

Home Energy Loan Program and High-rise Retrofit Improvement Support Program Evaluation

Date: March 21, 2017

To: Parks and Environment Committee

From: Chief Corporate Officer

Executive Director, Social Development, Finance and Administration

Wards: All

SUMMARY

The Residential Energy Retrofit Pilot Program was adopted by City Council in 2013 and launched in January 2014. It supports residential property owners in undertaking energy efficiency and water conservation improvements through financing enabled by amendments to the City of Toronto Act's Local Improvement Charge regulation. The Program operates as two streams – the Home Energy Loan Program and the High-rise Retrofit Improvement Support Program – which apply to eligible single-family houses and multi-residential buildings in Toronto, respectively.

A third-party evaluation of the Residential Energy Retrofit Pilot Program was completed in 2017 to examine the successes and challenges of the Program and identify potential refinements that could increase program participation and impacts. This report seeks City Council authorization for program refinements as part of the continued implementation of the Home Energy Loan Program and the High-rise Retrofit Improvement Support Program.

RECOMMENDATIONS

The Chief Corporate Officer and Executive Director, Social Development, Finance and Administration recommend that:

1. City Council extend the pilot period for the Home Energy Loan Program (HELP) to December 31, 2018, to align with a Council-approved extension of High-rise Retrofit Improvement Support Program (Hi-RIS), and direct the Chief Corporate Officer and Executive Director, Social Development, Finance and Administration to report back on both programs to the Parks and Environment Committee with an evaluation of outcomes and, if appropriate, a business case for a full-scale program.

2. City Council amend the Residential Energy Retrofit Pilot Program to:
 - a) increase the maximum special charge eligibility to be the lesser of 10 percent of the current value assessment of the property or \$75,000 (single-family house) and the lesser of 10 percent of the current value assessment of the property or \$2,000,000.00 per building (multi-residential building).
 - b) increase the initial disbursement to be up to 30 percent of the estimated cost of improvements for a single-family house pursuant to a property owner agreement, at the discretion of the Director, Environment and Energy Division.
 - c) revise the program eligibility for the multi-residential program stream to include residential rental apartment buildings of three or more storeys and seven or more units.
 - d) clarify that the sales tax portion of project costs is to be included as part of the special charge.
 - e) expand the category of eligible measures to include renewable energy technologies.
3. City Council amend the Residential Retrofit Program By-law (By-law No. 1105-2013) to reflect the changes to the Program recommended in Recommendation 2.
4. City Council authorize the Director, Environment and Energy Division and Director, Community Resources, Social Development, Finance and Administration Division to review and, where necessary, revise the Residential Energy Retrofit Pilot Program from time to time, solely for the purpose of integrating the City's program with new or existing Federal, Provincial and utility company energy, climate change and poverty reduction programs.
5. City Council authorize the City Solicitor to bring forward the necessary bills to further amend the Residential Retrofit Program By-law to implement Recommendation 4.
6. City Council authorize the Chief Corporate Officer and Executive Director, Social Development, Finance and Administration to enter into any agreements with third party partners integral to implementing these recommendations, upon terms satisfactory to them and in forms satisfactory to the City Solicitor, to support implementation of the Residential Energy Retrofit Pilot Program, as required.
7. City Council request the Government of Canada to address the legal and policy barriers that appear to contribute to lower participation in local improvement charge programs, particularly for property owners with default-insured mortgages.

FINANCIAL IMPACT

No additional financial commitments are required from the City to support the initiatives outlined in this report.

Funding of \$1.0 million to continue the Home Energy Loan Program is included in the 2017 Approved Capital Budget for Facilities, Real Estate and Environment and Energy (FREEE) funded by the Local Improvement Charge Energy Works Reserve Fund (XR1724). In addition, funding of \$0.233 million is included in the 2017 Approved Operating Budget for FREEE.

The 2017 Approved Budget for Social Development, Finance and Administration (SDFA) includes funding of \$4.5 million in 2017 and an additional \$2.1 million in the 2018 Outlook to support the High-rise Retrofit Improvement Support Program, with funding from the Local Improvement Charge Energy Works Reserve Fund (XR1724).

The Local Improvement Charge Energy Works Reserve Fund was established by the City with a \$20 million contribution to support pilot implementation and will be used to fund its continuation, subject to City Council approval through the budget process as required.

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its July 2013 meeting, City Council approved a three year energy and water efficiency pilot program for the residential sector ([EX33.22/2013](#)). Subsequently, the Home Energy Loan Program (HELP) and High-rise Retrofit Improvement Support Program (Hi-RIS) were launched in 2014 to support the single-family housing and multi-residential building sectors, respectively. Each program was allocated a \$10 million funding envelope to be administered to qualifying property owners interested in undertaking retrofit investments.

In April 2015, City staff provided an interim update on the progress of the pilot program to the Parks and Environment Committee ([PE3.2/2015](#)).

At its December 2016 meeting, City Council approved *TransformTO: Climate Action for Healthy, Equitable and Prosperous Toronto - Report #1* ([PE15.1/2016](#)). It prioritizes energy efficiency within the residential sector as a key emission reduction strategy to support the City's established GHG reduction targets (i.e. 80% GHG reduction by 2050). Among the TransformTO short-term actions, Council approved business case 1.5 *Continue support for residential property owners* to accelerate greater uptake for the energy performance of existing houses and apartment buildings. City Council also directed the City Manager to advocate to the Provincial and Federal governments for program funding, co-delivery opportunities and related policy and regulatory supports necessary to implement the TransformTO Short-term Strategies.

At its December 2016 meeting, City Council adopted the 2017 work plan and progress report for *TO Prosperity - Toronto Poverty Reduction Strategy*. The 2017 workplan identifies the High-rise Retrofit Improvement Support (Hi-RIS) program as an initiative that supports the recommendation to improve the quality of affordable housing for all.

At its meeting in February 2017, as part of the 2017 budget, City Council approved:

- The 2017 budgets for Facilities Management, Real Estate and Environment & Energy which includes \$1.0 million in capital funds and \$0.233 million in operating expenses funded from the LIC reserve to maintain the delivery of the Home Energy Loan Program in 2017.
- The 2017 budget for the Social Development, Finance and Administration Division which includes a recommendation for the continued implementation of Hi-RIS in 2017 and 2018, fully funded from the LIC reserve. The budget also approved two enhancements to support Hi-RIS program uptake: i) the addition of one temporary position for a 2 year period at \$0.139 million gross funded from the LIC reserve and ii) funding of \$0.050 million to be provided by Enbridge Gas for a conservation engagement program to support uptake of energy efficiency.

COMMENTS

OVERVIEW

The City of Toronto launched the Residential Energy Retrofit Pilot Program in January 2014 to provide financing to support residential property owners in taking action on energy and water efficiency and conservation improvements. Toronto was the first Ontario municipality to exercise new authority provided in an amendment to provincial Local Improvement Charges (LIC) regulation, as part of a comprehensive initiative for the residential housing sector.

The Residential Energy Retrofit Pilot Program operates as two streams: the Home Energy Loan Program (HELP) managed by the Environment and Energy Division and the High-rise Retrofit Improvement Support Program (Hi-RIS) managed through the Tower Renewal Program in the Social Development, Finance and Administration Division.

HELP and Hi-RIS (the Programs) were designed to address key barriers that prevent residential property owners from investing in energy efficiency - high, upfront capital cost and lack of information. Through a 'one-window' service delivery model, property owners gain access to financing, utility rebates and incentives and support services including energy assessment and project development support. This model has created a pathway for property owners to successfully complete energy efficiency retrofits.

A distinguishing feature of the LIC in comparison to conventional financing is that the payment obligation attaches to the benefitting property, not the owner, and is secured by the City's statutory priority lien. If a property changes ownership, the new owner has the option of assuming the financial obligation - and the benefit of the associated energy cost savings - and continuing to make payments to the City until the special charge is fully paid. Property owners also have the option of repaying the LIC in full.

The focus of the Programs is to test the market receptivity to the new financing mechanism, assess its ability to accelerate uptake for energy efficiency improvements and evaluate how the Programs align with the City's environmental, housing quality and affordability and economic development objectives.

HELP and Hi-RIS were awarded the Federation of Canadian Municipalities (FCM) Sustainable Communities Award in 2016 for innovative energy program. The Programs were also finalists in 2016 for the C40 Cities Awards which recognizes excellence in climate leadership.

Process

The Programs allow eligible property owners to voluntarily access financing from the City to undertake such improvements as high-efficiency heating systems, insulation, lighting and upgrading windows and doors. Property owners enter into an agreement with the City, thereby allowing the City to impose a special charge on the participating property equal to the amount of the cost of the improvements, plus the cost of borrowing at a fixed interest rate and an administrative charge recouped by the City. Payments are made via as a special charge on the property tax bill over a period of up to 15 years for single-family houses and up to 20 years for multi-residential buildings.

Table 1: Program Overview

| | HELP | Hi-RIS |
|--------------------------------|---|---|
| Target Markets & Participation | Single Family Houses Approximately 1000 houses | Multi-Residential Buildings Approximately 1000 apartment units |
| Eligibility | Single-family dwellings with fewer than 7 units | Buildings of 5 or more storeys |
| Program Leads | Environment & Energy | Tower & Neighbourhood Revitalization Unit, SDFA |
| Funding Envelope | \$10 million | \$10 million |
| Cost of Funding: | Borrowing costs over term plus an administrative charge of 2.0% | Borrowing costs over term plus an administrative charge of 0.8% |

| | |
|---------------------------------|---|
| Maximum Funding Eligibility: | Up to 5% of current assessed value (MPAC) |
| Financing Offer | Low-interest, fixed rate loans with 5, 10, 15 & 20 (Hi-RIS only) year payment terms Payments via special charge on property tax bill |
| Retrofit Improvements Supported | Building envelope improvements, mechanical systems (including lighting) and water conservation improvements |

More information about the HELP and Hi-RIS eligibility and application processes can be found at:

HELP: www.toronto.ca/home-energy-loan

Hi-RIS: www.toronto.ca/tower_renewal

Equity Impact

The Programs seek to support the City's priority groups including people with disabilities, seniors and low-income residents as well as women and children. The Programs are designed to assist these residents by improving housing conditions and maintaining housing affordability and thereby, their economic and social well-being.

To date, activities in support of this goal have included:

- Outreach in Neighbourhood Improvement Areas;
- Referrals to low income programs offered by the utility companies;
- Direct marketing and cross-promotion with Enbridge Gas including outreach to buildings eligible for the Enbridge Gas Affordable Housing Program which provides enhanced incentives;
- Outreach to the social housing sector to build awareness with multi-residential housing providers that serve resident groups including seniors, low-income residents and people with disabilities; and
- A restriction in the property owner agreement that prevents owners from applying for rent increases above the applicable provincial guideline for any funds received through Hi-RIS.

PROGRAM PILOT REVIEW

The City of Toronto retained Dunskey Energy Consulting through a competitive process to undertake an independent review and evaluation of the Programs to meet the following objectives:

1. Assess the overall impact of the Programs with respect to supporting energy and water savings and greenhouse gas emission reductions, and benefits such as improving housing condition; maintaining housing affordability and supporting economic development;

2. Propose program design and implementation refinements to improve program participation and increase the implementation of energy efficiency improvements in Toronto.

The review was completed between December 2016 and February 2017. The objectives were achieved through a process and impact evaluation, drawing on energy efficiency program evaluation best practices, as described below:

- A review of program design, administration and business processes: The consultant conducted a detailed document review and in-depth interviews with the program administration team and other key implementation stakeholders.
- Stakeholder Engagement: Semi-structured interviews were conducted with program applicants, dropouts, participants, non-participants and project contractors. For HELP, 30 participant interviews were completed in addition to a survey targeting energy advisors and contractors. For Hi-RIS, all program participants were interviewed as well as 2 contractors. Additionally, an interim evaluation included interviews with 5 program dropouts and non-participants.
- Program Impacts: The assessment of program impact consisted of a review program files, research and analysis on economic factors and environmental impacts and verification of energy and water savings estimates. Stakeholder engagement results were also considered.
- Program Benchmarking: Each program stream was reviewed and compared to similar initiatives in Canada and the US. The benchmarking included research and review of best practices of other programs to identify potential refinements.
- Market Assessment: An assessment was conducted to identify energy savings potential in the marketplace and the anticipated legislative/ regulatory context.

The scope of the evaluation was constrained by access to data and privacy constraints on participant information. Additionally, the lack of established evaluation methodologies for some identified key performance indicators was a limiting factor.

PROGRAM EVALUATION RESULTS

1. Participation and Uptake

The participation results for HELP and Hi-RIS from January 2014 to December 2016 are provided in Table 2 below.

Table 2: Participation and Uptake

| | HELP | Hi-RIS |
|---|-------------------------------|-------------------------------|
| Pre-applications / Expressions of Interest received | 485 | 16 |
| Funding Offers | 267 | 13 |
| Retrofit projects completed/committed | 125 homes | 5 properties (6 buildings) |
| Total project expenditures | \$2.1 million (21% of target) | \$4.2 million (42% of target) |

HELP

HELP received 485 pre-applications from Toronto homeowners interested in undertaking home energy improvements. Of those, 267 applicants satisfied the program eligibility requirements and were presented with a funding offer by the City. A total of \$2.1 million in capital funds was committed to 125 individual projects which represents 22% of the funding envelope. HELP was able to convert about 1 in every 4 applications into completing a retrofit project. About half of homeowners with mortgages were unable to get approval from their lender resulting in dropout at this stage. It was also commonplace for financial institutions to not permit homeowners with insured mortgages from participating in the City program. Participants also drop out because they are no longer interested, have sourced alternative financing or postponed their retrofit project.

Hi-RIS

For Hi-RIS, 16 expressions of interest were received from apartment building owners. Eligibility requirements were met by 13 properties. A total of \$4.2 million, or 42% of the funding envelope, was committed to improvement projects at 5 properties, benefitting the residents of 6 buildings or 1,078 apartment units.

Appendix A provides a map of Toronto that displays projects by ward.

2. Project Profile

Table 3 below provides a profile of typical projects funded through HELP and Hi-RIS.

Table 3: Project Profile

| | HELP | Hi-RIS |
|--|--|---|
| Average project cost | \$16,800 | \$833,400 |
| Average assessed value of the property | \$540,000 | \$27,300,000 |
| Average Simple Payback of retrofit projects | > 20 years (75% of projects) | 18 years |
| | 13 years (25% of projects) | |
| Average operating cost savings | \$560/year | \$46,000/year |
| Types of energy efficient retrofit measures undertaken | Windows and doors, heating system, insulation, air sealing | Windows and doors, roof, mechanical, water conservation |

HELP

Project costs ranged from \$1,650 to \$53,500 with an average value of \$16,800. HELP financing enabled homeowners to move ahead with improvements faster than they otherwise would. Most popular improvements completed include window upgrades, high-efficiency heating systems and insulation. Low-cost and high-impact improvements, like air sealing, recommended through an energy assessment were undertaken at the same time in addition to more costly improvements. Water efficiency (i.e. toilet replacement) was the least installed measure. Modeled energy savings suggest \$560 a year in total energy bill savings.

In terms of cost-effectiveness, about three-quarters of retrofit projects exceeded a simple payback of 20 years. Payback is the length of time required to recover the cost of an investment from energy savings. Longer paybacks are attributed to a higher project cost for many retrofits that provide energy savings and the portion of costs related to non-energy work (such as incidental repairs and remedial work) that must be completed as part of the improvements. However, for projects that only included energy efficiency measures, the average payback was closer to 13 years. Homeowners took about 7-8 months on average to complete their home renovations. Most homeowners believe their home is worth more money post-renovation, while they found energy savings as harder to quantify.

Hi-RIS

Projects ranged in scale from \$144,000 to \$2.1 million with an average project cost of \$833,000. Hi-RIS enabled owners to commence projects two to five years sooner than they would have without the program and pursue projects with longer paybacks than they would have considered otherwise. Projects took an average of two years from initial application to project completion. A range of improvements were pursued including investments in windows and balcony doors, mechanical systems and roofing upgrades. Only one Hi-RIS project pursued water conservation improvements. Projects are expected to increase building value as the energy and maintenance savings will increase the net operating income.

3. Energy, Environmental, Employment & Social Impacts

Table 4 provides an overview of key environmental, social and employment impacts of the Programs.

Table 4: Energy, Environmental, Employment & Social Impacts

| | HELP | Hi-RIS |
|---|-----------------------------------|-------------------------------------|
| Average savings per year | 65 GJ/project | 5,439 GJ/project |
| Average natural gas reduction | 34% | 27% |
| Average electricity reduction | 12% | 1% |
| Average total energy reduction | 30% | 23% |
| Average greenhouse gas emission reductions | 395 tonnes eCO ₂ /year | 1,431 tonnes eCO ₂ /year |
| Jobs created | 30 jobs | 60 jobs |
| Projects in Neighbourhood Improvement Areas | 11 of 125 | 2 of 5 |

HELP

HELP supported comprehensive, multi-measure improvement projects that achieved deep energy reductions of 30%. Natural gas savings (34%) dominated and considerable greenhouse gas emission reductions were realized from natural gas displacement. Average electricity reduction was 12%. An enhanced quality of life for participants through improved home comfort and the prospect of saving on energy bills were cited as primary motivations for making energy efficiency improvements. It is estimated that about 30 jobs were created by HELP during the 3 year pilot period.

HELP on average supported 65 GJ in total energy savings per home which surpasses typical EnerGuide results (44 GJ). HELP also supported homeowners by funding non-energy improvements - such as electrical panel upgrades, demolition and construction waste disposal and environmental remediation - which do not contribute to directly energy savings but are critical to addressing prior to the commencement of energy efficiency measures.

Hi-RIS

Hi-RIS supported a range of comprehensive improvements resulting in an average energy reduction of 23% and contributed to needed investment in building upgrades. On average, projects achieved 5,439 GJ (1,555,097 ekWh) in total annual savings. Savings were almost exclusively attributable to natural gas savings and thus, significant greenhouse gas emission reductions are being realized. It is estimated that about 60 jobs were created by Hi-RIS during the 3 year pilot period.

A key benefit of the Programs is that the criteria do not specify an energy savings minimum. For Hi-RIS, this allowed participants to achieve diverse benefits. In addition to energy savings, these included investment in building upgrades, greater comfort for residents which enhances quality of life and support tenant retention and marketability. Further, Hi-RIS projects help to address City priorities regarding reinvestment in rental apartment buildings and Tower Renewal, poverty reduction and climate change action.

Appendix B provides a summary of gross and lifetime energy and greenhouse emissions reductions for the Programs.

4. Financial Impacts

Over the course of the pilot period, the total project commitments and disbursements as of December 2016 are as follows:

| | |
|--------|-----------------|
| HELP | \$2.077 million |
| Hi-RIS | \$4.167 million |
| TOTAL | \$6.244 million |

The \$6.244 million was committed to properties for projects between January 2014 and December 31, 2016. These amounts will be repaid to the City over time (subject to financing terms selected by the property owner) via a special charge on the property tax bill of participants. Borrowing costs are also recouped by the City through an interest rate applied to the project cost amount for the purpose of recovering the City's forgone investment income on the funds used by the Programs.

Administration charges totalling \$0.075 million were assessed to participating properties to help recover program operating expenditures. Additionally, funding totalling \$708,000 was secured through agreements with external funding sources including The Atmospheric Fund, Independent Electricity System Operator and Natural Resources Canada. These funds were used to further offset direct program expenditures.

Direct program expenditures incurred during the pilot period include temporary program-specific staff for HELP, marketing, technical/professional services for project verification and program evaluation activities which totalled \$705,459. The costs do not include existing staffing resources to support Program implementation from various City divisions including Revenue Services, Legal Services and Accounting Services.

Summary of program funding sources and direct expenditures as of December 31, 2016 is provided below:

| | HELP | Hi-RIS | TOTAL |
|---------------------------------|-------------|------------|-------------|
| Contributions | | | |
| External Funding Sources | \$708,000 | | \$708,000 |
| Administration Charges assessed | \$41,543 | \$33,336 | \$74,879 |
| Expenditures | | | |
| Direct Program Expenditures | (\$626,382) | (\$79,076) | (\$705,458) |
| Balance | | | \$77,421 |

The balance of \$77,421 will be applied to program operating costs throughout the extension period.

No new operating pressures were added to the tax-supported City budget in the delivery of the pilot program as a result of the grants received from external funders. As part of the pilot extension period, alternative funding models will be considered to address the long-term financial sustainability of the Programs.

PILOT PROGRAM REVIEW - KEY FINDINGS

The result of the third-party program evaluation was that HELP and Hi-RIS are effective in driving energy efficiency improvements with their respective markets. Further, utilizing the LIC mechanism was found to be successful and helped to address primary barriers to the uptake of residential energy efficiency improvements. An analysis of various elements of the Programs is detailed below:

Areas of Strength

The section below highlights elements of the Programs that were found to be positive in motivating energy efficiency improvements and contributing to overall participation:

i. High-level of customer support and satisfaction: HELP participants experienced a high-level of support when dealing with the Environment and Energy Division staff who manage the Program. An overall satisfaction rating of 8 out of 10 was experienced by participants and almost all would recommend HELP to their friends and family. The city-managed program was deemed trustworthy and adds a tremendous amount of security and peace of mind from the homeowner's perspective in dealing with the City.

All Hi-RIS participants noted a high degree of satisfaction with the support and level of responsiveness provided by City staff which ranged from application information to project development guidance. Support through the Tower Renewal STEP Program was also noted by participants as a strong influence to their participation in Hi-RIS.

ii. Easy application process: Most participants found the multi-stage application process to be clear and straight forward. The effort involved in completing forms and steps in the overall process was reasonable to obtaining financing.

iii. Enabled participants to do more projects: HELP participants installed over 3 energy and water efficiency measures per project which achieved an EnerGuide score increase of approximately 16 points. A number of Hi-RIS participants were able to use Hi-RIS to finance energy retrofits then access capital from conventional sources to undertake other retrofit projects addressing other Tower Renewal and City priorities. Overall, Hi-RIS helped to support increased reinvestment in the rental housing stock.

iv. Benefits of the LIC mechanism: A unique feature of the Programs and the local improvement charge is the automatic transfer of the financial obligation to a future owner at time of sale. Most homeowners found benefit in the loan being attached to the property, not the owner. The ability to pay the charge via property taxes is considered a great advantage over other credit means.

Some multi-residential building owners saw a benefit to the LIC in that the financing does not require a mortgage encumbrance on the property. The program evaluation also noted that repayment through the LIC mechanism allows for longer repayment terms than many conventional financing options and may not impact debt limit.

Areas of Improvement

The section below highlights elements of the Programs that should be improved upon to better support the needs of participants and improve their Program experience:

i. Marketing and promotions: As new offerings, the level of program awareness was low for both HELP and Hi-RIS. HELP was initially available in select neighbourhoods at the outset and became a city-wide program in April 2015. In-person and direct marketing approaches, combined with community and industry-based outreach, were found to be most effective in building awareness but labour intensive and difficult to sustain over time.

ii. Mortgage lender consent: Mortgage lender consent is required as part of the HELP program to ensure that lenders will not consider a homeowner's enrollment in the City's program to be a breach of the homeowner's mortgage terms. HELP applicants with mortgages had mixed experiences when interacting with their financial institutions to obtain consent. This stage of the application process was the primary stage for dropout as only about half of participants were able to get consent. Participants encountered the following issues when dealing with their financial institution: lack of awareness for the City program, conflicting information from representatives within an organization, no clear policy on how to handle requests and lengthy turnaround times.

Hi-RIS did not require documentation of lender consent. Applicants were informed that as a condition of the agreement with the City, property owners must ensure that they comply with obligations to financial institutions or other lenders who have a mortgage interest in the property. Most participants were not negatively impacted by this requirement; however, two agreements at one property were cancelled because lender consent could not be obtained.

A key challenge identified by City staff is that various laws and policy appear to impede the willingness of the Canadian Mortgage and Housing Corporation (CMHC) to extend mortgage insurance to cover local improvement charges. These barriers prevent property owners with default-insured mortgages from more freely participating in the Programs. Consequently, staff recommended that City Council request the Government of Canada to address these barriers.

iii. Funding Disbursements: While the initial disbursement from the City was considered quick and easy to get, many HELP participants felt the initial amount should be more than 10% of project cost. The amount is considered insufficient as a 'deposit' for homeowners to commence construction, particularly when advance purchase of equipment such as a furnace becomes part of the retrofit project. As a result, participants used credit cards and lines of credit - which carry higher interest rates - to pay contractors as a means of bridge financing before receiving the final disbursement.

For Hi-RIS, the initial disbursement was not issued for any projects.

iv. Maximum funding eligibility: In many cases, the maximum funding eligible to property owners was insufficient in meeting their building retrofit needs. The current cap placed by the City is 5% of the current value assessment (CVA) for a given property. About one-third of HELP and 2 of the 5 Hi-RIS projects exceeded the CVA maximum, which may be a limiting factor in terms of the project scope and energy savings potential that can be achieved.

Other Areas Evaluated

i. Interest rates and payment terms: Low interest rates and longer payment terms are cited by homeowners as the top reasons for participating in HELP because it minimizes borrowing costs, when compared to other financing options (i.e. credit cards, line of credit). Conversely, feedback from the multi-residential sector, including participants, was that program interest rates may not be competitive to those available in the market.

ii. Collaboration with utilities: Both Programs have effectively collaborated with Enbridge Gas to integrate with existing incentives offered by the gas utility, in addition to cross-promotion and project support. 78% of HELP applicants received a Community Energy Conservation incentive from Enbridge which helped to reduce overall project costs for homeowners.

Most Hi-RIS projects were found to not be eligible for incentives due to the nature of the improvements. Owners were connected with utilities for other supports.

iii. Staff support: While participants noted a high-level of satisfaction in their interaction with City staff, the level of staff support required was much greater than expected. Staff provide in-person, telephone and e-mail assistance to participants to aid them along the retrofit pathway. Also, considerable time was spent answering general inquiries and providing referrals to complementary programs which is not attributed as uptake for the City's Programs but still influenced energy retrofit activity in Toronto.

iv. Supporting improvement beyond energy efficiency: Both Programs provide financial flexibility to cover non-energy work linked to energy improvements, such as maintenance upgrades and environmental remediation, which simultaneously enhances building quality and durability in addition to energy efficiency. The program evaluation noted that the ability to support improvements beyond energy efficiency was an attractive feature that drove participation in similar programs from other jurisdictions.

v. Program Management: Coordination across multiple City divisions including Environment and Energy, Social Development, Finance and Administration, Revenue Services, Legal Services, Accounting Services and City Clerk was found to be operating as planned. Regular communication and check-in points between implementation staff has helped to improve the program delivery over time.

vi. Integrated Approach to Hi-RIS Implementation: The implementation of Hi-RIS has been integrated with the City's Tower Renewal Program which offers support and guidance to spur reinvestment and improvement in the City's older apartment buildings and surrounding communities. The majority of Tower Renewal buildings are privately owned rental apartment buildings targeted for the improvements offered through Hi-RIS.

Since 2011, approximately 300 buildings have been directly engaged through a number of Tower Renewal programs and initiatives. Staff connect with approximately 50 new buildings annually through the Tower Renewal STEP Program undertaking a multi-faceted assessment of opportunities for environmental and quality of life improvements at the properties. Buildings are further supported with prioritized action plans, project development assistance, information sharing and events.

All Hi-RIS participants received STEP Program services and spoke highly of the level of support provided. This integrated approach provided an effective channel for direct outreach to prospective buildings owners, particularly in the City's Neighbourhood Improvement Areas. Roughly 40% of applicants heard about Hi-RIS through STEP. The approach also enabled more detailed staff support which helped applicants to consider a broader suite of improvement measures for financing.

PROGRAM DESIGN RECOMMENDATIONS

Based on the program evaluation findings and consultation with funding partners, City staff presents a series of key recommendations in order to refine the Programs design, address known barriers to participation and stimulate greater uptake.

Recommendation #1:

Increase the maximum special charge eligibility to be the lesser of 10 percent of the current value assessment of the property, or \$75,000 (single-family house) and \$2,000,000 per building (multi-residential building).

In some cases, the maximum funding eligible to property owners was insufficient in meeting their building retrofit needs. Providing up to 10% of CVA would enable more comprehensive retrofit projects that meet the financing needs of property owners. Furthermore, expanded funding will provide additional financial capacity needed to accommodate renewable energy installations (see recommendation #4).

Recommendation #2:

Increase the initial disbursement to be up to 30 percent of the estimated cost of improvements for a single-family house pursuant to a property owner agreement, at the discretion of the Director, Environment and Energy Division.

Homeowners found the 10% initial disbursement to be insufficient. Increasing the initial disbursement to 30% will reduce the carrying costs of property owners during the construction phase of the project and reduce their reliance on more costly methods for bridge financing. Approvals for initial disbursement will be evaluated on a case-by-case basis subject to project information submitted by homeowners to the City.

In the event that a property owner receives an initial disbursement from the City and decides not to proceed with completing a project, the City is able to add the amount to the property tax bill. Unlike the LIC, Program disbursements do not have priority lien status and therefore present a small risk to the City's ability to recover these disbursements.

Recommendation #3:

Revise the program eligibility for the multi-residential program stream to include residential rental apartment buildings of three or more storeys and seven or more units.

Over the course of program delivery, property owners with buildings of 3 or 4 storeys have inquired about and expressed interest in Hi-RIS. The program evaluation corroborated these findings and recommended that adjusting the eligibility to include buildings of 3 or more storeys would help to increase program participation. With this change, the Programs effectively cover most residential properties, with the exception of apartment condominiums.

Recommendation #4:

Clarify the sales tax portion of project costs to be included as part of the special charge.

Project costs eligible for funding are to be inclusive of HST or other applicable taxes. This recommendation addresses inconsistencies in the original Program by-law as to whether HST is an eligible expense for funding.

Recommendation #5:

Expand the category of eligible measures to include renewable energy technologies.

Property owners expressed strong interest in having renewable energy projects, like solar photovoltaic rooftop panels, included as an eligible measure. Doing so would enhance the appeal of the program offering while enabling greater electricity reductions, particularly under a net metering scheme. Further, the conclusion of current Provincial Feed in Tariff program in 2017 will create an opportunity to address a market gap for renewable energy project financing. The evaluation of similar programs found renewable energy to be commonplace and a potential draw for Toronto's program to achieve greater participation.

PROGRAM OUTLOOK

The evaluation included an assessment of Toronto's residential energy retrofit marketplace which suggested that there is considerable untapped energy savings potential. When combined with anticipated supportive legislation and programs from other levels of government, favourable conditions for improved uptake for the Programs are expected.

1. Technical Potential for Residential Energy Efficiency

The natural gas savings potential is considerable within the Greater Toronto Area's residential building sector:

- Houses offer 395M m³/year by 2020 and 774 m³/year by 2030
- Apartments offer 90M m³/year by 2020 and 400M m³/year by 2030
- Space heating represents 76% and 67% of achievable savings in houses and apartment buildings, respectively.

Current eligible measures in the City's Programs support the natural gas savings opportunities identified as relevant to the residential sector including heating and hot water equipment, insulation, air sealing and high performance windows.

Over the last decade, about 5% of houses in the City of Toronto have had a home energy assessment and completed some upgrades. Vast majority of houses were built prior to 1980 and the advent of energy efficiency standards in the building code. Accounting for the proportion of households that are experiencing housing affordability, combined with those who have already participated in previous energy conservation programs, there is an estimated 932,650 houses and an estimated \$15.8 billion in addressable technical potential for energy efficiency investment.

The majority of Toronto's older apartment buildings are also built prior to 1985 and predate energy efficiency standards. For the 250 benchmarked in the Tower Renewal Program, the average energy savings potential is 33% or more. There is also potential for increased uptake supporting improvements that address deferred maintenance - such as window replacement and cladding – through Hi-RIS. Investment in these longer payback improvements that are achievable through Hi-RIS has traditionally been slow.

2. Broader Policy Context

There are a number of new and forthcoming policy directions that align with the objectives of the HELP and Hi-RIS program and City priorities which include:

i. Climate change and other initiatives launched by the Federal and Provincial governments have prioritized energy efficiency in buildings as critical to reducing fossil fuel use and greenhouse gas emissions from the built environment.

- The Pan-Canadian Framework on Clean Growth and Climate change identified existing buildings retrofits, fuel switching, improved efficiency standards for appliances and equipment and supporting building codes and energy efficiency housing as areas for federal investment, regulation and programming. The Government of Canada also identified the need for housing that is environmentally, socially and financially sustainable and contributes to climate change goals as part of consultations on the National Housing Strategy.
- Ontario's Climate Change Action Plan includes:
 - Developing a model energy retrofit code for existing buildings by 2022
 - Mandatory home energy ratings at time of listing by 2019
 - Large building energy reporting and disclosure requirement, starting in 2018
 - Expanded funding for conservation programs delivered by gas utilities
 - Additional incentives for retrofits of multi-residential buildings
- The Ontario's Cap and Trade program has passed-through to utility ratepayers added cost for fossil-fuel based heating fuels thereby improving the business case and investment return on energy efficiency investments.

ii. City Council also recently approved TransformTO which is the City's action plan for achieving an 80% emission reduction by 2050. In doing so, City Council among other things directed the City Manager to advocate to the Federal government for policy and regulatory supports necessary to implement the TransformTO Short-term Strategies, which include continued and expanded HELP and Hi-RIS Programs. TransformTO will catalyze new investment and support to improve the energy performance of existing buildings with continued support for residential property owners.

iii. An update to TO Prosperity: Toronto's Poverty Reduction Strategy was recently adopted by City Council. Hi-RIS was identified in the 2016 and 2017 workplans as supporting the recommendation to improve the quality of all affordable housing. Further, with the emphasis on maintaining housing affordability, both Programs can support this City priority.

This political context is expected to create a more favourable environment in terms of the imperative to act on energy efficiency which is expected to drive increased uptake for the City's Programs.

3. Pilot Program Continuation

The evaluation findings conclude that HELP and Hi-RIS have established a successful model that demonstrates the potential for utilizing LICs to encourage deep energy retrofits of Toronto housing.

Continuing the pilot with the refinements detailed above allows for continued testing and evaluation of the refinements in their ability to expand uptake and impacts before possibly recommending a full-scale program.

Additionally, the City will draw from best practices from similar programs in other jurisdictions and feedback from the evaluation to refine approaches to property owners and industry engagement in order to:

- **Develop deeper connections** with contractors, utility companies, energy advisors, industry associations, community partners to enhance promotions.
- **Leverage existing opportunities** to connect with target markets.
- **Automate and streamline** the multi-stage application process to improve customer experience and administrative efficiencies.
- **Advocate** to the Federal government (including agencies and corporations such as CMHC) for policy and regulatory changes necessary for implementation, such as changes to mortgage insurance rules that currently inhibit consent from financial institutions, particularly for low-moderate income households and younger homeowners.
- **Integrate with complementary** new programs and regulations that are aligned with Program goals.

Staff will also further explore alternative program design and administrative models which have proven to be successful in other jurisdictions in achieving scale-up which include:

- Mobilizing private capital to for project funding
- Engaging an external entity to lead marketing and outreach
- Streamlining internal City administrative processes
- Providing a roster of pre-qualified contractors as a support for property homeowners

Staff will report back to City Council upon conclusion of the pilot with a business case for a full-scale program, if appropriate, and based on continued evaluation of program impacts and stakeholder consultation.

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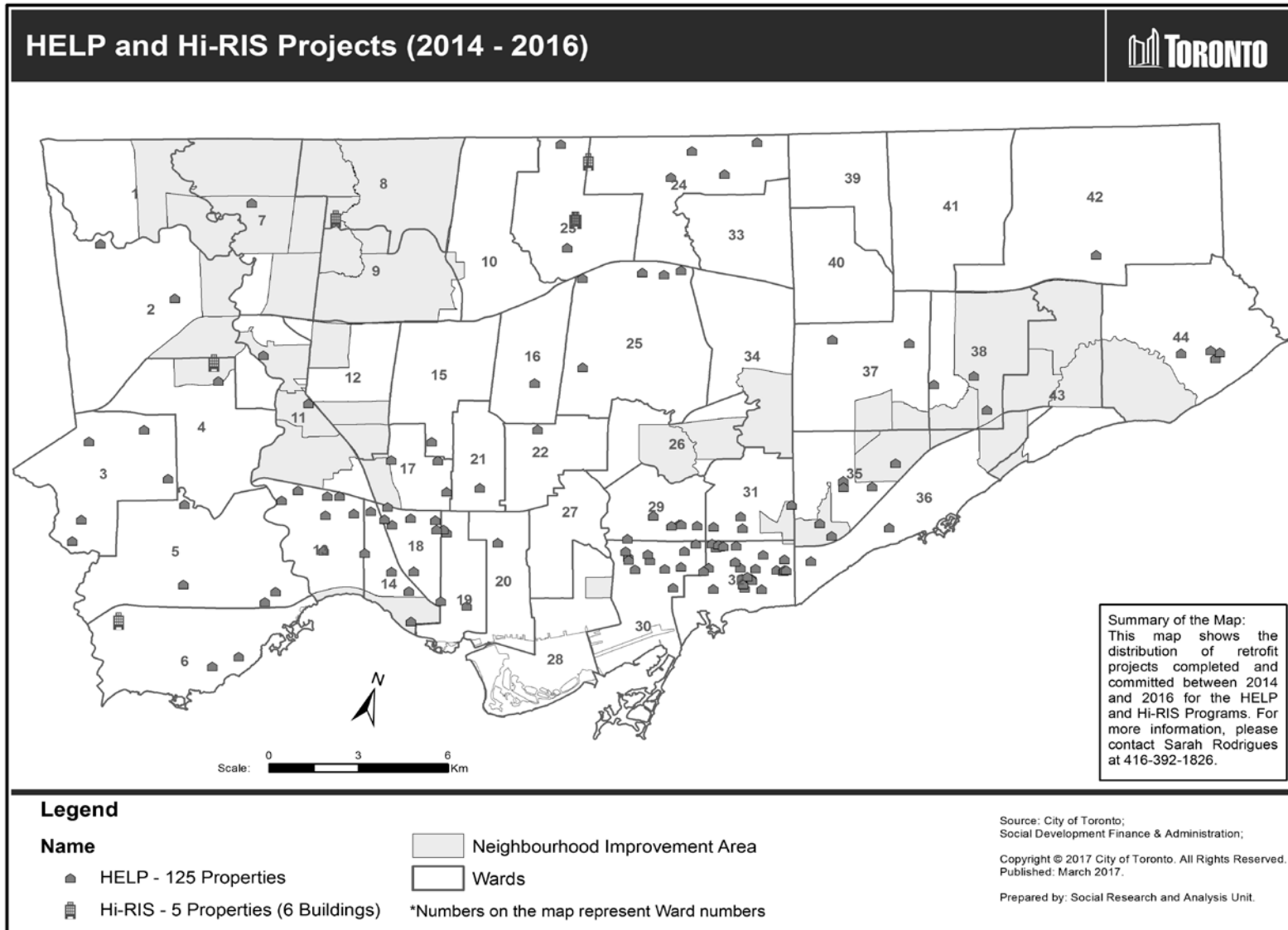
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ATTACHMENTS

Attachment A – Map of Program Participation
Attachment B – Summary of Gross Program Impacts

Attachment A – Map of Program Participants



Attachment B - Summary of Gross Program Impacts

The table below summarizes the estimated annual and lifetime energy, water and greenhouse gas emissions savings for completed and committed projects that have been supported by the Programs from 2014-2016. Lifetime amounts are calculated based on the average of the estimated useful life – the number of years that the retrofit projects are expected to last. The average estimated useful life is 20 years and 28 years for HELP and Hi-RIS respectively.

| | HELP | | Hi-RIS | |
|-------------------------------------|-----------------------------|-------------------------------|-------------------------------|--------------------------------|
| | Annual | Lifetime | Annual | Lifetime |
| Natural Gas Savings | 204,000 m ³ | 4,080,000 m ³ | 725,000 m ³ | 20,300,000 m ³ |
| Electricity Savings | 158,230 kWh | 3,164,600 kWh | 51,000 kWh | 1,428,000 kWh |
| Water savings | 690 m ³ | 13,800 m ³ | 2,500 m ³ | 37,500 m ³ * |
| Total energy savings | 8,170 GJ | 163,400 GJ | 27,000 GJ | 756,000 GJ |
| Greenhouse gas emissions reductions | 395 tonnes CO _{2e} | 7,900 tonnes CO _{2e} | 1,400 tonnes CO _{2e} | 39,200 tonnes CO _{2e} |

* The lifetime amount for water savings in Hi-RIS is calculated using an estimated useful life of 15 years as specified in the energy assessment report for water conservation retrofit projects.