Toronto and Region Conservation Authority

Effective Neighbourhood and Business Zone Models for Low Carbon Mobilization

March, 2021

In collaboration with

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EXECUTIVE SUMMARY

As municipalities develop "next generation" Climate Change Action Plans and design new strategies to achieve greenhouse gas (GHG) emission reduction targets, there is a need to foreground community-level engagement that inspires action on climate among local residents and businesses. With funding provided under the Federation of Canadian Municipalities' (FCM) Municipal Climate Innovation Program (MCIP), as part of the Transition 2050 grant stream, Toronto and Region Conservation Authority (TRCA) convened a collaborative cluster of nine municipalities interested in exploring the role TRCA's neighbourhood/business zone models could play in low carbon mobilization.

> **The goal of this Transition 2050 project is to apply, learn from and develop recommendations for the refinement, mainstreaming and scaling of the neighbourhood/business zone models as a municipal policy/practice for implementing climate action plans and achieving other municipal objectives.**

TRCA's Strategic Neighbourhood and Business Zone Models

Over the past decade, TRCA has been an innovator in community-level engagement and collaborative implementation through its Sustainable Neighbourhood Action Program (SNAP) and Partners in Project Green (PPG) Program, which focus on residential and business sectors respectively. Both programs employ proven strategic neighbourhood/business zone models designed to deepen engagement and empower local leaders to address climate action, while also tackling other sustainability challenges.

Collaboration, multi-objective delivery and long-term perspective are three critical strategies that underlie the success of these models. TRCA's role is that of a partnership-broker, who brings traditional and non-traditional stakeholders together, and a facilitator of integrated planning and project development through implementation and tracking. Implementation projects and programs may be led by TRCA or others. Applied in a growing network of neighbourhoods and with hundreds of local companies in the Toronto Pearson Airport eco-business zone, these efforts have resulted in real GHG reductions and many other co-benefits.

As one of Ontario's 36 conservation authorities, TRCA has more than 60 years of practical experience working with its municipal and community partners to address shared objectives. TRCA's jurisdiction includes nine watersheds in the Toronto Region, home to Canada's largest urban centre. TRCA's mission is to protect, conserve and restore natural resources and develop resilient communities through education, the application of science, community engagement, service excellence and collaboration with its partners. SNAP and PPG support local efforts toward achieving TRCA's watershed objectives and strategic goals shared with municipal partners, such as community resiliency, ecosystem restoration, healthy communities and green economies.

Sustainable Neighbourhood Action Program (SNAP)

SNAP is a neighbourhood model for sustainable urban renewal and climate action. TRCA developed SNAP to help municipalities overcome the challenges of retrofitting older neighbourhoods. Its success is rooted in a collaborative approach that aligns municipal priorities with local interests. SNAP improves efficiencies, draws strong community support and builds trusted implementation partnerships for initiatives in public and private realms. For more information visit: https://trca.ca/conservation/sustainable-neighbourhoods/.

Partners in Project Green (PPG)

PPG represents the culmination of more than two decades of partnership between the Greater Toronto Airports Authority (GTAA) and Toronto and Region Conservation Authority (TRCA). PPG was created to become an internationally recognized eco-business zone that connects public environmental plans and goals with businesses that can accelerate the change to a cleaner economy. PPG is a network of public, private and not-for-profit partners addressing global goals on carbon emissions reduction, water stewardship, waste reduction and environmental engagement, in the local context. For more information, visit: https://partnersinprojectgreen.com/.

Transition 2050 Partners, Process and Objectives

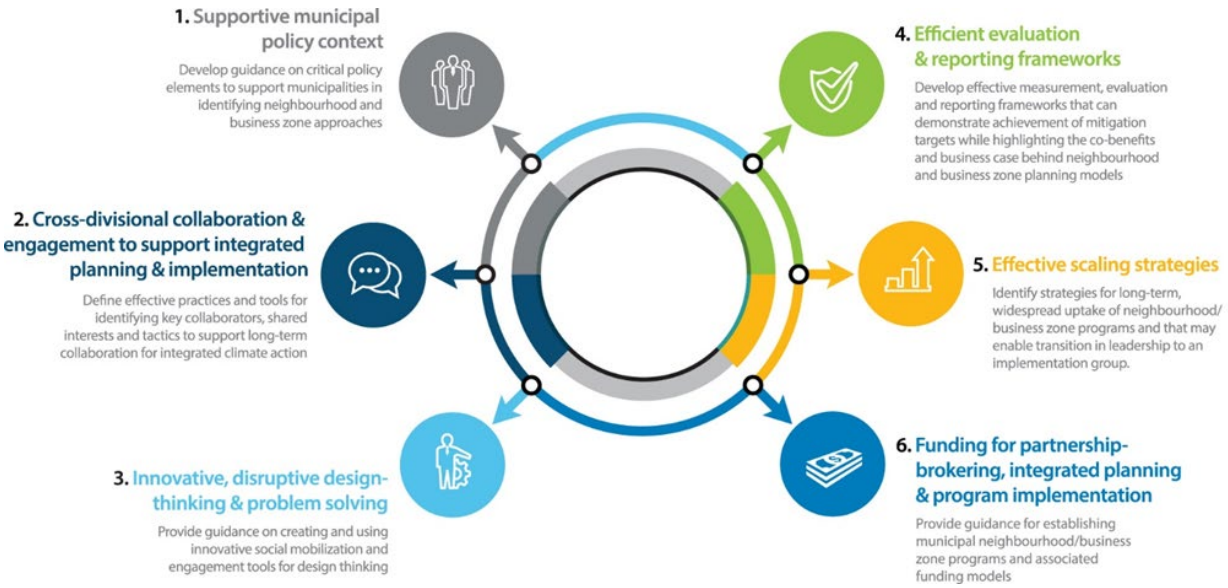
The nine collaborating municipalities are mostly located in the Greater Golden Horseshoe Region of southern Ontario, Canada. Among them, five are within TRCA's jurisdiction, including a mix of those new and experienced with SNAP and PPG, and four beyond TRCA's jurisdiction and are interested in piloting the neighbourhood/business zone approach.

CITY OF BRAMPTION	CITY OF MISSISSAUGA	CITY OF PETERBOROUGH
CITY OF VAUGHAN	CITY OF LONDON	CITY OF GUELPH
TOWN OF CALEDON	CITY OF HAMILTON	CITY OF MARKHAM

Each municipality received hands-on guidance from TRCA to apply the neighbourhood/business zone approach by focusing on either a residential neighbourhood or business zone/sector and worked together to share lessons and inform recommendations. This project followed a five-phased process involving a peer learning workshop at the end of each phase.

TRCA Transition 2050 Project Process

TRCA and its municipal partners identified strategic project objectives associated with each of the six success factors underpinning the neighbourhood/business zone model.



TRCA Transition 2050 Project Objectives

Transition 2050 Municipal Case Studies

As part of this Transition 2050 project, each municipality selected a project area, developed an action plan and implementation program focusing on either a residential neighbourhood or a business zone/sector. Municipalities and their partners implemented aspects of their chosen pilot project to the extent possible, within the limited timeframe of this project. COVID-19 restrictions impacted these initiatives in several ways, including some delays, adaptations and limitations in program delivery, however valuable lessons were still observed.

Many municipalities cited climate action plans or municipal energy plans as drivers for this initiative, but also a desire to achieve progress on other municipal social or sustainability objectives alongside climate action. Achieving multiple co-benefits and deepening engagement and uptake on climate action were two commonly cited reasons for interest in applying the neighbourhood/business engagement model. Other reasons included an interest in seeking cost efficiencies, cost sharing opportunities and increased multi-stakeholder collaboration, as well as the desire to foster greater integration of sustainability into ongoing City business.

TRCA Transition 2050 Partner Municipalities' Case Studies

Municipality	Case Study	Innovations being tested
Within TRCA's Jurisdiction		
City of Brampton	Bramalea SNAP Action Planning and Tower Resilience and Efficiency Initiative	Replication of SNAP's collaborative model for tower revitalization Working with tower owners to leverage planned projects to achieve co-benefits in the tenant community

Municipality	Case Study	Innovations being tested
Town of Caledon	PPG Business Engagement Pilot: GreenBiz Caledon	Potential opportunity to work with Innovate My Future youth climate program to support a business energy audit and retrofit New collaboration between Energy & Environment and Economic Development Divisions at the Town of Caledon – strengthened relationship has helped spur other collaborations
City of Markham	Integrated corporate asset management	Proposed application of the screening process to identify potential integrated infrastructure projects and candidate neighbourhood-based initiatives. Explore opportunities for operationalizing integrated approaches as part of corporate asset management program.
City of Mississauga	Burnhamthorpe SNAP Tower Demonstration and Webinar Series	Tower revitalization demonstration as a catalyst for engagement of other multi-unit residential building owners in sustainability actions Showcase innovative energy efficiency technologies and behaviours
City of Vaughan	Thornhill SNAP Action Planning and Pilot Home Retrofit Program Implementation	Innovative planning workshop Neighbourhood-scale resiliency strategy On-line interactive engagement Proposed Local Improvement Charge (LIC)
External to TRCA's jurisdiction		
City of Hamilton	North End Neighbourhood SNAP and resident private tree planting pilot	University collaboration supporting baseline data collection and urban forest canopy analysis On-line interactive engagement Use of ArcGIS Storymap tool to communicate neighbourhood action plan
City of Guelph	ISO 50001 Energy Management System Implementation	Adoption of the ISO 50001 standard – aim to engage local businesses to share knowledge and encourage a similar journey Become one of the first North American municipalities to strictly comply to the standard. Municipal-wide compliance.
City of London	London Business Community Low Carbon Program Development	Workshops sharing success stories to generate interest/ participation/ motivation; Subsidized Water/Energy/Waste audits Developing local non-profit capacity to deliver programs and allow City to scale programming Blue Roof retrofits
City of Peterborough	Kawartha Heights SUN/SNAP – Home Energy Renovation Video Series	Video series + virtual event with home retrofit contractors to stimulate homeowner action

Six Success Factors and Lessons Learned

At the initial project workshop, TRCA and its municipal partners identified six factors considered vital to the successful long-term application of the neighbourhood/business zone models. These factors formed the basis for shared project objectives, which guided the team as they brought forward tools, lessons and recommendations to inform and strengthen this approach. Each of the corresponding six sub-sections of the report describe why the factor is important, relevant lessons, tools and tactics, and summary observations.

Success Factor #1: Supportive Municipal Policy Context

TRCA's neighbourhood and business zone models are solutions to drive implementation action on a number of municipal priorities through multi-objective, place-based or business-focused approaches, rather than traditional single-objective, silo-based delivery. Policy is needed to commit to take action on climate and any number of other sustainability objectives. It is also needed to rationalize a different approach in certain places, which can complement municipal scale strategies. Having a supportive policy framework in place is necessary to guide the scope, prioritization and selection of neighbourhood and business zone projects and to allocate supportive municipal staff and resources.

Emerging municipal policy and partnerships indicate a growing recognition of the benefits of the neighbourhood/business zone approach to service delivery. A variety of available policy tools have been identified to provide a supportive framework, along with lessons for a model neighbourhood program. A transparent screening and selection process is provided to identify candidate areas that would benefit from focused, collaborative program delivery.

Summary Observations:

The municipal policy framework to support climate action and other sustainability initiatives is in place, and does not preclude taking a neighbourhood/business zone approach. The allocation of funding to support implementation is the more significant barrier, regardless of approach. Current reporting on climate action progress at the municipal scale may not be compelling enough to support greater allocation of implementation funding and program resourcing (e.g. the cost of continued climate impacts may not be well understood; there may be a lack of goal/target setting and therefore limited accountability to achieve progress). There was an observation that the benefits associated with applying the neighbourhood/business approach may help provide a business case for implementation and support additional resources being applied to the effort. A clear reporting framework is needed.

Several new policy mechanisms are being applied and tested to create dedicated funding for implementation programs and incentives, however these revenue sources are usually earmarked for specific applications. There remains a gap in funding to support integrated projects, where the co-benefits necessary to gain support for the overall project may lie outside the scope of siloed budgets. New policy may be needed to pool funds to support integrated, place-based services.

Success Factor #2: Cross-Divisional Collaboration and Engagement to Support Integrated Planning and Implementation

There is a compelling need for collaboration and deeper, more inclusive engagement that reaches beyond the "usual suspects". Integrated climate action solutions are not only necessary, due to the interconnected nature of the challenges, but offer significant benefits in terms of leveraging multiple interests and delivering social and economic

benefits alongside climate action – making action more appealing and efficient. These programs need to take a long-term view, because it takes time to develop trusted relationships with new partners and time to position major projects for implementation. Furthermore, sustained action needs to come from local community champions, therefore capacity building activities are an important part of the neighbourhood and business zone approaches, and it takes time for these local leaders to be self-sufficient.

TRCA's neighbourhood and business zone approaches work to tailor solutions to local needs and find ways to overcome obstacles to action. A key premise of this work is the deep engagement of a broad range of government and community stakeholders through local trusted social or business networks and collaborative processes to understand and address needs. By understanding local needs and interests, and designing projects and programs to address them, greater uptake and implementation can be achieved. Tools and tactics to support this work, along with innovative engagement forums and activities are outlined.

As part of their case studies, municipal partners experienced the key stages of project formation, action planning and pilot implementation in real world settings, following the strategic planning processes and engagement tools and tactics of the neighbourhood and business zone models. Key barriers/challenges and enabling tools/tactics were documented.

Summary Observations

Many of the barriers observed in this project reflect that collaboration and resource sharing is not part of the municipal organizational culture. Mandates and project budgets tend to be highly siloed and restricted depending on funding source. There needs to be commitment and clear direction from the top of the organization to ensure adequate support to implement approved climate action plans and related strategies. This is particularly needed if no new resources are to be allocated.

Staff turnover affected seven out of the nine municipalities during this project's two year timeframe, and in several cases represented one of the most debilitating barriers affecting project progress. Several mitigative strategies were outlined to avoid the costly delays that loss of staff can represent, as local knowledge and working relationships are re-established.

Some municipal staff perceive a risk that big new project ideas may emerge from collaborative processes. Authority to develop and lead such projects may be beyond the project team and current budgets, and may set expectations that cannot be met. Team members must be supported in bringing new ideas forward for fair consideration and, most importantly, not made to feel sole responsibility for bringing the new project to fruition. Workplans/budgets require some flexibility to accommodate timely and strategic opportunities, and a supportive culture for innovative fundraising is needed. New approaches may take more time and may involve some failure and some successes. Failure needs to be accepted and lessons learned.

Success Factor #3: Innovative, Disruptive Design-Thinking and Problem Solving

Creation of more inspiring designs and engagement approaches can motivate action. Humans tend to avoid or procrastinate about tasks perceived as difficult or dull, but will more readily get on board with positive, fun initiatives. As suggested in the literature, by making emotional connections to an initiative, there is likely to be stronger support for action. Methods are emerging to help stakeholders apply future-thinking, participate in co-design and find creative solutions to address multiple needs with limited resources. Such innovative approaches bring some risk

associated with trying something new, and therefore there needs to be acceptance for failure and opportunity to learn from mistakes.

Tools for innovative engagement and creative design processes are provided for the residential and business settings. These methods help to tap into what interests and excites people, and how those motivating "rewards" can be integrated into actionable solutions that address local needs. Tactics for managing risk are outlined.

Summary Observations

Case study lessons shared by municipalities indicated the lack of a supportive organizational culture for collaboration and reluctance to take risk are obstacles to innovative approaches. The neighbourhood/business engagement approach offers inherent opportunities to avoid, mitigate or share risks, including: lessons sharing among partners, pilot projects, partnerships and shift in certain roles to third party organizations (e.g. NGOs, conservation authorities, universities, private sector) who may be more experienced or better positioned to lead a new approach or to accept risk.

Success Factor #4: Effective and Efficient Evaluation and Reporting Frameworks

Tracking co-benefits is part of the business case. TRCA's neighbourhood models strategically integrate climate action with planned initiatives and projects designed to deliver on other compelling local interests, as a way to overcome implementation barriers and garner greater uptake. A key aspect of this approach also focuses on implementation of municipal scale objectives at the neighbourhood or business site scale. Therefore, overall efficiencies in delivery and a full accounting of outcomes must be measured across a broader scorecard of indicators than strictly those associated with greenhouse gas reduction and enable different scales of reporting.

For this component, TRCA partnered with Dr. Jeffrey Wilson of the University of Waterloo. Dr. Wilson led the development of a measurement and evaluation framework in collaboration with the municipal partners and TRCA, based on learnings from past experience and a literature scan of best practice. The resulting Climate Action Co-benefits Project Evaluation Guide provides a process to help partners develop an evaluation framework focused on measuring project benefits and co-benefits associated with neighbourhood or business based projects. Key principles include: measuring co-benefits; nested scales; reporting output, outcome and impact indicators; setting benchmarks; and adopting a long term lens. Worksheet templates and other tools were created to guide the process.

Summary Observations

Based on experience developing and applying the evaluation framework as part of Transition 2050 case study projects, municipal partners noted the value of tracking co-benefits, but also challenges associated with the long term timeframe and resource limitations. They noted the importance of selecting indicators meaningful to the community context and allowing for a flexible evaluation design that can adapt to different audiences. However, they also acknowledged the tendency to prescribe a set of indicators that enables comparisons between projects, however this approach ignores project diversity and program delivery differences which may make comparisons meaningless. Cross-cutting indicators should therefore complement project specific indicators. Fostering partner buy-in and a culture of data sharing from the project onset will help ensure more effective evaluation and reflect the reality that there may be multiple implementing partners contributing to the achievement of shared objectives.

Success Factor #5: Effective Scaling Strategies

There is a need to move beyond pilot projects to achieve targets, but also to realize return on investments in pilot success, including the knowledge/skills developed and human capital/networks established. Although there may be a need to expand current program resources (i.e. staffing, budgets) to achieve an optimal efficiency, there will always be limitations to infinite growth of a particular program within an organization. Therefore, alternative strategies are needed to scale impact.

Lessons for scaling projects and programs were shared from previous SNAP and PPG examples. Municipal partners considered immediate next steps for continuing and expanding their pilot projects.

Summary Observations

Despite ongoing constraints and the abnormal operating environment due to the COVID-19 pandemic during this project, most municipalities have expressed interest in scaling aspects of this work. Many flagged the need for external funding support to enable continuation, let alone scaling, of the work. It would seem that an internally supported and resourced program would be needed to move beyond "pilots" to scale work in the municipalities.

Time limitations in the project implementation schedule have prevented the group from seeing the full potential impact of this approach and deeper exploration of specific scaling strategies, and this may be an area for further work and peer exchange.

Success Factor #6: Funding for Partnership-Brokering, Integrated Planning and Program Implementation

Partnership brokering and integrated planning are necessary to get projects to a fundable stage, and yet represent significant effort that is often unfunded. In comparison, implementation projects attract a broader range of funding options, which can be more easily assembled once a well-supported project is defined. There is a need for sustainable funding models to improve operational efficiencies, catalyze implementation and support program growth. Current funding models are heavily dependent on grants and other special fundraising, even to support core staff complement. Regional and local municipal sources need to remain a core component of these new funding models, reflective of the benefits they accrue and also as these funds are critical for leveraging other funding from senior governments, private sector and other sources. An important factor is the need for longer term, multi-year outlook.

A summary of funding sources to support partnership brokering and integrated planning at the neighbourhood/business program scale and implementation activities at the project scale have been compiled. Emerging concepts and trends have been explored.

Summary Observations

The majority of neighbourhood and business programs and projects have been supported by a combination of funding sources and this is a reasonable model. This reality underscores the critical role of a partnership broker who brings the partners and resources together.

Municipal partners cited the lack of staff resources/budgets for both integrated program leadership and implementation, as well as a lack of homeowner and business retrofit incentives as key funding gaps. However, two other factors hinder efforts to allocate funding to address these issues: (1) A lack of climate action and sustainability goals/targets and accountability to measure progress toward reaching them in some municipalities means there is a

weaker framework to allocate funding to a range of strategic initiatives; and (2) There is an over-riding view that climate action is an "add-on" and is treated differently than other projects required to meet strategic goals.

Funding models for neighbourhood and business zone programs will likely continue to be composed of a hybrid mixture of funding sources, but there needs to be a stable core funding level to ensure program efficiency and leverage to support integrated projects/programs. Emerging concepts and trends in funding integrated planning and implementation may offer promising directions:

- *Joint Benefits Authority* - being piloted in San Francisco, this is a mechanism for pooling scarce resources among several departments and partner groups for mutually beneficial public-focused projects. It represents a positive approach to realize synergies and efficiencies in neighbourhood projects and overcome silos. Existing local forums may offer available platforms to build upon, and these could be explored as part of a potential local pilot.

- *Private sector ESG/Philanthropy* – as major corporations shift to an Environmental, Social and Governance model, they are focusing more attention on social impact investments for climate and resiliency outcomes within communities. Although the private sector may be able to participate as a funding partner with a shared stake in local climate action and sustainability projects, municipalities may need a third party NGO to broker and receive funds due to potential conflict of interest.

Conclusions and Recommendations

Between mid 2019 to the end of 2020, nine municipalities have worked with TRCA to apply SNAP neighbourhood or PPG business engagement models to develop and launch projects to mobilize climate action and other sustainability initiatives. The cohort has shared lessons during four Peer Learning Workshops. A summary of the applied strategies, tools and lessons is presented in this report in the context of six project objectives. Informed by municipal partner input at the final Project Workshop and a review of recurring observations throughout the project, cross-cutting conclusions and recommendations are made for the further application of the neighbourhood and business zone approach as an effective strategy for low carbon mobilization.

Roles of the Neighbourhood/business models for Low Carbon Mobilization

TRCA's neighbourhood and business zone models apply a collaborative, multi-objective, long term systems approach to deepen engagement toward climate and other sustainability objectives. They help make the motivating business case for action, but also build the partnerships and bring resources together to advance implementation in the public and private realms.

Municipal partners noted three particular strengths of these models:

- Building trusted and sustained collaborations among various municipal divisions and between the municipality and community stakeholders.

- Finding project synergies which are critical to making the business case for action, both in terms of practical needs for resource sharing and securing buy-in and participation of the un-engaged.

- Cross promotion of the need for action and available incentive programs in order to deepen engagement and uptake of other programs.

Promising low carbon implementation strategies and the neighbourhood/business contribution

Municipalities are moving forward with strategies for energy efficient building retrofits, renewable energy and low carbon transportation options. The neighbourhood/business programs offer unique strategies to complement these municipal scale initiatives by driving uptake and delivering on other sustainable objectives, making climate action appealing and efficient, in high priority areas. For example:

- Home retrofit programs – promotion through local community networks and other local project synergies; opportunities to aggregate action and attract bulk purchase discounts; profiling local champions and fostering participation through neighbourhood movements; providing follow up support as homeowners adopt sequential retrofit actions; and creating fun DIY parties and other "pitch in" events and celebrations of neighbourhood achievement.
- Active transportation – beautifying routes, improving amenities and offering local programming to encourage greater participation in active transportation.
- Business industrial process redevelopment – Business engagement, audits and systems mapping to guide carbon reducing retrofits; opportunities to aggregate a market and negotiate bulk purchase discounts; profiling industry champions and fostering industry standards; providing follow up support and friendly competitions and celebrations.

Recommendations for improved effectiveness in applying the neighbourhood/business model

The following recommendations outline next steps and actions to address the cross-cutting challenges and enabling factors for improved effectiveness in applying the neighbourhood/business model, as identified by municipal partners throughout this project.

1. **Commit to follow through on work initiated during the Transition 2050 project –** a) Commit to continue the pilot case study projects by seeking council endorsement and dedicated implementation funding, where applicable. Track outcomes and co-benefits over a three year period to more fully assess the impact from the neighbourhood/business approach. b) Work toward establishing a multi-year workplan to scale the pilot neighbourhood/business zone program throughout strategic neighbourhoods/businesses across the municipality. Select strategic focus areas based on the screening/prioritization process and incorporate other recommendations arising from this project into the program design. Dedicate staff who can facilitate integrated approaches among departments and external partners. – ***Lead responsibility: Transition 2050 municipalities; TRCA for project roles supporting municipalities within its jurisdiction*.**
2. **Apply climate and co-benefits measurement and reporting practices –** Develop evaluation frameworks focused on measuring and reporting greenhouse gas emission reductions and other co-benefits associated with neighbourhood/business based projects. Tracking co-benefits delivered alongside climate action is part of the business case, and more rigorous target setting and reporting may provide a more informed context for program resourcing and progress at achieving strategic goals. ***Lead responsibility: Municipalities and TRCA.***
3. **Designate an Integrator** – Recognize and support the critical role of a backbone organization (such as a conservation authority, a well-established local NGO and/or dedicated staff) who can broker multi-stakeholder partnerships and foster collaborative action planning, project development and long term implementation as part of neighbourhood and business programs. This backbone integration function

creates the space for residents, local government, business and other stakeholders to identify shared priorities, develop integrated projects to a fundable stage and create the basis for cost sharing strategies that can leverage other innovative funding. Having a credible external third party can ensure fair consideration of all stakeholder interests. ***Lead responsibility: Municipalities.***

4. **Foster an organizational culture to support collaborative approaches and take risks –**Introduce strategies to foster an improved collaborative culture, bring innovative ideas forward and help reduce/mitigate risk (e.g. common performance metrics that cut across divisional mandates, reward staff for bringing forward innovative ideas, infuse 'regular teams' with new ideas, create space to test new approaches, partnerships with academia/NGOs to test new ideas, etc.). Collaborations among municipal departments and with external partners (conservation authorities, NGOs, residents, businesses) can result in better projects that can deliver on more objectives, offer efficiencies and gain greater support. Furthermore, collaboration with local leaders is critical to gaining local knowledge and building their capacity to help lead action. ***Lead responsibility: Municipalities, TRCA.***
5. **Develop and pilot an integrated funding model –** Develop and pilot an integrated funding model to support the required up-front partnership brokering and integrated planning for climate action and revitalization projects that achieve co-benefits. Work in collaboration with municipal partners and others by building upon existing mechanisms to the extent possible. Consideration should be given to pilots within single tier and two-tier municipal settings to ensure mandates for environmental, social and economic objectives are brought together. Models such as the Joint Benefits Authority offer a potential means to pool funding necessary for developing integrated projects/programs to a fundable stage that can kick-start implementation. Climate action does not have to be an "add on" while there are opportunities to leverage existing budgets to act. ***Lead responsibility: TRCA and Municipalities; FCM (potential financial and advisory support).***
6. **Continue knowledge sharing among a neighbourhood/business community of practice –**Facilitate peer learning and collective approaches to act on the other strategic recommendations arising from this project by seeking opportunities to reconvene and support the Transition 2050 municipal partners and others over the next 1-4 years. ***Lead responsibility: TRCA; FCM (potential financial and advisory support).***

Summary – A timely approach

COVID-19 economic recovery, climate change impacts, social justice and inclusion – these are significant issues rooted in the locally-lived daily experiences of residents and businesses. The neighbourhood and business zone approach brings people together to design local solutions for lasting impact at the scale where implementation happens. Bringing people together creates more cohesive, inclusive communities, which are better able to help each other during difficult times. Integrated local solutions can deliver on environmental, social and economic objectives through green/blue infrastructure, skills development, local job opportunities and cost savings for homes and businesses. These actions can contribute to a green COVID recovery that advances climate action, while building more resilient neighbourhoods and business communities, better prepared for the next emergency.

1.0 INTRODUCTION – CLIMATE ACTION CONTEXT

With Canada's Greenhouse Gas (GHG) emission reduction targets of 80% below 2005 levels by 2050, municipalities have shown leadership by developing and initiating implementation of Climate Change Action Plans and Municipal Energy Plans. In 2019, some municipal councils further declared "climate emergencies" as expressions of support for action. However, despite good intentions, implementation of these plans has been challenging. As municipalities develop "next generation" Action Plans and design new strategies, there is a need to foreground community-level engagement that inspires action on climate among local residents and businesses.

Through a series of workshops, focus groups, and surveys led by the Community Energy Knowledge Action Partnership (CEKAP[1]) with municipal partners during 2017-2018, it became clear that a significant impediment to successful community energy and municipal climate action plans is the lack of a collaborative framework that engages at the neighbourhood or business scale where implementation of these plans occurs. Participants recognized the need to coordinate the technical data and policy tools with stakeholder engagement to build trust and buy-in needed for implementation of crucial actions such as district energy, building retrofits and active and shared mobility. Given that stakeholder engagement relies upon shared interests, there are emerging techniques that can inform integrated, co-benefitting plans and implementation projects. Such projects deliver multiple outcomes and are more likely to be successful.

Over the past decade, Toronto and Region Conservation Authority (TRCA) has been an innovator in community-level engagement and collaborative implementation through its Sustainable Neighbourhood Action Program (SNAP) and Partners in Project Green (PPG) Program, which focus on residential and business sectors respectively. Both programs employ proven strategic neighbourhood/business zone modesl designed to deepen engagement and empower local leaders to address climate action while also tackling other sustainability challenges.

With funding provided under the Federation of Canadian Municipalities' (FCM) Municipal Climate Innovation Program (MCIP) as part of the Transition 2050 grant stream, TRCA convened a collaborative cluster of nine municipalities interested in exploring the role TRCA's neighbourhood/business zone models could play in low carbon mobilization.

> **The goal of this Transition 2050 project is to apply, learn from and develop recommendations for the refinement, mainstreaming and scaling of the neighbourhood/business zone models as a municipal policy/practice for implementing climate action plans and achieving other municipal objectives.**

This report describes case study applications of the neighbourhood/business zone models pursued by partner municipalities and brings forward a toolkit of guidance for future applications, lessons learned, and recommendations associated with six factors for the successful application of these models by Canadian municipalities.

[1]Community Energy Knowledge Action Partnership (CEKAP) operates as a collaborative of academics, municipalities, governance partners, and think tanks with a shared interest in the successful implementation of low carbon community energy plans. CEKAP was launched in 2016 by the Ontario Climate Consortium Secretariat based at TRCA.

2.0 NEIGHBOURHOOD AND BUSINESS ZONE MODELS – STRATEGY AND OVERVIEW

2.1 Introduction

Since their inception in 2008-2009, TRCA's neighbourhood and business zone models have been applied in a growing network of neighbourhoods and with hundreds of local companies in the Toronto Pearson Airport eco-business zone. Sustainable Neighbourhood Action Program (SNAP) and Partners in Project Green (PPG) are proven models for engagement, peer-to-peer learning and collaborative action. These efforts have resulted in real GHG reductions and many other co-benefits. The neighbourhood/business zone approach has been increasingly recognized and applied by other jurisdictions as an effective strategy for mobilizing action on urban sustainability, climate and resilience priorities (Box 2.1).

Box 2.1: Other Similar Neighbourhood and Business Zone Initiatives

- SNAP initiatives by Credit Valley Conservation Authority and Peterborough GreenUP in Ontario (in collaboration with TRCA)
- Ecodistricts, Portland, Oregon
- 2030 Districts, US and Canada
- Making Vulnerable Neighbourhoods Sustainable Program of 18 municipalities, Platform31 and Nyenrode Business University in the Netherlands, informed by SNAP model
- Green Economy Canada (formerly Sustainability Co-Lab)

SNAP and PPG support local efforts toward achieving TRCA's watershed objectives and strategic goals shared with municipal partners, such as community resiliency, ecosystem restoration, healthy communities and green economies. As one of Ontario's 36 conservation authorities, TRCA's jurisdiction includes nine watersheds and the Lake Ontario shoreline from Mississauga to Ajax and is home to Canada's largest urban centre. TRCA's mission is to protect, conserve and restore natural resources and develop resilient communities through education, the application of science, community engagement, service excellence and collaboration with its partners. TRCA's 2013-2022 Strategic Plan, Building The Living City, outlines 12 strategic priorities including the need to implement sustainability measures in new and existing developments and to retrofit neighbourhoods. The Strategic Plan recognizes the role that programs, such as SNAP and PPG, play in these efforts.

With more than 60 years of practical experience working with its municipal and community partners, TRCA is well positioned to foster a shared understanding of challenges and help identify innovative solutions that can advance collective action. TRCA is a partnership organization with knowledge in climate science and watershed management, established working relationships and professional expertise to guide projects from research and planning through to implementation and tracking.

This section describes the needs that led to the TRCA neighbourhood/business zone models' creation, key elements of its strategy and a more detailed overview of how SNAP and PPG approaches work.

2.2 The Need and Challenges

In the Greater Toronto Region (and in other Canadian cities), there has been a critical need to find new ways to improve environmental and human health in older urban communities. Degraded natural systems and aging infrastructure are becoming strained in their ability to support the necessary services for overall ecological and human health. Climate risks, such as extreme heat and precipitation, are placing further stress on these systems and posing risks such as floods and heat stress to communities. In vulnerable communities, such as those with an aging population, poverty and other forms of social inequity, the risks can be even more pronounced. Lack of social connections and limited access to services, nature or fresh food can make these communities further disadvantaged.

While many excellent strategic infrastructure renewal, sustainability and climate action plans have been written in the past decades in the Greater Toronto Region, innovative approaches are needed to expedite their implementation. This is particularly true in older urban communities where there are unique challenges and often no impetus for mass change. There are competing demands for land, complex stakeholder interests and networks, and many disengaged residents and businesses. In addition, there is a perception that solutions must come at a high cost, and there is a lack of awareness about and unwillingness to try new practices.

Innovative strategies are emerging, although obstacles must still be overcome to fully realize their potential. For example, infrastructure managers are viewing not only hard engineering, but also natural assets as valuable infrastructure inventory. They are now trying to figure out how to integrate grey and green infrastructure solutions on public and private property. Climate adaptation managers acknowledge the value of strengthening community connections as a means of increasing local resilience, and yet are overwhelmed with the challenge of public engagement. Energy managers are piloting home energy efficiency strategies, such as property assessed financing incentives, but still need to secure homeowner participation and trust. Business solutions are available, but businesses often have a shortage of time, resources and knowledge on how to take action.

Faced with ongoing challenges and resource limitations relative to the growing number of needs, TRCA worked closely with its municipal and community partners to develop the Partners in Project Green and SNAP Programs. Partners in Project Green was formed as a collaboration of businesses located in the 1200 hectare business zone surrounding Toronto's Pearson International Airport. SNAP is a neighbourhood solution that takes advantage of multi-functional synergies. Both programs are based on a collaborative neighbourhood or business zone model that deepens engagement and builds capacity for action at the scale where implementation happens.

2.3 Neighbourhood/Business Model – Common Strategies

TRCA's SNAP and PPG neighbourhood/business zone models share three common strategies that underlie their success. These include taking a collaborative, multi-objective and long term approach **(Figure 2.1).**

Figure 2.1. TRCA Neighbourhood/Business Zone Model Strategies

These three core strategies influence other key attributes of the model, which include the following:

1. Collaborative approach
    - Multi-stakeholder
    - Cross-sectoral; coordinates public and private sector actions
    - Top-down and bottom-up
    - Engages more deeply through local networks

2. Multi-objective approach
    - Delivers on multiple objectives (NOTE: socio-economic outcomes are usually the drivers that sell projects and motivate participation)
    - Integrates across sectoral interests
    - Systems-thinking
    - Place-based or common business sector-based
    - Implementation solutions and action focused
    - Demonstrates and tests innovative approaches to overcome challenges

3. Long Term
    - Develops trusted relationships for progressive action
    - Follows through from planning to implementation and follow up tracking
    - Fosters delivery partnerships
    - Builds capacity for sustained implementation
    - Leverages planned projects for greater value

TRCA's role is that of a partnership-broker, who brings traditional and non-traditional stakeholders together, and a facilitator of integrated planning and project development through implementation. Implementation is best led by existing established partner organizations, but where there are gaps in potential leadership or lack of capacity, TRCA, with the support of its partners, may also play a role in leading pilot implementation initiatives. In these cases, TRCA also aims to build capacity in others for longer term arrangements. It is this niche role, combined with application of the approaches embodied in the three strategies, that is overcoming the barriers to action.

2.4 Sustainable Neighbourhood Action Program (SNAP)

2.4.1 SNAP overview and action areas

The Sustainable Neighbourhood Action Program[2] (SNAP) is a neighbourhood model for sustainable urban renewal and climate action. The Toronto and Region Conservation Authority (TRCA) developed SNAP to help municipalities overcome the challenges of retrofitting older neighbourhoods. Its success is rooted in a collaborative approach that aligns municipal priorities with local interests. SNAP improves efficiencies, draws strong community support and builds trusted implementation partnerships for initiatives in public and private realms. Working with local stakeholders, SNAPs address a broad range of sustainability objectives by advancing strategies for:

- Home retrofits (e.g. plantings, flood protection, rainwater harvesting, energy/water efficiency)
- Infrastructure renewal (integrating social and environmental outcomes)
- Multi-unit residential, commercial and institutional revitalization (e.g. sustainable landscaping, urban agriculture, building retrofits)
- Community resilience and leadership capacity (e.g. neighbour connections, skills building, emergency preparedness)

Each SNAP neighbourhood project is locally customized, however all SNAPs share a common approach based on the following critical elements **(Figure 2.2):**

- Neighbourhood scale: Focusing on place-based solutions
- Multi-objective: Seeking co-benefits
- Science-based: Predicting measurable outcomes
- Demonstration: Showcasing action
- Local networks: Engaging a new public
- Social innovation and market research: Identifying local motivators

Figure 2.2. Critical Elements of SNAP

[2] https://trca.ca/conservation/sustainable-neighbourhoods/

Design of the model was based on research and experience of TRCA and its partners in key areas:

- Integrated watershed planning and implementation – multi-stakeholder approaches informed lessons on fostering buy-in, nurturing champions and understanding systems
- Behaviour change and social market research –showed the limitations of traditional education campaigns and the need for alternative approaches tailored to local motivators and barriers
- Science-based studies and strategic plans – identified actions to achieve objectives for sustainability, asset management and climate action

Each neighbourhood project involves three phases and inherent strategies, including:

1. **Neighbourhood selection/scoping**: alignment with multiple priorities
2. **Action Planning:** partnership building, target-setting, defining motivational themes and project concepts through innovative engagement and co-design with multiple stakeholders
3. **Implementation:** partnership brokering, catalyzing engagement, capacity building in local leaders, monitoring impact and learning from lessons

Starting with three pilot SNAP neighbourhood projects, TRCA has worked on a total of ten SNAPs with eight upper and lower tier municipalities in its jurisdiction and has more recently advised on five SNAPs beyond its jurisdiction in Ontario. Sharing of lessons learned and adaptive planning have been critical strategies for continuous improvement of this process.

The SNAP neighbourhood process is explained further in the subsequent sections.

2.4.2 Neighbourhood Selection, Action Planning and Implementation Process

This section provides a more detailed look at the Neighbourhood Selection and Action Planning Process.

Neighbourhood Selection

Careful consideration goes into the decision to designate a neighbourhood as the focus of a SNAP, in order to confirm the necessary stakeholder cooperation and initial resources to ensure implementation momentum. The selection process shown in **Figure 2.3** consists of progressive steps to identify a site. The initial Neighbourhood Screening Process is key, because that process aims to identify the alignment of multiple municipal and partner priorities for urban renewal and climate action in a common location, including issues/needs and projects that may already be identified as part of strategic plans and capital programs. Involvement of multiple stakeholders in the selection process increases the potential for collaborative opportunities to be identified, building buy-in and potential cost sharing into the early stages of work.

Figure 2.3. Neighbourhood Site Selection Process

Typical SNAP neighbourhoods may have a population of 2000 to 20,000 people, 1000-4000 single detached homes, 20-40 multi-unit residential dwellings and a variety of other land uses, such as commercial and institutional properties, parks, roads, and other infrastructure.

Action Planning Process

Figure 2.4 illustrates the three phased SNAP Action Planning Process aimed at fostering deeper engagement and momentum toward the implementation of strategic retrofit projects. Key strategies embodied in this process involve the definition of motivational themes and integrated project concepts through innovative engagement and co-design activities with multiple local stakeholders. Complementary to two primary workshop events are numerous background engagements to inform the process, build partner support and leverage quick start activities and other local events to cross promote engagement in the project and start building the capacity and buy-in of implementation champions. A project management team guides the overall process.

Figure 2.4. SNAP Action Planning Process

Implementation

An implementation framework, prepared alongside the action plan, identifies a series of short and long term projects and programs, roles, interconnections and other information to support coordinated action and leadership by a variety of partners.

Specific implementation projects each contain unique strategies and take advantage of synergies across the neighbourhood scale (**Figure 2.5**):

- Neighbourhood home retrofit programs – locally targeted marketing and one-window delivery to deepen engagement and increase uptake of a wide range of home retrofit needs
- Multi-unit residential, commercial and institutional property revitalization – forming partnerships with the private sector and a broad range of other groups to revitalize underutilized spaces and buildings, while delivering social and economic outcomes
- Integrated Infrastructure renewal – leveraging planned capital projects to incorporate additional environmental and community benefits for greater impact
- Community resilience programming – strengthening community connections and building capacity for local resilience

An implementation team consisting of representatives from all key stakeholders oversees implementation of the plan.

Figure 2.5. Typical SNAP Action Areas

2.4.3 Project governance

The SNAP neighbourhood action planning process is truly a collaborative effort which brings TRCA and municipal government representatives together with a broad range of local stakeholders on all aspects of neighbourhood planning and implementation. The governance structure of each SNAP neighbourhood project consists of a core project management team, with representation from key departments of TRCA, the partner municipalities (upper and lower tier) and significant neighbourhood stakeholders (e.g. a major landowner, community-wide organization etc.)

The core project management team meets regularly to advise on and help lead aspects of project planning, engagement and implementation. This team also facilitates two-way information exchange with senior leadership and the broader internal network of departments, ensuring key people are involved at each stage and that relevant information and opportunities are flagged to the core team. Membership typically consists of representatives from one or more of the following departments:

- Sustainability, climate and environmental planning
- Public works, stormwater management, engineering
- Water efficiency, sanitary sewer inflow and infiltration
- Community stewardship and outreach programs
- Emergency Preparedness/ Climate Resiliency
- Environmental regeneration and parks

Core project management teams engage with a broader network of departments within TRCA and the upper and lower tier municipalities, through one-on-one meetings, milestone workshops or sub-project work groups as appropriate throughout the process. These broader departments are responsible for providing: sound technical data analysis and advice; services such as mapping, communications or monitoring; access to their trusted networks within the community; implementation roles; and guidance on feasibility and opportunities for action. This broader network of departments varies somewhat, depending on neighbourhood-specific issues, but quite commonly includes many departments throughout the municipality and conservation authority.

While the above-noted TRCA and municipal departments play important developmental roles in SNAP neighbourhood projects, the SNAP process is a collaboration among government representatives and local community leaders. As such, local community leaders are empowered to play significant roles in the development and implementation of their local neighbourhood action plan.

2.4.4 Community and Stakeholder Engagement

The collaborative SNAP process brings TRCA and municipal government representatives together with a broad range of local stakeholders on all aspects of neighbourhood action planning and implementation. Each SNAP neighbourhood project consults and engages the following stakeholder groups:

- **Government and agency staff** – e.g. provincial and federal government, energy utilities, agencies such as health services, in addition to the TRCA and municipal government departments noted in the previous section
- **Indigenous communities** – i.e. those who identify local areas as part of their traditional lands
- **Community leaders, NGOs and Institutions** – e.g. resident associations, environmental organizations, faith-based organizations, schools etc.
- **Private property owners and businesses** – e.g. commercial and multi-unit residential, institutions, local retail businesses, real estate agents, etc.
- **Residents** – homeowners, tenants and citizens, including most strategically the “hard to engage” residents (i.e. not the “usual suspects”)

"Consultation" to inform and seek input from diverse stakeholder perspectives is a minimum objective. SNAP applies a broad range of approaches to achieve deep, meaningful engagement, ranging from traditional (e.g. open houses, person-on-the-street surveys, one-on-one meetings, focus groups) to very innovative, interactive activities (e.g. experiential walks, character role playing, inspiring co-design workshops, etc.). Commonly, SNAP incorporates planning related engagement with action-oriented, family-friendly and hands-on educational events and activities, as a way of getting on with the delivery of measurable impact and development of skills, while inspiring input towards future action.

The SNAP model aims to empower each stakeholder to play significant developmental roles, including engagement through their local networks and constituencies, contribution of local knowledge, volunteerism and the coordinated delivery of their local programs and services. By forming trusted relationships, diverse and non-traditional stakeholders are working together to find innovative solutions to achieve their shared goals. This has included such collaborations as data sharing, resource sharing, integrated programming and joint fundraising. In addition, the SNAP process aims to build the capacity of "passive" participants so they feel inspired and capable of taking on increasingly responsible leadership roles within their own community **(Figure 2.6).** These engagement, empowerment and capacity-building strategies garner greater support for the action plan. More importantly, they ensure the long term sustainability of programs, project installations and continued action toward neighbourhood goals, long after TRCA and its municipal partners help initiate the catalyst actions and leave the neighbourhood.

Figure 2.6. Participants to Leaders

2.4.5 Outcome/Impact areas

SNAP projects help to build more resilient neighbourhoods by delivering primary and secondary environmental outcomes, as well as social and economic outcomes. These outcomes are generally outlined in the subsequent sections, and illustrated by selected case examples that highlight the range of co-benefits delivered by these projects (Boxes 2.2 to 2.5).

Primary Environmental Outcomes

Supporting higher level municipal plans, each SNAP achieves objectives through strategic retrofit projects and programs customized for that neighbourhood. Primary environmental outcomes from SNAP Action Plans may include the following long-term (e.g. 20 year) targets with examples from Black Creek SNAP, Toronto (See also Box 2.2):

- **Stormwater management** - measures to reduce runoff and erosion, improve quality and moderate temperature *(e.g. Reduce runoff volume 30%)*
- **Natural heritage and urban forest** - restoration, biodiversity and stewardship actions to achieve targets *(e.g. Expand tree cover from 26 to 34%)*
- **Water efficiency** - reducing residential and commercial demand *(e.g. continued declining trend in water use)*
- **Energy efficiency and renewables** - reducing residential and commercial demand and identifying alternative energy sources *(Reduce electricity use 10% and natural gas use by 17% below 2007 levels)*
- **Greenhouse gas reduction** - sustainable transportation, energy and water retrofits, tree planting and urban agriculture to mitigate greenhouse gas *(estimated 128,000 kg of carbon storage from expanded urban forest)*

Box 2.2: SNAP Program Example Environmental Outcomes

Across all SNAPs, 2012-2019:

- 10,145 total trees and shrubs planted
- Eight significant green infrastructure projects completed on public land, including bioswales, stormwater ponds, wetlands with 1000's of trees and pollinator plants and other amenities
- 32 initiatives (green infrastructure, urban agriculture, energy, water and waste) on 14 multi-unit residential properties and 18 commercial or institutional properties

Demonstration project monitoring quantified outcomes:

- Lake Wilcox SNAP: Front yard makeover's sideyard soakaway and raingarden captured stormwater runoff from 13 mm events, representing 75% of all rain events
- County Court SNAP: Green Home Makeover monitoring demonstrated local homes could realize 44% energy savings and 41% water savings; 307 significant actions undertaken in neighbourhood homes
- County Court SNAP: Boulevard bioswales reduced runoff 34% and peak flows 50-70%

Secondary Environmental Outcomes

SNAP Action Plans often identify secondary environmental outcomes as part of their guiding framework of sustainability objectives. The level of analysis and quantification that supports target setting is commonly limited to qualitative or directional aims (e.g. increase, decrease, contribute to).

Secondary environmental outcomes may include (See also Box 2.3):

- **Urban Heat Island –** ground surface temperatures are reduced through tree planting and naturalization, shade structures, and reduced hard surfaces
- **Improved Air quality –** air quality is improved through reduced emissions and increased natural cover associated with sustainable transportation, water/energy retrofits and tree/shrub planting
- **Noise reduction –** large tree and mass shrub plantings create a natural buffer against noise from busy highways and streets
- **Groundwater recharge –** increased water infiltration through removal of hard surfaces and installation of low impact development features
- **Waste/Materials management –** community clean ups, organics and resource sharing, and repair initiatives result in less waste generated and higher landfill diversion

Box 2.3: Example Secondary Environmental Outcomes

- County Court SNAP, Brampton: estimated 11 tonne air pollutant removal and localized temperature moderation of up to 5-7 degrees Celsius will result from expanded urban forest
- Black Creek SNAP, Toronto: 14,454 pounds of surplus fruit and vegetable harvest were donated to local food banks and meal programs as part of multi-objective home retrofit programs, diverting this waste from landfill

Social Outcomes

Delivery of social outcomes is not simply a side-benefit, but a strategic feature of SNAP. By designing environmental projects to deliver on compelling local interests, often social, the team can garner more support for implementation and achieve greater impact on multiple objectives (see Boxes 2.4 and 2.5).

While neighbourhood initiatives help address social objectives, there are many determinants beyond the neighbourhood scale. Therefore, SNAP social objectives and targets are often qualitative (e.g. increase, decrease, contribute to..), although tracking is done in quantitative and qualitative ways.

Social outcomes may include:

- **Social connections and Sense of belonging –** community-based projects and programs offer opportunity for neighbour connections; inclusive programs support connections for newcomers, low income and racialized groups
- **Health and well-being –** increased access to nature, urban agriculture and enjoyment of trails and parks result in more active and healthy lifestyle behaviors and diet, resulting in better physical and mental health outcomes
- **Urban agriculture -** access to affordable, healthy food options increases food security for vulnerable communities
- **Skills training –** workshops, in-home training, on-the-ground projects and volunteer experience help residents gain skills needed to undertake action on their own and train others

- **Emergency preparedness –** improved neighbour connections, awareness of vulnerabilities and available resources results in more prepared community that can help each other
- **Neighbourhood Safety –** shared projects in public spaces supports more "eyes on the street" and potentially reduced crime
- **Arts and Culture –** local identity is celebrated and integrated through community-inspired public space designs, involvement of local talent and facilitation of local festivals

Economic Outcomes

Similar to the social outcomes, SNAP projects are strategically designed to address locally relevant economic interests, with qualitative or directional target setting.

Economic outcomes may include (See also Box 2.4):

- **Skills training –** formal training and hands-on experience in urban agriculture, sustainable landscaping and home retrofit projects gives residents valuable job skills that have supported income opportunities and social enterprise initiatives
- **Urban agriculture –** local food production supports savings on groceries; preservation and canning of locally grown produce offers an income opportunity for residents
- **Saving on utility bills** – home energy/water retrofits increase efficiency and save residents costs **Flood risk reduction** – basement flood protection measures and landscaping for better stormwater management can reduce the likelihood or severity of basement flooding and associated damages
- **Municipal and TRCA cost efficiencies –** attracting innovative funding sources, cost sharing arrangements, empowering volunteers and leveraging planned capital project budgets are several ways SNAP programs enable delivery on multiple municipal and TRCA objectives with limited public budgets

Box 2.4: Example Social and Economic Outcomes

Bayview Glen SNAP, Markham:

- $420,000 Park revitalization project funded by five City departments (67%), private sector foundation (12%) and TRCA (21%), with the City's Parks Department contributing 14% of project costs, accomplishing greater environmental and social outcomes.

County Court SNAP, Brampton:

- Over $100,000 in green technologies and services donated from private sector in support of Green Home Makeover demonstration
- SNAP nurtured local leadership capacity resulting in the creation of a new neighbourhood association, which continues to engage average of 700 people annually since 2016

Box 2.5: Integrated SNAP Case Examples Delivering Multiple Outcomes

Black Creek SNAP Harvest the Rain Home Retrofit Program

SNAP's neighbourhood-based home retrofit model aims to deepen engagement and uptake by homeowners across a range of indoor and outdoor home retrofit actions. Key strategies include: locally targeted marketing responding to local interests, one-window consultations with a trusted delivery agent, incentives and promotion of available programs and follow-up support. During 2013-2018, close to 20% of neighbourhood homes participated in home consultations. Of the 262 homes:

- 93% implemented on site stormwater management actions
- 49% implemented basement flooding prevention measures
- 30% implemented significant energy efficiency retrofits
- 59% planted a tree
- 481 metric tonnes CO2e reduced
- 12,882 m3 rainwater retained by trees and disconnected downspouts
- 4,895 m3 potable water saved
- 14,454 kg local food produced and consumed by 40 surplus harvest pickups, diverting 9,784 kg waste from landfill

"The program's benefits were that it helped me to save money, and gave me personalized guidance"

San Romanoway Tower Revitalization

SNAP projects engage owners of multi-unit residential properties and their tenants to develop revitalization projects for underutilized spaces, building retrofits and overall improvement of quality of life. A key strategy involves reframing environmental projects so that they are designed to deliver social and economic outcomes. Such a project at Toronto's San Romanoway Towers involved the installation of 120 edible balcony gardens, 65 allotment vegetable gardens, 26 urban orchard trees, rainharvesting, pollinator gardens and 1000s of native trees and shrubs. This project included behaviour change initiatives, public art and skills certification training, producing these social outcomes:

- every 1 hour of SNAP programming generated 19 hours of community volunteerism;
- 70% of residents reported feeling more safe
- >85% reported a positive impact on their mood
- 61% confirmed they have been inspired to start a small business due to the project
- 69% reported the project inspired them to fundraise for a community cause, as a result of SNAP actions

While this project represented a significant environmental and urban agriculture installation, it is the socio-economic outcomes that get the most attention. Strong positive relationships that formed among the private property owners, the municipality and tenants, have led the tower owner to make further investments in building energy efficiency retrofits.

2.4.6 Measurement and Evaluation

At the neighbourhood scale:

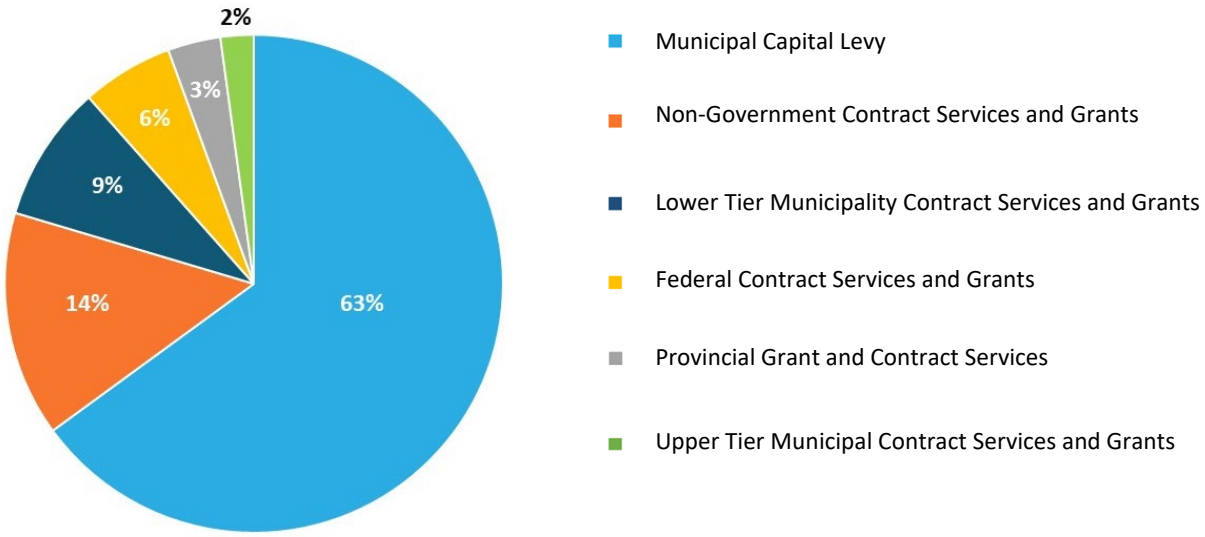
1. **The measurement context is established in the neighbourhood action plan**. Each SNAP planning process develops a framework of sustainability objectives, baseline conditions and targets, reflecting municipal, TRCA and community priorities for that neighbourhood. The planning process also estimates projected outcomes of the strategic retrofit projects being recommended for selected key indicators, to demonstrate the plan's potential impact and feasibility.
2. **For each implementation initiative, a nested measurement framework is used.** Nested frameworks integrate across scales and help address the need to report on multiple environmental and socio-economic impacts of these neighbourhood projects and programs. This includes project scale "outputs" *(e.g. number of home energy retrofits, trees planted, learner hours in a skills training program),* neighbourhood or program scale "outcomes" *(e.g. reduced GHGs from a home retrofit program, forest canopy improvements, social enterprise groups formed)*, as well as the municipal scale context *(e.g. municipal GHG reduction targets, regional habitat quality , employment rates).* Output and outcomes are tracked for key indicators and benchmarked against specified targets (annual or long term) or other controls.
3. **A variety of data sources are used**. Outputs draw on program records (e.g. actions delivered, uptake rates, number of hours a program delivered a certain experience, such as active living). Outcomes draw on monitoring (e.g. performance data), follow-up surveys, partner data sharing of their program uptake) and aggregated analysis (e.g. total numbers or % targets achieved). Community contextual information may involve neighbourhood benchmarking or literature-based data (e.g. census) that help justify the importance of the indicator to the neighbourhood (e.g. access to nature improves mental health; health stats etc.). Lessons learned sessions inform adaptive approaches.
4. **Strategic considerations** for effective and efficient measurement - prioritization of indicators; timing and scale of impact to ensure analysis at efficient times; quantitative vs. qualitative (e.g. testimonials, stories are often more effective and sufficient); and avoidance of survey fatigue).
5. **Projecting potential impacts** – Intensive performance monitoring of demonstration projects provides the basis for extrapolation neighbourhood wide. Similarly, the potentially expanded impacts of a successful neighbourhood home retrofit program can be projected by identifying the number of similar homes region-wide and transferring the proven tactics.

At the SNAP Program scale, impact has been measured using the following indicators:

- Partner feedback through semi-annual partner network workshops and surveys
- Recognition awards
- Enquiries from other interested municipalities and groups
- Requests for tours and presentations, articles and publications

2.4.7 Funding Model

The current SNAP program funding model consists of Regional and local municipal contributions and grants from a variety of public and private sources (**Figure 2.7**). Regional municipal funding sources are derived from water rate revenue. Local municipal contributions have usually been made from a single department and are often grant dependent. The municipal funding has been critical to leverage other special funding sources, including in-kind contributions of products and services.



2.7. SNAP Program Average Annual Revenue Sources 2014-2019

2.4.8 Timelines

Neighbourhood Project Scale

SNAP neighbourhood action plans focus on short to medium term actions, while outlining longer term targets and strategic directions. This strategy capitalizes on exciting catalyst projects to gain momentum, while avoiding the inefficiency of planning to get too far ahead of the pace of implementation and the reality that new approaches will continue to emerge.

TRCA began the SNAP neighbourhood projects with the intention of a 3-5 year commitment to launch initial projects. TRCA's ongoing involvement in the neighbourhoods has considered a number of factors, in consultation with municipal staff and other members of the project management team. These have included: time to achieve reasonable progress toward objectives, launch catalyst projects, build capacity in another leadership group who can sustain action, continued opportunities to test innovative approaches and availability of necessary resources.

The long term commitment of SNAP has been a noted factor of its success. It has become clear that longer term horizons (5-8 years) are often needed to fully realize significant project objectives, such as major infrastructure that is planned on longer cycles, or to enable partners the time to take action once relationships have been established.

As noted in section 2.4.1, TRCA's SNAP Program has developed through four strategic phases, from piloting to scaling, over a ten year period. Municipalities new to SNAP should expect to allow time to gain experience and build working relationships during an initial pilot phase, which will be an important foundation to grow a longer term program to maturity.

TRCA's SNAP Program

The SNAP Program has been developed through four strategic phases:

1. Piloting neighbourhood action planning model projects (2009-2012)
2. Implementation, rigorous monitoring and lessons (2012-2016 and ongoing)
3. Testing scaling strategies, streamlining, growing the network (2016-2020)
4. Institutionalizing the neighbourhood approach with municipal partners (ongoing)

As SNAP is not a "business as usual" approach, TRCA has observed that each municipality, new to the SNAP process, needs time to work through similar stages in the evolution of this collaborative and integrative practice. The first pilot SNAP project lays important foundations of working relationships, roles and processes that work within that municipality. In municipalities where subsequent SNAP neighbourhood projects have been undertaken, the processes have been streamlined by building on previous experience.

2.5 Partners in Project Green (PPG)

2.5.1 PPG overview and action areas

The development of Partners in Project Green was the culmination of more than two decades of partnership between the Greater Toronto Airports Authority (GTAA) and Toronto and Region Conservation Authority (TRCA).

These two organizations envisioned a community of like-minded businesses pulling together for the betterment of both the environment and the local economy. After extensive consultation with businesses and various levels of government, Partners in Project Green: A Pearson Eco-Business Zone was officially launched in the fall of 2008.

PPG was started with an ambitious goal – to become an internationally recognized eco-business zone that connects public environmental plans and goals with private businesses that can accelerate the change to a cleaner economy. PPG was created to be a network of public, private and not-for-profit partners addressing global goals on carbon emissions reduction, water stewardship, waste reduction and environmental engagement, in the local context.

Public institutions and private companies working within PPG collaborate on solutions from policy to implementation. The many committee meetings, events and programs that PPG has managed since 2008 have built bridges between these two sectors. This has allowed both sides to develop a better shared understanding of both the opportunities and challenges associated with environmental sustainability from each perspective.

Within the participating municipalities and businesses, the trust and shared foundation of information built over time have had a catalytic effect. Action by one company inspires action by another company. A new policy or program introduced by one municipality provides insight or inspiration for another municipality. Results of pilot

programs or technologies are often shared for the benefit of others. The non-competitive, collaborative space has been an essential aspect of the work of PPG.

Performance Areas

1. Energy Management and Low Carbon Transportation
2. Water Stewardship
3. Waste Management
4. Environmental Engagement

2.5.2 Business Zone (or Sector) Selection and Action Planning Process

For more than two decades, GTAA has maintained a strong partnership with TRCA to protect and enhance the Etobicoke and Mimico Creeks, including implementing state-of-the-art stormwater management practices and completing habitat restoration activities. Canada's largest employment area has grown not only around, but as a direct result of, Toronto Pearson International Airport generating a significant economic benefit to the region. Along with the increase in business development, the area's residential communities have also grown. Recognizing the impact of the airport's operations, the GTAA promotes environmental stewardship within the communities it serves as a longstanding core mandate.

In 2006, the GTAA and TRCA undertook a joint study on restoration strategies for the natural and aquatic systems surrounding Toronto Pearson. This study uncovered the importance of engaging the business community in supporting efforts to protect local watersheds and recommended the adoption of an eco-business model based on popular models through North America. This led to the initial focus of the project being centered in the Pearson Eco-Business Zone (PEBZ). The PEBZ encompassed over 12,000 hectares of industrial and commercial land surrounding Toronto Pearson International Airport (**Figure 2.8**). The area fell under four municipal jurisdictions, including the Region of Peel, City of Toronto, City of Mississauga and the City of Brampton. In 2008, the PEBZ included an estimated 12,500 businesses, generating upwards of $6,529,500,000 gross revenues annually, and providing employment for approximately 355,000 people. Primary industries were manufacturing, retail, wholesale, transportation and warehousing.

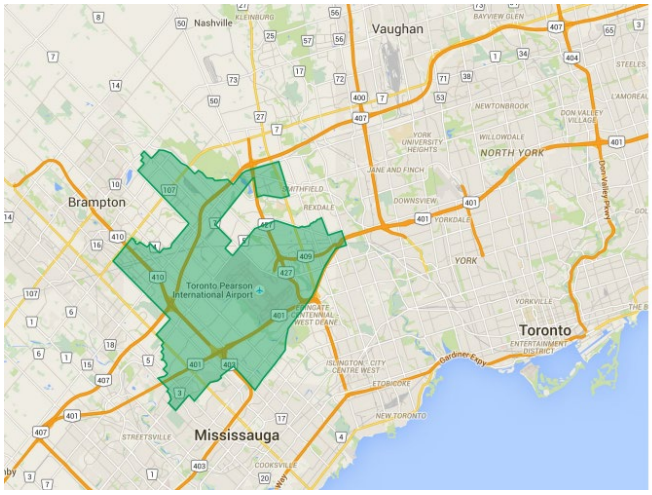


Figure 2.8. Pearson Eco-Business Zone, 2008

A 2013 review that involved multiple stakeholder consultation sessions uncovered that while PPG's defining vision and core essence remained strongly relevant there were opportunities to capitalize on opportunities to sharpen focus and respond both strategically and tactically to specific issues and community needs that had arisen since program inception. This resulted in the focus shifting from a geographic based model to a Performance Area based model. This consultative process resulted in streamlining program delivery focus areas to the Performance Areas of: Energy Management; Water Stewardship; Waste Management; and

Communications and Engagement. Studies were undertaken to review employment areas as a focus for PPG program delivery expansion (Figure 2.9).

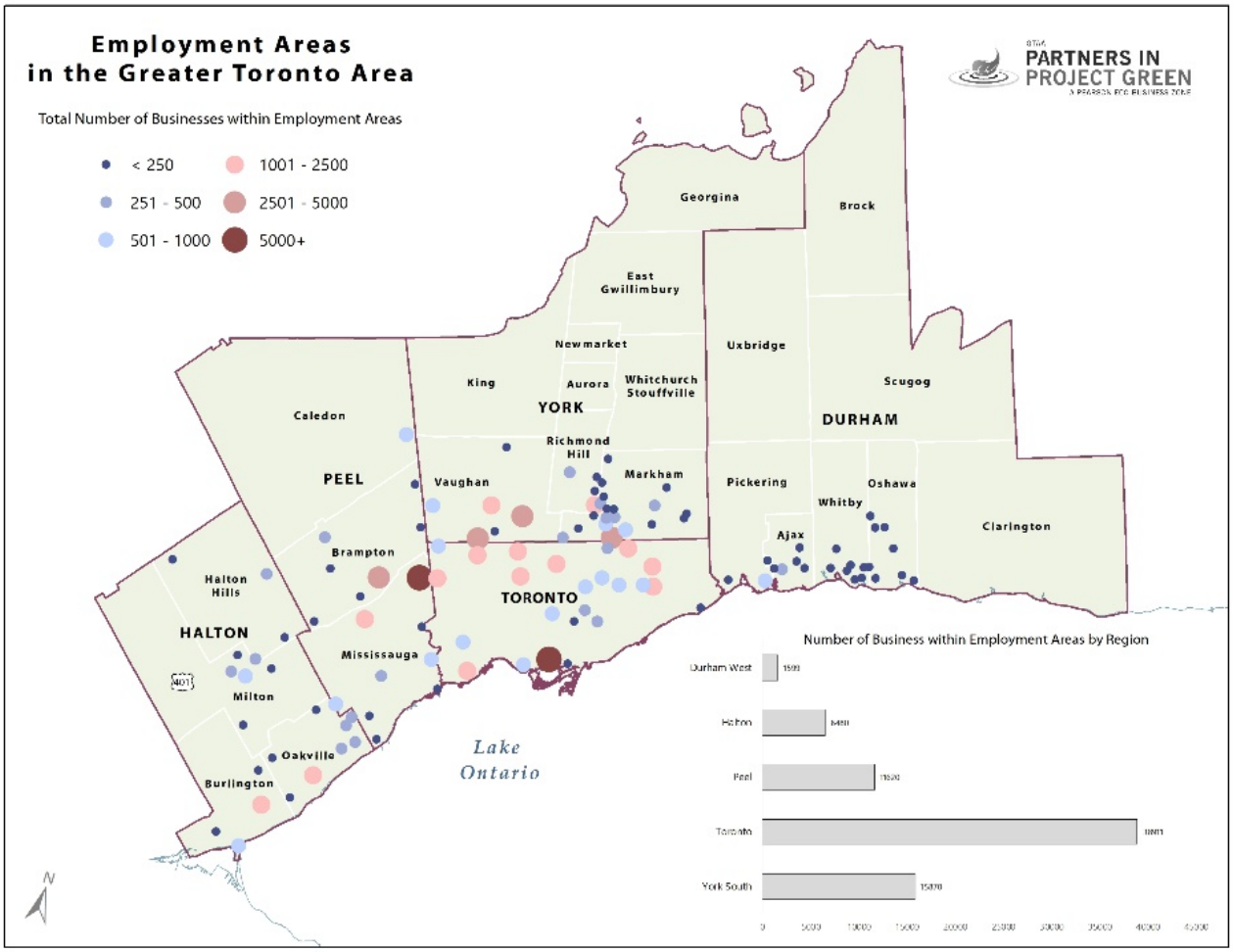


Figure 2.9. Number of Businesses within Employment Areas - by Region

Periodic review and stakeholder consultation are conducted to ensure focus areas are aligned with market needs. In 2019, staff utilized the interviews with committee members, membership surveys of current and past PPG members, and reviews of key municipal and partner strategic plans to undertake its strategic refresh and ensure alignment with key stakeholder goals.

This review resulted in the refinement of the delivery model (**Figure 2.10**).

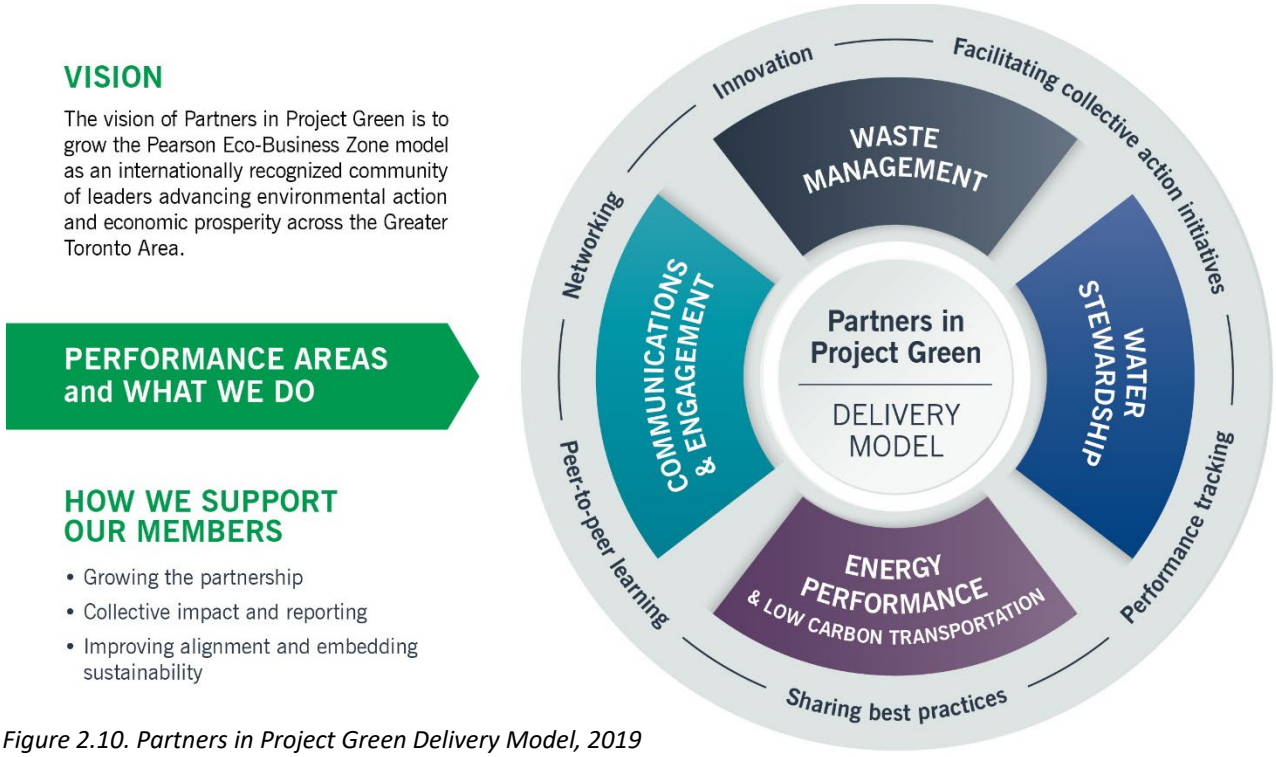


Figure 2.10. Partners in Project Green Delivery Model, 2019

2.5.3 Project governance

PPG's Eco-Business Zone approach is about 'systems-thinking.' Often, both the causes of and effects felt from environmental problems are shared and action taken by one party may not be enough to make significant impact. Action to address environmental issues is also often voluntary and effective solutions require consultation with other stakeholders from suppliers to employees to the community. A systems-thinking approach brings all stakeholders together to discuss common issues to come up with unique solutions that take advantage of economies of scale, pooled resources, and are sensitive to the needs of all.

The Executive Management Committee which steers the direction and priorities of PPG is a sub-committee of TRCA's Board of Directors, comprised of business leaders, elected officials, public servants, and subject matter experts in environmental and economic issues. Committee meetings are an important forum to discuss issues from a variety of perspectives from voters, to vendors, legislated requirements to customer needs, environmental to economic priorities.

Governance can be one of the most important, yet least visible or tangible elements that contributes to success. While considering a variety of perspectives can take time and careful planning, it has ultimately led PPG to effective solutions that work.

2.5.4 Community and Stakeholder Engagement

Community and stakeholder engagement are the core of PPG. With a diverse range of stakeholders from industry (manufacturing, warehousing, office/retail, property management, technology providers, and more); municipal and provincial stakeholders; and citizen stakeholders, a multi-lensed approach is required. Recognizing that diversity of perspectives and expertise allows for the incubation and acceleration of sustainability excellence, PPG works with these broad stakeholder groups to achieve results. This jump starts ideas from business-as-usual to innovative solutions that transform the way we live and work. Key examples include:

- **Consortium model -** By bringing key stakeholder groups together to focus on specific environmental target areas, PPG can accelerate individual organizations progress toward sustainability by leveraging best practice sharing, relationship building, and knowledge transfer. This has been demonstrated through the Energy Leaders Consortium, Small-to-Medium Energy Consortium, and Water Efficiency Cluster.

- **Collaborative programs -** Bringing stakeholders together to achieve results that have more impact than they could alone has been very successful for PPG. From 2014-2017 Partners in Project Green worked with 17 organizations within the business community to install 130 electric vehicle (EV) charging stations across the GTA. Several of these installations were the first large-scale deployments of their kind in the country and participating organizations continue to be leaders in supporting EV infrastructure. This program brought together non-governmental organizations, EV installers, end users and financing to drive collective action.

- **The People Power Challenge** is a turn-key employee engagement program that gives businesses a roadmap to drive sustainability into their organizations and engage their people. Through educational webinars, action-oriented events, and sustainability activities for the home and workplace, employees build their environmental knowledge and make tangible changes. The three-month campaign is linked to the United Nations Sustainable Development Goals, linking the program to global collective action. Participants engage in friendly competition against each other and participate in peer-to-peer learning sessions, enhancing the program impacts through collective action.

- **Committee engagement -** As illustrated in Section 2.4.2.3, PPG utilizes a consensus-based governance model made up of diverse stakeholders from the public and private sectors. In addition, PPG has a Communication and Engagement Committee that consists of municipal representatives and local industry. This group provides insights to PPG programming, and shares best practices to accelerate environmental engagement in their respective jurisdictions.

- **Events -** PPG holds a variety of events to bring community stakeholders together. These include restoration-based events such as tree plantings and shoreline clean-ups; networking events; and education and training events to build environmental capacity of the participants.

2.5.5 Outcome/Impact areas

Partners in Project Green delivers primary and secondary environmental, economic, and social outcomes.

Primary Environmental Outcomes

- **CO2e reductions -** reducing commercial demand and identifying alternative energy sources (e.g. average of 27,372 tonnes CO2e diverted annually; installation of 130 EV charging stations)
- **Water efficiency** - reducing commercial demand (e.g. average 1.83 billion litres of water offset annually)
- **Waste diversion** – diverting non-recyclable commercial waste streams from landfill (e.g. 392 circular economy exchanges and 19,932 tonnes of waste diverted between 2013-18)
- **Engagement –** Between 2013 -2018, the People Power Challenge had an average of 14 competing organizations, who collectively received 8,768 suggestions for workplace environmental achievement, 67,228 pledges for environmental behavior change, and implemented 1,503 sustainability projects.

Secondary Environmental Outcomes

PPG's work realizes secondary environmental benefits, such as:

- **Environmental Leadership** – inspiring further action, collectively impacting global challenges through industry leadership
- **Urban Heat Island** – ground surface temperatures are reduced through installation of cool roofs, tree planting and naturalization, and reduced hard surfaces
- **Improved Air quality** – air quality is improved through reduced emissions and EV charger installations, water/energy retrofits and tree and shrub planting
- **Resource extraction reductions –** circular economy exchanges reduce the production and disposal of new materials by finding new uses for a variety of items
- **Groundwater recharge –** increased water infiltration through removal of hard surfaces and installation of low impact development features.

Economic Outcomes

- **Skills training –** formal training and hands-on experience in environmental management improves the economic performance of participating organizations
- **Resource cost reductions** – energy and water retrofits increase efficiency and save utility costs; employee environmental engagement increase efficiency and reduce costs; waste diversion from landfill reduces waste management costs
- **Flood risk reduction** – stormwater management measures can mitigate flood risk, and, in some jurisdictions, can reduce municipal charges
- **Employee engagement, attraction and retention** – Employee attraction and retention is improved in organizations with strong Corporate Social Responsibility programs

- **Supply chain impact** – procurement support and identifying sustainable vendors and material options; alternative fuels and low carbon infrastructure
- **Municipal and TRCA cost efficiencies –** attracting innovative funding sources, cost sharing arrangements, and leveraging fees-for-service are several ways PPG enables delivery on multiple municipal and TRCA objectives with limited public budgets

Social Benefits

As organizations transition from a Corporate Social Responsibility (CSR) reporting model to an Environment, Social and Governance (ESG)[3] model, the social facets and impact of environmental management become a driving factor. PPGs work provides these benefits to participating organizations in the following ways:

- **Network Influence –** Thorough knowledge sharing, peer-to-peer pressure and the introduction of environmental corporate norms, organizations can play a strategic role in the community. Lange Transportation is an example of how this plays out in practice **(see Box 2.6).**
- **Resiliency –** Adaptation and mitigation of environmental stresses increases the reliance of organizations to withstand negative impacts resulting from climate change and other environmental concerns. From the lens of the community, strong local jobs are an important component in the wellbeing of citizens.
- **Green sector job development –** as organizations in traditional sectors seek to enhance their environmental performance, skill building of current employees or finding opportunities to bring in new staff often become apparent. While this happens naturally in the course of PPGs work, it has been formalized in some instances. In 2009 the Energy Management Co-op Program was designed to connect co-op students with businesses within the Pearson Eco-Business Zone to implement energy efficiency opportunities. The program provided additional training and mentoring to students and employers during their work-term. Cool Rexdale was another program run during this time and engaged young people from the Rexdale community in roofing apprenticeships. The program aimed to promote the installation of green and cool roofs in the Rexdale community, while providing career opportunities for young people.
- **Reputation –** Environmental initiatives can assist with corporate relationship building with surrounding communities. The Greater Toronto Airports Authority (GTAA) has utilized the engagement access that PPG provides to strengthen their business and constituent community ties. Sustainability initiatives pursued in direct partnership with the GTAA's Environmental program enhances community relationships through the stewardship and protection of natural habitats and wildlife habitats.

[3] Environmental, social and governance (ESG) criteria are a set of standards for a company's operations that socially conscious investors use to screen potential investments. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights.

Box 2.6: Network Influence: Lange Transportation and Geothermal Technologies

In 2006 Lange Transportation moved to a new building that had very high energy bills. Unsatisfied with traditional options to become more energy efficient, the company pursued a novel method to heat and cool a building, via geothermal exchange.

At the time, relatively few geothermal exchange or energy projects had been developed so obtaining financing for the project was difficult due to lack of knowledge about the technology. Eventually the system was successfully installed and after six years of energy savings, the project paid for itself.

With a geothermal energy project implemented just 2 km from the Toronto Pearson Airport, the GTAA saw an opportunity to reduce its own energy costs. After collaboration with Lange Transportation and the Sustainable Technologies Evaluation Program (STEP, a program of TRCA), GTAA developed its own geothermal exchange project at the North Fire Hall which houses the firefighting personnel and equipment responsible for the airport.

2.5.6 Measurement and Evaluation

PPG Governance committees, in partnership with PPG staff, have conducted measurement and evaluation of the programs impact. Prior to 2013, program results were gathered and reported out to the relevant stakeholders via annual reports. In 2013, the desire to create formal metrics arose in alignment with the creation of the Performance Area Committees. These committees owned program performance metrics and reporting progress to the Executive Management Committee. Metrics and targets were created in partnership with the municipal and industry leaders on said committees and PPG staff leads. These metrics are (**Figure 2.11**):

- Tonnes of equivalent CO2 avoidances
- Annual water footprint offsets
- Tonnes of waste diverted from landfill
- Number of members
- Number of event participants

Figure 2.11. Partners in Project Green Collective Impact, 2013-2018

2.5.7 Funding Model

PPG's co-management model with the business community (executive level participation with financial, and in-kind contributions), municipal staff (financial and in-kind contributions), and elected officials has had an exceptional track record of securing self-generating revenues from both the public and private sectors. Between 40-45% of PPG's annual revenue is linked to municipal support, with the balance coming from the private, provincial and federal sectors which includes memberships, sponsorships, grants and fee-for-service contracts (**Figure 2.12**).

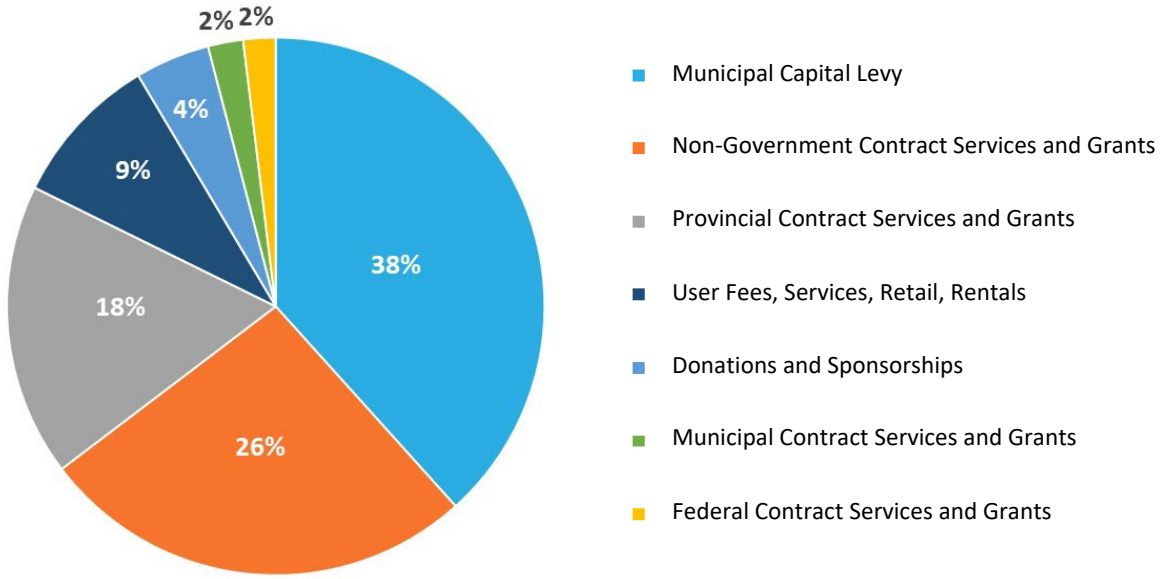


Figure 2.12. PPG Average Annual Revenue Sources 2014-2019

2.5.8 Timelines

2006 – 2012: Network Creation

In these years, efforts were focused on bringing stakeholders together and building momentum around the newly formed Partners in Project Green: A Pearson Eco-Business Zone. Key highlights from these early days include:

- In 2006, TRCA and GTAA developed a comprehensive assessment identifying environmental issues and opportunities in the employment lands surrounding Toronto Pearson and providing direction to the GTAA's Environmental Program. This was to become the foundation of Partners in Project Green.
- After consultations with the business community and obtaining financial and in-kind support from all municipal stakeholders in the Zone, TRCA obtained the GTAA's approval to launch the program and it was approved by the TRCA Board. In 2008, the Pearson Eco-Business Zone Strategy was published.

- In 2009 alone 2,525 local companies, from industry leaders in logistics, food processing, automotive, plastic and pharmaceuticals, implemented energy reduction programs to save a combined 5.4 megawatts of electricity and 3,626,455 m^3 of natural gas in the Pearson Eco-Business Zone. PPG also successfully engaged 738 employees from the Pearson Eco-Business Zone to participate in networking and training events that aided them in reducing their costs and identifying new business opportunities.
- In 2011, working in partnership with its municipal partners and funding from the Federation of Canadian Municipalities Green Municipal Fund, PPG developed the Pearson Eco-Business Zone Policy Toolkit, which consists of 11 tools for municipal use. These include communications tools, primers and policy templates that each municipality can use to encourage green business development and a more consistent approach to eco-economic development across the Pearson Eco-Business Zone.

2013 – 2018: Impact

As the program reached maturity and had secured deep and lasting relationships within the business community, efforts turned to deepening the environmental impact of the program. During these years, infrastructure projects were completed, and programs were refined to achieve larger impact. A small selection of highlights includes:

- The first meeting of the Energy Leaders Consortium was held in 2012. This program has now achieved a collective impact of reducing 133.6 million kWh of electricity, 11.4 m^3 of natural gas and 31,000 tonnes CO2e; and saved $36.3 million.
- The Stormwater Infrastructure Project known as Caleston's Ponds was completed in 2015. This project diverts 1.8 million litres of water annually and provides 9,300 litres of rainwater storage.
- The previously mentioned Electric Vehicle Network was created in 2015 and installed 130 electric vehicle (EV) charging stations across the GTA.
- The first Material Exchange occurred in 2013. From inception to 2018, 392 circular economy exchanges were completed, resulting in the diversion of 19,932 tonnes of waste diverted from landfill.
- The Recycling Collection Drive, launched in 2016, has had 84 participating organizations with 231 facilities, diverting 39.1 tonnes of waste from landfill.
- Between 2013-18, the People Power Challenge had an average of 14 competing organizations. During that time they collectively received 8,768 suggestions for workplace environmental achievement, 67,228 pledges for environmental behavior change, and implemented 1,503 sustainability projects.

2019 – Future: Growth

As PPG moves forward, focus will be on expanding the reach and impact of the program. As highlighted in the Strategic Refresh: 2019-2023, PPG will focus on:

- Increasing focus on sustainability impact and performance
- Adopting a "systems" approach to sustainability problem solving where feasible
- Expanding and refining programming to respond to member requests, changing policy, economic development and growth, and collective implementation opportunities
- Deeper level of engagement through events, workshops, and expanded consortium and working group and cluster models
- Accelerating innovation through collaboration, engaging different stakeholders, and expanding business models

One way these goals are being realized in practice is through expansion of the consortium model to include a Small-to-Medium Energy Consortium (launched 2020) and explore the creation of additional impact area consortiums (i.e., water stewardship and waste management). These multi-stakeholder groups have a proven track record of driving tangible results in participating organizations and accelerating innovation.

Aspects of systems thinking that PPG will be focusing on in the coming years include:

- **Transportation and Energy:** From personal zero-emission vehicles such as electric vehicles to new mass transportation systems, all transportation will have an impact on our energy needs, uses, and infrastructure — including where and how we generate electricity, how far it is transported, and how it can be stored through batteries or other means. Autonomous vehicles and even drones will also have implications for our transportation infrastructure needs.
- **Water and Waste**: We are just beginning to understand how plastic and other waste materials have been and still are affecting the ecosystem, wildlife, and humans. Similar to carbon, we have built an economy that demands tremendous amounts of plastic. We must look at the system overall to reduce the use of materials deemed to be harmful, emphasize the re-use and repairability of products, and improve recycling so that we can capture the valuable components of recyclable products. This requires input from product designers, researchers, and recyclers.
- **Water and Energy:** Getting water to and from your home or business, heating it, and — after it has been used — treating it, all require energy, whether or not the municipality or the business must pay for that energy. With increasing urbanization comes increasing demands on our water and energy infrastructure which, in many jurisdictions across Canada, is approaching its end of life. As we replace or repair infrastructure, there are opportunities to be more efficient with water and therefore our energy — from using less water to using water in more unique ways, such as cooling buildings using deep lake water or ice that has been frozen overnight, when energy demands are low.

2.6 Program Directions

As TRCA marked 10 years of experience implementing SNAP and PPG, it embraced the opportunity provided by the Federation of Canadian Municipalities' Transition 2050 program. This project enables TRCA to work with a diverse range of experienced and new municipal partners to identify ways to expand the impact of these neighbourhood and business zone models toward the low carbon transition.

3.0 TRANSITION 2050 PARTNERS, PROCESS AND OBJECTIVES

3.1 Municipal Project Partners

The TRCA's Transition 2050 cluster consists of municipalities that have recently updated their Climate Action Plans (or Municipal Energy Plans) and/or are doing so. They recognize that implementation of these "next generation" climate and energy plans requires social mobilization initiatives targeted to local residents and businesses and stronger attention to the delivery of co-benefits to garner support.

This collaborative cluster consists of nine municipalities: five within TRCA's jurisdiction, which include a mix of those new and experienced with SNAP and PPG, and four beyond TRCA's jurisdiction who are interested in piloting the neighbourhood/business zone approach.

Table 3.1 lists the nine partner municipalities, the status of their Climate Action Plan and initial rationale for involvement, previous relationship with TRCA and their Partners in Climate Protection (PCP) status.

Table 3.1: TRCA Transition 2050 Partner Municipalities

Municipal Partner	Climate Action Plan status and Rationale for Involvement	Connection to TRCA	PCP Status*
Within TRCA's Jurisdiction			
City of Brampton	Brampton was developing its Community Energy and Emissions Reduction Plan (CEERP) between 2019-2020 and needed to explore ways to deepen residential engagement in energy efficiency retrofits. The CEERP was approved by Brampton City Council in September 2020 and includes aggressive targets for community-wide energy efficiency and emissions reduction.	SNAP, Region of Peel PPG member	0
Town of Caledon	Caledon's 2010 Community Climate Change Action Plan was being updated over 2019-2020. With a SNAP project already underway, the Town also wanted to explore PPG as a business implementation pathway.	SNAP, Region of Peel PPG member	5

Municipal Partner	Climate Action Plan status and Rationale for Involvement	Connection to TRCA	PCP Status*
City of Markham	Markham's Municipal Energy Plan was completed in 2018. Having partnered on a SNAP project, the City saw potential opportunities for leveraging planned infrastructure projects to advance community transformation on carbon reduction and sustainability. They wanted to explore this implementation pathway further to inform their asset management program.	SNAP	4
City of Mississauga	Mississauga was completing its Climate Change Action Plan in 2019 and wanted to explore ways to deepen engagement and implementation through SNAP and PPG.	SNAP, Region of Peel PPG member, CEKAP member	5
City of Vaughan	Vaughan completed its Community Climate Action Plan in 2014 and its Municipal Energy Plan in 2016. The City was undertaking a local improvement charges study in 2018-2019 to develop financing incentives for residential retrofits. Vaughan saw SNAP and PPG as implementation pathways and potential pilots.	CEKAP member; PPG member	3
External to TRCA's jurisdiction			
City of Hamilton	Hamilton completed its Climate Action Plan in 2015 and launched development of its Community Energy Plan in 2020-2021. It saw SNAP as an implementation model that could deliver climate action with multiple co-benefits.	OCC member; CAC member	5
City of Guelph	Guelph was one of the first Canadian municipalities to have a Community Energy Plan in 2007. The City was updating its Community Energy Initiative through a multi-stakeholder driven process known as Our Energy Guelph which was approved by Council in 2019. Guelph saw PPG as a business engagement model.	CEKAP member	3
City of London	London's 2014-2018 Community Energy and Emissions plan was being updated. A Climate Emergency Action Plan, combined with a Community Energy Action Plan, has been under development 2019-2020. London sees PPG and SNAP as implementation models.	CEKAP member	5
City of Peterborough	Peterborough's Climate Change Action Plan was developed in 2016. The City was participating in the development of two SNAP Action Plans, led by a local non-profit, and expressed interest in strengthening the energy component to align with their CAP objectives.	SNAP, CEKAP member	3

*FCM/ICLEI Partners for Climate Protection (PCP) Milestone Completion Status: 1-Inventory; 2-Targets set; 3-Action Plan; 4-Implementation; and 5-Monitoring (0-no official status).

3.2 Project Approach and Process

Working together, the goal of this Transition 2050 project is to apply, learn from and develop recommendations for the refinement, mainstreaming and scaling of the neighbourhood and business zone model as a municipal policy/practice for implementing climate action plans and achieving other municipal objectives. Not intended to be only a policy study, this project aimed to leverage proven engagement tactics to mobilize stakeholders to adopt low carbon behaviours and technologies, leading to direct GHG emissions reductions in buildings (e.g. energy, water and waste). Furthermore, the project guided participants in the development of longer term workplans for future projects and generated tools to inform other Canadian municipalities for the purposes of expanding the network of neighbourhood/business zone programs.

The project consisted of five phases (**Figure 3.1**) with a peer learning workshop at the end of each phase. Upon completion of the cluster formation (Phase 1), the Peer Learning series kicked off in Phase 2 with an initial one-day "bootcamp" introduction and training session, designed to facilitate sharing among municipalities on their climate action interests and experience on the neighbourhood and business zone models.

Following the introductory training, each municipality received hands-on support during Phases 3 and 4 to develop a case study neighbourhood-based action plan and implementation program focusing on either: (1) a residential neighbourhood or (2) a business zone / employment lands. Each municipality was to implement an aspect of their chosen pilot and project(s) for a period of one year, however delays in project award/start up and subsequent restrictions associated with the COVID-19 pandemic caused delays and reductions in the time available for this phase of work.

In addition to three Peer Learning Workshops following Phases 2, 3 and 4, all municipal partners met for a final capstone evaluation session, designed to highlight lessons learned and recommendations for municipal policies and/or practices that could mobilize knowledge to support future applications of the neighbourhood and business zone models.

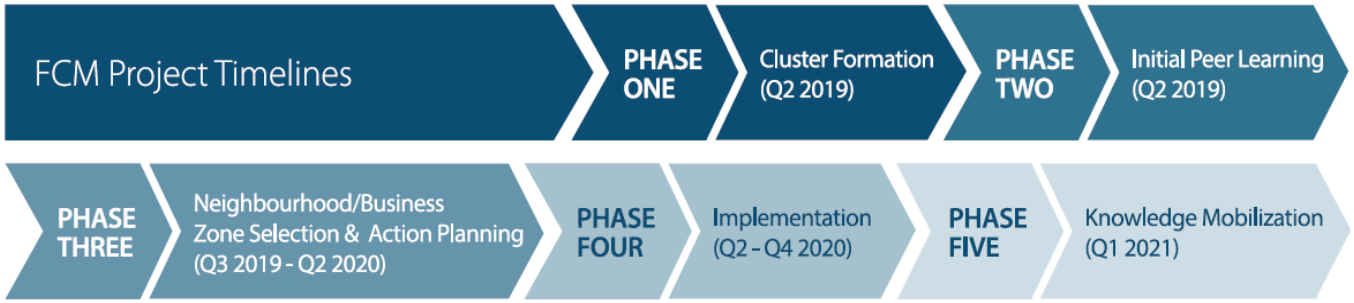


Figure 3.1. TRCA Transition 2050 Project Process

In addition to TRCA's coaching role, provided to all participants, TRCA took an active role in collaborative planning and implementation with municipal partners that fell within our jurisdictional boundaries (i.e. Markham, Vaughan, Caledon, Brampton and Mississauga).

The summary documentation of deliverables from this project is contained within this report, featuring case studies from municipalities that participated in the cluster, key lessons learned and recommendations. Notes from each of the peer learning workshops are documented separately. A more detailed toolkit of resources for the further application of the SNAP neighbourhood model is also documented under separate cover.

3.3 Project Governance

TRCA Project Management Team

An internal TRCA Project Management (PM) Team was responsible for project administration, direction, tracking and reporting processes and knowledge sharing. This PM Team consisted of senior staff from TRCA's SNAP and PPG programs.

Municipal Stakeholder Advisory Committee

A Municipal Stakeholder Advisory Committee was responsible for providing strategic advice and guidance to the PM Team on key issues, such as training objectives, issues analysis, recommendations development and project communications strategies. Each Committee member acted as the lead municipal liaison in terms of the initiation, development and implementation of the neighbourhood or business case study initiative within their municipality. Their involvement supported integrated implementation, ensured duplication was avoided and resources efficiently leveraged, and fostered cross -departmental and multi-stakeholder coordination.

At the outset of the project, the PM Team developed a memorandum of understanding (MOU) with each municipality to create the collaboration cluster and document expected inputs, decision-making processes, and project outputs. These MOUs were used as reference points for evaluating progress against established workplans and budgets.

University of Waterloo

Dr. Jeffrey Wilson of the University of Waterloo (UW) led the development of a co-benefits evaluation framework for the Transition 2050 case study projects, in collaboration with the municipal partners and TRCA. Dr. Wilson is Director of the Terrametrics Research Lab and Assistant Professor in the School of Environment, Enterprise and Development (SEED), Faculty of Environment at UW. Working at the interface of economic, environmental and well-being research, Dr. Wilson's work specializes in low carbon pathways, natural capital accounting, ecosystem goods and services valuation, corporate social responsibility and energy transitions.

3.4 Project Objectives

The Collaborative Peer Learning Bootcamp workshop, held on June 27, 2019 as part of Phase 2, brought together participating municipalities with TRCA staff to exchange experiences and seek input on overall project objectives. Municipal partners discussed and validated a set of six key success factors for the implementation of neighbourhood and business zone engagement programs. Based on challenges and needs associated with each of those factors, the group informed the development of six overarching project objectives for the TRCA-led Transition 2050 initiative.

Figure 3.2 illustrates the six success factors and corresponding project objectives.

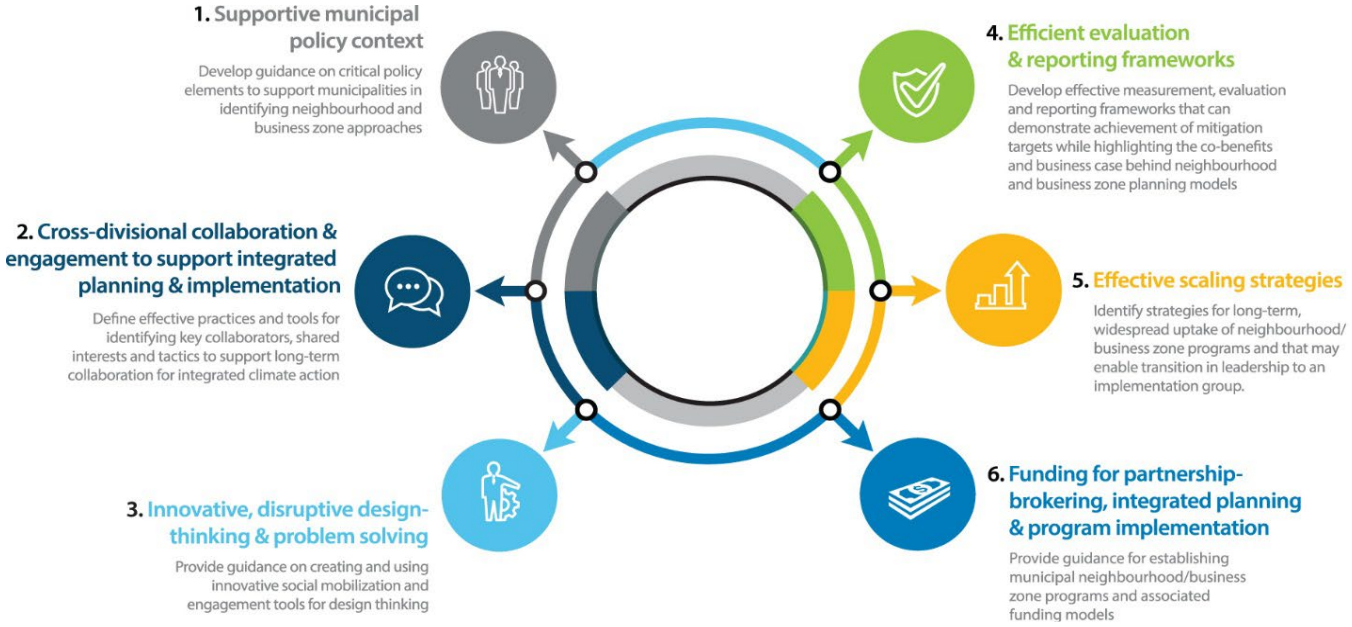


Figure 3.2. TRCA Transition 2050 Project Objectives

4.0 TRANSITION 2050 MUNICIPAL CASE STUDIES

As part of this Transition 2050 project, each municipality received hands-on support to develop a neighbourhood-based action plan and implementation program focusing on either: (1) a residential neighbourhood or (2) a business zone / employment lands. Each municipality implemented an aspect of their chosen pilot and project(s) to the extent possible, within the limited timeframe of this project.

Table 4.1 summarizes the municipal case study projects, which are each described in more detail in Appendix 1.

Across the nine municipal partners, five pursued SNAP neighbourhood-based projects with a focus on either residential retrofits or multi-unit tower revitalization initiatives, two concentrated on business engagement in sustainability initiatives and two municipalities pursued corporate sustainability directions with a view to potential future linkages with either business or residential engagement efforts. Many municipalities cited climate action plans or municipal energy plans as drivers, but also a desire to achieve progress on other municipal social or sustainability objectives alongside climate action.

Achieving multiple co-benefits and deepening engagement and uptake on climate action were two commonly cited reasons for interest in applying the neighbourhood/business engagement model. Other reasons included

an interest in seeking cost efficiencies, cost sharing opportunities and increased multi-stakeholder collaboration, as well as the desire to foster greater integration of sustainability into ongoing City business.

A few observations can be made of common themes among the various case study approaches:

- Multi-stakeholder collaborations supported the majority of these projects.
- Partnerships among departments and with local neighbourhood groups, non-profit groups and universities provided critical capacity to enable these projects to be completed. Inter-departmental collaborations have already begun to spill over to new projects and a neighbourhood action planning project has set a higher standard which is beneficially influencing a new development design.
- Deepened engagement success hinged on ability to tap into locally established networks via partnerships or previously established relationships.
- Understanding the needs, values and motivations of each different stakeholder, particularly property owners or other lead implementors, is essential to designing a successful implementation project. These efforts build trusted relationships to support long term actions.
- Taking a multi-objective approach, particularly at a neighbourhood scale, enabled the identification of ways the project could contribute to broader community priorities, strengthening the business case for participation by implementors.
- Implementation takes time; many plans laid out short, medium and longer term actions. Quick starts often involved tree planting, while deeper energy or water efficiency retrofits were being planned for 3-5 years out. This underscores the need for program continuity.
- A few of the projects engaged residents or businesses in initial educational workshops, and although the timelines of this project were too limited to track follow-up actions, there was indication that education and information (e.g. energy audits) are clearly not enough. Follow-up supports and incentives are needed.
- COVID-19 impacted approaches in several ways, including delays associated with redeployed staff, adaption to virtual engagement (which had advantages and disadvantages) and limitations in program delivery due to safety restrictions.
- Scaling opportunities arise by taking a neighbourhood approach, which can aggregate a number of similar buildings, and by developing capacity in a property owner who can extend the approach across their portfolio of buildings.
- Most projects were funded by a variety of funding sources, including municipal funding and special grants. Leveraging planned capital projects was a common strategy for advancing a number of strategic priorities.

Section 5.0 of this report probes the lessons learned from these case studies in greater detail, based on additional insights shared by municipal and TRCA participants during Peer Learning Workshops.

Table 4.1: TRCA Transition 2050 Partner Municipalities' Case Studies

Municipality	Case Study	Innovations being tested	Key Result and Top Lesson
Within TRCA's Jurisdiction			
City of Brampton	Bramalea SNAP Action Planning and Tower Resilience and Efficiency Initiative	Replication of SNAP's collaborative model for tower revitalization Working with tower owners to leverage planned projects to achieve co-benefits in the tenant community	• Created a full sustainable neighbourhood action plan; completed revitalization concept designs for two MUR towers; delivered quick start implementation tree planting projects led by non-profit partner; and established implementation partnerships among five private and public tower owners and non-profits for future revitalization initiatives. • Critical role of the partnership broker who builds trusted relationships and understands each stakeholder's interests as part of overall vision. Tower owner and other non-profits were engaged from the beginning, and therefore ready to lead short, medium and long term actions.
Town of Caledon	PPG Business Engagement Pilot: GreenBiz Caledon	Potential opportunity to work with Innovate My Future youth climate program to support a business energy audit and retrofit New collaboration between Energy & Environment and Economic Development Divisions at the Town of Caledon – strengthened relationship has helped spur other collaborations	• Town established GreenBiz Caledon, a consortium of nine companies in their Township, and with each company established a list of planned first year retrofit and engagement initiatives for energy, water and waste. • Effective integration of two Town divisions for program design and outreach, which has already led to further internal collaboration.
City of Markham	Integrated corporate asset management	Proposed application of the screening process to identify potential integrated infrastructure projects and candidate neighbourhood-based initiatives Explore opportunities for operationalizing integrated approaches as part of corporate asset management program	• A vacancy in a critical staff position has significantly delayed this project and caused competing timelines to meet legislative requirements for delivery of a corporate asset management strategy. Proposal to consider applying the screening process as second phase of the City's corporate asset management strategy development. • Internal integration staff champion is essential to foster interdepartmental collaboration.

Municipality	Case Study	Innovations being tested	Key Result and Top Lesson
City of Mississauga	Burnhamthorpe SNAP Tower Demonstration and Webinar Series	Tower revitalization demonstration as a catalyst for engagement of other MURB owners in sustainability actions Showcase innovative energy efficiency technologies and behaviours	• Multi-stakeholder retrofit workshop and engagement helped the MURB building owner create goodwill with tenants and stakeholders, resulting in a non-profit led installation of a community garden and distribution of indoor microgreen gardens, and developed building retrofit plans for water and energy efficiency. • City sees opportunity for scaling the MURB demonstration examples to other MURB buildings through a pilot webinar program and MURB building owner sees opportunities for replication at other properties in its portfolio.
City of Vaughan	Thornhill SNAP Action Planning and Pilot Home Retrofit Program Implementation	Innovative planning workshop Neighbourhood-scale resiliency strategy On-line interactive engagement Proposed Local Improvement Charge (LIC)	• Completed a full sustainable neighbourhood action plan, preliminary residential retrofit program design and resident engagement in Home Energy Retrofit Orientation workshop to kick start action. • Multi-objective, integrated planning approach has fostered a culture of collaboration among City departments and broader community engagement. This was facilitated by initial screening process, leveraging and supporting planned capital projects and inspiring social innovation workshops (in-person and online).
External to TRCA's jurisdiction			
City of Hamilton	North End Neighbourhood SNAP and resident private tree planting pilot	University collaboration supporting baseline data collection and urban forest canopy analysis On-line interactive engagement Use of ArcGIS Storymap tool to communicate neighbourhood action plan	• Largely formulated a full sustainable neighbourhood action plan and delivered a pilot residential tree planting program to kick start action momentum. • Partnerships with the neighbourhood association and university provided additional capacity to make the project possible and extended engagement with potential for continued support. City played a critical role as partnership broker, and benefitted from having two staff closely involved who could backfill during redeployments.

Municipality	Case Study	Innovations being tested	Key Result and Top Lesson
City of Guelph	ISO 50001 Energy Management System Implementation	Adoption of the ISO 50001 standard – aim to engage local businesses to share knowledge and encourage a similar journey Become one of the first North American municipalities to strictly comply to the standard. Municipal-wide compliance	• Further advancement toward ISO 50001 standard and established a reference repository of industry templates and actively pursued prospective funding stream for staff training. • Value of doing ISO 50001 standard in collaboration with local businesses and other municipalities, but their engagement wasn't doable in the timeframe of the project due to a shift in institutional direction.
City of London	London Business Community Low Carbon Program Development	Workshops sharing success stories to generate interest/ participation/ motivation; Subsidized Water/Energy/Waste audits Developing local non-profit capacity to deliver programs and allow City to scale programming Blue Roof retrofits	• Built capacity in local non-profit in water and waste programming and identified two sites for blue roof implementation with designs underway. • Working with a local non-profit accelerates the work, by expanding staff resources and accessing broader networks – potential scalability through the local non-profit.
City of Peterborough	Kawartha Heights SUN/SNAP – Home Energy Renovation Video Series	Video series + virtual event with home retrofit contractors to stimulate homeowner action	• Developed a locally-tailored DIY home energy efficiency video series and plan to pilot an initial virtual engagement event. • Partnership with a local non-profit for project design and implementation will enable access to their local knowledge, established resident network and build upon sustainability activities they have initiated.

5.0 SUCCESS FACTORS AND LESSONS LEARNED

This chapter explains the six success factors underlying the neighbourhood and business zone model, and brings forward lessons and tools to address each of the associated project objectives. This material is informed by the municipal case studies, peer learning workshops held during this project and contributions from municipal and TRCA team members based on past experience.

The six success factors are discussed in the following sub-sections:

- 5.1 Supportive municipal policy context
- 5.2 Collaboration and engagement to support integrated planning and implementation
- 5.3Innovative disruptive design-thinking and problem solving
- 5.4 Effective and efficient evaluation and reporting frameworks
- 5.5 Effective scaling strategies
- 5.6 Funding for partnership-brokering, integrated planning and program implementation

5.1 Supportive Municipal Policy Context

5.1.1 Project Objective

The first of the six objectives identified for this Transition 2050 project is to:

> Develop guidance on critical policy elements to support municipalities in identifying neighbourhood and business zone approaches.

5.1.2 Why is this important?

Need to recognize the need for climate action

TRCA's neighbourhood and business zone models are solutions to achieve implementation action on a number of municipal priorities. Therefore, the municipality must first have a policy framework that recognizes and commits to take action on climate and any number of other sustainability objectives. This policy context is important to guide the scope and prioritization of neighbourhood and business zone projects and to allocate supportive municipal staff and resources.

Need to recognize the rationale for neighbourhood and business zone delivery

The neighbourhood and business zone approaches do not fit within traditional silo-based program delivery aimed at a single objective (e.g. energy, water, etc.), but rather they are multi-objective and place-based or business focused. These characteristics are inherent to their ability to achieve deeper engagement and deliver greater impact toward a broad range of objectives. Therefore, having municipal policy recognition of the benefits of this novel approach, particularly tied to the need for greater action in priority locations, is needed to rationalize different levels of investment and different ways of working in different geographic locations across the municipality. Furthermore, a transparent selection process is needed to rationalize the selection of candidate neighbourhoods or business zones.

Recognize neighbourhood approach as a complement to municipal scale strategies

While the neighbourhood and business zone models focus on driving action and overcoming obstacles in specific places, there is still the need for municipal-wide programs that can provide strategic incentives and support for specific types of action at economies of scale.

***See also**: Section 5.2 for further rationale on cross-divisional collaboration; Section 5.4 for evaluation and reporting of the co-benefits inherent in this approach; and Section 5.6 on funding models.*

5.1.3 Lessons, Tools and Tactics

Emerging Municipal Policy and Practice Supports Neighbourhood Approach

There is growing recognition of the benefits of the neighbourhood approach and neighbourhood-based and business zone service delivery, as indicated in recent municipal policy documents and project partnerships:

- City of Brampton's 2040 Vision includes a specific vision statement and recommended actions for revitalizing "Neighbourhoods", and the City has launched the Nurturing Neighbourhoods Program with support from TRCA, CVC, Region of Peel and other community partners.
- William Osler Hospital, Peel Public Health and the former Central West Local Health Integration Network launched the Healthy Communities Initiative, identifying SNAP as a pilot for revitalizing the built environment for health outcomes, including diabetes and cardio-vascular diseases.
- City of Toronto's Transform TO strategy identifies mobilization of low carbon communities as a key acceleration campaign to ensure that efforts to reduce greenhouse gas emissions can also maximize potential community benefits.
- City of Toronto's First Resilience Strategy identifies People and Neighbourhoods as a focus area recognizing communities are first to experience a shock, and including neighbourhood resilience pilots as a priority action area.
- Neighbourhood Pods TO is an example of COVID-19 response supporting mutual aid networks at the neighbourhood scale in Toronto.
- City of Toronto's Green Streets program is a joint initiative of Toronto Transportation and Toronto Water to prioritize road infrastructure projects in terms of opportunities for green infrastructure enhancements to deliver social and economic benefits to surrounding neighbourhoods.
- Region of York's Community and Health Services Department is taking a place-based approach to the development of Community Safety and Well-being Plans, including pilot locations within South-Central Richmond Hill and South-Central Markham.
- Municipal Energy Plans (e.g. Vaughan, Markham, Caledon, Brampton) cite SNAP as an implementation mechanism.

- FCM recognized TRCA and its nine participating municipalities for the SNAP Program as part of its 2020 Sustainable Communities Awards, under the Visionary Award category, noting its effectiveness at delivering environmental projects with long term social and economic impact.
- Supportive industry guidance and strategic directives formulated with PPG's Executive Management Committee.
- Town of Caledon's Guide to Eco-Zone planning and development (2014) served as a supportive reference to develop pilot initiatives to engage Caledon businesses.

Table 5.1 summarizes policy tools that can be used to support municipalities in identifying and implementing neighbourhood or business zone approaches.

Table 5.1: Supportive Municipal Policy Tools

Supportive Municipal Policy Tools*
Official Plan, Secondary Plans, Community Improvement Plans
Corporate Strategic Plans and Visions
Term of Council Priorities, Workplans
Climate Action Plan
Community/Municipal Energy Plan
Resilience Strategies and Plans
Sustainability Strategies and Plans
Economic Development Strategies
Community Development Strategies
Infrastructure Master Plans (e.g. Stormwater Management, Transportation,
Asset Management Plans (e.g. Stormwater Management, Transportation, Green Infrastructure)
Revenue-related policy (e.g. Development Charges, Local Improvement Charges, municipal bylaws pertaining to direction of fee revenue, Climate Change Reserve Fund etc.)

**Tools for recognizing the need for climate action and role of the neighbourhood and business zone approach; recommendations of such documents could be used to direct projects and programs*

Lessons for a model neighbourhood program

Experience from TRCA's SNAP Program, the City of Brampton's pilot Nurturing Neighbourhoods Program and early lessons from the Transition 2050 municipal case studies indicate key components of a model neighbourhood program (**Table 5.2**). These components would need to be in place to facilitate integrated action planning, community engagement and implementation support. These components speak to the need for a strong organizational culture for collaboration and the critical role of a project manager as a partnership-broker and integrated planner, who brings key stakeholders together to design and deliver compelling implementation projects.

Table 5.2: Key Components of a Model Neighbourhood Program

Key Components of a Model Neighbourhood Program
Core Program Components (to be undertaken in-house)
• **Program Mandate/Leadership –** A champion and a clear mandate to establish a comprehensive program scope and framework of objectives (environmental, social, economic, cultural) to support work across departments and with external organizations. Should support alignment with corporate climate action and urban renewal priorities. • **Core program staff –** A dedicated Project Manager, Coordinator and Program Assistant are needed to maintain the necessary project momentum, in order to develop an action plan within a one year timeframe and lead 1-2 implementation projects per year. This staff complement assumes collaboration and support from partner departments and groups and some fluctuation in workload through the planning and implementation cycle. While some staff support can come from external partners, reliance on this approach will depend on the maturity of the collaborative relationship. • **Internal liaisons –** Ability to secure meaningful representation from a cross-section of relevant departments to provide input to neighbourhood selection, action planning and implementation initiatives. • **External advisors/collaborators** – Ability to engage meaningful representation from external organizations and collaborators with aligning objectives and projects in urban renewal and climate action and community engagement. Advisors could include other levels of government, conservation authorities, utilities, social service providers and community organizations. • **Neighbourhood Selection Process –** A process to identify strategic neighbourhoods to work in. This could include overlaying mapping of multiple urban renewal and climate action interests and projects among internal and external partners. • **Communications, Promotion** – Ability to develop program or neighbourhood communications (e.g. flyers, videos, local logos, reports), promotion of events and sharing of outcomes, social media management. • **Tracking, reporting, evaluation –** A framework of key output and outcome indicators and ability to undertake ongoing data collection and documentation, review and evaluation of results to support improvement.
Operational Components (could be in collaboration with external organizations and partners)
• Action Plan co-development (facilitation, integrated planning, mapping) • Implementation facilitation/support • Neighbourhoods Audits/Walks • Surveys • Quick win projects and Tactical urbanism • Inclusive community engagement and capacity building • Toolkits and resources for community • Online Engagement/Mapping Tools

A Transparent Screening and Selection Process

Working with municipal partners, TRCA developed a transparent method for identifying candidate geographic areas that would benefit from collaborative, integrated approaches, such as SNAP and PPG. The process identifies areas of alignment of multiple municipal and TRCA priorities for urban renewal and climate action, and wherever possible, where there is also local community interest. This process ensures municipalities have local program interests that enable them to participate and increases the potential to leverage planned implementation projects to achieve greater impacts.

The process follows three steps, each involving input and participation by multiple municipal and TRCA departments (**Table 5.3**).

Table 5.3: Screening and Selection Process

Screening and Selection Process *(for identifying candidate SNAP neighbourhoods, business zone or other integrated projects)*	
1.	**Screening** – mapping at the municipal scale to identify "areas of interest", based on alignment of multiple municipal and TRCA priorities for urban renewal, watershed management and climate action (e.g. high energy/water use, planned infrastructure renewal etc.).
2.	**Candidate Neighbourhood/Area Selection** – review and discussion of each of the "areas of interest" by municipal and TRCA staff to understand the issues, timing, opportunities, feasibility and the potential benefits of an integrated, collaborative approach, as the basis for recommending a future SNAP neighbourhood(s), business zone or other integrated project.
3.	**Project Confirmation and Boundary Refinement** – consultation with local community leaders, elected officials, and senior program directors to confirm their support and desired role in the project, as well as potential considerations for study area boundaries, approach, funding, roles and final commitments by all key stakeholders (e.g. municipal and TRCA departments who may be financially contributing or pursuing joint funding applications, community organizations, major landowners or other agencies as may be involved in the specific neighbourhood project management team).

This process has been piloted in City of Vaughan, City of Brampton, City of Toronto and City of Hamilton to identify future SNAP neighbourhood projects. A similar approach has been applied in the Town of Caledon to identify business eco-zones for the focus of business engagement.

This screening process has revealed opportunities for collaboration and led to early identification of project enhancements which could be incorporated into workplanning, budgets and grant applications. It has enabled existing capital project budgets to be leveraged as matching funds for new grant applications and has allowed departments advance notice to better align their annual work programs to take advantage of synergies. It has expedited the neighbourhood action planning process which can build on the data collected as part of the screening. Furthermore, this tool has served as a reference when reviewing potential capacity to support community leaders who are expressing interest in local neighbourhoods.

Lessons from Integrated Asset Management

A number of previous SNAP and PPG initiatives have demonstrated how planned infrastructure renewal projects can be leveraged and designed to incorporate multiple benefits, including additional environmental function and community amenities.

Ontario has a well-advanced regulatory structure for municipal asset management, including provisions for recognizing natural assets and green infrastructure. Municipal asset management programs may offer policy opportunities for promoting inter-departmental collaboration for integrated approaches and enhanced outcomes.

5.1.4 Summary of Observations

The following are key overall observations regarding critical policy elements needed to support the neighbourhood and business zone practice:

1. The policy framework to support climate action and other sustainability initiatives is in place, and does not preclude taking a neighbourhood/business zone approach. The policy framework draws upon a variety of tools; none is more important than another. In some municipalities, certain policies and plans are specifically starting to call for neighbourhood or business zone based program delivery. As multi-objective impact is a core strategy of the neighbourhood/business practice, these projects help implement many municipal strategic plans.

2. It is important to continue to ensure alignment with the Climate Change Action Plan as other policies/plans get updated so that synergies can be realized and climate action operationalized as a normal part of business.

3. Although the policy framework is in place, the allocation of funding to support implementation is the more significant barrier. Several new policy mechanisms are being applied and tested to create dedicated funding for implementation programs and incentives. These include: Climate Change Reserve Fund that raises money through property tax; municipal bylaws to dedicate a portion of servicing fees (licenses, parking fees, development charges etc.); Local Improvement Charges to help homeowners finance retrofits. However, these revenue sources are usually earmarked for specific applications, and there remains a gap in funding to support integrated projects, where the co-benefits necessary to sell the overall project may lie outside the scope of siloed budgets. New policy may be needed to pool funds to support integrated, place-based services (See also s. 5.6 in this report).

4. Current reporting on climate action progress at the municipal scale may not be compelling enough to support greater allocation of implementation funding and program resourcing (e.g. the cost of continued climate impacts may not be well understood; there may be a lack of goal/target setting and therefore limited accountability to achieve progress). There was an observation that the benefits associated with applying the neighbourhood/business approach may help provide a business case for implementation and support additional resources being applied to the effort. A clear reporting framework is needed.

5.2 Cross-Divisional Collaboration and Engagement to Support Integrated Planning and Implementation

5.2.1 Project Objective

The second of the six objectives identified for this Transition 2050 project is to:

> Define effective practices and tools for identifying key collaborators (both internal and external), shared interests and tactics to support long-term collaboration for integrated climate action.

5.2.2 Why is this important?

Compelling need for collaboration and deeper, more inclusive engagement

Across many program areas, participant uptake rates are lucky to penetrate even the 15% Early Adopter segment of the market, as illustrated in Rogers' classic innovation adoption curve[4] (**Figure 5.1**), let alone the 60-80% levels commonly targeted to achieve climate goals. New approaches are needed to make the solutions more appealing, to simplify and accelerate the process and to deepen engagement beyond the "usual suspects". Christiano and Neimand's 2017 article[5] "Stop Raising Awareness Already" explains this point further.

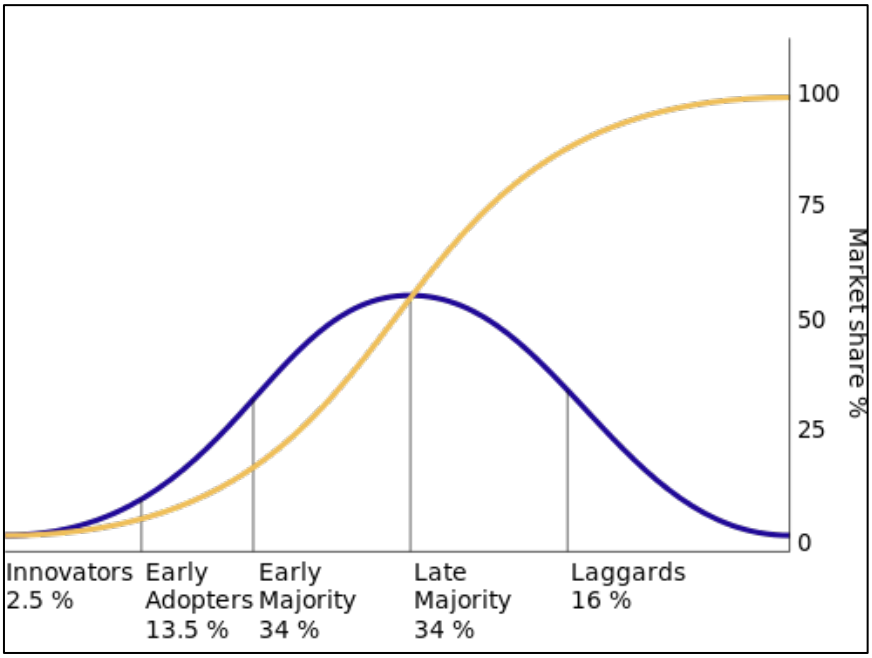


Figure 5.1. Rogers' Innovation Adoption Curve

[4] Based on Rogers, Everitt M.. 1962. Diffusion of Innovations. Fifth Edition. The Free Press, New York. Source: https://en.wikipedia.org/wiki/Diffusion_of_innovations)

[5] https://ssir.org/articles/entry/stop_raising_awareness_already

TRCA's neighbourhood and business zone approaches work to tailor solutions to local needs and find ways to overcome obstacles to action. A key premise of this work is the deep engagement of a broad range of government and community stakeholders through local trusted social or business networks and collaborative processes to understand and address needs. To be successful, several provisions and tools need to be in place:

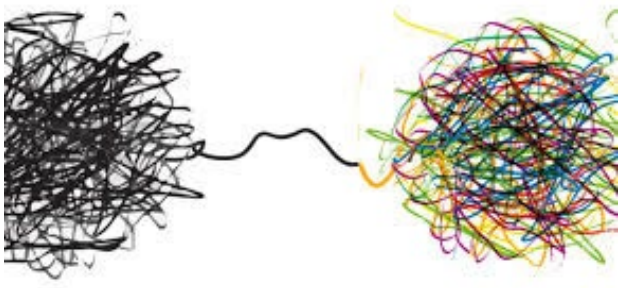
- Ability to work with traditional and non-traditional (public and private sector) partners
- Ability to cross departmental silos
- Ability to share power, resources
- Customized, audience-specific tactics
- Flexibility to adapt and coordinate workplans

In some communities, residents and businesses face unique challenges accessing the information and resources they need to participate in climate action and ensure their voice is heard. Therefore these socio-economic issues must be addressed alongside the environmental solutions. During the engagement and planning phase, for example, it may be necessary to provide a small honorarium, financial incentive or offer services (e.g. daycare, transportation) to ensure a community member's time is respected and obstacles to their participation are removed.

As an outcome of the action plan, there are opportunities for climate solutions to deliver significant social and economic co-benefits which these populations most need, such as job skills training, networking and community connections, access to nature for mental health benefits etc.. In order to realize these social and economic co-benefits, and also to support communities in a way that best helps them achieve their own goals, projects must be designed collaboratively with an understanding of local needs. There is growing recognition that local leadership in climate action is paramount to building local resilience and gaining support for larger actions.

Strategic benefits of integrated planning that leverages multiple interests

Integrated approaches to the development of climate action solutions are not only necessary but offer significant benefits.



The drive to achieve climate goals can be referred to as a "wicked problem". It is interconnected with many other challenges involving environmental, social and economic elements, a large number of people and a lack of resources. Therefore, there is a need to bring a systems approach to understand the linkages among the parts and a recognition that a single intervention is unlikely to be effective (**Figure 5.2**)

Figure 5.2. Wicked Problem[6]

[6] https://medium.com/@anneseoyounglee/wicked-problem-design-thinking-2126dc147170

Taking an integrated, multi-objective approach often reveals innovative solutions that can achieve greater impact. New thinking is said to emerge from different perspectives and the deepest solutions are found in the "spaces-in-between"[7]. This setting is achieved by bringing "content experts" (subject matter professionals) from a range of departments together with "context experts" (people with lived experience). Understanding everyone's interests and designing projects to meet them will garner greater support and momentum for implementation. Beneficial outcomes may include synergies between workplans, joint projects, opportunities for cost sharing and the potential to deliver co-benefits. Emerging municipal practices support this trend toward integrated multi-objective approaches, including integrated asset management, triple bottom line, delivery of community and public realm benefits as part of infrastructure renewal projects and the expectation for climate action to generate co-benefits.

TRCA's neighbourhood and business zone approaches embrace the core aspects of integrated planning by understanding the interconnections among environmental, social and economic systems and addressing diverse interests. To support this work, existing and new practices and tools have been applied or recommended to enable the following:

- Ability to identify collaborators and their interests
- A clear mandate supporting multi-objective integrated approaches
- Mechanisms for defining shared priorities, visions and integrated projects
- Ability to track co-benefit indicators

Need for long term view toward collaboration and capacity building

Developing trust and relationships with new partners takes time to reach the stage for full collaboration and even integration among programs. Major capital projects take time to go from planning to implementation regardless of whether they are in the public or private sector. Sustained action needs to come from local leadership, therefore capacity building activities are an important part of the neighbourhood and business zone approaches, and it takes time for these local leaders to be self-sufficient.

Social innovation activities involving cross sector coordination and large-scale change is a movement that does take time (**Figure 5.3**).

[7] Spencer, F. Wicked Opportunities: 7 Shifts in the Age of Opportunity. *Rotman Management*. Winter 2015.

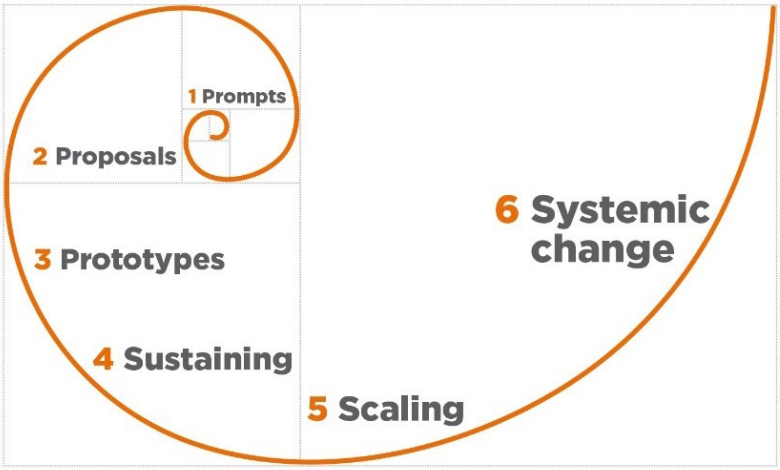


Figure 5.3. The Process of Social Innovation[8]

To support this need for a long term view inherent in the neighbourhood and business zone approaches, practices and tools are needed to address the following:

- Multi-year program commitment
- Capacity-building tools
- Staff and partner retention for stability in working relationships

See also: Section 5.3 on innovative approaches to engagement and Section 5.4 on evaluation and reporting on co-benefits.

5.2.3 Lessons, Tools and Tactics

Lessons from Transition 2050 Neighbourhood/Business Zone Selection and Action Planning

In this Transition 2050 project, municipal participants worked with TRCA staff to apply either the SNAP neighbourhood or PPG business engagement models in selected case study projects described in section 4). They experienced the key stages of project formation, action planning and pilot implementation in real world settings, following the strategic planning processes and engagement tools and tactics of the neighbourhood and business zone models. Experiences and lessons were exchanged during Peer Learning Workshops.

Table 5.4 summarizes top lessons learned from the municipal experience with neighbourhood selection and action planning, in terms of barriers and enablers at each stage. **Box 5.1** highlights additional soft skills and tips for stakeholder engagement.

[8] Murray, R., J. Caulier-Grice and G. Mulgan. 2010. The Open Book of Social Innovation. The Young Foundation and NESTA.

Box 5.1: Soft Skills and Tips for Stakeholder Engagement

- Be patient; Get support from their supervisor
- Leverage contacts, networks
- Get initial cooperation for small roles
- Align with their current workplan
- One-on-one meetings; regular updates
- Provide clear expectations and roles
- Respect their time; request participation only when needed
- Highlight mutual benefits; Make it fun; be positive

Lessons from Transition 2050 Pilot Implementation

Most municipal partners were able to initiate a pilot implementation activity during the timeframe of this Transition 2050 project. **Table 5.5** summarizes top lessons learned from this experience.

Lessons from Previous SNAP Integrated Infrastructure Renewal

The Transition 2050 implementation cases involved home retrofits, tower renewal and business greening, however integrated public infrastructure renewal has been another key focus of TRCA's models. Integrated approaches have delivered multiple benefits. **Table 5.6** summarizes barriers and enablers identified from an evaluation of two successful SNAP projects: County Court SNAP boulevard bioswale in Brampton and Bayview Glen SNAP Glencrest Park Renewal in Markham.

Table 5.4: Summary of Top Transition 2050 Lessons – Neighbourhood and Business Zone Selection and Action Planning

Stage of Work	#	Barriers	Enablers – Tools and Tactics
Project management	1.	Staff turnover, lack of staff capacity	Resource sharing/Partnerships with other departments, NGOs, university students (Partnership Agreements)
	2.	Getting participation from others Departmental silos	Interdepartmental / stakeholder engagement tips – Soft Skills (see Box 5.1) Council direction was helpful in keeping staff committed Corporate culture for collaboration; Internal integration champion
	3.	Lack of clear upfront expectations, roles	Project management team with representation from key departments and stakeholders, Regular touchpoints Workplan, Project Charter, Formal written sign-off
	4.	Lack of implementation funding	Alternative funding options (see section 5.6) Interdepartmental resource sharing, partnerships
Neighbourhood/ business zone selection	5.	Question of how sites are selected	Interdepartmental engagement Neighbourhood Screening Process – rationalized site and fostered interdepartmental synergies (see section 5.1)
Action Planning	6.	Stakeholder engagement challenges	Leveraging existing partner relationships Partnerships with NGOs to engage residents/businesses Communication templates; Weekly/bi-weekly meetings Leveraging climate and economic development relationships PPG business curriculum provides a ready “menu” Neighbourhood screening process – helped identify stakeholder interests
	7.	COVID-19 restrictions	Collaborations help maintain implementation momentum Virtual, interactive engagement platforms
	8.	Reluctance to consider “big idea” projects	Community collaborations create momentum. Community driven demand for change, many voices, council support Pilots and quick starts. Case studies from other jurisdictions Neighbourhood screening – enables leveraging existing planned projects

Table 5.5: Summary of Top Transition 2050 Lessons – Pilot Implementation

Type of Work	#	Challenge/Barriers	Enablers Tools and Tactics
SNAP – Home Retrofits *e.g. energy efficiency, tree planting*	1.	COVID-19 restrictions	Program adaptations to enable safe in-person tree pick-up Virtual/on-line engagement and workshops
	2.	Homeowner engagement	Directly mailed letters/promotions, signage in public spaces "something exciting is happening here – QR code link"
	3.	Tracking uptake by homeowners – Where multiple similar programs are being delivered; Follow-up mechanisms	Data-sharing and cross-promotion arrangements among implementers. Fun incentives for voluntary follow-up reporting (e.g. photos sent in were presented as incentives for others to join action)
SNAP/PPG – Tower Retrofits	4.	Differing motivations to act	Need to understand tower owner AND tenant interests (Note that local/site scale may not always reflect general neighbourhood/community interests) MURB revitalization designed to address social needs alongside climate and environmental objectives gets more support
	5.	Tower owner engagement	Building on past relationships of partners; Use of established networks
	6.	Securing funding/Initiating action	Early implementation of multiple implementation partners facilitated quick start partnerships and joint grant writing activity
	7.	Inconsistent public communications	Set clear expectations among all partners on roles and communications messages
PPG – Business Engagement for Sustainability Actions *e.g. energy, water, waste*	8.	Business engagement/resourcing	Economic Development Department's established relationships/network Partnership with NGO to assist with outreach
	9.	Lack of awareness among business community about available programs; lack of examples	Knowledge sharing between municipal sustainability managers and local business (need for continued efforts, incentives, case studies).
	10.	Lack of support, incentives, COVID-19 impacts on business	Water and energy audits are not enough; need additional supports for follow through on action (process support, retrofit incentives, deadlines) Anticipate implementation delays, but more interest in action post-COVID

Table 5.6: Lessons from Past SNAP Integrated Infrastructure Projects[9]

#	Barrier	Example of Barrier	Enablers and Lessons Learned
1.	Scope and design limitations when projects are too far along the planning and approvals process	Changes to EA approved projects require EA Amendment process Capital budgets and timelines for implementation are already set	Early identification of opportunities at strategic planning stage Internal integration facilitator/coordinator
2.	Departmental silos; Inflexible mandates, budgets, processes, and work plans	Lack of departmental willingness to integrate objectives beyond their mandate; lack of incentive for collaboration	Clear mandate for integrated projects Flexibility in workplans to take advantage of opportunities that arise
3.	Timing for effective engagement of all stakeholders	Challenges for the efficient and meaningful involvement of implementation and operations expertise at concept design stage	Early involvement of relevant expertise and decision-makers Culture for inter-departmental collaboration
4.	Buy-in, team building, and ownership of project objectives	The new roles and relationships required for integrated projects can make ownership ambiguous Staff turnover or ineffective delegation means those who approved the project might not be around for implementation	One-on-one meetings with key leaders to get buy-in at the top Infuse “regular” teams with people having an innovation mind-set Set shared vision, responsibilities as a group
5.	Concern that projects could be more expensive and time consuming than “business as usual”	Uncertainty with expected construction costs for innovative features Project managers are lauded for meeting deadlines, rather than delivering great projects	Community engagement builds excitement and support Business cases to show resulting project achieves greater outcomes
6.	Different stakeholder levels of risk aversion versus optimism	Level of comfort with innovative project elements Discrepancy between stakeholder requirements to secure all financing for all phases of the project before implementation of any phases	Use SNAP to pilot new approaches Discuss concerns as a group, share experience to avoid risk and develop contingency plans

[9] TRCA. 2018. SNAP Profile: Leveraging Public Infrastructure Renewal for Multiple Outcomes.

#	Barrier	Example of Barrier	Enablers and Lessons Learned
7.	Inflexible permitting processes	Permit forms do not accommodate for innovative features	Early engagement with permitting agencies
8.	Unforeseen issues (a.k.a. you don't know what you don't know)	Underestimated costs Designs need to be adapted	Build a buffer into the project budget and timeline Make hard decisions based on key goals

5.2.4 Summary Observations

The following are key overall observations regarding collaboration, engagement and integrated planning to support long term climate action:

1. *Lack of supportive organizational culture* – Many of the barriers observed in this project reflect that collaboration and resource sharing is not part of the daily routine. There needs to be commitment and clear direction from the top of the organization to ensure adequate support to implement approved climate action plans and related strategies. This is particularly needed if no new resources are to be allocated.

2. *Lack of Budget Collaboration* – Need a way for the collaborative process to carry through to budgets. Mandates and project budgets tend to be highly siloed and restricted depending on funding source.

3. *Staff Turnover* – Staff turnover is a reality. It affected seven out of the nine municipalities during this project's two year timeframe, and in several cases represented one of the most debilitating barriers affecting project progress. Human capital and the trusted relationships developed with partners are foundational for this work, therefore loss of staff can represent costly delays as the local knowledge and working relationships are re-established. Assume it is going to happen and incorporate mitigative plans as part of the approach (e.g. identify alternates and keep them informed, documentation of decisions, commitments in the project charter, and other approaches to create a positive organizational culture that can motivate staff retention, including longer term contracts or full time positions wherever possible).

4. *Reluctance to consider new big projects; Risk aversion* – Some municipal staff perceive a risk that big new project ideas may emerge from collaborative processes. Authority/mandate to develop and lead such projects may be beyond the project team and current budgets, and may set expectations that cannot be met. Team members must be supported in bringing new ideas forward for fair consideration and, most importantly, not made to feel sole responsibility for bringing the new project to fruition. Workplans/budgets require some flexibility to accommodate timely and strategic opportunities, and a supportive culture for innovative fundraising is needed. New approaches may take more time and may involve some failure and some successes. Failure needs to be accepted and lessons learned.

5.3 Innovative, Disruptive Design-Thinking and Problem Solving

5.3.1 Project Objective

The third of the six objectives identified for this Transition 2050 project is to:

> Provide guidance on creating and using innovative social mobilization and engagement tools for design thinking.

5.3.2 Why is this important?

Section 5.2 outlined the foundations of the neighbourhood and business models: collaboration, integration and long term view. This section dives deeper into methods for problem-solving and inspiring action that overcome the limitations of the "business-as-usual" approaches. The following points explain a few of the key considerations, which draw from several prevailing creative thinking approaches (**Table 5.7**).

Need to create inspiring designs and motivate action

Studies show that humans tend to avoid or procrastinate about tasks perceived as difficult or dull, but will more readily get on board with positive, fun initiatives. Most people are weary of hearing the doom and gloom around climate change and are overwhelmed about what they must do. Methods are needed to tap into what interests and excites people, and how those motivating "rewards" can be integrated into actionable solutions. By making emotional connections to an initiative, there is likely to be stronger support for action. In "The Science of What Makes People Care", Christiano and Neimand (2018[10]) refer to the need for more effective communication techniques such as visual images, evoking emotion with intention and telling better stories.

Need to be future-thinking

There is a tendency to design solutions for present day problems in uninspiring utilitarian ways. Most people are unable to truly envision and plan for the future. Sometimes great designs are simply transplanted from elsewhere, but are ill-suited to the local needs of their new place. Methods are needed to help stakeholders imagine the trends that may affect them in future, both positively and negatively, and to define the experiences they wish to realize by turning challenges into opportunities.

Need methods to support "co-design"

As explained in section 5.2, innovation and creativity comes from the "spaces-in-between" when diverse perspectives are brought together. Methods are needed to dispense with the hierarchies of power and to forge respectful, productive working relationships among "content experts" and "context experts". In residential neighbourhoods, the residents who live there are thought leaders, just as much as the technical experts. In businesses, insights from front line operations staff can contribute as much toward innovative solutions as from executives.

[10] https://ssir.org/articles/entry/the_science_of_what_makes_people_care#

Need creative approaches to address multiple needs with limited resources

With increasingly limited and stretched municipal budgets, there is a need for creative thinking to bring groups together to identify systematic solutions to make it easy to integrate best practices and see multiple benefits coming out of built projects or programs.

Need to accept the risk of failure; learn from mistakes and adapt

Currently project managers are rewarded for delivering on time and on budget, and therefore tend to prefer to avoid risks associated with new, untested approaches or partnerships that may take components of the project out of their control. Tools are needed to assess and manage risk to enable testing of new approaches.

See also: *Section 5.1 on supportive municipal policy context and Section 5.2 on collaboration and integrated planning.*

Table 5.7 Creative-thinking/Problem-solving approaches

Approach	Definition	Description and Resources
ICE – Innovation, Creativity, Entrepreneurship	Skills training that provides a process-based approach to innovation, creativity and entrepreneurship for solving real-world, sector-relevant challenges	Three stages of ICE: 1. Empathy & Need Finding 2. Ideation & Prototyping 3. Strategy & Testing http://www.rotmanithink.ca/ice
Design Thinking	An approach that works closely with the clients and consumers, design thinking allows high-impact solutions to social problems to bubble up from below rather than being imposed from the top	Three spaces of Design Thinking: 1. Inspiration 2. Ideation 3. Implementation https://ssir.org/articles/entry/design_thinking_for_social_innovation#
Social Innovation	A social innovation is any initiative (product, process, program, project, or platform) that challenges and, over time, contributes to changing the defining routines, resource and authority flows or beliefs of the broader social system in which it is introduced. Successful social innovations have durability, scale and transformative impact (Frances Westley, 2014 at University of Waterloo WISIR)	What is Social Innovation? https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/about/what-social-innovation Stanford Starter kit for social innovation https://ssir.org/articles/category/essentials_social_innovation
Appreciative Inquiry	A model that seeks to engage stakeholders in self-determined change. AI advocates collective inquiry into the best of what is, in order to imagine what could be, followed by collective design of a desired future state that is compelling and thus, does not require the use of incentives, coercion or persuasion for planned change to occur	The 5D Appreciative Inquiry Model: 1. Define 2. Discover 3. Dream 4. Design 5. Deliver/Destiny Centre for Appreciative Inquiry generic processes https://www.centerforappreciativeinquiry.net/more-on-ai/the-generic-processes-of-appreciative-inquiry/

5.3.3 Lessons, Tools and Tactics

Tools for Innovative Engagement

TRCA's neighbourhood and business models use a variety of approaches for convening stakeholders to inspire new thinking and action, and for the practical purpose of collaborative design of solutions. T**able 5.8** summarizes a few approaches applied as part of the SNAP case studies during this project. **Table 5.9** summarizes a few approaches applied by PPG for business engagement.

Table 5.8: SNAP Examples of Innovative Engagement Activities

Activity	Objective/Description
Experiential Walks/ Neighbourhood Audits	To experience the neighbourhood through different senses and lenses. Participants tour through the neighbourhood sharing observations of what they see, hear, feel etc. and identifying actions to protect or enhance.
Timeline	To understand the past, share stories and knowledge, recognize unique local themes, and make predictions for the future. Participants review and add to a timeline of historical events, discussing observations of recurring themes.
WOW	To generate excitement and foster motivation to act. Participants draw on things that inspire their imaginations today and think about how they could be applied.
2040 Cover Story	To paint a picture of what the future of the neighbourhood could look like. Participants write a headline and describe the possibilities.
Precedent photos, case examples, inspiring guest speakers	To inspire possibilities, excite and spark discussion on what could be.
Character Role playing	To instill empathy and understanding for different perspectives. Participants are randomly assigned different characters and asked to play that role through other noted activities or in response to a discussion question.
Climate Scenarios	To assist in analysing the potential impacts of future climate conditions. Participants are provided with a description of a future climate situation (e.g. extreme heat/cold, ice storm, wind, power outage etc.), and may even be given a sensory experience (fans, heaters, ice cubes etc.), and asked to consider impacts/assets/opportunities.

Table 5.9: PPG Examples of Innovative Engagement Activities

Activity	Objective/Description
Consortium model	Bringing key stakeholder groups together to focus on specific environmental target areas, PPG can accelerate individual organizations progress toward sustainability by leveraging best practice sharing, relationship building, and knowledge transfer amongst industry peers of varying manufacturing sectors, removing the competitive barriers that limit collaboration.
Collaborative programs	Bringing stakeholders together to achieve results that have more impact than they could alone has been very successful for PPG. Utilizes industry collaboration across governments, non-governmental and non-profit organizations, industrial, commercial, and institutional businesses, and service and technology vendors to drive collective action and achieve impactful implementation.
Committee engagement	PPG utilizes a consensus-based governance model made up of diverse stakeholders from the public and private sectors. This group provides insights to PPG programming, and shares best practices to accelerate environmental engagement in their respective jurisdictions. This group also provides leadership and guidance that PPG enlists for external support and credibility.
Stakeholder events	PPG holds a variety of events to bring community stakeholders together. These include restoration-based events such as tree plantings and shoreline clean-ups; networking events; and education and training events to build environmental capacity of the participants. Events also showcase community network initiatives that amplify the awareness and uptake of programs offered to business partners.
Thought leadership and case studies	PPG facilitates the opportunities for business partners to showcase their collaborative projects to a broader sustainability audience through speaking engagements, trade publication articles, and thought leadership case studies. This ensures that the project can be replicated through sharing of lessons learned, understanding stakeholder partnerships established, funding capacity secured, and return on investment justification shared by the participants involved.

Tools for Managing the Risk of Testing Innovative Approaches

Different stakeholders have different levels of risk aversion and optimism toward testing innovative approaches. Based on Transition 2050 workshops and previous experiences, participants identified a number of benefits of the neighbourhood/business zone approach which enabled them to take on additional risk:

- Opportunity to discuss concerns as a group, share experiences to help avoid risk
- Develop contingency plans as a group
- Use projects like SNAP and PPG to pilot new approaches
- Shift certain roles to third party organizations who may be more experienced or better positioned to accept risk.

5.3.4 Summary Observations

The following are key overall observations regarding innovative social mobilization and engagement approaches:

1. Case study lessons shared by municipalities as part of the Transition 2050 peer learning workshops, reported in section 5.2, indicated the lack of a supportive organizational culture for collaboration and reluctance to take risk are obstacles to innovative approaches. However, the neighbourhood/business engagement approach offers inherent opportunities to avoid, mitigate or share risks, including: lessons sharing among partners, pilot projects, partnerships and shift in certain roles to third party organizations (e.g. NGOs, Conservation Authority, universities, private sector) who may be more experienced or better positioned to lead a new approach or to accept risk.

5.4 Effective and Efficient Evaluation and Reporting Frameworks

5.4.1 Project Objective

The fourth of the six objectives identified for this Transition 2050 project is to:

> Develop effective measurement, evaluation and reporting frameworks that can demonstrate achievement of mitigation targets while highlighting the co-benefits and business case behind neighbourhood and business zone planning models.

5.4.2 Why is this important?

Tracking co-benefits is part of the business case

TRCA's neighbourhood models strategically integrate climate action with planned initiatives and projects designed to deliver on other compelling local interests, as a way to overcome implementation barriers and garner greater uptake. A key aspect of this approach also focuses on implementation of municipal scale objectives at the neighbourhood or business site scale. Therefore, overall efficiencies in delivery and a full accounting of outcomes must be measured across a broader scorecard of indicators than strictly those associated with greenhouse gas reduction and enable different scales of reporting.

See also: *Section 5.2 on approaches for cross-divisional collaboration that may be necessary to support shared measurement and reporting on multiple outcomes.*

5.4.3 Lessons, Tools and Tactics

For this important component of the Transition 2050 project, TRCA partnered with Dr. Jeffrey Wilson of the University of Waterloo. Dr. Wilson was tasked with leading the development of a measurement and evaluation framework that was implementable, responsive to municipal partner needs and consistent with the emerging state of practice in other jurisdictions. This initiative culminated with the production of a Climate Action Co-benefits Project Evaluation Guide – Neighbourhood and Business Zone[11]. The Guide reflects learnings from

[11] University of Waterloo, Terrametrics Research Lab. 2021. *Climate Action Co-benefits Project Evaluation Guide – Neighbourhood and Business Zone*. Prepared for TRCA Transition 2050 Project.

previous SNAP and PPG evaluation approaches, a literature scan and an iterative review process which engaged municipal and TRCA partners during a series of four workshops.

Project Evaluation Guide

The Project Evaluation Guide provides a process to help partners develop an evaluation framework focused on measuring project benefits and co-benefits associated with neighbourhood or business based projects. It provides flexibility to adapt to the specific project and municipal sustainability objectives. The full Guide is published separately, with key concepts summarized here.

Key Principles

The literature is consistent in identifying the following as key principles in an effective evaluation:

1. *Measure co-benefits* – accounting for co-benefits has been shown to increase participation. Stakeholder support and buy-in. Therefore by guiding the identification of potential co-benefits at the project outset, practitioners can not only maximize impact through informed project design, but ensure that additional benefits are not overlooked in reporting.
2. *Adopt a nested measurement approach* – projects have impacts that occur and need to be relevant at multiple scales, including the project/site, neighbourhood/business zone and municipality.
3. *Report output, outcome, and impact indicators* – need to account for project performance at different levels.
4. *Set benchmarks* – benchmarks give meaning to indicators and can be a reference point in time, a reference point against a peer group or an ideal target.
5. *Adopt a long-term lens* – many project benefits may not manifest immediately.

Evaluation Development Tools

The Guide provides an evaluation readiness questionnaire and the following four worksheet templates:

1. Identifying Co-Benefits
2. Connecting Impact to Project Delivery
3. Identifying Indicators
4. Reporting Progress

To be useful, evaluation frameworks need to balance practicality with comprehensiveness. To assist in refining the final set of indicators, the Guide provides factors for consideration, including audience, data access, materiality to purpose etc.

While the Project Evaluation Guide was developed as part of the Transition 2050 initiatives, it is transferable and can continue to be a useful tool for future applications.

5.4.4 Summary Observations

Based on municipal partner experience developing and applying evaluation frameworks as part of Transition 2050 case study projects, Dr. Wilson compiled key observations and recommendations regarding co-benefits evaluation approaches:

1. Reporting co-benefits – project partners indicated that tracking co-benefits allows them to build a better business case for their projects which may not be realized by simply reporting CO2 emission reductions. In addition, reporting co-benefits can enhance the reach of climate action projects by communicating the full value of projects to community stakeholders and project funders. *Recommendation: Adopt an evaluation framework that tracks co-benefits to capture the full set of community impacts.*

2. Long term evaluation – Project impacts manifest over time, especially those resulting from new ways of doing things or those contingent upon broad scale behaviour change. Similarly, impacts from projects based on building relationships and community trust take time to realize. Understanding the return on project investment requires monitoring and evaluation over an appropriate timeframe which may extend beyond the funded project timespan. Too often, projects fail to understand the full impacts because the evaluation period is too short. *Recommendation: Commit to long term evaluation and integrate evaluation plans at project onset.*

3. Funding and resource requirements **–** A barrier to longer term evaluation is that project timelines and funding typically extend to project development and implementation without a comprehensive plan to support project evaluation and learning. While the proposed framework is designed to support a longer timeline and culture of evaluation, fulsome evaluation, requires time and resources. *Recommendation: Implement funding mechanisms and project plans that address the time and resource commitments needed to support long term evaluation.*

4. Non-prescriptive indicators **–** The tendency when developing an evaluation and reporting framework with broad applicability is to prescribe a set of indicators that, in this case, for example, would allow for comparisons across projects and communities to understand which projects were most effective at reducing CO2 emissions. A prescriptive set of indicators, however, ignores the diversity of projects, and different community contexts, resources and program delivery models making comparisons meaningless. It becomes problematic if comparative results determine future funding decisions in the absence of broader project evaluation and review. Reporting cross cutting indicators is fine but they should complement a set of project derived indicators that reflect project and community contexts. Indicators should be useful to project partners and stakeholders. What is important is they inform learning and project improvement. *Recommendation: Adopt indicators meaningful to project and reflective of community context.*

5. Flexible design, flexible mindset **–** The evaluation framework is designed to provide a consistent structure that can be adapted to different project scopes and audiences. The templates are intended to foster reflection on project benefits at different scales and support the identification of indicators to track direct project benefits and co-benefits. Implied in the flexible design is a mindset that if the evaluation process (indicators selected, data collection tools) is not working or achieving the intended objectives, it should be adjusted to ensure usefulness. *Recommendation: Implement a flexible design applicable to different project scopes, audiences, and community contexts and adaptable to changes in project scope or direction.*

6. Partner buy-in – In many cases, populating indicators will require project partners and/or community stakeholders to provide or collect data. Reach out early to ensure support. Make it easy for partners by implementing systems to facilitate the process. Where possible, work with partners to share data and reporting efforts to benefit all parties. *Recommendation: Secure support from partners and community stakeholders to assist with data collection and tracking at project onset.*

7. Data sharing – Lack of access and availability of data often limit effective evaluation. Interdepartmental data sharing and data sharing among partners is not a fail-safe solution but can help mitigate some of these challenges. *Recommendation: Support a culture of data sharing and open data.*

5.5 Effective Scaling Strategies

5.5.1 Project Objective

The fifth of the six objectives identified for this Transition 2050 project is to:

> Identify strategies for long-term, widespread uptake of neighbourhood/business zone programs that may enable transition in leadership to an implementation group.

5.5.2 Why is this important?

Need to move beyond pilot projects

Need to realize return on investments in pilot success, including the knowledge/skills developed and human capital/networks established. Pilots often end up as "one-offs" without deliberate strategies to expand their impact. In practical terms, the pilot should be testing elements of the anticipated full scale program so that lessons are transferable.

Although there may be a need to expand current program resources (i.e. staffing, budgets) to achieve an optimal efficiency, there will always be limitations to infinite growth of a particular program within an organization. With the urgency of climate action and many other urban renewal issues, alternative strategies need to be explored to scale the impact rather than the organization. Bradach and Grindle have outlined nine strategies to deliver impact at a scale that meets needs (**Figure 5.4).**

Scaling the impact vs. the organization

See also: *Section 5.1 on the necessary policy context and key components for long term neighbourhood/business programs; Section 5.2 on factors for successful collaboration; and Section 5.6 on funding models.*

Figure 5.4. Transformative Scale: The Future of Growing What Works – Nine Strategies to deliver impact at a scale that truly meets needs. Jeffrey Bradach and Abe Grindle (2014). Stanford Social Innovation Review and Bridgespan Group.

5.5.3 Lessons, Tools and Tactics

Scaling within the municipality – next steps

In this Transition 2050 project, municipal participants worked with TRCA staff to apply either the SNAP neighbourhood or PPG business engagement models in selected case study projects described in section 4. Most municipal partners were able to initiate a pilot implementation activity during the timeframe of this Transition 2050 project. Due to tight timelines on this Transition 2050 project, and the added impacts of COVID-19 on municipal operations and stakeholder decision-making, the opportunity to see results of this work was limited to a few weeks and months.

Based on preliminary experience in applying the models and piloting initial implementation, the municipal partners were asked to identify their potential interests and objectives for scaling these approaches and what support they would need (Table 5.10).

Table 5.10: Transition 2050 Municipal Interests for Scaling

What are your objectives for scaling?	What would you need?
Larger scale residential program: • Continue virtual home energy efficiency training workshops, but still hoping to implement street-based and neighbourhood scale • Scale to the rest of the neighbourhood using online forums, home visits (post COVID) • Local neighbourhood-based marketing will still be important	External Funding Grant applications underway
Convert pilot business engagement to program: • Expand knowledge transfer to more businesses; more implementation action with tracking and measurement mechanisms • From Education/Promotion focus to Implementation focused program	Determine what is the galvanizing issue
Expand SNAP to more neighbourhoods	Budget – efforts to seek budget are underway Interactive platforms to collect and report data, but that retain the local neighbourhood “feel”

Lessons for Scaling from Previous SNAPs and PPG

Although TRCA’s effort at scaling its SNAP and PPG programs is still in progress, several examples of successful replication and growth of program design and execution can be identified:

- **More SNAPs** – TRCA has been testing advisory services and capacity building in other lead organizations. SNAPs are now being led by such groups as Credit Valley Conservation and Peterborough GreenUp.

- **Replication of successful strategies**: **SNAP neighbourhood-based home retrofit programs** – neighbourhood "typologies" have been identified to characterize neighbourhoods having similar building stock and demographics. The successful pilot home retrofit program developed in the Black Creek SNAP neighbourhood of 1750 homes, could potentially benefit an additional 89,000 similar homes in the Toronto Region. TRCA confirmed the transferability of the proven program tactics by testing their application in another neighbourhood of the same profile and demonstrating strong levels of uptake. In addition, TRCA has been building capacity in other local organizations, by training them in the successful program delivery tactics, such that they can extend the impact of these programs to other comparable neighbourhoods across the municipality.

- **Expansion of PPG** – A strategic review confirmed business community needs and resulted in the expansion of PPG's program delivery beyond the Pearson Eco-business zone into employment areas within the full TRCA jurisdiction, along with a shift towards Performance Area based expertise: Energy Management, Water Stewardship, Waste Management, and Communications and Engagement. Program delivery was aligned with ongoing business engagement within the Pearson Eco-Business Zone, to take advantage of synergies within staff and program capacity. This scaling approach resulted in enhanced overall program delivery to include showcasing of best practices amongst businesses, facilitating collective action towards impactful projects, establishing performance benchmarking, and assisting businesses with the adoption of innovation.

Scaling Beyond the TRCA jurisdiction and beyond this project

Continued knowledge sharing among a neighbourhood/business community of practice would provide ongoing opportunities for peer learning, collective initiatives and larger markets.

5.5.4 Summary Observations

1. Despite the constraints and abnormal operating environment during this project, most municipalities have expressed interest in scaling aspects of this work. Many flagged the need for external funding support to enable continuation, let alone scaling, of the work. It would seem that an internally supported and resourced program would be needed to move beyond "pilots" to scale work in the municipalities.
2. Time limitations in the project implementation schedule have prevented the group from seeing the full potential impact of this approach and deeper exploration of specific scaling strategies, and this may be an area for further work and peer exchange.

5.6 Funding for Partnership-Brokering, Integrated Planning and Program Implementation

5.6.1 Project Objectives

The final of the six objectives identified for this Transition 2050 project is to:

> Provide guidance for establishing municipal neighbourhood/business zone programs and associated funding models.

5.6.2 Why is this important?

Partnership brokering and integrated planning are necessary to get projects to a fundable stage, and yet represent significant effort that is often unfunded.

Two types of funding needs are associated with the neighbourhood/business zone model:

1. Program related funding to support partnership brokering and integrated planning to prepare neighbourhood and business action plans/programs and develop integrated implementation project concepts to a fundable stage – Typical expenses include:
    - Staff salary and benefits – Project Manager (with skills in integrated strategic planning, facilitation, partnership building, overall urban sustainability and green infrastructure technical conversancy, report writing etc.) and Coordinator (skills in community engagement, event planning, reporting, research, etc.)
    - Expenses – events, materials, marketing materials, light design, travel etc.
    - Professional development and networking – e.g. knowledge sharing, think tank

2. Implementation project funding – Typical expenses include:
    - Design and Technical advice
    - Community engagement and involvement in detailed design
    - Project management and approvals – e.g. landowner and other stakeholder/partner engagement, permit applications, etc.
    - Expenses – meetings, travel, etc.
    - Capital seed funding and incentives
    - Note: “seed funding” to get project to fundable stage or to launch a pilot and matching or full funding, once shovel ready. Local beneficiaries should be expected to invest a portion where possible (e.g. landowners from planned maintenance and upkeep, government programs etc.).

Need for sustainable funding models to improve operational efficiencies, catalyze implementation and support program growth.

Current models are heavily dependent on grants and other special fundraising, even to support core staff complement. Regional and local municipal contributions need to remain a core component of these new funding models, reflective of the benefits they accrue and also as these funds are critical for leveraging other funding from senior governments, private sector and other sources. An important factor is the need for longer term, multi-year outlook.

See also: *Section 5.1 on the necessary supportive municipal policy context; Section 5.2 on approaches for collaboration which may support cost-sharing models; and Section 5.4 on evaluation and reporting of co-benefits which may support the business case for investment from diverse partners.*

5.6.3 Lessons, Tools and Tactics

Program funding for partnership brokering and integrated planning

Drawing on experience from TRCA's SNAP and PPG Programs, municipal case studies, and municipal partner input provided during the initial Transition 2050 Workshop, a diverse range of funding options has been used to support neighbourhood/business zone programs (**Table 5.11**) and implementation initiatives (**Table 5.12**). Each funding option has strengths and weaknesses that may limit their application. As a result, the majority of programs and projects have been supported by combination of funding sources. This reality underscores the critical role of a partnership broker who brings the partners and resources together. An emerging concept being piloted in San Francisco, a "Joint Benefits Authority", may offer a model for pooling resources across departments (see Box 5.2).

Table 5.11: Program-related partnership brokering and integrated planning funding

Funding Option Types	Considerations
Municipal Tax/Operating Budget	Many competing essential service demands Limited to no examples of long-term program support from this source.
Municipal Capital Budget *(e.g. water rate revenue, SWM fees, % of capital project allocation to upfront planning)*	Applications strictly limited to purpose (e.g. water management) and may not support broader scope of objectives
Private sector business partnership or sponsorship	Expectation for matching funds Expect profile, which may interfere with goal of fostering shared ownership Preference for involvement once tangible outcomes can be identified and risk minimized
Charitable foundation	Supports pilots, testing innovations Often short term, subject to change, may be "one-off"
Membership fee revenue	Willingness to pay may limit scale and scope.
NEW – Joint Benefits Authority	See Box 5.2

Box 5.2: Emerging Concept - Joint Benefits Authority

Governments and agencies around the world are struggling to address the growing climate impacts while faced with limited resources and siloed governance systems. The pooling of resources to support upfront planning and implementation of integrated infrastructure projects is an emerging best practice that holds great promise. An excellent example of this approach is the Joint Benefits Authority (JBA) currently being designed and piloted in San Francisco, California by a pilot partnership of the World Resources Institute with Encourage Capital, and the San Francisco Public Utility Commission. The JBA represents a mechanism by which city departments and delivery partners can jointly plan, finance, and implement integrated infrastructure solutions with co-benefits.

The overarching goal of this innovative model is "to build resilient public infrastructure that strengthens communities, particularly those in underserved and environmental justice areas, by capturing co benefits inherent in integrated solutions." The JBA partners have a shared vision which includes: capturing co-benefits; establishing integrated project delivery; pioneering creative municipal financing; and advancing social equity. The JBA allows multiple stakeholders to identify, quantify and capture the cross-cutting outcomes that otherwise would not be realized with single purpose projects. The JBA establishes a third-party financing and project delivery entity through a multi-stakeholder agreement and is governed by a Board of City and agency representatives that provide fixed funding and oversight. It has a Project Delivery Team that works with stakeholders to conduct planning, design, construction, and operations and maintenance.

More information is available at https://wriorg.s3.amazonaws.com/s3fs-public/uploads/joint-benefits-authority.pdf

Implementation Project Funding

Table 5.12 summarizes a variety of new revenue funding sources and cost saving (or alternate resourcing) strategies that have been used to support implementation. Trends in Environmental, Social and Governance models within the corporate sector may represent new community funding opportunities (See Box 5.3).

A combination of funding approaches is commonly required. In all likelihood, integrated, multi-objective, co-benefitting projects will continue to be supported by a combination of sources. As noted previously, this relies on an ability to broker partnerships, assemble funds and coordinate resources to deliver a successful project or program.

Table 5.12: Implementation Project Funding

Funding Option Types	Considerations
New Revenue Funding Sources	
Grants – government	- Short-term, subject to change, may be "one-off" - Usually limited to public property - Often limited to capital vs. design and project management - Often specific "silo" focus, which limits their application to a portion of the project cost (e.g. energy, water etc.) - Supports pilots, testing innovations
Grants – charitable sector	- Short term, subject to change, may be "one-off"
Grants – private sector	- Ensuring transparency, equity - May have significant requirements for branding/ profile of the company
Donations, sponsorships *(from residents, businesses etc.)*	- Branding rights? - Profile for mutual benefit; may also pose limitations
Crowd-sourced funding	- More conducive to popular, tangible, short-term initiatives vs. background, long term
Municipal Revenue Generating Tools *(e.g. LIC, SWM fees)*	
Green Bonds	- It is municipal debt and must be paid back - Low interest government backed bonds is growing in interest globally; Ontario government is the largest green bond issuer in Ontario
Create investment stream for future returns (*e.g. Peel water efficiency savings to support Peel Climate projects; Toronto sale generated TAF endowment)*	
Ward funding allocation and Community vote *(e.g. In London, each Ward is given $50,000 and the community can vote on its preferred project to receive funding)*	- Community interests are often small scale (e.g. rain gardens) and may not align with municipal priorities
Performance-based savings Investment Company (i.e. Efficiency Capital)	
Cost-Saving Strategies	
Infrastructure cost avoidance	
Redirect savings from the spread between cost of capital and the expense (e.g. Guelph)	

Funding Option Types	Considerations
Cost sharing among departments or partners	- Requires a partnership-broker to coordinate
Community volunteers (groups or individuals)	- Procurement agreements need to identify and manage risk, yet flexible to recognize the overall efficiencies - Role of honoraria to be recognized
Non-profit or professional services and products – in-kind, preferred rates, paid only an honorarium, expenses or below-market rates	- Procurement policies need to be transparent, yet flexible to recognize the overall efficiencies - Include NGOs on Preferred Vendor Lists - Not all community groups are registered, nor carry insurance – this can become a barrier to partnerships that could save costs overall and have other local benefits
Bulk-purchase agreements to reduce costs	- Requires a partnership-broker to negotiate
Exclusive discounts per neighbourhood or group of businesses	- A third party is needed to negotiate on behalf of the group

Box 5.3: Trends in Environmental Social Governance (ESG) in the Corporate Sector

Environmental, social and governance (ESG) criteria are a set of standards for a company's operations that socially conscious investors use to screen potential investments. There is a heightened awareness by major corporations to start exploring their social impact as a stakeholder in a community on climate and resiliency-based issues. This has become an emerging trend with progressive investment focused on social impact investing opportunities. Community spending is becoming more strategic with companies having a central vision of what they are trying to achieve, how they want to access customers and profile their brand. Some companies want to collaborate with entities that receive contributions, while others get more involved and hands-on.

TRCA has examples of these corporate contributions towards major capital transformation projects (e.g. The Meadoway, Tommy Thompson Park), and through ongoing corporate engagement by the Toronto Region Conservation Foundation and Partners in Project Green to build capacity, awareness and implementation opportunities with this perspective in mind.

5.6.4 Summary Observations

1. The majority of neighbourhood and business programs and projects have been supported by a combination of funding sources and this is a reasonable model. This reality underscores the critical role of a partnership broker who brings the partners and resources together.

2. Municipal partners cited the lack of staff resources/budgets for both integrated program leadership and implementation, as well as a lack of homeowner and business retrofit incentives as key funding gaps. However, two other factors hinder efforts to allocate funding to address these issues:

    - A lack of climate action and sustainability goals/targets and accountability to measure progress toward reaching them in some municipalities means there is a weaker framework to allocate funding to a range of strategic initiatives. An optimal level of resourcing needs to be provided in association with reasonable targets for progress.
    - There is an over-riding view that climate action is an "add-on" and is treated differently than other projects required to meet strategic goals.

3. Funding models for neighbourhood and business zone programs will likely continue to be composed of a hybrid mixture of funding sources, but there needs to be stable core funding level to ensure program efficiency and leverage to support integrated projects/programs. Emerging concepts and trends may offer promising directions:

    - *Joint Benefits Authority* - being piloted in San Francisco, this is a mechanism for pooling scarce resources among several departments and partner groups for mutually beneficial public-focused projects. It represents a positive approach to realize synergies and efficiencies in neighbourhood projects and overcome silos. Existing local forums may offer available platforms to build upon, including the Peel Community Climate Partnership and Service Level Agreements/MOUs between conservation authorities and partner municipalities. These could be explored as part of a potential local pilot. Integrated asset management and secondary planning processes may also serve as existing hubs to focus the identification of integrated projects.
    - *Private sector ESG/Philanthropy* – as major corporations shift to an Environmental, Social and Governance model, they are focusing more attention on social impact investments for climate and resiliency outcomes within communities. Although the private sector may be able to participate as a funding partner with a shared stake in local climate action projects, municipalities may need a third party NGO to broker and receive funds due to potential conflict of interest.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Between mid 2019 to the end of 2020, nine municipalities have worked with TRCA to apply SNAP neighbourhood or PPG business engagement models to develop and launch projects to mobilize climate action and other sustainability initiatives. The cohort has shared lessons during four Peer Learning Workshops. A summary of the applied strategies, tools and lessons is presented in this report in the context of six project objectives. Informed by municipal partner input at the final Project Workshop and a review of recurring observations throughout the project, cross-cutting conclusions and recommendations are made for the further application of the neighbourhood and business zone approach as an effective strategy for low carbon mobilization.

Roles of the Neighbourhood/business models for Low Carbon Mobilization

TRCA's neighbourhood and business zone models apply a collaborative, multi-objective, long term systems approach to deepen engagement toward climate and other sustainability objectives. They help make the motivating business case for action, but also build the partnerships and bring resources together to advance implementation in the public and private realms (see **Figure 6.1**).

Municipal partners noted three particular strengths of these models:

- Building trusted and sustained collaborations among various municipal divisions and between the municipality and community stakeholders.
- Finding project synergies which are critical to making the business case for action, both in terms of practical needs for resource sharing and securing buy-in and participation of the un-engaged.
- Cross promotion of the need for action and available incentive programs in order to deepen engagement and uptake of other programs.

Promising low carbon implementation strategies and the neighbourhood/business contribution

Municipalities are moving forward with strategies for energy efficient building retrofits, renewable energy and low carbon transportation options. The neighbourhood/business programs offer unique strategies to complement these municipal scale initiatives by driving uptake and delivering on other sustainable objectives, making climate action appealing and efficient, in high priority areas. For example:

- Home retrofit programs – promotion through local community networks and other local project synergies; opportunities to aggregate action and attract bulk purchase discounts; profiling local champions and fostering participation through neighbourhood movements; providing follow up support as homeowners adopt sequential retrofit actions; and creating fun DIY parties and other "pitch in" events and celebrations of neighbourhood achievement.
- Active transportation – beautifying routes, improving amenities and offering local programming to encourage greater participation in active transportation.
- Business industrial process redevelopment – Business engagement, audits and systems mapping to guide carbon reducing retrofits; opportunities to aggregate a market and negotiate bulk purchase discounts; profiling industry champions and fostering industry standards; providing follow up support and friendly competitions and celebrations.

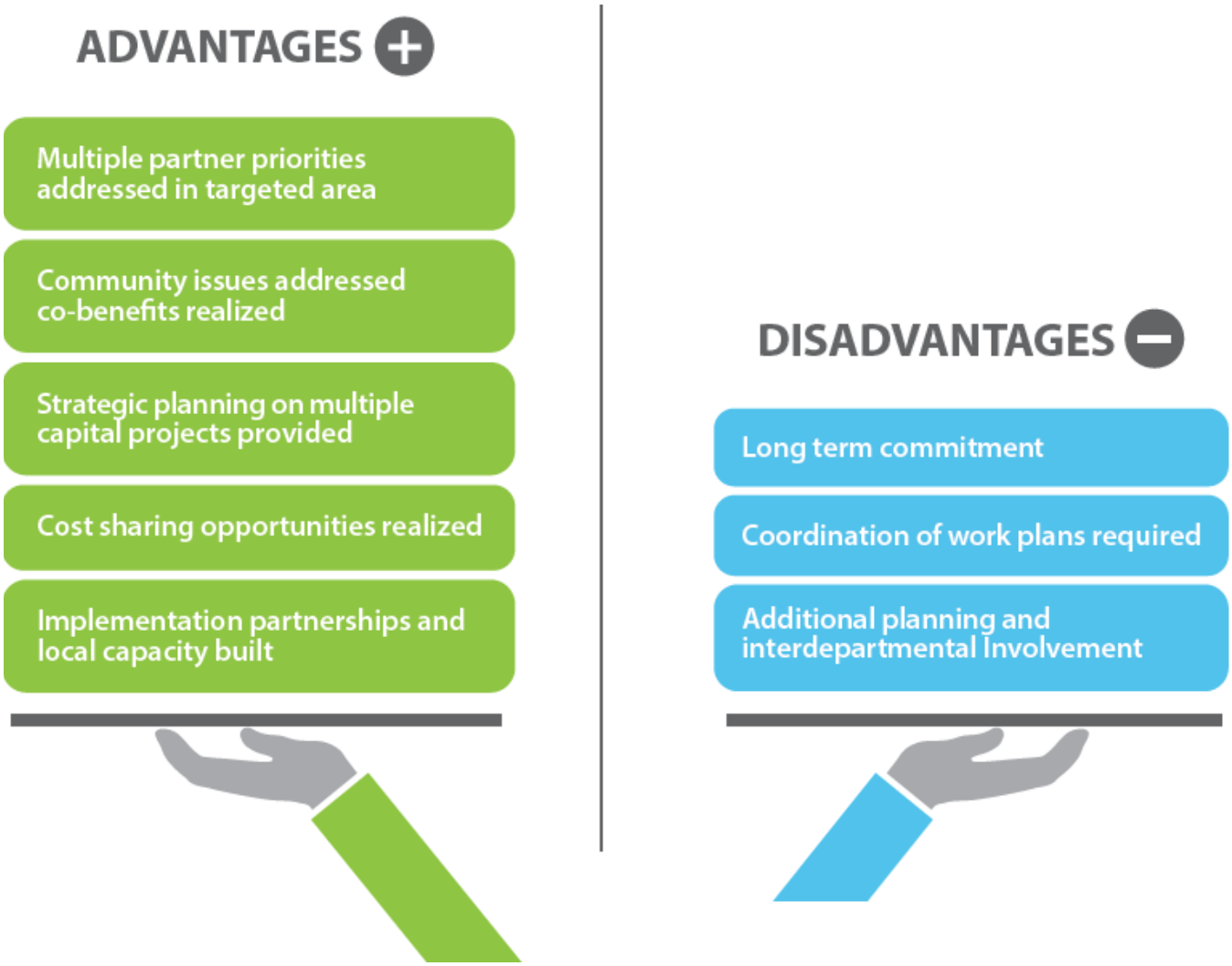


Figure 6.1 Considerations for applying the neighbourhood/business zone model

Recommendations for improved effectiveness in applying the neighbourhood/business model

The following recommendations outline next steps and actions to address the cross-cutting challenges and enabling factors for improved effectiveness in applying the neighbourhood/business model, as identified by municipal partners throughout this project (**Table 6.1**).

1. **Commit to follow through on work initiated during the Transition 2050 project –** a) Commit to continue the pilot case study projects by seeking council endorsement and dedicated implementation funding, where applicable. Track outcomes and co-benefits over a three year period to more fully assess the impact from the neighbourhood/business approach. b) Work toward establishing a multi-year workplan to scale the pilot neighbourhood/business zone program throughout strategic neighbourhoods/businesses across the municipality. Select strategic focus areas based on the screening/prioritization process and incorporate other recommendations arising from this project into the program design. Dedicate staff who can facilitate

integrated approaches among departments and external partners. – ***Lead responsibility: Transition 2050 municipalities; TRCA for project roles supporting municipalities within its jurisdiction*.**

2. **Apply climate and co-benefits measurement and reporting practices –** Develop evaluation frameworks focused on measuring and reporting greenhouse gas emission reductions and other co-benefits associated with neighbourhood/business based projects. Tracking co-benefits delivered alongside climate action is part of the business case, and more rigorous target setting and reporting may provide a more informed context for program resourcing and progress at achieving strategic goals. ***Lead responsibility: Municipalities and TRCA.***
3. **Designate an Integrator** – Recognize and support the critical role of a backbone organization (such as a conservation authority, a well-established local NGO and/or dedicated staff) who can broker multi-stakeholder partnerships and foster collaborative action planning, project development and long term implementation as part of neighbourhood and business programs. This backbone integration function creates the space for residents, local government, business and other stakeholders to identify shared priorities, develop integrated projects to a fundable stage and create the basis for cost sharing strategies that can leverage other innovative funding. Having a credible external third party can ensure fair consideration of all stakeholder interests. ***Lead responsibility: Municipalities.***
4. **Foster an organizational culture to support collaborative approaches and take risks –**Introduce strategies to foster an improved collaborative culture, bring innovative ideas forward and help reduce/mitigate risk (e.g. common performance metrics that cut across divisional mandates, reward staff for bringing forward innovative ideas, infuse 'regular teams' with new ideas, create space to test new approaches, partnerships with academia/NGOs to test new ideas, etc.). Collaborations among municipal departments and with external partners (conservation authorities, NGOs, residents, businesses) can result in better projects that can deliver on more objectives, offer efficiencies and gain greater support. Furthermore, collaboration with local leaders is critical to gaining local knowledge and building their capacity to help lead action. ***Lead responsibility: Municipalities, TRCA.***
5. **Develop and pilot an integrated funding model –** Develop and pilot an integrated funding model to support the required up-front partnership brokering and integrated planning for climate action and revitalization projects that achieve co-benefits. Work in collaboration with municipal partners and others by building upon existing mechanisms to the extent possible. Consideration should be given to pilots within single tier and two-tier municipal settings to ensure mandates for environmental, social and economic objectives are brought together. Models such as the Joint Benefits Authority offer a potential means to pool funding necessary for developing integrated projects/programs to a fundable stage that can kick-start implementation. Climate action does not have to be an "add on" while there are opportunities to leverage existing budgets to act. ***Lead responsibility: TRCA and Municipalities; FCM (potential financial and advisory support).***
6. **Continue knowledge sharing among a neighbourhood/business community of practice –**Facilitate peer learning and collective approaches to act on the other strategic recommendations arising from this project by seeking opportunities to reconvene and support the Transition 2050 municipal partners and others over the next 1-4 years. ***Lead responsibility: TRCA; FCM (potential financial and advisory support).***

Table 6.1 How recommendations support the six success factors

	Six Success Factors for the Neighbourhood / Business Zone Model					
Recommendations	**1. Supportive Policy**	**2. Collaboration & Integrated Planning**	**3. Innovation & Problem Solving**	**4. Co-benefits Evaluation**	**5. Scaling**	**6. Supportive Funding**
Follow through pilot program	✓	✓	✓	✓	✓	✓
Track co-benefits	✓	✓	✓	✓	✓	✓
Designate external integrator	✓	✓	✓	✓	✓	✓
Collaborative culture	✓	✓	✓	✓	✓	✓
Integrated funding	✓	✓	✓	✓	✓	✓
Knowledge sharing	✓	✓	✓	✓	✓	✓

Summary – A timely approach

COVID-19 economic recovery, climate change impacts, social justice and inclusion – these are significant issues rooted in the locally-lived daily experiences of residents and businesses. The neighbourhood and business zone approach brings people together to design local solutions for lasting impact at the scale where implementation happens. Bringing people together creates more cohesive, inclusive communities, which are better able to help each other during difficult times. Integrated local solutions can deliver on environmental, social and economic objectives through green/blue infrastructure, skills development, local job opportunities and cost savings for homes and businesses. These actions can contribute to a green COVID recovery that advances climate action, while building more resilient neighbourhoods and business communities, better prepared for the next emergency.

APPENDIX 1 – MUNICIPAL CASE STUDIES

Municipality	Case Study
Within TRCA's Jurisdiction	
City of Brampton	Bramalea SNAP Action Planning and Tower Resilience and Efficiency Initiative
Town of Caledon	PPG Business Engagement Pilot: GreenBiz Caledon
City of Markham	Integrated corporate asset management
City of Mississauga	Burnhamthorpe SNAP Tower Demonstration and Webinar Series
City of Vaughan	Thornhill SNAP Action Planning and Pilot Home Retrofit Program Implementation
External to TRCA's jurisdiction	
City of Hamilton	North End Neighbourhood SNAP and resident private tree planting pilot
City of Guelph	ISO 50001 Energy Management System Implementation
City of London	London Business Community Low Carbon Program Development
City of Peterborough	Kawartha Heights SUN/SNAP – Home Energy Renovation Video Series

City of Brampton
Bramalea SNAP Action Planning and Tower Resilience and Efficiency Initiative
Case Study Overview

Project Focus	SNAP neighbourhood action planning and tower resilience and efficiency			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- Demonstrate implementation of actions identified in the Brampton Grow Green Environmental Master Plan (2014), including but not limited to:
  - L 22: Expand the Sustainable Neighbourhood Retrofit Action Plan (SNAP) program to existing neighbourhoods across the City in conjunction with CVC, TRCA and Peel.
  - L 24.4: Assess opportunities to use roofs, terraces and/or balconies for urban agriculture purposes.
  - L 25: Develop policies to encourage private property community gardens in areas of high density, in collaboration with institutions, etc.
  - E 5.4: Identify high-energy use communities and develop local action plans to reduce energy use.
  - E 5.5: Develop a Residential Retrofit Program to assist homeowners with energy efficiency retrofits, including Local Improvement Charges.
- Develop and deliver neighbourhood scale projects that support the goals and targets of the City of Brampton's Community Energy and Emissions Reduction Plan. The CEERP identifies the Bramalea area as a hot spot for energy use and GHG emissions. It also calls for the following actions:
  - Identify opportunities within SNAPs to implement community retrofit programs and/or related projects.
  - Implement the City's One Million Trees Program.
  - Develop an engagement strategy to raise the awareness of energy saving opportunities.
- Pursue collaborations with community groups and other organizations to build awareness of the CEERP

Rationale for testing the neighbourhood/business zone model

- Identifying and achieving co-benefits of infrastructure/renewal projects
- Cross collaboration; multi-stakeholder approach
- Improving engagement
- Building relationships with and between external groups, residents
- Mobilize residents, businesses, organizations/ institutions into coordinated action
- Cost efficiencies
- Funding opportunities
- Knowledge, skill, resource building and sharing

Project partners

- Toronto and Region Conservation Authority
- CAPREIT
- Peel Living
- City of Brampton (Environmental Planning, Parks Community Programs, Strategic Communications)
- Association for Canadian Educational Resources (ACER)
- Ecosource

Project Overview

Purpose

- With over a dozen residential towers and one townhouse complex located in the Bramalea SNAP, a majority of households in this area of Bramalea are apartments in multi-unit residential buildings (MURBs).
- The K-Section alone contains a cluster of twelve towers within four blocks, built during the post-war tower development boom of the 1960s and 1970s.
- They have a significant energy impact. Second only to transportation, the residential sector represents a significant proportion of Brampton's energy use (26%), greenhouse gas (GHG) emissions (21%) and water consumption (73%).
- Residential retrofits are a critical component in achieve the energy and GHG emission targets identified in the Brampton's Community Energy and Emissions Reduction Plan (2020)
- The purpose of the Tower Efficiency and Resilience Initiative is to encourage and facilitate the delivery of revitalization work that increases resilience and energy and water efficiency, while also helping address local health and well-being priorities and achieve community benefits within the tower community.

Objectives

- Growing, preparing food
- Active, healthy living
- More trees, green infrastructure
- Connections between towers, shared uses
- Eco-construction methods
- Climate resilience and building efficiency
- Community building, local employment, skills training

Approach

- The Bramalea SNAP Action Plan is made is made up of six themes, each with their own integrated initiatives
- Home and Building Efficiency and Resilience is one of these themes, and the Tower Resilience and Efficiency Initiative a catalytic action under this theme
- Co-design workshops, community surveys, and engagement of tower owners have identified a range of possible features across tower properties.
    - They include greening activities such as tree planting, perennial flowers and pollinator gardens, rainwater capture and use, parking lot greening, solar panels, and energy efficient lighting.

    - Urban agriculture activities were a significant interest to many community members, including community gardens, container or balcony gardens and planter boxes, roof top gardens.
    - Desired outdoor amenities include fitness equipment for all ages, natural playground components, a bike hub, and gathering spaces such as outdoor amphitheater, seating and tables, shade structures, and outdoor BBQ space.
    - Suggested community programming included on-site events, community boards, and children's programs. There was also strong interest in safe pedestrian crossings outside the buildings and making stronger connections to nearby park space.
    - This initiative would also include building emergency preparedness measures, helping increase resilience to climate-related vulnerabilities like flooding and heat waves. Potential measures identified from other related tower initiatives include tenant communications, emergency plans, elevator safety, back-up generators and alternative energy sources.
- TRCA worked with tower owners Peel Living and CAPREIT and other local collaborators to co-develop Tower Revitalization Concept Plans, and facilitate implementation partnerships for five buildings within the SNAP neighbourhood.
- TRCA is providing dedicated project management to this initiative, and collaborating with external groups to implement.
- Building owners were engaged first, and they were supportive of TRCA engaging their tenants in the broader action planning process.
- The TRCA and City worked with ACER, a local non-profit, to undertake tree planting on tower grounds with the assistance of community volunteers, as well as a community planting in a local park through funding provided by Arbour Day Foundation/TD Green Spaces Grant
- Another local non-profit implementation partner, Ecosource, has also been awarded funding through Community Investment Program 2020 Change Fund for "Grown in Bramalea" to support work on community gardens, for food production to increase food access.
- Ongoing discussions and engagement will be undertaken with the tower owners, tower residents, and other stakeholders to drive forward additional projects that will bring the Tower Concept Plans into reality.

"At CAPREIT we pride ourselves on our ability to improve the resident experience. The Bramalea SNAP initiative will allow us to continue to build on the resident experience for our building communities and help develop a lasting resident and community relationship and a sense of pride. We find it important to giveback to our community and our residents, as it allows us the opportunity to create memorable experience."

- Associate Director, Operations, CAPREIT

Expected Outcomes and Evaluation Approach

Outcomes

- Increase urban forest canopy cover in Bramalea SNAP from 17% (39.7 ha) to 27% (60.8 ha) by 2040
- Increase household energy efficiency to support City target of 35% energy efficiency gain by retrofitting 80% of existing homes by 2041
- Increase household water efficiency to support City target of 34% gain from 2016 levels by 2041
- Increase of program participants reporting physical and mental well-being
- Increase of program participants reporting physical activity during leisure time

- Increase of participants in SNAP learning activities who indicate that they have improved their likelihood of finding employment through those activities
- Increased satisfaction levels in neighbourhood features
- Increase in the number of interesting spaces for people to gather

Evaluation Approach
- Participant surveys
- Program participation tracking
- Utility data
- Mapping

Timing
2020
- Concept plans for 2 towers (drafted)
- Property owner / tenant engagement and relationship building
- ACER tree planting on tower properties
- Analysis of GHG, energy, and cost savings through low carbon options

2021 - 2022
- Grown in Bramalea – Community Gardens at two towers (Ecosource) this program is for one year and will install community garden in one tower property; will continue to secure additional funding for the second tower.
- Confirm phased programing, staffing/resourcing, funding, community building
- Green infrastructure – pollinator gardens, outdoor classroom and gathering space
- Active living - fitness stations for adults
- Supportive programming (harvest sharing, knowledge and skills building, focus on children and seniors, biking, walks)
- Green Champions

2023-2025
- Climate resilience and building efficiency (e.g. energy and water efficiency, renewable energy)

Source of Funding and Resources
- Arbour Day Foundation/TD Green Spaces Grant (tree planting)
- Community Investment Program 2020 Change Fund (community garden)
- Toronto and Region Conservation Authority (in-kind staff time)
- Tower owner planned projects
- Other funding sources TBC

Innovations being tested

- Replication of SNAP's collaborative model for tower revitalization
- Working with tower owners to leverage planned projects to achieve co-benefits in the tenant community

Noteworthy lessons and outcomes

- Neighbourhood-scale engagement is not enough, you need deeper engagement
- Highlight and build on past relationships and successes to drive future projects
- Outdoor work/landscape related projects are an easier sell, and quicker wins

- Having a backbone organization to act as main partnership broker is critical
- Critical to understand property owner interests, align with their plans
- Developing a cross-cutting tower site concept plan is very helpful to use as basis to identify indoor and outdoor projects, confirm owner interests in short, mid, long term actions, and align work plans. It also is helpful in acting as a guiding plan for multi-stakeholder work
- Focus on quick start projects to help kick start implementation, make new partnerships, connect with tenants and draw out community leaders.
- Working with local NGOs is a vital part of getting the work done. They are very passionate and help get the work done, however, it is helpful to have clear set of expectations on both ends.
- Property owners have been very supportive of these projects; there has been no real cost to them.

Town of Caledon
GreenBiz Caledon
Case Study Overview

Project Focus	PPG Business Engagement: GreenBiz Caledon pilot			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- Resilient Caledon Community Climate Change Action Plan – identifies actions to work with local businesses on energy retrofits, process/operation improvements, resiliency
- Economic Development Strategy – support businesses to save energy and build resiliency in their operations

Rationale for testing the neighbourhood/business zone model

- Deepen engagement with the business sector
- Approach to get more businesses to save energy and reduce GHG emissions

Project partners

- Town of Caledon – Economic Development (EcDev), Communications
- TRCA/PPG
- Community groups – EcoCaledon

Project Overview

Purpose

To engage businesses in practical ways to reduce energy and greenhouse gas emissions, and improve resiliency in their operations.

Objectives

Raise awareness and build capacity among businesses; reduce energy use and GHG emissions in the business sector.

Approach

- Developed overall project scope and workplan in partnership with PPG and EcDev; strong integration between Energy and Environment, and Economic Development divisions
- Launched recruitment effort – direct emails from EcDev, social media, website
- Held regular project team meetings to keep on track
- Hosted 3 workshops with 10 participating businesses focusing on different areas of sustainability, providing businesses with an opportunity for knowledge sharing and peer learning
- Engagement with businesses to understand needs and interests, and help them develop personalized action plans

- Implementation of some sustainability actions in the short term; more in the longer term – need to keep ongoing contact with businesses

Expected Outcomes and Evaluation Approach

- **Enhanced knowledge and capacity among businesses** – administer a survey at the end of the program to gauge their experience with the project and willingness/ability to take on sustainability measures
- **GHG emissions reductions** – longer term evaluation pending implementation of specific projects and data sharing from the business
- **Reduced costs for businesses** – longer term evaluation pending implementation of specific projects and data sharing from the business

Timing

- Engagement and action plan development between September and December
- Some implementation of projects possible between January and March; most implementation will be longer-term

Source of Funding and Resources

- No direct funding provided to participating businesses, but a number of potential funding sources that businesses will be kept aware of:
  - Town of Caledon – Community Improvement Plan program (available for eligible businesses)
  - Utility incentive programs – Save On Energy, Enbridge, Hydro One, etc.
  - NRCan – funding for EV charging infrastructure

Innovations being tested

- Potential opportunity to work with Innovate My Future youth climate program to support a business energy audit and retrofit
- New collaboration between Energy & Environment and Economic Development Divisions at the Town of Caledon – strengthened relationship has helped spur other collaborations

Noteworthy Lessons and Outcomes

- Town established GreenBiz Caledon, a consortium of nine companies in their Township, and with each company established a list of planned first year retrofit and engagement initiatives for energy, water and waste.
- Nine companies have established a comprehensive list of sustainability priorities and actions that they'd like to pursue as part of the founding group of GreenBiz Caledon. This gives Town of Caledon staff an ability to scale the capacity of the pilot into a long-term collaboration with Partners in Project Green.
- Diversity of companies engaged will be part of the scalable plan long-term. This will include further participation by the founding group of companies along with more small-to-medium companies and national/multi-national corporations. Town of Caledon staff are being encouraged to identify and pursue scalable funding capacity for the pilot program to continue long-term.
- Effective integration of two Town divisions for program design and outreach, which has already led to further internal collaboration.

City of Markham
Integrated Corporate Asset Management
Case Study Overview

Project Focus	Operationalization of integrated project approaches as part of corporate asset management			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

Corporate asset management strategy

Rationale for testing the neighbourhood/business zone model

Project partners

City of Markham departments (Sustainability and Asset Management (lead), Environmental Services, Operations and Planning)
TRCA

Project Overview

Innovations being tested

Proposed application of the screening process to identify potential integrated infrastructure projects and candidate neighbourhood-based initiatives.

Explore opportunities for operationalizing integrated approaches as part of corporate asset management program.

Noteworthy Lessons and Outcomes

- A vacancy in a critical staff position has significantly delayed this project and caused competing timelines to meet legislative requirements for delivery of a corporate asset management strategy. Proposal to consider applying the screening process as second phase of the City's corporate asset management strategy development.
- Internal integration staff champion is essential to foster interdepartmental collaboration.

City of Mississauga
Burnhamthorpe SNAP Tower Demonstration & Webinar Series
Case Study Overview

Project Focus	SNAP neighbourhood and PPG business engagement: Launch of a multi-unit residential (MUR) tower revitalization demonstration project as a foundation for the engagement of other MUR property owners and managers in educational webinars and subsequent sustainability and low carbon actions.			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus		Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

This project has the potential to address several actions in the City of Mississauga's Climate Change Action Plan (CCAP). These include:

- Encourage the use of low carbon heating and cooling technologies (e.g., heat pumps) for space and water heating and cooling (Action 6-4)
- Promote building envelope upgrades (e.g. wall insulation, energy efficient windows) in residential, commercial, and industrial buildings (Action 6-5)
- Work with industry and businesses to support initiatives to decrease emissions and enhance resilience (Action 13-5)

This work also supports other City strategies and programs including Mississauga's stormwater credit program and Mississauga's Housing Strategy. It also supports Region of Peel objectives including those of the Climate Change Master Plan and Water Efficiency strategies.

Rationale for testing the neighbourhood/business zone model

This project was initially identified by the Burnhamthorpe SNAP Action Plan developed in 2015, responding to the need for residential building resilience and food security in the tower community. The Burnhamthorpe neighbourhood contains a cluster of over 45 older high-rise multi-unit residential buildings built during the post-war period, many in need of retrofit. At the same time, this area is home to many new immigrants and low-income households. The tower demonstration is part of a broader neighbourhood-scale tower program aimed at engaging tower owners and managers in sustainable action, uncovering shared tower retrofit opportunities, securing local implementation partnerships, and encouraging peer learning.

The tower demonstration project was identified in response to tower owner insights, indicating the need for an incentive to capture attention and one-on-one help in navigating through available programs and opportunities. The results and partnerships developed through the tower demonstration project will support increased uptake in the neighbourhood and provide lessons for the broader webinar series.

As for the webinar series, the City wants to build on the Tower Demonstration project, and educate, inform, and drive action among other MURB property owners and managers. The ultimate goal of this work is to develop a municipal scale tower renewal program.

Project partners

- TRCA: Sustainable Neighbourhoods, PPG
- City groups: Environment, Planning & Building, Forestry, Active Transportation
- Region of Peel groups: Public Works
- Local implementation partners: Ecosource, Dixie-Bloor Neighbourhood Centre

Project Overview

Neighbourhood Selection and Action Planning Context (preceded Transition 2050)
This project was initially identified by the Burnhamthorpe SNAP Action Plan developed in 2015 in collaboration with TRCA, City of Mississauga, Region of Peel, local organizations and residents. This older neighbourhood was selected based on the presence of aligning partner priorities (i.e. stormwater management and LID, energy management, natural heritage and urban forest, active transportation), and the opportunity to showcase retrofits across a diverse land use mix. The Burnhamthorpe SNAP Action Plan supports environmental resilience and active lifestyles in three major areas of focus: (1) Residential Housing Resilience through lot level stormwater and energy actions; (2) Food-Tower Connection for food security and greater neighbourhood connections through local food production; and (3) Occupying the Street by creating greener, more vibrant streets over time.

Following on-the-ground demonstration projects and low-density residential programming from 2015-2017, SNAP partners scoped and launched a one-window tower program in 2018 to increase tower sustainability, climate change resilience and GHG mitigation in older multi-unit residential buildings (MURBs). Guided by insights from local tower owners and industry advisors, the multi-objective program seeks to increase water, energy and landscape retrofits and community co-benefits. Program components include one-on-one meetings with towers, the use of strategic tower demonstration projects to showcase action, and neighbourhood-scale partnerships and initiatives.

As part of the tower demonstration project, a strategic selection process was launched inviting all eligible towers in the Burnhamthorpe SNAP neighbourhood to apply. A Selection Committee with representatives from a cross section of public and private partners conducted an evaluation of applications. Starlight Investments' tower properties were selected based on the level of owner interest and green leadership, and potential for the properties to showcase innovative multi-objective retrofits.

Purpose
The ultimate goal for both the Tower Demonstration project and webinar series is to spur retrofits, particularly energy efficiency and resilience retrofits, in older MURBs. This will help the City reach its goals in regards to GHG reductions and increased resilience.

For the Tower Demonstration, the focus of this work was indoor and outdoor energy and water efficiency retrofits, green infrastructure, urban agriculture, and supportive tenant projects and programs. The project was intended to build on the property owner's planned projects, priorities, and interests, as well as to integrate input from a variety of technical experts, implementation partners with shared interests, and tenants. Specific objectives included:

- Showcasing innovation (i.e., efficient technology and/or behaviour change)
- Testing new technologies and/or processes
- Demonstrating a business case for retrofits, co-benefits, and community programming
- Creating new and/or strengthening existing implementation partnerships

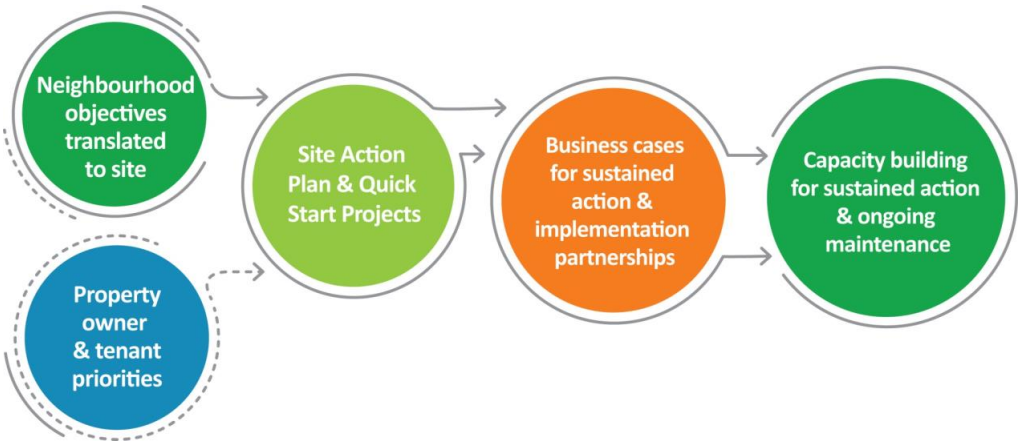
Building on the demonstration project, we plan to engage property owners and managers in a webinar series that will provide information on energy and resilient design and retrofits. Specific webinar series objectives include:

- Increase awareness about energy and resilient design and retrofits among property owners and managers of MURBs
- Understand perceived barriers to implementing retrofits
- Connect owners and managers to programs and other resources that may assist in implementing retrofits
- Build relationships among City staff, PPG, and property owners and managers of MURBs
- Move projects forward

Approach

For the Tower Demonstration project, the team has used SNAP's approach to collaborative MURB revitalization, as illustrated by the figure below.

SNAP's Approach to MURB Revitalization



The approach has involved the following:

- **Incorporating lessons learned and best practices –** the team sought out the experiences of industry advisors as well as other SNAP team members that have led similar work, including the San Romanoway project in Black Creek SNAP.
- **Blending neighbourhood objectives with property owner plans –** Although informed by the broader neighbourhood objectives identified through the SNAP action plan, the project also put a focus on property owner and tenant interests. Understanding property owner planned projects and interests has helped identify shared interests.
- **Tenant engagement –** Tenant engagement was also undertaken, with the goals of identifying future on-site projects and programming, understanding top of mind interests and concerns, and

connecting tenants with available local programs. The team worked closely with the property management to promote and deliver the event.

- **Multi-objective scope –** The project took a comprehensive approach to identifying climate action by blending owner, tenant and partner interests. On-site energy, water and irrigation assessments were undertaken to help inform potential retrofit projects. Top of mind tenant interests in urban agriculture, outdoor amenities and additional programming were also considered.
- **Multi-stakeholder –** The process has been highly collaborative, working with multiple partners, including the property manager, various City and Region staff, non-profit groups, and the private sector, in order to identify and implement projects. A multi-stakeholder workshop was held to bring diverse groups together to discuss the project, share best practices, and identify immediate implementation opportunities.
- **Implementation partnerships –** a key component of the work was connecting the property owner with local implementation partners to help build on-site projects and undertake further tenant engagement and programming for long term implementation capacity.

For the webinar series, the approach continues to evolve, but will likely rely on existing networks to engage property managers and owners in the webinar series.

Expected Outcomes and Evaluation Approach

For the Tower Demonstration project, outcomes may include:

- Improved water efficiency
- Improved energy efficiency
- Improved waste management
- Reduced GHGs
- Improved stormwater management and reuse
- Improved natural systems and urban forest
- Increased active living
- Increased food production

For the webinar series, outcomes may include:

- Increased awareness among property owners and managers about energy and resilient design and retrofit, and available program supports and incentives
- Increased uptake among these owners and managers of programs and other resources that assist in implementing retrofits
- City staff and TRCA connected with property owners and managers

In terms of evaluation approach, we have adopted the framework developed by the University of Waterloo, which focuses on outputs, outcomes, and impacts at the project, neighbourhood, and municipal levels. Impacts may also extend beyond the municipality. It will therefore be important to work closely with our partners and others to share program tracking results.

Example indicators associated with the tower demonstration and webinar series are as follows:

Tower property

- Number of tenants engaged
- Number of households participating in programming (i.e. balcony gardens/microgreen kits)

- Number of retrofit actions undertaken on MURB property (i.e. system improvements, gardens built, trees installed)
- Number of community gardens installed

Neighbourhood

- Number of tower properties engaged
- Number of relationships brokered between towers and local implementation organizations

Municipal

- Number of property owners and managers who participate in each webinar
- Number of property owners and managers who take advantage of retrofit program(s) or other resources
- Decreased GHG emissions from webinar participant buildings
- Increased number of relationships between City staff and property owners and managers

Timing

For the Tower Demonstration project, implementation of several urban agriculture activities has been completed including distribution of microgreen kits and installation of raised garden beds. We are also working with the property owner on each of the recommended energy, water and irrigation actions to identify barriers and support action. We anticipate additional activities before the end of the T2050 project period (March 2021).

For the webinar series, we are exploring a delivery partnership which may enable presentation of the first webinar by the end of March 2021.

Source of Funding and Resources

City of Mississauga work is supported by in-house staff and existing budgets. TRCA work is supported by funding from Federation of Canadian Municipalities T2050 grant, as well as Region of Peel Capital budget.

Innovations being tested

Our objectives for the Tower Demonstration project include showcasing innovation (i.e., efficient technology and/or behaviour change) and testing new technologies and/or processes.

Noteworthy Lessons and Outcomes

Project Outcomes

The following provides a summary of project outcomes so far:

- Multi-objective recommendations for three older towers, ranging from on-site operational improvements in energy, water and irrigation systems to broader recommendations for the tower owner's portfolio of buildings across the GTA
- Development of a summary list of up to date programming that towers may participate in
- Early implementation action projects, including 2 accessible garden beds installed and 82 households receiving microgreen indoor growing kits
- 5+ relationships brokered between towers and local implementation organizations (i.e. Starlight, Ecosource, Mississauga, Peel, consultants)
- 100+ tenants engaged in summer event to identify a community action project and connect them with other local community programming
- 40+ participants engaged in multi-stakeholder workshop sharing best practices in MURB revitalization and scoping implementation projects
- 30+ towers engaged as part of neighbourhood tower program and demonstration selection process
- City relationships established with advisors to help scope the webinar series

Tower Demonstration Project Lessons

The following high-level lessons are based on input from Conservation Authority and municipal staff as well as a debrief with the Tower manager Starlight Investments.

- Achieving mitigation and adaptation action on MURB properties in the city continues to be a major interest of public and private partners and can also support Conservation Authority watershed objectives. There is interest in scoping the City's role in supporting this work and scoping a broader program.
- Tower owner was pleased with the process, indicating they would not change anything moving forward. They were surprised at the number of tenants who got involved, how smoothly the first implementation project roll-out was, and how minimal Starlight effort was needed for successful execution.
- Tower owner found tremendous value in the tenant engagement. They indicated it was much needed during an uncertain time in the world and helped explore the idea of food security.
- Partnerships with local organizations (i.e. Ecosource) to undertake quick win implementation projects were a critical part of the project and were of great value to the tower owner.
- Postponement of a previously planned infill project on the tower sites impacted the tower owner's ability to undertake retrofits to the older towers on-site. Tower owner indicated that other major reasons for not undertaking more action included COVID-19 and budget.
- The timing of working with the tower owner on retrofit recommendations is important. Many of the operational system improvements recommended by the energy and water assessment were already being acted upon, and the low hanging actions were recently undertaken.
- Some of the energy assessments undertaken may be of more value to a smaller company with less in-house capacity to do the work themselves. However, the complete multi-objective project package with additional scope and tenant engagement does provide value for a large company like Starlight.
- The tower demonstration project has been successful in identifying broader initiatives at other buildings within Starlight's building portfolio.

- Working with a tower owner at the neighbourhood-scale supported adaptability and flexibility in the project. Given they own several buildings within the neighbourhood, we were able to expand the project to three sites when challenges were presented at one.
- Local partnerships and community engagement insights secured through the neighbourhood SNAP Action Plan proved helpful to the tower demonstration project (i.e. both during action planning process and in the implementation years following). Considering the neighbourhood scale continues to offer a valuable lens to identify partner collaboration opportunities and a channel to contribute to broader community priorities.

City of Vaughan
Thornhill SNAP
Case Study Overview

Project Focus	SNAP neighbourhood: Action planning for overall neighbourhood sustainability and focus on residential retrofits.			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- City's Service Excellence Strategic Plan includes a key activity to "build the low carbon economy and a resilient City".
- Vaughan Municipal Energy Plan (MEP) identifies residential energy intensity as high priority for GHG reductions. Residential building sector in Vaughan is the largest consumer of energy (37% in 2013) and emitter of GHGs (35% in 2013). MEP stipulates a GHG reduction target of 22% decrease from business as usual from 2016 to 2031.
- Thornhill area has highest energy intensity in City (0.597 GJ/m2; highest in the City based on 2013 data)
- Demonstrate local implementation of Green Directions Vaughan, community sustainability plan
  - Local Improvement Charge pilot – Action within GDV to undertake feasibility study to support energy conservation retrofits.
  - SNAP – Action within GDV to implement SNAP to improve placemaking, contribute to a healthy environment and promote a strong community, and work on neighbourhood resilience to climate change.
- >7 other strategic plans (see Project Overview)

Rationale for testing the neighbourhood/business zone model

- Demonstrate implementation of integrated solutions that are customized to the specific neighbourhood characteristics and demographic, to increase sustainability and improve climate resiliency
- Demonstrate the integration of sustainability into City business (core functions, business/budget plans and Master Plans)
- Showcase initiatives/innovations that demonstrate the alignment of financial sustainability and environmental sustainability
- Deepen engagement and build capacity in the local community to help the City meet environmental goals and to find efficiencies by cross-promoting various programs within the neighbourhood

Project partners

- City departments – Parks Planning, Parks Development, Infrastructure Delivery, Economic & Cultural Development, Policy Planning & Environmental Sustainability, Facility Management, Infrastructure Planning & Corporate Asset Management, Environmental Services, Parks, Forestry and Horticulture Operations
- Local ward Councillor

- TRCA
- Community partners - SpringFarm Ratepayers' Association, various resident volunteers, others are still being explored (Uplands Golf Course, schools in area)
- Other key stakeholders - Gallanough Resource Centre, DANI, REENA, Society for Preservation of Thornhill

Project Overview

Purpose:

The ultimate goal of this project is to spur climate action, while also improving overall sustainability and resilience in the Thornhill neighbourhood.

Objective:

The objective of this project is to develop a neighbourhood Action Plan for the Thornhill community which will seek to encompass multi-objective policy alignment and demonstrate the implementation of shared municipal and agency objectives at the neighbourhood scale, including: Green Directions Vaughan and the City's Municipal Energy Plan, Active Together Master Plan, Pedestrian and Bike Master Plan, Parks Redevelopment Strategy and Creative Together Cultural Plan; TRCA's Don Watershed Plan; and the Region of York's Long-Term Water Conservation Strategy, Sm4rt for Living Plan and 2019 - 2038 Management Plan for York Regional Forest.

Approach:

Neighbourhood Screening and Selection

In 2018, TRCA worked with multiple departments at the City of Vaughan and the Regional Municipality of York (York Region) to apply a neighbourhood screening process, to identify candidate communities within the City that would be well suited to the implementation of a SNAP project. The screening process was designed to support a collective, proactive approach to a growing number of complex issues including: aging infrastructure and asset management needs; climate vulnerabilities and risks; watershed regeneration and urban renewal needs.

As an important first step in the screening process, a mapping framework was developed to organize partner priorities into a comprehensive set of service area themes reflecting sustainable community attributes. This framework guided the multi-objective analysis and included use of data layers which represented planned projects and known vulnerabilities across various departments and organizations. The exercise comprised dividing the City into 25-hectare hexagon units as a way to standardize each data layer. Equal weighting was assumed for each data layer, and then a "multiple hits" analysis was applied to highlight areas where many partner projects or vulnerabilities were concentrated. Through this process a number of "areas of interest" were identified and a "deep dive" analysis of these areas was undertaken by the City, the Region and TRCA to select the preferred neighbourhood. A summary of the key technical priorities identified through this exercise for the Thornhill neighbourhood, include:

- Flood Vulnerable Area
- High priority for low impact development (LID)
- Sensitive Target Fish Species
- Highest energy usage and intensity in the city
- High annual water consumption
- Urban heat stress

- Aging population and urban growth
- Aging park infrastructure and changing neighbourhood demographics
- Areas of concentrated disadvantage
- Planned capital projects

Project Governance
The Thornhill neighbourhood Action Plan was developed using a highly collaborative approach that brought together key municipal and TRCA technical objectives with community priorities. This approach helped to achieve co-ownership of the Action Plan among key stakeholders and the community. The project was co-managed by key partners, including ten departments from the City of Vaughan and four Divisions from TRCA, through a Project Management Team (PMT). The multi-divisional PMT guided decision-making throughout the action planning process and met at key milestones to debrief on progress, review deliverables and confirm next steps. The community, including residents, institutions, NGOs and other local stakeholders participated actively in the development of the plan through a robust engagement process that included innovative co-design activities. This collaborative approach allowed for identification and exploration of shared ideas and solutions.

Action Planning Process
The Thornhill SNAP action planning process followed a phased model which promoted multi-stakeholder engagement at each of the following three phases:

Phase 1 – Scoping issues, stakeholders and interests
Phase 2 – Defining vision, motivational themes and action planning concept areas
Phase 3 – Co-creating the Action Plan

Local knowledge and input were integral to revealing important community characteristics, not apparent in the neighbourhood's built form, that contribute to local culture and values. Robust public engagement, along with the technical analyses carried out, helped inform the recommended priority projects and initiatives that are outlined in the neighbourhood Action Plan.

Neighbourhood Vision
The Thornhill SNAP Action Plan reflects the culmination of technical analyses, community and stakeholder engagement, and planned capital works. When implemented, the proposed actions, projects and programs will help achieve the following neighbourhood vision:

> *A green, walkable and bikeable neighbourhood that is prepared for extreme weather events and provides connected amenities and where nature thrives around sustainable homes and buildings and where public spaces are interesting places where residents meet each other while staying active and neighbours celebrate together and support each other.*

Neighbourhood Action Plan
The Thornhill SNAP is a comprehensive action plan for neighbourhood resilience and revitalization that integrates local community interests, sustainability objectives and climate adaptation strategies under the overarching theme of "historically rich, culturally diverse, green and connected".. This motivating theme will be used as a strategy to guide deeper engagement for action.

The Action Plan is centered on three integrated projects that will each be implemented through a series of initiatives. The three integrated project areas include:

1. **Connected Places, People, and Ecosystems** – green infrastructure, active transportation, parks revitalization and other related community programming.
2. **Residential Retrofit Program** – addressing retrofit priorities and homeowner priorities in residential building stock
3. **Greening and Humanization of Multi-unit Residential, Institutional and Commercial Properties** – addressing 15 institutional properties, 18 towers and 600 registered local businesses.

In addition, three Signature Project designs featured in the plan showcase revitalization concepts informed by multi-stakeholder input. They are aligned with planned capital projects, which will provide a mechanism for leveraging other resources to support implementation. By integrating community interest, these exciting projects demonstrate how planned capital initiatives can achieve greater co-benefits. They are expected to garner increased community support, which will serve as a catalyst for action on these and other collaborative projects.

Residential Retrofit Program

Of the three integrated project areas defined in the action plan, the Residential Retrofit Program (RRP) is the focus for the Transition 2050 pilot implementation project. The RRP will address sustainability and resiliency objectives in the Thornhill neighbourhood, as well as address the top priorities identified by homeowners through SNAP engagement.

Following the SNAP model, the Residential Retrofit Program will be:

- Multi-objective, including environmental and resiliency themes (i.e. energy efficiency/renewables, electric vehicles, water efficiency, SWM, eco-landscaping, flood prevention, waste management) and social themes of interest to the community (i.e. aging in place, emergency preparedness, etc.), to ensure a broad basis for engagement and impact.
- Customized to address specific retrofit needs for the neighbourhood's particular building stock, to be relevant.
- Customized to address Thornhill residents' priorities and main obstacles for implementing renovations, including upfront costs, uncertainty about return on investment, uncertainty about the type of renovations needed for their home, and lack of time to undertake appropriate preparations or to research reputable contractors.
- Where possible, will include incentive programs to help mobilize uptake.
- Promoted using locally-targeted marketing techniques that reflect identified community priorities.
- Cross-promoted through other neighbourhood projects, programs and events.
- Offer ongoing support and continued follow-up to homeowners, recognizing that the home renovation process takes time to implement (e.g. homeowners may follow a staged approach). This approach helps motivate individuals to follow through on commitments and take on additional projects.

Vulnerability Assessment and Climate Adaptation Strategies

The Thornhill SNAP Action Plan also presents a series of twenty-six climate adaptation strategies that have been developed to address the unique character, resources and vulnerabilities of the Thornhill Community. These strategies are designed to improve the overall community resilience, which in many cases is also helping to achieve the sustainability objectives identified for the SNAP. These recommendations will be incorporated into the integrated project initiatives and signature projects

where appropriate. Additional effort will also be made throughout the implementation phase to identify opportunities and partners that can help implement these strategies and to ensure the community co-benefits are fully realized.

Implementation Case Study Focus for T2050

In partnership with Humber College and Enbridge Gas, residents in the Thornhill SNAP neighbourhood were offered a free, two-hour Home Efficiency Retrofit Orientation (HERO). The workshop was promoted through numerous channels, including the Thornhill SNAP Newsletter, City of Vaughan online event listing, digital signboards throughout the community and through social media. The workshop was hosted virtually given the ongoing restrictions for in-person gatherings due to the COVID 19 pandemic. It was offered at two separate times on October 25, 2020 and the Zoom platform was used to host the sessions.

The workshop was delivered by a veteran Humber Sustainability Professor and an NRCan Certified Energy Advisor. It was focused on engaging homeowners to understand and incorporate available energy efficiency retrofits, recognize the benefits of energy-efficient retrofits, and learn about rebates and incentives. The HERO workshop was designed to bridge the energy efficiency literacy gap, increase home-owner AIDA (Awareness/Interest/Desire/Action), and accelerates deeper multi-measure sustainability and energy conservation retrofits.

The goals of the HERO workshop were to:

- Motivate and empower homeowners to take action on climate change by improving the energy efficiency of their homes
- Educate homeowners on the EnerGuide home energy evaluation and energy efficient home upgrades to achieve net zero emissions
- Connect homeowners to rebates, incentives and financing for energy efficient upgrades

The workshop was organized into the following four delivery modules:

Module 1: Getting Started - Introductions & Our Typical Home, Energy Audits & Retrofit Roadmaps House as a System & Air Sealing Upgrades
Module 2: Improve Your Envelope - Air Conditioning & Heating Upgrades
Module 3: Optimize Your Mechanicals - Window & Envelope Upgrades
Module 4: Keep it Flowing - Hot Water Upgrades, Reasons to Renovate & Next Steps

Evaluation of Pilot Project

An example evaluation framework was developed in collaboration with the University of Waterloo. The framework identified potential outputs, outcomes and impact at three scales including, household, neighbourhood and municipality. Example indicators are as follows (values shown indicate observed data based on workshop results):

Household scale output

- # of homeowners completing workshops (18)
- % of participants who would recommend the HERO workshop to friends/family (100%)
- # of homeowners completing an energy audit (no data yet)

Household scale impact

- % of survey respondents reporting change in understanding of how to sequence and integrate energy efficiency and greenhouse gas emissions reduction measures in their future renovations (100%)
- % of survey respondents reporting a change in understanding of target and deep retrofit upgrades to include in home renovations (83%)
- % of survey respondents reporting a change in awareness of available incentives, assistance and financing programs (50%)

Neighbourhood scale outcome

- % of survey respondents reporting sense of community pride

Municipal scale impact

- # job creation in energy audit sector (no data yet)
- Change in CO2e in residential sector (no data yet)

Thornhill SNAP Expected Outcomes and Evaluation Approach

The Thornhill SNAP Action Plan serves to facilitate the local implementation of many higher-level municipal and TRCA plans and strategies, addressing various environmental and socio-economic priorities. For each of the neighbourhood's eight sustainability goals, output and outcome indicators and targets have been identified. These indicators will be updated as appropriate throughout the implementation phase. As projects are implemented, their contribution toward these goals will be tracked through ongoing monitoring and evaluation as part of a Performance Monitoring Plan.

Timing

With the strategic planning phases complete and key projects and outcomes identified in this Neighbourhood Action Plan, the next step is implementation and monitoring which will commence in 2021, subject to available funding. Given the integrated nature of the recommended projects and the diversity and responsibilities of the partners involved, an implementation framework will be developed to facilitate coordination. The framework will serve as a planning resource by identifying potential lead roles, key collaborators or partners, relevant technical information, implementation timeframes and potential funding sources.

Early in 2021, implementation committees will be established for each of the signature projects and other major initiatives. These committees will be comprised of interested residents and community stakeholders and appropriate technical staff, to move projects forward collectively. The role of these committees will be to refine project and program plans, gather widespread support, assist with fundraising efforts and provide ongoing input throughout the implementation phase.

Source of Funding and Resources

Confirmed:

- FCM Green Municipal Fund – City of Vaughan has received grant funding for the Thornhill SNAP (2019 – 2021)
- City of Vaughan – capital funds for implementation projects (2021-2022) and in-kind staff time
- TRCA in-kind staff time

Potential:

- City of Vaughan has applied for FCM's Community Efficiency Financing to facilitate implementation of an LIC program (grant recipients to be announced late 2020 or early 2021).

- Fundraising – will be ongoing throughout the implementation phase
- Provincial/Federal Grants – City of Vaughan and TRCA are currently preparing grant applications to support implementation efforts in the Thornhill SNAP

Innovations being tested

Innovative planning workshop: A full day planning workshop was hosted in January 2020 that brought together technical staff, local stakeholders and residents to identify neighbourhood priorities and co-develop solutions. The workshop introduced social innovation and disruptive thinking activities that walked participants through the past, the present and the future and helped connect with their creative and emotional sides to find outside the box solutions. We received great feedback both from participating staff and community (1450 comments and innovative ideas were generated and at the end of the workshop and 8 residents expressed interest in volunteering in the SNAP).

Neighbourhood-scale Resiliency Strategy: A high-level neighbourhood-scale Resiliency Strategy was undertaken as part of the action planning process. The strategy was based on technical analysis of neighbourhood vulnerabilities, local conditions and local knowledge and expertise from residents and stakeholders on perceived risks and assets. The assessment provided insight into the specific community risks posed by climate change, identified existing vulnerabilities and assets within the neighbourhood and was used to inform the suggested climate adaptation recommendations that are presented as part of the neighbourhood Action Plan.

On-line engagement: To adapt to the current COVID-19 situation, the SNAP team adapted the community engagement approach to an online delivery model. The team hosted several live sessions using the Zoom platform, including two open houses and three visioning workshops – one for each signature project. The visioning workshops included a series of inspiring presentations by innovators and thought leaders, facilitated group activities that were carried out using virtual tools such as Google Globe View and Street View, as well as guided discussions and social innovation activities that were facilitated using moderated break out rooms. The online sessions also took advantage of virtual polling platforms and other online engagement tools (Wordle, Google Jam Boards) to help create an interesting and creative experience for the participants.

Proposed Local Improvement Charge (LIC):
The City of Vaughan has applied for funding to pilot an LIC/PACE program which is a financing policy tool uniquely available to local governments in jurisdictions with enabling legislation in place (only five provinces in Canada have this legislation in place). In Ontario, an amendment to O. Reg. 586/06 permit municipalities to implement by-laws to use LICs on private properties to support 'water conservation, energy efficiency or renewable energy works'. As part of the Residential Retrofit Program, the SNAP team will provide support for promotion and uptake of the LIC through one-on-one resident engagement, through customized, local marketing techniques, and through cross-promotion efforts with other SNAP initiatives.

Noteworthy Lessons and Outcomes

Action Planning Process

- TRCA's Neighbourhood selection process was a great tool to identify geographical areas with multiple priorities and opportunities, where the investment in a SNAP is of great value.

- Planned capital projects offer a great opportunity to leverage planned investment to achieve higher impact, including additional sustainability objectives and innovation.
- Development of Resiliency Strategy alongside Action Plan development posed some challenges for timelines and integration.

Online Engagement - Due to COVID-19 we had to adapt our engagement activities to online platforms. We realized this approach has many challenges, but also has some unique benefits. Moving forward we will try to include an online element to our engagement activities to help reach more people in the community and to offer an alternative way for people to provide input. Specific benefits and challenges include:

- Convenience – people can engage from comfort of their home with no travel and can easily include all members of their household in discussion – kids felt more comfortable engaging in virtual discussion more than they would at an in-person workshop
- Privacy – individuals could participate based on their own comfort level (e.g. video, audio and chat offered various ways people could participate)
- Reach – online sessions can be developed once and then hosted on multiple times/dates to help engage more people (in-person workshops are not as easy to replicate because of cost and logistics). Sessions could also be recorded and made accessible on the website to allow more people to participate.
- Impact - harder to foster creativity through on-line engagement and have less time for engagement than compared to in-person events; therefore, need to be very strategic with planning activities and may need more level of effort to capture adequate feedback (e.g. pre-workshop surveys or activities that ask residents to provide information ahead of session, workshop activities need to be very focused, need knowledgeable moderators, etc.)

Project Management

- In addition to PMT meetings, it is necessary to have ongoing communication and meetings with technical staff for individual projects/initiatives to keep SNAP top of mind and to address project-specific needs.
- It is important to allow sufficient time for technical staff reviews and sign off and for check-in meetings, as needed. This is important to build ownership and lay the ground for implementation.
- Having a dedicated municipal staff champion working closely with TRCA's PM contributed to the initiative's success.
- Rapid planning process requires more staff resources to ensure deliverables can be achieved in shorter timeline

Additional Resources

- Partnerships with post-secondary institutions were helpful to have students develop lower profile elements of the plan and to augment staff resources
- Helpful to recruit local volunteers and to build their capacity during the planning phase, while momentum and excitement is high

City of Hamilton
North End Sustainable Neighbourhood Action Plan (SNAP)
Case Study Overview

Project Focus	SNAP: To deliver social benefits alongside climate action by creating a sustainable action plan for the North End Neighbourhood with a focus on protecting and enhancing the natural environment, improving air quality and public health, increase net zero affordable housing and improving cycling and pedestrian transportation.			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- Hamilton City Council declared climate emergency directing staff to investigate actions to get community-wide GHG reductions to net zero by 2050
- Transportation Master Plan
- Upcoming Urban Forest Strategy calls for 40% tree canopy cover target
- Developing Community Energy and Emissions Plan that models low carbon actions including building retrofits, improved energy efficiency in new buildings, increase transportation mode shift to transit etc.

Rationale for testing the neighbourhood/business zone model

- To find strategic ways to accelerate implementation of city-wide policies starting at the neighbourhood level.
- To deliver broader social climate initiatives that meet community objectives including equity, public health, diversity and inclusion.

Project partners

- Public Health Section, Healthy and Safe Communities, City of Hamilton (Lead)
- Planning and Economic Development Department, City of Hamilton
- Public Works Department, City of Hamilton
- Neighbourhood Action Strategy, Healthy and Safe Communities Department, City of Hamilton
- GIS Services, Corporate Services, City of Hamilton
- North End Neighbourhood Association Climate and Environment Committee
- Hamilton Naturalist Club
- *TRCA (advisor)*

Project Overview

Purpose

To create a comprehensive action plan for neighbourhood revitalization that integrates local community interests and sustainability objectives.

Objectives

Develop a neighbourhood action plan that:

- Meets community social and economic priorities as well as climate mitigation and/or adaptation needs.
- Reduces Greenhouse Gas (GHG) emissions;
- Better protects residents and businesses against climate impacts; and
- Advances social and economic equity goals.

Approach

In order to complete this action plan the overarching approach will be followed:

- Partnership Formation and Development (i.e Project Advisory Team) – Complete
- Neighbourhood Screening – Complete
- Neighbourhood Survey – Complete
- First Workshop – Complete
- Second Workshop – Complete
- Quick Start Implementation – Complete
- Action Plan – First draft underway
- Third Workshop – TBB
- Final Workshop – TBD

Partnership Formation and Development

The Sustainable Neighbourhood Action Plan requires a multi-disciplinary team comprised of City Staff across the Corporation and external stakeholders. A Project Charter that outlines the key deliverables and actions were created. Project partners were asked to review the Project Charter and to sign off on it as commitment to the project. The core team of partners are included in the Project Partner section above.

The North End Neighbourhood Association's Environment and Climate Committee was and continues to be an integral partner to ensure local neighbourhood collaboration and trust. This stakeholder was actively engaged prior to the start of the project. Project leads in the Public Health Section attended a committee meeting to present the SNAP framework and asked for participation. Going out to a committee meeting within their neighbourhood face-to-face was a very important first step to build awareness and trust.

Neighbourhood/Business Scale Selection and Action Plan

A robust neighbourhood screening process was taken to select the neighbourhood. One of our core project partners from the Neighbourhood Action Strategy has many years of experience working across Hamilton neighbourhoods. Five neighbourhoods were put on a short list based on past and current knowledge.

Utilizing the TRCA's neighbourhood decision matrix, we analyzed each neighbourhood. Ultimately, we chose the North End Neighbourhood for the following main reasons:

- Major redevelopment occurring including: waterfront redevelopment, social housing tower retrofit to PassiveHouse standards and large social and private mix Jamesville redevelopment;
- North End Neighbourhood Association recently established an Environment and Climate Committee growing public participation in climate action, as well as existence of other local organizations providing key social services to leverage;

- Neighbourhood within Ward 3 which generally has much higher proportion of household making less than $25,000/year, higher proportion of immigrant residents that arrive to Canada between 2011 and 2016, and higher proportion of dwellings built before 1980 (https://spatialsolutions.maps.arcgis.com/apps/MapSeries/index.html?appid=6bd75dad63d2487fa81d23b93485bdf4)

Neighbourhood Survey

Partnering with CityLAB Hamilton, background research, neighbourhood walk-abouts and a survey were completed to better understand the neighbourhood and identify priorities. CityLAB Hamilton is an innovative hub that brings together student, academic, and civic leaders to co-create a better Hamilton for all. Students from McMaster University, Mohawk College and Redeemer College join CityLAB Student's in Residence to partner with City staff on projects.

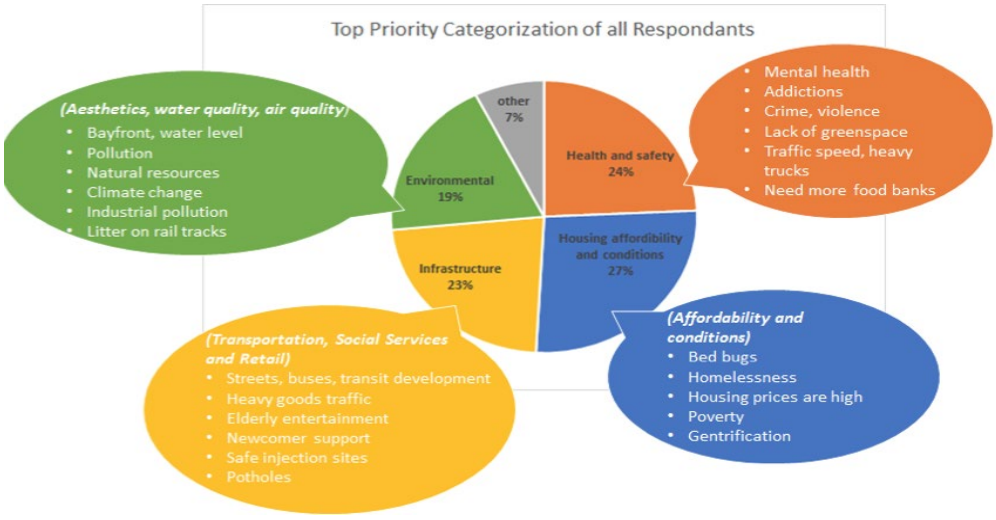
This part of the project had a dedicated team of twelve (12) students that completed background research, on-the-ground neighbourhood audits and surveys to learn more about the neighbourhood.

The survey included questions to understand what residents liked and did not like about their neighbourhood. The student group handed out surveys to local hotspots including recreational facilities, restaurants/donut shops, and community not-for-profit organizations. In total seventy-two (72) people filled out the survey. Over half of which specified either living or working within the North End Neighbourhood.

The students and the project core team analyzed the survey and identified top priorities including:

- Housing Affordability and Condition (27%);
- Health and Safety (24%);
- Infrastructure (23%);
- Environmental (19%).

Figure 1.0 Top Priority Categorization of All Respondents



The student group was instrumental in completing this time intensive work and being the "boots on the ground" walking the neighbourhood and taking the time to conduct the research. Given the

project core team had other ongoing work and projects, having the students resulted in a much more robust background research phase that otherwise could not have been completed.

North Neighbourhood Workshops

Following the background research, surveys and analysis, a workshop was hosted within the community in November of 2019 to present the results of the neighbourhood walk-abouts, surveys and the introduction of the science of climate change and climate impacts to the participants.

The students presented results of the neighbourhood audits including pictures of problematic infrastructure, as well as solutions to spur ideas. Survey results were presented which then were followed by table top activities including asset mapping to prioritize main themes.

Interestingly from the first table top activity participants prioritized the following main themes differently than the initial survey, which may reflect differences in respondent groups involved in the two different samples. This underscores the need to ensure representative input from a cross section of stakeholders using different methods. The workshop participants priorities were as follows:

- Environment (35%);
- Infrastructure (25%);
- Public Health (18%); and
- Housing Affordability & Conditions (13%).

A cross-cutting indicator discussed was the importance of trees and tree canopy cover in terms of protecting the environment, but also as a key part of infrastructure and public health main theme areas. Tree planting therefore seemed to be an action of common interest, which could serve as an initial focus for engagement and action.

The second workshop was initially planned for the spring of 2020, along with a tree planting event based on the results of the first workshop. Unfortunately, because of the COVID-19 pandemic both of these events were significantly delayed with the workshop being completed virtually in August of 2020.

Prior to the second workshop, City staff posted a follow-up survey on the City's Engage Hamilton (https://engage.hamilton.ca/) website. The Project Team thought this would be useful given the dramatic changes COVID-19 has had on the municipality and wanted to better understand if any of the priority theme areas had changed or have been re-prioritized.

Not surprisingly, Public Health was ranked as the number one priority, with the Environment, Infrastructure, Housing Conditions and Affordability as the 2nd, 3rd and 4th priority respectively.

This second workshop consisted of presentations from our community engagement lead City Staff and our neighbourhood project partner. Following the presentations there were break out facilitated discussions. An impactful presentation from the neighbourhood project partner outlining historic climate changes and past successes of local activism was very well received from participants.

The facilitated break-out sessions included discussions on the importance of setting aspirational goals, while at the same time creating tangible actions and targets. Multi-modal transportation was a key discussion in one of the break-out groups, as well as having the North End Neighbourhood be a leader in net-zero infrastructure and reducing Greenhouse Gas (GHG) emissions.

Quick Start Implementation - case study focus for T2050
The quick start implementation included a free tree giveaway on Saturday October 24, 2020 between 1:00PM and 5:00PM. The strategic objectives of the implementation were to:

- Jump start action based on the survey results and what we heard from residents at the workshop. This will work to further build trust by showing residents the Project Team was listening.
- Meet more people and initially get further feedback on draft theme areas and action plan (did not occur because of COVID-19 protocols); and
- Build ongoing list of engaged residents to cross promote other programs and actions related to this project and others that meet similar objectives.

In total 60 trees were ordered from a local nursery to be given away during the event. Prior to the event using a google form twenty-five (25) people registered for a tree pick-up. The types of trees that were ordered and delivered were native to North America.

Results
In total all but one, or 96% of pre-registered citizens came and picked up their free tree. In addition we had approximately 15 walk-ins who also picked up free trees. We were able to collect contact information for 8 of the 15 walk-ins. This is in combination to the 25 pre-registered individuals who provided their contact and address.

In total 60 trees were ordered for the event. The combination of pre-registered, drop-ins and some people wanting to take more than one tree to plant, in total 50 of the 60 (~83%) trees delivered were given out.

Citizens who provided their contact information have been asked to provide an update on the success of their tree planting and we are asking for citizens to submit a picture of their new tree. The total number of citizens who respond to the request for follow-up will be collected. We are hoping for at least a 25% response rate.

Additional Programs
Prior to the North End Neighbourhood Free Tree Giveaway a local non-profit organization also hosted a free tree giveaway in Hamilton's lower wards. Their free tree giveaway included giving away 8 additional trees/shrubs specifically for the North End. Comparing the two initiatives, the non-profit organization ended up giving out over 400 trees across the entire City of Hamilton. This type of tree giveaway is unprecedented and shows the popularity of such programs, especially as it comes from local and trusted non-profits who specialize in these types of events.

When comparing this event to the Free Tree Giveaway it is interesting to note that because City staff redeployed to COVID-19 and other competing priorities, this project did not have as long to organize or publicize. Furthermore, the amount of funding for the North End Free Tree Giveaway was substantially less. Even with less time, resources and popularity, the North End Free Tree Giveaway resulted in over 6 times the uptake of trees being given away specifically to the North End.

This type of uptake shows that the background work of the SNAP project, including development a core project team, as well as a larger group of engaged citizens help to further increase uptake at the

neighbourhood level. The Free Tree Giveaway resulted in over 6 times the uptake at the North End Neighbourhood level, compared to the larger City-wide initiative.

Both initiatives are extremely important and overall compliment each other. These results show that when looking to undertake a targeted approach or project, the SNAP framework can help accelerate uptake of actions at the neighbourhood level.

Next Steps
Following the results from the citizens on the status of their tree planting a winter online workshop is going to be planned to go through the draft sustainable neighbourhood action plan. The plan is currently being drafted taking results and feedback from past engagement activities. Baseline data collection on the main theme areas (natural environment, sustainable transportation infrastructure, affordable housing units, air quality etc.) using ArcGIS is still underway.

Using the information from past engagement activities, combined with GIS data collection, draft actions will be developed which includes a baseline, target and key performance indicators. Using this information throughout the workshop break-out sessions can occur to further discuss the actions including potential locations, identifying leads and potential partnerships, including timing of realistic implementation of those actions.

Source of Funding and Resources
The Project Advisory Team was able to secure approximately $3,500 from the Hamilton Industrial Environmental Association for the free tree giveaway. Approximately $1,000 was spent on the October 2020 Tree Giveaway. The remaining $2,500 will be used to host a larger tree giveaway in the spring with hopes to leverage the resources and expertise of the Forestry Department. Additional existing in-kind resources worth well over $25,000 from City of Hamilton staff have occurred throughout the project.

Innovations being tested

- The collaboration of CityLABS Hamilton and having student groups conduct the time intensive portion of the project is an innovative approach to complete this type of work.
- McMaster University Student semester project included utilizing itree analysis estimating urban tree canopy cover in the North End. Feasibility of using this to track tree planting and tree canopy cover is being investigated.
- Due to COVID-19 community engagement has had to go virtual. The Project Advisory Team has tested Webex Training Sessions to create an interactive online engagement event.
- To communicate the data collected and draft action plan we are planning to utilize ArcGIS storymap.

Noteworthy Lessons and Outcomes

External project stakeholders very much appreciate City staff giving up their weekends to complete the project. This helps to quickly build a trusting relationship and will benefit in the future.

Forming a trusted relationship with the neighbourhood association tapped into an established local communication network that supported deeper engagement and has the potential for ongoing roles.

Partnerships with the university provided invaluable additional resources for baseline data collection, workshop facilitation and documentation that made this project possible, while City staff capacity was stretched.

The City staff position plays a critical role as partnership-broker and to maintain continuity in the project. Having two closely involved City staff was an advantage when one or other were redeployed to address competing priorities.

City of Guelph
ISO 50001 Energy Management System Implementation
Case Study Overview

Project Focus	PPG business engagement			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- Climate change energy targets have been set for the Corporation to source 100% of its energy use with 100% renewable energy supply.
- The City of Guelph Strategic Plan has identified environmental sustainability, climate change mitigation and energy management as a key component
- Strict compliance to the ISO 50001 Energy Management System standard has been identified as a foundational component of the implementation phase of the Strategic Plan.

Rationale for testing the neighbourhood/business zone model

- Demonstrate implementation of ISO 50001 EnMs in the Municipal context
- Potential for learnings from commercial and industrial sector

Project partners

- All City of Guelph departments as this is a Corporate-wide initiative
- *TRCA (advisor and supporting role to assist with incremental implementation of ISO 50001 standard)*

Project Overview

Implementation of the ISO 50001 Energy Management Information Standard. This is a best-in-class internationally recognized standard that will enable the City of Guelph to effectively manage energy consumption, reduce greenhouse gas emissions and progress towards the Corporate 100% Renewable Energy target and support the Community Net Zero Carbon target.

Purpose
Develop an Energy Management System compliant to the ISO 50001 standard at the City of Guelph.

Objective
Complete tasks identified in the gap analysis to further implement the ISO 50001 standard.

Approach
Implementation case study focus for T2050.

Expected Outcomes and Evaluation Approach
Baseline has been established with gap analysis. Track progress against the baseline.

Timing
Compliance to the ISO 50001 standard by March 2021

Source of Funding and Resources
City of Guelph in-house resources

Innovations being tested

Adoption of the ISO 50001 standard.

Become one of the first North American municipalities to strictly comply to the standard. Municipal-wide compliance.

Noteworthy Lessons and Outcomes

- Further advancement toward ISO 50001 standard and established a reference repository of industry templates and actively pursued prospective funding stream for staff training.
- Engaging local businesses from an energy management standpoint was the immediate alignment of the pilot, working with corporations that participated in the Guelph Energy Managers (GEMS) program offered by the City of Guelph. Due to timing of the program pause and institutional directional changes, this alignment was not maximized.
- PPG identified a capacity alignment of sharing best practices of the ISO 50001 standard to businesses in the regional business community. Awareness of this project and introductions to businesses in the Greater Toronto Area interested in learning more from the City of Guelph's experience was facilitated.
- Value to doing ISO 50001 standard in collaboration with local businesses and other municipalities, but their engagement wasn't doable in the timeframe of the project due to a shift in institutional direction.

City of London
London Residential & Business Community Low Carbon Program Development
Case Study Overview

Project Focus	Engagement & Implementation of Low Carbon Projects			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- London Plan – become one of the greenest cities in Canada (https://london.ca/sites/default/files/2020-11/The-London-Plan-Policies-Effect-Nov18-2019_0.pdf)
- Climate Emergency Action Plan – net zero greenhouse gas emissions in London by the year 2050 (https://london.ca/living-london/water-environment/londons-climate-emergency-declaration)

Rationale for testing the neighbourhood/business zone model

- Deepen Engagement
- Understand formulation of programs that are of interest to the public
- Provide avenue for knowledge sharing and motivation
- Reach traditionally uninvolved population

Project partners

- City of London Water Engineering
- City of London Environmental Programs
- Green Economy London
- *Toronto & Region Conservation Authority (advisor)*

Project Overview

Developing community capacity to engage, design, and deliver neighbourhood or business environmental programs that target their needs, and encourage implementation.

Purpose
Engage, encourage, and catalyze action through residential and business programs in an easy to scale format.

Objectives
Encourage participation, identify opportunities, catalyze implementation of low carbon projects and practices, measure and share successes to motivate more participation.

Approach

Neighbourhood/business scale selection and action plan
Utilizing membership in a sustainability centered organization (Green Economy London) as an initial gauge of interest, we aim to provide high value programs (such as grants for retrofits) for those who are active members, and outreach and educational programs to reach those who aren't yet ready to commit to their sustainability journey (or are just curious). This includes business sectors.

Implementation case study focus for T2050
Implement audits and retrofits of business participants (water/energy/waste audits, blue roof conceptual design, implementation of opportunities).

Expected Outcomes and Evaluation Approach
Expected to have measurable carbon footprint decrease, increased engagement, and additional findings or cases that can be shared with others that spur even more interest. Evaluation is done through surveys, participation count, and tracking the "journey" of participants.

Timing
Case study is expected to be completed by Q4 2021 (implementation). Expected to be earlier, but may be impacted by COVID-19.

Source of Funding and Resources
Funding from City of London, FCM, Federal Government

Innovations being tested

- Workshops sharing success stories to generate interest/participation/motivation
- Subsidized Water/Energy/Waster audits
- Developing local non-profit capacity to deliver programs and allow City to scale programming
- Residential "one-stop" shop for sustainable practices and coaching program
- Blue Roof retrofit projects identified both within City of London assets and private stakeholders willing to develop pilot implementation capacity

Noteworthy Lessons and Outcomes

- Audits are an easy sell, but implementation with its high price tag is slower to come by
- Releasing programs to membership only limited participation (we thought it'd result in higher quality applicants); however, we probably missed out on generating interest from non-members instead (quality applicants would be evident in applications, so we should've just opened it up to all)
- Having project implementation funding along with audit funding may have helped carry momentum (we were waiting to see how much funding might be needed in general, so haven't yet determined amount of funding available)
- Workshops served as a good environment for honest discussion (waste seminar, where business partners learned that plastics recycling wasn't actually doing much "recycling" resulted in a lot of surprise and passionate exchanges).

City of Peterborough
Kawartha Heights SUN/SNAP Home Energy Renovation Video Series
Case Study Overview

Project Focus	SNAP neighbourhood: Deepening engagement and uptake of home energy efficiency retrofits by building on GreenUP SUN neighbourhood initiatives previously developed and launched using SNAP model.			
Past experience	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)
Stage of focus	Neighbourhood selection	Action Planning	Implementation (pilot)	Implementation (multi-year)

Links to municipal CCAP, MEP and strategic plans

- Community CCAP action seeks to lower residential emissions by 30% by 2031
- Community Energy Plan recommends lowering household energy by 25-50%
- City of Peterborough's Official Plan seeks to decrease community-wide GHG emissions by 2040

Rationale for testing the neighbourhood/business zone model

- GreenUP's SUN neighbourhoods (Kawartha Heights and Curtis Creek) have already been identified as ideal locations for T2050 project
- Each SUN neighbourhood is comprised of typical Peterborough housing archetypes
- Opportunity to deepen homeowner engagement by building on local networks and contacts established in SUN neighbourhoods.

Project partners

- City of Peterborough Infrastructure Management Division
- GreenUP
- *TRCA (advisor)*

Project Overview

Neighbourhood Selection and Action Planning Context (preceded Transition 2050)

GreenUP, a local non-profit group, previously piloted a new SUN neighbourhood initiative in Peterborough in collaboration with the City of Peterborough and other partners, by applying TRCA's SNAP planning model. Kawartha Heights and Curtis SUN neighbourhoods were selected as pilot SUN projects, based on priority needs associated with their SWM issues, age of building stock and relatively low rates of renovation for energy efficiency improvements. Neighbourhood action plans were prepared and quick start implementation projects (e.g. tree planting, pollinator plantings and rain garden installations, etc., involving extensive collaboration and engagement with the local community.

Purpose

Educate and increase uptake by SUN neighbourhood residents in entry level DIY home energy renovation projects.

Objectives

- Create home energy retrofit video series to describe DIY techniques to activate community member participation in energy renovations by profiling common housing archetypes with energy and GHG considerations.
- Host virtual Q&A sessions where residents can discuss with expert contractors their renovation needs, but also listen and discuss with neighbours opportunities for specific to the neighbourhood's home typologies.

Approach

Local market research during the action planning process revealed a strong tendency for DIY approaches in the Kawartha Neighbourhood. It also identified that residents were interested in educational supports to undertake these retrofits and that they enjoyed socializing with neighbours and discussing with them potential retrofit actions and approaches for their homes.

In response to these findings, the initial idea was to organize in-person DIY parties, in which resident champions would host their neighbours at their home, and a contractor would come in to train all participants on DIY actions. This idea had to be adapted to a virtual event, as COVID-19 forecasted continued community spread during the project timeframe. Also, community member hesitancy to engage in an in-person event was another motivating factor in the transition to a virtual training session. The City's team engaged with GreenUP, who had good knowledge and networks in the Kawartha neighbourhood and had developed virtual education material in the past, to ensure that our project would be as engaging as possible.

The virtual training approach will still respond to neighbourhood homes retrofit needs and to the findings from the local market research in Kawartha Heights:

- The video series captures SUN neighbourhood's top priority building energy demands for the most common neighbourhood housing archetypes. The videos rely on these specific housing typologies and targets the most common energy repairs identified by local energy auditors and home energy experts.
- A highly tailored video series will resonate with homeowners and motivate individuals to perform DIY renovations instead of non-location/housing specific online video series
- It speaks to straightforward DIY energy projects that homeowners can undertake while also highlighting what a net-zero renovation would entail if undertaken (i.e. cost, material)
- Will host a virtual SUN neighbourhood event with a contractor and energy auditor to field home energy questions and to preview home video series to neighbourhood audience. Residents will be able to listen to and build on their neighbours insights for similar homes.

The videos will be mostly promoted in the Kawartha Heights neighbourhood, through the listservs and networks developed during the development of the neighbourhood action plan and implementation of local quick start projects. However, the reach of the video series is expected to extend way beyond the neighbourhood.

The Kawartha Heights neighbourhood happens to have housing typologies that are also typical for the rest of Peterborough. If timing permits, a second virtual event will be hosted, available to all Peterborough residents. Videos will be posted on the GreenUP and the City of Peterborough communications platforms and may be used in future educational events or promotions. Experts

filmed in the series will be consulted as to their ability to provide Q&A material that will accompany the films on each partner's website. The City uses a community engagement platform that can engage and track action by community members through responses.

Governance
Decisions are jointly made with City of Peterborough Infrastructure Management staff and GreenUP's executive director to oversee the project's implementation. GreenUP is directly involved in the implementation of the project. No other City of Peterborough divisions or organizations were involved in the project's planning and implementation phase.

Expected Outcomes and Evaluation Approach
TBC

Timing
Video production December 2020 to January 2021 and virtual SUN neighbourhood event planned for February/March 2021.

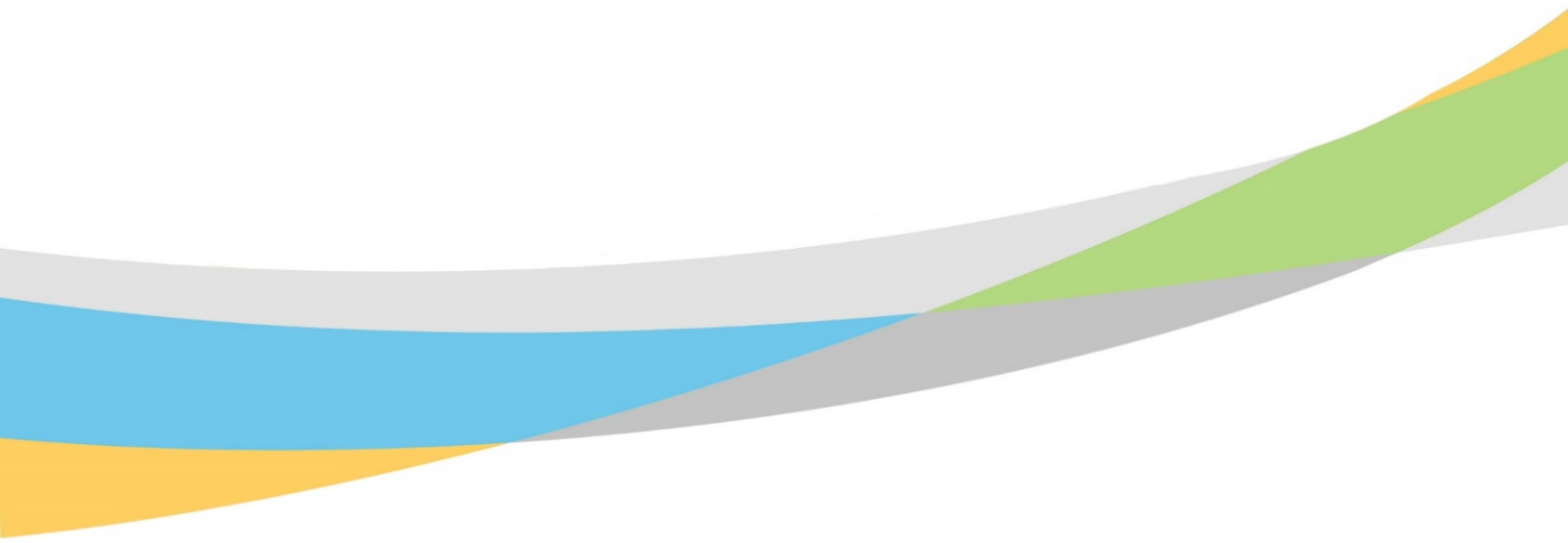
Source of Funding and Resources
City of Peterborough and County of Peterborough

Innovations being tested

If educational video series coupled with virtual event Q/A session featuring home retrofit contractors can stimulate homeowners to undertake energy renovations.

Noteworthy Lessons and Outcomes

Partnership with a local non-profit for project design and implementation will enable access to their local knowledge, established resident network and build upon sustainability activities they have initiated.



Toronto and Region Conservation Authority