li>Homeowner will pay based on typical billing cycle</li> </ul>
Partial/late payments, delinquencies	<ul style="list-style-type: none"> <li>Late charge of 1¼ % of loan payment (aligned with the Town's current charges for other tax delinquencies)</li> </ul>
Contractors Payment	<ul style="list-style-type: none"> <li>Up to 30% of estimated project value can be advanced for EnerGuide evaluation and contractor costs</li> </ul>
Utility rebates	<ul style="list-style-type: none"> <li>LIC based on total project cost</li> <li>Utility rebates (EnerGuide assessment &amp; eligible measures) will go directly to the homeowner who can choose to pay lump sum early payment w/o penalty</li> </ul>
Transferability	<ul style="list-style-type: none"> <li>The LIC is transferable</li> </ul>

## 2.3.2 – Other pilot features

The Pilot will include four additional features to complement the LIC:

1. **Develop an information hub.** The Town will develop a pilot-specific webpage that will act as a hub with information on the pilot, and access to all application forms, contact information, links to other programs and contractor directories, etc.
2. **Link to complementary incentive programs.** Several incentive programs complement the Pilot and Town's objectives. The Town will link homeowners to relevant programs that they can take advantage of in addition to the Pilot, including:
  - a. **Enbridge Home Efficiency Rebate Program** is available to homeowners that heat their home primarily with natural gas. The program offers up to \$5,000 in rebates for eligible measures and a \$550 rebate for the cost of a pre- and post-EnerGuide evaluation (after upgrades and the post-evaluation are complete). Homeowners must complete a pre-and post EnerGuide



assessment performed by an Enbridge approved Registered Energy Advisor. The pre- and post-EnerGuide assessment and a minimum of two eligible upgrades (three with furnace replacement) must be completed within 120 days to be eligible for rebates. Bonus incentives are available for each upgrade beyond the minimum. Homeowners are reimbursed \$550 for the cost of the pre- and post-EnerGuide assessment.

- b. **Enbridge's Winterproofing Program** provides income eligible homeowners with a home energy assessment and installs insulation, draft proofing, and a smart thermostat at no cost to help lower homeowner's natural gas bill and improve their comfort.
  - c. **Save on Energy Energy Affordability program** provides support to income-eligible electricity consumers by helping them to lower their monthly electricity costs and to increase their home comfort. Depending on the homeowner's situation, they may be eligible for different energy-saving products and services. Some participants qualify for a free home energy needs assessment and replacement of inefficient appliances and installation of insulation and draft-proofing. Other participants may qualify for free energy saving kits. These are customized and may include energy-saving LED lighting, timers, faucet aerators and/or clothes drying line.
  - d. **Canada Greener Homes Grant** provides up to \$5,600 to help homeowners access EnerGuide evaluations and expert advice, and make energy efficiency retrofits to their homes, such as better insulation.
3. **Link to contractor directories.** Homeowners will be able to choose the contractor of their choice to complete home upgrades. For those who seek assistance in finding contractors, the Town will direct homeowners to existing Enbridge contractor lists and official trade directories like Renomark, HRAI, and insulateandairseal.ca. Additionally, the Town and partners will provide information on their websites on how to select a reliable contractor.
4. **Coordinate with other internal departments.** Retrofit Halton Hills will coordinate efforts with other Town departments to align Town objectives, initiatives, and programs, including, but not limited to:
  - a. **Heritage (Planning and Development).** The *Ontario Heritage Act* requires Ontario municipalities to keep a Register of properties that are of cultural heritage value or interest. While homes on heritage property can benefit from energy efficiency, it will be important to work with the Senior Heritage Planner to ensure the history, cultural heritage value, and character of these homes are not compromised in the process.
  - b. **Building Services.** Building permits are required for renovations, alterations, and repairs. Climate Change & Asset Management and Building Services will coordinate to promote the Pilot and required building permits, seek opportunities to ensure an efficient and smooth process where a permit may be required, issue building permits and perform inspections.
  - c. **Economic Development.** Targeted outreach to local businesses via the Town's Economic Development staff builds on Council's climate change priorities and leverages related initiatives to position Halton Hills as a leading destination for investment and growth in the clean technology/low-carbon economy sectors. As these sectors continue to grow in Halton Hills, the Pilot will contribute to the creation of an environment that supports the growth and attraction of green businesses, and encourages the adoption of green practices by both residents and local firms.

## 2.4 – Eligible measures

Measures listed in Table 5 are eligible for financing. Rebates are identified where available. Other measures may be added as new technologies become available.

The eligible measures were selected because they align with Enbridge utility rebates that can be stacked with the Pilot to reduce natural gas use, help reduce the amount homeowners must borrow and to encourage electrification and renewable heating and cooling. Up to 15% of the loan can be used for non-energy related home improvements.

### Pilot Objective 4: Test LIC Model to Help Close the Gap Between Existing Home Performance and Net Zero Carbon.

Homeowners will be guided by the EnerGuide home evaluation and will choose what measures they do. The Pilot will allow for a range of diverse projects to test how well homeowner's needs and priorities align with the Town's goal of net zero carbon. And if not, determine what design adaptations are needed to close the gap?

Table 5: Program eligible measures, estimated costs and potential rebates

Eligible Measure	Minimum Eligibility Criteria	Estimated Cost	Enbridge Rebate (natural gas heated homes)
High-Efficiency Furnace	<ul style="list-style-type: none"> <li>ENERGY STAR®</li> <li>96% AFUE or higher condensing natural gas furnace</li> </ul>	\$3,000-\$6,500	\$500
High-Efficiency Boiler	<ul style="list-style-type: none"> <li>ENERGY STAR®</li> <li>90% AFUE or higher condensing natural gas boiler</li> </ul>	\$6,000-\$11,000	\$1000
Basement Insulation	<ul style="list-style-type: none"> <li>Add R12 – R23 to 100% of basement</li> <li>Add R10 – R23 to 100% of crawlspace</li> <li>Add R24 to 100% of floorspace above crawl space</li> <li>Must upgrade a minimum of 20% of total wall area</li> </ul>	\$3,000	\$400- \$1000
Exterior Wall Insulation	<ul style="list-style-type: none"> <li>Add R3.8 – R20 to 100% of building</li> <li>Must upgrade a minimum of 20% of total wall area</li> </ul>	\$4,000	\$1000- \$2000
Attic Insulation	<ul style="list-style-type: none"> <li>Increase attic insulation to at least R60 from R35 or less</li> <li>Increase cathedral / flat roof insulation by at least R14</li> </ul>	\$1,500	\$500
Comprehensive Air Sealing	Achieve base target	\$365	\$100
	Achieve 10% or more above base target	\$400	\$150
Window/Door/Skylight	ENERGY STAR® qualified	\$270- \$800	\$40 per measure
Water Heating	ENERGY STAR® qualified natural gas water storage heater	\$1,000- \$3,000	\$200
	ENERGY STAR® qualified natural gas water heater		
Connected Thermostat	ENERGY STAR® qualified smart thermostats (e.g., Nest, Ecobee, Emerson Sensi, Honeywell)	\$275	\$75

Eligible Measure	Minimum Eligibility Criteria	Estimated Cost	Enbridge Rebate (natural gas heated homes)
Central Air Source Heat Pump	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified</li> <li>Certified by Canadian Standards Association (CSA)</li> <li>Installed by a licensed refrigeration and air conditioning mechanic</li> </ul>	\$9,300	—
Ductless Heat Pump (single and multi-zone)	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified</li> <li>Certified by Canadian Standards Association (CSA)</li> <li>Must be installed by a licensed refrigeration and air conditioning mechanic</li> </ul>	\$2,500- \$5,000	—
Geothermal Heat Pump	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified</li> <li>Meet CSA Standard C448 for installation and design practices of GSHPs</li> <li>Must be installed by Canadian Geo Exchange Coalition (CGC) Accredited Installer</li> </ul>	\$20,000- \$30,000	—
Heat Recovery Ventilator and Energy Recovery Ventilator	<ul style="list-style-type: none"> <li>Listed with the Home Ventilating Institute</li> <li>Must be installed by a Heating, Refrigerator and Air Conditioning Institute-qualified contractor.</li> </ul>	\$500- \$1,500	—
High-Efficiency Air Conditioner	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified</li> </ul>	\$2,500- \$5,000	—
Drain-water Heat Recovery	<ul style="list-style-type: none"> <li>Minimum 30% efficiency</li> </ul>	\$1,000	—
LED Lighting	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified interior, exterior LED lamps and fixtures</li> <li>ENERGY STAR® qualified lighting controls</li> </ul>	\$5/bulb	—
Energy Star Appliances	<ul style="list-style-type: none"> <li>ENERGY STAR® qualified refrigerators, freezers</li> <li>ENERGY STAR® qualified clothes washers, dryers</li> <li>ENERGY STAR® qualified dishwasher</li> </ul>	\$1,000	—
Renewables	<ul style="list-style-type: none"> <li>Rooftop solar photovoltaics</li> </ul>	\$2.19- \$2.68 / Watt	—

## 3 Pilot Set Up and Delivery

In this section we review the activities that must be completed prior to Pilot launch and how the pilot will be delivered.

### Pilot Objective 2: Set Up Program Infrastructure and Optimize Internal Processes.

The Pilot will test whether it can be administered at a reasonable cost to the Town and homeowners with the aspirational goal of being cost neutral. And if the program were to become a full-scale program, what will it cost (as designed and with enhancements based on evaluation findings and recommendations).

### 3.1 – Pilot Set-Up

Prior to pilot launch there are several activities that must be completed, including:

- **Legal review:** of bylaw obligations and constraints, accounting, and financial reporting
- **Enact by-law:** As required under O. Reg. 586/06<sup>4</sup> a bylaw must be enacted to allow the Town to authorize energy efficiency and water conservation works on private residential property as local improvements under the Retrofit Halton Hills Program.
- **Approval from Council for proposed pilot design:** The proposed program design will be submitted to Council in Q2 2021.
- **Develop required infrastructure:** All applicant materials (e.g., application forms, program participant agreements, etc.) need to be developed. Additionally, while the Town's new billing system can manage LICs, program specific updates or changes may be required, and system modules need to be tested. The Town will also need to adapt/develop IT infrastructure to accept online applications, Service Halton Hills and software to track, monitor and report applications, approvals, projects, energy and GHG savings and loan disbursements.
- **Engage potential partners and establish agreements (if required):** The Town will engage, and potentially need to enter into memorandum of understandings or agreements, with key market actors, including local utilities (Halton Hills Hydro & Enbridge), NRCan, Service Organizations/Energy Advisors, contractors/industry associations, environmental and community groups.
- **Develop marketing and outreach strategy:** This includes developing the strategies and materials to increase energy literacy, raise awareness and drive program uptake.

Each are discussed in detail below and a detailed administration process document is in Appendix A.

#### 3.1.1 – Legal / Financial Review

A legal and/or financial expert review is required for the following:

- **O. Reg 586/06 Interpretation:**
  - **Section 36.14 (1)** states “after the treasurer of the municipality has certified the local improvement roll under subsection 36.11 (2) or section 36.15, the municipality shall by by-law provide that, the amount specially charged on each lot set out in the roll is sufficient to

<sup>4</sup> See <https://www.ontario.ca/laws/regulation/060586>

raise that lot's share of the cost by a specified number of annual payments; and a special charge is imposed in each year on each lot equal to the amount of the payment payable in that year."

- The Town should seek legal counsel on whether payments must be 11 equal installments through pre-authorized payment plan (TO model requires PAP, but not clear why decision was made) or if they can be made via property tax typically billed twice per year.
  - **Section 36.6 (1)** before passing a by-law to undertake a work as a local improvement, the municipality shall give notice to the public of its intention to pass the by-law.
    - The Town should confirm whether they must develop and publicly disclose a LIC Register.
  - **O. Reg. language requires the municipality to carry out the work.**
    - The Town may require further interpretation to allow 3rd party service providers (for future program).
- **Loan terms and interest rates.** The Town wants to identify appropriate term lengths and interest rates. Term lengths should allow for manageable payments for property owners and cannot exceed the average estimated useful life of the measures installed. Interest rates should reflect the Town's own cost of borrowing. Suggestions have been made herein (see Table 4) based on experience in other jurisdictions, but the Town may wish to seek additional advice.
  - **Accounting/Interest Rate policy vs LIC bylaw.** The Town will seek advice as to whether the accounting and interest rate policy requires updating to allow the Town to define term lengths and interest rates, or whether the bylaw approval can address this.
  - **Fees bylaw vs LIC Bylaw.** The O. Reg 586/06 Section 36.3 allows the Town to impose fees to offset administration costs. Administrative costs should be reasonable and can include the cost of advertising and of giving notices. The Town will seek advice as to whether the Pilot administration fees will require updating the Fee bylaw or whether the LIC bylaw can address this.
  - **Financial accounting and reporting requirements.** The Town's Finance department requested direction on annual financial accounting and reporting requirements related to the LIC.

### 3.1.2 – Enact Bylaw

The following key elements are recommended to be included in LIC legislation. Table 6 compares the recommendations, with provincial legislation and considerations for the Town's bylaw.



Table 6: Comparison of recommended elements of LIC legislation

Recommended LIC Legislation	O. Reg. 586/06	Town Bylaw Considerations
State public purpose goals & broadly outline measures eligible	Section 1.2.q includes energy efficiency and renewable energy works	Specify program's public purpose goals, restate types of measures eligible (include additional measures of interest like water conservation, electrification, seismic improvements)
Specify repayment mechanism, e.g., PACE assessment	Section 36 describes local improvements on private property	Clearly state the repayment mechanism and that only payable portion of the LIC will be added to the tax roll each year
Apply same collection & lien status as property taxes	Section 1.3 describes priority lien status. Section 33 (which applies to Part II LICs on the basis of frontage) states special charges imposed on land under this Regulation do not constitute an encumbrance on the land unless they are unpaid and in arrears. This is not specified in Part III for local improvements on private property.	Specify that lien only applies to LIC assessment payments in arrears
Confirm assessment will not end or accelerate due to default	Not included	Include with language on early repayment options
Indicate PACE funding options (e.g., bonds, reserves, 3 <sup>rd</sup> party capital)	Section 34 (under Part II for LICs on the basis of frontage) indicates how to apply reserve fund for long-term debt	State all possible funding options and how funds will be managed
Declare right for municipality to impose fees to offset admin costs	Section 36.3	Restate costs including admin (Town or 3 <sup>rd</sup> party), terms, interest, design, delivery, infrastructure, materials, etc.
Allow for 3 <sup>rd</sup> party program administrators	Not included – not forbidden	O. Reg language requires municipality to carry out the work. May require further interpretation to allow 3 <sup>rd</sup> party service providers

### 3.1.3 – Council approval for program design

The proposed program design is expected to be submitted to Council in Q2 2021. Town Staff will present the program design supported by the Business Case Report, and internal and external stakeholder input and demonstrating alignment with the Town's climate emergency declaration and net-zero by 2030 target.

### 3.1.4 – Develop required infrastructure

The following infrastructure is needed to effectively deliver the pilot:

- **Billing system:** The Town launched a new billing system in early 2021. While the new system is capable of registering LICs, the Town has not had experience with LICs in the past. The Town will need to determine the processes to be used within the system by testing modules and training staff prior to launch. The Town will also create a template to calculate loan repayments in Excel.
- **Develop required forms.** The following external and internal forms will need to be developed. While each program is unique, the Town could reference existing forms developed by other program administrators (e.g., Toronto HELP, Clean Foundations PACE Financing) to accelerate the process.
  - **Pre-qualification form:** This should be a simple 2–3-page document to confirm applicant eligibility, for example, home ownership, location, single family home, occupancy, age of home, energy use, property tax & utility information (to confirm in good standing). The pre-qualification should be reviewed with Finance to ensure it meets Finance requirements and includes the electronic funds transfer application details as per Town standard operating procedures.
  - **Notice to proceed:** includes a Retrofit Halton Hills Reference number and offers homeowners guidance on next steps.
  - **Funding Request Form:** This form requests homeowners provide a list of planned improvements, including estimated costs based on contractor quotes, EnerGuide rating and Renovation Upgrade Report and any payment details as required. Applicants will also indicate whether they will exercise the option of receiving an initial disbursement of funds prior to completing their project to pay for materials or secure a contractor (i.e. security deposit). This initial payment is up to 30% of the total estimated funding amount and is available after signing the Property Owner Agreement and before completing the project.
  - **Property agreement:** A Property Owner Agreement (POA) is the funding agreement between the property owner(s) and the Town specifying all terms and conditions. As per O. Reg 586/06 s. 36.2 (5), the agreement must include:
    - the estimated cost of the work;
    - the estimated lifetime of the work;
    - a description of the apportionment method and the amount of the special charges to be specially charged;
    - the manner in which a cost over run or under run is to be dealt with, if the actual cost of work differs from the estimated cost of the work; and
    - when the special charges are to be paid.
    - what happens in the event the property is sold prior to full LIC repayment

- **Work completion form:** This form details the list of actual improvements, final costs and contractor invoices, and final EnerGuide rating. The Town may also wish to ask if the homeowner has applied to other rebate programs (although this will not be deducted from the total amount).
  - **Bylaw for benefitting properties:** As per O. Reg 586/06 Section 36.5 (1), The Town may pass a by-law to undertake the work as a local improvement for the purpose of raising all or any part of the cost of the work by imposing special charges on the property which the local improvement will be located.
  - **Notice to public:** As per O. Reg 586/06 Section 36.6 (1) before passing a by-law to undertake a work as a local improvement, the municipality shall give notice to the public of its intention to pass the by-law. The public notice of the intention to pass the by-law shall include,
    - a description of a specific work the municipality intends to undertake; or
    - a description of a program that the municipality has or intends to establish to undertake the types of works set out in the notice.
  - **Notice to homeowners:** As per O. Reg 586/06 Section 36.11 before a special charge is imposed, the Town must give notice of the proposed local improvement roll that is prepared to the property owners liable to be specially charged.
  - **Loan schedule:** Finance will help to create a loan schedule Excel template to allow CCAM to calculate the amount of each annual payment based on the approved project funding request and LIC terms and conditions.
  - **Cheque requisition:** Finance requires a cheque requisition form following CCAM project funding approval prior to disbursing funds.
- **IT infrastructure** to accept online applications, Service Halton Hills, website, and information hub, etc.
  - **Pilot tracking database** (e.g., Excel workbook) to track and monitor applications, approvals, projects, energy and GHG savings and loan disbursements, LIC disclosure (website). Key information is listed below and aligns with information required for Pilot evaluation and FCM CEF reporting (see Appendix A).
    - Address of property where work is conducted
    - Homeowner(s) name and contact information (if different from the address where work is being conducted)
    - Unique Pilot project reference number
    - Status of application (approved, denied, withdrawn, in-progress, complete)
    - Reason for withdrawal
    - Initial EnerGuide rating, energy consumption and GHG emissions
    - Planned and actual work completed
    - Estimated and actual costs of improvements
    - Contractor that conducted the work
    - Rebates/incentives received from other programs (if known)
    - Final EnerGuide rating, energy consumption and GHG emissions after improvements made
    - Schedule of payments

**Map staff roles and responsibilities:** The Town should map out all internal departments, specific Staff by role or function and what they are responsible for at each step.

### 3.1.5 – Engage potential partners

#### Pilot Objective 3: Engage and Coordinate External Stakeholders.

Key market actors will be critical to Pilot success (e.g., promote the Pilot, support delivery and/or enable home energy improvements). The Pilot will test tactics to engage, establish necessary partnerships and tools and support to mobilize key stakeholders.

The Town will engage, and potentially enter into memorandum of understandings/agreements, with key partners, including:

- **NRCan** to share and access EnerGuide house files, coordinate and streamline access to the Federal Green Homes program and access Free EnerGuide home evaluations (once available).
- **Local utilities** (Halton Hills Hydro & Enbridge) to promote the pilot and complementary programs, coordinate and streamline processes for homeowners where possible, share information/data to support targeted messaging, attribute savings, evaluate performance, etc.
- **FCM** to execute a Partnership Agreement once final terms and conditions of the FCM CEF program are known, including applicant and participant obligations.
- **Service Organizations/Energy Advisors** to education about the Pilot and ensure capacity to conduct EnerGuide evaluations required for homeowners to participate in the Pilot.
- **Contractors/Industry Associations** to educate and promote the Pilot and benefits, ensure qualified, skilled contractors are available to perform the required work.
- **Halton Region** to promote the program.
- **Environmental/community groups** to promote the program.

The potential partners and their roles and responsibilities are summarized in Table 7.

Table 7: Potential partners and their roles and responsibilities to support the Pilot

Potential Partners	Role/Responsibility
NRCan	<ul style="list-style-type: none"><li>• Oversees EnerGuide Rating System</li><li>• Manages EnerGuide house files and data transfer</li></ul>
Service Organizations/ Energy Advisors	<ul style="list-style-type: none"><li>• Perform EnerGuide evaluations, QA/QC</li><li>• Issue EnerGuide rating and upgrade recommendations</li><li>• Submit house files to NRCan</li></ul>
Utilities (Enbridge, Halton Hills Hydro)	<ul style="list-style-type: none"><li>• Provide rebates for EnerGuide evaluations and home improvements</li><li>• Develop list of approved Energy Advisors</li><li>• Support marketing &amp; outreach</li></ul>
Contractors/Industry Associations	<ul style="list-style-type: none"><li>• Perform upgrades</li><li>• Provide industry training &amp; certifications</li><li>• Develop contractor directories</li></ul>
Halton Region	<ul style="list-style-type: none"><li>• Promote program</li></ul>
Environmental/ Community Groups (e.g., Halton Environmental Network)	<ul style="list-style-type: none"><li>• Concierge services to provide hands-on support to Pilot participants</li><li>• Capacity building</li><li>• Promote program</li></ul>

### 3.1.6 – Develop marketing and outreach strategy

The goal of Pilot marketing and outreach is to raise awareness and engage the broader market to acquire Pilot participants. This section provides guidance on high-level marketing considerations. The Town's Communications Team will lead the development and implementation of a detailed marketing strategy.

Marketing should support the entire customer journey from initial program awareness through to post-participation (see figure below). The effectiveness of the marketing strategy, messaging and tactics will be assessed through the Pilot evaluation.

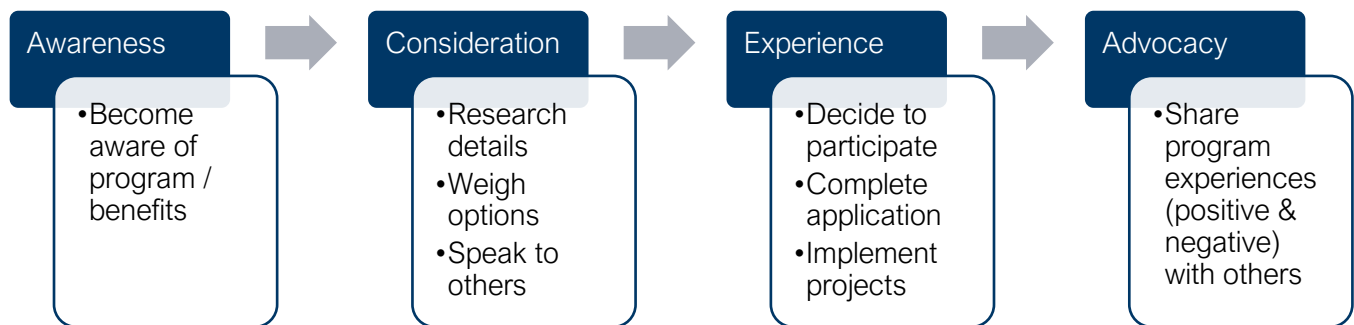


Table 8 presents three high-level marketing strategies and identifies how, together, they support the entire homeowner experience from generating initial interest (leads) through to developing program champions.

Table 8: Marketing strategies to support homeowner journey

Strategy	Awareness	Consideration	Experience	Advocacy
Develop broad awareness campaign	✓			✓
Engage pilot partners and industry	✓	✓	✓	✓
Target messaging	✓	✓		



## Marketing Strategy Considerations

- **Avoid using the “Pilot” label publicly** to obtain the necessary buy-in and participation required to enable success.
- **Develop a target audience profile** based on the Business Case analysis and any previous homeowner segmentation and market surveys to develop **key messages that will resonate**. Studies show that health, comfort, & bill savings are motivating factors. Indeed, the Retrofit Halton Hills survey showed that common motivators include cost, environment, comfort and increasing home value.
- **Target messaging** to homes that are older and heat with oil/propane and at key trigger points (e.g., home purchase, planned renovations)
- **Define high impact activities** like press releases, community events, home shows, bill inserts, digital campaign, word of mouth) and **develop collateral** such as brochures, factsheets, contractor kits, bill inserts, event booths, homeowner stories. **Information should be easily accessible**, offer clear direction and be engaging.
- **Engage homeowners through different channels:** Leverage relevant channels for homeowners and other stakeholders, including Let’s Talk Halton Hills, traditional media (print, radio), social media, contractors.
- **Engage Contractors through targeted industry channels.** Contractors can be engaged through industry associations chapters (BILD, West End Home Builders Association, etc.) to receive pilot-specific training/ webinars & industry training opportunities (e.g., NAIMA insulator training, CEIT Dollars to Sense, etc.).

We describe each high-level marketing strategy and how, together, they support the entire homeowner experience from generating initial interest (leads) through to developing program champions and the target audience, activities, and channels to consider.

### 3.1.6.1 – Develop broad awareness campaign

This strategy has a broad target audience and focuses on communicating the benefits of energy efficiency, renewable energy, and beneficial electrification and shares homeowner’s stories. This strategy addresses lack of energy literacy and raises awareness to drive pilot participation. Past Pilot participants can also become champions to share their experience. Word of mouth can be a very powerful tool.

Broad EE Awareness Campaign		
Target Audience	Activities	Channel
<ul style="list-style-type: none"> <li>Homeowners</li> <li>Industry (Energy Advisors, Contractors)</li> <li>Environmental Groups</li> </ul>	<ul style="list-style-type: none"> <li>Press Releases</li> </ul>	<ul style="list-style-type: none"> <li>Local Media</li> </ul>
	<ul style="list-style-type: none"> <li>Marketing and awareness campaign</li> <li>Share case studies/homeowner stories</li> </ul>	<ul style="list-style-type: none"> <li>Online (website, social media)</li> <li>Traditional media (print and radio)</li> <li>Let's Talk Halton Hills</li> </ul>
	<ul style="list-style-type: none"> <li>Information sessions</li> </ul>	<ul style="list-style-type: none"> <li>Town Halls</li> <li>Community Events</li> </ul>
	<ul style="list-style-type: none"> <li>Bill inserts</li> </ul>	<ul style="list-style-type: none"> <li>Utility bills</li> <li>Municipal property tax bills / newsletters</li> </ul>
	<ul style="list-style-type: none"> <li>Community-based social marketing campaign</li> </ul>	<ul style="list-style-type: none"> <li>Contractors</li> <li>Local Environmental / Grassroots Groups</li> <li>Local hardware stores (where contractors purchase materials)</li> </ul>

### 3.1.6.2 – Engage pilot partners and industry

Partnerships with key stakeholders is critical to Pilot success. The Town is viewed as a trusted resource for assistance with home improvements. Most homeowners surveyed (34%) would turn to the Town for assistance with home energy improvements, followed by contractors (28%)<sup>5</sup>. Training, educating, and supporting program partners/industry will ensure that they are aware of, and can communicate, Pilot details, major changes, and updates. An educated industry can help to drive awareness and ensure positive pilot participation and experience.

Pilot Training, Education, Awareness and Support		
Target Audience	Activities	Channel
<ul style="list-style-type: none"> <li>Town staff</li> <li>Pilot Partners (e.g., utilities, registered energy advisors)</li> <li>Industry (e.g., contractors, associations)</li> <li>Environmental Organizations</li> </ul>	<ul style="list-style-type: none"> <li>Pilot-specific training via webinars, workshops, or in-person</li> <li>Pamphlets</li> </ul>	<ul style="list-style-type: none"> <li>Online</li> <li>Contractor place of business</li> <li>Industry trade shows, events and conferences</li> <li>Local Hardware stores (where contractors purchase materials)</li> <li>Targeted direct outreach via Economic Development staff</li> </ul>

<sup>5</sup> Retrofit Halton Hills Survey

### 3.1.6.3 – Target messaging

Targeting homeowners at major milestones (e.g., during planned renovations, emergency replacement and when buying or selling a home) and homes with specific space and water heating requirements (e.g., oil/propane) offer the greatest GHG reduction potential. These are key trigger points where homeowners are likely to integrate energy efficiency and renewable energy into home renovation and major purchases.

Deliver message at key trigger points		
Target Audience	Activities	Channel
<ul style="list-style-type: none"> <li>Homeowners (planning renovations)</li> </ul>	<ul style="list-style-type: none"> <li>Program resources (guides, factsheets, brochures)</li> <li>Digital advertising (display ads, search engine marketing etc.)</li> <li>Event booths</li> </ul>	<ul style="list-style-type: none"> <li>Building permit applications</li> <li>Utility/Town bill inserts</li> <li>Contractors / Equipment Suppliers</li> <li>Home Shows</li> </ul>
<ul style="list-style-type: none"> <li>Homeowners (looking for emergency replacement)</li> </ul>	<ul style="list-style-type: none"> <li>Program resources / information (guides, factsheets, brochures)</li> <li>Digital advertising (display ads, search engine marketing etc.)</li> <li>Event booths</li> </ul>	<ul style="list-style-type: none"> <li>Contractors / Equipment Suppliers</li> </ul>
<ul style="list-style-type: none"> <li>Homebuyers / Sellers</li> </ul>	<ul style="list-style-type: none"> <li>Program resources (guides, factsheets, brochures)</li> <li>Digital advertising (display ads on Realtor.ca)</li> </ul>	<ul style="list-style-type: none"> <li>Realtors</li> </ul>
<ul style="list-style-type: none"> <li>Homes that primarily heat with oil or propane</li> </ul>	<ul style="list-style-type: none"> <li>Program resources (guides, factsheets, brochures)</li> </ul>	<ul style="list-style-type: none"> <li>Utility/Town bill inserts</li> <li>Targeted direct mail</li> <li>Contractors / Equipment Supplier</li> </ul>

## 3.2 – Pilot Delivery

### 3.2.1 – Pilot Flow of Funds, Customer Journey and Town Touchpoints

A visual illustration of the flow of funds, customer journey and key Town touch points is shown in Figure 3 followed by a detailed description of Pilot delivery broken down into four phases: Discovery, Application & Approval, Project Implementation, and Project Completion.

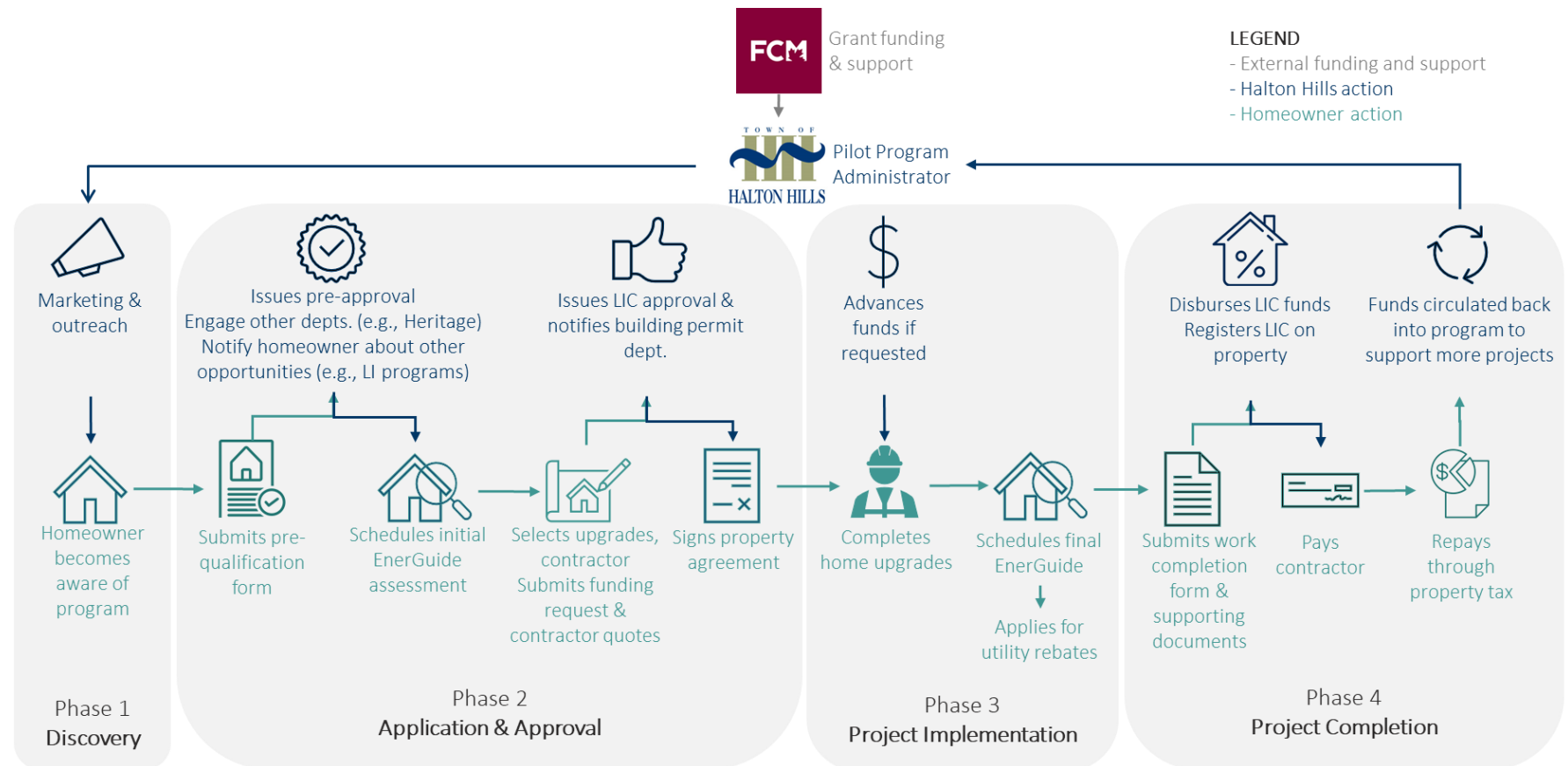


Figure 3: Pilot flow of funds, customer journey and key touchpoints

### 3.2.2 – Pilot Delivery

Pilot delivery includes four phases: Discovery, Application & Approval, Project Implementation, and Project Completion.

For each phase we describe the following:

- **Process:** The steps in the phase and general approach.
- **Key Program Staff and Partners:** Town staff and partners involved.
- **Supporting Documentation:** Documentation needed to support (criteria, templates, forms).

#### 3.2.2.1 – Discovery

The Discovery phase includes identifying and recruiting eligible homeowners and directing homeowners to available resources that can assist them with home energy improvements.

**Process:** The following steps are taken in the *discovery* phase:

1. **Marketing Strategy implemented:** The Town raises awareness about the Pilot and recruits participants through various communication channels and campaigns like the Town’s website, Let’s Talk Halton Hills, social media, town halls, Economic Development committee, etc.
2. **Homeowner considers participating:** Eligible homeowners consult information available online and other trusted resources (e.g., contractor).

**Key Town Staff and Partners:**

- Town: Communications (Lead), Climate Change & Asset Management (CCAM), Economic Development
- Partners: Utilities, Halton Region, Environmental Groups, Contractors

**Supporting Documentation:** Marketing strategy, marketing activities/materials

#### 3.2.2.2 – Application & Approval

The Application and Approval phase includes pre-qualification, an EnerGuide assessment to identify and prioritize work, and homeowner funding request.

**Process:** The following steps are taken in the *application and approval* phase:

1. **Pre-qualification form submitted:** The Homeowner submits a completed pre-qualification form online. The pre-qualification form is used to confirm eligibility before a homeowner proceeds with any work.
2. **Pre-qualification form reviewed and documented:** CCAM staff review the pre-qualification form and verify eligibility criteria (e.g., house and measure eligibility, all receivables (property tax, water, solid waste, and other revenue streams are in good standing). The information will be recorded in the Pilot tracking system and a unique Retrofit Halton Hills reference number will be created. The Town will aim to turn-around pre-approval within five business days.



3. **Pre-qualification notice issued:** A “notice to proceed” letter will be issued to the homeowner, which will include information on next steps, links to Registered Energy Advisors and Contractor directories (e.g., Renomark), how to select a contractor, and other complementary programs the homeowner may be eligible for.
4. **Other relevant departments notified:** For example, the age of the home may trigger notification to Heritage staff to provide additional advice/guidance to homeowners.
5. **EnerGuide evaluation and contractor quotes completed:** The successful applicant will schedule a home energy assessment with an NRCan Registered Energy Advisor. The homeowner will then choose the home improvements they want to implement, procure contractor quotes for service and select their preferred contractor.
6. **Funding Request Form submitted.** Once the homeowner selects the upgrades they wish to pursue and the contractor who will do the work, they will submit a funding request form to the City along with all relevant documents. Homeowners will indicate whether they will exercise the option of receiving an initial disbursement of funds prior to completing their project to pay for materials or secure a contractor (i.e., security deposit). Homeowners are eligible for up to 30% of the total estimated funding amount.
7. **Funding reviewed and approved.** CCAM staff will review the funding request form for completeness and accuracy, confirm eligibility. Contractor quotes will be reviewed to verify costs are reasonable, the contractor municipal business licence and/or HST number to confirm that they are licenced to operate.
8. **Create a loan schedule:** CCAM will develop a loan schedule using an Excel template.
9. **Relevant departments cross-referenced:** Other departments may be notified, for example, Building Services to confirm that all appropriate permits have been obtained to complete the work.
10. **Homeowner record updated:** CCAM staff will update the homeowner record in the Pilot database.

#### Key Program Staff and Partners:

- Town: CCAM (Lead), Planning & Development, Building Services
- Partners: NRCan Registered Energy Advisors, Contractors

**Supporting Documentation:** Pre-qualification form, Notice to Proceed template, Funding Request form, EnerGuide Label and Renovation Report, Contractor Quotes

### 3.2.2.3 – Project Implementation

The project implementation phase is where a property agreement is signed, projects are implemented, and results are tracked and reported.

**Process:** The following steps are taken in the *project implementation* phase

1. **Property Owner Agreement (POA) executed:** The Town will conduct a title search to verify all owners of the property. A POA is executed by the property owner(s) and the Town outlining all terms and conditions.

2. **POA certified:** The Town Clerk determine the sufficiency of the agreement and, where it is sufficient, certifies it. The clerk's certification of the agreement as sufficient is final and binding.
3. **Advance funding disbursed if requested:** The initial payment (up to 30%) of the total estimated funding amount and is available after signing the Property Owner Agreement and before completing the project. CCAM will submit a cheque requisition to Finance to trigger a review and approval by the Treasurer, initiate the receivable and the first installment to the homeowner.
4. **Payments processed.** Payments will be processed through Great Plains software system and to be paid through electronic fund transfer.
5. **Work implemented:** The homeowner proceeds with the project according to the POA.
6. **Final EnerGuide evaluation completed:** Homeowner schedules a final home energy evaluation to verify the work and savings.

#### Key Program Staff and Partners:

- Town: CCAM, Legal/Clerk, Financing
- Partners: NRCan Registered Energy Advisors, Contractors, Utilities

#### Supporting Documentation: POA

### 3.2.2.4 – Project Completion

The project completion phase comes after home upgrades are complete and involves amending the POA, verifying and reporting results and imposing the LIC.

**Process:** The following steps are taken in the *project completion* phase:

1. **Work Completion Form submitted:** The homeowner submits a Work Completion form along with supporting documentation (contractor invoices and final EnerGuide label and report).
2. **Application reviewed and approved:** CCAM staff review work completion form and all supporting documentation, append final funding schedule (based on actual costs) to the POA. The Town should aim to turn-around final approval within ten business days.
7. **Final funds disbursed:** CCAM disburses final funds to homeowner (or contractor if authorized by homeowner). CCAM will submit a cheque requisition to Finance to trigger a review and approval by the Treasurer, initiate the receivable and the final installment to the homeowner.
3. **Local improvement roll prepared:** The Treasurer prepares LI roll
4. **Bylaw for Benefitting Properties prepared:** CCAM develops 'Bylaw for Benefitting Property' and issues notice to public with a description of a specific work and program that the municipality has undertaken. Notice of the proposed local improvement roll that is prepared is also issued to the property owners liable to be specially charged.
5. **Local improvement roll certified:** Provided there are no objections, the Treasurer certifies the local improvement roll, Finance attaches this to the bylaw, and the bylaw is sent to Council for approval. Bylaws for each benefitting property sent to Council in batches 4-5 times per year.
6. **Priority lien recorded:** Finance records the priority lien, updates tax assessment roll and updates the public LIC Register. Finance will require the appropriate GL accounts to map LICs and repayments.

7. **LIC repaid:** The homeowner pays the LIC via their property tax.
8. **LIC managed:** Finance collects payments (regular and early repayments) and monitors delinquencies, follows up with homeowners regarding non payments, and prepares monthly reports on status of all LICs. The Central Square software system will be auto mapped to allocate any loan repayments and the associated loan interest to the correct account. Interest regarding overdue accounts is not to be applied to the loan – it is to be billed and coded as per the regular tax penalties. Finance will allocate interest to the remaining loan balance on the balance sheet if this is an FCM requirement. Otherwise, Finance will use the actual monthly blended rate as per current standard operating procedure.
9. **Prepare monthly status reports of LICs.** Finance will conduct a monthly analysis of LIC accounts in the general ledger.
10. **Homeowner record updated:** CCAM staff will update the homeowner record in the Pilot database based on information in the work completion form, final EnerGuide label and report, contractor invoices, and NRCan EnerGuide house files.
11. **Progress reported:** CCAM is required to report on program impact to Council and all funding sources (e.g. FCM). An annual report will be prepared from the Pilot database to support progress reports and may include information on number of homeowners engaged, number of homes that participated, loan volume, energy and GHG savings.

#### **Key Program Staff and Partners:**

- Town: Finance (Lead), CCAM, legal/Clerk
- Partners: Registered Energy Advisors, NRCan, Utilities

**Supporting Documentation:** Work Completion Form, Contractor Invoices, EnerGuide Label and Report, NRCan house files detailing initial and final EnerGuide results, POA and funding schedule amendment, Bylaw for benefitting properties, local improvement roll, public and property owner notices.

### **3.2.3 – Key Town roles and responsibilities**

The Town key steps, activities and touch points are summarized in Figure 4 along with the lead department responsible and the other Town departments that may be involved either directly (to support) or indirectly (kept informed as required). A detailed description of the process is provided in Appendix A.

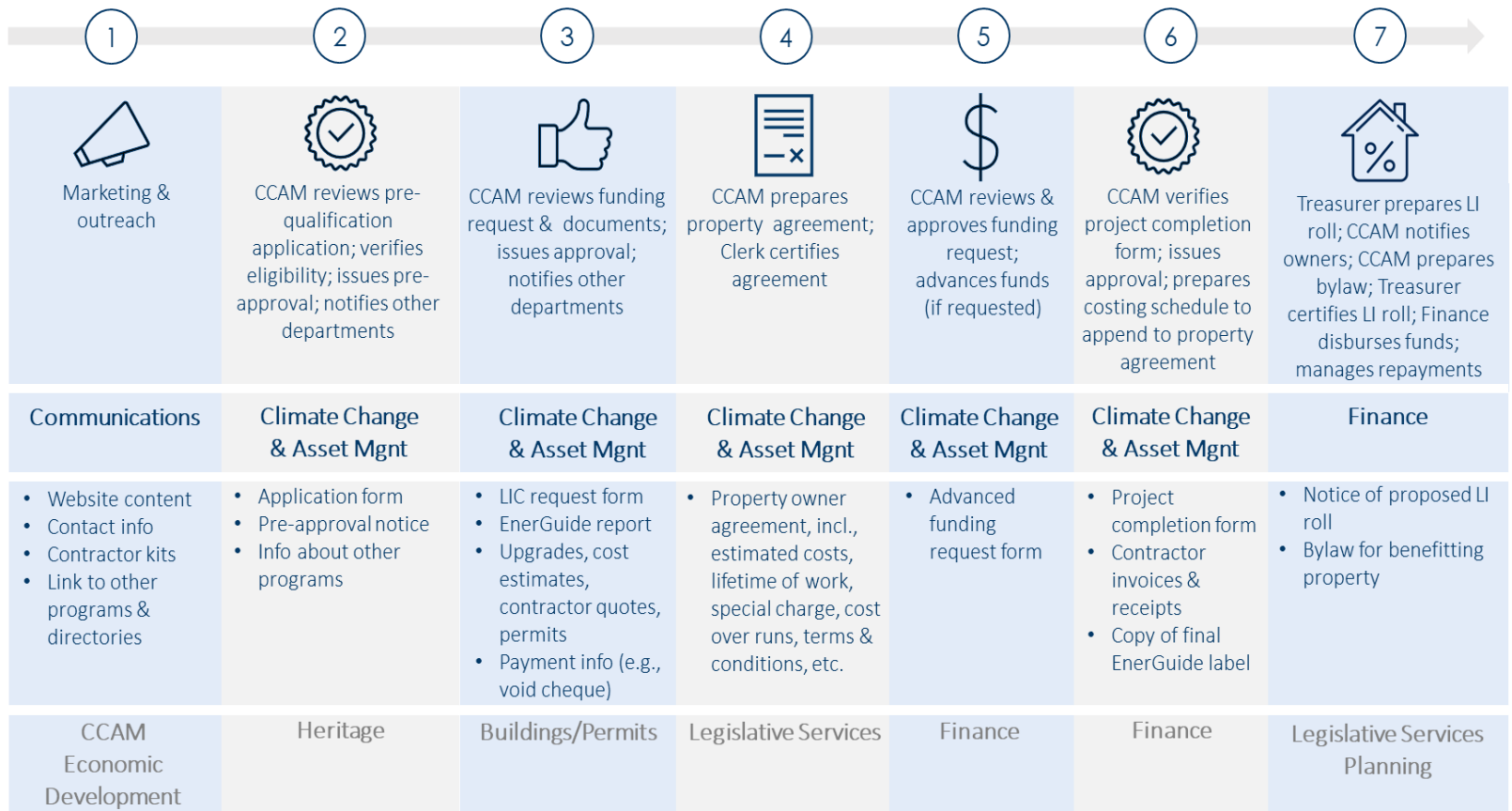


Figure 4: Town of Halton Hills Internal Process

## 3.3 – Estimated Impacts

### 3.3.1 – Participation

The Town's Pilot budget is based on an estimated 20 homes participating and an average LIC of approximately \$20,000. An energy and economic analysis performed as part of the Retrofit Halton Hills Business Case Report<sup>6</sup> modelled three adoption scenarios based on the experience in other jurisdictions<sup>7</sup>. Pilot adoption ranges from 20 – 205 homes over 3 years. Table 9 shows the estimated Pilot participation over the next three-years for the three adoption scenarios. The Low Scenario aligns with the pilot projects and budget. The Medium and High Scenarios will demonstrate greater demand and result in earlier than anticipated transition to a full program or expanded pilot.

Because the Pilot is new and there is uncertainty as to how the market may respond, the projections are shown as a range. Estimates can be affected by various factors, including impacts out of the Town's control (COVID impacts, economics conditions, fluctuations in fuel prices); change in political priorities; industry capacity and capability; the effectiveness of marketing and outreach and the size and scope of projects homeowners choose to undertake, among other things.

Table 9: Pilot adoption scenarios, new and cumulative adoption over first 3 years

Scenario	New adoptions per year			Cumulative adoptions per year		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Low	5	8	8	5	15	20
Medium	20	25	40	20	45	85
High	55	65	85	55	120	205

Typically, participation is initially low, and increases over time as the program is optimized to cater to market needs, as awareness increases and as some equipment in homes reach the end of their useful life.

#### External Factors May Affect Pilot Uptake

External factors outside the Town's control can negatively or positively affect Pilot uptake. For example, the federal government budget 2021 committed \$2.6B over 7 years to offer homeowners a combination of grants and loans to improve the energy efficiency of their homes. The program will be delivered by the Canadian Mortgage and Housing Corporation. Details on the interest-free loan is currently not available, which has created uncertainty as to how the federal loan may impact the Town's planned Pilot. The Town will continue to monitor developments and may revise aspects of the Pilot once more details are available.

<sup>6</sup> Dunskey Energy Consulting. 2021. Retrofit Halton Hills Business Case Report.

<sup>7</sup> The low adoption scenario is based on the early Toronto HELP pilot, the medium adoption scenario is based on a revised Toronto HELP program following pilot modifications and the high scenario is based on the California HERO program.

### 3.3.2 – Budget

The Town has a total budget of \$600,800 (The Town contribution is \$300,000 and FCM's grant contribution is up to \$300,800). The estimated budget is based on total LICs (\$400k) and Pilot administration costs (\$200,800).

The estimated Pilot budget (prepared by Dunsky based on experience in other jurisdictions) is around \$410,000 over three years (see Table 10) for a 'Medium Adoption Scenario'. This budget includes all costs such as existing staff and additional delivery costs as needed (e.g., additional support, marketing and outreach, etc.). The Town can also use this budget estimate to understand the long-term administration costs (whether delivered by the Town or a third-party). However, it is noted that the 'Medium Scenario' has the Town reaching the 20 homes in year 1. The Town will require additional funding if it wishes to continue the Pilot beyond the planned 20 homes. It should be noted that adding more program design features to increase adoption will incur additional operational costs.

*Table 10: Estimated operational budget for the next three years (excluding loan disbursement) for medium adoption scenario*

Year	Program Administration				Total
	LIC set up and administration <sup>a</sup> (Finance)	Marketing and Outreach (Communications)	Program Coordination <sup>b</sup> (Climate Change & Asset Management)	Revenues from application fees <sup>c</sup>	Total Halton Hills
2021	\$15,000	\$50,000	\$115,000	\$9,000	\$171,000
2022	\$15,000	\$30,000	\$115,000	\$10,800	\$149,200
2023	\$15,000	\$20,000	\$115,000	\$15,300	\$134,700

<sup>a</sup> We assume 0.15 FTE to prepare the new finance IT system, which is already capable to manage LICs), test LIC modules, train staff and manage LICs.

<sup>b</sup> This cost reflects 1.0 full time equivalent (i.e., multiple staff time to support the Pilot equates to one full time employee, but no one Staff will spend 100% of their time on the Pilot). Program Coordination includes all Staff time (existing staff and additional support (e.g., student, analyst, other) to administer the Pilot (marketing, outreach, manage inquiries, review applications, support participants, engage key stakeholders). Additionally, Staff will conduct ongoing planning, research and evaluation to prepare for the eventual transition from pilot to program.

<sup>c</sup> A one-time \$450 administration fee per participating home partially covers the cost to administer the Pilot.

While we present three years of operational budget, two operational costs will remain until the LICs are repaid, regardless of whether the pilot transitions to a program or if the Town decides to halt the initiative, including:

1. **Payment Defaults:** We estimate Payment Default at 1% of the principal loan repayments due every year.
2. **Loan billing and administration:** Until all the loan are fully repaid, the Town will incur loan billing and administration fees, for the finance dedicated staff.



# 3.4 – Timeline

Figure 5 shows the planned timeline for program rollout, implementation, and evaluation.

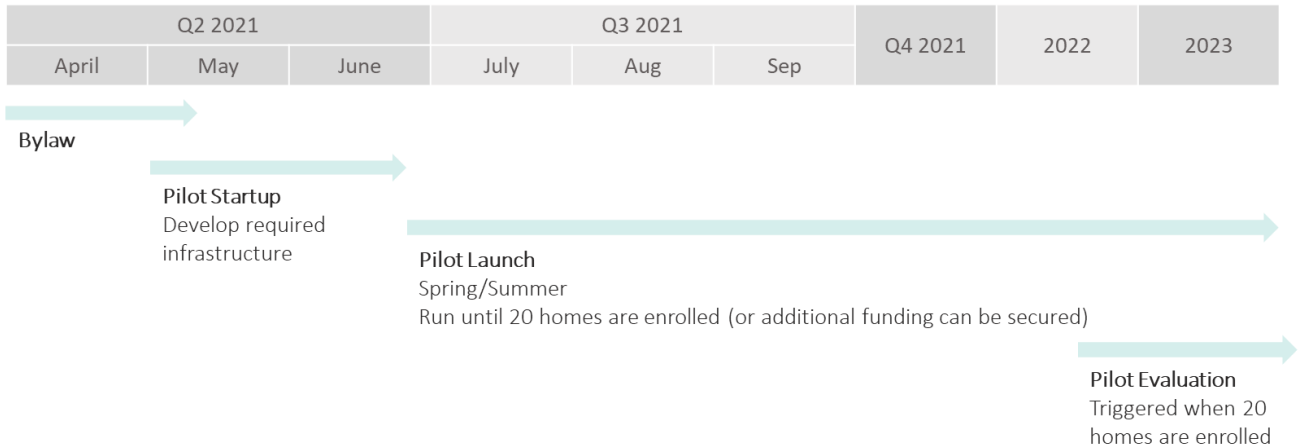


Figure 5: Pilot Timeline

## 4 Preliminary Evaluation Plan

The Town will use the Pilot evaluation plan to produce clear evidence of success (or failure) and determine whether to expand (with or without modifications) or discontinue the program. The evaluation plan is about embedding evaluation into pilot design and delivery. Effective evaluation relies on clearly articulating the challenge, how the pilot design intends to address the problem, and conveying the pilot outcome criteria to determine success.

The evaluation plan is based on industry accepted evaluation protocols to ensure that the Pilot is effectively delivered, established processes are followed and that savings estimates are credible.

The evaluation plan includes the following:

- **Key Objectives and estimated impacts:** The evaluation plan sets out the criteria will be used to determine the pilot's success or failure and the estimated impacts.
- **Evaluation Framework:** The framework describes the evaluation principles to achieve meaningful and valid results, links the Pilot objectives to evaluation questions and data sources, and evaluation timeline.
- **Responsibility:** This section describes who is expected to lead and participate in evaluation activities.
- **Evaluation Dependencies:** This section describes the factors that may affect evaluation timelines and results.
- **Communicating Results:** This section details the internal and external target audience and how evaluation results will be communicated.

### 4.1 – Key pilot objectives and estimated impacts





#### 4.1.1 – Key Objectives

The evaluation will assess the Pilot's success based on the following desired outcomes:

1. Set up program infrastructure & optimize internal processes.
2. Engage /coordinate external stakeholders.
3. Demonstrate the need for & benefits of financing.
4. Test model to help close the gap between existing home performance & net zero carbon.
5. Test the pilot's ability to attract external investment.

#### 4.1.2 – Estimated Impacts

We modelled three scenarios based on four potential energy and GHG reducing retrofit packages that would likely be considered depending on a home's space and water heating characteristics, including fuel switching, medium retrofit and deep retrofit and solar. Each is described below.

	 Fuel Switching	 Medium Retrofit	 Deep Retrofit	 SolarPV
<b>Space &amp; Water Heating</b>	<ul style="list-style-type: none"> <li>• Diesel or Propane</li> </ul>	<ul style="list-style-type: none"> <li>• All fuels</li> </ul>	<ul style="list-style-type: none"> <li>• All fuels</li> </ul>	<ul style="list-style-type: none"> <li>• All fuels</li> </ul>
<b>Measures</b>	<ul style="list-style-type: none"> <li>• Heat pump (central high or low efficiency)</li> <li>• Air Sealing</li> <li>• Insulation (attic and basement)</li> <li>• Fuel switching from water heating</li> </ul>	<ul style="list-style-type: none"> <li>• Heat pump</li> <li>• Air sealing</li> <li>• Insulation (attic, basement, exterior wall)</li> <li>• Space cooling</li> <li>• Water heating</li> <li>• Efficient Windows/ Doors</li> </ul>	<ul style="list-style-type: none"> <li>• Heat pump</li> <li>• Air Sealing</li> <li>• Insulation (attic, basement, exterior wall)</li> <li>• Space cooling</li> <li>• Water heating</li> <li>• Drain water heat recovery</li> <li>• Heat/Energy Recovery Ventilator</li> </ul>	<ul style="list-style-type: none"> <li>• Electrification of water heating</li> <li>• Electrification of space heating (heat pump)</li> <li>• Solar array</li> </ul>
<b>Estimated Costs</b> (excludes utility rebates)	<ul style="list-style-type: none"> <li>• \$11,500</li> </ul>	<ul style="list-style-type: none"> <li>• \$18,500</li> </ul>	<ul style="list-style-type: none"> <li>• \$30,000</li> </ul>	<ul style="list-style-type: none"> <li>• \$24,000</li> </ul>
<b>Repayment Terms</b>	<ul style="list-style-type: none"> <li>• 5 years</li> </ul>	<ul style="list-style-type: none"> <li>• 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• 15 years</li> </ul>
<b>GHG Reductions (tCo2e)</b>	<ul style="list-style-type: none"> <li>• 4.9</li> </ul>	<ul style="list-style-type: none"> <li>• 3.2</li> </ul>	<ul style="list-style-type: none"> <li>• 4.1</li> </ul>	<ul style="list-style-type: none"> <li>• 4.0</li> </ul>

**Note:** The retrofit packages are illustrative to model estimated economic, energy and GHG impacts. Homeowners will ultimately choose the energy conservation measures that are tailored to their home and preferences. There may be many permutations.

The estimated impacts based on 20 participating homes is shown in Table 11.

Table 11: Estimated impacts of 20 participating homes

Property type	Single Family Detached Built between 1970 and 2000
Total number of units	20
Avg. floor area of one unit (sq. ft)	2,000
Avg. annual natural gas use (m3)	2,100
Avg. annual electricity use (kWh)	15,000
Total avg. annual energy use (GJ)	130 GJ
Total avg. GHG emissions (tCO <sub>2</sub> e)	5 tCO <sub>2</sub> eq
<b>Package 1 – Fuel switching for propane or diesel</b>	
Number of packages	3
Cost of package (\$)	11,500
Estimated annual energy savings (GJ)	46
Estimated annual GHG savings (tCO <sub>2</sub> e)	4.9
<b>Package 2 – Medium Retrofit</b>	
Number of packages	12
Cost of package (\$)	18,500
Anticipated energy savings (GJ)	54
Anticipated GHG savings (tCO <sub>2</sub> e)	3.2
<b>Package 3 – Deep Retrofit</b>	
Number of packages	3
Cost of package (\$)	30,000
Estimated annual energy savings (GJ)	68
Estimated annual GHG savings (tCO <sub>2</sub> e)	4.1
<b>Package 4 – Solar PV Retrofit</b>	
Number of packages	2
Cost of package (\$)	24,000
Estimated annual energy savings (GJ)	81
Estimated annual GHG savings (tCO <sub>2</sub> e)	4.0

We present estimated program impacts for each ‘adoption scenario’ in Table 12. As the pilot is relatively lean on program enhancements reducing market barriers, adoptions and impacts might be closer to the lower bound. Program design considerations (e.g., integrating financing into a broader EE and RE ecosystem, providing additional homeowners support, contractor tools, etc.) could increase program adoption and associated impacts (as illustrated in the medium and high adoption scenarios).

Table 12: Estimated cumulative impacts for low, medium and high adoption scenarios over the first 3 years.

Impacts	Low	Med	High
Number of program participants	20	85	205
Cumulative annual energy impacts (GJ)	1,340	4,670	11,500
Cumulative annual GHG impacts (tCO <sub>2</sub> e)	80	290	730

## 4.2 – Evaluation framework

The Evaluation plan must balance an easy process to track energy savings and to access reliable, relevant, and meaningful results with budget, time, and resource constraints. The evaluation plan is guided by five key principles:

1. **Measurable:** Evaluation design should clearly define what measurements will be used to determine Pilot success and follow industry best practices and established processes so that results are credible.
2. **Objective:** Evaluation results should be highly reliable, unambiguous and consist of an honest and transparent assessment of the Pilot's contribution to the Town's goals and the cost and benefits of taking the pilot to scale.
3. **Relevant:** The evaluation objectives and activities should consider all relevant variables and criteria to assess alignment with the Town's goals and priorities and criteria for measuring success.
4. **Valuable:** Evaluations should always be conducted with the objective of creating value for all stakeholders, namely by effectively communicating the results and implementing improvements based on the evaluation's conclusions and recommendations.
5. **Manageable:** The EM&V process should be reasonable and practical given the Pilot's size, budget, time, and resource constraints, while maintaining the appropriate level of rigour.

The pilot evaluation will largely be qualitative given the Pilot's size and key objectives and measures of success drawing on standard energy efficiency program evaluation guidelines and practices, including:

- Program design and implementation review (i.e., document and file review)
- In-depth interviews with key program staff and partners/key market actors
- Surveys with Pilot participants and nonparticipants
- Analysis and verification of pilot tracking data

A common thread in all evaluations is the importance of identifying program data needs and establishing robust data collection and tracking mechanisms early on. Effective data collection will facilitate future evaluations – particularly for monitoring and reporting the pilot progress toward objectives, measuring of success, and improving the pilot (and eventual program).

Table 13 maps each Pilot objective to evaluation questions and the data sources / approach to facilitate monitoring, measuring, and reporting pilot success and opportunities for improvement.

Table 13: Map of pilot objectives to evaluation criteria and data sources

Pilot Objectives	Evaluation Criteria
<b>Objective 1: Set up program infrastructure &amp; optimize internal processes</b>	
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>• Was the pilot administered internally (across all relevant departments) with assigned resources and reasonable effort?</li> <li>• Can the pilot be administered at a reasonable cost to the Town and homeowners with the aspirational goal of being cost neutral?</li> <li>• How will budget be impacted if the pilot expands to a full program (as is and with adaptations)? <i>See the text box below on future program considerations/adaptations.</i></li> <li>• Should the Town or 3rd party administer a future program? If it is a 3rd party model, what elements does the Town keep and what do they hand off?</li> <li>• Were Pilot participants satisfied with their experience and are the costs/time/effort to participate deemed reasonable?</li> </ul>
<b>Data Sources</b>	<ul style="list-style-type: none"> <li>• Document Review (Pilot design report, including Pilot Logic Model, data tracking system, forecast and actual budget)</li> <li>• Analysis of costs if program were to expand (as is and with enhancements)</li> <li>• Interviews with key Town Staff (CCAM, Finance, Communications, Economic Development, etc.)</li> <li>• Service Halton Hills</li> <li>• Participant surveys</li> </ul>
<b>Objective 2: Engage/coordinate external stakeholders</b>	
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>• Has the Town effectively engaged/coordinated activities with external stakeholders?</li> <li>• Has the pilot clearly defined external stakeholder's role (delivery support, ally, promote)?</li> <li>• What Town support is needed to continue if the program scales up?</li> </ul>
<b>Data Sources</b>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key partners/market actors (NRCan, Energy Advisors, Utilities, Contractors, etc.)</li> </ul>
<b>Objective 3: Demonstrate the need for &amp; benefits of financing</b>	
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>• Has the pilot addressed a need for and demonstrated benefits for: <ul style="list-style-type: none"> <li>○ Homeowners (larger projects, flexible underwriting, etc)</li> <li>○ Internal stakeholders, e.g., Economic Development Strategy &amp; green economy</li> <li>○ External stakeholders, e.g., contractors (e.g., recognize financing as a tool to sell larger, higher efficient projects, close the deal, etc.)</li> </ul> </li> </ul>
<b>Data Sources</b>	<ul style="list-style-type: none"> <li>• Rapid-fire participant surveys following project completion</li> <li>• Participant and non-participant surveys</li> <li>• Qualitative interviews with internal and external stakeholders</li> </ul>
<b>Objective 4: Test model to help close the gap between existing home performance &amp; net zero carbon</b>	
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>• How deep are participants retrofitting homes (measured by project costs, energy and GHG savings) &amp; what is required to close the gap to net zero?</li> <li>• What is the limiting factor for achieving near net-zero; the financing available, or the technical/market barriers?</li> <li>• What adaptations need to be made to the program design to enable homeowners to get to near/net zero goal? <i>See text box below on future program considerations/adaptations.</i></li> <li>• What other external factors should be considered (e.g., provincial/federal incentives, future existing building retrofit codes, etc.) that financing can support/complement?</li> </ul>



Pilot Objectives	Evaluation Criteria
<b>Data Sources</b>	<ul style="list-style-type: none"> <li>Pilot participant tracking database including NRCAN house files</li> <li>Market survey of other programs/services available</li> </ul>
<b>Objective 5: Test the pilot's ability to attract external investment.</b>	
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>Has the pilot provided sufficient proof of concept to attract private investment (e.g., FCM, Regional government, 3rd party program administrators, private financial institutions)?</li> <li>What is required to attract private investment (e.g., volume, loan loss reserve to mitigate risk)?</li> </ul>
<b>Data Sources</b>	<ul style="list-style-type: none"> <li>Interviews with key Town Staff (CCAM, Finance)</li> <li>Market survey with 3rd party administrator/finance partners</li> </ul>

## Future Program Considerations/Adaptations

The Town will investigate and explore possible Pilot adaptations through evaluation. This will inform decision makers on whether the Pilot should transition to a full program and how it can be optimized. Key considerations are identified below.

### Process and Cost Optimizations

- Administrative Models:** Municipal involvement can span from a light touch (e.g., a 3<sup>rd</sup> Party Turnkey Model) to deep involvement (The Town administers all activities)
- Funding options:** Capital can be provided by the Town, external funding sources (e.g., FCM) or a partner third-party financial institution (e.g., local credit union).

**Design adaptations to enable homeowners to get to near/net zero goal).** Other jurisdictions deploy various enabling strategies to enhance success, including, but not limited to:

- Hands-on support for homeowners** (e.g., Energy Coach) to help homeowners overcome program and project complexity (e.g., navigating programs, undertaking projects, time/disruption).
- Contractor tools, resources, and training.** Contractor technical training ensures that measures are installed correctly so energy savings materialize and homeowners benefit. Program-specific training extends limited market and outreach dollars and that contractors deliver a clear consistent message.
- Long-term engagement:** It is unlikely that all pilot participants will undertake comprehensive retrofits of their entire home at once. Indeed, the Retrofit Halton Hills survey showed that almost 70% prefer to spread out the cost and work of a deep home energy upgrade. Homeowners may benefit from *personalized renovation roadmaps* to identify and prioritize projects over 5-10 years. The Town could also *allow homeowners to re-enter the program*, extend the LIC amount and term to add new measures over time and upon approval through simplified process (post-EnerGuide assessment becomes pre-assessment, POA revised, etc.)
- Additional measures:** The Town may be able to attract more homeowners to the program with additional measures like EV charging infrastructure, battery storage, etc.

### External factors outside of the Town's control that may influence pilot/future program.

- COVID has changed homeowners relationship with their home. The Retrofit Halton Hills Survey reported 42% of homeowners experienced a change and almost 60% see this as lasting). They are spending more time at home and see value in upgrading to be more efficient and comfortable.
- Changes in policy and programs (priorities, funding opportunities, other LIC programs/partners, etc.)
- Market trends

### 4.2.1 – Evaluation Timeline

The evaluation will be triggered when the target 20 homes have complete projects or at the end of three years, whichever comes first. It is recommended that the Town start evaluation while the pilot is running given the cost and complexity to develop and implement a financing program such as this and to continue to learn.

The Town should begin **evaluation planning when 20 homes have enrolled but before 20 homes have completed projects** (e.g., 10 homes). Evaluation planning includes engaging an evaluation consultant (if required) and building off the high-level plan herein to develop a detailed evaluation plan. This will ensure that evaluation activities are ready to begin when 20 projects are complete.

Evaluation activities should be conducted quickly and results available within 1-2 months. This will ensure a timely Council recommendation to extend the pilot or transition to a full program and secure required funding and resources.

A high-level evaluation schedule illustrating when evaluation activities will be triggered is shown in Figure 6.

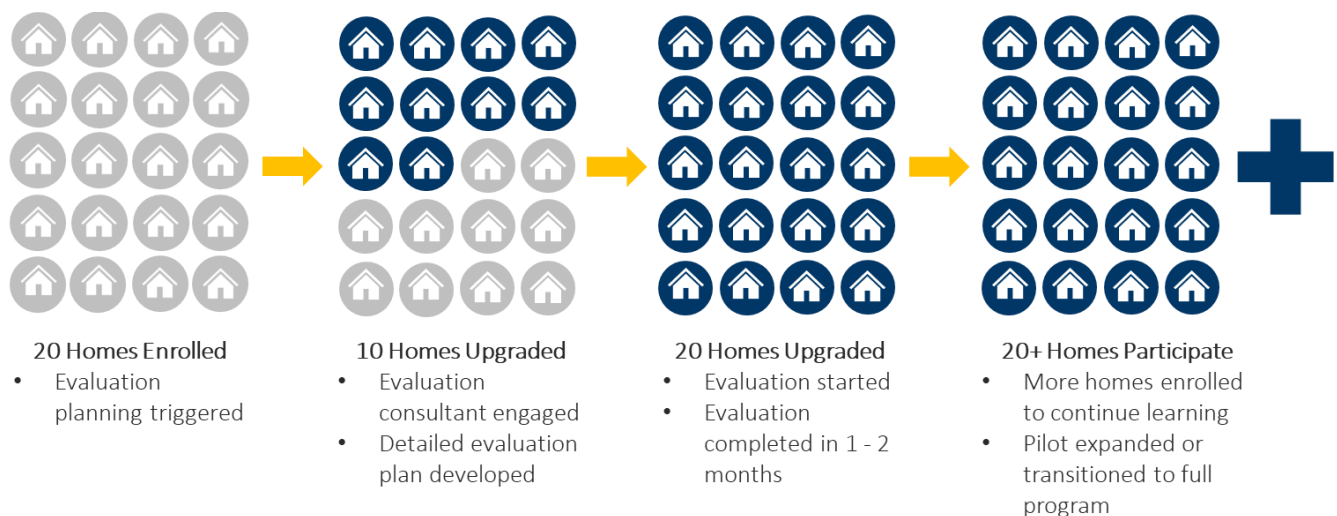


Figure 6: Evaluation schedule

## 4.3 – Responsibility

The Climate Change & Asset Management Team will lead evaluation activities, including contracting third-party evaluator (if applicable) and coordinating documents and data sharing/access requirements, and ensuring evaluation timelines are being followed. All relevant staff and departments will actively participate in the evaluation (e.g., provide relevant background information and context, and participate in interviews).

A third-party evaluator (if applicable) will develop a detailed evaluation plan (building off the preliminary plan herein) and implement all evaluation activities and report on key findings and recommendations.

## 4.4 – Evaluation dependencies

Several factors can influence an evaluation's efficiency and effectiveness, including:

- **Resources:** Assign appropriate resources (staff and tools) to monitor and track data required for evaluation (at the program outset in anticipation of future evaluations) and ensure sufficient and experienced resources are in place to lead and support evaluation activities.
- **Funding:** The cost of evaluation varies with the frequency, complexity, and scope of data collection and analysis. There are trade-offs between expected evaluation benefits and program costs / limited resources. Evaluation costs and rigour should be proportionate to the program scope, savings, and the degree of uncertainty around existing estimates of savings. Evaluation typically cost 3-5% of annual program budgets.
- **Engaging stakeholders:** The evaluation can be impacted by stakeholder's willingness and ability to participate in evaluation. This can be mitigated by making evaluation participation a requirement under the Pilot agreement and / or offering incentives to encourage participation.
- **Data limitations:** Limited access and data sharing and / or gaps in data can create challenges. It will be critical to track and document project results in a central location, consistently and accurately.

## 4.5 – Communicating results

Evaluation results are important, and the conclusions and recommendations will provide credible impact estimates, optimize the Pilot and identify direct core decisions about a full-fledged program. For evaluation to be effective and useful requires results to be accessible to a broad audience and given quickly to decision makers who will decide whether the Pilot should end, continue, or become a full-fledged program. Thus, it is critical that the evaluation be timely and that the report be transparent, concise, understandable, and actionable.

Results will be communicated to four main audiences:

1. **Halton Hills Staff:** The evaluation and subsequent report will provide clear actionable steps that can be taken to improve the Pilot design and delivery and if the Pilot expands to a full-fledged program. While the formal evaluation will be conducted when 20 projects have been completed, Halton Hills is encouraged to conduct internal evaluations and communicate results (celebrate successes and provide constructive feedback toward continuous improvement) to the team and partners early and often.
2. **FCM:** As a recipient of FCM CEF funding, Halton Hills is required to prepare a semi-annual report that includes specific details on Pilot activities and performance. Information will be reported through FCM's standard reporting templates (see Appendix A for a link to FCM's reporting template).
3. **Halton Hills Council and Halton Region:** Elected officials will be keen to measure progress toward the Low-Carbon Transition Strategy and report progress to constituents. The evaluation results will also be used to inform future policy directions and program funding.
4. **Other Municipalities:** There is currently only one other municipality in ON with an LIC Program (Toronto HELP), although others are expected to follow suit with FCM CEF Funding support. The Town has an opportunity to share their experience, lessons learned, trends and insights with other municipalities across Canada to facilitate peer learning.

The Town will communicate evaluation results in several ways, including:

1. Making the evaluation report publicly accessible on the Retrofit Halton Hills webpage and Let's Talk Halton Hills
2. Communicating program impacts to Council and relevant committees,
3. Collecting case studies, stories and data trends that highlight financing successes and communicating through the Pilot's website, through newsletters, community events, etc., and
4. Presenting program results, lessons learned and best practices through one-on-one interactions, at municipal conferences and industry events, etc.

# Appendix A: Pilot Administration Process Document

The detailed pilot administration process is described in the table below.

## 4.5.1 – Admin Process: Set-up

Prep-work required before Pilot Launch		
Step	Town action needed	Departments Involved
<b>Legal and Finance Review</b>	<ul style="list-style-type: none"> <li>A legal and/or financial expert review is required for the following: <ul style="list-style-type: none"> <li>O. Reg 586/06 to interpret requirement to pass a bylaw for each benefitting property, whether payments must be 11 equal installments and preauthorized payments (TO model) or if they can be applied to typical billing cycle (twice per year) and whether a 3<sup>rd</sup> party service provider could deliver a future program.</li> <li>Appropriate term lengths and interest rates.</li> <li>Whether the accounting and interest rate policy requires updating to allow the Town to define term lengths and interest rates, or whether the bylaw approval can address this.</li> <li>Whether the Pilot administration fees will require updating the Fee bylaw or whether the LIC bylaw can address this.</li> <li>Direction on financial accounting and reporting requirements</li> </ul> </li> </ul>	<b>CCAM</b>
<b>Draft Bylaw</b>	<ul style="list-style-type: none"> <li>Address recommended LIC elements to include in bylaw (see section 3.1.2 in the Retrofit Halton Hills Pilot Design Report) and within boundaries of <a href="#">O. Reg 586/06</a></li> </ul>	<b>CCAM</b>
<b>Council Approval</b>	<ul style="list-style-type: none"> <li>Obtain Council approval on pilot design</li> </ul>	<b>CCAM</b>
<b>Develop/test finance specific infrastructure</b>	<ul style="list-style-type: none"> <li>The Town's new billing system is capable of registering LICs however the Town will need to develop processes, train staff and test modules prior to launch on how to prepare the local improvement roll, certify the LI roll and manage repayments.</li> <li>Automate as much as possible</li> </ul>	<b>Finance (Lead) CCAM (Support)</b>
<b>Develop / test Pilot infrastructure</b>	<ul style="list-style-type: none"> <li>Develop online portal/email to accept online applications.</li> <li>Develop pilot tracking database to track and monitor applications, approvals, denials, project status, energy and GHG savings and LIC disbursements.</li> <li>Develop review and approval process to assess eligibility at various stages (pre-qualification, funding request and work completion)</li> <li>Develop list of NRCAN Licensed Service Organizations and Registered Energy Advisors that can conduct EnerGuide evaluations – align with Enbridge's approved list to ensure homeowners can access rebates.</li> <li>Establish links to recognized contractor directories (e.g., Renomark)</li> <li>Map staff roles and responsibilities including all internal departments, specific staff by role or functions and what they are responsible for at each step.</li> </ul>	<b>CCAM</b>

Prep-work required before Pilot Launch		
Step	Town action needed	Departments Involved
Develop required forms	<ul style="list-style-type: none"> <li>• <b>Pre-qualification form:</b> This should be a simple 2-3-page document to confirm applicant eligibility, for example, home ownership, location, single family home, occupancy, age of home, energy use, property tax &amp; utility information (to confirm in good standing)</li> <li>• <b>Pre-qualification notice to proceed:</b> includes a Retrofit Halton Hills Reference number and offer homeowners guidance on next steps. CCAM will review pre-qualification with Finance to ensure it meets Finance requirements and includes the electronic funds transfer application details as per Town standard operating procedures.</li> <li>• <b>Funding Request Form:</b> This form requests homeowners provide a list of planned improvements, including estimated costs based on contractor quotes, EnerGuide rating and Renovation Upgrade Report and any payment details as required. Applicants will also indicate whether they will exercise the option of receiving an initial disbursement of funds prior to completing their project to pay for materials or secure a contractor (i.e., security deposit). This initial payment is up to 30% of the total estimated funding amount and is available after signing the Property Owner Agreement and before completing the project.</li> <li>• <b>Property agreement:</b> A Property Owner Agreement (POA) is the funding agreement between the property owner(s) and the Town specifying all terms and conditions. As per O. Reg 586/06 s. 36.2 (5), the agreement must include, <ul style="list-style-type: none"> <li>○ the estimated cost of the work;</li> <li>○ the estimated lifetime of the work;</li> <li>○ a description of the apportionment method and the amount of the special charges to be specially charged;</li> <li>○ the manner in which a cost overrun or under run is to be dealt with, if the actual cost of work differs from the estimated cost of the work;</li> <li>○ when the special charges are to be paid; and</li> <li>○ process in the event the property is sold prior to LIC fully repaid.</li> </ul> </li> <li>• <b>Work completion form:</b> This form details the list of actual improvements, final costs and contractor invoices, and final EnerGuide rating. The Town may also wish to ask if the homeowner has applied to other rebate programs (although this will not be deducted from the total amount).</li> <li>• <b>Bylaw for benefitting properties:</b> As per O. Reg 586/06 Section 36.5 (1), it may pass a by-law to undertake the work as a local improvement for the purpose of raising all or any part of the cost of the work by imposing special charges on the property which the local improvement will be located.</li> <li>• <b>Bylaw notice to public:</b> As per O. Reg 586/06 Section 36.6 (1) before passing a by-law to undertake a work as a local improvement, the municipality shall give notice to the public of its intention to pass the by-law. The public notice of the intention to pass the by-law shall include: <ul style="list-style-type: none"> <li>○ a description of a specific work the municipality intends to undertake; or</li> <li>○ a description of a program that the municipality has or intends to establish to undertake the types of works set out in the notice.</li> </ul> </li> <li>• <b>Bylaw notice to homeowners:</b> As per O. Reg 586/06 Section 36.11 before a special charge is imposed, the Town must give notice of the proposed local improvement roll that is prepared to the property owners liable to be specially charged.</li> </ul>	CCAM (Lead) Legal / Clerk (Support) Finance (Support)



Prep-work required before Pilot Launch		
Step	Town action needed	Departments Involved
	<ul style="list-style-type: none"> <li>• <b>Loan schedule:</b> Finance will help to create a loan schedule Excel template to allow CCAM to calculate the amount of each annual payment based on the approved project funding request and LIC terms and conditions.</li> <li>• <b>Cheque requisition:</b> Finance requires a cheque requisition form following CCAM project funding approval prior to disbursing funds.</li> </ul>	
<b>Develop marketing and outreach strategy</b>	<ul style="list-style-type: none"> <li>• Develop broad awareness campaign, engage pilot partners and industry, and develop targeted messaging</li> </ul>	
<b>Engage potential partners</b>	<ul style="list-style-type: none"> <li>• The Town will engage, and enter into memorandum of understandings or agreements (where required), with key partners, including:               <ul style="list-style-type: none"> <li>○ <b>Local utilities</b> (Halton Hills Hydro &amp; Enbridge) to promote the pilot and complementary programs, coordinate and streamline processes for homeowners where possible, share information/data to support targeted messaging, attribute savings, evaluate performance, etc.</li> <li>○ <b>FCM</b> to execute a Partnership Agreement once final terms and conditions of the FCM CEF program are known, including applicant and participant obligations.</li> <li>○ <b>NRCan</b> to share and access EnerGuide house files, coordinate and streamline access to the Federal Green Homes program and access Free EnerGuide home evaluations (once available).</li> <li>○ <b>Service Organizations/Energy Advisors</b> to educate about the Pilot and ensure capacity to conduct EnerGuide evaluations required for homeowners to participate in the Pilot.</li> <li>○ <b>Contractors/Industry Associations</b> (BILD, West End Home Builders Association) to educate and promote the Pilot and benefits, ensure qualified, skilled contractors are available to perform the required work.</li> <li>○ <b>Halton Environmental Network</b> for concierge services and support.</li> <li>○ <b>Environmental/community groups</b> to promote the pilot.</li> </ul> </li> </ul>	<b>CCAM (Lead) Economic Development Communications</b>

#### 4.5.2 – Admin Process: Implementation

Admin Process – What happens once an application is submitted?			
Stage in Process	Step	Town action needed	Departments Involved
<b>1 Marketing/Outreach</b>	Inform homeowners and contractors about the Pilot, benefits, how it works and how	<ul style="list-style-type: none"> <li>• Implement '<b>Marketing Strategy</b>' to raise awareness and recruit participants:               <ul style="list-style-type: none"> <li>○ <b>Resources for homeowners:</b> Easy to access and clear FAQ pages, engaging social media/news ads, promotional videos, webinars, etc.</li> </ul> </li> </ul>	<b>CCAM (Lead) Communications, Economic Development (Support)</b>

Admin Process – What happens once an application is submitted?				
Stage in Process		Step	Town action needed	Departments Involved
		homeowners can apply	<ul style="list-style-type: none"> <li>○ <b>Resources for contractors:</b> A section of the website dedicated to contractor resources, including targeted outreach such as informational webinars as well as advertising via contractor associations, local hardware stores, etc.</li> </ul>	
2	Application	Homeowner submits online application for pre-qualification	<ul style="list-style-type: none"> <li>• Homeowner submits <b>'Pre-qualification Form'</b>: to confirm eligibility through online portal/email</li> </ul>	CCAM
		Town staff pre-qualify and issue a notice to proceed	<ul style="list-style-type: none"> <li>• CCAM reviews pre-qualification form to verify eligibility and creates record in Pilot tracking system.</li> <li>• CCAM staff issues <b>Pre-qualification Notice to Proceed'</b> that includes a Retrofit Halton Hills Reference number and guidance on next steps.</li> <li>• CCAM staff update homeowner record in pilot tracking database</li> </ul>	CCAM
		Notify other relevant departments	<ul style="list-style-type: none"> <li>• If home built on or before specific year (year of construction to be determined in consultation with Sr. Heritage Planner), CCAM staff notify Sr. Heritage Planner to engage homeowner about the process to identify potential energy improvements and how to ensure the home's cultural heritage value and character are not compromised.</li> </ul>	CCAM (Lead) Planning and Development (Support)
3	Funding Request and Approval	Homeowner sets up initial EnerGuide evaluation	<ul style="list-style-type: none"> <li>• Homeowner refers to list of NRCan Licensed Service Organizations and Registered Energy Advisors that can conduct EnerGuide evaluations on Town website.</li> </ul>	CCAM
		Homeowner chooses home improvements, selects contractors and procures contractor quotes	<ul style="list-style-type: none"> <li>• Homeowner refers to contractor directories and other available rebate programs on Town website</li> </ul>	CCAM
		Homeowner submits full funding request based on audit results	<ul style="list-style-type: none"> <li>• Homeowner <b>submits 'Funding Request Form'</b> through online portal or email.</li> <li>• CCAM staff review eligibility, funding request and costs, and potential to stack utility incentives.</li> <li>• CCAM staff cross references with relevant departments (e.g., Building Services) to ensure all appropriate permits have been issued for work and verifies that contractor costs are reasonable, and that the contractor has a valid municipal business license and/or HST number.</li> </ul>	CCAM

Admin Process – What happens once an application is submitted?				
Stage in Process		Step	Town action needed	Departments Involved
			<ul style="list-style-type: none"> <li>CCAM staff update homeowner record in pilot tracking database.</li> </ul>	
4	Property Owner Agreement	Town staff prepare agreement	<ul style="list-style-type: none"> <li>CCAM will develop a <b>loan schedule</b> using an Excel template.</li> <li>CCAM and homeowner execute '<b>Property Owner Agreement</b>' (POA)</li> </ul>	CCAM
		Town and homeowner execute agreement	<ul style="list-style-type: none"> <li><b>Town Clerk must certify POA</b></li> </ul>	CCAM (Lead) Legal / Clerk (Support)
		Advance funding if requested	<ul style="list-style-type: none"> <li>CCAM approves advance funds (if requested) This initial payment is up to 30% of the total estimated funding amount (identified in the Funding Request Form) and is available <i>after</i> signing the Property Owner Agreement and before completing the project.</li> <li>CCAM submits a <b>cheque requisition to Finance</b> to trigger a review and approval by the Treasurer, initiate the receivable and the first installment to the homeowner.</li> <li>Finance processes payments through Great Plains software system and to be paid through electronic fund transfer.</li> </ul>	CCAM (Lead) Finance (Support)
5	Project Implementation	Homeowner hires contractor	<ul style="list-style-type: none"> <li>Link homeowner to contractor directories on website</li> </ul>	CCAM
		Homeowner submits post-audit and proof of completion	<ul style="list-style-type: none"> <li>Homeowner submits '<b>Work Completion Form</b> via online portal or email along with supporting documentation (e.g., Final EnerGuide label and report, contractor invoices)</li> </ul>	CCAM
		Town review and disburse final LIC amount	<ul style="list-style-type: none"> <li>CCAM staff verify that work completion form is complete, and all supporting documentation is submitted and verifies that contractor costs are reasonable, and that the contractor has a valid municipal business license and/or HST number.</li> <li>CCAM staff update and append final funding schedule (of actual costs) to the POA.</li> <li>CCAM approves final funds to homeowner (or contractor if authorized by homeowner)</li> <li>CCAM submits a cheque requisition to Finance to trigger a review and approval by the Treasurer, initiate the receivable and the final installment to the homeowner.</li> </ul>	CCAM (Lead) Finance (Support)
6	Prepare LI roll	Prepares LI roll	<ul style="list-style-type: none"> <li>Treasurer prepares LI roll.</li> </ul>	Finance

Admin Process – What happens once an application is submitted?				
Stage in Process		Step	Town action needed	Departments Involved
		Prepare Bylaw for Benefitting Properties Notify public and property owners	<ul style="list-style-type: none"> <li>CCAM develops '<b>Bylaw for Benefitting Property</b>' using template.</li> <li>CCAM issues '<b>Notice to public</b>' and '<b>Notice to Property Owners</b></li> </ul>	<b>CCAM (Lead)</b> <b>Legal / Clerk (Support)</b>
		Treasurer certifies LI roll Bylaw sent to Council Priority lien recorded Tax assessment roll updated	<ul style="list-style-type: none"> <li>Treasurer certifies LI roll.</li> <li>Finance attaches certification to bylaw, forwards to legal for review and sends to City Clerk to prepare Bylaw for Council (Bylaws for each benefitting property sent to Council in batches 4-5 times per year)</li> <li>Finance records priority lien, updates tax assessment roll</li> <li>Finance maps appropriate GL accounts to LICs and repayments</li> </ul>	<b>Finance (Lead)</b> <b>Legal / Clerk (Support)</b>
		Update public LIC Register	<ul style="list-style-type: none"> <li>CCAM staff update LIC Register and disclose on website</li> </ul>	<b>CCAM (Lead)</b>
<b>7</b>	<b>Repayment</b>	Applicant pays back loan via LIC on property tax	<ul style="list-style-type: none"> <li>Finance collects payments (regular and early repayments) and monitors delinquencies, follows up with homeowners regarding non payments.</li> <li>The <b>Central Square software system</b> will be auto mapped to allocate any loan repayments and the associated loan interest to the correct account. Interest regarding overdue accounts is not to be applied to the loan – it is to be billed and coded as per the regular tax penalties. Finance allocates interest to the remaining loan balance on the balance sheet if this is an FCM requirement. Otherwise, Finance will use the actual monthly blended rate as per current standard operating procedure.</li> <li>Prepare monthly reports on status of LICs.</li> </ul>	<b>Finance</b>
<b>8</b>	<b>Reporting</b>	CCAM is required to report on program impact to Council and all funding sources (e.g. FCM)	<ul style="list-style-type: none"> <li>An annual report will be prepared from the Pilot database to support progress reports and may include information on number of homeowners engaged, number of homes that participated, loan volume, energy and GHG savings</li> </ul>	<b>CCAM</b>

# Appendix B : Supporting Documentation

The list below provides links to relevant documents:

1. Retrofit Halton Hills Business Case Report
2. Retrofit Halton Hills Survey Results
3. FCM\_CEF Loan Portfolio Semi-annual Reporting Template



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