TORONTO

STAFF REPORT
ACTION REQUIRED

Proposed Energy and Water Efficiency Initiative for the Residential Sector

Date:	June 18, 2013
To:	Executive Committee
From:	City Manager Deputy City Manager and Chief Financial Officer
Wards:	All
Reference Number:	P:\2013\Internal Services\E&E\Ec13003e&e (AFS #16651)

SUMMARY

This report seeks City Council approval to undertake a pilot program designed to advance funding to consenting property owners interested in undertaking qualifying energy and water improvements and willing to allow the City to impose a Local Improvement Charge (LIC) on their property to secure repayment. The program responds to a City Council directive and is authorized by recent Provincial amendments to the City of Toronto Act's LIC regulation (Ontario Regulation 596/06).

Eligible LIC projects include cost-effective natural gas, electricity and water efficiency and conservation measures. The funds advanced to consenting property owners would be repaid to the City over a period of 5 to 15 years (single-family houses) and 5 to 20 years (multi-unit residential buildings) via a special charge that is added to the property tax bill of the benefitting property. The repayment term would be geared to generally reflect the anticipated operating cost reductions (i.e. energy or water savings) and useful life of the retrofit measure(s).

This voluntary program will include two streams, single-family homes and multi-unit residential buildings, and targets the participation of up to 1,000 houses and 10 multi-unit residential buildings completing energy assessments, installing energy efficiency and water conservation measures and accessing the LIC, with a total funding envelope of $20 million. The program is projected to stimulate job creation, increase housing affordability through operating cost savings and annually avoid 5,000 tonnes of greenhouse gas emissions.

The primary focus of the pilot program is to test the market receptivity to this new financing mechanism, its ability to accelerate the uptake for investment in energy efficiency and evaluate how it aligns with the City's economic development, housing quality and affordability and environmental sustainability objectives.

RECOMMENDATIONS

The City Manager and the Deputy City Manager and Chief Financial Officer recommend:

1. City Council enact a by-law pursuant to Section 35 of Ontario Regulation 596/06 to authorize the undertaking of energy efficiency and water conservation works on private residential property as local improvements under the Residential Energy Retrofit Pilot Program set out in Appendix A.

2. City Council authorize the Deputy City Manager & Chief Financial Officer and Chief Corporate Officer to:

    a. implement the Residential Energy Retrofit Pilot Program in accordance with the process and criteria set out in Appendix A, including the approval of participating properties, eligible retrofit measures, eligible expenses and pilot neighbourhood selection;

    b. negotiate and enter into all property owner agreements with consenting property owners on the terms and conditions set out in Appendix B and in a form satisfactory to the City Solicitor and sufficient for the City Clerk pursuant to Ontario Regulation 596/06; and

    c. report back to City Council upon the conclusion of the Residential Energy Retrofit Pilot Program with an evaluation of outcomes and, if appropriate, a business case for a broader full-scale program.

3. City Council authorize the City Clerk to give the requisite notices, to assess the sufficiency of the property owner agreements, and to certify the property owner agreements, all in accordance with Ontario Regulation 596/06.

4. City Council approve the imposition of a special local improvement charge on properties participating in the Residential Energy Retrofit Pilot Program in the amount of the cost of the local improvement undertaken on the participating properties as set out in the property owner agreement for the participating property, and payable over the term set out in the property owner agreement for the participating property.

5. City Council authorize the City Treasurer to:

    a. prepare a local improvement roll, to certify the local improvement roll, and to certify that the full payment of the special charge has occurred when and if it does; and

b. add the special charge imposed on participating properties for the cost of the work undertaken on that property to the tax roll for the property in the year in which it becomes payable.

6. City Council authorize the City Solicitor to regularly submit bills to impose the special charge on participating properties.

7. City Council authorize the Deputy City Manager and Chief Financial Officer to:

a. Establish a discretionary reserve fund called the 'Local Improvement Charge Energy Works Reserve Fund' to provide funds to consenting property owners for the purpose of undertaking qualifying retrofit projects on private property, including but not limited to, energy and water efficiency and conservation, under the Residential Energy Retrofit Pilot Program as outlined in Appendix E;

b. Amend Municipal Code, Chapter 227, Reserve and Reserve Funds, by adding ‘Local Improvement Charge Energy Works Reserve Fund’ to Schedule No. 7 - Corporate Discretionary Reserve Funds;

c. Borrow up to $20 million from the Working Capital Reserve over the Residential Energy Retrofit Pilot Program and transfer such funds to the Local Improvement Charge Energy Works Reserve Fund to fund the Residential Energy Retrofit Pilot Program;

d. Repay the Working Capital Reserve from the Local Improvement Charge Energy Works Reserve Fund as local improvement charges established under the Residential Energy Retrofit Pilot Program are paid to the City by property owners participating in the Program; and

e. Establish interest rates that reflect the City’s current return on its investment portfolio with terms to maturity of up to 15 years (single-family houses) and 20 years (multi-residential buildings) for the purpose of recovering the City's foregone investment income on the funds used by the Residential Energy Retrofit Pilot Program. As part of the overall cost of the Program, the interest rate will be applied to the cost of each retrofit project and used to determine the total local improvement charges imposed by the City on participating properties.

8. City Council increase the 2013 Approved Operating Budget for Environment & Energy Division by $162,500.00 gross and $0 net to begin the Residential Energy Retrofit Pilot Program in the fall of 2013.

9. City Council authorize the City Manager to negotiate and enter into all necessary agreements with Toronto Hydro, Enbridge Gas Distribution, Natural Resources Canada and other partners, in forms satisfactory to the City Solicitor, to support

joint implementation of the Residential Energy Retrofit Pilot Program, as required.

Financial Impact

The proposed Residential Energy Retrofit Pilot Program (the "Program") offers a flexible means by which the City can undertake energy retrofits to qualified private properties through a voluntary program and impose a special charge on the property's tax bill to be repaid over time, pursuant to Ontario Regulation 596/06 (the "Regulation").

The priority lien status of the local improvement charge (LIC) afforded to it through the addition of the LIC to the tax roll will enable the City to add any unpaid amounts to the cancellation price in a tax sale and to recover the amounts of the LIC ahead of other lien holders should the property owner fail to pay.

No new financial commitments are required from the City to support the initiatives outlined in this report. Ongoing direct Program costs are to be recovered through Program administration fees applied to the LIC project costs i.e. staffing, administration, and marketing and recovered through the LIC. Initial start-up costs will be sourced from alignments with current program activities in the Environment & Energy Division and Tower Renewal Office, complimented with external funds committed by Program partners.

The estimated operating cost to administer the pilot totals $1.413 million gross and $0 net from 2013 to 2016. It is recommended that the 2013 Approved Operating Budget for Environment & Energy Division be increased by $162,500.00 gross and $0 net to begin the Program in the fall of 2013. Future year costs for 2014 to 2016 include an increase of 2 temporary staff positions to support the marketing and administration for the single-family stream and required technical/professional services for the multi-residential stream. These costs will be considered as part of future year operating budget processes. These operating costs will be offset by $0.753 million in external funding commitments in the form of grants and contributions from external sources and $0.660 million in up front funding that is to be recovered from Program participants. Securing the external funding however is contingent upon City Council approval of the Program.

External funders and their commitments are detailed below in Table 1:

Table 1: External Funding Commitments

Funder	Amount	Type	Cost Allocation
Ontario Power Authority	$458,000	Cash	Marketing, program implementation, evaluation
Toronto Atmospheric Fund	$200,000	Cash	IT database development, evaluation
Natural Resources Canada	$50,000	Cash/ In-kind	EnerGuide Rating System, Program implementation
Toronto Hydro	$25,000	Cash/	Marketing

		In-kind	
Enbridge Gas	$20,000	In-kind	Marketing, program planning
TOTAL	**$753,000**		

Subject to City Council approval of the Program, $20 million in capital funding for the Program will be considered as part of the 2014 capital budget process.

It is recommended that $20 million be withdrawn from the City's Working Capital Reserve as the funding source for the Program. A fixed interest rate that reflects the City's foregone investment revenue (i.e. opportunity cost) would be included in the costs recovered by the City through the LIC imposed on participating properties over the term of the retrofit project. In this manner, the City will recover any unrealized investment revenue directly from Program participants and therefore, no costs will be borne by the City's tax levy. By approving this Program, there is no negative implication for the City's credit rating and no new pressures are added to the City's debt threshold.

To service the loan repayment requirements beginning in 2017, the future year operating budgets will be adjusted to reflect incremental revenues generated from the local improvement roll, offset by equivalent additional expenditures related to funds advanced to consenting property owners that undertake retrofits.

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

Equity Impact

The recommended Program is intended to assist the City's priority groups including people with disabilities, seniors and low-income residents, as well as women and children. The Program is designed to assist these residents by improving housing conditions and thereby, the economic and social well-being of the stated priority groups. These Program goals will be measured and the results will be included as part of the Program evaluation.

Opportunities exist for enhanced utility incentives for low-income residents and will be promoted in connection with the Program. Further, Program criteria in the multi-residential stream will require that Program participants do not apply for Above Guideline Increases in connection with retrofit measures completed under this Program.

DECISION HISTORY

At its meeting of July 11, 2012, City Council adopted item ED 15.8 *Proposed Energy and Water Efficiency Initiative for the Residential Sector* and in doing so, directed the City Manager to develop a proposal for a pilot energy and potentially water efficiency program for residential property owners in accordance with Ontario Regulation 596/06, *Local Improvement Charges – Priority Lien Status,* as amended.

Link to City Council decision:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.ED15.8

At the July 11, 2012 meeting, City Council adopted item EX 21.30 *Housing Makes Economic Sense – Report for the Private Sector Roundtable* and endorsed the strategic directions for action on opportunity and value, including the benefits of reinvesting in private rental housing communities.

Link to City Council decision:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.EX21.30

In 2009, City Council established aggressive energy conservation targets to reduce the City's reliance on fossil fuel burning generation in an effort to reduce strain on the electrical grid, alleviate the need for expanded networks of transmission lines and natural gas pipes, and help Toronto meet its carbon emission reduction goals (i.e. 80% reduction in greenhouse gas emissions by 2050).

These energy targets and greenhouse gas emission reduction (GHG) goals are presented in Table 2 below:

Table 2: Energy Conservation[i] & Greenhouse Gas Emission Reduction[ii] Goals

Source	By 2012	By 2020	By 2050
Conservation – Electricity	Reduce by 200MW	Reduce by 550MW	Reduce by 1050 MW
Conservation – Natural Gas	Reduce by 240 Mm^3	Reduce by 730 Mm^3	Reduce by 1560 Mm^3
Greenhouse Gas Emissions Reduction	6%	30%	80%

[i] These are cumulative targets and are based on 2007 levels of 5,000 Megawatts (MW) of electricity consumption and 4,200 million cubic metres (Mm^3) of natural gas consumption.
[ii] Greenhouse gas emissions reductions based on 1990 emissions levels.

The Power to Live Green: Toronto's Sustainable Energy Strategy envisions the City of Toronto facilitating, in partnership with Toronto Hydro, Enbridge Gas and other stakeholders, the design, delivery and co-ordination of energy efficiency and water conservation programs for all market sectors including:

- coordination of programs, policies and resources;
- development of new programs and initiatives to address emerging issues associated with supporting residents and businesses in taking action; and
- investigation and development of new financing tools and options to support residents and business.

Link to City Council decision:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.EX36.9

ISSUE BACKGROUND

Local Improvement Charges (LICs) have been a part of the municipal finance toolbox for decades. LICs are typically used to fund new capital infrastructure, such as sidewalks or sanitary systems, whereby the municipality undertakes the work and recovers the cost from benefitting property owners via a surcharge on the property tax bill that is to be repaid over time.

On October 25, 2012, the Minster of Municipal Affairs and Housing filed Ontario Regulation 323/12, an amendment to Ontario Regulation 595/06 under the *City of Toronto Act, 2006* regarding local improvement charges. This amendment expands the definition of capital works to include energy efficiency, renewable energy and water conservation. It permits the City to now undertake works on individual private properties with the consent of a property owner (i.e. on a voluntary basis).

The regulatory update paves the way for the City of Toronto to offer a low cost option for property owners willing to make energy and water efficiency investments and have the City impose a special charge on their property. In particular, it addresses the key barriers to undertaking energy retrofits such as upfront financing and split incentives associated with selling a property before realizing full operating cost savings.

An LIC Program potentially can fill the gap left behind from the discontinuation of government grant programs, like Ontario Home Energy Savings Program and the federal ecoENERGY program. The City can address this by launching a next generation program offering to stimulate new investments in energy efficiency and in doing so, support the overall achievement of its energy and environment targets, as well as addressing objectives of increasing local employment, strengthening local industry and supporting affordable housing.

COMMENTS

This report was prepared in response to City Council's direction to create a comprehensive residential energy efficiency program in collaboration with local utilities and key stakeholders. The proposed Program taps into the regulatory framework and financing mechanism of local improvement charges (LIC) to support energy efficiency and water conservation projects on private property.

Reasons why a property owner would be interested in participating in the Program and in subjecting their property to an LIC for retrofit measures include: the payments are geared toward the utility and operating cost savings so that the property owner may have no impact on their net income; if the property will be sold within a few years, the benefits and costs of the retrofit measures stay with the property; and the LIC is an alternative to increasing the mortgage on the property. The overall value proposition is expected to trigger uptake for more substantive and costly improvements that can achieve deeper energy savings.

This Program has been designed with insights from market research, focus groups, detailed research and evaluation of residential energy improvement programs in North America and in consultation with key stakeholders including the City Divisions, Federal and Provincial governments, utility companies, community associations, energy efficiency practitioners, and representatives from the banking sector.

This report provides:

- an overview of the new opportunities enabled by the revised LIC regulation;
- proposed pilot design principles to guide implementation; and
- a recommended pilot program approach, components and delivery details.

Amendment to Local Improvement Charges Regulation (Ontario Regulation 596/06)

In October 2012, the Ontario Minister of Municipal Affairs and Housing amended the *Local Improvement Charges-Priority Lien Status* regulation made pursuant to the *City of Toronto Act, 2006* (Ontario Regulation 596/06), as well as the corresponding *Municipal Act, 2001* regulation.

Highlights of the amendment include:

- expanding the definition of qualifying capital works to include non-linear energy efficiency retrofits, renewable energy installation and water conservation measures;
- expanding the list of qualifying properties to include an individual private property itself, exclusive of City-owned frontage;
- introducing the use of a Program by-law together with a property agreement between the City and each individual private property owner as adequate substitutes for the notice and consent provided for LICs on linear infrastructure by an initial by-law and petition process; and
- enabling a special charge for these particular works on these particular properties to receive priority lien status.

The regulatory amendment enables the City to expand the use of LICs as a mechanism to accelerate the uptake for energy and water improvements on private property. The City would have considerable control and flexibility in designing a high-quality, customer-oriented Program to encourage new investment while being able to support a variety of City-building objectives.

City Council's direction was to assess the efficacy of using LICs for an energy efficiency and water conservation program. The amended LIC regulation, however, allows the City to exercise considerable autonomy to define the scope of works that would qualify as part of a municipal program. Although further study is still required, City staff is of the initial position that LICs likely have broader applications and can support a range of initiatives

including, but not limited to, energy efficiency, water conservation, renewable energy and district energy systems across all sectors i.e. residential, industrial and commercial.

Using Local Improvement Charges for Improvements on Private Property

A property owner would voluntarily apply for the Program and enter into an agreement with the City to undertake energy and water improvements, thereby allowing the City to impose a local improvement charge ("LIC") in the amount of the cost of the improvements, plus a fixed interest rate and other administrative costs incurred by the City on the participating property.

LIC payments to the City are made over a period of time of up to 15 years for single-family houses and 20 years for multi-residential buildings (the terms will reflect the useful life of the work) as a special charge on the property tax bill. The payment obligation attaches to the participating property, not the owner, and is secured by the City's statutory priority lien. If a property changes ownership, the new owner would assume the financial obligation – and benefit from the associated energy bill savings - and continue to make payments to the City of the special charge until the charge is fully paid.

City staff, in consultation with the Legal Services Division, evaluated options regarding how energy advisors/auditors and retrofit contractors should be engaged to assess and complete the qualifying works on private property. Balancing various risks has led to a Program design in which, for energy advisors/auditors, the property owner pays up front and may be able to seek a utility rebate, and for contractors, the City provides monies to property owners for properly verified, completed work, and property owners use those monies to, in turn, pay contractors hired directly by property owners. Focus group testing of the proposed Program suggests a preference for owner-selected contractors, which corroborates this recommended approach.

Energy Profile of Toronto's Residential Housing Sector

Single-family homes and multi-unit residential buildings are major energy consumers in Toronto. This sector is the largest natural gas consumer, accounting for 54% of overall use, and a significant user of electricity, accounting for 30% of electricity consumption. Electricity and natural gas end-uses combined account for a major component (44%) of the total greenhouse gas emissions in the City, with the residential sector being the largest greenhouse gas emitter.

The majority of houses and apartment buildings in Toronto were built pre-1980 during an era characterized by poor energy efficiency. Out-dated heating equipment and inadequate insulation are commonly still found within these buildings today. Given that 80% of the housing stock expected to exist in 2050 already exists today, addressing the energy demand within existing buildings is critical to achieve overall future sustainability and maintain housing affordability. Existing buildings present the greatest opportunity to achieve substantial natural gas and electricity reduction and water conservation by retrofitting for improved energy performance.

Benefits of Energy Efficiency Investments

Investment in energy efficiency spurs a variety of economic, public health and environmental benefits that supports the City's key public policy objectives, including:

i. Saving Money on Energy Bills and Maintaining Housing Affordability
A household, on average, can expect to achieve a 20%-25% reduction in energy use[1] by making energy efficiency improvements. This equates to about $100 to $400 in annual electricity and natural gas bill savings. The Ontario Ministry of Finance forecasts natural gas prices to more than double by 2030.[2] Similarly, a forecast of Ontario's wholesale price for electricity is expected to dramatically increase by 74% over the next decade.[3]

Multi-unit residential housing represents half of Toronto's residential households and, in particular, older apartment buildings provide an affordable housing option for over 500,000 Toronto residents. These buildings are often high energy users with aging building equipment and systems. Typically about 10% of what is paid in rent goes to paying energy costs. As energy use and prices increase, there is upward pressure on rent levels and affordability. Retrofit projects are feasible but capital intensive. In this market sector, there is general reluctance to invest capital in projects that require a long term payback (over 3 years).

Supporting investments in energy efficiency retrofits through a LIC Program will hedge property owners and residents against rising energy prices and help to maintain housing affordability.

ii. Creating High-Quality Jobs
Energy efficiency retrofits are labour intensive, employ local workers and can create training opportunities. A report on the Ontario economy cites that 14.2 jobs are created per $1 million of spending and a recent U.S. analysis found similar findings.[4] These jobs would include work undertaken by a variety of skilled trades including energy assessment professionals, HVAC contractors, insulation applicators and other retrofit contractors.

iii. Improving Energy Security
Toronto's development boom is adding considerable strain to an already aging electricity distribution network. About one third of Toronto Hydro's assets are beyond their useful life and about 40% of the power outages in 2011 were caused by aging equipment. Reducing demand for energy places less stress on Toronto's electrical infrastructure and

[1] Calculation based on Toronto ecoENERGY data (results vary depending on housing type, vintage, existing conditions and retrofit bundle installed).
[2] Ministry of Finance: Ontario's Long-Term Report on the Economy http://www.fin.gov.on.ca/en/economy/ltr/2010/ch2.html
[3] London Economics, 2013: http://www.londoneconomics.com/pdfs/Ontario-press-release.pdf
[4] Pollin, R. 2011: "Building the Green Economy: Employment Effects of Green Energy Investment in Ontario. assets.wwf.ca/downloads/building_the_green_economy.pdf and American Council for an Energy Efficient Economy, 2011: How Does Energy Efficiency Create Jobs?, http://www.aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf. Calculation based on data from Statistics Canada and the U.S. Bureau of Labour Statistics.

therefore helps to mitigate the risk of power disruption (i.e. blackouts). Conservation and demand management are widely regarded to be key approaches to managing the energy needs of a growing City.

iv. Reducing Carbon Footprint
Upgrading insulation and installing high efficiency heating equipment are regarded as some of the most cost-effective GHG abatement measures.[5] Typical home and apartment building energy retrofits will reduce annual carbon emissions by 5 tonnes and 263 tonnes, respectively.

v. Enhancing Quality of Life
Reducing the energy wasted in buildings helps to alleviate air pollution that gives rise to smog related illness, such as asthma. Poor air quality contributes to the death of 1,700 people annually in Toronto with an additional 6,000 related illnesses.

Research & Public Engagement Findings
The Environment & Energy Office and the Tower Renewal Office, to assess options for a new energy efficiency program for Toronto with a particular focus on innovative financing approaches, undertook background research. A jurisdictional review of North American programs was assessed for its relevance and applicability to the Toronto context. Appendix D contains a review of the programs evaluated, as well as key program features and results.

The following commissioned studies have informed the work presented in this report:

- Assessment of North American Property-Attached Financing Programs;
- Toronto Community-Based Home Retrofit Program;
- Community Energy Plan for Tower Renewal Pilot Sites; and
- Tower Renewal Financing Options Report.

The City through consultation events and market research surveys has engaged businesses and residents, to gauge public opinion and interest for a new Toronto program, which includes the following:

- Home Energy Efficiency Financing Survey (Ipsos Reid, 2010);
- Focus Group Sessions (Ipsos Reid, March 18, 2013);
- Multi-Stakeholder Workshop (February 13, 2013);
- Community/Ratepayer Association Workshops (March 5 & 7, 2013);
- Meetings with Enbridge Gas, Toronto Hydro, the Federation of Metro Tenants Association and Canadian Mortgage and Housing Corporation;
- Outreach to tenants groups through presentations to the Rental Housing Advisory Committee and the Low-Income Energy Network; and

[5] McKinsey & Co (2009). "Pathways to a low carbon economy"

- Discussions with United Way Toronto, retrofit industry representatives, private property owners and managers, the Greater Toronto Apartment Association and the Federation of Rental Housing Providers of Ontario.

The City has been in discussion with the Canadian Bankers Association and its members regarding the proposed Program. Based on these discussions, the Program design will incorporate lender consent as a requirement of LIC approval for mortgage holders in the single-family stream. For the multi-residential stream, property owners will be advised to ensure they are complying with their obligations to financial institutions.

Additionally, the City is an active partner with the Collaboration on Home Energy Efficiency Retrofit in Ontario (CHEERIO). CHEERIO is a multi-municipal research consortium with representatives from 22 Ontario municipalities committed to the joint-development of a pilot LIC Program based on the recently amended Regulation and along the lines of the approach Toronto may take.

Below is a summary of common design features that have been synthesized from this body of work and provides the foundation for the recommended Toronto Program:

Focusing on Deep Energy Savings by taking a comprehensive approach to electricity, natural gas and water conservation to achieve cost-effective savings. Typically, retrofit measures capable of producing deeper energy savings are more costly, have longer payback periods (five years or more) and are therefore less likely to be undertaken. Results from the recently concluded federal ecoENERGY program revealed that a 10% performance gap exists between the realized and potential energy savings for an average Toronto house. In the multi-residential sector, in many cases the 'low hanging fruit' energy efficiency measures have been completed. Further measures that may achieve additional energy use reductions of 10% may require financing due to a payback profile that extends beyond three years.

Overcoming Upfront Capital Cost is regarded as the primary financial obstacle for property owners considering making investments in energy efficiency. In a market research survey, over 40% of Toronto homeowners identified as being likely to have an energy efficiency assessment and energy efficiency upgrade to their home in the near future but identified insufficient front-end financing as the primary reason for not being able to take action. Homeowners may have insufficient equity in their homes to qualify for financial products offered by a bank (i.e. mortgage refinancing or a home line of credit). This Program offers an alternative vehicle to participating in energy improvements without having to rely on traditional loans that may have higher financing rates.

A study of the financing needs in the multi-residential sector found that currently the most commonly available financing option for these projects is through a mortgage on the property. This limits the owner’s ability to pursue alternative investments that provide higher rates of return. Comprehensive retrofit projects cannot compete with other investment options. As a result, with the financing options currently available, more extensive retrofit projects are unlikely to be undertaken. To realize the benefits of deep

retrofit projects, it is necessary to provide an alternative funding option that resolves the hurdle of a simple payback of four or more years.

By **Supporting Cost-Effective Measures,** energy bill savings can help to 'pay for itself' over time. Although retrofits can reduce energy bills, a range of factors including future energy prices, weather fluctuations, and building occupant behaviour makes it challenging to ultimately guarantee the savings will fully recover the initial capital outlay. In the multi-residential sector there are capital projects that can be completed to a higher efficiency level and will be done earlier if suitable financing is available. It is important to also recognize the co-benefits of energy retrofits when evaluating the overall cost effectiveness of these projects: improved building comfort, indoor air quality benefits, greenhouse gas emissions reductions, and market resale value.

Revenue Neutral Program Administration was achieved in several US programs, like Boulder County in Colorado, where municipalities acted as facilitators of the program. This approach is important for Toronto's Program so that costs are recovered from Program participants - via administration fees, cost sharing arrangements with utility partners, and start-up grants - without having to rely on subsidies from the municipal property tax base.

Customer Service requirements of the Program need to address concerns about providing flexibility for property owners in determining the specific products, services and contractors being used. Making it easy for property owners to undertake improvements and simplifying the entire retrofit process is a critical success factor. This is achieved through partnerships with various stakeholders, provision of low cost financing options and streamlined incentives from government and utilities to create a 'one window' service.

Channel Marketing involves forging partnerships with utility companies, contractors, realtors, industry associations and community groups to leverage their reach and influence. Utility companies (Toronto Hydro and Enbridge Gas) are actively engaged in seeking building retrofits to meet their incentive program targets. They offer various incentive programs, however the financing of the projects can still be a barrier to moving forward. By making LIC financing available, more projects may be undertaken. By aligning the financing approval process for the Program with the incentive approval processes of the utility companies, efficiencies can be realized.

The Program

i. Goals and Objectives

The Program entails the City sourcing $20 million from its Working Capital Reserve to support energy efficiency projects within the existing residential housing sector.

Two Program streams are proposed: Single-Family Stream (detached, semi-detached and dwellings with fewer than seven units) and Multi-Residential Stream (private rental buildings greater than four storeys). The funding envelope is to be evenly shared

between both Program streams. The participation targets are forecasted to be approximately 1,000 single-family homes and ten multi-residential buildings (representing approximately 1,000 units).

The objectives of the Program are:

- Achieving substantial natural gas and electricity use reductions from comprehensive whole-home and whole-building energy efficiency retrofits;
- Testing the housing market's receptivity to a municipal funding Program aimed at accelerating the uptake for deeper energy efficiency retrofits that will improve the quality of the City's housing stock;
- Assessing a suite of energy efficiency measures to determine cost-effectiveness;
- Testing neighbourhood-based and sector-based marketing approaches to raise awareness for and drive uptake for the Program offering;
- Identifying the best ways to collaborate with Toronto Hydro, Enbridge Gas, Ontario Power Authority, Toronto Atmospheric Fund and other service providers in the delivery of a comprehensive Program;
- Monitoring the effectiveness of the special charge process and inter-divisional coordination in the City's implementation of the Program; and
- Developing a business case to assist senior management in recommending and City Council in adopting a broader full-scale version of the Program for Toronto, if appropriate.

Table 3: Phase I Program Overview		
	Key Features	**Additional Details**
Term	3 year pilot period	2013 – Q4 launch
Resource Conservation	Single-Family Stream: Focus on 25-50% reduction in overall energy use	Natural gas, electricity and water efficiency and conservation
	Multi-Residential Stream: Target projects with simple paybacks of over 3 years	
Target Markets	Single-Family Homes	Testing neighbourhood-based marketing approaches in 4 pilot neighbourhoods
	Multi-Residential Buildings	Focused on apartment buildings of 5 or more storeys city-wide constructed prior to 1984
Participation Targets	Approximately 1,000 single-family homes	Completing energy assessments, installing energy efficiency measures, and accessing the City financing
	Approximately 10 buildings (representing 1,000 housing units)	
Average Project Value (less rebates)	$10,000 – Single-family home	Up to $2,000 in utility company incentives may be available
	$1 million - Multi-unit residential building	Up to $100,000 in utility company incentives may be available.
Retrofit Measures Supported	Building envelope improvements, mechanical systems and water efficiency upgrades	Examples include: Furnace/boiler replacement Insulation upgrades Window replacement Low-flow toilets
Funding Envelope	$20 million in retrofit funding – evenly allocated between both Program streams	Funding to be sourced from the City's working capital with no reliance on general property tax revenues.

ii. Program Impact Assessment

Table 4 provides an estimate of the economic, energy and environmental impacts from energy efficiency improvements across approximately 2,000 housing units as envisioned by the Program. The Program is expected to result in the creation of nearly 300 new jobs. Direct employment (i.e. HVAC technicians, insulation applicators, energy advisors) accounts for two-thirds of the total employment while the rest is from indirect jobs (i.e. equipment suppliers). The annual natural gas and electricity use reduction estimates are 2.4 million m^3 and 4.8 million kWh, respectively, which translates into $1 million annually in cost savings to property owners and residents. Lastly, almost 5,000 tonnes of greenhouse gas emissions abated is equivalent to taking about 1,000 automobiles off the road each year.

Table 4: Projected Economic, Energy & Environmental Impact			
PHASE I	Single-Family Houses	Multi-Unit Residential Buildings	**TOTAL**
Housing Stock Improvements	1,000 houses	10 buildings	**2,000 housing units**
Job Creation[i] – Direct & Indirect Jobs	280 jobs		**280 jobs**
Conservation[ii] – Natural Gas	870,000 m^3/year	1.5 million m^3/year	**2.4 million m^3/year**
Conservation[ii] – Electricity	1 million kWh/year	3.8 million kWh/year	**4.8 million kWh/year**
Operating Savings[iii]	$250,000/year	$700,000/year	**$950,000/year**
Annual Greenhouse Gas Emissions Reduction	1,700 tonnes/eCO_2	3,200 tonnes/eCO_2	**4,900 tonnes/eCO_2**

[i] 14.2 direct and indirect jobs are created per $1 million of spending in conservation and demand management initiatives.
Source: Pollin, R. 2011: Building the Green Economy: Employment Effects of Green Energy Investment in Ontario

[ii] Energy reductions are based on analysis from the ecoENERGY Homes Program and utility data from Tower Renewal pilot site buildings.
Source: Arup, 2010: http://www.toronto.ca/tower_renewal/pdf/arup.pdf

[iii] Single-Family Houses: Average energy cost savings over retrofit project lifecycle, assuming a 3% electricity and natural gas annual price increase.
Multi-Unit Residential Buildings: Based on 2010 energy costs for Tower Renewal pilot site buildings.

Case Study:
Singh Family of Scarborough

Scott and Jameela Singh and their two children live in a bungalow in Scarborough built in the 1960s with an original gas furnace, limited insulation and drafty single pane windows. The family is concerned about rising energy costs, improving the comfort of their home and conserving energy to help protect the environment. However, the high cost and lack of financing options make energy improvements unrealistic for the Singh's.

Jameela learns from her neighbour of the City of Toronto's new program that provides low cost funding for home energy improvements and is eager to get started. To understand the opportunities for cost-effective energy improvements in her home, Jameela arranges for a home assessment that is performed by Trevor – a Certified Energy Assessor. Trevor performs a series of tests to determine the energy performance of the home. Trevor produces a customized report for the Singh's that he reviews with them. It has recommendations for improvements (known as retrofits) that will reduce energy use and save money. The report identifies the furnace will soon need to be replaced, that there is air leaking around windows and doors, and the attic insulation would benefit from upgrading. If all these improvements are completed, the Singh's can expect to save $40 per month on their energy bills.

Scott and Jameela decide to proceed with the project and begin to get quotes from contractors. They submit an application to the City that identifies the work to be undertaken and the associated costs based on their quotes. The City approves their request for $10,000. The Singh's find the low interest rate and long repayment period of 15 years offered by the City as attractive.

Every month, Scott and Jameela make an additional $55 payment to the City for the energy efficiency improvements as part of their property tax payment. The Singh's notice a reduction in their monthly utility bills which makes the repayment to the City that much easier. Plus, the improved home comfort and enhanced market value of their home is a bonus.

iii. Program Design Framework

The proposed Program is designed to be owner-led with customer support from the City throughout the retrofit process as described below.

There are three components to the Program design:

Making it Easy: A One-Window to Customer Service

A single, comprehensive Program will cover natural gas, electricity and water conservation. This one-window approach will guide property owners through energy assessments to identify retrofit opportunities and access to an attractive financial offering to pay for them. Aligning the utility incentive qualification criteria with the LIC approval process will streamline the rebates and grants from Toronto Hydro, Enbridge Gas and the Ontario Power Authority and create consistency across the qualifying measures. Participants will have the flexibility of selecting their own energy advisor and retrofit contractors instead of having to rely on a City-qualified or a contracted service provider.

Encouraging Action: Neighbourhood & Sector Based Marketing

The Single-Family Program Stream's marketing approach will involve intensive engagement within four neighbourhoods, one from each of the Community Council areas. Trusted information channels, like neighbourhood associations, local hardware stores, door-to-door canvassing, Live Green Toronto website, Councillor Offices, utility companies and neighbourhood events, will be leveraged to promote the Program and deliver information through face-to-face interactions. This approach allows for the customization of marketing materials and retrofit approaches tailored to the local demographic and housing types.

Similarly, the Multi-Residential Program Stream will leverage outreach through industry associations, energy service companies, equipment suppliers, and others, to build awareness and encourage action. Although the Program will be available to buildings across the City, particular outreach will be made to buildings located in low income areas, those pursuing funding through Toronto Renovates, areas designated by City Council as

Residential Apartment Commercial (RAC) pilot project areas as part of the City-Wide Zoning By-law implementation and apartment building sites where new infill development is taking place.

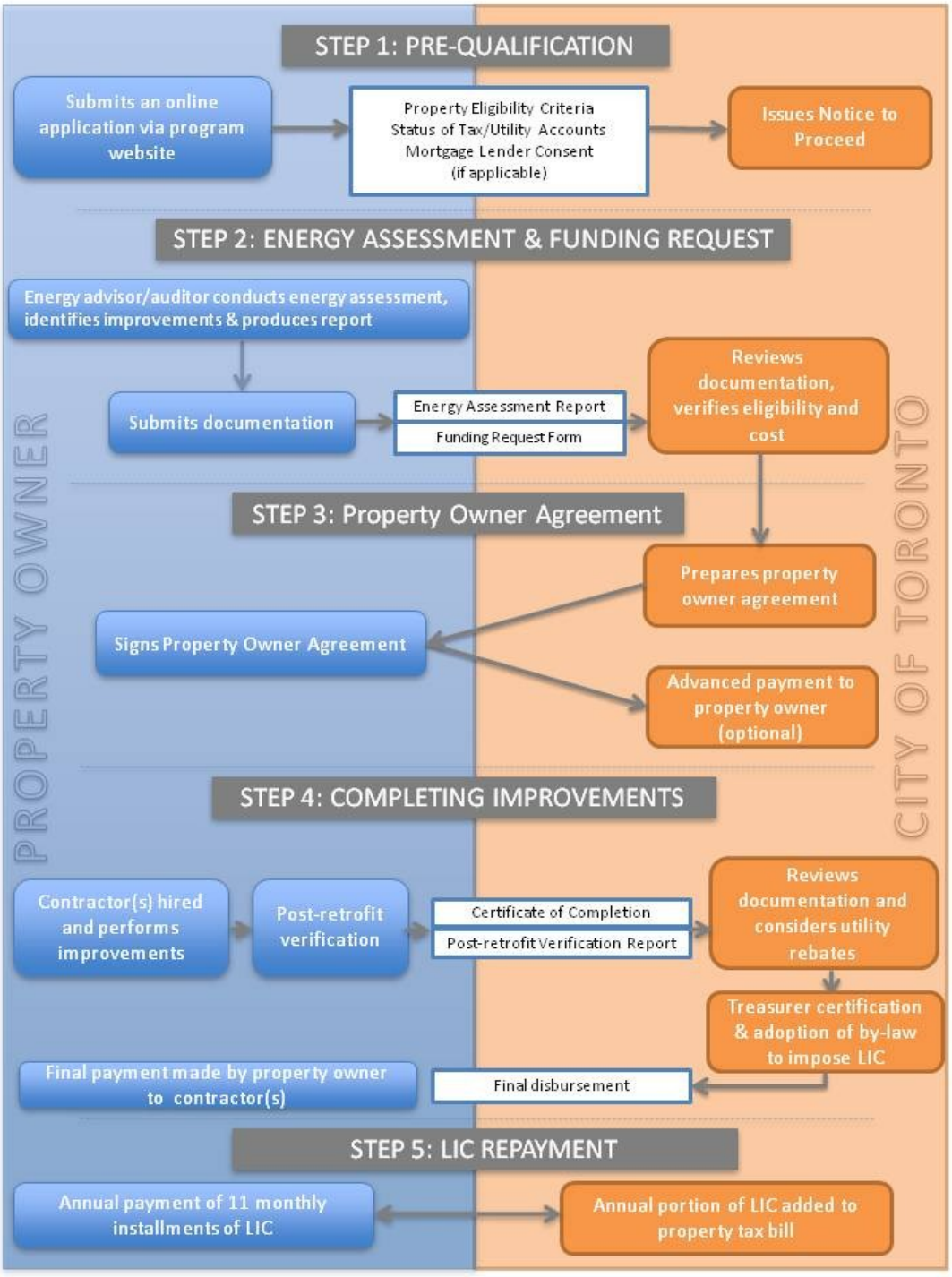
Attractive Option for Improvements on Private Property

Through the Program, the City will advance funds to eligible properties to cover the cost (including the City's cost of borrowing and administrative costs) of energy and water improvements and will recover these costs through a LIC levied on the property. Property owners then conveniently repay the LIC as a special charge on the property tax bill over an agreed term. The repayment period for the special charge is designed so that anticipated energy savings will help to offset costs of the improvements over time. (The City will not guarantee savings through this Program)

iv. How it Works: 5 Steps to Undertaking Energy Improvements

This section describes the process that eligible property owners will need to follow in order for the energy efficiency improvements to qualify for local improvement charges.

Appendix A provides details for the Program design and eligibility criteria for the Single-Family Stream and Multi-Residential Stream.



vi. Risk Identification and Mitigation

The proposed Program incorporates certain design features to minimize the risk exposure to the City, participating property owners and mortgage lenders. Below is an analysis of the issues and mitigation measures that have been put in place to effectively manage risk.

Table 5: Risk Analysis-Mitigation		
Issue	**Risk**	**Mitigation Measures**
City		
Potential for lower than expected Program uptake	Program start-up costs would be squandered if the participation targets were not achieved.	Market research suggests demand exists for a financing program offered by the City to support energy efficiency retrofits. Program design to be simple, hassle-free and emphasize a high level of customer service. Flexibility to adjust marketing approach and communication channels over the course of the Program. External funding partners have provided start-up funding and therefore share the associated start-up risk.
Assurances that property owners will pay the special charge	Risk that payments may overextend property owners and create cash flow issues	City will use the status of property tax and utility accounts and 5-year payment history review as proxy to assess credit worthiness. Also, when applicable, mortgage lender consent is a Program requirement, which will screen applicants for good mortgage standing prior to the City approving LIC funding. LIC will be approved for cost-effective improvements that can achieve immediate energy cost savings over the lifecycle of the project and help to offset LIC payments. Priority lien applies only to the yearly LIC amount due in a given year.

Table 5: Risk Analysis-Mitigation		
Issue	**Risk**	**Mitigation Measures**
Default of payments	Potential for payments not to be made to the City	The regulation allows for an encumbrance on the land to be imposed for any defaults. Additionally, priority lien protection makes the City's lien rank ahead of other liens on the property (except for liens of the Crown) and enables the City to force a tax sale and recover the amounts added to the tax roll from those proceeds.
Property Owner		
Unrealized energy savings from energy improvements	Risk of energy efficiency improvements not translating into lower energy bills.	Property owner will receive an energy assessment by a certified energy advisor/auditor in advance of the LIC being imposed on the property. The assessment will identify cost-effective improvements and associated operating savings. The City makes no guarantees of energy savings, which will be stipulated in the POA.
Paying off and clearing the LIC from the property	Potential for the presence of an outstanding LIC balance to affect the resale marketability of a property	Property owner is able to make a one-time payment to the City to clear the outstanding balance before selling a property. Otherwise, the LIC automatically transfer to successive owners upon sale.
Mortgage Lenders & Insurers		
Credit approval process	City's assessment of credit worthiness is limited	City has been working with the Canadian Bankers Association and its members to incorporate an appropriate means of informing the lender as part of the approval process. Canadian Mortgage and Housing Corporation has also been consulted in the development of the Program.
Transparency of LIC to lenders	Requirement to give adequate notice of LIC imposed on a given property	City will give notice by approving a special charge by-law and posting information to the City's website Tax Certificate will reflect total LIC amount, current year payable and any arrears or defaults.

vii. Evaluating and Measuring Success

The City is developing, in collaboration with CHEERIO, Toronto Hydro and Enbridge Gas, a monitoring and evaluation protocol to assess the overall effectiveness of the initial Program and highlight areas for improved Program design and delivery.

The evaluation methodology would include an analysis of pre and post energy data, follow-up surveys of Program participants/dropouts, and interviews with participants, energy advisors, retrofit contractors and other partners. The evaluation is intended to answer key questions and better inform outcomes including:

Program Uptake: Did participation achieve more property owners undertaking energy efficiency and water conservation improvements?

Market Barriers: Did participation address overcoming high up-front costs barrier, split incentives, property-attached repayment features, ability for savings to repay initial investment over time, etc.?

Collaboration: Did the delivery of the Program optimize synergies between the City of Toronto, Toronto Hydro and Enbridge Gas?

Social Equity: Did the Program assist residents by improving housing conditions and thereby, their economic and social well-being?

Economic Development: Did the Program create employment, training and opportunities for local industry?

Program Administration & Implementation: What were the successes and challenges of the Program relating to internal business processes, resource requirements and inter-divisional coordination?

Below is a sample of the key performance indicators and measures of success to be incorporated into the Program evaluation:

Table 6: Measuring Success: Key Performance Indicators		
AREA	**KEY PERFORMANCE INDICATOR**	**METRIC**
Energy Conservation & Environmental Protection	Energy Efficiency Savings	% of energy savings (electricity, natural gas) # of retrofit measures installed
	Air Pollution Reduction	# of kgs of particulate matter reduced
	Greenhouse Gas Emissions Reduction	# of tonnes of eCO_2 abated
Supporting Green Economy & Housing Affordability	Job Creation and Skills Development	# of person years of employment created (direct/indirect) # of youth employment training opportunities created
	Reduced operating costs	$ of energy bill savings Savings-to-Investment ratio % reduction in long term building operating costs
Community & Stakeholder Engagement	Community and Sector Uptake	# of households reached, # of energy assessments completed, conversion rate (%), neighbourhood retrofit completion rate (%)

	Stakeholder Involvement	$ funding committed,
		$ in-kind contributions
		# of project partners

Customer Service	Customer Experience & Satisfaction	Satisfaction ratings for Program design elements: ease of use and convenience, financing terms, convenience of a property-attached loan, retrofit measures covered by Program, overcoming barriers, overall satisfaction
Occupant/Property Improvements	Occupant comfort benefits, property resale marketability	Improved thermal comfort (qualitative), % increase in property value and marketability
Local Improvement Charge	Effectiveness of the special charge as a funding mechanism	% of LIC defaults, Internal business processes in administering the LIC by-law, on-billing charge, etc.

A report to City Council will follow the completion of the Program. Based on the results of the evaluation, that report may recommend Council authorization for a broader scaled-up Program.

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ATTACHMENTS

Appendix A – Residential Energy Retrofit Program Design
I. Single-Family Housing Program Stream
II. Multi-Unit Residential Buildings Stream

Appendix B – Outline of Property Owner Agreement Terms

Appendix C – Multi-Residential Stream Business Case

Appendix D – Review of Innovative Energy Financing Programs

Appendix E – Local Improvement Charge Energy Works Reserve Fund

LINK

Public Consultation Report: Proposed Energy Efficiency Retrofit Program
http://www.toronto.ca/teo/pdf/public-consultation-report.pdf

Appendix A: Residential Retrofit Program Design

I. Single-Family Housing Program Stream

1.0. Overview

The Single-Family Stream of the Program is designed to extend municipal funding to consenting homeowners for the installation of qualifying natural gas, electricity and water conservation improvements and related energy assessments and then to secure payment by imposing a local improvement charge on the private residential property, as authorized by the Regulation.

1.1. Program Eligibility

Residential low-rise buildings located within the City of Toronto of the following forms are eligible: detached, semi-detached, townhouse, and more generally housing forms with fewer than seven units.

The property must have a property tax account with the City of Toronto. The property must also be a customer of either Toronto Hydro and/or Enbridge Gas.

Participation is voluntary, owner-initiated and subject to the following conditions:

- All registered owner(s) of the property must consent to participating in the Program;
- Property tax, utility bills and all other payment obligations to the City for the past five years must be in good standing; and
- Consent from all mortgage lenders, if the property is subject to one or more mortgages

1.2. Neighbourhood Selection Process

Enbridge Gas and Toronto Hydro have identified a mutual interest and willingness to work alongside the City in selecting four Toronto neighbourhoods to pilot the Program.

The neighbourhood selection process is to be guided by the preliminary criteria set out below:

- One neighbourhood selected from each of the Community Council areas;
- Above average utility-calculated natural gas and electricity end-use consumption;
- Above average number of pre 1980 building vintages and uniform building types;
- Higher than average ratio of owner-occupied versus rental properties;
- Varying demographic and socio-economic characteristics (i.e. low-income neighbourhoods); and
- Existing community initiatives or organizations interested in being aligned with the Program to achieve efficiencies in terms of program delivery (i.e. marketing and outreach support).

The City will monitor Program uptake within the pilot neighbourhoods during the implementation of the Program. If appropriate, the Program may be rolled out Citywide

to achieve the participation goals (i.e. either $10 million in retrofits or 1,000 single-family homes) while operating within the City Council approved budget.

1.3. Home Energy Assessments

Similar to the ecoENERGY Home Retrofit Program designed by the Federal Government, the City's Program will utilize the EnerGuide Rating System (the "ERS") that provides a standard measure of a home's energy performance. It provides a standardized tool and process to assess home energy efficiency and can model energy savings projects.

The property owner must hire a Certified Energy Advisor (the "CEA") - certified by Natural Resources Canada ("NR Can") - to perform pre- and post-retrofit assessments in accordance with ERS. CEAs are experts in the field of energy efficiency and well-versed in the 'whole home' approach to home energy systems, technologies and products. The cost of the energy assessments are paid by the homeowner to the CEA. Under the current Enbridge Gas incentive program, a homeowner is eligible for a rebate for the cost of an energy assessment of up to $500 should a homeowner complete a retrofit project and achieve a minimum natural gas savings (e.g. 25% natural gas reduction). This incentive effectively covers the entire energy assessment costs (excluding HST).

Upon completion of the pre-retrofit home energy assessment, a report is provided to the homeowner with the NR Can EnerGuide rating for the home and recommendations for energy improvements that could potentially increase that rating. This report is to be provided to the City in order to access LIC funding.

After the retrofit is complete, a second and final home assessment is performed by the CEA to obtain a second EnerGuide rating and to verify the completion of work. Provided that the second assessment that the homeowner provides to the City indicates that the EnerGuide rating has increased and the improvements have been completed, then the utility incentives (described in Section 1.8. – *Access to Utility Rebates & Incentives*) can be determined and the City can issue the final disbursement of funds, minus those incentive amounts.

1.4. Qualifying Energy Efficiency & Water Conservation Measures

The home energy assessment must demonstrate the potential to achieve cost-effective energy reductions in order to qualify for LIC funding. Funding is designated for capital costs (not maintenance costs) with an expected useful life of 5 years or greater and for measures that are permanently affixed to a property. The expected useful life of the retrofit measures is to be linked with the LIC term. The non-exhaustive list of the categories of measures eligible under the Program includes:

i. *Thermal envelope upgrades*: attic, wall and basement insulation, windows, air-sealing.

ii. Mechanical systems: furnace and boiler replacement, water heater replacement, thermostats and controllers, drain water heat recovery systems.

iii. *Water efficiency***:** low-flow toilets.

Ineligible measures include equipment or products not permanently affixed to the property, previously installed in another home and are deemed general maintenance.

By recommending categories of retrofit improvements and associated measures, the City makes no guarantees of the materials, performance, cost-effectiveness or any warranty of the measures supported by the Program.

Only the costs associated with retrofits of up to 5 percent of the Current Value Assessment of the property are eligible for the Program.

1.5. Completing the Retrofit through Contractor Engagement

The City will provide funding to homeowners for eligible measures covered by the Program that have been recommended by the CEA, verified by the City and installed by contractors hired by the property owner. The City will not pre-qualify contractors or procure contractors to perform energy assessments or install retrofit improvements on behalf of homeowners in connection with this Program. The homeowner will use the funds disbursed by the City to pay contractors directly. Note that none of the funding can be used for the CEA, but utility rebates may be available for that cost.

The City is not responsible for the work quality of any contractors hired in connection with this Program and assumes no liability for the works undertaken. All retrofit improvements and renovations must adhere to local codes and by-laws. The homeowner is responsible for ensuring that hired contractors are licensed, bonded, and insured. Any issues that may arise relating to the quality of workmanship or post-installation performance of energy measures, for example, should be dealt with by the property owner and contractor.

1.6. Application Process

The steps below outline the process and requirements homeowners need to follow as part of the Program. City staff will periodically review this process to ensure effective Program implementation and, where deemed appropriate, the City may make changes in its sole discretion.

Step 1: Pre-qualification

Homeowners submit an on-line application form that includes, but is not limited to, the following information:

- Property address to confirm location is within eligible pilot neighbourhood;
- Property assessment roll number to confirm no outstanding payments owed to the City in the last five years; and
- Evidence of mortgage lender consent (where applicable)

If a homeowner has one or more outstanding mortgage(s) associated with the property, then the homeowner must obtain (at his or her own expense) consent from the mortgage lender(s) through a form that the City will provide. Property owners will advise their mortgage lender(s) of their intention to participate in the Program and receive permission

from the lender(s) (perhaps up to only a specific dollar amount) as a requirement of the Program.

Once the property owner has been prequalified by City staff, based on the above criteria, the City will provide Notice to Proceed to the homeowner.

Step 2: Energy Assessment and Funding Request Form

1. Energy Assessment

The homeowner completes the pre-retrofit home energy assessment in accordance with Section 1.3 *Home Energy Assessments* and submits to the City the resulting Energy Assessment Report that the CEA provides to the homeowner.

That Energy Assessment Report must include:

- the current NR Can EnerGuide rating for the home;
- recommended improvements that have been customized for the home based on existing conditions which could potentially increase the NR Can EnerGuide rating of the home;
- the estimated useful life of the proposed improvement(s);
- estimated energy cost savings that may be realized after installing the recommended improvements; and
- potential eligibility for utility rebates and incentives offered by Toronto Hydro and Enbridge Gas.

In addition, where the CEA will also act as the contractor, the estimated cost of the works can be included in the report or separately indicated on the Funding Request Form.

2. Funding Request Form

Along with the Energy Assessment Report, the homeowner also will need to submit a Funding Request Form that:

- identifies the improvements that the property owner intends to install based on the Energy Assessment Report;
- identifies the cost for each improvement (including equipment, materials and labour costs); and
- the amount of prepayment (up to a maximum of 10% of the estimated cost of the work) being requested from the City upon signing the POA

Following receipt of the Funding Request Form, the City will:

- confirm the eligibility of the works (e.g. items affixed to property);
- verify the reasonableness of retrofit costs and labour costs by consulting manufacturer pricing and prevailing labour rates;
- calculate the administrative costs using a formula that apportions the cost to the City to operate this program between participating properties as percentage of the cost of the work undertaken relative to the percentage of the cost of the work to the overall Program budget for each Program Stream.

(*n.b.* the "cost to the City" includes recurring costs and any non-recurring costs not covered by the grant funding that the City has obtained for the Program); and

- estimate the eligible utility rebates and incentives available to the homeowner.

The above steps will enable the City to derive the funding amount up to the maximum of five percent of the property's assessed value to include in the Property Owner Agreement.

Step 3: Property Owner Agreement

After the City has confirmed the acceptability of the Energy Assessment Report and the Funding Request Form, the City will prepare a property owner agreement ("POA"), in accordance with Appendix B for the homeowner(s) to review and sign.

Step 4: Completing Improvements

1. Initial Funding Disbursement

Following execution of the POA, the City will provide the homeowner with the initial disbursement agreed upon in the POA to a maximum of ten percent of the estimated cost of the work that can be used by the homeowner to pay contractors or suppliers (i.e. security deposit). The property owner will be contractually obligated to repay this initial disbursement to the City if the property owner does not complete the improvements.

The property owner can then proceed with hiring contractor(s) and performing the approved energy improvements to the property. The improvements must be completed within a reasonable timeframe, as stipulated in the POA, to be determined by the City in its sole discretion.

2. Final Funding Disbursement

As will be detailed in the POA, the City will provide the final disbursement only after the homeowner provides a copy of the post-retrofit assessment report from the CEA that:

- includes a Certificate of Completion that attests the approved retrofit measures having been installed and provides an EnerGuide rating of the home after the retrofit measures have been completed which is greater than the original EnerGuide rating noted on the pre-retrofit assessment report from the CEA; and
- indicates the actual costs and useful life for all the works.

Step 5: LIC Repayment

Following the City Treasurer's periodic certification of the local improvement roll, (which occurs after the improvements on a given set of properties are complete and the final amounts of funding are confirmed), the City Solicitor will submit a corresponding bill for Council to adopt a by-law pursuant to Section 35.14 of O.Reg 596/06 to impose the special charges on the participating properties. For each property included in the by-law, the Treasurer will then add to the City's tax roll for that property each year that portion of the imposed special charge that is due in that year. These collective steps will provide priority lien status for the annual amount that the Treasurer adds to the tax roll

and will ensure that any subsequent property owner who was not a party to the POA is bound to pay that amount.

To facilitate repayment of the annual special charge, the POA will require homeowners to sign-up for the pre-authorized payment plan option of 11 monthly instalments similar to the existing Program for property tax payments. At any time, a homeowner can make advance payments, including a one-time payment of the total outstanding amount owing to clear the property of the LIC charge. Failure to make payments is treated with the same remedy as uncollected property taxes which may include penalties and interest charges.

1.7. LIC Disclosure

As indicated above, the subsequent owner of a property on which the City has imposed a special charge is required to pay the City the annual LIC amount even though that subsequent owner was not a party to the original POA. In addition to notice that the City will be giving in accordance with the provisions of O.Reg 596/06, the City also will take the following steps to ensure even greater transparency of the LIC to interested parties by:

i) posting on the City's website notice of the special charge by-law to impose the charge on the property in advance of its introduction and after its adoption; and
ii) updating the Tax Certificate to include the full LIC amount, amount payable in the current year, outstanding amounts owing and a note to reference the by-law pursuant to which the special charge was imposed.

1.8. Access to Utility Rebates & Incentives

The City plans to partner with Enbridge Gas and Toronto Hydro in the delivery of the Program to streamline homeowner's access to incentives and promotions that the utilities are making available, in part, pursuant to certain Provincial directives. Incentives are subject to change and availability.

i. Financial incentives to qualified homeowners provided by Enbridge Gas include[6]:

a. Incentives for 25% - 49% annual gas savings totals $1,600:
$500 covering the full energy audit costs, excluding HST, and
$1,100 in a cash incentive

b. Incentives for 50% annual gas savings, or above, totals $2,000:
$500 covering the full energy audit costs, excluding HST, and
$1,500 in a cash incentive

ii. Financial incentives to qualified homeowners provided by Toronto Hydro include[7]:

a. Incentive of $250 for replacing an existing furnace with a qualifying high-efficiency furnace with an Electronically Commutated Motor (ECM).

[6] Enbridge Gas incentives are available for installations of eligible equipment completed before December 31, 2014.
[7] OPA incentives are available for installations of eligible equipment completed before December 31, 2013.

b. Incentive of $250 for replacing an existing central air conditioner with a qualifying ENERGY STAR qualified system.

c. Incentive of $400 for replacing an existing central air conditioner with qualifying stand-alone CEE 'Tier 2' level system.

Other available promotions under the Ontario Power Authority (OPA) SaveONEnergy Program that will be promoted to homeowners include:

a. Peaksaver/Peaksaver PLUS Programs.

b. Free refrigerator and freezer pickup (for older less efficient models).

c. OPA coupons for efficient light bulbs, lighting fixtures, power bars, low-flow aerators and showerheads, programmable thermostats and hot water pipe and tank insulation wraps.

The funding advances by the City will be net of any rebates or other incentives received by the homeowner, with the exception of rebates received to offset the costs of the energy assessment.

1.9. Quality Control

As a means of additional oversight to confirm that the funded improvements were completed, the POA will indicate that the City reserves the right to have a City official or third party contractor arrange with the property owner for an inspection. The property owner(s) is also responsible for keeping original copies of contractor invoices and photos of installed measures, especially for harder to verify measures like insulation, and be prepared to disclose this information to the City upon request.

1.10. Measurement and Verification

Via the POA, the property owner(s) must consent to providing the City with access to the property's utility usage data in order to monitor results and evaluate the Program's effectiveness for a period of five years after completion of the retrofit. Also, the property owner(s) agrees to participate in surveys and other follow-up activities to help the City evaluate the Program.

II. Multi–Residential Stream Program Design

2.0. Outline

The Multi-Residential Stream of the Program will reach out to multi-residential property owners across the City. The Program will be designed to facilitate property owner participation by providing for the self selection of contractors, a range and combination of retrofit measures that can be pursued and competitive financing terms. Contractors will align with the requirements specified by Toronto Hydro and Enbridge Gas in connection with the delivery of utility incentive programs in order to maximize opportunities to fund retrofits.

2.1. Objectives

The proposed Program design will balance the need to attract participation and addresses the objectives of enabling a higher incidence and depth of investment in apartment building retrofits to align with a number of City objectives to:

- increase the quality of rental housing stock;
- address housing affordability by mitigating pressures on rent increases due to rising utility costs;
- realize economic development opportunities in connection with investments in retrofitting of apartment buildings, including industry development and job creation;
- achieve green house gas emission reductions; and
- achieve a higher level of energy and water efficiency and conservation.

The projected benefits to the City may include improved housing affordability, enhanced energy security, extended economic development opportunities and improved environmental performance.

2.2. Program Eligibility

Rental apartment buildings located within the City of Toronto with five or more storeys would be eligible to apply to the Program.

Properties that are not required to pay property taxes would be ineligible and properties such as condominiums that have multiple single owners would not be eligible without commitment from all owners.

The LIC would be limited to 5% of the Current Value Assessment of the property as reflected in the most recently returned assessment roll.

The City would require that participating property owners do not apply for Above Guideline Increases for retrofit measures completed through the Program.

Additional Program eligibility criteria would include:

- All registered owner(s) of the property must consent to participating in the Program;

- Property tax, utility bills and all other payment obligations to the City for the past five years must be in good standing; and
- Specification that the property owner will obtain independent legal and financial advice with respect to participation in the Program.

2.3. Outreach and Building Selection Process

The Program will be available across the City with outreach focused in:

- Areas with a concentration of buildings with a preponderance of residents with low-incomes – to maximize outcomes aligned with city objectives);
- Areas designated by City Council as Residential Apartment Commercial (RAC) pilot project areas as part of the City-Wide Zoning By-law implementation - to complement existing outreach and staff activities in these areas maximizing Program delivery efficiencies (http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.PG21.1);
- Existing apartment sites with an application for infill development - the availability of the LIC would provide an option for securing improvements to an existing building without financial implication to Section 37[8]; and
- Existing apartment sites participating in Toronto Renovates[9] - to leverage LIC funding to provide an opportunity for additional improvements.

Staff will work with a number of parties in order to build Program awareness and effectively engage participants in the Program. Engagement activities will involve:

- Associations in the multi-residential sector encouraging performance improvements such as the Greater Toronto Apartment Association, Federation of Rental Housing Providers of Ontario (particularly through the Certified Buildings Program), Canadian Green Building Council, Building Owners and Managers Association(BOMA) (through BOMA BESt), etc.
- Connections to the Toronto Atmospheric Fund which has initiatives supporting improvements to multi-residential buildings in the City
- Channel Partners: Industry professionals, suppliers, Local Distribution Companies, Enbridge Gas
- Connections established through Social Development, Finance and Administration and Tower Renewal Program initiatives such as the Strong Neighbourhoods Strategy, OPA-funded Initiatives, and connections with the United Way Tower Neighbourhood Renewal Project, Tower Renewal Leaders Forum and Tower Renewal STEP Program participants
- Multi-residential property owners and property managers

[8] Policies related to Section 37 provisions of the Planning Act are defined within the Official Plan and, as part of an application for new development on an apartment site, may include payment for improvements to an existing rental building on site. The LIC program could provide funding for the energy efficiency and water conservation improvements leaving Section 37 available for other improvements on site.

[9] The Toronto Renovates Program, led by the City's Affordable Housing Office, offers funding for the repair and renovation of affordable rental apartment buildings in the City. Toronto Renovates funding extends beyond energy efficiency and water conservation measures and would be complemented by the LIC Program.

2.4. Building Energy Assessment

As part of the Program application process, the City will require property owners to have a building energy assessment (also referred to as an energy audit) completed by an certified professional energy auditor that meets the eligibility criteria set out below. To ensure adherence to high professional industry standards, the City's requirements for the energy assessment are aligned with the energy audit requirements outlined by Toronto Hydro and Enbridge Gas for their respective incentive programs. This alignment will help to maximize opportunities for utility incentive funding for participating property owners.

To meet program eligibility requirements, the energy assessment and related report would need to be completed by a certified energy auditor with expertise in building energy efficiency who meets the following criteria:

> (i) a professional engineer ("P.Eng."), a certified engineering technologist ("CET"), a certified energy manager or a certified measurement and verification professional; with a minimum of three years of experience evaluating energy systems in buildings; or
>
> (ii) an engineer-in-training under the supervision of a P.Eng. or a CET, only if a qualified and experienced person as described in (i) above certifies and signs the energy assessment report; and
>
> (iii) the certified professional that meets (i) or (ii) must be independent of and third party to the Program applicant. [10]

Property owners will be responsible for engaging a certified professional to complete the building energy assessment and will assume any associated costs. Property owners may be able to offset these costs through incentives from Toronto Hydro or Enbridge as described in section 2.9. below. Property owners will also be responsible for any costs incurred by the City to verify the assessment report and these costs will be recovered as part of the Program administration costs.

The property owner will be required to provide the City with an energy assessment (energy audit) report that includes the identification of: recommended energy efficiency improvements (the measures), the anticipated energy and cost savings, the expected useful life of measures, the cost range for the recommended measures and eligibility for incentives.

The report provided by an eligible certified professional will be reviewed by either a third party or City staff to determine the reasonableness of the associated costs of the proposed retrofit project. In the instance where property owners are applying to the Program for measures that have received prior approval from Enbridge or Toronto Hydro, the

[10] Excerpt from the requirements for the Toronto Hydro Audit Funding Incentive https://www.saveonenergy.ca/Business/Program-Overviews/Audit-Funding/Eligibility.aspx

Enbridge and/or Toronto Hydro approval would suffice as third-party verification for those measures.

2.5. Qualifying Energy Efficiency and Water Conservation Measures

In the Multi-Residential Stream of the Program, property owners would be able to propose a range of retrofit measures that would improve the quality of life for residents, improve building condition and help to reduce building operating costs. To qualify for LIC funding, retrofit measures proposed by the property owner must be identified by the energy assessment (energy audit) report, provided by an eligible certified energy auditor. The certified energy auditor must meet the criteria set out in Section 2.4.

Eligible retrofit measures would be required to demonstrate the potential to achieve cost-effective savings or to demonstrate how the retrofit measure compliments an overall state of good repair capital program for the building. For example, undertaking a window replacement and balcony door replacement may significantly improve resident comfort and address disrepair issues as well as generating energy savings.

Examples of the categories of retrofit measures supported through the Program include:

i. Mechanical Systems (including electricity and HVAC related measures): boilers, bi-level lighting in parking garages, hot water circulation pump controls
ii. Building Envelope improvements: window and balcony door replacement, solar walls, insulated cladding for exterior walls
iii. Water Efficiency upgrades: low-flow toilets and fixtures

Retrofit measures that are not permanently affixed to the property or measures with an expected useful life of less than 5 years would not be eligible for the Program. The LIC term will not exceed the expected useful life of the retrofit measure to a maximum of 20 years and only costs of retrofits up to 5 percent of the Current Value Assessment of the property are eligible for the Program. By defining categories of retrofit improvements and associated measures, the City makes no guarantees of the materials, performance, cost-effectiveness or any warranty of the measures supported by the Program.

2.6. Completing the Retrofit Project

City will provide funding to property owners for approved retrofit projects consisting of eligible retrofit measures that meet the criteria outlined in section 2.5, and have been recommended as part of the energy assessment report prepared by an eligible certified energy auditor and verified by the City or its third party agent. Contractors will be hired by the property owner. The City will not pre-qualify contractors or procure contractors to perform energy assessments or undertake retrofit projects on behalf of property owners in connection with this Program. The property owner will use the funds disbursed by the City to pay contractors directly. Note that none of the Program funding can be used to pay for the completion of the energy assessment and related report but utility company rebates may be available to offset this cost.

The City is not responsible for the work quality of any contractors hired in connection with this Program and assumes no liability for the works undertaken. All retrofit

improvements must adhere to local codes and by-laws. The property owner is responsible for ensuring that hired contractors are licensed, bonded, and insured. Any issues that may arise relating to the quality of workmanship or post-installation performance of retrofit measures, for example, should be dealt with by the property owner and contractor.

2.7. Application Process

The steps below outline the process and requirements property owners need to follow as part of the Program. City staff will periodically review this process to ensure effective Program implementation and, where deemed appropriate, the City may make changes in its sole discretion.

Step 1: Prequalification

Property owners submit an on-line application form that will include the following information:

- Property address to confirm property is an eligible building type and ownership type.
- Property assessment roll number to confirm no outstanding payments owed to the City in the last five years.
- Acknowledgement that the property owner will obtain independent legal and financial advice with respect to participation in the Program.
- Acknowledgement of the application to the Program and consent to Program participation from all registered property owners.

Once the property owner has been prequalified by City staff, based on the above criteria, the City will provide a Notice to Proceed to the property owner.

Step 2: Building Energy Assessment and Funding Request Form

1. Building Energy Assessment

The property owner completes and provides a building energy assessment in accordance with Section 2.4 above and submits to the City the resulting Energy Assessment Report that the eligible certified energy auditor provides the property owner.

The report must include:

- recommended energy efficiency improvements (the measures),
- the anticipated energy and cost savings,
- expected useful life of measures,
- the cost range for the recommended measures

- potential eligibility for incentives.

2. Funding Request Form
Along with the Energy Assessment Report, the property owner also will need to submit a Funding Request Form that:

- identifies the improvements that the property owner intends to install based on the Energy Assessment Report;

- identifies the cost for each improvement; and

- specifies the amount of a prepayment (up to a maximum of 10% of the estimated cost of the work) that is being requested from the City upon signing the POA, if any. The City will determine at its sole discretion whether a prepayment will be advanced.

In the Funding Request Form, the property owner should specify if there is a need for several disbursements where the works involve multiple measures occurring over an extended period of time.

Following receipt of the Funding Request Form, the City will:

- confirm the eligibility of the works (e.g. items affixed to property);

- verify the reasonableness of retrofit costs and labour costs by consulting manufacturer pricing and prevailing labour rates; and

- calculate the administrative costs using a formula that apportions the cost to the City to operate this Program between participating properties as a percentage of the cost of the work undertaken relative to the percentage of the cost of the work to the overall budget for each Program Stream (*n.b.* the "cost to the City" includes recurring costs and any non-recurring costs not covered by the grant funding that the City has obtained for the Program).

The above steps will enable the City to derive the funding amount up to the maximum of five percent of the property's assessed value to include in the Property Owner Agreement.

Step 3: Property Owner Agreement
After the City has confirmed the acceptability of the Building Energy Assessment Report and the Funding Request Form, the City will prepare a property owner agreement ("POA"), in accordance with Appendix B for the property owner(s) to review and sign.

Step 4: Completing Improvements

1. Initial Funding Disbursement

Following execution of the POA, the City will have the option at its sole discretion to provide the property owner with an initial disbursement to a maximum of ten percent of the estimated cost of the work that can be used to pay contractors (i.e. security deposit). If provided, such disbursement would be agreed upon in the POA. The property owner will be contractually obligated to repay this initial disbursement if the property owner does not complete the improvements.

The improvements must be completed within a reasonable timeframe, as stipulated in the POA, to be determined by the City in its sole discretion.

Where a property owner anticipates several disbursements over a longer period of time to complete the work, the City may require the property owner to enter into separate POAs and may impose a separate special charge on the property for each disbursement.

2. Final Funding Disbursement

As will be detailed in the POA, the City will provide the final disbursement only after the property owner provides:

(i) proof that the work to install the approved retrofit measures has been properly completed and the work has been approved and accepted by the property owner; and

(ii) a detailed invoice and specification of the actual costs and useful life for all the works.

The City would be responsible for verifying that the retrofit project specified in the POA has been completed, either through a City staff or a third party verifying agent contracted by the City. The City will also verify all eligible utility rebates to be paid to the property and ensure that the rebate amounts are not included in the final funding disbursement.

Step 5: LIC Repayment

Following the City Treasurer's periodic certification of the local improvement roll (which occurs after the improvements on a given set of properties are complete and the final amounts of funding are confirmed), the City Solicitor will submit a corresponding bill for Council to adopt a by-law pursuant to Section 35.14 of O.Reg 596/06 to impose the special charges on the participating properties. For each property included in the by-law, the Treasurer will then add to the City's tax roll for that property each year the portion of the imposed special charge that is due in that year. These collective steps will provide priority lien status for the annual amount that the Treasurer adds to the tax roll and will ensure that any subsequent property owner who was not a party to the POA is bound to pay that amount.

To facilitate repayment of the annual special charge, the POA will require property owners to sign-up for the pre-authorized payment plan option of 11 monthly instalments

similar to the existing Program for property tax payments. At any time, a property owner can make advance payments, including a one-time payment of the total outstanding amount owing to clear the property of the LIC charge. Failure to make payments is treated with the same remedy as uncollected property taxes which may include penalties and interest charges.

2.8. LIC Disclosure

As indicated above, the subsequent owner of a property on which the City has imposed a special charge is required to pay the City the annual LIC amount even though that subsequent owner was not a party to the original POA. In addition to notice that the City will be giving in accordance with the provisions of O.Reg 596/06, the City also will take the following steps to ensure even greater transparency of the LIC to interested parties by:

i) posting on the City's website notice of the special charge by-law to impose the charge on the property in advance of its introduction and after its adoption; and

ii) updating the Tax Certificate to include the full LIC amount, amount payable in the current year, outstanding amounts owing and a note to reference the by-law pursuant to which the special charge was imposed.

2.9. Access to Utility Rebates & Incentives

The City has been in discussions with Enbridge Gas and Toronto Hydro and plans to work with these entities in the delivery of the Program to streamline property owner's access to the range of incentives and promotions available for multi-residential buildings. Incentives are subject to change and availability.

i. Examples of incentives currently available from Enbridge Gas:

a. Preliminary evaluation of building energy efficiency and performance report modeling provided free of charge.

b. Retrofit incentives for up to 50% of eligible project cost to a maximum of $100,000.

ii. Examples of incentives currently available from Toronto Hydro:

a. Energy Audit incentives of up to 50% of the cost to a maximum of $35,000 for eligible buildings.

b. Retrofit incentives ranging from $400 - $800 per kWh saved providing up to 50% of the project cost for approved measures.

The funding advanced by the City will be net of any rebates or other incentives received by the property owners, with the exception of rebates received to offset the costs of the energy assessment.

2.10. Quality Control

As a means of additional oversight to confirm that the funded improvements were completed, the City reserves the right to have a City official or third party contractor

complete an inspection. The property owner(s) is also responsible for keeping original copies of contractor invoices and may be required disclose this information to the City upon request.

2.11. Measurement and Verification

The property owner(s) must consent to providing the City with access to the property's utility usage data in order to monitor results and evaluate the Program's effectiveness for a period of 5 years after completion of the retrofit. Also, the property owner(s) agrees to participate in surveys and other follow-up activities to help the City evaluate the Program.

Appendix B: Outline of the Property Owner Agreement Terms

The Property Owner Agreement ("POA") will be structured in accordance with the Regulation and include the following terms and conditions, among others:

1. Estimated Cost of Work: Consists of the estimated cost of the equipment, materials and labour required to complete the retrofit project.

2. Amount of Special Charge: Consists of an amount equal to the following, net of any rebates received by the property owner from utility companies (other than those intended to cover the cost of the energy assessment): (i) estimated cost of retrofit work, (ii) an interest charge at the interest rate described below, and (iii) other costs (i.e. administrative Program costs incurred by the City) incurred.

3. Interest Rates: A fixed interest rate is amortized over the course of the financing term as a pass thru rate from the Program's funding source. Interest rates cannot be adjusted in whole or part over the term.

4. When the Special Charge is to be Paid: The repayment period is variable and reflects the expected useful life of the retrofit asset(s) and projected energy savings. The maximum financing terms available are up to 15 years for single-family houses and 20 years for multi-residential buildings. If a property is sold during this time frame and an outstanding balance exists, the obligation to repay automatically transfers to successive owners, unless paid by the property owner upon transfer of the property.

5. Maximum Disbursement Amount: The maximum amount of funding eligible for a single property is five percent of the Current Value Assessment (CVA), excluding taxes and third party rebates.

6. Amount of Prepayment: The percentage of the estimated cost of the work which the City will pay upon commencement of the work (up to a maximum of 10%).

7. Time Frame for Completion of Work: The time period determined by the City in which the work on the retrofit project must be completed to be eligible for the funding.

8. Cost Overruns/Underruns: following completion of improvements, where the property owner's final cost deviates from the earlier estimate, a property owner can request an increase or decrease in the LIC up to five percent of the estimate for overruns or underruns, respectively.

9. Early LIC Buy-out: Option for property owner to make a one-time payment of the full amount of the LIC imposed on the property to clear an outstanding LIC balance in advance of the agreed upon term.

10. Pre-Authorized Debit Payment Plan: Requirement to enrol in the City's payment program whereby property owners authorize automatic withdrawals from their bank accounts to pay the special charge and property tax instalments.

11. Inspection of Retrofit Projects: The City reserves the right to have a City Official or third party contractor arrange with the property owner to inspect the work.

12. Property Owner Consent: where needed for utility rebates and access to ongoing utility data.

13. Severed Lands: where a property owner or subsequent property owner seeks to sever the property, the LIC either will be: (a) reapportioned among those lots in any manner the City considers just and equitable, having regard to the relative degree of benefit received by each of the new lot; or (b) paid in full at the time of the City approval for the severance.

14. Above Guideline Rent Increase Restriction (Multi-Residential Stream only): The restriction on the property owner's ability to apply for above-guideline rent increases in respect of the work undertaken under the Program.

15. Financial Institution Obligations (Multi-Residential Stream only): Specification that, in signing the POA, property owners acknowledge and agree that they are responsible and will ensure they are complying with their obligations to financial institutions.

16. Land Titles Act Section 118 Registration where applicable.

Appendix C: Multi-Residential Stream Business Case

Opportunity

A substantial number of apartment buildings in Toronto are candidates for comprehensive renewal. Through retrofit measures, significant reductions to building energy and water consumption, utility costs and greenhouse gas (GHG) emissions can be achieved. Projected across the multi-unit residential buildings in the Program, the potential reduction in energy costs may range from $400,000 to $700,000 with a 10 – 25% reduction in consumption[11]. Water conservation measures would provide additional savings. Technical studies undertaken by ARUP Engineering for the Tower Renewal Office in 2010 found that significant reductions in GHG emissions, ranging from 30% to over 70%, can be achieved through conservation measures at a typical apartment building.

Projecting widespread adoption of deep retrofit projects utilizing an LIC financing mechanism would generate a demand for at least an estimated $1 billion in investment in a 10-year timeframe. Ultimately, the proposed financing option can be used to support an estimated $3.5 billion of work to be undertaken by 2035. Industry experts estimate that the time needed to perform the retrofit work for all Toronto concrete slab apartment buildings is at least 20 years. [12] The net wages for these workers would amount to approximately $2.12 billion and generate an estimated total of 30,000 person years of employment.

The expected result of the Program will be the achievement of greater economic activity and higher levels of environmental sustainability as well as reducing the potential adverse impacts to housing affordability from resource cost escalations. More comprehensive retrofit projects will also bring improvements that lead to better quality of living for residents, with a healthier living environment.

Financing Barrier

A significant reason that property owners across North America have not been pursuing comprehensive retrofits is because they are very reluctant to spend their available equity and/or available capital on opportunities that have long simple payback profiles. A recent McKinsey report (based on a national survey in the U.S.) stated that owner's hurdle rate on equity is 40%+. This means that a retrofit financed through owner's equity would have to realize a maximum payback of 3 years thereby excluding many more extensive improvement projects and projects that achieve greater savings. Now, property owners will evaluate a retrofit project in comparison to other proposed investments, and since more comprehensive projects have paybacks that are longer than 3 years, they will not be done.

By providing a source of financing that does not compete with alternative investment options, projects that have a longer payback are more likely to be looked on favourably.

[11] Calculations are based on 2010 utility costs

[12] Kesik, T, 2010. Tower Renewal Workforce Challenges and Opportunities – Final Report, http://www.toronto.ca/city_manager/pdf/tr_jobs.pdf.

To find such a source of financing, Morrison Park Advisors in a report[13] to the Tower Renewal Office examined project financing options that would not tap into property owner equity funds or impinge meaningfully on the mortgage financing capability of building owners.

Subsidies and low-cost loans are alternative sources of funding for retrofits but the impact of these options was found to be limited because the level of funding that would be required to reduce the simple payback period sufficiently to spur additional investment. Overall, where these measures have been applied, subsidy and loan programs have not generated participation in multi-faceted retrofit projects in the for-profit sector.

To address the financing challenge of comprehensive retrofits, it was previously endorsed that a new financing option be created that, once established, could be designed to operate on a self-sustaining basis.
(http://www.toronto.ca/legdocs/mmis/2010/ex/bgrd/backgroundfile-30935.pdf)
The implementation of this financing option was dependant on the Province making appropriate regulatory amendments:

a. to permit the City to provide financial assistance in the initial start-up phase to a city services corporation; and
b. to give effect to the proposed financing mechanism by providing the City the authority to add payments in default owing to the corporation to the tax roll and according such payments priority lien status.

To date, the Province has chosen to utilize the provisions of the Local Improvement Charges regulations. While the Local Improvement Charges regulations provide a vehicle to support retrofit projects, there are certain limitations that the regulations present in that the City has to provide the financing of the retrofit projects rather than an arms-length corporation sourcing capital financing and there are administrative requirements such as the passing of a by-law that add complexity to the process. Through the pilot phase staff will assess how the characteristics of the provided regulatory framework suit the needs of a full-scale retrofit financing program.

Retrofit projects fundamentally depend on the economics of investment in building upgrades successfully generating long-term savings. In spite of a net positive return over the life of the investment, which makes retrofit projects financially desirable, there has not been significant uptake for more extensive retrofit projects because limited upfront capital has been available.

Conclusion and Recommendation
A wide range of environmental, economic and social benefits can be achieved through the undertaking of building retrofit projects on a wide scale. To make these projects happen in the private sector an alternative means of financing must be available. Arranging favourable, long-term financing secured through priority lien status, will provide an alternative financing stream that does not have to compete with alternative investment opportunities.

[13] Morrison Park Advisors, 2010. http://www.toronto.ca/city_manager/pdf/tr_financing_options_report.pdf

Appendix D: Review of Programs from Other Jurisdictions

As part of the development of the pilot Program, research was undertaken by City staff to identify and review programs in other jurisdictions in North America that uses the LIC mechanism or similar property-attached financing vehicles.

Property-attached financing has been used for low-rise and multi-residential properties in North America since 2009. While the property-attached mechanism has not been used to extend financing to individual multi-residential properties in Canada, there are 16 programs operating in the United States offering financing to multi-residential properties as part of a commercial property program stream. These programs resulted largely from prior adoption of enabling legislation by the state legislature in which the municipality is located. As with the proposed LIC program, in each program examined, property owners receive funding for retrofit projects and make repayments through an additional charge on the property taxes. Ten programs were examined in detail and the case studies provided below outline four distinct program approaches.

Case Study 1:

Sonoma County Energy Independence Program
http://www.sonomacountyenergy.org/index.php

The Sonoma County Energy Independence Program (SCEIP) was launched in 2009 providing program funding to low density residential properties and commercial properties which include multi-residential properties. SCEIP focuses on ease of participation with eligibility criteria that includes a maximum project amount of 10% of property value, proof of good standing and payment history, lender acknowledgement and a loan to value ratio[14] of less than 100%. A broad range of retrofit measures are permitted. The program has a strong focus on marketing and outreach including a contractor training requirement. SCEIP also emphasizes an alignment with local utilities and other retrofit funding sources in order to create a one-stop destination for energy efficiency information. At present, information on the overall energy impact of the program is not available but evaluation tools are currently being established.

Economic development and job creation was a significant program goal for SCEIP. Monthly activity reports are released and to date, 752 jobs have been created or retain in connection with the program.

Detailed Program Features:

- Eligibility criteria includes: verification of property ownership, maximum financing request of 10% of property value, proof of good standing with property tax and mortgage payments and no bankruptcy for owner in past 3 years, loan to value ratio of less than 100%, a mortgage lender acknowledgement of application and completion of a building permit process for all projects;

[14] Loan to value ratio is the sum of all lien balances against the property divided by the market value of the property.

- Eligible Measures: A broad range of energy and water efficiency and renewable energy measures are acceptable provided the resulting asset is permanent affixed to the property;
- Contractor qualification: Contractors must sign Contractor standards, must be licensed and have general liability insurance and worker‘s compensation; the program offers training and resources for contractors and a online directory listing for contractors who complete program training;
- At least two contractor bids must be submitted for proposed retrofit projects;
- An energy audit is required at the application phase (aligned with local utility audit requirement for commercial incentives);
- Financing: Sonoma Country provides program financing through a revolving fund using bond issues for a pool of retrofit projects and determines the interest rate (currently 7%). Loan terms of 10 years and 20 years are available. Third-party financing of commercial loans are also accepted but uptake to date has been low; and
- Program Administration: provided by in-house by the county and administrative costs are recouped from participants.

Case Study 2:

Connecticut: C-PACE / Clean Energy Finance and Investment Authority (CEFIA)
http://www.c-pace.com/site/page/view/about

Connecticut created a state-wide program in October 2012 providing property-attached financing to eligible commercial properties including multi-residential buildings. C-PACE is only available to property owners that are paying property taxes in participating municipalities (currently 21 municipalities are participating in C-PACE.) C-PACE has followed more stringent participation requirements than SCEIP including a two-phase application process, the requirement for two detailed energy audits, a results reporting and measurement and verification requirement. Eligible measures are limited to those with a positive savings to investment ratio. The use of pre-qualified contactors will be required in the future. Property owner is also responsible for finding a lender for the retrofit project.

C-PACE was developed to address state energy security, reduce costs for residents, businesses and governments and to create economic opportunities. Program impact information is not yet available.

Detailed Program Features:
- Eligibility criteria:
    - the basic criteria is similar to SCEIP however, C-PACE also requires mortgage lender consent and a loan to equity ratio of greater than 1 for the property
    - energy savings are evaluated through required ASHRAE audits
    - property owners are required to undertaken performance measurement and verification and provide reporting

- Eligible measures: measures that meet a required savings to investment ratio of 1 or more are accepted as well as non-energy savings measures deemed to benefit the property.
- Two phase application process is conducted with review of eligibility at the initial phase application. Qualified applicants are invited to submit a full application within two business days.
- Financing: property owner must find a lender using a list of pre-approved program lenders or securing another project lender based on loan terms. CEFIA enters agreement with selected lender to repay loan using the special charge on the property tax.
- Contractor eligibility: CEFIA is currently establishing a list of pre-qualified contractors and use of a pre-qualified contractor will become a program requirement. CEFIA offers contractor training and resources and provides an online directory of trained contractors.
- Program administration: provided through a delivery agent (Buonicorp Partners, LLC) and administrative costs are recouped from participants.
- CEFIA verifies project completion, alert the tax collector to place the final benefit assessment on the property, alerts the project lender to release funds, after which the owner will receive payment and pay the contractor. Repayment occurs from the property owner through payment of the special charge on the property taxes. The municipality sends the special charge amount to the lender.

Case Study 3:

Halifax Solar City
www.halifax.ca/solarcity/

In December 2012, the Halifax Regional Municipality (HRM) launched the Solar City Program. The $8.3 million program is designed to use local improvement charges to support 1,000 solar water heating systems per year to homeowners. There are currently 1,600 signed-up homeowners on a waiting list for the pilot program which is being financed by the Federation of Canadian Municipalities Green Municipal Fund.

Detailed program features:

Qualified HRM residents are eligible to have up to two solar hot water collectors installed on their property.

1. Homeowner registers by expressing interest to HRM by submitting contact information and energy and water usage detail.
    a. A no cost detailed screening and assessment process is conducted by solar contractor & verified by HRM and 3rd party consultant to confirm size of system and suitability.
    b. Homes that are screened in receive an assessment of how much the solar system will save and the cost after all Federal and/or Provincial rebates and incentives (which HRM collects on their behalf).

c. Homes that are screened out are given a detailed explanation. Typically homes will be screened out because they will not save enough money to justify the installation, or will be deemed structurally unsuitable.

2. Homeowner chooses how to pay for system by either:
    a. A lump sum; or
    b. Installments for up to 10 years, which incur 3.5%, interest charges.

3. Homeowner signs agreement and returns to HRM within 30 days.
    a. Solar Contractor installs system and invoices HRM.
    b. Audits of installation are verified by

Eligibility Criteria: Homeowners' accounts must be in 'good standing' with HRM Finance to participate.

Turn-key Service Delivery Model: The program will help residents overcome any obstacles by making things simple and arranging the contracting, and through economies of scale reduce the installation pricing while holding vendors to a high quality assurance standard. HRM will also be able to help residents realize maximum savings by applying all available rebates to each participant's purchase and installation cost.

Case Study 4:

ClimateSmart Loan Program, Boulder County, Colorado
www.climatesmartloanprogram.org

Boulder County's ClimateSmart Loan Program was introduced to support the County's goal of achieving Kyoto Protocol targets and long-term carbon neutrality. Boulder County voters passed Ballot Measure 1A to authorize $40 million in bonding capacity in 2008. The program is available to residents and commercial property owners of Boulder County and covers a wide range of energy works including solar PV, small wind installations, energy efficiency retrofits and landscaping. The residential program has been put on hold until issues with the Federal Housing Administration and federal mortgage regulators, Fannie Mae & Freddie Mac, can be resolved. The first round of funding closed in April 2009 with 393 applications that totaled $7.5 million in financing.

Legal Authority: State of Colorado passed House Bill 08-1350 to allow counties to provide below-market financing for renewable energy and energy efficiency improvements on private properties via a Clean Energy Options Local Improvement District. The enabling legislation permits the use of tax exempt bonds and taxable bonds to finance projects.

Financing Options: The Boulder Program offers two types of funding

i) *Private Activity Bonds* are tax-exempt, have a lower interest rate, apply to primary residence and require applicants to demonstrate they make 115% or less of the area median income. The maximum funding amount under this option is $15,000.

ii) *Taxable Bonds* do not have income restrictions and will fund up to $50,000 or 20% of the property's actual value, whichever is less.

Funding terms are for 15 years and the interest rates are contingent on the rate secured by the county.

Administration & Program Costs: Majority of coordination, marketing and administration is done in-house (i.e. Boulder County staff). A $75 application fee applies to each project and a processing fee of 1.07% of the total assessment value. The county makes a final payment directly to contractors upon acknowledgement of work completion by the property owner. A third party organization is responsible to work alongside municipal staff to review applications and manage the bond issuance.

Eligible Measures: Air sealing and ventilation, insulation, space heating and cooling, water heating, lighting retrofits, daylighting, windows, doors and skylights, reflective roofs, pool equipment, landscaping, solar hot water, solar PV, small wind and wood/pellet stoves.

Outreach: Multi-level engagement via ClimateSmart Program website, public workshops, contractors, etc. Marketing costs are estimated at $20,000 to $20,000 annually. Mandatory workshop attendance for potential applicants is required to learn about the program in advance of submitting an application.

Appendix E: Local Improvement Charge Energy Works Reserve Fund

1. Location within the Consolidated Reserves/Reserve Funds Schedule

This account will be included in Schedule No. 7 - Corporate Discretionary Reserve Funds.

2. Statement of Purpose

The funds are to be advanced to consenting property owners for the purpose of undertaking qualifying retrofits projects on private property, including but not limited to, energy and water efficiency and conservation, under the Residential Retrofit Pilot Program.

3. Service Area or Beneficiary Program

The Environment & Energy Division and the Social Development, Finance and Administration Division shall have joint responsibility for the reserve account.

4. Initial Contribution

Funds will be contributed to this reserve account on a periodic basis from the funding sources for the Residential Energy Retrofit Pilot Program, including the Working Capital Reserve, and including, but not limited to, the Ontario Power Authority, Toronto Atmospheric Fund, Natural Resources Canada, Toronto Hydro and Enbridge Gas.

5. Contribution Policy

All payments of special charges by participating properties will be deposited into this reserve account.

6. Withdrawal Policy

Funds may be withdrawn for: (1) funding individual projects on participating properties that have entered into a Property Owner Agreement (POA) with the City under the Residential Energy Retrofit Pilot Program; (2) paying for the costs of administering the Residential Energy Retrofit Pilot Program; and (3) repaying the funds provided to the Program from the Working Capital Reserve.

7. Review Cycle

The account will be reviewed a minimum of once every three years.