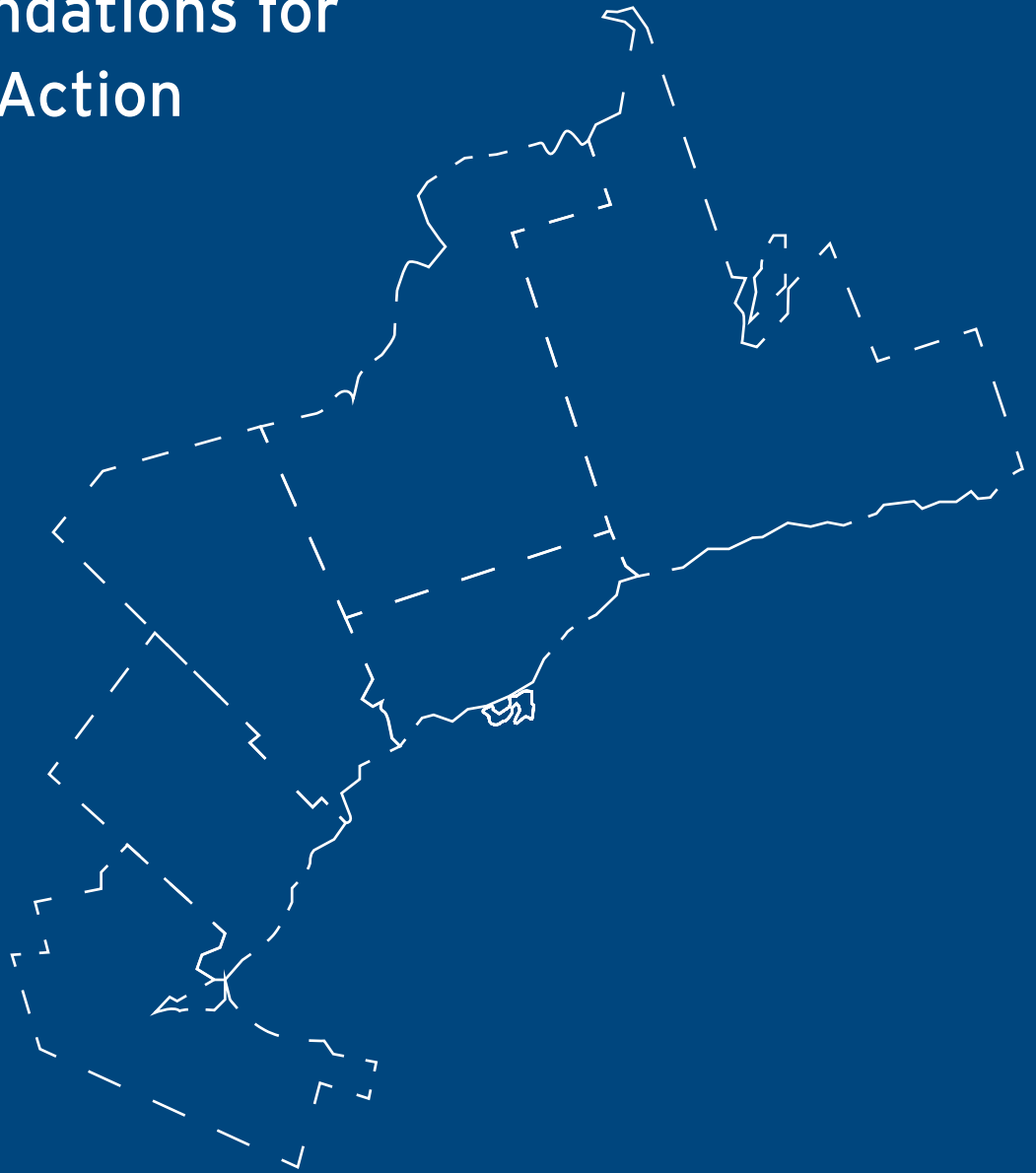




Year End Review on the 2018 Business Plan

Building Foundations for
Low Carbon Action

January 2019



Summary of Key Results

1. **Delivering energy, carbon and cost savings:** TAF's 10 TowerWise retrofits, including seven Toronto Community Housing buildings, are delivering significant energy and carbon reductions. TCHC shaved over \$500,000 off utility bills and reduced carbon emissions by 892 tonnes in the first full year of operation, with cost savings exceeding projections by 20%.
2. **Deepening Focus on Energy Efficiency:** TAF shared lessons and data widely including a [white paper](#) on our groundbreaking demonstration of Gas Absorption Heat Pump technology and presentations at major industry conferences (Canada Green Building Council - Building Lasting Change, The Buildings Show, ACEEE's inaugural Environment, Energy and Health Conference). We launched the [next phase of Towerwise](#) with two "deep" retrofits to demonstrate the technical and financial viability of achieving >40% carbon reductions using measures including cold-climate air-source heat pumps and innovative window retrofit technology. We secured \$6.9 million to date including a \$5 million loan and \$750,000 grant from the Federation of Canadian Municipalities.
3. **Contributing to Smart, Low-Carbon Policy:** TAF responded to 17 climate-related consultations including analysis and recommendations on the Federal Clean Fuels Standard and Zero Emission Vehicle policy, the Ontario Building Code and Ontario's new Climate Change Plan, and Toronto's Sustainable Energy Plan Financing Program Enhancement and Home Energy Loan Program.
4. **Growing TAF's Recognition & Influence:** TAF's CEO was appointed to the multi-stakeholder Generation Energy Council that provided the Minister of Natural Resources with an ambitious [low-carbon roadmap for the energy sector](#). TAF's VP Programs & Partnerships was designated as a trainer-practitioner by the international Partnership Brokering Association, trained 31 community leaders during two four-day workshops and established a GTHA community of practice. TAF's VP Impact Investment sat as a director on the GreenON Board. TAF staff (and some Board and Committee members) undertook a full-day Indigenous Cultural Competency training session.
5. **Supporting Region-wide Innovation & Action:** TAF published the first-ever [Greater Toronto & Hamilton Area GHG inventory](#), participated in approximately 30 climate-related events throughout the GTHA, and continued building relationships with regional stakeholders. Sixteen organizations received grants totalling over \$1 million for a range of initiatives including projects which aim to divert industrial waste heat towards low-carbon energy applications, accelerate the adoption of renewable natural gas, and build industry capacity to construct zero-emissions buildings. We earmarked \$100,000 to a Low-Carbon Neighbourhoods granting stream to support and engage underrepresented communities in local climate action.

6. **Mobilizing Financial Capital:** TAF's low-carbon impact investing expertise and leadership was in great demand from public and private sectors. TAF provided advice on how public funds could leverage private capital via Efficiency Canada's pre-Budget submission and our ["Money on the Table" report](#), which documented capital market failures and barriers to investing in this space. Our finance team streamlined and scaled up potential for retrofit financing via Efficiency Capital Corp. and advanced financing for one new project. Under the banner of Low-Carbon Cities Canada, TAF coordinated development of a proposal, submitted via Federal Budget process, to expand our endowment, operational budget, and to launch six other centres modelled on TAF.
7. **Sharing Information and Insights:** TAF's urban low-carbon solutions thought-leadership and value proposition was conveyed through over 60,000 visits to [TAF.ca](#) (a 78% increase from last year), over two dozen media articles, 42 blogs, and the ["Faces of Climate Action"](#) brochure featuring the diverse voices and faces of our local collaborators.
8. **Quantifying Carbon and Co-Benefits:** TAF collaborated with City and community partners to develop metrics and methods for quantifying the co-benefits of climate actions - job creation, health protection, improved mobility, and local economic development. In partnership with Canada Green Building Council, we convened key stakeholders to initiate the TransformTO high performance buildings workforce campaign.

Key Insights and Lessons Learned

1. **Climate co-benefits have resonance.** A recent poll commissioned by The City of Toronto shows that 62% of respondents feel that climate change threatens personal health and well-being of individuals. We need to demonstrate the multiple benefits of climate action in order to get traction. For instance, TAF worked with other members of the Canadian Environmental Grantmakers Network who are focusing their investments on creating “narratives” that link climate and public health.
2. **Toronto residents can and want to be more fully engaged.** A TAF-funded study asked whether the existing network of community hubs located in Toronto’s Neighbourhood Improvement Areas were receptive to engaging residents in local climate actions. The response was a resounding yes with local champions revealing that many climate-related activities are already underway and there is appetite for more. Further, a Toronto opinion poll also shows that only 15% of residents are aware of the City’s climate plan, indicating a need for stronger communication efforts.
3. **Regionalizing takes patience and persistence.** It can take time for new relationships to develop and project ideas to mature; for instance, TAF’s first regional grants took over a year to cultivate. Key strategies are to follow the energy and support projects that link to existing local priorities, and invest in enhanced community capacity to deliver successful projects. TAF’s regional expansion efforts have benefited from online outreach, including blogs, webinars and earned media. However, there’s no replacement for face-to-face discussions to build relationships of trust with community practitioners.
4. **The growth of impact investing is both a challenge and opportunity.** Based on the evolution of the impact investing market, there is now more capital available than there are investable products. More available investment can pose a competitive challenge for TAF with fewer opportunities and the risk of lower earning potential. As the market matures and rates normalize, growing interest in low-carbon investment is an opportunity for TAF to play multiple roles - we need to take a lead role in underwriting transactions with more risk-tolerant capital. We can accelerate the flow of capital to cultivate and source transactions more strategically through referrals and participate in multi-investor deals.
5. **More capacity and expertise is needed across Canada:** TAF’s expertise and leadership in advancing urban low-carbon solutions is in demand. Municipal, non-profit and business colleagues interested in advancing specific or organizational low-carbon initiatives regularly come to TAF for assistance. It is necessary to decline many requests as our resources must be dedicated to advancing TAF’s GTHA mandate. However, we have engaged with federal and provincial colleagues, especially regarding energy efficiency and financing, and should evaluate the impact on our GTHA mandate. Having more expertise and experience in this space, including via the newly-formed Efficiency Canada, would alleviate demands on TAF.

6. **Solving problems takes time and effort...but are worth it.** Many of TAF's clients and partners are, by definition, innovators and early-adopters, and not everything always goes according to plan. Completing the change of EC ownership, getting timely repayment of several ESPA-financed retrofits, and building profile in the region require a commitment to maintaining excellent relationships and reputation while achieving TAF's financial and environmental mandate.
7. **Deep retrofits are technically and financially challenging.** The next phase of TowerWise aims to accelerate deep retrofits (>40% carbon reduction), in line with the TransformTO climate plan. Work to date has shown that achieving this level of savings requires four times the capital investment of a typical multi-measure retrofit, and the use of measures and technologies that have not yet been adequately demonstrated in the GTHA market. On the other hand, this challenging work must be done to meet our climate goals, and deep energy retrofits can provide benefits that extend beyond energy and carbon savings. These retrofits create local jobs and can improve comfort, resiliency, and indoor environmental quality for building occupants.
8. **Evolving our TransformTO role.** TAF's role shifted from co-creator to community participant once the TransformTO plan was approved. Lack of a formal collaboration with the City to clarify how TAF's strengths and resources could be best applied during the implementation phase has affected our ability to plan activities in a complementary way, leading to some duplication of effort and also public confusion about TAF's role. We continue to participate as a member of the City's Electric Vehicle Working Group, through informal liaison with Public Health, Social Development and Finance, Resilience Office and City Planning and via attendance at Environment and Energy Division's engagement consultations. We will continue to apply TAF's resources to help achieve TransformTO goals in 2019.

Activities Roundup

The 2018 Business Plan outlined seven Projects and 52 Activities.

- 22 or 42% are completed
- 25 or 48% are continuing/in progress.
- 5 or 10% were cancelled or deferred.

#1: TowerWise

Objective: Accelerate the implementation of deep energy efficiency in the built environment by demonstrating the technical and economic feasibility of retrofits, showcasing the potential for multiple benefits, and developing policy and program recommendations for scale-up.

Key collaborations in 2018 included: Toronto Community Housing Corporation, City Housing Hamilton, Enbridge Gas Distribution and Union Gas, Toronto Hydro, Ecobee, City of Toronto, and various engineering firms and equipment manufacturers.

- **Share what we learned:** Publish and disseminate six case studies and several technical papers documenting the outcomes and insights from all completed TowerWise demonstration sites. This includes the results of our Indoor Environmental Quality research, gas absorption heat pump trial, data from smart thermostats, and condensing boiler retrofits.

IN PROGRESS: TAF published and disseminated two technical papers - a report on the gas absorption heat pump pilot and surveys documenting resident perceptions of indoor environmental quality before and after retrofits. Two additional technical papers are in progress and will be published in Q1 2019, covering a smart thermostat demonstration and summarizing health and comfort co-benefits. The TowerWise team drafted six case studies in 2018, all to be published by Q2 2019. We produced a short video about TowerWise, and Ecobee produced a video documenting our smart thermostat pilot which was very widely circulated (over 400,000 views).

- **Inform key audiences:** Disseminate knowledge outcomes to groups such as green building professionals, policy-makers, and building operators; see #6 Communications for details.

COMPLETED: TowerWise staff presented project findings at five major conferences in 2018, as well as a number of smaller webinars and meetings with select stakeholders.

- **Make the case:** Document the business case and financing options for deep retrofits in multi-residential buildings based on the next program phase results.

IN PROGRESS: A report outlining the business case and financing options for deep retrofits in MURBs is drafted and will be published by Q2 2019

- **Prepare scale-up in Toronto:** Support Toronto Community Housing in scaling up the implementation of deep energy and indoor environmental quality retrofits across their portfolio leveraging previous TowerWise results.

IN PROGRESS: TAF continues to advise TCHC in scaling up retrofits across their portfolio and discussions are underway to expand our partnership focused on achieving mutual objectives for energy efficiency and housing renewal. The

TowerWise team is collaborating with the City of Toronto to develop strategies for accelerating deep retrofits in multi-unit residential buildings that will be presented to Council by Q2 2019.

- **Prepare scale-up across the GTHA:** Initiate development of a scale-up strategy for deep retrofits in the multi-residential sector, including consideration of capacity building needs, and required policy/program supports.

IN PROGRESS: In development and targeted for publication in Q2 2019.

- **Expand the program:** Complete retrofit plans and initiate construction at two buildings as part of the 2017-2019 program phase to demonstrate the viability of deep retrofits that achieve at least 40% emissions reduction.

COMPLETED/ IN PROGRESS: We initiated retrofit measures at two buildings and the results to date verify both costs and savings for key measures to be used across multiple sites. Project design has advanced as far as possible prior to securing building owner approval for commencing the full retrofit projects.

- **Secure funding:** Attract \$5-15 million in funding, including grants and soft loans, to support and expand the implementation of the TowerWise deep retrofit demonstration.

IN PROGRESS: We secured a \$5 million soft loan and \$750,000 grant from the Federation of Canadian Municipalities (FCM), supplementing \$1 million in previously secured grants. Confirmation of a \$150,000 request is expected in Q1 2019 and discussions are underway with other potential funders. Our leading-edge retrofit demonstrations are supported by Ontario's Independent Electricity System Operator, Natural Resources Canada and Federation of Canadian Municipalities.

- **Accelerate heat pump uptake:** Develop measurement and verification guidelines for heat pump retrofits to help facilitate adoption of this energy efficient technology.

IN PROGRESS: TAF is piloting a measurement and verification strategy for heat pump retrofits in the units that have already been retrofitted; the results will inform development of guidelines planned for 2019.

#2: Policy Development

Objectives: Catalyze and support the development and implementation of strategic policy solutions to address climate change. Work with a broad range of stakeholders to magnify impacts on all levels of government.

Key collaborations in 2018 included: TAF worked with a range of stakeholders to respond to consultations and develop and advance policy recommendations in 2018 including: Canada Green Building Council, Clean Economy Alliance, Clean Energy Canada, Efficiency Canada, Pembina Institute, Electric Mobility Canada.

- **General:** Identify and review climate policy opportunities at all levels of government. Develop policy briefs and recommendations around laws, regulations, and policies - where possible in partnership or alignment with other stakeholders.

COMPLETED: TAF engaged on a number of key policy developments with significant GHG reduction potential including consultations regarding the repeal of the *Green Energy Act* and the proposed *Made-in-Ontario Environment Plan*. Engagements at the City level included responses to consultations on property-assessed financing (Home Energy Loan Program and High-rise Retrofit Improvement Support Program), TOCore Energy & Mobility Plans, and Sustainable Energy Plan Financing Program Enhancement. In total, TAF responded to 17 policy-related consultations at municipal, provincial and federal levels.

- **Canada's proposed Clean Fuel Standard:** Prepare recommendations and contribute to policy development via the advisory group.

COMPLETED: TAF participated in a multi-stakeholder consultative committee convened by Environment and Climate Change Canada to advise on development of the Clean Fuel Standard (CFS). Separately, TAF convened a working group and commissioned a consultant to help the group come to consensus and advocate for critical policy design elements. As a first phase, TAF and Electric Mobility Canada (EMC) collaborated on development and submission of recommendations for a transportation electrification pathway in the CFS, and most of these have been adopted in the regulatory design. Via the working group, a joint submission in response to the government's Regulatory Design Paper is being developed and TAF will continue to engage on this file in 2019 as the federal government releases further policy details.

- **Ontario Renewable Natural Gas portfolio requirement:** Work out policy recommendations in support of renewable natural gas generation and usage in the province.

IN PROGRESS: TAF has discussed renewable natural gas with the province and plans to explore further opportunities to advance the issue in 2019. We provided a grant to Quality Energy Urban Systems of Tomorrow (QUEST) in order to develop a Renewable Natural Gas Handbook that will help GTHA practitioners (e.g., municipalities, utilities, technology service providers) effectively implement new renewable natural gas projects.

- **Equipment performance standards:** Research and develop recommendations for key products at both the federal and provincial level, for example boilers, furnaces, and heat pumps.

COMPLETED: TAF contributed extensively to the federal government's proposed energy performance standards as part of Natural Resources Canada's Forward Regulatory Plan for 2018-2020. Specifically, TAF participated in the development of a

joint Federal-Provincial-Territorial market transformation strategy for HVAC equipment, provided input on the proposed Energy Efficiency Regulations for windows and HVAC equipment, and led development of joint submissions with a number of industry partners regarding commercial boiler standards (a program TAF played a key role in developing).

- **Federal Zero Emissions Vehicle Strategy:** Provide input to decision-makers, and work with stakeholders and allies to increase public support for supply-side rules for electric vehicles.

IN PROGRESS: TAF signed a joint letter endorsed by almost 30 stakeholders and addressed to the relevant federal ministers calling for strong policies, including a national zero-emissions vehicle (ZEV) mandate, to be implemented to accelerate transportation electrification in Canada. Finalization of the ZEV strategy was deferred by the Federal Government into 2019.

- **Toronto Green Standard 3.0:** Help implement Toronto's Zero Emissions Building Framework that TAF co-developed.

COMPLETED: TAF approved a grant to the City of Toronto to develop a training curriculum to support implementation of new high-performance building concepts, and to deliver the training to approximately 200 participants from municipalities and the building industry.

- **Building codes:** Provide input for the development of a federal model code for energy efficiency retrofits; work with colleagues to ensure the Ontario Building Code gets on a pathway to net-zero emissions.

IN PROGRESS: TAF collaborated with a range of stakeholders to engage the provincial government on recommendations submitted in 2017 for the Ontario Building Code update (which generally happens every 5 years and was anticipated in 2017). However, a decision on the OBC was deferred until after the provincial election and it is not clear when an update will happen. Consultation on the Federal model building code, which promises to include guidance for renovations as well as new construction, have been deferred to 2019.

- **Electrification:** Identify approaches and partners for advancing regulatory reforms and business strategies that will allow local utilities to play their essential, strategic role in achieving low-carbon cities. Participate in the development of the Toronto Region Integrated Regional Resource Plan (IRRP).

DEFERRED: The regulatory landscape is evolving, and a preliminary exploration did not identify potential partners or grantees. TAF contributed to the Toronto Region IRRP as a member of the Local Advisory Committee, which wound down early in the year, but the process was not conducive to exploring or advancing the scope and scale of policy and practical reform needed for alignment with TransformTO electrification objectives.

- **National Energy Vision & Strategy:** As a member of the federal Generation Energy Council, advance the importance of conservation, renewable electricity, and the role of cities in delivering on Canada's Pan-Canadian Framework and Paris commitments.

COMPLETED: The Generation Energy Council delivered its report to the Minister of Natural Resources in June with an ambitious low-carbon roadmap for tripling the rate of energy efficiency improvement throughout the economy, accelerating clean electricity production and use, amplifying production and use of biofuels where electricity is not viable, and dramatically reducing the oil and gas industry's carbon emissions. TAF led the energy efficiency and financing sections, and ensured there was a strong focus on urban challenges and solutions. These energy milestones complement the Pan-Canadian Framework on Climate Change.

#3: Impact Investing

Objectives: Use TAF's finance innovation and impact investing expertise and track-record to invest in a manner that will mobilize capital for energy efficiency and other low-carbon investment opportunities. At the same time, generate a risk-adjusted return and attract new capital and co-investors for TAF.

Key collaborations in 2018 included: TAF's Investment Committee continued to provide expert guidance and fiduciary oversight, and we worked with a range of colleagues in the financial sector, responsible investing organizations, and federal and provincial agencies involved and interested in financing low-carbon solutions.

Impact Investing TAF's Endowment

- **Maximize the financial and carbon-positive impact of TAF's endowments.** Prudently deploy both endowments in compliance with TAF's investment policy, maintaining separate accounts. Increase Direct Investments to at least 30 percent of the portfolio to reduce potential market exposure and to mobilize investment in low-carbon opportunities. Identify Fixed Income options for reducing carbon exposure and improving return.

COMPLETED/ IN PROGRESS: The Board approved the 'target portfolio' recommended by the Investment Committee's Asset Mix Subcommittee and the process of re-balancing was initiated within the bounds of the current investment policy. Direct Investments now comprise 13.5% percent of the portfolio and a strategy for increasing this is in development with consulting support, focusing on several key opportunities including district energy systems, transportation, and biofuels. We have scanned fixed Income options and a formal search will be needed.

- **Finance six to eight energy efficiency retrofits:** Structured as Energy Savings Performance Agreements (ESPA™), finance the implementation of TowerWise deep retrofit demonstration projects. These will be available for purchase by Efficiency Capital Inc. (EC) under the terms of the Warehouse Facility. Streamline the sales,

marketing, client relations, reconciliation and payment, and reporting to facilitate volume and ensure performance.

IN PROGRESS: A new agreement is in place with new and engaged management of EC which relieves TAF of sales and management functions, allowing us to focus on financial and energy/carbon metrics. The 'standard' retrofits will be financed by EC, and the 'deep' demonstration projects by TAF (with co-investors). Construction was completed on two projects from the legacy EC (total \$990,000) and construction began on a separate project from the new EC (\$604,000). The next EC transaction will likely be finalized in the next few months, with construction and drawdown shortly thereafter.

- **Co-invest in two to three companies with proven technologies or services** to generate both emissions reductions and financial return on investment as well as help commercialization in Canada.

IN PROGRESS: Three investments were approved at the Board. Unfortunately, one of the transactions became over-leveraged and TAF's financing was no longer needed. The second transaction is expected to close within 90 days, with drawdown taking place in mid-2019. The chances of the third transaction being completed is low as the business continues to attract significant commercial financing at zero cost.

Low-Carbon Finance Innovation

- **Financing suite-metered retrofits:** Craft a specialized financing approach to address the challenges that suite-metering in multi-residential buildings poses to investment in comprehensive retrofits. Demonstrate implementation and business cases in at least two buildings.

DEFERRED: This is on hold until the market moves toward suite metering of thermal energy (natural gas) which, unlike electricity, offers opportunity for GHG reduction. Instead, TAF is developing a unique financing method where our investment is tied to the company's sales, somewhat like Purchase Order financing.

- **Green Ontario Fund:** Advance financing as a core strategy for GreenON, Ontario's green bank, through TAF's membership on the Board of Directors.

COMPLETED/ CANCELLED: Tim Stoate, TAF's VP-Impact Investing, was appointed to the GreenON Board in 2017 and worked with the agency's staff and government officials to establish the agency, launch 11 inaugural programs for the residential, commercial, manufacturing and agricultural sectors, and establish 'best in class' customer service to enable Ontarians to readily participate in the Agency's programs. A key goal was to establish a sustainable organization to transition from rebates and grants to other forms of financial assistance, and transform the market. With the cancellation of the cap-and-trade program on July 3, 2018, the agency's access to additional capital, including Federal government funding, was curtailed, and the government directed an orderly wind-down.

Increasing TAF's Capital Pool

- **Canada Infrastructure Bank:** Apply for \$100 million from the nascent bank and achieve at least 1:1 co-financing for deep retrofit financing; stimulate the development of companies and capacity to originate a significant volume of retrofit projects in the GTHA.

COMPLETED/ IN PROGRESS: TAF's application initiated a conversation about the need for Canadian Infrastructure Bank (CIB) involvement in energy efficiency. This prompted TAF to publish a [Money on the Table report](#) to address the perceived lack of evidence regarding capital market failure in this space. Building on the proposal and as a counterpoint to the Federal government's purchase of the Trans-Mountain Pipeline, TAF sketched out a \$5-10 billion energy efficiency fund, which has been integrated into Efficiency Canada's 2019 Budget submission. TAF is exploring another proposal to CIB with a partner to respond to the CIB's project strike-zone. The various departments responsible for CIB have sought out TAF's expertise in energy efficiency financing and TAF has had the opportunity to profile and share this at several important sessions organized by Canada Green Building Council, Efficiency Canada, Evergreen, Green Banks Council, and NRCAN.

- **Retrofit re-financing:** Attract \$3 million as non-recourse 'take-out' financing for commissioned and performing retrofit projects (if available), with TAF maintaining at least 20 percent of each transaction.

DEFERRED: Although there is interest, eligible transactions were not available for re-financing this year. In addition, Efficiency Capital has indicated preference for a longer time between commissioning of retrofit projects and re-financing or sale. Meanwhile, an ESPA-financed project that was refinanced is experiencing challenges and remedial action is in process to protect and recover TAF's and the purchaser's investment.

- **Low Carbon Cities Canada (LC3):** As one of six LC3 centres, request a total of \$115 million in federal investment for the network and attract \$40 million as "working capital." Encourage the Province of Ontario to match any federal contributions to enhance TAF's capacity to invest and advance low-carbon carbon solutions in the GTHA.

IN PROGRESS: TAF made a formal Pre-budget submission requesting in August drawing on the collaborative development of Low Carbon Cities Canada and consultations with federal colleagues. Natural Resources Canada has undertaken robust due diligence in support of the submission. With Calgary joining, the seven LC3 Centres would cover about 140 cities and more than half the country's population. Letters of support have been received from MPs, MPPs, Mayors and community leaders from across the country (including from Mayor Tory and MP Adam Vaughan). Through an Expression of Interest process, three highly-qualified organizations have been shortlisted to serve as the national/central office for LC3. An updated presentation summarizes the initiative and the request for \$183 million (including \$40 million for TAF).

#4: Regional Leadership & Capacity-Building

Objective: Cultivate high-impact grants and capacity building initiatives to support key partners' climate work in the GTHA.

Key stakeholders in 2018 included: community organizations, municipal sustainability practitioners, academic institutions, climate and energy funders and regional organizations such as TRCA, the Clean Air Partnership, and Friends of the Greenbelt Foundation.

- **Connect with key stakeholders:** Identify the top stakeholder events and ensure attendance, presentation and/or co-sponsorship opportunities at 15-20 events to promote TAF's services. Disseminate information regarding TAF's programs through existing municipal networks and channels. Develop and formalize at least one strategic partnership based on key criteria (e.g. a partner's regional reach, links to emissions reduction and key co-benefits, complementarity of services and approaches with TAF's, and willingness to work in partnership).

IN PROGRESS. The team regularly scanned key regional climate-related events in the GTHA (e.g. conferences, workshops, panels), and attended approximately 30 events in 2018 on topics such as suburban transit connections, mid-size cities, and distributed energy systems. TAF communicated its program offerings through regional channels like the Ontario Climate Consortium's newsletter and the Clean Air Council, as well as through TAF's own blog. TAF held meetings with multiple prospective regional partners and also co-organized a Regional GHG Reduction Lab Scoping Workshop with partners from across the region. Explorations regarding a formal regional partnership are ongoing.

- **Develop support services for emissions reporting:** Share best practices on emissions quantification to support GTHA municipalities in identifying high impact initiatives. Serve as a resource for GTHA municipalities to continuously improve the quality of key emissions reduction analysis. Explore the formation of strategic partnerships to support the quality of emissions data around the region.

COMPLETED. TAF published the first-ever GHG emissions inventory for the GTHA, which will assist in the effective design of regional and municipal emission reduction efforts. We updated our carbon emission quantification methodology, which includes a marginal emission factor to improve the quality of our electricity-related emissions estimates. Our methodologies were published along with resources and best practices for the broader community to use and have been well-received. To help identify and assess potential policy and program options to reduce transportation emissions and improve the quality of our quantification and analysis in the transportation sector, TAF supported the design and development of an automated Traffic Emissions Prediction model and software.

- **Strengthen local capacity:** Develop and deploy a dedicated capacity building fund

to enhance the social innovation skills of key climate actors in the GTHA. Explore providing support services in areas such as attracting and leveraging funding for region-wide emissions reductions, policy-related convening and/or communications.

COMPLETED. TAF established a new two-year Social Innovation Skills Fund, allocating \$45,000 per year to help TAF grantees and allies access specialized training opportunities on topics like management of multi-sectoral initiatives (collective impact) and developmental evaluation. In 2018, TAF spent approximately \$32,000 to support TAF grantees and allies to attend Partnership Brokering training courses (see below) and Tamarack Institute's Community Change Festival. TAF continues to assess new opportunities to provide and promote valuable capacity-building initiatives to practitioners throughout the region.

- **Explore the need and value of a regional network:** Create a baseline to understand the quantity and quality of existing regional networks. Assess the need of creating a new network or strengthening existing ones. Explore which common approaches or objectives could stimulate commitment, and strategize how to support the development if deemed necessary.

DEFERRED. TAF commissioned Dunskey Energy Consulting and the Clean Air Partnership to review global best practices for regional networks and collect insights from local practitioners in the GTHA. While developing a regional network could help to facilitate region-wide climate actions to maximize impacts over the long-term, TAF has determined that its more immediate priority action area will be to focus on local capacity-building. When possible, TAF has supported, and will continue to support, regional convening; for example, the TAF-funded Bay Area Climate Change Council at Mohawk College brings together community groups from multiple sectors and the municipalities of Hamilton and Burlington to advance high-impact climate solutions across both cities.

- **Support a portfolio of initiatives throughout the GTHA:** Develop an active portfolio of eight to 10 initiatives occurring within at least three regional or single-tier municipalities and totaling \$500K in grants, internal projects and loans.

COMPLETED. As of the end of 2018, TAF has an active portfolio of 13 grants totalling \$995,608 which involve regional activities, including six projects totalling \$659,058 being led by GTHA organizations based outside of Toronto (in Hamilton, Peel Region and York Region). Two of TAF's internal projects (TowerWise and the Social Innovation Skill-Building Fund) also engage organizations outside of Toronto.

#5: TransformTO

Objective: Advance the understanding of the co-benefits associated with new TransformTO campaigns. Help to incubate one new campaign. Support best practices in community engagement and climate communications. Enhance professional partnership brokering capacity.

Key partners in 2019 included City of Toronto divisions including Environment & Energy, Toronto Public Health, Social Development & Finance, the Partnership Brokers Association International, and a suite of community organizations.

Leveraging Co-Benefits to Enhance Engagement

- **Deepen understanding of co-benefits:** Work with City of Toronto divisions and agencies, community stakeholders, academics and others to better understand and quantify the benefits of implementing TransformTO. Analyze how TransformTO climate actions could be aligned with Toronto's resilience strategy.

IN PROGRESS. City of Toronto started developing metrics in 2018 and has commissioned research on the topic. TAF participates in City working groups related to this task - which is ongoing through Q2 2019 for reporting to Toronto City Council in June 2019. The goal is to identify and, where practicable, create metrics to monitor co-benefits associated with key climate actions. Working with community partners, TAF has also explored benefits specifically related to local job creation with a variety of key stakeholder groups such as the Canadian Green Building Council and Efficiency Canada and has cultivated relationships with key community players such as the Toronto Community Benefits Network - the latter resulting in a grant in 2018 to support education of black youth in the trades about green building approaches.

- **Strengthen climate communication and community engagement techniques.** Use understanding of co-benefits insights to improve the impact of communications and outreach to increase support for climate actions. Seek out areas where co-benefits opportunities can be credibly quantified to help build the case for climate action and conduct message testing.

IN PROGRESS. See above regarding development of credible approaches to co-benefits metrics by the City of Toronto. TAF also embedded a co-benefits framing approach in its own corporate branding work, and developed a new corporate brochure demonstrating the multiple benefits of climate action.

- **Broaden community engagement:** Explore, develop and demonstrate best practices to attract communities not traditionally engaged in climate-focused action. Test new methods of public engagement using new visualization methods. Explore new ways to more fully engage diverse community members in advancing climate action, including integration of indigenous values and knowledge. Identify opportunities for strategic cross-sector partnerships.

IN PROGRESS. In February, in collaboration with Autodesk and University of Toronto, TAF co-hosted a stakeholder workshop exploring visualization approaches that could solve climate engagement challenges. TAF launched a new Neighbourhood Engagement Fund earmarking \$100,000 to support community engagement models focused on engaging diverse audiences in climate action work. The Fund supported three local projects engaging people who traditionally are not part of the

climate dialogue, for example social housing tenants, new immigrants, and people involved in programs at United Way-funded community hubs in Toronto's neighbourhood improvement areas. In addition, TAF funded researchers at the University of Toronto to examine ten existing climate-focused community engagement initiatives and to create a framework for assessing this work and its outcomes. TAF also undertook preliminary exploration with members of Toronto's indigenous community to assess ways to integrate traditional indigenous knowledge and approaches into climate action work – this exploration is ongoing and will also be informed by a new partnership organized by the City of Toronto with Indigenous Climate Action. TAF also supported a local co-hort of practitioners to attend the national conference on community collaboration hosted in Toronto in October by The Tamarack Institute.

- **Incubate partnership brokering capacity:** Help improve local partnership management capacity by hosting Partnership Brokering Association training opportunities in the GTHA. Work with lead Canadian partnership broker and accredited trainer Jocelyne Daw to familiarize Toronto-area practitioners with professional partnership brokering concepts and to provide formal training opportunities. Support the development of one or two accredited trainers in the Toronto area to fill the gap in local training capacity.

IN PROGRESS. In collaboration with the Partnership Brokers Association (PBA), TAF mounted two four-day partnership brokering training sessions in the GTHA in 2018, training a total of 31 practitioners. TAF also launched a regional partnership brokers community of practice and hosted four sessions, engaging 80 participants GTHA-wide. In December Mary Pickering received international accreditation as a PBA-certified trainer-practitioner – the first in the GTHA.

Developing the Workforce for High-Performance Buildings

- **Clarify energy efficiency job creation opportunity in Toronto and the GTHA:** Leveraging our TowerWise and grants programs, better understand the benefits that city-wide retrofits could bring in terms of local job creation. Support this initiative with research and strategic explorations with community experts and city colleagues. Seek out lessons from the community benefits sector on how to embed job creation (especially for those with barriers to employment) within government programs targeted at improving energy efficiency in buildings.

DEFERRED: It was determined that research was already underway including by Canada Green Building Council (CaGBC) and ECO.

- **Identify champions and start the conversation:** Seek out and engage key community stakeholders in initiating the TransformTO Workforce campaign. Start a dialogue about the strengths and weakness of the current workforce and training supports related to energy efficiency employment. Undertake research to better understand the types of skills needed to drive effective retrofit activity and how to fill these gaps. The tasks in this segment align with one of three proposed new campaigns

in the Council-approved TransformTO plan.

COMPLETED: TAF and CaGBC co-hosted a roundtable dialogue, leveraging Construct Canada as a venue, which brought together 16 key stakeholders including from labour, engineering/architecture, developers, Board of Trade, community-benefits network, and various associations. The aim was to understand the current work underway to build capacity in the green buildings space, the issues and needs facing the sector, and the interests in collaboration if there are aligned objectives. While preliminary, there is broad agreement on the importance of and need for a concerted campaign/effort to ensure that recruitment and training is in place to ensure the workforce is in place to implement the scale of retrofits and net zero new construction that is required to achieve our climate targets. The next phase will focus on framing and resourcing a collaborative initiative.

#6: Communications & Fundraising

Objective: Raise TAF's profile across the region as a low-carbon solutions leader. Effectively tell our stories, share knowledge and mobilize strategic support and funding from key stakeholders.

Key collaborations in 2018 included: TAF liaised with organizations throughout the GTHA including Mohawk College, the Ontario Climate Consortium, City of Markham, the City of Toronto (Environment & Energy Division) to frame and disseminate stories, as well as with creative agencies and market research organizations.

Corporate Communications

- **Social media and email list:** Aggressively expand TAF's social media presence through organic and promoted content with a combined annual growth of 50% (Facebook, Twitter, LinkedIn). Continue to build TAF's email list. Plan and execute a Facebook-based email subscription campaign to accelerate the annual growth rate to 25%.

COMPLETED. Combined followers and subscribers grew by 61% -- well above our goal -- with a focus on expanding to regional audiences including growth of 97% on Facebook, 19% on LinkedIn, and 69% on Twitter, and 53% on TAF's email newsletter and blog lists.

- **Website:** Complete the overhaul of key parts of TAF's website. Publish 30-40 blogs.

IN PROGRESS: TAF communications team favoured a lighter, more cost-effective refresh (versus overhaul) on the TAF website, which is underway and scheduled for completion Spring 2019. We published 43 blogs providing thought-leadership on a range of topics from provincial policies to residential heat pumps, which garnered an increase in average views of 21% over 2017.

- **Earned media:** Build relationships with media contacts; pitch stories and releases with a goal of 20 media hits. Pitch three op-eds and capitalize on guest contribution opportunities.

COMPLETED: TAF secured 15 media mentions including op eds and earned media, mainly focused on key grants, TowerWise demonstration projects, and municipal and provincial climate policies.

- **Brand guidelines:** Roll out TAF's updated brand guidelines. Finalize TAF's new brand framework and messaging platform; synchronize with new Theory of Change. Storytelling and visualization: Increase the use of storytelling and visual communications such as short videos to increase awareness of TAF's work and concepts such as co-benefits.

COMPLETED: Brand and editorial guidelines are now in practice. TAF's brand [Messaging Framework](#) was completed and is being integrated by staff throughout all aspects of our organization. Drawing from the brand messaging framework, the [Faces of Climate Action](#) brochure demonstrates TAF value, narratives, and co-benefits as told by the voices of our diverse collaborators. A short animated video telling a simple story of how heat pumps work and add value in the Ontario carbon and co-benefits context is in progress.

Program Communications

- **TowerWise:** Share insights, retrofit best practices, and scale-up recommendations with key audiences. Efforts will include contributions to industry and academic publications, TAF's blog and e-news, conferences and events, as well as social and earned media. Deliverables include a guideline to support the use of Integrated Design Process for retrofits, a design resource for retrofitting multi-residential space heating systems, case studies, and a new TowerWise video.

COMPLETED: TAF published five TowerWise blogs and promoted five conference presentations by TowerWise staff. We also designed and promoted one retrofit case study, six technical reports, and secured seven articles in industry magazines.

- **Policy Development:** Advise and support TAF's policy work through development of materials and dissemination via website, blogs, social media, and e-newsletters.

COMPLETED: TAF provided commentary related to each policy submission and promoted them via social media and newsletters when appropriate. We also published 17 blogs this year related to climate policy.

- **Regional Outreach:** Improve TAF's website through more regional information and blogs. Help strengthen TAF's regional profile through targeted social media and email list growth as well as collateral creation.

IN PROGRESS: TAF published six regional blogs, including guest blogs from regional partners. Our summer intern took high-quality photos across the GTHA and created a flickr account with authentic, people-focused visuals for our website and reports. The first regional GHG Inventory was designed and disseminated to over 1200 stakeholders. 17% of TAF's Facebook followers are now from outside Toronto.

- **Impact Investing:** Demonstrate TAF's leadership in impact investing including retrofit financing experience (in collaboration with Efficiency Capital) and other investment case studies. Key audiences include the financial sector and investees; key channels will include conference presentations, social and earned media, and guest writing for external blogs and publications. Communicate the importance of leveraging public funds to accelerate low-carbon solutions and mobilize capital, including the role of 'green banks.'

IN PROGRESS: TAF published three finance blogs, promoted two conference presentations by the impact investing team, and one earned media story on retrofit financing.

- **TransformTO:** Promote the Toronto City Council-approved climate plan and its 2018 implementation. In particular, focus on the co-benefits of low-carbon action and employing new visualization approaches to grow public support.

IN PROGRESS: TAF supported TransformTO progress by creating a [brochure](#) highlighting three campaign areas and co-benefits, eight blogs and monthly e-news updates. We promoted TAF Low-Carbon Neighbourhoods grant opportunities to support TransformTO campaign goals. TAF presented TransformTO as a case study at Tamarack community engagement conference. Data visualization opportunities are still in exploratory phase. We are in the process of developing a standalone TransformTO website in consultation with community partners.

Fundraising (addressed in other sections)

#7: Governance & Operations

Objective: Ensure excellent and efficient operations and governance, including funder stewardship and accountability.

TAF worked with its Board, Standing Committee and Ad Hoc Committee members, City and Provincial colleagues, and several advisors/consultants.

- **Support governance and decision-making:** Provide TAF's board and committees with timely and relevant information, advice and logistics needed to review and revise strategic directions. Help ensure that all decisions are compliant and aligned with City of Toronto and Province of Ontario requirements. Recruit expert committee members with an eye on regional representation.

COMPLETED & ONGOING: Our trial of scheduling four Board meetings instead of five has been successful and various improvements are underway to support governance including a dashboard, integration of Ontario stewardship reports into Board packages, electronic participation, and regular presentations featuring grantees, investees and project leaders. Five new members were recruited and appointed to the Investment and Grants & Programs Committees, and 65% of current Grants & Programs Committee members have demonstrated expertise in developing and/or implementing strategies or projects which achieve regional GHG emissions in the GTHA

- **Undertake an interim strategic planning process:** In co-operation with TAF Board and Committee members, review and revise the 2015-2020 Strategic Plan to recognize TAF's regional expansion; reflect the approaches and targets embedded in the TransformTO plan, and to address other key opportunities or challenges.

IN PROGRESS: An Advisory Committee, including two TAF Board members and five community members participated in an intensive, two-meeting process, supported by interviews with 5 external stakeholders and background information prepared by staff. A draft refreshed Strategic Directions has been submitted for Board approval.

- **Provide diligent financial management and stewardship:** Use best practices in functions and systems to ensure compliance with all relevant requirements, including the City-TAF Relationship Framework and the provincial Transfer Payment Agreement. Support efficient budget development, deployment, tracking, and the annual audit. Support prudent and compliant investment and management of both endowments, along with TAF's third-party investment advisor. Provide stewardship to external funders to demonstrate TAF's value and solidify their ongoing commitment.

COMPLETED: The 2017 audit was the first to include separate fund accounting of both endowments, and identified various opportunities for streamlining the process which are being adopted for a successful and timely 2018 audit. We instituted a more participatory internal budget planning process and piloted an integrated project management/accounting system to more efficiently track expenditures versus budgets. Quarterly financial reporting, including on the operating budget and investments, was in compliance with requirements and Board and Investment Committee needs. Staff continued to work with Proteus Performance Management, TAF's third-party investment advisor, to plan and execute portfolio reallocation to ensure compliance with SIOP and Investment Committee recommendations.

- **Enhance staff performance and team cohesion:** Mentor and provide staff with professional development and opportunities for reflection that will enhance their contributions to TAF's mandate. This includes technical and analytical skills, as well as innovation and cultural (partnership building, diversity) capacities. Improve the working environment through measures such as the renovation of premises and IT upgrades. Streamline internal communications and reduce email load through new approaches such as Slack.

IN PROGRESS. In 2018, TAF staff complement grew to 19; 10 permanent plus temporary project-based positions. Renovation of TAF's office was finally completed; staff cohesion suffered during the extended process but we are now enjoying the re-designed and brighter space and productivity improvements from ample meeting space and upgraded equipment. TAF's full team undertook a half-day training session on equity, diversity and inclusion in 2018, and two full-day team-building/training retreats in January and June. TAF also completed a review of HR policies and practices and updated practices to improve support of staff in relation to health benefits.

TAF supported staff attendance at key conferences and seminars to provide personal development including: attendance of key knowledge transfer meetings and conferences hosted by Natural Resources Canada, the Federation of Canadian Municipalities, the Canadian Green Building Council, the American Council for an Energy-Efficient Economy (ACEEE), Construct Canada, Canadian Environmental Grantmakers' Association, The Tamarack Institute, and the international Partnership Brokers Association; and specific individual training in the areas of climate communications, business writing, and program evaluation.

- **Contribute to reconciliation with Indigenous communities:** Organize Indigenous cultural competency training for all TAF staff in collaboration with an established Indigenous training centre. Create an internal working group to explore how to respect and reflect indigenous traditional knowledge and values in TAF's urban climate action work.

IN PROGRESS. TAF staff and several Board and Committee members participated in a full-day cultural competency training workshop delivered by the Ontario Federation of Indigenous Friendship Centres (OFIFC).

- **Evaluate TAF's programs and performance:** Incorporate the new Theory of Change and brand framework in program design and analysis, including reviewing and revising TAF's internal Key Performance Indicators. Further enhance internal assessments through tools such as Developmental Evaluation.

PARTIALLY COMPLETED. TAF continues to apply its new Theory of Change framework in program design, and in particular used it to inform the 2018 Interim Strategic Planning exercise. Update of Key Performance Indicators was only partially completed, with revisions of methodology applied to two of three current indicators to strengthen their relevance and practical applicability. TAF continues to explore options for creating a useful indicator related to its mobilizing social capital spheres. A proposed evaluation for the TowerWise program was deferred to 2019 due to challenges related to staff capacity. TAF's brand framework was used to create new collateral materials for TAF and to guide a website re-fresh for completion in Q1 2019.

Key Performance Indicators

2018 Dashboard

GREENHOUSE GAS REDUCTIONS (tCO ₂ eq)	
Direct	114,833
Potential	37,521,877
FINANCIAL CAPITAL MOBILIZED	
\$ 3,178,641	
EXTERNAL FUNDS RAISED TO ADVANCE THE PROJECT	
\$ 5,814,000	
JOB YEARS CREATED	
16	
INCREASE IN GDP	
\$ 2,309,921	

	Criteria Air Contaminant (CAC) Emissions Reductions							
	TPM (t)	PM10 (t)	PM2.5 (t)	SOx (t)	NOx (t)	VOC (t)	CO (t)	NH3 (t)
Potential	4,874	3,140	1,470	67,796	726,189	7,881	109,432	533
Direct	1.2	1.1	1.0	804	10,615	1.7	17.2	0.4

GHG Emissions Reductions in the GTHA

Total direct and potential GHG reductions from activities funded by Grants, Programs, and Direct Investments are reported annually, and tracked cumulatively. Please see the [TAF Guide Carbon Emissions Quantification Methodology](#) for definitions and methods used for these calculations.

Direct Emissions Reductions (tCO ₂ eq)	Direct Cost per Direct Tonne (\$/tCO ₂ eq)	Potential Emissions Reductions (tCO ₂ eq)	Total Project Cost per Potential tonne (\$/tCO ₂ eq)
114,833	18.10	37,521,877	0.88

The direct emission reduction achieved in 2018 is twice the 2017 amount (53,583 tCO₂eq). Most reductions this year are related to grants and impact investing projects, whereas TAF's internal projects (e.g., TowerWise) contributed the most in 2017.

The direct cost per tonne in 2018 (18 \$/tCO₂eq) is lower than 2017 (145 \$/tCO₂eq) due to the level of investments in grants and direct investments. The potential for emission reduction from these 2018 investments is 2.5 times greater than the 2017 portfolio of projects, despite the total cost per tonne increasing by 0.24 \$/tCO₂eq.

Co-Benefits of GHG Emission Reduction Actions in the GTHA

Economic Benefits

	Job years created	Increase in GDP (\$)
Potential	N/A	N/A
Direct	16	2,309,921

Results are somewhat lower than in 2017 mainly due to less investment for the TowerWise project as work on the 10 retrofits was completed and we transition to the next phase of the project.

Air Quality Benefits

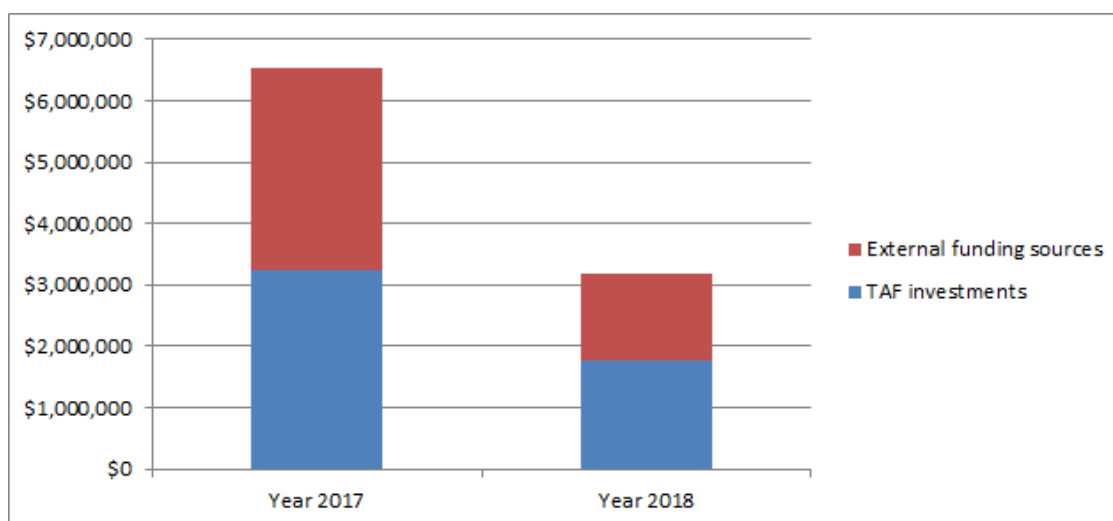
	Criteria Air Contaminant (CAC) Emissions Reductions							
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Potential	4,874	3,140	1,470	67,796	726,189	7,881	109,432	533
Direct	1.2	1.1	1.0	804	10,615	1.7	17.2	0.4

Air quality improvements, particularly SOx and NOx reduction, are significantly attributable to one Direct Investment approved in 2018.

Financial Capital Mobilized in 2018

In 2018, TAF mobilized \$3,178,641 for low-carbon solutions in the GTHA. This includes

a) TAF direct investments, grants and program spending and b) complementary contributions and co-financing for these. A protocol is being refined to allow quantification of at-scale potential for capital mobilization. Financial capital mobilized in 2018 was lower than 2017, largely reflecting that capital work on TowerWise retrofit demonstration sites was intensive in 2017 but capital work on new demonstration sites was only beginning to ramp up in 2018.



This year, TAF raised \$5,814,000 from external sources including:

- \$12,750 for TowerWise Internship from Colleges and Institutes Canada

- \$11,250 for TowerWise Internship from ECO Canada
- \$40,000 for Neighbourhood Climate Action Grants from Echo Foundation
- \$5,750,000 for TowerWise demonstration projects from Federation of Canadian Municipalities

Mobilizing Social Capital - 2018 Partnerships

Efficiency Capital: TAF incubated this for-profit company as a mechanism to commercialize the innovative, non-debt Energy Savings Performance Agreement (ESPA™) which helps advance multi-measure retrofits with little risk and even when building owners have challenges accessing other sources of capital. TAF continues to provide EC with up to \$7 million as a Warehouse Facility and up to \$2 million in Subordinated Debt for retrofit projects that meet our criteria, and strategic advice for building the business. Efficiency Capital now has new and motivated owners who are in market attracting financing and advancing retrofits, and TAF's agreement with EC has been re-structured as a license so that our ROI is based on their success.

Low Carbon Cities Canada: TAF has been leading a collaborative effort to capitalize a network of TAF-like centres in six other Canadian cities/regions: Vancouver, Calgary, Edmonton, Ottawa, Montreal and Halifax. Together we have developed a proposal and advanced a request for \$183 million from the federal government in the context of the 2019 Budget.

Partnership Brokers Association: TAF is delivering capacity-building training in the GTHA developed by the UK-based PBA in twice-annual workshops. We are also collaborating with PBA and other Canadian collaborators in Calgary and Vancouver to build Canadian training capacity in this sphere to ensure stronger local training capacity.

Toronto Community Housing: TAF continues to work jointly with Toronto Community Housing on the TowerWise retrofit program. In the most recent phase, we collaborated with the agency to design, co-finance, implement and monitor retrofits in seven high- and mid-rise residential buildings. We are developing case studies and technical papers to share lessons learned from those seven projects to help inform next steps in scaling up retrofits in multi-residential social housing stock in Toronto and across the region. TAF and TCHC are also collaborating on a new deep retrofit demonstration site, and TAF continues to advise TCHC on its broader retrofit work.

University of Toronto: TAF continues to partner with U of T in various ways including providing financial and advisory support, practical program implementation, and knowledge transfer on multiple fronts. In affiliation with TAF's TowerWise program we continue to work with the University of Toronto to assess the relationship between energy efficiency retrofits and indoor environmental quality (IEQ) and to co-develop academic presentations to add original knowledge to the sector. We also collaborate with U of T to assess best methods for bridging the academic and community sectors to advance problem-solving knowledge and build community capacity.

