REVIEW OF THE CITY OF TORONTO GREEN MARKET ACCELERATION PROGRAM

September 2022

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Acknowledgments

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About Foresight

Foresight is enabling Canada to become the first G7 country to reach net zero. To accelerate the transition, we need to rapidly launch, commercialize, and scale climate solutions. With the support of our Helix 5 partners - innovators, industry, investors, government, and academia - Foresight is relentlessly driving cleantech innovation in Canada.

This report was commissioned by the City of Toronto.

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In supporting green technology innovators, GMAP will advance Toronto's green economy

Introduction

The City of Toronto's Green Market Acceleration Program (GMAP) supports the acceleration and commercialization of early stage green technologies. This report serves to identify the role of GMAP within the City of Toronto's green economy landscape, the value of the program to parties inside and outside the City, and to offer recommendations for improving or changing the program.

The primary objective of GMAP is to provide opportunities for local companies to collaborate with the City and gain controlled access to municipal infrastructure and assets for applied research, proof of concept testing, and demonstration pilots. In supporting green technology innovators, GMAP will advance Toronto's green economy (as defined by the City as "economic activity that produces products or services that directly or indirectly reduce the impact of human activities on the environment") more broadly by:

- Increasing green sector job growth in Toronto
- Developing, attracting, and retaining talent and business
- Supporting international trade and other market development opportunities for local green enterprises
- Fostering partnerships at local and global scales
- Creating competitive advantage for Toronto's green companies
- Attracting investment to Toronto's green economy companies

Benefits to participants beyond access to city-owned infrastructure for applied research and product development include access to City staff knowledge and use of the City of Toronto as references for marketing. GMAP creates the legislative framework to set out legal underpinning for private sector companies to work with the public sector. Prior to its inception, approvals for these types of pilot or demonstration projects required Council approval.

The program is jointly delivered by Economic Development & Culture (EDC)'s Business Growth Services (BGS) unit and Strategic Partnerships. Council first approved a pilot version of the program in Fall 2015 which ran from 2016-2018. In 2018 it was renewed until 2022. The program was put on hold from March 2020 to June 2022 due to the COVID-19 pandemic. As a result, Council voted in April 2022 to extend the program until March 2023.

While records are incomplete, best estimates indicate that since its inception, approximately 110 applications have been received and approximately twenty projects have successfully gone through GMAP, or are currently in the process of seeking a host division.

GMAP and City of Toronto Priorities

Economic Development & Culture Divisional Strategy

GMAP supports EDC's mandate to make Toronto's businesses and culture thrive, and to advance Toronto's prosperity, opportunity, and liveability. A new EDC strategy is in development for the 2024-2028 period. EDC strategic directions for 2022-2023 include:

1. Advancing economic and cultural recovery post-pandemic
2. Attracting and supporting businesses, entrepreneurship and sector development
3. Developing and implementing a coordinated approach to inclusive economic development
4. Enhancing supports for arts and culture
5. Embracing inclusive data-driven decision making and planning for 2024-2028 EDC Divisional Strategy

Summary of Consultations

Interviews and focus groups were conducted with key City of Toronto staff, program applicants, program participants, and green industry professionals to evaluate the effectiveness and value of GMAP from varying perspectives.

GMAP Staff

Interviews were conducted with staff from EDC and Strategic Partnerships. Staff turnover has resulted in the loss of some of the institutional memory around GMAP, with only one of the original GMAP staff remaining on the team. The remaining staff members have supported the program for one year or less. The remaining staff members have supported the program for one year or less. Only a portion of each staff member's time is dedicated to GMAP, requiring them to balance the needs of GMAP with other project and program priorities.

GMAP staff described program processes for screening applications, formal review, communication with applicants, and seeking host divisions. An online application form was introduced in 2019, making it easier to track applications. A formal review panel of three staff (one EDC staff member, one Strategic Partnerships staff member, and one staff member from a potential host division) review applications according to a set of criteria. It was noted that applications are often missing details about the specific project proposed to the City, which requires frequent follow-up with the proponent. Feedback is given to applicants who are unsuccessful and staff respond to inquiries from potential participants, but there is no formal communication protocol for the program.

Once a project is accepted into the program, GMAP staff begin seeking a host division for the project. This is the most time consuming part of the process and represents a significant barrier to overall program success. Successfully securing host divisions is largely built on relationships, as identifying the right person within the division heavily dictates if a project will be considered. Given the high turnover of GMAP staff, it is likely that knowledge and relationships have been lost. The process to find a host division can take up to 6-8 months, and is often unsuccessful. GMAP staff cited several reasons for a lack of uptake from host divisions, which aligned with feedback from agencies, boards, commissions, and divisions (ABCDs) in the subsequent section. Host division, staff capacity, lack of connection to divisional priorities, lack of awareness, and a culture of risk aversion within the City around implementing innovation were noted as barriers from the perspective of GMAP staff.

There is optimism among GMAP staff that a December 2021 Council decision may help alleviate some of the challenges around securing host divisions. Under this decision, Council has requested that heads of all City ABCDs participate in GMAP and designate a program liaison. However, as there is no requirement to report back to Council, there may

be limited response from divisions. Furthermore, for this direction to be impactful, it will be critical that the liaisons hold enough knowledge and decision-making authority within their institution to facilitate the advancement of a GMAP project. Once a host division has been secured, the GMAP staff can provide guidance around establishing a contract; however, it is the responsibility of the host division to complete that process. The GMAP team has created some contract templates but often the specific project needs require more customization. After a project has moved forward with a host division, GMAP staff no longer have any formal involvement and do not track the project. There are standard project evaluation forms but they are often not filled out or returned to the GMAP team. Without a formal reporting process, it is difficult to capture learnings or track how many projects make it to conclusion.

Staff indicated that programs like GMAP are likely to play an increasingly important role in the City. As the City is exploring potential evolution of GMAP, staff suggested there may be an opportunity to examine if a special purpose office, like Strategic Partnerships, is the right host. Overall, the learnings from GMAP as a template work to the City's advantage as efforts in green innovation get underway.

EDC staff indicated that GMAP does contribute to divisional goals and priorities. Municipal governments are limited in the policy instruments they have available to tangibly support business development in priority sectors. GMAP is one such opportunity that the City of Toronto can offer.

City of Toronto ABCDs

Five focus groups were held with 17 City of Toronto ABCDs representatives who have had previous engagements with GMAP. ABCDs agreeing to participate in the review included Solid Waste Management Services (SWMS), Transportation Services, Environment & Energy (now Environment & Climate), Legal Services, Toronto Hydro Corporation, and Technology Services. Participants were asked to discuss their experience with the program, challenges and successes, opportunities for improvement, as well as speak to the value GMAP brings to divisional priorities, and whether they desire to continue participating.

Some participating ABCDs had experience hosting between 1 - 5 projects. Other participating divisions have not directly hosted projects, but were involved as legal support. Individual participants' experience with GMAP varied. Some had directly engaged with projects and others had not, but were familiar with the program. A small group of participants were unaware of GMAP and expressed confusion about the program's purpose, believing it was a procurement process.

One of the most frequently mentioned challenges with GMAP from the perspective of ABCDs was a lack of staff resources. With certain projects taking considerable time, hosting is not always feasible as divisional staff are often at maximum workload capacity. ABCDs also mentioned encountering administrative issues that required extensive amounts of time on the host division's end with minimal support from GMAP staff. This included developing legal contracts and the project closeout process. Because of limited staff resources, ABCDs emphasized the importance of aligning pilot projects with divisional goals, which has been a challenge in the past. Another common challenge stems from a misunderstanding among GMAP participants who believe the program is a procurement process rather than a test and pilot opportunity. This results in a disconnect between participants and the host division, with some ABCDs experiencing direct sales attempts.

Despite the challenges, ABCDs were appreciative of the uniqueness of GMAP. Review participants expressed pride in the fact the City is open to exploring new technologies to advance 'green technology'.

To improve GMAP, suggestions from ABCDs included:

- Better communication within City departments to increase visibility
- Operating on a set review schedule to give host divisions more preparation time to free up resources
- Setting specific calls for innovation that align with host divisions' current priorities
- More clearly scoping projects in advance
- Developing shared templates for legal agreements and other common documentation

Additionally, ABCDs noted the opportunity for GMAP to function as a 'repository of research'. If results and data from previous tests and pilots were compiled and shared among divisions, having a source of information on the desired standards and specifications of various technologies would be highly valuable to City staff. Positioning pilots as an opportunity to collect and share results and data may also present a benefit to divisions, making allocation of resources and City assets more likely.

Regarding the value of GMAP to divisional priorities, some ABCDs liked that the program increases awareness of potentially beneficial, innovative technologies. This value would be heightened by better aligning projects with active priorities in each division. These ABCDs expressed an interest in continuing to participate. Other ABCDs didn't recognize GMAP's value to supporting priorities and are unlikely to continue to participate. It is apparent that certain ABCDs are running similar programs within their own divisions (e.g., SWMS, Transportation Services). Because of this, there is a limited niche in which GMAP would fit within business needs. It was also noted that the lack of staff resources is a contributing factor to reduced participation. Some divisions noted this opinion may change if the program could better assist with specific technology needs

Green Industry

15 program participants were contacted for feedback. Interviews were secured with five companies who have participated, or are currently participating, in GMAP between 2016 and 2022. Interviews were also conducted with five applicants to the program who had not participated for various reasons. Most indicated that they were introduced to GMAP through existing networks and conversations with City of Toronto staff.

A common trend heard from applicants was that despite being a testing program, there was still confusion around the relationship between GMAP and procurement, with many hoping that GMAP was a channel to sell to the City after the project. In fact, in one instance, a participant was actually directed to GMAP by Purchasing & Materials Management (PMMD). This lack of clarity frequently resulted in negative feedback. Other participants that better understood the opportunity associated with GMAP mentioned getting a lot more benefit out of the program.

Most companies appreciated the straightforward proposal and rolling application process, but some remarked on long time periods before hearing any feedback, in some cases taking up to one year. It is of note that most of the successful applicants and those with the quickest project start time were referred to the program by a host division. Once accepted into the program, participants described the legal contract phase to be time consuming and complicated. Participants also noted the costs as a barrier to participation.

Additional commonly heard benefits of participating in the program include access to subject matter expertise and project management support during the implementation stage. Despite frustration on the lack of procurement opportunities, most participants saw a significant benefit of participating in the program to advance their technology. In some cases, GMAP led to significant commercial success, with one participant confidently reporting that 100 jobs were created as a result of the testing they were able to complete via GMAP.

Suggested opportunities to improve GMAP include hosting a showcase or demo day for program participants, improving clarity on the specific information needed for a successful application, developing clearer final evaluation reports, and showcasing case studies of successful participants on the GMAP website.

NGOs/Industry Associations

Interviews were conducted with representatives from green industry parties to understand the role of GMAP in the broader environmental ecosystem. Representatives were from:

- The Atmospheric Fund (TAF), which invests in urban solutions to reduce greenhouse gas emissions and air pollution
- The partnership of Foresight and SI Canada (formerly the Climate Ventures brand) which fast-tracks the success of early-stage entrepreneurs and innovators developing and implementing solutions to the climate crisis
- The Ontario Environmental Industry Association (ONEIA), the business association representing the interests of the environment industry in Ontario

Overall, familiarity with GMAP was low among green industry representatives. Where there was awareness of the program, it was driven by personal relationships with City of Toronto staff. There is interest among green industry professionals to learn more about GMAP, perhaps through targeted workshops.

Green industry participants identified some potential barriers to program success. They indicated that the opportunities presented by GMAP would most benefit early stage ventures who are still trying to validate their technology; however, these early stage ventures are unlikely to have the ability to cover the costs and capacity needs of program participation. Ventures that have the capacity may be less likely to need GMAP. Recommendations were made to explore a potential collaboration with a third party funding body to lower barriers to entry.

All of the interviewees identified that a program like GMAP is valuable to the ecosystem; however, they did note that the bottleneck in green technology solutions in Ontario is in market uptake, not innovation. For those who implement green technologies, having a shorter supply chain would reduce costs and time associated with projects, therefore programs that cultivate local solutions are appreciated.

Industry professionals also indicated that clarification around the geographic eligibility of the program would be useful. Those supporting early stage ventures mentioned that they would direct their community to the program but would first want to do more relationship building with the City to maximize the probability of success for their partners.

GMAP Evaluation

The consultations yielded fruitful insights to help evaluate GMAP. Key insights on the program's design and processes as well as a review of its key strengths, weaknesses, and value to City priorities elucidated from conversations are summarized below.

A. Program Design

1. Relationship Between GMAP and Procurement

As it is currently structured, the program works best when there is no need for or expectation of procurement following a project. As GMAP evolves and iterates, there may be an opportunity to explore a more intentional relationship between GMAP and procurement, if deemed appropriate. Linking the outcomes of GMAP to market uptake of green innovation, either within the City or with other customers, will help achieve the overall goals of the program and address the bottleneck that was identified by green industry professionals.

2. Geographic Scope

Clear geographic eligibility guidelines must be determined and included in internal and external program materials. If companies based outside of Toronto are eligible, projects must directly benefit Toronto and align with City priorities. Doing so will ensure there is no real or perceived 'bonusing' of companies, which occurs if a company receives an undue benefit from a Municipality as defined under the *City of Toronto Act, 2006*. Expectations around direct benefits must be communicated.

3. Project Volume

Presently, the ability of the program to meaningfully deliver against the stated goals is limited by the small number of successful projects over the lifespan of the program. An important caveat is that the program was closed for a significant amount of time during the COVID-19 pandemic. In order to maximize the return on resource investment, efforts should be made to improve program efficiencies, increase internal buy-in, and build overall awareness to increase the number of successful projects.

4. Strategic Alignment with City Division Priorities

GMAP works best when the projects deliver against City priorities while also supporting green innovators. Furthermore, the benefit to the City needs to be clear to prevent bonusing of companies. There is opportunity to identify and strategically align GMAP with broad divisional priorities. Better alignment will likely reduce the effort required to secure host divisions.

B. Processes

1. Record Keeping and Tracking

The records for the program are often incomplete, making it difficult to evaluate program progress and success. Very little information about project outcomes is shared with or compiled by the GMAP team. While there is a standard end-of-project report template, it is often not filled out and returned to the GMAP team.

2. Securing Host Divisions

Securing host divisions is a large barrier to GMAP success. Improving uptake within host divisions will greatly increase the effectiveness of GMAP. The recent Council directive for all divisions to identify a GMAP Champion may help if it is implemented.

3. Consistency and Fairness

A lack of consistency in program acceptance can arise due to fluctuations in available host division capacity and resources. For example, two very similar technologies may apply at different times of year, with only one being accepted due to available capacity. This may introduce perceptions of unfairness into the program.

C. Strengths

1. Tangible Intervention

Municipalities are often limited in terms of actual policy instruments available to address the community priorities around sector development. GMAP provides a practical, tangible intervention that supports green sector business development. City staff and participants emphasized the value of the legal opportunity for divisions to explore innovative pilots without needing Council approval.

2. Application Process

The simplicity of the application form creates a low barrier to entry. Both applicants and City divisions appreciated the rolling application process.

3. City Subject Matter Expertise

GMAP participants cited the subject matter expertise they received from the City staff as an important benefit to the program. The ability to interact with City staff resulted in learnings and improvements for their technology which has led to more sales and market opportunities.

D. Weaknesses

1. Low Awareness

Program awareness is low among City staff and green industry professionals. This leads to fewer applications and increased difficulty in finding host divisions.

2. Lack of Clarity

The most common feedback from interviewees across all demographics was a lack of understanding around the relationship between GMAP and procurement. Clarity is important both for program delivery and to defend city procurement decisions from potential legal action.

Participants also cited confusion over the geographic eligibility requirements of the program.

3. Communication

With Applicants:

While the website does clearly state that participants will not receive preferential treatment in procurement processes, our consultations indicate that there is still confusion. Additional or alternative methods of ensuring this is understood are needed. Presently, clear application guides and FAQs are not available to applicants. As a result, GMAP staff must spend time responding to questions or following up on relevant information missing from proposals.
Once a company submits a proposal, there is little communication until a host division has been secured. This leads to the proponent feeling unclear about next steps.

With City Staff:

Many City staff do not know about GMAP or misunderstand the opportunity, and do not know where to find more information.
Two-way communication with potential host divisions will provide insights into division priorities. This information could be used to provide broad thematic program priorities.

With Green Industry Professionals:

Awareness of GMAP is low among green industry professionals, and where it does exist it is driven by personal relationships. Without broader program awareness, there will be fewer applicants and less recognition of Toronto as a leader in the space.

Overall Program Marketing:

Presently, there are no marketing initiatives to support GMAP. Showcasing program successes will increase program visibility locally and abroad, potentially leading to more

City of Toronto ABCDs acting as hosts, further investment in the ecosystem, and the establishment of Toronto as a global leader in green talent and innovation. It will also increase visibility of program participants and support their commercial success.

4. Standardized Templates

There is a need for standardized templates and processes, in particular around contracting and reporting. Some City of Toronto staff voiced frustration at the amount of capacity required to develop and execute contracts, and that they were expecting more support/direction from the GMAP team. Frustrating and highly resource-intensive processes make it less likely that a division will host future GMAP projects.

5. Follow Up and Project Reporting

The absence of a standardized, end-of-project reporting process means that the true impact of GMAP is difficult to evaluate, and therefore the benefit to the City is not being fully realized.

6. Program Resources

Under the current level of resourcing, GMAP staff do not have the capacity to build program awareness, provide support to participants and host divisions, manage reporting and, overall, deliver the program as effectively as desired.

E. Ability to Contribute to City Priorities

1. GMAP Priorities

Due to the lack of reporting, it is difficult to fully evaluate GMAP's effectiveness. Based on our consultations, we found that GMAP in its present form is partially achieving the stated goals. When GMAP works as intended, it provides significant benefits to green companies, at times leading to commercial success, including with international clients. However, the small volume of projects means that the program is not significantly contributing to job growth or to developing, attracting, and retaining sector talent and business.

In the absence of targeting marketing initiatives, the lack of awareness about the program and its successes means it is not likely to contribute to the development of local and global partnerships or to attract investment to Toronto firms. To more fully achieve these goals, the program may need to evolve and/or receive an additional investment in capacity.

2. Economic Development & Culture priorities

Given that EDC is in the process of creating a new strategy, there is opportunity to reflect on the role and weight given to GMAP in achieving new divisional goals. Based on the 2022-2023 goals, GMAP is contributing to the ambition of attracting and supporting businesses, entrepreneurship, and sectoral development. Given the important emphasis and priority given to initiatives to support and cultivate inclusivity, consideration should be given to how or if GMAP can support those goals.

F. Overlap/Integration with other City programs

1. Other City Division Priorities

GMAP works well when the projects support divisional priorities. In some cases divisions are developing their own pilot programs to help achieve their goals. These programs may be more tailored to the individual needs of the divisions and better suited their goals than GMAP and may be designed to lead to procurement. However, in some cases it is possible that GMAP would suit the needs of the division and they are simply unaware of the opportunities provided. Care should be taken to ensure that any division-specific programs are complementary to GMAP and not a duplication of efforts.

2. Broader City Initiatives

Consultations reported that the innovation landscape in the City is evolving, and GMAP can be an important part. The program has the benefit of several years of learning compared to other, newer initiatives. For any innovation program to be successful, efforts will need to be made to foster a culture that is more open to innovation. Where possible, GMAP should align and integrate with other City innovation initiatives to avoid duplication of efforts and confusion.

3. TransformTO and Net Zero Strategy

While not currently part of the program's mandate, GMAP has significant potential to support the delivery of the TransformTO and Net Zero Strategy. This program is designed with 2030 and beyond Net Zero Targets to reach net-zero (base year 2008) levels of CO_2 emissions. Under this strategy, there are multiple targets relating to the innovation of green technologies and their adoption for the City of Toronto. Efforts should be made to ensure that GMAP smoothly feeds into these strategies.

Recommendations and Conclusion

1. **Create tracking processes over the complete lifecycle of projects to allow for better evaluation of individual projects and GMAP as a whole. This could include improved web analytics for the GMAP website and securing capacity to centralize historical program information.**

   a. In particular we recommend the development of a more robust, standardized mechanism to capture the learnings of all GMAP projects to ensure the City is maximizing the benefits of the program. These learnings could be hosted in a repository to benefit future procurement needs of City divisions.

2. **Improve program clarity by:**

   a. Clearly defining and communicating geographic eligibility guidelines
   b. Explore and clearly communicate the relationship (if any) between GMAP and the procurement process with the necessary internal stakeholders, and then clearly communicate the expectations to internal and external audiences

3. **Identify and implement strategies to overcome common barriers to host division participation. These may include:**

   a. Targeted outreach to increase awareness of GMAP among City of Toronto staff. GMAP staff should capitalize on the opportunity created by the City Council directive by identifying and relationship building with divisional GMAP liaisons. Clearly communicate the co-benefits to participation in GMAP.
   b. Creating frameworks and templates to be used by host divisions to reduce difficulty in negotiating legal agreements later
   c. Providing more guidance through the project establishment process to host divisions
   d. Continuing to accept applications on a rolling bases but completing reviews at regular intervals that align with host division resourcing and work planning timelines (perhaps quarterly). This would allow better mapping of resources required to host GMAP projects.
   e. Identifying City division priorities and align GMAP to help divisions achieve those priorities. This may include communicating broad thematic program priorities to GMAP applicants, or occasionally holding targeted, Challenge-style calls for proposals.

4. **Align GMAP with other, similar initiatives, and initiate conversations with divisions undertaking similar processes (e.g. Environment & Climate, Transportation Services) to ensure that efforts are not being duplicated**

5. **Explore relationships with third party funding bodies who can support GMAP participation among early stage or resource constrained ventures**

6. **Update program materials on the website to include:**
   a. An FAQ document
   b. An application guide
   c. Clearer explanation about the goals and opportunities presented by the program
   d. Updates to the application form to better outline the benefit to the City presented by the proposed project to ensure that there are no concerns around bonusing

7. **Explore introducing a requirement that project participants add all non-proprietary data to City of Toronto open data**

8. **Create a marketing strategy for GMAP to help achieve program goals. Consider including demo days or other opportunities for program participants to engage with community members and potential investors**

9. **Assess the capacity needs for GMAP and consider additional resources to enable the GMAP team to:**
   a. Build and maintain relationships with host ABCDs, green industry professionals and potential applicants
   b. Improve project reporting
   c. Manage a data repository
   d. Execute a marketing strategy

Foresight appreciates the opportunity to provide the City of Toronto with this review of the Green Market Acceleration Program, and looks forward to continued collaboration to support advancement of the clean economy.

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