



STAFF REPORT ACTION REQUIRED

Eco-Roof Incentive Program: Progress Report #3

Date:	June 6, 2013
To:	Planning and Growth Management Committee
From:	Josie Scioli, Chief Corporate Officer
Wards:	All
Reference Number:	P:\2013\Internal Services\E&E\Pg13001e&e- (AFS 17005)

SUMMARY

Green and cool roofs – known together as 'eco-roofs' – help make Toronto more sustainable and better adapted to climate change. Green and cool roofs reduce urban heat and its associated energy use. Green roofs also help manage storm water runoff, enhance biodiversity, improve air quality, and beautify our city. The implementation of eco-roofs supports businesses and creates jobs in the green industry.

In order to support the adoption of eco-roofs by building owners, the City of Toronto established the Eco-Roof Incentive Program in 2008, which is administered by the Environment and Energy Office. The program is intended to complement the City of Toronto's Green Roof By-law that mandates green roofs for new building construction. The Eco-Roof Incentive Program currently applies to existing industrial, commercial and institutional buildings, new buildings not subject to the City's Green Roof By-law, and all new and existing Toronto Public and Separate School Board buildings.

This report outlines proposed changes to the program to help further advance the implementation of eco-roofs in Toronto. Proposed changes to increase the uptake of eco-roofs include expanding the program to include residential buildings and increasing the amount of the incentive offered to green roof installations.

Funding for the program in 2009 – 2012 came from a dedicated reserve. Starting in 2013 the program became self-sustaining with funding coming from the cash-in-lieu policy tied to the Green Roof By-law. This report recommends an amendment to the Green Roof By-law to allow cash-in-lieu funds to be made available for both cool roof and green roof projects through the Eco-Roof Incentive Program. Currently, funds collected for buildings in lieu of the construction of green roofs can be directed to green roofs only.

This report also provides an update on the Eco-Roof Incentive Program.

RECOMMENDATIONS

The Chief Corporate Officer recommends that:

1. City Council authorize the Director of the Environment and Energy Office to amend the eligibility requirements in the Terms and Conditions of the Eco-Roof Incentive Program, to include residential buildings.
2. City Council authorize the Director of the Environment and Energy Office to amend the eligibility requirements in the Terms and Conditions of the Eco-Roof Incentive Program, to increase the amount of the incentive offered to green roof projects to \$75 per square metre.
3. City Council request the City Solicitor prepare an amendment to Chapter 492 of the Municipal Code – Green Roofs, known as the Toronto Green Roof By-law, to allow funds collected as cash-in-lieu of construction of a green roof be directed to the Eco-Roof Incentive Program for the provision of green roofs and cool roofs.

Financial Impact

There are no net financial implications for the Environment and Energy Office as a result of this report, as all funds are included in the program's approved 2013 Operating Budget. The 2013 budget includes \$100,000 from the Strategic Infrastructure Reserve dedicated to fund cool roof projects, and \$700,000 from the Eco-Roof Financial Assistance Reserve Fund dedicated to fund green roof projects.

2013 is the final year of dedicated funding from the Strategic Infrastructure Reserve for the Eco-Roof Incentive Program. Ongoing approval of projects through the program will be subject to the availability of funds in the Eco-Roof Financial Assistance Reserve that receives contributions from the cash-in-lieu policy tied to the Green Roof By-law. As of May 2013, there is \$817,618 available in the Eco-Roof Financial Assistance Reserve.

Currently, funds collected as cash-in-lieu of construction of a green roof can be directed to green roofs only. This report recommends an amendment to the Green Roof By-law to allow cash-in-lieu funds to be made available for both cool roof and green roof projects through the Eco-Roof Incentive Program.

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

Implementation Points

Amendments to the Eco-Roof Incentive Program, as recommended in this report will apply to all green roof and cool roof funding applications as of the date of approval by City Council. Notification of changes to the program will be provided online to applicants through the City of Toronto website.

DECISION HISTORY

In December 2008, City Council endorsed the terms of reference for the Eco-Roof Incentive Program (<http://www.toronto.ca/legdocs/mmis/2008/pg/bgrd/backgroundfile-16869.pdf>), which was officially launched in March 2009. Regular progress reports have been made to City Council. The first progress report was presented in February 2010:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2010.EX40.7>.

The second progress report was presented in March 2012:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.PG13.4>

At its meeting of May 26, 2009, City Council adopted the Green Roof By-law (Toronto Municipal Code Chapter 492) which provides an option for developers who do not wish to construct a green roof as required, to seek approval to provide cash in-lieu of constructing the green roof. City Council directed that any funds collected as cash-in-lieu be directed to the Eco-Roof Incentive Program and be utilized to provide financial support for green roof installations. The Green Roof By-law came into effect in January 2010 and can be viewed at: http://www.toronto.ca/legdocs/municode/1184_492.pdf.

At its meeting in May 2012, City Council authorized the creation of a discretionary reserve fund called the 'Eco-Roof Financial Assistance Reserve Fund' to receive monies raised through the cash-in-lieu policy of the City's Green Roof By-law for the purpose of financing green roof installations. Council also directed that that all funds acquired, both already received and in the future, through the cash-in-lieu policy of the Green Roof By-law be deposited in the Eco-Roof Financial Assistance Reserve Fund.

At its meeting in May 2012, City Council also adopted the recommendation to amend the eligibility requirements in the Terms and Conditions of the Eco-Roof Incentive Program, as needed, to ensure that eligibility for Eco-Roof Incentive Program funding is consistent with the requirements of the Green Roof By-law. At that time City Council also directed that all new Public, French and Catholic School construction projects be made eligible for green roof subsidies provided by the Eco-Roof Incentive program regardless of size. The decision document for the May 2012 City Council meeting can be viewed here:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.PG13.3>

At its meeting in January 2013, City Council adopted the following as part of the 2013 Capital and Operating Budgets:

"City Council request the Director of the Toronto Environment Office to report on amendment to the City's Green Roof By-law and cash-in-lieu policy in 2013 to include future cool roof installations."

The decision document can be viewed here:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.EX27.1>

ISSUE BACKGROUND

The Eco-Roof Incentive Program builds upon the Green Roof Strategy adopted by City Council in 2006 and the Green Roof Pilot Incentive Program, delivered in 2006 and 2007. The program complements the Green Roof By-law that mandates green roofs for new development and applies to residential, industrial, commercial and institutional buildings. The purpose of the program is to encourage the adoption of eco-roof technology, make buildings more sustainable and promote the creation of green jobs.

The Eco-Roof Incentive Program, launched in 2009, encourages the installation of green and cool roofs on existing industrial, commercial and institutional buildings (ICI) and new buildings not subject to the Green Roof By-law. The program was expanded in 2012 to include new and existing Toronto Public and Separate School Board buildings.

An "eco-roof" includes both green roofs and cool roofs. A green roof contributes to storm water management and urban heat island mitigation and is comprised of a waterproof membrane, drainage layer, organic growing medium and vegetation. A cool roof contributes to urban heat island mitigation and has an exterior surface with high "solar reflectivity" and "thermal emissivity" that reflects the sun's rays and reduces heat build-up from the sun's thermal energy. A cool roof can be either a coating applied over an existing roof system or a new single-ply waterproof membrane.

For green roofs, the program offers a \$50/m² incentive, to a maximum of \$100,000 on:

- existing ICI buildings
- new ICI buildings with a gross floor area of less than of 2,000 m².
- new and existing Toronto Public and Separate School Board buildings of any size

For cool roofs on existing ICI buildings only, the program offers the following incentives to a maximum of \$50,000:

- \$2/m² incentive for a coating over an existing roof; or
- \$5/m² for a new roof membrane.

Applicants must submit detailed plans of their proposed roof including roof coverage, maintenance plan and construction details. Applications are reviewed by Environment and Energy Office staff to ensure they adhere to the program criteria and the Toronto Green Roof Construction Standard. When necessary, staff from City Planning, Toronto Water and Toronto Building, are asked to make recommendations to the Director of the Environment and Energy Office.

If approved, the applicant is required to construct the eco-roof and provide evidence of its completion prior to receiving any part of the grant. Evidence of completion includes a letter of declaration from the installer and photos of the completed roof. Random site inspections by City staff are also part of the verification process. City staff may also inspect a green roof at anytime during its lifetime to ensure that it is being maintained properly. More information about the application process can be found at:

www.toronto.ca/livegreen/ecoroofs.

COMMENTS

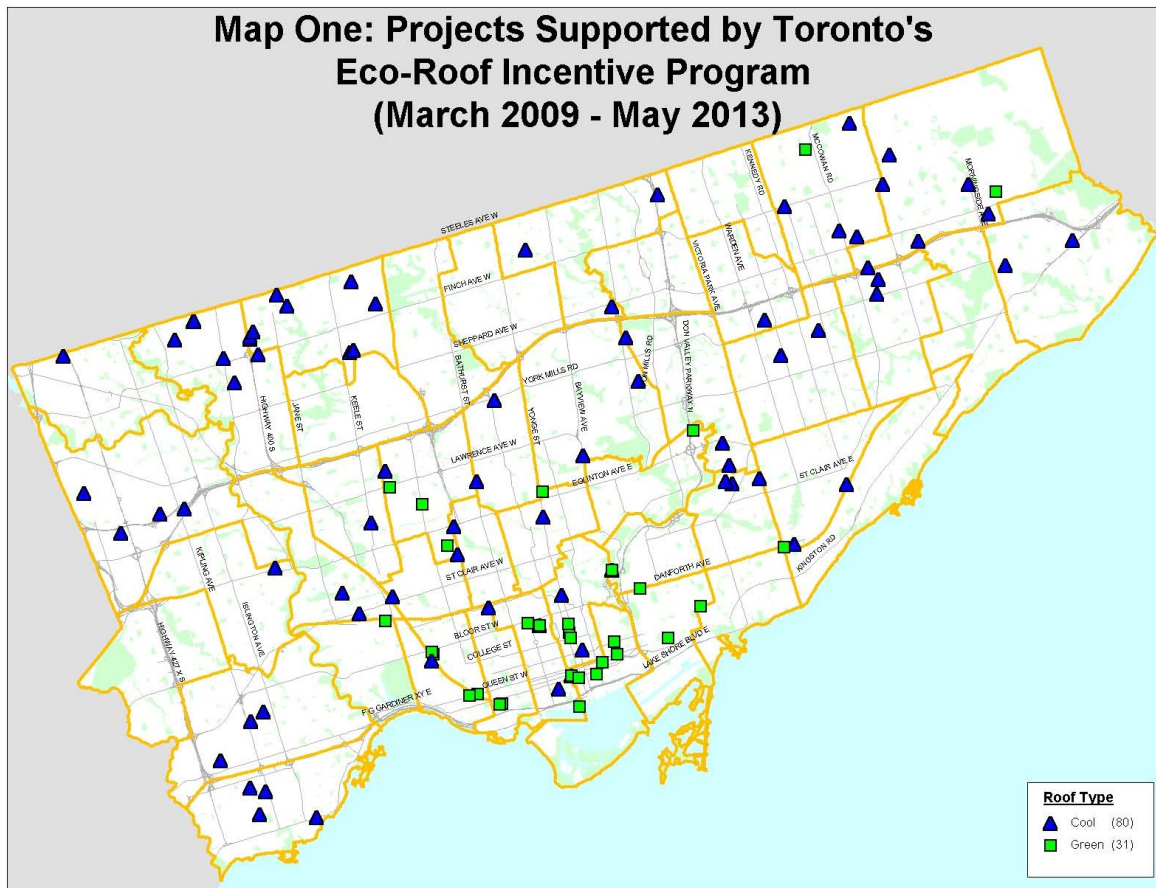
Eco-Roof Incentive Program Outcomes

Environmental & Economic Benefits

Between March 2009 and May 2013, 139 applications were received, 111 applications were approved, and 88 projects were completed (25 green roofs and 63 cool roofs) with 23 projects in progress.

A total of 240,000 square metres (equivalent to 44 football fields) of green and cool roofs have been approved under the Eco-Roof Incentive Program, with a combined funding allocation of \$1.75 million.

Map One shows the funded projects across all major employment areas in Toronto. Table One summarizes the outcomes associated with the projects supported by the Eco-Roof Incentive Program. Appendix I provides a detailed list of all approved projects.



**Table One: Measureable Outcomes of Toronto's Eco-Roof Incentive Program
March 2009 to May 2013***

Area of Concern	Outcomes
Storm water Management and Combined Sewerage Overflow	<p>Approximately 10.1 million litres of storm water diverted from sewers annually due to approved green-roofs.</p> <p>Storm water diversion by approved green roofs results in an initial cost saving of \$45,400.</p> <p>The reduction of combined sewer overflow events results in an initial savings of \$17,900 (due to reduced need for storage) and an annual savings of \$300 (due to avoided beach closures).**</p>
Energy Efficiency	<p>Average of 224,000 kilowatt hours per year in energy savings primarily from reduced need for air conditioning due to 31 approved green roofs.</p> <p>Average of 377,000 kilowatt hours per year in energy savings primarily from reduced need for air conditioning due to 80 approved cool roofs.</p> <p>Total electricity savings: \$74,500 per year (based on Toronto Hydro's average rate of 12.4 cents per kWh)</p>
Greenhouse Gas Emission Reductions and Air Quality	<p>Average of 42 tonnes of greenhouse gases avoided annually due to approved green roofs.</p> <p>Average of 71 tonnes of greenhouse gases avoided annually due to approved cool roofs.</p> <p>Green roofs provide an improvement in air quality due to reduction in particulates, nitrogen oxides, sulfur oxides, carbon monoxide and ozone from vegetation.</p>
Economic Development	<p>Minimum of 25 person-years of new employment generated to date.</p> <p>Estimated that 40 person-years of existing employment were maintained through this program.</p>
Green Space Enhancement	<p>More than 19,000 square metres of green roofs will help increase biodiversity in Toronto.</p>

*Based on 111 approved projects, of which 88 are complete

**Values are based on Toronto's Wet Weather Flow study

Urban Heat Island Reduction

Green and cool roofs reduce the urban heat island effect, which is defined as the observed increase in air and surface temperatures in an urban area caused by concrete and non porous surfaces locking in heat. Wide spread implementation of green roofs can reduce local ambient air temperature by 0.5 to 2°C and wide spread implementation of cool roofs can reduce local ambient air temperature by 0.6 to 1.7 °C.

Eco-Roof Incentive Program Review

Stakeholder Consultation

In order to determine how to make effective revisions to the Eco-Roof Incentive Program, staff undertook extensive stakeholder consultation in 2012 and 2013. Grant recipients of the program and the roofing industry were engaged through a survey and focus group.

Eco-Roof Incentive Program Recipients Survey

An online survey was conducted in February 2012. The respondents included building owners, property managers, roofing contractors, architects and green roof designers.

There were 23 responses from Eco-Roof Incentive Program grant recipients (building owners and property managers), representing 30% of program participants. Highlights of their responses include:

- 81% identified cost as a barrier to installing an eco-roof on their property.
- 77% agreed that the Eco-Roof Incentive Program grant influenced their decision to install an eco-roof over a traditional roof.
- Other key factors that influenced their decision included a desire to reduce urban heat (77%), lower energy costs (73%) and social leadership (73%).

In addition, there were 17 responses received from roofing contractors, architects and others in the green design industry. Highlights of their responses include:

- 94% cited cost as the main barrier to their clients installing a green roof.
- 67% cited cost as the main barrier to installing a cool roof.

Additional feedback received in the comments section of the survey included:

- Broaden the eligibility and increase the incentive.
- Increase the building types to which it applies by including residential.
- Provide case studies to show the cost and benefits of eco-roofs.
- Promote the program to building industry and professional associations.
- Engage the roofing industry, consider holding a seminar or focus group.

RoofTech Expo Roofing Industry Focus Group

Building upon the recommendations received through the stakeholder survey, City staff delivered a facilitated focus group at the RoofTech Expo in April 2013. A detailed overview of the Eco-Roof Incentive Program and Green Roof By-law was presented by

staff to 20 focus group participants. The group was then asked to consider how the Eco-Roof Incentive Program could be revised to allow greater participation in the program and result in more eco-roofs built in Toronto.

The following key questions were considered in the focus group:

- What can we do so that more eco-roofs are built in Toronto?
- What are the features of an Eco-Roof Incentive Program that will encourage the greatest uptake?
- What are the best ways to educate the industry and property owners about the Eco-Roof Incentive Program?
- What are the barriers to getting more eco-roofs built in Toronto?

Highlights of the feedback from the focus group included:

- Expanding the program to include residential buildings.
- Increase the financial incentive for green roof projects.
- Continuing to offer incentives for cool roofs.
- Providing case studies on completed projects for education purposes.
- Targeted promotions to roofing contractors to raise awareness of the program.
- Allowing greater flexibility to choose options that mitigate storm water and urban heat island.

Based on the results of the stakeholder consultation, three key program improvements were identified:

1. Expand the program to allow residential buildings to be eligible for funding.
2. Increase the incentive from \$50/m² for green roof projects.
3. Continue to offer incentives for cool roof projects.

A more detailed discussion evaluating these possibilities is presented below.

Expand to include residential buildings

The Eco-Roof Incentive Program currently funds industrial, commercial and institutional buildings in Toronto. Stakeholders have identified that program participation could be increased by expanding the program to include residential buildings. In this section the value of expanding the program to include residential buildings is explored.

The feedback received through the stakeholder consultation process showed overwhelming support for including the residential sector in the Eco-Roof Incentive Program. Participants in the focus group expressed the importance of allowing all types of buildings to be included. Many of the roofing contractors participating in the focus group have clients who are interested in installing residential green roofs, particularly for multi-residential buildings such as condominiums and co-operatives, where green roofs would be accessible for tenants to enjoy. Due to their high visibility, green roofs are often

one of the most popular features of green buildings. It was apparent from the feedback from the roofing industry that there is a demand for eco-roofs in the residential sector.

Residential buildings were included as part of the Green Roof Pilot Incentive Program, run by Toronto Water in 2006 and 2007. While some applications representing industrial, commercial and institutional buildings were received under the pilot program, the majority (70%) came from the residential sector. In 2006 and 2007 a total of 46 green roof projects received funding from the City. Of the 46 funded projects, 32 were constructed on residential properties. The positive response from the residential sector to the pilot program demonstrates a strong interest from residential property owners to install green roofs.

Public interest in greening residential buildings continues to be high, with daily inquiries received by City staff. The most frequently asked question about the Eco-Roof Incentive Program is regarding the eligibility of residential buildings, demonstrating an eagerness to invest in eco-roof technology from the residential sector.

Given the strong interest in green roof technology from the residential sector, it is proposed that the Eco-Roof Incentive Program be expanded to include residential roofs. Expanding the program to include residential will help achieve the program goals of facilitating and encouraging the adoption of eco-roofs and generating jobs. Broadening the program will increase the uptake of eco-roofs in Toronto, which will result in greater economic and environmental benefits.

The Eco-Roof Incentive Program is intended to compliment the Green Roof By-law that mandates green roofs for new development and applies to residential, industrial, commercial and institutional buildings. By including the residential sector, the program would also better align with the Green Roof By-law, which includes all building categories.

Until the program changes are in place, it is difficult to estimate the number of applications that will be received from the residential sector. However it is anticipated that there will be an increase in applications and, as a result, an increase in eco-roof space in Toronto.

Increase the incentive for green roofs

The Eco-Roof Incentive Program currently provides \$50 per square metre to eligible green roof projects to a maximum of \$100,000. The stakeholder consultation process has revealed that the current incentive is not enough to encourage green roofs installations and attract applicants to the program. Stakeholders have identified that an increase in the green roof incentive is required to offset the high installation costs of green roofs, particularly for green roof retrofits. In this section, an assessment of increasing the incentive for green roof projects is explored.

When the Eco-Roof Incentive Program was launched in 2009, 28 green roof applications were received. The number of green roof applications has decreased, while cool roofs applications continue to remain steady (as shown in Table Two). To encourage more green roof submissions, adjustments to the program are necessary.

Table Two: Eco-Roof Incentive Program Applications Received by Year

Year	# of Green Roof Applications Received	# of Cool Roof Applications Received
2009	28	22
2010	7	22
2011	2	23
2012	4	13*
2013**	3	15

*Cool roof funding was advertised as ending Dec 31, 2011, resulting in fewer applications in 2012.

**as of May 2013

While significant progress has been made in establishing eco-roof space in Toronto, many property owners remain reluctant to install green roofs on their buildings due to high upfront costs. Those surveyed during the stakeholder consultation process cited high upfront costs as one of the main barriers to installing green roofs, with 81% of property owners and 94% of roofing industry identifying cost as the main barrier to installing a green roof.

Comments from the roofing industry at the focus group held in April 2013 were consistent, stating that the financial incentive of \$50 per square metre was too low to encourage the installation of a green roof over a conventional roof. Participants in the focus group noted that the cost of a green roof tends to be well over \$200/m² (and higher for retrofits), while a conventional roof typically costs less than \$100/m². The divergence in upfront costs between a green roof and a conventional roof supports the feedback that cost is a major barrier to green roof development.

Research and industry response indicates that green roof costs are significantly higher for existing buildings than new construction. Structural modifications to existing buildings to support the weight of a green roof are often required (which can increase costs by 29%). Since green roof retrofits are more expensive, an attractive incentive is required to encourage property owners of existing buildings to adopt green roof technology.

As part of ongoing program monitoring, several comprehensive case studies of Eco-Roof Incentive Program grant recipients were developed to show the costs and benefits of funded green roofs. Based on three in-depth green roof retrofit case studies, the average cost to install these roofs was found to be \$315/m², further showing the significant cost of green roof retrofits and the need to increase the current green roof incentive to offset these high installation costs.

Table Three summarizes the average cost and recommended incentive for green roofs from two key studies (TRCA, 2007 & Crauderuff, Dalski and Margolis, 2012). A report providing an economic analysis of green roofs, prepared by the Toronto and Region Conservation Authority (TRCA) in 2007, cited the average cost of the installation and

labour for a green roof ranges from \$65 to \$225/m² (this value did not include the cost of the base roof, maintenance or structural modifications). This report recommended that for green roof incentive programs in the Greater Toronto Area to be successful, an incentive needs to bring the cost of a green roof within 8% of a conventional roof. Based on their calculations this means an incentive needs to be offered in the range of \$43 to \$75/m².

A 2012 study, by Crauderuff, Dalski and Margolis, assessing the effectiveness of New York City's green roof tax abatement program, determined that the typical cost to design and install a green roof ranges from \$218 to \$246/m², while the City of New York's Sustainable Storm Water Management Plan estimated the cost of a green roof to be even higher at \$263/m². This report recommended increasing the value of the incentive in New York to be in the range of \$97 to \$150/m². The program currently provides \$48/m².

Table Three: Average Cost and Recommended Incentive for Green Roofs

Report	Average cost of a green roof*		Recommended green roof incentive	
	\$/ft ²	\$/m ²	\$/ft ²	\$/m ²
TRCA report	\$6 - \$21	\$65 - \$225	\$4 - \$7	\$43 - \$75
New York City study	\$20.29 - \$22.90	\$218 - \$246	\$9 - \$14	\$97 - \$150

*Average cost of a green roof is provided as a range due to varying costs associated with the different types of green roofs (intensive, semi-intensive, or extensive), and the various types of systems (i.e. modular systems, loose laid systems, etc.).

Based on industry feedback and research, it is evident that a larger financial incentive is required to encourage green roof retrofits and attract more applicants to the Eco-Roof Incentive Program.

Recognizing that cost is a considerable barrier to the widespread adoption of green roof technology, it is recommended that the incentive for green roofs be increased from \$50/m² to \$75/m². This is within the range provided by the TRCA and below the recommended incentive provided by the New York City study. A higher value was selected from the range provided by the TRCA study, which included both new and retrofitted roofs, to help offset the greater costs associated with installations on existing buildings. Since the Eco-Roof Incentive Program is primarily focused on retrofits, a higher incentive is required to compensate for the greater expenditures.

Continue funding cool roofs

The Eco-Roof Incentive Program currently provides an incentive of \$2 to \$5 per square metre to eligible cool roof projects to a maximum of \$50,000. Funding to support cool roof installations is scheduled to end in 2013. In order to continue funding cool roof projects under the Eco-Roof Incentive Program, it has been suggested that resources be made available from the Eco-Roof Financial Assistance Reserve Fund, which receives contributions from the cash-in-lieu policy under the Green Roof By-law.

At its meeting in January 2013, City Council adopted the following as part of the 2013 Capital and Operating Budgets:

"City Council request the Director of the Toronto Environment Office to report on amendment to the City's Green Roof By-law and cash-in-lieu policy in 2013 to include future cool roof installations."

When City Council approved the Green Roof By-law in 2009, it directed that any funds collected as cash-in-lieu be provided to the Eco-Roof Incentive Program for the purpose of funding green roof installations. Currently cool roof installations are not funded by cash-in-lieu contributions.

The cool roof component of the program has proven to be successful with over 80 approved projects, over 60 completed roofs and 222,000 m² of cool roof space established in Toronto since 2009. Applications for cool roofs on existing buildings continue to remain steady (as shown in Table Two), demonstrating a strong desire to install cool roofs in the industrial, commercial and institutional sector. It is anticipated that cool roof applications will continue to be received in 2013 and beyond at the same frequency, showing the need to continue to support these types of installations on existing buildings.

Feedback from the roofing industry and property owners has suggested that, in many cases, the only option for an eco-roof on existing buildings is a cool roof, as they are unable to structurally support a green roof. Structural amendments to existing buildings to support the weight of a green roof can be significant and too costly to undertake, despite the current green roof incentive offered. For a majority of existing buildings, a cool roof or a conventional roof are the only financially viable options. To encourage the uptake of cool roofs over conventional roofs on existing buildings (where a green roof is not feasible) a financial incentive is required.

In order to continue to provide cool roof funding through the Eco-Roof Incentive Program, it is recommended that cool roof projects be funded by the Eco-Roof Financial Assistance Reserve Fund, which receives financial contributions from the cash-in-lieu policy of the Green Roof By-law. This requires an amendment to the Green Roof By-law to allow cash-in-lieu funds to be directed toward both green and cool roof projects.

It is proposed that an amendment be made to Section 492-12(C) of the Green Roof By-law to add "cool roofs". This amendment will permit funds collected under the Green Roof By-law to be used to fund all eligible green roof and cool roof projects under the Eco-Roof Incentive Program. This will ensure the sustained support of cool roof retrofits, thereby allowing the overall eco-roof space in Toronto to continue to grow and the economic and environmental benefits associated with cool roofs to increase.

Program Outlook

The recommendations made in this report are intended to broaden the Eco-Roof Incentive Program and result in more eco-roof space in the city of Toronto. Staff is forecasting an increase in applications received for both green and cool roofs based on the proposed program changes. Table Four provides a summary of applications, funding approved and eco-roof area provided through the Eco-Roof Incentive Program to date.

Table Four: Eco-Roof Incentive Program Applications and Funding Approved by Year

Year	Green Roofs Approved	Green Roof Funding Approved	Green Roof Area (m ²)	Cool Roofs Approved	Cool Roof Funding Approved	Cool Roof Area (m ²)
2009	20	\$412,089.00	9901.57	16	\$211,911.10	48642.21
2010	4	\$63,643.50	1272.87	20	\$261,320.90	52264.33
2011	2	\$71,050.00	2,451	21	\$282,530.50	68355.29
2012	3	\$52,582.50	1051.65	11*	\$165,171.00	33504.21
2013**	2	\$144,957.50	4504.15	12	\$87,575.00	17515
Total	31	\$744,322.50	19181.24	80	\$1,008,508.00	220281

*Cool roof funding was advertised as ending Dec 31, 2011, resulting in fewer applications in 2012.

**as of May 2013

From 2013 and onwards, the Eco-Roof Incentive Program will be completely self-sustaining due to funding from the cash-in-lieu policy tied to the Green Roof By-law. Ongoing approval of projects through the program will be subject to the availability of funds received from cash-in-lieu contributions and held in the Eco-Roof Financial Assistance Reserve Fund. Table Five below summarizes the funds currently held in the Reserve Fund, the expected funds to be provided from cash-in-lieu and the funds committed to green roof projects but not yet paid.

Table Five: Existing and Forecasted Funds from Cash-in-lieu Contributions

Year	Current Funds in Eco-Roof Reserve Fund	Cash-in-lieu approved but not deposited into Reserve Fund*	Grants Approved but not yet paid
Jan 2010 - May 2013	\$817,618	\$676,630	(\$144,957.50)

* It is important to note that this is an estimated amount. Proponents do not actually pay for their variance or exemption until they apply for their building permit, and may decide to pursue options provided by the Green Roof By-law.

Forecasting future cash-in-lieu payments for 2014 and beyond is difficult as there is not enough historical data currently available. The Green Roof By-law has only been in place since 2010 making it difficult to establish trends at this point in time. As part of the annual budget process, staff will report on the availability of funds from cash-in-lieu payments. It is important to note that staff will not approve projects over and above the availability of actual funds in the Eco-Roof Financial Assistance Reserve Fund.

CONCLUSION

Since 2009, the Eco-Roof Incentive Program has provided many environmental and economic benefits to the community and to the businesses that undertake eco-roof projects.

In 2012 and 2013, City staff undertook research and stakeholder engagement to determine how to improve uptake of green roofs in Toronto and increase applications to the program. Results of the stakeholder consultation and research have demonstrated that program participation could be increased by revising the Eco-Roof Incentive Program to:

- include residential buildings;
- increase the green roof incentive from \$50/m² to \$75/m², and;
- continue funding cool roof projects on existing buildings through funding available from cash-in-lieu contributions.

It is anticipated that these adjustments to the Eco-Roof Incentive Program will encourage more property owners to install eco-roof technology on their buildings, resulting in more eco-roof space created in the city of Toronto.

Staff will provide another progress report to City Council in the second quarter of 2015. This report was prepared in consultation with City Planning, Toronto Building and Legal Services.

CONTACTS

Jim Baxter, Director, Environment and Energy Office
Tel: 416-338-1295, Email: jbaxter2@toronto.ca

Mark Bekkering, Manager Implementation and Support, Environment and Energy Office
Tel: 416-392-8556, Email: mbekker@toronto.ca

Annemarie Baynton, Senior Environmental Planner, Implementation and Support,
Environment and Energy Office
Tel: 416-392-1848, Email: abaynto@toronto.ca

SIGNATURES

Josie Scioli
Chief Corporate Officer

Appendix I: Approved Eco-Roof Applications, March 2009 to May 2013.

APPENDIX I:
Approved Eco-Roof Applications, March 2009 to May 2013

TABLE A: APPROVED <u>GREEN ROOF</u> PROJECTS					
Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
29	Carrot Commons Corporation	348 Danforth Avenue	471	\$23,550.00	Completed and verified
26	Building Owner: Crown Property Management. Tenant: ESRI Canada	12 Concorde Place	704	\$35,200.00	Completed and verified
27	Metro Central YMCA	20 Grosvenor Street	486	\$24,300.00	Completed and verified
20	Brookfield Properties	207 Queen's Quay West	607.2	\$30,360.00	Completed and verified
18	Gladstone Hotel	1214 Queen Street West	540	\$27,000.00	Completed and verified
27	Native Child and Family Services of Toronto	30 College Street	531	\$26,550.00	Completed and verified
13	128 Vine Inc	128 Vine Avenue	290	\$14,500.00	Completed and verified
27	Seeds of Hope Foundation	6 St. Joseph Street	130	\$6,500.00	Completed and verified
28	Robert Carroll, Sanghun Oh (290 Ion Fashion Inc.)	380 Queen Street East	67.1	\$3,355.00	Completed and verified
35	Access Alliance Multicultural Health and Community Services	3079 Danforth Avenue	411.5	\$20,575.00	Completed and verified
22	North Toronto Collegiate Institute, Toronto District School Board	17 Broadway Avenue	2105	\$100,000.00	Completed and verified
30	Dorset Property Corp. and Reserve Investment Corp.	970 Queen Street East	493	\$24,650.00	Completed and verified
15	HM Investments Inc	518-520 Oakwood Avenue	180	\$9,000.00	Completed and verified
30	Riverdale Immigrant Women's Enterprises	1326 Gerrard Street East	150	\$7,500.00	Completed and verified
18	Monkman Art Inc.	240 Sterling Road	280	\$14,000.00	Completed and verified
19	Monarch Corporation	132 East Liberty Street	415	\$235.00	Completed and verified
19	Monarch Corporation	100 Western Battery Road	12.97	\$648.50	Completed and verified

TABLE A: APPROVED GREEN ROOF PROJECTS					
Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
28	Dundas and Parliament Development Corporation	25 Cole Street	1314	\$8,475.50	Completed and verified
20	Rotman School of Management, University of Toronto	105 St. George Street	485.8	\$24,290.00	Completed and verified
20	Miles Nadal Jewish Community Centre	750 Spadina Avenue	372	\$18,600.00	Completed and verified
18	Scout Media Inc.	276 Sterling Road	206.2	\$10,310.00	Completed and verified
14	Noble Street Studios	17 Noble Street	383.67	\$19,183.50	Completed and verified
29	Evergreen	550 Bayview Avenue	311	\$15,550.00	Completed and verified
28	Metropolitan Toronto Condominium Corporation	80 Front Street	1421	\$71,050.00	Completed and verified
28	TD Bank Group	55 King Street West	1030	\$51,500.00	Completed and verified
28	260 Richmond Holdings Inc.	260 Richmond Street East	228	\$11,400.00	In progress
15	Building Block Holdings Ltd	1189 Lawrence Avenue West	54.65	\$2,732.50	In progress
28	HOOPP Realty Inc.	141 Adelaide Street West	297	\$14,850.00	In progress
41	Conseil scolaire Viamonde	339 Alton Tower Circle	700	\$35,000.00	In progress
42	Meadowvale Sheppard Public School, Toronto District School Board	50 Upper Rouge Trail	3605	\$100,000.00	In progress
15	Lanterra Developments	2811 Dufferin Street	899.15	\$44,957.50	In progress

Green Roof Projects Summary

- Total Approved Green Roof Projects: 31 (25 complete, 6 in progress)
- Total Approved Green Roof Area: 19,181.24 square metres
- Total Approved Green Roof Grants: \$ 744,322.50

TABLE B: APPROVED COOL ROOF PROJECTS

Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
29	Peer 1 Hosting	20 Pullman Court	3623	\$18,115.00	Completed and verified
16	Toronto Cricket Skating and Curling Club	141 Wilson Avenue	5008	\$25,040.00	Completed and verified
44	The University of Toronto Scarborough	1265 Military Trail	2611	\$13,055.00	Completed and verified
34	Don Valley Volkswagen	1695 Eglinton Avenue East	1579	\$7,895.00	Completed and verified
27	Toronto Community Housing	931 Yonge Street	581	\$2,905.00	Completed and verified
2	Bayer Inc	77 Belfield Road	600	\$1,200.00	Completed and verified
8	Toronto and Region Conservation Authority	5 Shoreham Drive	1765	\$8,825.00	Completed and verified
35	Hudson Movers Ltd.	347 Kennedy Road	2232	\$11,160.00	Completed and verified
8	Friesland and Zeeland Investments Inc.	61 & 63 Brisbane Road	1015	\$5,075.00	Completed and verified
6	Butterick Holdings Ltd.	40 Butterick Road	4452	\$22,760.00	Completed and verified
8	Black Creek Pioneer Village, Toronto and Region Conservation Authority	1000 Murray Ross Parkway	2871	\$14,355.00	Completed and verified
15	PI Creative Art	1180 Caledonia Road	557	\$2,785.00	Completed and verified
1	Zoran Property Management	32 Goodmark Place	3419	\$17,095.00	Completed and verified
29	Evergreen	550 Bayview Avenue	7290.51	\$36,452.55	Completed and verified
7	Pal/Max Property Management Inc.	2300 Finch Avenue West	10000	\$20,000.00	Completed and verified
7	Avcon Construction Inc.	25 Scarsdale Road	4564	\$22,820.00	Completed and verified
16	Shaarei Shomayim Congregation	470 Glencairn Avenue	2090	\$10,450.00	Completed and verified
42	Stanmore Equipment Limited	2275 Markham Road	2511	\$12,555.00	Completed and verified

TABLE B: APPROVED COOL ROOF PROJECTS					
Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
42	Emston Industries Inc.	525 Milner Avenue	2249	\$11,245.00	Completed and verified
37	Optik K&R	425 Midwest Road	2004	\$10,020.00	Completed and verified
20	Toronto Hydro-Electric System Limited	253 Wellington Street West	790	\$3,950.00	Completed and verified
2	Soheil Mosun Limited	34 Greensboro Drive	2575	\$12,875.00	Completed and verified
2	Woodbine Entertainment Group	555 Rexdale Boulevard	790	\$3,950.00	Completed and verified
7	Atlas Containers Limited	85 Millwick Drive	2031.51	\$10,157.55	Completed and verified
8	Myriad Property Management	125 Norfinch Drive	4687.05	\$23,435.26	Completed and verified
21	Beth Sholom Synagogue	1445 Eglinton Avenue West	2039	\$10,194.25	Completed and verified
8	York Manufacturing Services	65 St. Regis Crescent North	4148.77	\$20,743.86	Completed and verified
38	Con-Tech Restorations Ltd	755 Progress Avenue	2232.00	\$11,159.98	Completed and verified
5	Coleman Containers Limited	54 Atomic Avenue	5584	\$27,920.00	Completed and verified
8	Mr. G. Investments Limited	114 Norfinch Drive	3404	\$17,020.00	Completed and verified
2	Bayer Inc.	77 Belfield Road	1578	\$7,890.00	Completed and verified
34	Medipac International Inc	180 Lesmill Road	2901	\$14,505.00	Completed and verified
27	Ryerson University	122 Bond Street	2790	\$13,950.00	Completed and verified
42	Alfa Laval	101 Milner Avenue	2876	\$14,380.00	Completed and verified
19	Elgin Picture & Frame	665 Dupont Street	420	\$2,100.00	Completed and verified
6	Domenic and Cathy Loschiavo	2786-2800 Lakeshore Boulevard West	210.4	\$1,052.00	Completed and verified

TABLE B: APPROVED COOL ROOF PROJECTS

Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
22	Global Pet	2019 Yonge Street	102	\$510.00	Completed and verified
14	Structure Corporation	35 Golden Avenue	2120.5	\$10,602.50	Completed and verified
42	Direct Marketing PG Inc.	35 Grand Marshall Drive	2518.09	\$12,590.45	Completed and verified
6	1629810 Ontario Inc.	43 Fima Crescent	468.23	\$2,341.15	Completed and verified
5	Dimpflmeier Bakery Ltd	26-36 Advance Road	1965.91	\$9,829.55	Completed and verified
40	J & P Steel Rule Dies Co.	50 Rolark Drive	1506.4	\$7,532.00	Completed and verified
7	Garyray Properties Inc.	700-730 Garyray Drive	2568.6	\$12,843.00	Completed and verified
41	Electro Circuit Inc.	115 Select Avenue	1542.19	\$7,710.95	Completed and verified
37	Mememe Inc.	1470 Birchmount Road	2346.73	\$11,733.65	Completed and verified
17	Consolidated Bottle Corporation	77 Union Street	2843	\$14,215.00	Completed and verified
5	Dimpflmeier Bakery Ltd	26-36 Advance Road	1170.11	\$5,850.55	Completed and verified
5	Dimpflmeier Bakery Ltd	29 Chauncey Avenue	524.62	\$2,623.10	Completed and verified
20	Rotman School of Management, University of Toronto	105 St. George Street	1038.7	\$5,193.50	Completed and verified
24	Canadian College of Naturopathic Medicine	1255 Sheppard Avenue East	1992.2	\$9,961.00	Completed and verified
6	Pizza Pizza Limited	500 Kipling Avenue	13082	\$26,164.00	Completed and verified
41	Torgan Construction Limited	4186 & 4188 Finch Avenue East	4473.5	\$22,367.50	Completed and verified
24	Milal Church	405 Gordon Baker Road	5852.89	\$29,264.45	Completed and verified
11	Michael Mazza	2375 St Clair Avenue West	79.90	\$399.48	Completed and verified

TABLE B: APPROVED COOL ROOF PROJECTS					
Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
31	Allanson International Inc.	33 Cranfield Road	6700.8	\$33,504.00	Completed and verified
7	Humber River Regional Hospital	2111 Finch Avenue West	2118	\$10,590.00	Completed and verified
24	Conros Corporation	125 Bermondsey Road	14000	\$50,000.00	Completed and verified
25	Sunnybrook Health Sciences Centre	2075 Bayview Avenue (B wing roof)	521	\$2,605.00	Completed and verified
41	Woodchuck Flooring Inc.	161 Nugget Avenue	1229	\$6,145.00	Completed and verified
41	Richardson Industrial Finishers Limited	21 Commander Boulevard	2043	\$10,215.00	Completed and verified
8	Mr G Investments Limited	110 Norfinch Drive	1186.84	\$5,934.20	Completed and verified
11	501 Alliance Investments Inc.	501 Alliance Avenue	10,470	\$50,000.00	Completed
25	Sunnybrook Health Sciences Centre	2075 Bayview Avenue (H wing roof)	1688	\$8,440.00	Completed
2	Italian Home Bakery	271 Atwell Drive	6503.21	\$32,516.05	In progress
12	Speedy Self Storage	7 Ingram Drive	5778.6	\$28,893.00	In progress
28	HOOPP Realty Inc.	141 Adelaide Street West	1023	\$5,115.00	In progress
35	3209 Danforth Avenue Holdings Ltd.	3211 Danforth Avenue	557.62	\$2,788.10	In progress
31	Ilse Reardon	41 Hollinger Road	855	\$4,275.00	In progress
8	Arlen Recycling Inc.	601 Canarctic Drive	3005	\$15,025.00	In progress
4	Ukrainian Canadian Care Centre	60 Richview Road	1924.3	\$9,621.50	In progress
42	Carmton Holding	1415 Morningside Avenue	2193	\$10,965.00	In progress
42	Carmton Holding	1415 Morningside Avenue	279	\$1,395.00	In progress

TABLE B: APPROVED COOL ROOF PROJECTS					
Ward	Organization	Address	EcoRoof Area (m2)	Approved Grant	Status as of May 2013
31	Ms. Olga Stojko	1314 Victoria Park Avenue	297.3	\$1,486.50	In progress
24	Sunnybrook Health Sciences Centre	285 Cummer Avenue	428	\$2,140.00	In progress
7	Garyray Properties Inc.	690 Garyray Drive	1124	\$5,620.00	In progress
7	N. Ferraro Investments Limited	150 Rivalda Road	1189	\$5,945.00	In progress
8	Alberto Rocha	5 St. Regis Crescent North	4950	\$24,750.00	In progress
44	Vince's Spring Service	6489 Kingston Road	557.4	\$2,787.00	In progress
15	Gowan Property Management	450 Winona Drive	1621	\$8,105.00	In progress
38	Grace New Covenant Pentecostal Church	1800 Ellesmere Road	1765.16	\$8,825.80	In progress

Cool Roof Projects Summary

- Total Approved Cool Roof Projects: 80 (63 complete, 17 in progress)
- Total Approved Cool Roof Area: 220,281.03 square metres
- Total Approved Cool Roof Grants: \$ 1,008,508.42