



## STAFF REPORT ACTION REQUIRED

### Green Market Acceleration Program Pilot

<b>Date:</b>	August 20, 2015
<b>To:</b>	Economic Development Committee
<b>From:</b>	General Manager, Economic Development and Culture and Director, Toronto Office of Partnerships
<b>Wards:</b>	All
<b>Reference Number:</b>	

#### SUMMARY

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Companies in Toronto's green economy are rapidly growing, generating jobs and creating solutions to urban and environmental challenges. To further support economic growth by our local innovators, Toronto companies are in need of sites for testing, proving concepts and demonstrating their new technologies.

This report seeks Council approval of the Green Market Acceleration Program (GMAP) to run in a two-year pilot phase to allow local businesses in the green economy to apply to the City to use City infrastructure and assets for certain applied research, proof of concept and demonstration pilots. This will accelerate the development of innovative green products for introduction into the market and improve the global competitiveness of Toronto businesses.

As part of the GMAP, this report seeks standing authority from Council for division heads to enter into non-procurement agreements with local businesses as currently no such authority exists.

Providing controlled access to municipally owned infrastructure and assets will assist local businesses as a stepping stone to the commercialization of new products and technologies. It is anticipated that this will lead to increasing the number of green jobs in Toronto while streamlining the request process for non-commercial partnerships that support the development of innovative green technologies or solutions for local businesses resulting in more timely responses to such requests. In addition the GMAP will reduce the workload of divisional staff that currently deal with these types of requests on an ad-hoc basis and will ensure that procurement policies are adhered to.

## **RECOMMENDATIONS**

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### **The General Manager of Economic Development and Culture and the Director of the Toronto Office of Partnerships recommends that:**

1. City Council authorize the General Manager, Economic Development and Culture (EDC) and the Director, Toronto Office of Partnerships (TOP) to launch the Green Market Acceleration Program (GMAP) for a period of two years as described in this report with the implementation requirements as set out in the Protocol for the GMAP (attached as Appendix A).
2. City Council authorize the heads of applicable City divisions to execute agreements on behalf of the City providing for the implementation of applied research partnerships, proof of concept projects and technology demonstrations using City assets or infrastructure under the GMAP in a form satisfactory to the City Solicitor.
3. City Council direct all City divisions to work with local businesses, through the GMAP, to assist with their applied research, proof of concept projects and technology demonstrations, supporting the development of "made in Toronto" market-based innovative solutions to real world issues and growing Toronto's economy.
4. City Council direct the General Manager, Economic Development and Culture, and the Director, Toronto Office of Partnerships, to report back on the outcomes of the GMAP pilot program after two years and, if warranted, provide recommendations on the establishment of a permanent program.
5. City Council direct the General Manager, Economic Development and Culture, in consultation with the Director of the Toronto Office of Partnerships and working in partnership with other City divisions, to report back in early 2016 on a proposed innovation procurement policy that would enable the City to be a first-purchaser of innovative products, services and technologies from Toronto's businesses.

### **Financial Impact**

There are no financial impacts beyond what has already been approved in the 2015 budget. This pilot program will be carried out within the base budget and staff resources of Economic Development and Culture and the Toronto Office of Partnerships. The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

## DECISION HISTORY

On May 5, 2015, City Council endorsed the report: *From Concept to Commercialization: A start-up Eco-system Strategy for the City of Toronto*. This Strategy identified actions to build local entrepreneurial capacity, support regional economic development opportunities and catalyze Toronto's start-up eco-system through business incubation and acceleration so that Toronto is recognized as a global leader. Action 15 in the Strategy recommends that EDC work with other City divisions to develop a process that would enable the City to be a first adopter and testing ground for new products and services developed by local start-ups. The GMAP addresses using the City as a testing ground for new products.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.ED3.6>

On June 12, 2007 City Council passed the report: *Unsolicited Quotations or Proposals – Revised Policy*. That report gave authority to the Toronto Office of Partnership to introduce a process to review and accept proposals for commercial business partnerships for innovative products already in the marketplace outside the normal procurement process. However it did not include a process for partnership proposals that were non-commercial in nature or did not produce a financial return for the firm. The GMAP addresses this situation.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2007.GM5.6>

Additionally, the GMAP supports three of the recommendations in the *Collaborating for Competitiveness Strategy* passed by City Council on February 20, 2013:

- *Recommendation C.1: Help small and medium size enterprises form and prosper.*
- *Recommendation D.1: Strengthen and grow high-value sectors particularly those with high economic multipliers.*
- *Recommendation D.2 Strengthen support for retaining and expanding manufacturing.*

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.ED19.4>

## ISSUE BACKGROUND

The City has a defined policy and process for evaluating and accepting commercial business partnerships through the Toronto Office of Partnerships. However when a business is interested in partnering with the City in a “non-commercial” way to support the development of innovative products it becomes extremely challenging due to a lack of Council direction and a lack of direct economic benefits for the City division engaged.

*“Partnerships proposals that are not commercial and do not produce financial returns for the proponent are not subject to these processes,”* as posted on TOP's website.

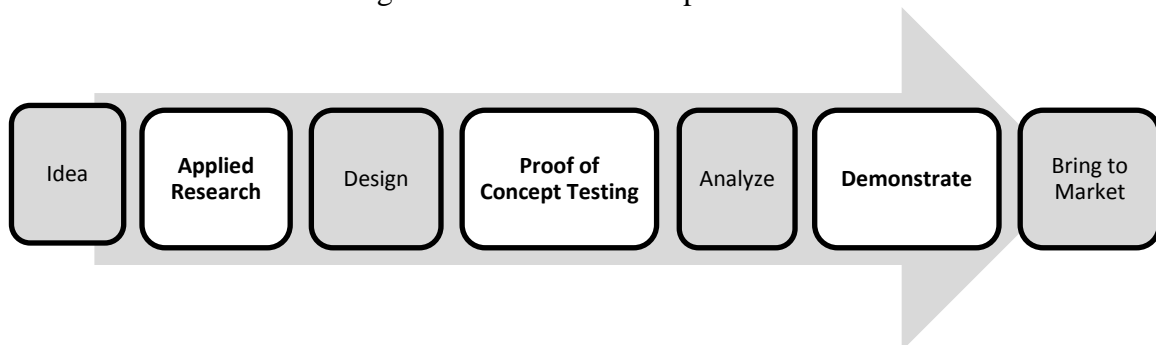
The ability for private businesses to develop innovative infrastructure improvements or solutions requires the owner of the infrastructure (often municipalities) to be a willing partner in developing new technologies that will, in the long run, reduce operational or capital costs, create revenue opportunities, or improve services. Additionally, these new technologies can be sold into the wider global market stimulating local economic growth. There are many examples of collaborative product development where the private sector partnered with local governments. The parking meter, for example, was a collaborative public-private partnership in Oklahoma City in 1933. Municipalities are now setting up programs (Vancouver's Green and Digital Demonstration Program) or offices (Boston's Office of Urban Mechanics) to unleash the private sector's ability to create innovative solutions for urban, municipal and environmental issues. The proposed GMAP closely follows Vancouver's Green and Digital Demonstration Program approved by Vancouver City Council in July 2014.

The City can play a catalytic role in supporting innovation by reducing barriers and risks associated with bringing new products to market. Establishing a process through the GMAP can work to create a more supportive environment for businesses in Toronto to test, validate and scale their new products or technologies.

Supporting the early stages of commercial innovation is a key driver for long-term economic growth. Currently City staff receives many undocumented requests for these types of collaborative partnerships and staff must deal with them on an ad hoc basis. The GMAP will reduce workload for staff, better protect the City's interests and provide a clear path for local green businesses to partner with the City.

Product development paths normally follow seven stages from concept or idea through to mass production, as illustrated in diagram 1

Diagram 1: Product Development Path



The GMAP supports the applied research, concept testing and demonstration segments of a product's development. These are the stages where there is a need for stakeholder input (applied research partnerships) or hosting of the product (proof of concept projects and technology demonstrations). It is important to note that firms that cannot research, test and demonstrate their innovations locally will inevitably be attracted to move their business closer to where their products are being developed.

City of Toronto divisions are currently hesitant to support technology innovation (applied research through to demonstration) as there is no apparent immediate benefit or financial return. Additionally, with no defined process, staff has concerns about the volume of requests they might receive, the investment of their time in managing projects and potential complications for future procurement processes. The GMAP process will manage the volume of requests, reduce divisional staff time to manage the projects and insure there are no violations of procurement policy.

While the GMAP assists companies in a number of crucial stages of product development, municipal governments can also potentially be the 'first customer' of innovative products and services that can address significant city issues while supporting growth of the local economy. This in turn assists early-stage businesses gain the market validation required to grow. EDC will work with TOP, Purchasing and Materials Management Division (PMMD), and other City divisions to examine current policy frameworks and develop recommendations for a proposed innovation procurement policy.

## **COMMENTS**

### **Defining the Green Economy**

The green sector of the economy is composed of a diverse variety of firms providing products or services that reduce the impact of human activities on the environment. This includes using our natural resources (water, air, land, trees, waste, and energy) more effectively or efficiently and includes technological solutions such as energy efficiency, electric vehicles and green transportation, renewable energy, green buildings, resource management and bio-products (i.e. items made from plants). Of Toronto's 11 key industry sectors, the green sector intersects the most with City operations. Globally, the largest commercial customer for green technologies is municipal governments.

### **Key Learnings from Past Market Acceleration Projects**

Between 2013 and 2015 EDC staff advocated for and managed a number of requests for non-commercial partnerships to support the development of innovative green technologies or solutions by local businesses. Three of the projects' key learning outcomes are outlined below while further details of each project can be found in Appendix B:

#### Underwater Compressed Air Energy Storage Demonstration

- Who: Hydrostor - Toronto start-up firm incubated at MaRS and currently located at the Toronto Business Development Centre.
- Need: Applied research, proof of concept testing and demonstration.

- Proposal: Needed a site on the waterfront to house their demonstration.
- Barrier: Project would not have happened without EDC managing the approval process through the various City divisions impacted by the project.
- Result: Ongoing. Technology has global market potential.
- GMAP Value: GMAP would clarify the role of EDC for stakeholders and City divisions and provide a clear path for internal approvals of future projects like this

#### Sawmill Demonstration at Urban Forestry Wood Residue Yard

- Who: Sawmill Sid - firm looking to establish in Toronto.
- Need: Proof of concept testing and demonstration.
- Proposal: Needed access to a City ward to operate a sawmill for a 3 week period to verify the business case.
- Barrier: Project would not have happened without EDC managing the development of the legal agreement and handling various internal administrative details.
- Result: Successful. Company has established itself in Toronto and was successful in a follow up procurement for purchasing wood from the City. This is saving the City the costs of disposing of "waste" wood while developing markets both locally and globally.
- GMAP Value: GMAP would clarify the role of EDC for stakeholders and City divisions and provide a clear path for internal approvals of future projects like this

#### Applied Research for Innovative Treatment of Waste Water

- Who: Toronto start-up firm with ties to local universities.
- Need: Applied research.
- Proposal: Samples of water from a Toronto Water waste water treatment plant.
- Barrier: Toronto Water receives a large volume of requests to support applied research and has resource challenges which prevents them from doing a proper evaluation and selection of proposals.
- Result: Due to the above barriers Toronto Water was unable to support this proposal.
- GMAP Value #1: Would formalize the process of selecting proposals – reducing the amount of time divisions spend on these inquiries and ensuring that the selection process uses objective criteria.
- GMAP Value #2: Would provide focus on the importance of supporting local businesses in developing technologies that will grow Toronto's economy.

## **The GMAP Project Application Process**

The GMAP will be run collaboratively by staff from TOP and EDC (referred to as the "GMAP team"). The operational protocols for the program are outlined in Appendix A. Specific issues are addressed below.

The project proposals will go through a two-step process - the initial application screening process reviewed by the GMAP team and then the final approval by the proposed host division.

The screening by the GMAP team will use economic, environmental and other objectives described in Appendix A and shall focus on scalability, risk, feasibility of implementation, potential for positive environmental impacts, and the overall impact on City infrastructure.

Only applications which meet a rating threshold based on the above factors will proceed to the proposal stage. The GMAP team will then discuss the proposal with the potential hosting division to identify potential interest and challenges. Once approval is given by the hosting division, and prior to commencement of the approved project, the applicant will be required to enter into an agreement with the City in a form and content satisfactory to the City Solicitor including provisions for appropriate insurance and indemnification of the City.

All direct and incremental costs shall be borne by the GMAP participant, including any direct costs incurred by the City for implementation.

The GMAP team will develop success metrics and each project will be evaluated using these metrics. At the end of each project the GMAP team will document the outcomes and lessons learned. Propriety knowledge will be kept confidential. Information will be summarized annually by EDC and TOP and will be used to assess and adjust the program. Furthermore, EDC will support the development of a communications program with the proponents to promote the success of the entrepreneur's demonstrations and the City's efforts to support them.

Legal and other risks associated with the GMAP will be addressed through the specific governance and other requirements set out in Appendix A including requirements related to procurement, legal review, insurance, time limits, scope, and duration of projects.

## **Implications, Risks and Related Issues**

### **Human Resources/Labour Relations**

All GMAP projects will be reviewed to ensure that they pose no or minimal risk to staff the public, or City assets or infrastructure, and that they carry the necessary insurance to mitigate any risk. They must meet all applicable safety standards and legislative requirements.

By channeling requests for support of applied research through a structured process in the GMAP the amount of staff time from the relevant division needed to support these requests will be managed and minimized.

### **Legal Requirements**

The City has participated in similar projects on an ad hoc basis in the past. The GMAP is intended to reduce risk by bringing these projects within a Council-approved governing framework and process; ensuring proper legal arrangements are in place to protect the City and the public.

Risk Insurance Management and Legal Services will be involved in the review of applications and the preparation of the required form of agreement to be entered into by all approved applicants prior to the commencement of any projects.

### **Procurement**

This program is intended to support applied research for real-world problems faced by infrastructure owners, to test and demonstrate technologies and to provide a reference for green business ventures with innovative market solutions. In the event the City is interested in procuring technology or other services similar to projects piloted through the GMAP, any such procurement will proceed in accordance with the City's Procurement Policies. This will include going through the Toronto Office of Partnerships Unsolicited Proposal process where appropriate.

If the GMAP participant wishes to offer its products or services to the City for purchase the company will not receive preferential treatment and must exit the program and engage the City via the normal procurement channels as per City policy. This requirement will be made clear during the marketing of the GMAP.

## **Benefits to the local Economy and City**

The economic benefits of the Green Market Acceleration Program include:

- Accelerate job growth in the green economy of Toronto
- Develop, attract and retain talent and business in the green sector
- Boost market development including international trade for local green companies
- Generate local and global partnerships
- Shorten commercialization period for innovators in Toronto
- Create competitive advantages for Toronto's green companies
- Attract investment to Toronto firms



The benefits to the City include:

- Reduce administrative burden and free up staff time by centralizing these types of requests
- Protect City interests through a clearly defined process and legal agreements
- Increase awareness of new products and technologies that may support divisions' mandate while reducing costs or improving services
- Continue to enhance Toronto's brand as a green and innovative city

## **CONTACT**

Rob McMonagle  
Sector Development Officer, Business Growth Services  
Economic Development and Culture  
Tel: 416-397-7141  
Email: [rmcmona@toronto.ca](mailto:rmcmona@toronto.ca)

Peter Remedios  
Policy & Partnership Advisor  
Toronto Office of Partnerships  
Tel: 416-392-6120  
Email: [premedi@toronto.ca](mailto:premedi@toronto.ca)

## **SIGNATURE**

Michael H. Williams, General Manager  
Economic Development and Culture

Phyllis Berck, Director  
Toronto Office of Partnership

Attachments:

Appendix A - Protocols for the Green Market Acceleration Program

Appendix B - Examples of Green Market Acceleration Projects

## **APPENDIX A: Protocols for the Green Market Acceleration Program<sup>1</sup>**

The following requirements shall govern the Green Market Acceleration Program.

### 1. Requirements Concerning the Financial Aspects of the GMAP:

a. The City of Toronto (the “City”) shall not pay any money to the GMAP participants or in respect of any GMAP project.

b. The cost of implementation of any GMAP project shall be borne by the GMAP participant, including reimbursement for any costs incurred by the City, which may include labour costs for providing access to infrastructure, providing traffic control or installations on City infrastructure. The City will not charge for staff time required to administer the GMAP.

c. The City may from time to time charge financial or equivalent consideration where it is necessary for the City to do so in order to comply with any City policies.

### 2. Requirements Concerning the Administration of the GMAP:

a. Public promotion and materials of the GMAP will be managed by the Toronto Office of Partnerships (TOP).

b. All marketing material of the GMAP will identify City requirements, including the fact that legal agreements (typically in a standard form) will be required, with appropriate provisions related to insurance and indemnification of the City by GMAP participants.

### 3. Requirements Concerning the Selection of GMAP Projects

a. Applications to the GMAP will be reviewed by a review committee consisting of not less than 3 City staff from EDC, TOP and at least one additional division or City agency.

b. GMAP processes, developed in consultation with City division staff, will focus on the selection of technologies that are genuinely in need of demonstration or proof-of-concept trials.

c. The GMAP program team will use the following objective criteria to choose technologies to present to the respective City divisions:

- Potential local economic benefits;
- Potential environmental benefits on both a local and global scale;
- Potential benefits to the City;
- Company's ability to implement the project and bring product to market;
- Compatibility with City assets;
- Amount of effort required for the GMAP program team to manage the project and time needs of divisional staff to support;
- No direct costs or risks to the City;

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<sup>1</sup> The protocols outlined here either duplicate or closely follow the best practices developed by Vancouver's Green and Digital Demonstration Program.

d. The GMAP program team will ensure that applicants receive notice within one month of their submission as to whether their proposal application will be referred to the appropriate City divisions.

e. Upon evaluating the proposal, the division will inform the proponent, via the GMAP program team, that:

- Further information is required before a decision can be made;
- The division has declined the opportunity to proceed with the project for the reasons expressed; or
- The division head has signed off and that a detailed proposal with or without amendments, is requested.

f. City divisions will work to make a decision on projects within one month of referral from the GMAP program team.

g. The City will endeavour to bring about the commencement of each approved GMAP project within four months from the time of the applicant's initial referral to the City division.

#### 4. Requirements Concerning the Administration of GMAP Projects:

a. Purchasing and Procurement Management Division, Legal Services and Risk Insurance Management shall be engaged for their review of each approved application.

b. Each GMAP project will be documented through a standard form legal agreement acceptable to the City Solicitor;

#### 5. Additional Requirements Concerning Procurement:

a. The GMAP will be directed at providing opportunities for limited scale and duration demonstrations of green technologies, in the interest of allowing local businesses to prove their technologies and create jobs.

b. Participants in the GMAP will not receive any preferential treatment or consideration with respect to future procurements. Eventual procurements, if any, will proceed in the normal course in accordance with the City's Procurement Policies. Sole-source procurement of any GMAP projects will only proceed if approved in accordance with the City's policy for sole source procurement.

c. All of the foregoing shall be made clear in the City's public promotion and marketing of the GMAP.

#### 6. Other Considerations:

a. GMAP projects shall have durations sufficient to adequately determine and document their performance or to provide a showcase, as appropriate. Projects will have a maximum duration of three years, unless the primary purpose of the project is to test the durability of a technology over a longer period.

- b. GMAP installations or projects shall not create any service interruptions for the host City division.
- c. The GMAP program team may from time to time bring forward applications that relate to assets or infrastructure owned by, or the control of which is vested in City agencies, boards and commissions.
- d. With respect to "local businesses" the GMAP will focus on companies who are physically located in Toronto but this definition may be expanded to the Greater Toronto Area subject to demand and benefit to the Toronto economy or where the project provides potential benefit to City operations. Requirements in international trade agreements will be adhered to.
- e. The provisions of this Appendix A may be adjusted by the General Manager, EDC and Director, TOP, with the concurrence of the City Solicitor and the General Manager of the Purchasing and Material Management Division, following the commencement of the GMAP; provided that such adjustments shall not materially alter the GMAP.

## **APPENDIX B: Examples of Green Market Acceleration Projects**

### Underwater Compressed Air Energy Storage Demonstration

Hydrostor is a Toronto company incubated at MaRS. Their technology has potential applications globally and in Toronto could reduce electricity peak demand thereby reducing stress on the local grid. They required a waterfront site for applied research, testing and demonstrating the benefits of their technology to clients from around the world. An appropriate site was found at the Island Water Treatment Plant operated by Toronto Water. Toronto Water was willing to host the project but did not want to take on managing the internal approvals (Legal Services, Real Estate Services, Transportation Services, and Parks, Forestry & Recreation). EDC took on the role of project managing the approval process to make this project succeed.

The GMAP would clarify the role of EDC and provide a clear path for internal approvals of future projects like this.

### Sawmill Demonstration at Urban Forestry Wood Residue Yard

There is a significant cost to the City to dispose of wood from trees removed from City property due to tree health, storm damage and safety reasons. In the summer of 2014 a local portable sawmill operator, Sawmill Sid, approached the City interested in testing if the wood residue could be processed into lumber in a cost effective manner at the City Yards. This would validate their business case for expansion into Toronto with the potential of saving the City on costs to dispose of the wood. The proposal did not fit into the standard "Offer to Purchase" that Urban Forestry offers and, as there was no financial transaction involved, it did not fit into the standard Unsolicited Proposal program of TOP. Urban Forestry was willing to host the pilot but did not have the resources to manage the contract between Sawmill Sid or to manage and oversee the actual pilot. TOP and EDC worked with Legal Services to customize a non-commercial agreement between the City and Sawmill Sid and EDC acted as the project manager for the pilot.

As Council has not provided authority for staff to enter into non-commercial agreements the process to develop the agreement had significant hurdles to overcome and took a disproportionate amount of time to develop for this 3 week demonstration. The GMAP would simplify the process through the development of a standard form of agreement for GMAP projects and reduce time between proposals and implementation.

The sawmill demonstration ran for 3 weeks in late December 2014 and early January 2015 and resulted in a number of positive media articles for the City's innovative actions. Over the 3 week demonstration, the project resulted in the City saving up to \$12,000 in wood waste disposal costs and the sale of about \$7,000 of lumber to local lumber distributors. More importantly it validated the concept for Sawmill Sid and resulted in the firm bidding (and winning) an OTP contract with the City, establishing their business in Toronto, hiring Toronto staff and ordering a custom made sawmill made by a Toronto firm.

### Applied Research for Innovative Treatment of Waste Water

In the summer of 2014 EDC was approached by a Toronto start-up firm with ties to local university researchers developing water treatment solutions using biological technologies and the use of micro-organisms. They were looking to obtain water samples from Toronto Water (TW) and an understanding of the challenges that TW faces using their current treatment processes.

EDC staff connected with TW staff to discuss this request and were told that TW gets a large number of requests to support technology development (applied research) and did not have the resources needed to adequately evaluate, select and manage them:

*"We get many requests from private sector companies and universities wanting to pilot new products and technologies. The requests greatly outstrip our ability to accommodate and we therefore have to limit ourselves to providing assistance to local academic researchers doing pure research."* Email correspondence between EDC and Toronto Water staff – September 2, 2014.

The GMAP would provide direction to City divisions that supporting local businesses like this in developing their technologies is important. In addition, GMAP would formalize the process of selecting proposals to be passed on to divisions reducing the amount of time they spend on inquiries and ensuring that the selection process uses objective criteria.