

Sustainable Neighbourhood Action Program

THORNHILL SNAP NEIGHBOURHOOD



Thornhill Sustainable Neighbourhood Action Plan

Historically rich, culturally diverse, green and connected

Final Report July, 2021

In collaboration with:



Acknowledgements

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 plan supports a future where the neighbourhood's public and private spaces are well connected and rich with nature, activity, culture, history and art; where people of all ages and abilities feel comfortable, safe and engaged; where the built environment is created or retrofitted with health and sustainability in mind; and where community connections grow and prosper.

Thank you to the core Project Management Team who provided guidance and expertise on the development of this Action Plan.

TRCA Staff

Adriana Gomez	Senior Program Manager, Sustainable Neighbourhoods
Patricia Lewis	Project Manager, Sustainable Neighbourhoods
Sharon Lam	Research Analyst, Ontario Climate Consortium
Rehana Rajabali	Associate Director, Engineering Services
Adam Dembe	Project Manager, Conservation Lands and Trails

City of Vaughan Staff

Alanna MacKenzie	Sustainability Coordinator, Policy Planning and Environmental Sustainability
Tony Iacobelli	Manager Environmental Sustainability, Policy Planning and Environmental Sustainability
Ruth Rendon	Senior Environmental Planner, Policy Planning and Environmental Sustainability
Monica Choy	Sustainability Coordinator, Policy Planning and Environmental Sustainability
Michael McNamara	Project Manager, Parks Infrastructure Planning and Development
Morteza Behrooz	Manager Parks Delivery, Parks Infrastructure Planning and Development
Katrina Guy	Cultural Heritage Coordinator, Development Planning
Walter Fischer	Trails Coordinator, Parks Infrastructure Planning and Development
Joerg Hettman	Urban Forestry Supervisor, Parks, Forestry and Horticulture Operations
Petr Emelianov	Active Transportation Specialist, Infrastructure Planning and Corporate Asset Management
Martin Tavares	Manager Parks and Open Space Planning, Parks Infrastructure Planning and Development
Jaime Acosta,	Manager Wastewater/Stormwater Services, Environmental Services
Frank Facchini	Project Manager, Infrastructure Delivery
Michael Habib	Senior Planner, Parks Infrastructure Planning and Development
Salima Jivraj	Manager Design and Construction, Infrastructure Delivery
Dorothy Kowpak	Active and Sustainable Transportation Project Manager, Infrastructure Planning and Corporate Asset Management

Toronto and Region Conservation Authority (TRCA) has authored this report on behalf of the City of Vaughan. Action Plan recommendations were identified through a co-creation process involving local residents and stakeholders, City, Region, and TRCA staff. **A special thank you to municipal councillors, local stakeholders, and numerous staff groups that were extensively involved in collaborative engagement activities that helped create a vision for the recommended initiatives.**

Cover Image: Gallanough Park courtesy of TRCA

© 2021, Corporation of the City of Vaughan,. All Rights Reserved.

This project was carried out with assistance from the Green Municipal Fund. A Fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities.

Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.

TABLE OF CONTENTS

Acknowledgements	i
1.0 Introduction	1
2.0 The Thornhill Neighbourhood	1
3.0 Neighbourhood Selection and Key Priorities	8
4.0 Neighbourhood Climate Change Vulnerability Assessment.....	13
5.0 Sustainability Framework.....	18
6.0 How We Got Here.....	19
6.1 The SNAP Governance Model.....	19
6.2 The Action Planning Process.....	20
7.0 Who was Involved?.....	22
8.0 Community Engagement Highlights.....	23
9.0 The Thornhill SNAP Action Plan	29
9.1 Integrated Action Areas	30
9.1.1 Connected Places, People and Ecosystems	30
9.1.2 Residential Retrofits.....	33
9.1.3 Greening and Humanization of Commercial and Institutional Properties and Multi-Unit Residential Buildings	36
10.0 Signature Projects	40
10.1 Gallanough Park Redevelopment	40
10.2 York Hill District Park Redevelopment	45
10.3 Complete Streets Project (Atkinson Ave, Hilda Ave and Centre Street)	50
10.4 Thornhill Home Retrofit Program	56
11.0 Other Notable Projects	59
11.1 Oakbank Pond Park.....	59
11.2 Ryerson Partnership Projects	61
12.0 Climate Adaptation Recommendations.....	63
13.0 Measuring Success	71
14.0 Implementation and Next Steps.....	76
Appendix A - Example Monitoring and Evaluation Framework for Integrated Action Areas ...	68

Appendix B - Example Monitoring and Evaluation Framework for the Adaptation and Resilience Strategies	72
Appendix C - Thornhill SNAP Preliminary Monitoring Hub Framework	77

LIST OF FIGURES

Figure 1 - Thornhill SNAP Neighbourhood Study Area.....	5
Figure 2 - Neighbourhood Screening Process Neighbourhood Screening Process	8
Figure 3 - Summary of Overall Vulnerability in Thornhill by Block	17
Figure 4 - Thornhill SNAP Sustainability Framework.....	18
Figure 5 - SNAP Governance Structure.....	19
Figure 6 - SNAP Action Planning Process.....	20
Figure 7 - SNAP Home Retrofit Program Model	35
Figure 8 - SNAP's Approach to Multi-Unit Residential Building Revitalization	37
Figure 9 - Thornhill SNAP Neighbourhood Action Plan Map	39
Figure 10 - Gallanough Park Concept Plan	42
Figure 11 - York Hill District Park Concept Plan	46
Figure 12 - Complete Streets Concept Plan	54

LIST OF TABLES

Table 1 - Thornhill SNAP Neighbourhood Profile (Source: Environics, 2020, TRCA 2017 Landuse, MPAC, 2020)	6
Table 2 - Mapping Framework and Data included within the City of Vaughan.....	9
Table 3 - Summary of Climate Change Vulnerability Assessment Indicators for Thornhill	14
Table 4 - Local Contributors	22
Table 5 - Summary of Thornhill SNAP Engagement Activities	29
Table 6 - Thornhill SNAP Climate Adaptation Strategies.....	64
Table 7 - Sustainability Goals and Targets.....	71
Table 8 - Preliminary Implementation Framework	78

1.0 Introduction

The Thornhill Sustainable Neighbourhood Action Program (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 plan supports a future where the neighbourhood's public and private spaces are well connected and rich with nature, activity, culture, history, heritage and art; where people of all ages and abilities feel comfortable, safe and engaged; where the built environment is created or retrofitted with health and sustainability in mind; and where community connections grow and prosper.

What is SNAP?

The Sustainable Neighbourhood Action Program (SNAP) of Toronto and Region Conservation Authority (TRCA) is a collaborative, neighbourhood-based approach for advancing urban renewal and climate change action in older urban areas. SNAPS help municipalities and other community collaborators improve efficiencies, draw strong local support, and build innovative partnerships for the implementation of a broad range of initiatives in the public and private realms. More information is available at: trca.ca/conservation/sustainable-neighbourhoods.

2.0 The Thornhill Neighbourhood

Located in the City of Vaughan, Regional Municipality of York (York Region), the Thornhill SNAP neighbourhood is bounded by Bathurst Street and Yonge Street, Steeles Avenue West and Highway 407 (see Figure 1). It is home to a population of approximately 29,500 people with two distinct demographics.

Data accessed through Environics provides a detailed look at the characteristics of the neighbourhood. Block Two, north of Centre Street consists primarily of single-family homes that are on average 60 or more years old. 96% of the homes are owned and approximately 52% of people living in Block Two have a university degree. The average household income is approximately \$249,000. There is a strong value among residents in Block Two toward community involvement which is reflected by their participation in community groups and staying on top of local current events. Residents in this Block also support an ecological lifestyle and feel that the environment should be protected at all costs.

The area south of Centre Street, known as Block One, is also primarily single family detached homes that are approximately 30-39 years old. This Block also contains 18 multi-unit residential buildings (MURBs), some of which are home to more vulnerable,



One of 18 MURBs in Block 1
(Image courtesy of TRCA)



Typical single-family home in Block 1
(Image courtesy of TRCA)

low-income residents and one of which currently offers subsidized housing. Approximately 83% of residents in the southern block own the home they live in. The average household income is \$153,000 and approximately 46% of residents in Block One have a university degree. There is a strong value among residents in this Block to seek out authentic, compelling experiences that are deeply connected to a sense of culture and history.

The neighbourhood is fortunate to have diverse cultural representation with approximately half of the community comprised of foreign-born residents and one third of residents belonging to a visible minority group, including Chinese, West Asian, Korean, South Asian and Filipino. Approximately 66% of the community speak English at home with other top languages, such as Russian, Mandarin, Korean and Persian being spoken in the community. The average age of residents is 60 and approximately 70% of residents drive their car for commuting purposes, followed by 20% who use public transit. One third of all households in this community are two-person households, slightly above the municipal benchmark of 24%. Approximately 59% of residents are married or common law and half of all households in the community consist of families with children living at home, and 26% of the children living at home are over the age of 25. There is a large population of Jewish residents living in the community who exhibit a strong culture of philanthropy and an interest in providing facilities for and improving the livelihoods of persons living with disabilities. Overall, the community exhibits a strong value toward community involvement which is reflected by their interest in local news and through their commitment to community organizations.

Land use maps referenced indicate there are a total of 15 institutional buildings within the neighbourhood, including six schools, five places of worship, and four municipally owned buildings. The community has noted that at least another five places of worship also exist either in schools or in private homes. There are commercial zones primarily located along Yonge Street and Steeles Avenue in both Blocks 1 and 2 and which currently comprise retail stores, fast food restaurants, supermarkets, professional

services, auto dealerships, among others. A Heritage Conservation District exists along Yonge Street from Thornhill Avenue to just south of Arnold Avenue and along portions of Centre Street and other nearby streets. The City has identified 30 properties within this district as having architectural and historic value, 16 of which are also included in the Canadian Inventory of Historic Buildings and/or the Ontario Inventory of Buildings. All properties are designated under Part V of the Ontario Heritage Act (see also A Look Back on Historic Thornhill on page 10).

The Thornhill SNAP neighbourhood is located in both the Upper East Don and Lower East Don River subwatersheds. As per the 2018 Don River Watershed Report Card, surface water quality in the Upper East Don is graded as poor based on measured concentrations of phosphorus and E. coli and the presence of chloride from road salting practices. Forest conditions in the Upper and Lower East Don subwatersheds were also rated as poor based on the percent of forest cover, forest interior and streamside cover. In terms of land cover, approximately 10% of the Thornhill SNAP comprises natural cover including forest, wetlands, meadows and successional communities with the remaining 90% consisting of developed areas. Key issues for the Don River include excessive stormwater runoff, both in terms of the quality and quantity of runoff which contributes to erosion and localized flooding. Additional concerns relate to the presence of invasive species, including dog-strangling vine, phragmites and the emerald ash borer, which has already contributed to the loss of many trees in the Thornhill SNAP. The high rate of non-native trees including Manitoba and Norway Maple is also a concern.



The emerald ash borer (left) and phragmites (right). Images courtesy of TRCA

The East Don River valley lands are almost exclusively contained within the Uplands and Thornhill golf clubs. The neighbourhood is home to 12 parks and four parkettes and according to the City's 2018 Active Together Master Plan, Thornhill has a higher amount of active parkland per capita than many other areas in the City. In Block 2, the Newport Square Park, Rosedale North Park and Thornhill Park provide outdoor facilities

including playgrounds and sport courts (basketball, softball and tennis). Among them, Thornhill Park is the only one that offers an outdoor swimming pool. In Block 1, there are five large parks which are Bathurst Estates Park, Hefhill Park, Winding Lane Park, Vaughan Crest Park and the York Hill District Park (the largest recreational park in the SNAP area); each of these parks offers playground areas as well as sport courts to the local community. In terms of parkettes, the Edmund Seager Parkette is the only one located in Block 2, as the remaining three are within Block 1.

Figure 1 - Thornhill SNAP Neighbourhood Study Area

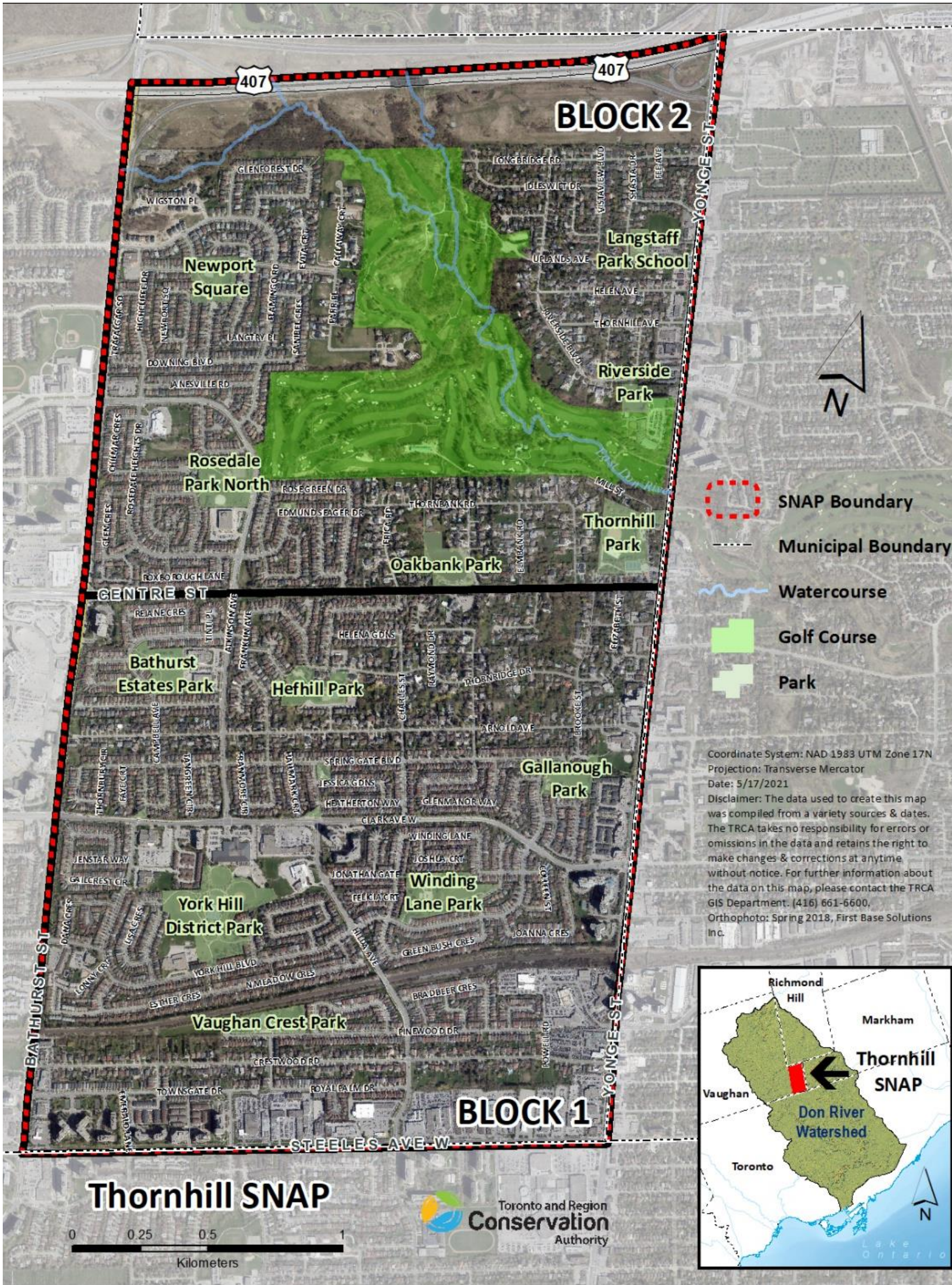


Table 1 - Thornhill SNAP Neighbourhood Profile (Source: Environics, 2020, TRCA 2017 Landuse, MPAC, 2020)

Neighbourhood Size		860 ha
Land Use	Medium-Low Density Residential	58 %
	High Density Residential	2%
	Commercial / Institutional	9%
	Recreational / Open Space	7%
	Roads	5%
	Meadow	5%
	Forest	4.5%
	Golf Course	8%
	Other	1%
Population	29,523	Block One – 22,815 Block Two – 6,708
Diversity	Visible minorities	35%
	Immigrants	51%
	English as language most commonly spoken at home	66%
Households	# of households	9,995
	% of households with children at home	52%
	% of residents with a University Degree	47%
Median Age	60	
Median Income	\$171,304	Block One - \$152,704 Block Two - \$248,630
Housing	# households 9,995	Block One - 8,057 Block Two – 1,938
	% of households owned	86%
	% of households rented	14%
	% houses / # houses	58% / 5816
	single detached	54% / 5,425
	semi-detached	1% / 115
	triplex	0.02% / 2
	row house	3% / 274
	% apartments/ # buildings / #units	34% / 18 / 3,413
	high rise	29% / 2,920
	low-rise	1% / 137
	detached duplex	4% / 356
Transportation	% of residents who travel to work:	
	by car as driver	70%
	using public transportation	20%
	walk	4%
	cycle	0.5%

A Look Back at Historic Thornhill

The Thornhill area is the traditional territory of the Huron-Wendat, Haudenosaunee and the Mississauga of the Credit Indigenous peoples.

Thornhill is one of Ontario's earliest settlements, dating from the original construction of Yonge Street. Governor Simcoe laid out Yonge Street as the first north-south street in the region in 1793 and settlement began shortly after. As with many early villages, it was the intersection of the road with a river, giving the opportunity to develop water-powered mills, that gave rise to a concentrated settlement within the general agricultural context. The first mill in what became Thornhill was built in 1801. The British Corn Laws created a ready market for Ontario's grain and Thornhill prospered and grew for 45 years. The repeal of the Corn Laws in 1846 ended the boom. The village entered a long stable period with little economic growth, but new houses continued to be built, though at a slower rate. The stability preserved the village and its buildings for another century and more.

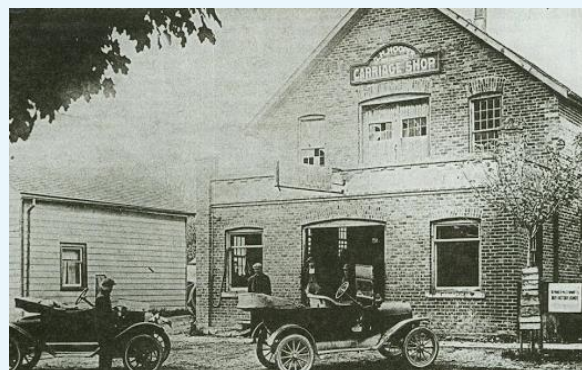
The presence of Yonge Street has been central to Thornhill's growth and identity. For the first hundred years of Thornhill's existence the traffic consisted of wagons, carriages, and stagecoaches. By 1898 an electric railway line was laid down and a streetcar service was established that allowed residents to commute to jobs in the Toronto area. The streetcar service lasted well into the 1940's but due to the rising popularity of cars, the streetcar line service ended.

The Arnold House, located at 21 Spring Gate Blvd, would have originally faced onto Yonge Street and would have been considered to be just south of the Village of Thornhill, well into the 20th century. John Arnold was deeded the land in 1848 by his father and he farmed for several years on the property with his wife and family. The surviving house is thought to have been built circa 1872. It was designated in 1982 under Part IV of the Ontario Heritage Act.

The Thornhill Vaughan Heritage Conservation District was first created in 1984, with the 1988 plan and boundary updated in 2007 [Source: Thornhill HCD Plan, 2007]



Looking south on Yonge toward Steeles at Clark Ave



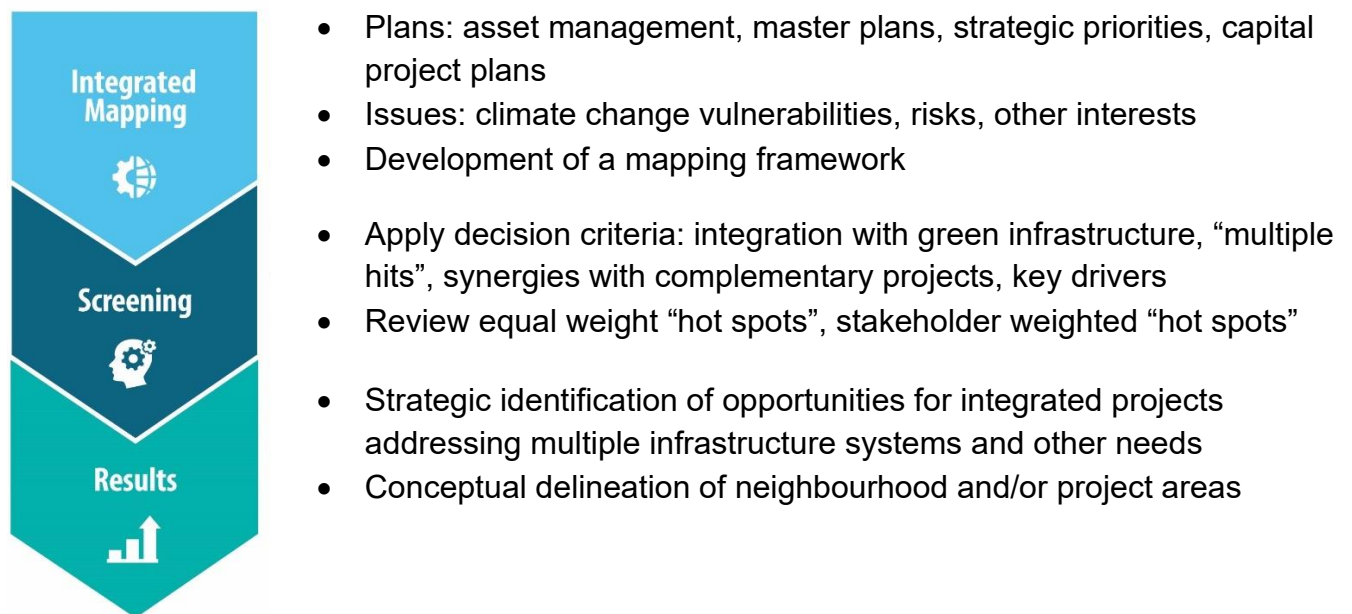
7756 Yonge Street - current home of the Thornhill Pub

(Images courtesy of Society for the Preservation of Historical Thornhill)

3.0 Neighbourhood Selection and Key Priorities

In 2018, TRCA’s Sustainable Neighbourhood’s team worked with multiple departments at the City of Vaughan and York Region to apply a neighbourhood screening process in order to identify candidate communities within the City that would be well suited for the SNAP program. The screening process, as presented in Figure 2, 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.

Figure 2 - Neighbourhood Screening Process



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. Table 2 presents the framework of service areas and lists the data used in the screening exercise. These layers represented planned projects and known vulnerabilities across 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”, including the Thornhill SNAP area, were identified, based on the following criteria:

- Areas containing at least one incidence of the highest score hexagon (e.g., >17 priority hits)
- Blocks with a high concentration of multiple hits hexagons
- Blocks with priorities of multiple partners

Table 2 - Mapping Framework and Data included within the City of Vaughan

Buildings	Total Energy Residential (GJ)-"High energy consumption (944,141 GJ)" <i>(includes electricity and natural gas consumption 'hot spots')</i>	City of Vaughan	Need/Condition
	Annual Residential Water Consumption 2017	York Region	Need/Condition
	Annual Residential Outdoor Water Consumption 2017	York Region	Need/Condition
Infrastructure and Mobility	Municipal SWM ponds in older residential neighbourhoods	City of Vaughan	Need/Condition
	Municipal Roads - improvements to existing	City of Vaughan	Opportunity/Project
	Municipal trails / Active Transportation	City of Vaughan	Opportunity/Project
	Conceptual Regional Trail-TRCA Trail Strategy DRAFT-Short-term priority	TRCA	Opportunity/Project
	York Region Road Project (10 years)	York Region	Opportunity/Project
	York Region Bridge replacement / improvement	York Region	Opportunity/Project
	York Region Intersection / interchange improvement (10 years)	York Region	Opportunity/Project
	York Region VIVA Next Project (10 years)	York Region	Opportunity/Project
	Provincial Transit Projects - Metrolinx/GO (limited data)	Prov of Ontario	Opportunity/Project
Flood Safety and Erosion Risk Reduction	Provincial Infrastructure Projects	Prov of Ontario	Opportunity/Project
	Flood calls - past 10 years – "very high vulnerability (13-18)"	City of Vaughan	Need/Condition
	Flood Vulnerable Areas - Cluster Management Zones - all	TRCA	Need/Condition
	Flood Vulnerable Roads	City of Vaughan	Need/Condition
	Riverine Erosion Problem Areas - Higher than 70 Catchments with Downstream Erosion Sensitivity	TRCA	Opportunity/Project
		TRCA	Need/Condition

Natural Environment and Watershed Systems	Natural Heritage Network - Enhanced Targeted TNHS, refined for each watershed - potential cover	City of Vaughan TRCA	Need/Condition Need/Condition
Health	IRP scores – "high priority (7-10)" Restoration Areas of Focus Heat Stress - Ground Surface Temperatures over 30C Water Balance - Priority Areas for Retrofit LID SWM controls Significant Groundwater Recharge Areas - all Depth to Water Table - "Depth to Water Table >2m" Catchments supporting Sensitive Target Fish Species – high priority	TRCA City of Vaughan York Region TRCA TRCA TRCA TRCA	Need/Condition Opportunity/Project Need/Condition Need/Condition Need/Condition Need/Condition Need/Condition
Parks and Recreation		City of Vaughan	Opportunity/Project
Health and Wellbeing	Opportunities for Environmental Learning - Seniors Opportunities for Environmental Learning - Early Childhood Education	TRCA TRCA	Need/Condition Need/Condition
Economic Vitality	Low-Income rates by CT 2012 United Way Signs of Concentrated Disadvantage - equal weighting United Way Signs of Concentrated Disadvantage - economic heavy weighting	York Region United Way United Way	Need/Condition Need/Condition Need/Condition

Once the areas of interest were identified, a “deep dive” analysis of these areas was undertaken by various divisions from the City, York Region and TRCA to select the preferred neighbourhood. A summary of the key technical priorities identified through this exercise for the Thornhill neighbourhood, as well as motivating interests identified by the community, include:

- **Flood vulnerable area** – Community is identified as a Flood Vulnerable Area Cluster by TRCA and the neighbourhood has the highest number of flood calls in Vaughan (2008 – 2018).
- **Low impact development (LID)** – Presence of medium-high impervious soils and a depth to water table, in certain areas, that is conducive to infiltration make this area a high priority for LID retrofits.
- **Sensitive target fish species** – The majority of the Thornhill SNAP neighbourhood is located in the Upper East Don River Subwatershed. A study commissioned by the City of Vaughan in 2010, noted the presence of Sensitive Fish Area 5 that covers most of Richmond Hill and the northern part of Block 2 of the Thornhill SNAP area. This Fish Area features permanent, cold water streams and several fish Species-at-Risk (Brown trout, Mottled Sculpin, Rainbow Trout).
- **Energy usage and intensity** – Portions of the Thornhill neighbourhood have the highest energy consumption rates in the City, as identified in City of Vaughan’s Municipal Energy Plan, and which highlights the potential to improve home energy performance.
- **Annual water consumption** – One of the areas in the York Region with highest indoor and outdoor water consumption, highlighting potential opportunities for reducing both indoor and outdoor water usage.
- **Urban heat stress** – Areas within the Thornhill neighbourhood are vulnerable to urban heat stress which can pose a threat to vulnerable populations, such as seniors and children.
- **Aging population and urban growth** – The presence of a high senior population combined with urban growth pressures present opportunities for encouraging aging-in-place initiatives and fostering intergenerational interactions.
- **Aging park infrastructure and changing neighbourhood demographics** – Aging park infrastructure and changes in neighbourhood demographics present an opportunity for park revitalization initiatives.

- **Areas of concentrated disadvantage** – Southern portions of the neighbourhood have been identified by United Way as an area of concentrated disadvantage.
- **Planned capital projects** – A series of planned capital projects that can be leveraged to achieve, through the SNAP program, higher environmental, resilience and social impact in this community. Planned capital projects in the community include Gallanough Park Stormwater Management Facility Municipal Class EA, and Gallanough Park Redevelopment. Garnet A Williams Community Centre Retrofit, Clark Avenue Cycle Tracks and other transportation improvements, York Hill Park Redevelopment and the South York Greenway Pedestrian and Cycling Corridor.
- **Nature in the city** – There is an opportunity to facilitate meaningful contact with nature throughout the neighbourhood by improving connections with existing natural heritage features, through planned park revitalization projects and through strategically planned green infrastructure initiatives.
- **Pleasant, connected active transportation** – The City has identified four collector roads within the neighbourhood to receive in-boulevard, dedicated cycle tracks. These plans provide a great opportunity to promote active transportation and its associated health benefits, in addition to helping manage traffic congestion, improve cycling safety and improve the pedestrian experience.
- **Community connections and liveability** – Community outreach revealed a feeling of detachment and a sense of disconnection between geographic areas of the community, between different cultures, and between youth and seniors. The Action Plan will identify programming and projects that will encourage renewed community connections as a means of improving quality of life and to help build the neighbourhood's overall resilience.
- **History, culture and art** – Community indicated a strong desire to celebrate the neighbourhood's unique history, diverse culture and vibrant arts community.

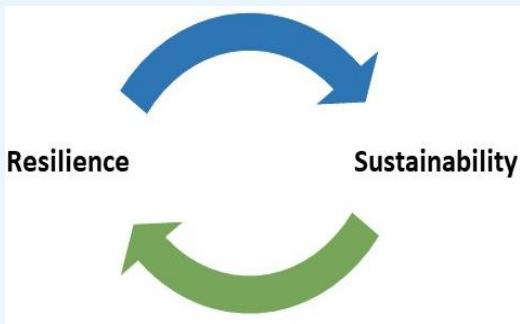
4.0 Neighbourhood Climate Change Vulnerability Assessment

In addition to the screening exercise and local baseline analysis, which revealed the above-noted technical priorities, TRCA's Ontario Climate Consortium staff completed a climate change vulnerability assessment for the Thornhill SNAP as part of a separate study entitled [High Level Resilience Strategy for Thornhill](#). This assessment provided insight into the specific community risks posed by climate change, identified existing vulnerabilities within the neighbourhood and was used to inform the resilience strategies outlined in the Climate Adaptation Recommendations (see Section 12 of this report).

The climate change vulnerability assessment was informed by community engagement and technical neighbourhood-level analysis to determine the community's likelihood of exposure to changing climate conditions, such as flooding, ice storms and extreme heat; to assess neighbourhood characteristics that influence how sensitive the community will be to climate change, such as percent of seniors, percent of residents living alone and age of homes; and to assess the community's current ability to adapt (e.g., anticipate, respond and recover from) to the effects of climate change, each of which can be impacted by the quality of, and access to public services among other factors. Table 3 outlines the full range of indicators considered in the assessment and Figure 3 presents a summary of the overall vulnerability findings by Block.

Sustainability and Resilience

For a system such as a neighbourhood, city or region to be sustainable over the long-term, the system must also be resilient. Resilience is understood to be the ability of a system to prepare for risks and threats, to manage the associated impacts, and to recover, adapt and thrive after experiencing acute shocks (e.g., flooding and extreme heat) or chronic stresses (e.g., drought and warmer winters).



- Resilience is integral to sustainability; increasing the resilience of a system makes the system more sustainable over the long-term.
- Increasing the sustainability of a system does not necessarily make it more resilient but there are certainly actions that can increase both.

Source: Marchese et al. 2017

Table 3 - Summary of Climate Change Vulnerability Assessment Indicators for Thornhill

Exposure	Sensitivity	Adaptive Capacity
<ul style="list-style-type: none"> • Extreme heat trends (including the urban heat island effect) • Precipitation trends • Flooding risk • Ice storm trends • Vector-borne diseases trends 	<ul style="list-style-type: none"> • Perceptions of climate change risks • Percent of seniors aged 65 years or older • Percent of children under 14 and under • Percent of residents living alone • Percent of population who do not speak English or French • Percent of people without a high school diploma • Average household income and distribution • Neighbourhood income inequality and polarization • Housing tenure (owned, rented, or other) • Age of buildings and homes 	<ul style="list-style-type: none"> • Local assets and services • Presence of air conditioning • Mobility and access to transportation (including public transit and active transportation) • Access to drinking water • Access to food outlets/sources • Street tree canopy coverage • Access to greenspace • Communications • Sense of community



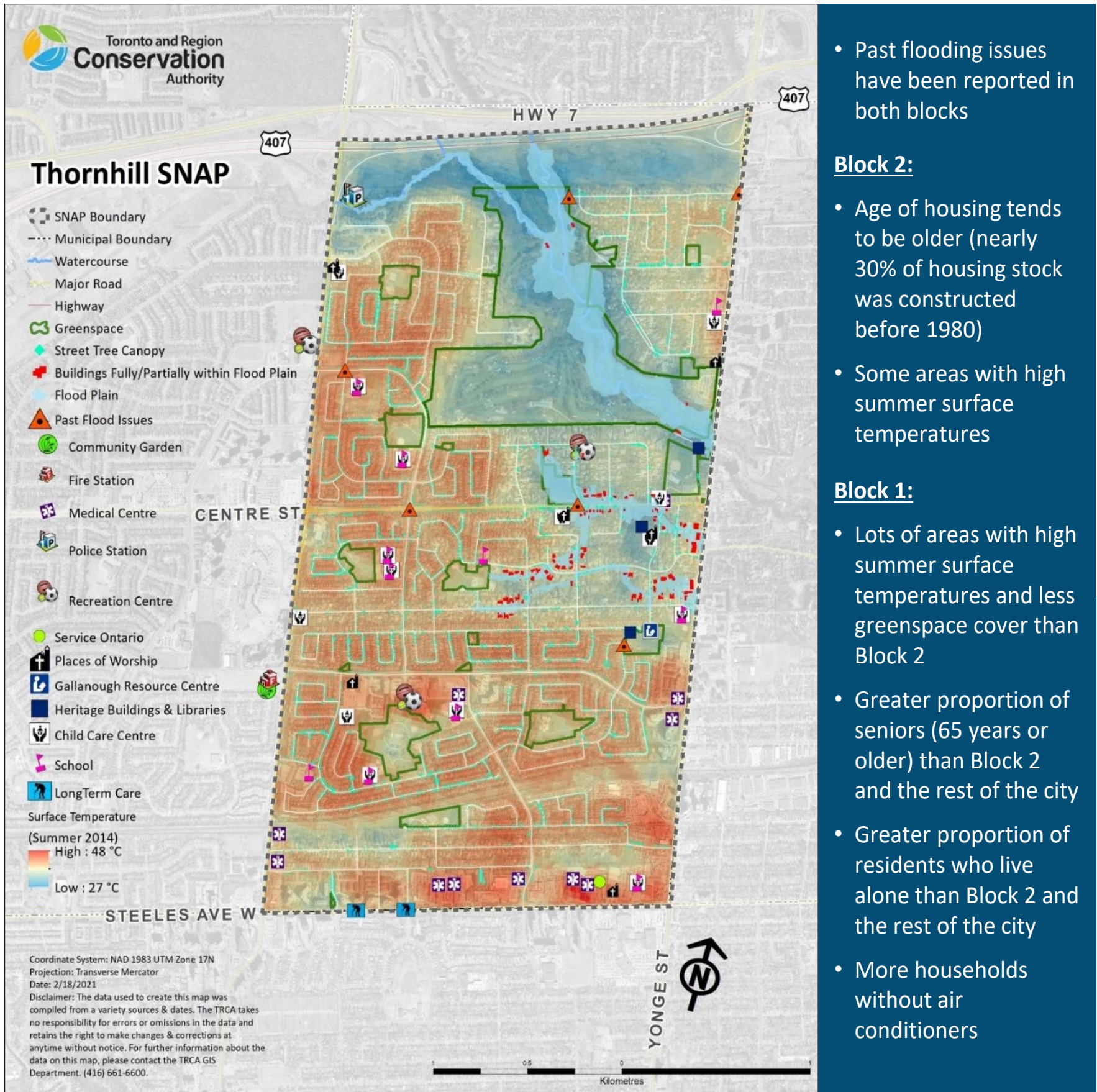
Images courtesy of TRCA

Key Vulnerabilities for the Thornhill Community

- **Increasing heat stress** – Many parts of the neighbourhood already experience high summer surface temperatures (e.g., the Spring Farm Marketplace and commercial areas along Steeles Avenue and Yonge Street). This urban heat island effect can exacerbate extreme heat events, which are anticipated to increase due to climate change. Extreme heat, which affects some people more than others (including seniors, children, and people with pre-existing conditions), is a key risk for Thornhill because it has a higher proportion of seniors (65 years or older) compared to the rest of the city.
- **Risk of flooding** – Based on available building footprint data, 104 buildings within Thornhill are located fully or partially within the flood plain, which are at greater risk of riverine flooding. Residents and stakeholders have also reported past flooding issues in some areas that appear to be infrastructure-related, which can be exacerbated by anticipated increases in precipitation.
- **Perceptions of climate change risks** – Before the COVID-19 pandemic, flooding was identified as a major concern for Thornhill residents and stakeholders, while concern for/awareness of other climate change risks tend to be lower (e.g., risks related to extreme heat, vector-borne diseases, and winter storms). Knowledge and awareness of other climate change risks can be improved, building on the lessons learned and awareness raised through the COVID-19 pandemic.
- **Access to greenspace** – Greenspace helps build climate resilience and brings many environmental, social and health benefits. There is opportunity to improve access to greenspace and reduce disparities in greenspace cover among Blocks 1 and 2 (5 percent versus 26 percent of greenspace cover).
- **Street tree canopy** – The size of street trees in Thornhill, as measured by diameter at breast height (DBH), are skewed towards the lower end, meaning that most street trees are smaller in size and provide less benefits for shade and stormwater runoff reduction compared to larger trees. In addition, many residents noted that numerous trees have been lost in recent years throughout the neighbourhood as a result of the Emerald Ash Borer, from ice damage and as a result of redevelopment activities.

- **Active transportation and access to public transit** – For people without access to a car, active transportation (e.g., walking and cycling) and access to public transit are important, especially during an event or disaster. Transit accessibility is better for households living along or near Steeles Avenue and parts of Yonge Street but declines for households located further away from the southeast corner of Thornhill. More people commute by car in Block 2 compared to Block 1, but public transit use remains low in Block 1. Residents and stakeholders expressed interest in improvements to active transportation (e.g., sidewalks, trails, and bike lanes) and public transit (e.g., subway extension and coordinated bus schedules).
- **Seniors and residents living alone** – The population in Thornhill tends to be older than the rest of the city and there is a greater proportion of residents living alone in Thornhill, who may need additional support during an event or disaster.
- **Language barriers** – While most residents are knowledgeable of either English or French, some Thornhill residents (approximately 3 percent) have no knowledge of English or French. To ensure that communications can be understood by all residents, it is important to develop translated products or communications that can be understood with few or no words.
- **Sense of community** – Overall, residents have a good sense of community but noted some feelings of social disconnect (especially south of the rail tracks) and desire for more opportunities to bring the community together (e.g., through programming in parks and community centres, block parties and barbeques, and revival of the Thornhill Festival).

Figure 3 - Summary of Overall Vulnerability in Thornhill by Block



5.0 Sustainability Framework

Working goals and objectives were developed across various sustainability themes (see Figure 4) based on technical neighbourhood conditions and community interests. These goals and objectives were customized to the neighbourhood, but also respond to bigger picture municipal and TRCA strategies, including but not limited to, Green Directions Vaughan, City of Vaughan Municipal Energy Plan, York Region's Long Term Water Conservation Strategy and SM4RT Living Plan and TRCA's Stormwater Management Criteria and Don River Watershed Plan.

Figure 4 - Thornhill SNAP Sustainability Framework

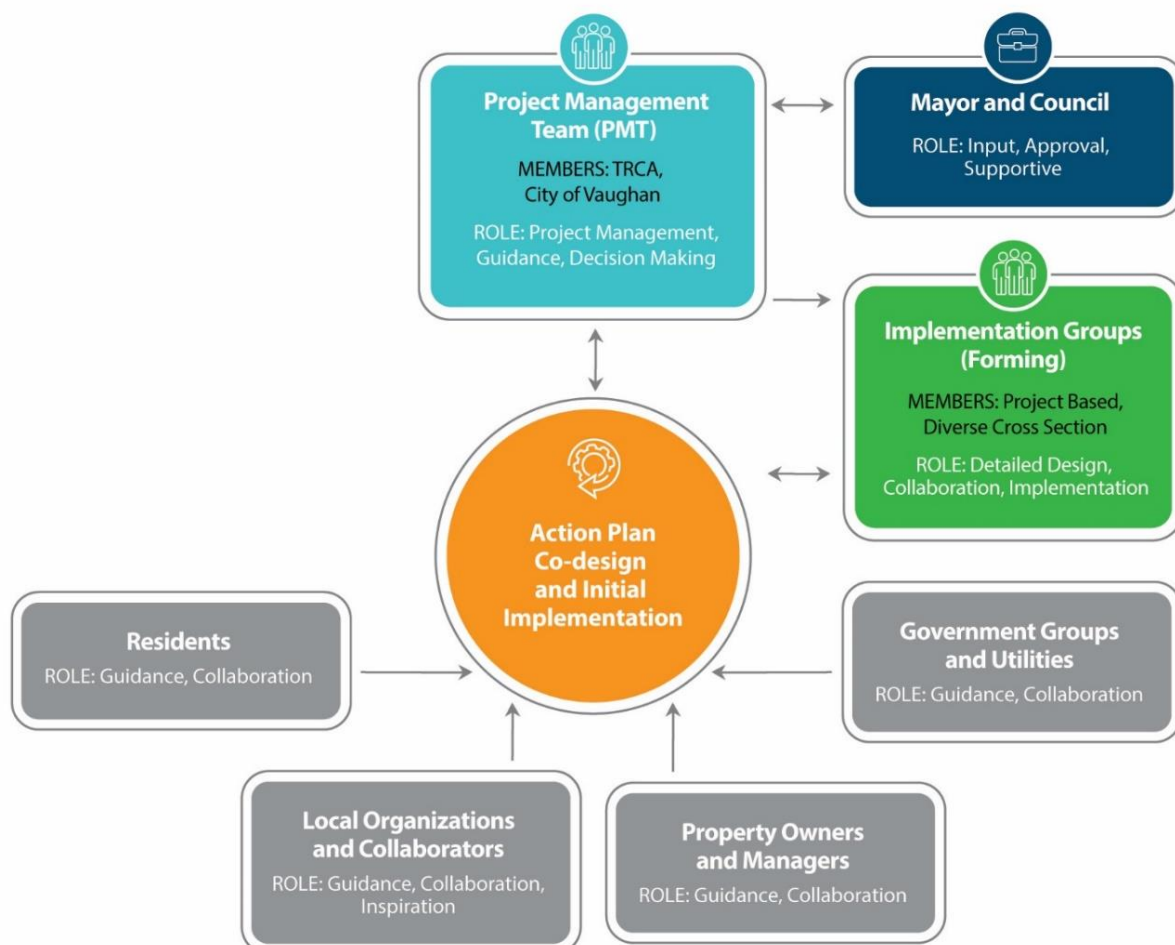


6.0 How We Got Here

6.1 The SNAP Governance Model

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 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, non-governmental organizations (NGOs) and other local stakeholders participated actively in the development of the plan through a robust engagement process that included innovative visioning activities. This collaborative approach allowed for identification and exploration of shared ideas and solutions.

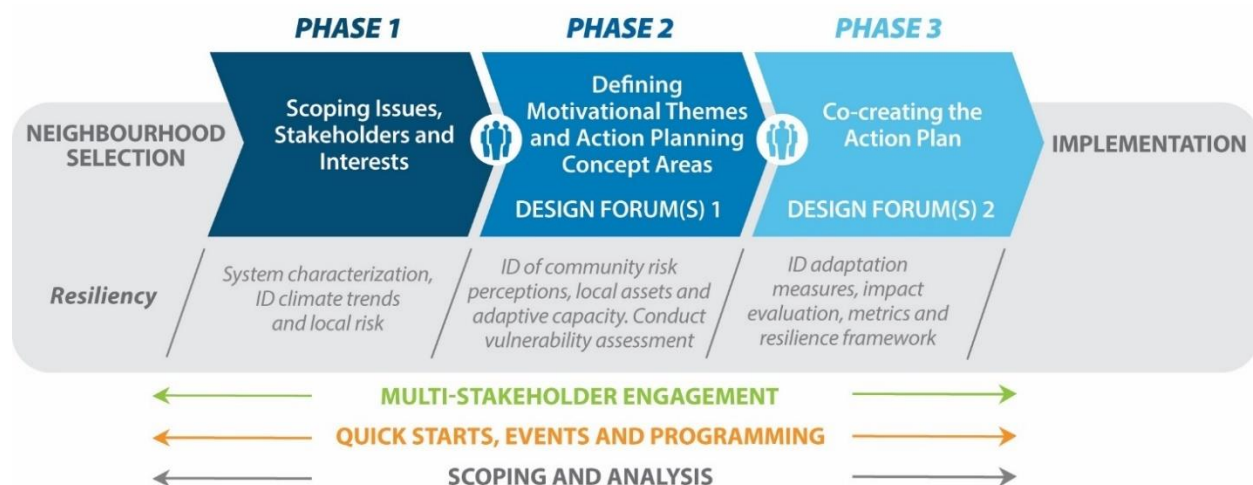
Figure 5 - SNAP Governance Structure



6.2 The Action Planning Process

The Thornhill SNAP action planning process, as presented in Figure 6, followed a phased model that promoted multi-stakeholder engagement at various stages. Local knowledge and input was integral to identifying 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 actions and associated implementation strategies that are outlined in this plan.

Figure 6 - SNAP Action Planning Process



Phase 1 – Scoping Issues, Stakeholders and Interests

The objective of Phase 1 was to conduct background research to help the project team generate an understanding of the baseline scientific and socio-economic characteristics of the community. During this phase the SNAP team also conducted multiple one-on-one meetings with community leaders, organizations, businesses and not-for-profits to gain insight into their unique perspective on community priorities, needs and challenges. Meetings with technical staff from various departments at the City of Vaughan, York Region and TRCA were also conducted. These technical meetings were undertaken to assess technical challenges and opportunities, to coordinate timing with Municipal Class Environmental Assessments (EA) and capital infrastructure projects planned for the neighbourhoods and explore opportunities to leverage these projects, and to identify planning documents and strategies of relevance within the study area. The overall SNAP community engagement strategy was also customized during this phase to align with the timing of local planned initiatives and other key milestones.

Phase 2 – Defining Vision, Motivational Themes and Action Planning Concept Areas

The objective of Phase 2 was to develop a neighbourhood vision and identify motivating themes, discover perceived risks, climate change vulnerabilities and assets, develop integrated action ideas and associated guiding principles, and prepare a draft Action Plan map. Engagement activities during this phase included a *SNAP into Action* survey, which was sent out to all residents, meetings with local organizations, and a one-day, visioning workshop that brought together residents, local stakeholders and technical staff (refer to Section 8 for a complete summary of the engagement initiatives).

Phase 3 – Co-creating the Action Plan

In the final phase of the action planning process, the objective was to confirm and finalize the Neighbourhood Action Plan, identify relevant climate adaptation strategies, develop preliminary concept drawings for each of the signature projects, and identify a number of quick start projects that could be used to build excitement and continue momentum for the SNAP. In this phase, planned engagement activities were modified and restructured to allow for online delivery as a result of the COVID-19 pandemic and associated restrictions around social gatherings. These restrictions precluded the SNAP team from hosting the Thought Leaders Workshop as originally planned. Community engagement activities in Phase 3 included two virtual open house sessions and three virtual visioning workshops. Each of the visioning workshops focused on one of the signature projects identified for the neighbourhood and were facilitated using the Zoom platform. The workshops were designed to resemble the “Thought Leaders” approach by bringing together technical staff from TRCA and the City of Vaughan with local community stakeholders and residents to brainstorm ideas and recommendations for key signature projects. Inspirational guest speakers were invited to present innovative projects of a similar nature. A TRCA landscape architect translated the ideas that were shared at the workshops, plus multiple meetings with technical staff, into conceptual drawings for each project. The draft Action Plan map, resulting from activities and analysis in Phase 2, was also posted to the SNAP website as part of Phase 3. Residents and community stakeholders were invited to provide their thoughts and feedback on the draft map (refer to Section 8 for a complete summary of the engagement initiatives).

7.0 Who was Involved?

The following stakeholders and local organizations were involved in the Action Planning process either through one-on-one stakeholder meetings, or through participation in the various in-person and online engagement workshops.

Table 4 - Local Contributors

Municipalities	<ul style="list-style-type: none"> • City of Vaughan- multiple departments • York Region- multiple divisions
Local Councillor	<ul style="list-style-type: none"> • Councillor Shefman
Faith Based Organizations	<ul style="list-style-type: none"> • Beth Avraham Yoseph of Toronto Congregation • Shoresh • Holy Trinity Anglican Church • United Jewish Association Federation of Greater Toronto
Community Groups and Not-for-Profit Groups	<ul style="list-style-type: none"> • SpringFarm Ratepayers Association • The Society for the Preservation of Historic Thornhill • Thornhill Heritage Foundation • Windfall Ecology Centre • Gallanough Resource Centre • Developing and Nurturing Independence (DANI) • Reena • pointA
Educational Institutions (public and private)	<ul style="list-style-type: none"> • Blessed Scalabrini Catholic Elementary School • Kayla's Children Centre • Thornhill Public School
Indigenous Peoples	<ul style="list-style-type: none"> • Mississaugas of the Credit First Nation • Curve Lake First Nations • Hiawatha First Nation
Private Business	<ul style="list-style-type: none"> • Thornhill and Uplands Golf Clubs

8.0 Community Engagement Highlights

SNAP takes a highly collaborative and community-based approach to foster co-ownership of the Action Plan among stakeholders and members of the community. This high level of resident involvement is one of the reasons for the SNAP program's continued success. The engagement activities are designed to tap into people's emotional connection to the neighbourhood as a main motivation for taking actions to improve neighbourhood sustainability and resilience. The following sections describe the multi-faceted engagement approach that was used for the Thornhill SNAP.

One-on-One Stakeholder Engagement (Phase 1)

The SNAP team conducted multiple one-on-one meetings with community organizations, businesses and not-for-profits to gain insight into their unique perspective on community priorities, needs and challenges and to inform customization of the engagement strategy.

SNAP into Action Survey (Phase 2)

A series of 25 questions were developed and compiled into a *SNAP into Action* survey. The survey was mailed out to all households in the Thornhill SNAP community in January, 2020. The survey was designed to gather feedback related to a number of different topics, including general interests, satisfaction with community services, areas for improvement in the community, sense of belonging and community connections, participation with various modes of transportation, perceived climate risks, community vulnerabilities and resources, home ownership status, renovation plans, renovation priorities and barriers, knowledge of residential retrofit incentive programs, and desired supports. A total of 103 people responded to the survey which provided great insight that was used to inform the Action Plan development.

Co-visioning Workshop (Phase 2)

A one-day workshop was hosted on January 26, 2020 from 9:30 am to 2:30 pm at the Thornhill Golf Club. The workshop was attended by 62 participants including community residents along with City and TRCA staff. The goal of the workshop was to engage participants in a full day of social innovation activities geared towards re-thinking their relationships with the neighbourhood and over the course of the day, over 1450 comments and suggestions were submitted by workshop participants. This was achieved through facilitated exercises prompting participants to think about the past, present and future of Thornhill. The workshop activities aimed to: respect past and current community building efforts in the neighbourhood; integrate creative and future oriented activities; achieve a mix of independent and group activities; and allow for a collaborative mapping component. While residents and other local stakeholders were

encouraged to share their local expertise, staff contributed by bringing their technical knowledge to the discussions.

A series of presentations from community members, partners and staff were delivered over the course of the day to provide context and information for future planning activities. A presentation was given on the historical context of Thornhill, beginning from the paleo period (12,000 BCE) and covering significant events through time that have shaped the community into the modern suburb that it is today. A local resident of the Thornhill SNAP, presented a personal perspective on what it's like to live in Thornhill, what they love about the community, local issues people are facing, and their impression of what needs to change. TRCA staff presented a brief overview of relevant trends in watershed and natural systems, regional climate forecasts, public health and built environment, community and development, and overall neighbourhood well-being.

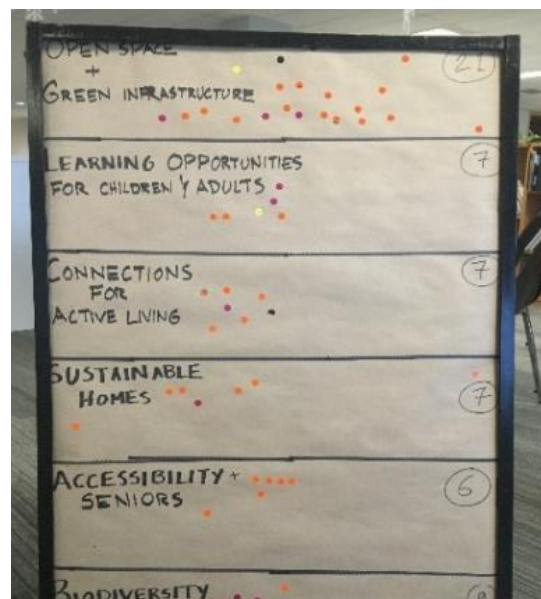
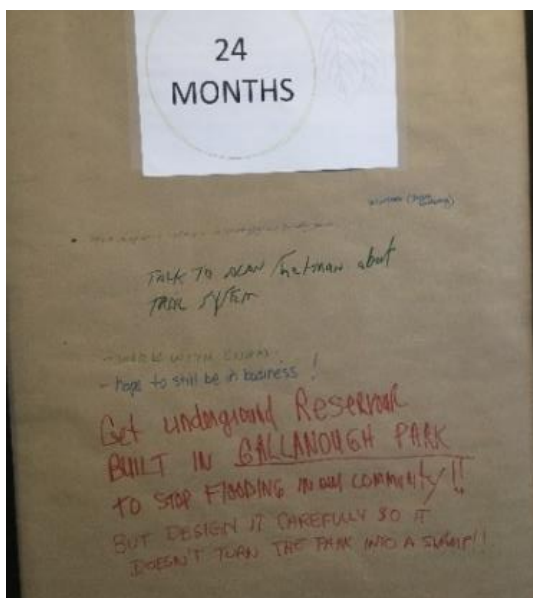
Co-visioning Workshop Activities

- **Mapping Activity** – Participants were invited to sit with other residents in groups and mark on a physical map, local assets, concerns, and opportunities. Participants were asked to consider: 1. What is important to you in your neighbourhood? 2. What do you wish for your neighbourhood? In the second portion of this activity the groups were assigned extreme weather events (ice storms, flooding, heat waves and windstorms) and were asked to identify important places in the community, priorities and vulnerabilities on the map of their neighbourhood.
- **Timeline Activity** – The goal of this activity was to understand and reflect on the history of Thornhill, share stories and knowledge, recognize patterns, and make predictions for the future. A large-scale timeline illustrating significant moments in Thornhill's history was used for this activity.



Images of Timeline and Mapping Activities from Community Workshop #1 (Images courtesy of TRCA)

- **Wall of WOW Activity** – This activity was used to generate excitement and motivation by exploring a series of “WOW” ideas to help inspire participant imagination. Participants contributed their own innovative ideas and ground-breaking concepts to the “wall of WOW” and shared what excited them most about those ideas. Participants explored where and how some of these ideas might become a reality in Thornhill.
- **2040 Cover Story Activity** – The activity was designed to encourage participants to imagine what the future of Thornhill could look like, by way of top news stories and news makers in the year 2040. Participants were asked to assume the role of various community members to imagine what the future would be like from varying viewpoints. The outcome of this activity revealed unique insight into the community’s values and aspirations for the future of Thornhill.
- **24 Challenge Activity** – The goal of this activity was to ensure that participants considered how the discussions from the workshop could be used to change their behaviour in the short, medium, and long term. Participants were asked to think about the day’s discussions and consider what action items they would be willing to do in the next 24 hours, 24 days and 24 months.



Images of 24 Challenge and Dotmocracy Activities from Community Workshop #1
(Images courtesy of TRCA)

- **Dotmocracy Activity** – For the final activity of the workshop, participants were given the opportunity to vote on the topic that resonated most with them from a list of various themes that had emerged over the course of the day.

Phase 1 and 2 Engagement Outcomes

A large amount of data was collected throughout the phase 1 and 2 engagement activities, ranging from input on specific sites to broader issues that affect the community at large. Residents and local stakeholders identified what they love and what they want to see changed. They identified their connection to Thornhill, memories of the past, and ideas for the future. Staff identified technical priorities and provided ideas for innovative solutions. Based on a careful review of the engagement documentation, key outcomes were identified, including motivating themes, the sustainability framework described previously in this report, and an overall emerging action plan with potential integrated action areas, signature project sites and programs.

One of the key objectives of phase 1 and 2 engagement was to understand community top of mind interests and motivating themes to help shape the direction of the Action Plan, its projects, and programs. These were identified based on commonly shared or repeated comments by community members during engagement activities, and patterns and trends identified by facilitators and members of the PMT. The following provides a summary of those motivating themes:

Primary Themes

- Nature in the City
- Revitalized, connected parks and open spaces
- Pleasant, connected active transportation
- Community connections and livability
- Sustainable retrofits in homes and institutions

Secondary Themes:

- Flood prevention
- Aging in place and accessibility
- Safety / security
- History and culture
- Local food
- Traffic and transit
- New development
- City services

Indigenous Peoples Engagement

TRCA and City of Vaughan strive to work with Indigenous Peoples to find ways to include elements of Indigenous culture and history into our projects including parks and trails. In May 2020, City of Vaughan and TRCA staff met with three Indigenous Communities. Mississaugas of the Credit First Nation, Curve Lake First Nation and Hiawatha First Nation were represented at the meeting. The discussion included an overview of the Thornhill SNAP action planning process, engagement to date and an overview of the motivating themes. The objective of the meeting was to identify opportunities to engage Indigenous Communities throughout the remainder of the planning and implementation phases. In addition, the Indigenous Communities were asked to identify specific locations of interest or priorities they would like to see addressed in the Action Plan. A brief discussion on the cultural and historical significance of the Don River was provided and all parties agreed this presented a

unique opportunity for interpretive initiatives. Additional suggestions were presented as ideas for how to include Indigenous recognition/education throughout the community, including naming of trails, use of Indigenous plant species, art installations by Indigenous artists, and interpretive signage.

Open House Sessions (Phase 3)

Two open house sessions were organized and hosted on June 14, 2020. A total of 30 people attended the two sessions. The open house sessions were hosted online as a result of the COVID-19 pandemic and associated limitations on social gatherings. Two separate web hosting platforms were used - Zoom and GoTo Webinar - to allow participants the option to interact either face-to-face on Zoom, or over an audio-only webinar format as on GoTo Webinar. The open houses served primarily as a wellness check on the community to gauge how people were faring in light of the health pandemic, and to maintain contact with the residents and continue building momentum for the SNAP. The sessions consisted of a short presentation about the Thornhill SNAP including an overview of the engagement and results to date, as well as information about how residents could participate and provide feedback moving forward.

Participants were encouraged to use the chat feature to ask any questions and time was also allotted for open discussion where participants were encouraged to unmute themselves and speak freely, as an opportunity to voice their concerns, share ideas and introduce themselves.

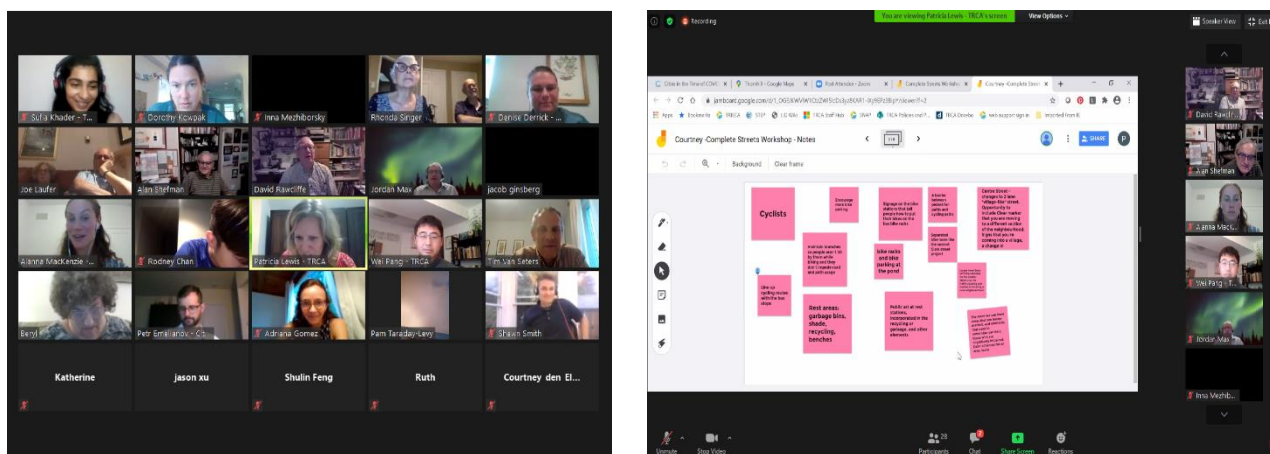
Online Action Plan Map Engagement

A draft Action Plan map was developed to portray the integrated action areas, proposed activities and programs and signature projects for the Thornhill SNAP. The draft map was made available on the SNAP website where the community was invited to provide feedback via an online form. Participants were asked if the map captured their hopes for the community and if anything was missing from the map. Residents were also asked to suggest a one-line catchphrase to capture the essence of the plan and the community spirit. A total of 15 residents completed the feedback form and an additional 5 sent direct emails to TRCA and/or Vaughan staff to provide their feedback. The action plan map was viewed by 246 people over the course of the commenting period.

Virtual Signature Project Workshops (Phase 3)

In the typical SNAP planning process, a second, in person workshop would be hosted as part of phase 3, to begin co-planning the signature projects for the community and to gain final approval for the draft action plan and motivating themes. In light of the ongoing COVID-19 pandemic, an in-person workshop was not possible for the Thornhill SNAP. Instead, a series of three virtual workshops were hosted in August and September of 2020, one for each of the public realm signature projects in the community. The workshops were all hosted using the Zoom platform and were attended

by residents, local stakeholders and technical staff. Each workshop began with opening remarks from the local Councillor, followed by an ice breaker activity (e.g., local trivia or bingo) which helped get participants comfortable with the technology and thinking in a creative mindset. At two of the workshops, participants were also asked to enter three words into the chat feature to describe how they would like to feel when in the subject park. The participant responses were then used to create a Wordle which was shared later at the end of the workshop. At each of the workshops, TRCA staff started off with a presentation on the Thornhill SNAP activities to date and an overview of how the Neighbourhood Action Plan was shaping up. City staff then presented slides to set the context for the specific project being discussed, including an overview of relevant City strategies, as well as a review of the SNAP guiding principles for the project. Each workshop also included an inspirational guest presenter to showcase what has been achieved in other communities, or other locations, for similar-type projects. Workshop activities were facilitated via break out groups on the Zoom platform and using Google maps and Google Street View. In each of the workshops, participants were broken into smaller groups and were asked to share ideas and solutions that could be implemented to help achieve the SNAP guiding principles and were also prompted to consider the perspective of all users and visitors. Each workshop wrapped up with a discussion about innovative implementation partners to identify key players who might have an interest in helping with implementation either through financial or in-kind contributions. As outlined in Table 5, a total of 132 people participated in the three signature project workshops combined.



Images from online signature project workshops (Images courtesy of City of Vaughan)

Table 5 - Summary of Thornhill SNAP Engagement Activities

Engagement Activity	Date	Number of Participants
One-on-one Stakeholder Meetings	Various dates	12 groups/associations
SNAP into Action Survey	January 2020	103
Co-Visioning Workshop	January 26, 2020	62
Indigenous Communities Engagement	May 28, 2020	3
Open House #1	June 14, 2020	19
Open House #2	June 14, 2020	11
Action Plan Map Online Commenting Period	June 1 – June 14, 2020	246
Complete Streets Signature Project Workshop	July 22, 2020	56
Gallanough Park Signature Project Workshop	July 29, 2020	40
York Hill Park Signature Project Workshop	September 2, 2020	36
Draft Action Plan Report Commenting Period	May - June 2021	City Councillors and 83 public views

9.0 The Thornhill SNAP 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 action plan supports a future where the neighbourhood's public and private spaces are well connected and rich with nature, activity, culture, history and art; where people of all ages and abilities feel comfortable, safe and engaged; where the built environment is created or retrofitted with health and sustainability in mind; and where community connections grow and prosper.

The Thornhill SNAP Action Plan, as presented in Figure 9, is centered on **three Integrated Action Areas** that will each be implemented through a series of initiatives. The Integrated Action Areas were developed in consideration of neighbourhood technical objectives for sustainability and resilience, planned capital projects and community priorities. These action areas represent the key themes to be addressed in each of the Signature Projects and will also serve to provide guiding direction for other initiatives that are implemented as part of the action plan moving forward. By adhering to the principles outlined in these action areas, the Thornhill SNAP Action Plan aims to help both the City and TRCA achieve key objectives and goals that are outlined in various strategy and planning documents, including but not limited to Vaughan Official Plan, City of Vaughan Municipal Energy Plan, Green Directions Vaughan, City of Vaughan Pedestrian and Bicycle Master Plan, City of Vaughan Active Together Master Plan and future City of Vaughan Greenspace Strategic Plan.

In addition, **four signature projects** have been identified in the neighbourhood. These signature projects align with planned capital works or City initiatives and are intended to be innovative projects that will serve to demonstrate how multiple co-benefits and diverse, community wide objectives can be achieved. Lastly, the Action Plan also presents a series of climate adaptation strategies that have been developed to address the unique character, resources and vulnerabilities of the Thornhill Community. This Action Plan reflects the culmination of technical analyses, robust 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. A neighbourhood where public spaces are interesting places for residents to meet each other while staying active and neighbours celebrate together and support each other.

9.1 Integrated Action Areas

The foundation of the Thornhill SNAP Action Plan is premised on the following three Integrated Action Areas:

9.1.1 Connected Places, People and Ecosystems

The Connected People, Places, and Ecosystems is an action area that will focus on building and enhancing physical, social and ecological connections within the community. Communities that are well connected are better equipped to respond and recover from economic stresses, climate impacts or other unexpected events. Strong social connections in a community are also important because of the mental and

physical health benefits they generate. The following four components should be considered when planning and designing projects:

- **Green Infrastructure Planning** – To complement the City’s ongoing efforts to implement green infrastructure, it is recommended that an inventory of green infrastructure opportunities be identified for the neighbourhood. This inventory could be used to help inform future development of public and private spaces within the neighbourhood. Green infrastructure planning measures should be integrated into the planning and design of existing municipal plans and/or projects to improve the community’s ecological integrity and ability to manage wet weather events through a well- connected system of natural infrastructure. Tree planting opportunities, as well as locations for pollinator gardens, rain gardens, urban agriculture, permeable pavement and other low impact development practices will be assessed. Consideration should be given to select tree and plant species that produce less pollen as it is expected that pollen seasons may be longer and more intense with climate change. In addition, community concerns regarding potential for bee stings should be considered in the design and location of new pollinator gardens and should also be addressed in related outreach material and signage. TRCA has completed a tree planting opportunity analysis for all land uses, which will complement this plan. The community also provided valuable insights on locations with opportunities for tree planting or replacement of dead trees. The information gathered through this work will contribute to the development of the City’s Green Space Strategic Plan.
- **Active Transportation Planning** – It is recommended that Active Transportation improvements be included to complement and build on both the City’s Active Together Master Plan and the recently updated Pedestrian and Bicycle Master Plan. The two plans provide direction for parks, open space and recreational activities and outline the proposed cycling and trail networks for the City, respectively. The Pedestrian and Bicycle Master Plan further recommended that the City focus on implementing localized active transportation networks in four neighbourhoods, one of which was Thornhill. Four streets in the Thornhill neighbourhood were identified as priorities for new separated cycling infrastructure by the community both in the context of the Pedestrian and Bicycle Master Plan as well as the SNAP project. Multi-modal transportation improvements including cycle tracks, pedestrian, and accessibility improvements, transit stop improvements as well as operational improvements for motorists, cyclists and pedestrians were substantially completed along Clark Avenue between Bathurst and Yonge Streets (within the SNAP study area) in 2020. Atkinson Ave, Centre Street and Hilda Avenue have all be identified for active transportation improvements including the implementation of separated

cycling facilities within the next 5-10 years. These planned capital projects offer a great opportunity to showcase the complete streets approach for all ages and abilities and be highly innovative. A Complete Streets signature project that aligns with the City's Priority Cycling Network is recommended as part of the Action Plan (see Section 10.3 below).

In addition, through a partnership between TRCA, the City of Vaughan and Ryerson University, a class of Urban and Regional Planning students developed an initial Multigenerational Active Transportation Opportunities Plan. This plan builds on the above-mentioned city priorities and SNAP signature project by identifying potential opportunities to enhance the active transportation network and experience for all ages and abilities at the neighbourhood level, while achieving a broad range of neighbourhood sustainability objectives (see Section 11.2 below).

- **Parks and Open Space Planning** – It is recommended that parks and open space improvements be included in the 12 parks and 4 parkettes, where needed and as identified by the community. As illustrated on the Thornhill SNAP Action Plan Map, there are numerous recommendations from the community regarding small-scale amenity and ecological improvements at many of these public spaces. In addition, two of the three signature projects identified for the neighbourhood comprise more substantial park revitalization projects which are aligned with planned capital works as identified through the 2018 Parks Redevelopment Strategy. The objective of the revitalization efforts throughout Thornhill's parks and open spaces will be to focus on improving ecological integrity, celebrating local culture and history and replacing aging amenities as planned in the capital budget. Addition of new features and facilities is also recommended to generate engaging, safe and unique places for residents to enjoy and to ensure levels of service are maintained with growth of the community. Revitalization of parks and open spaces should also improve connectivity with adjacent land uses as well as improving connectivity within the spaces themselves. Overall revitalization efforts will help promote these destinations as a Community Gateway.
- **Educational, Cultural and Community Programming** – It is recommended that cultural and community programming will focus on the development and delivery of customized programming and events that complement existing efforts already undertaken by the City or local community. This programming will foster community connections and help residents develop a deep sense of belonging to their community and a sense of pride in their neighbourhood. These programs and events will, where appropriate, support existing community initiatives (e.g., local festivals) or will offer new ideas to help generate community excitement and engagement. Programming and events may include educational events, skill building workshops,

themed virtual tours or scavenger hunts, and will be designed to reflect interests identified by the community, including celebrations of local culture and history, environmental stewardship, etc. A volunteer group of residents, which was formed as a result of the SNAP process, has expressed interest in leading community events and activities to foster a sense of community cohesion.

Connected People, Places and Ecosystems Guiding Principles

Connect green spaces, institutions and destinations through trails and wayfinding (within the neighbourhood and beyond)

- Improve walkability and bike ability across the neighbourhood (for commute and recreation)
- Improve accessibility for all and places to sit
- Provide more trees and connected habitat in public and private land across the neighbourhood
- Add more shade to parks and open spaces
- Create unique destination parks and spaces that are not "cookie cutter"
- Incorporate multi-age, multi-season recreation facilities and sports
- Incorporate art installations and cultural event
- Celebrate the neighbourhood's historical heritage through signage, art and programming
- Make public spaces safer and more comfortable
- Encourage contact with nature and environmental education through physical improvements and programming
- Encourage community building through physical improvements, events and programming
- Encourage community connections between elderly and youth, MUR and SFH and North and South of the railway tracks
- Encourage community participation in parks maintenance and programming (e.g., through adopt a park program, friends of parks, etc.)

9.1.2 Residential Retrofits

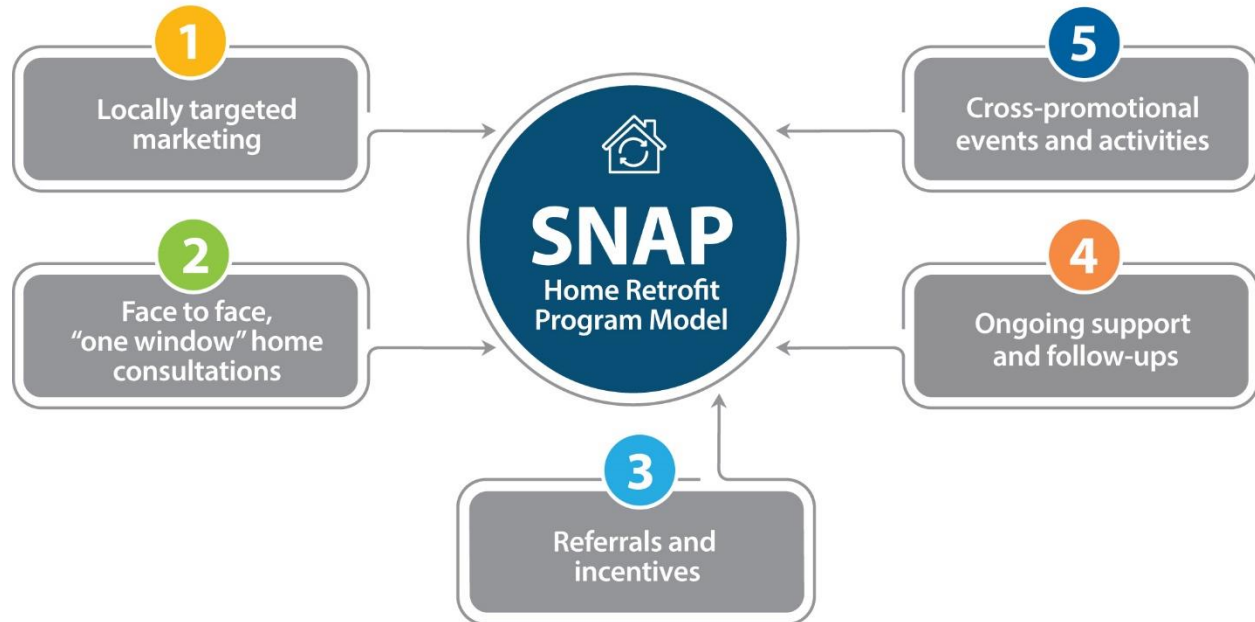
Through the engagement process, residents expressed significant interest in supports and programs to help them retrofit their homes. In addition, there are a number of characteristics of the building stock, which make this community a good candidate for intensified programs and initiatives to encourage single family residential retrofits. The City of Vaughan's Municipal Energy Plan indicates that the residential sector makes up about 37% of energy use in the City. Block 1 has been identified as having one of the highest energy consumption rates in the entire City. Approximately 66% of the existing residential building stock in the Thornhill SNAP consists of single family, semi-detached

and row houses. Of this 66%, the majority were constructed between 1975 and 1989, with the next largest proportion being constructed prior to 1975. This aging building stock provides an excellent opportunity for retrofits that will improve energy efficiency and achieve GHG reductions. The Thornhill SNAP has also been identified as having some of the highest water consumption rates in York Region which also presents an opportunity for physical and behavioural changes to help reduce these rates. The neighbourhood vulnerability assessment also identified challenges for the residential sector, including heat stress and flooding. Residential Retrofit Programs could help address these risks through actions and programming.

It is recommended that residential retrofit programs and initiatives for Thornhill be designed to address the above-noted issues as well as the top priorities identified by homeowners through SNAP engagement, including energy efficiency, renewables and electric vehicles, eco-landscaping, water conservation, aging in place, emergency preparedness, stormwater management, flood prevention, and waste management. The programs should provide supports and resources aimed at eliminating or reducing barriers identified by residents, 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. The City's study of the use of the local improvement charges financing mechanism, to encourage home energy renovations, suggests marketing benefits such as greatly improved home comfort (e.g., quieter indoor spaces with less temperature differences) as well as reduced utility costs and greenhouse gas reductions.

Following the SNAP model (see Figure 7), neighbourhood-based residential programs should use locally targeted marketing techniques that reflect identified community priorities and will benefit from being cross-promoted with other neighbourhood initiatives. They should also build on and help to increase uptake of existing incentive programs (e.g., utilities incentive programs, municipal financing programs, etc.) and should consider offering additional incentives, if needed, to respond to specific needs and priorities from Thornhill residents. Face to face engagement has shown by the SNAP program to be highly effective as well as offering ongoing support and continued follow up to homeowners, recognizing that the home renovation process takes time to implement and homeowners may complete renovations in a staged approach. The ongoing support ensures homeowners have a trusted, reliable resource to turn to and may help motivate individuals to take on additional projects.

Figure 7 - SNAP Home Retrofit Program Model



Residential Retrofits Guiding Principles:

- Encourage home retrofits and actions that will help to address neighbourhood sustainability and resiliency objectives
- Incorporate a multi-objective approach, including environmental and resiliency themes, such as energy, water, stormwater management, eco-landscaping and flood prevention and social themes of interest to the community, such as aging in place
- Customize programs and initiatives to address specific retrofit needs for the neighbourhood's particular building stock
- Customize programs and initiatives to address Thornhill residents' priorities and main obstacles preventing homeowners from completing renovations
- Cross-promote residential programs and initiatives through other neighbourhood programs and events
- Build on, complement and aim at increasing uptake of existing residential incentive and financing programs (e.g., from various levels of government, utilities and other organizations)
- Customize marketing, incentives and program promotion to the Thornhill demographic

Under the Thornhill SNAP Signature Projects an initial conceptual design for a home retrofit program was developed (see Section 10.4 below). This concept follows the SNAP Home Retrofit Program Model and guiding principles outlined for this Action Area.

9.1.3 Greening and Humanization of Commercial and Institutional Properties and Multi-Unit Residential Buildings

This Integrated Action Area will bring together property owners, tenants, not-for-profits and businesses to implement property-specific initiatives that will help support the various sustainability objectives identified for this community, while addressing owner and tenant priorities. The project will focus on commercial, institutional and multi-unit residential buildings in the Thornhill neighbourhood, of which there are 15 institutional buildings, including four publicly owned schools, two private schools, five places of worship and four other publicly owned buildings, including Garnet A. Williams Community Centre, John Arnold Historic House, Gallanough Resource Centre and a local OPP detachment. There are 18 multi-unit residential buildings with approximately 3,300 units, which represents approximately one third of all households in the Thornhill SNAP community. There are numerous commercial properties and approximately 600 registered businesses located throughout the neighbourhood.

Commercial and Institutional Properties

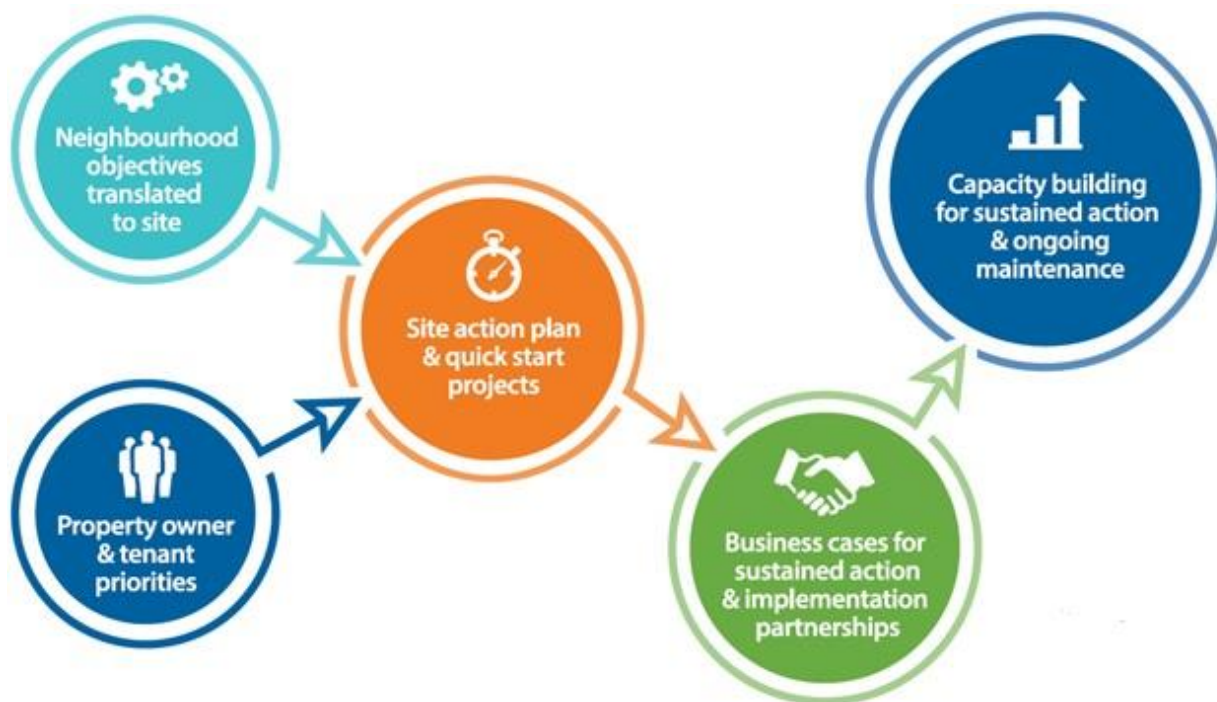
Many of the institutional properties in the community are aging and may require renovations during the next few years, which offer opportunities to achieve energy and water efficiencies, encourage sustainable transportation (e.g., through bike parking and EV stations), and achieve ecological integrity and sustainable stormwater management in the outdoors. Improvements to facilitate walkability and access to these properties, from surrounding land uses, will help strengthen these locations as community destinations. Residents expressed a particular interest in having art and educational installations and creating opportunities for community building through the development of gathering areas (such as patios) and programming. The community identified several institutional properties that would benefit from renovations or upgrading, including Gallanough Resource Centre, The Arnold House and Garnet A. Williams Community Centre.

In terms of the commercial properties the community indicated they would like to see improvements specifically at Chabad Gate Plaza, Spring Farm Market Place and the historic district on Yonge Street. Recommendations included renovations to create more sustainable and efficient buildings, greening of parking lots and outdoor spaces and improving or adding outdoor amenity features, such as benches, patios, bike parking, etc. Residents indicated they would like to see a “village-like” feel on Yonge Street, similar to Unionville in Markham. Overall residents would like to see these commercial spaces transformed into community hubs that are inviting, beautiful and full of life and where residents can come to do more than shop.

Multi-Unit Residential Buildings (MURBS)

As presented in Figure 8, the SNAP approach for revitalization of MURBs, will include a review of community objectives to determine how they can be translated and adapted at the site level. Engagement with property owners and tenants will be carried out to identify key interests and priorities which will form the basis for a site-specific action plan and identification of quick start projects. Quick start projects are intended to be easy to implement and inexpensive and are designed primarily to build excitement and support for the plan from all stakeholders. Projects and initiatives requiring sustained action or significant financial capital will be supported by a business case analysis which will include recognition of both financial and non-financial benefits for the property owner, tenants and the community as a whole. Where appropriate, capacity building measures will be used to facilitate long-term operational support and to sustain interest and action into the future.

Figure 8 - SNAP's Approach to Multi-Unit Residential Building Revitalization



With approximately one third of residents living in high rise towers, the MURB initiatives will be multi-objective, including building retrofits and revitalization of the grounds, urban agriculture (e.g., balcony gardens, community/allotment gardens, etc.), and outdoor amenity improvements. Underutilized spaces surrounding many MURBS can be better designed and programmed to provide greater ecological and social function, allowing for connection to nature that is otherwise not readily available to tenants. Actions to help

tenants build meaningful social connections will be encouraged to help mitigate social barriers and reduce rates of isolation and marginalization.

Property owners will benefit from being perceived as good corporate citizens and by participating in positive environmental impact and social change and from other tangible benefits, such as improved tenant retention rates, improved occupancy rates and through a renewed ability to attract new investment opportunities.

New Development

While the SNAP program focuses on retrofits as opposed to new development or re-development, through the engagement process the community expressed significant interest in achieving community benefits from new development taking place in the neighbourhood. Some of the ideas that came up and that should be considered by the City of Vaughan, included the development of privately owned public open spaces and/or amenities (such as theatres) that could be used by the broader community. The community also highlighted the opportunity of achieving ecological integrity thorough the design of the grounds and roofs of these developments. It was also noted that the community expressed concern over the proposed new developments at Yonge and Steeles and stressed the importance of the City evaluating and addressing the impact of these proposals from an infrastructure, transit, social and quality of life perspective.

Greening and Humanization of CI Properties and MUR Buildings Guiding Principles:

- Create sustainable and resilient buildings, parking lots and outdoor spaces
- Contribute to a connected natural heritage
- Ensure properties are accessible through active transportation and have bike facilities
- Ensure properties are fully accessible for all user abilities
- Encourage community connections through physical improvements, events and programming
- Encourage connections with nature and environmental education
- Integrate celebration of arts, culture and neighbourhood's historical heritage through programming and/or physical improvements
- Consider use as emergency centres for extreme climate events
- Consider offering local food (through urban agriculture, farmers' markets, retail, etc.)
- Prioritize safety

Figure 9 - Thornhill SNAP Neighbourhood Action Plan Map



10.0 Signature Projects

Four signature projects have been identified for the Thornhill neighbourhood. Signature projects are intended to be innovative pilot projects that are developed based on input from the community and technical staff from the City and TRCA. These signature projects demonstrate how co-benefits and diverse, neighbourhood-wide, sustainability and resilience objectives can be achieved along with addressing strategic targets set by the City, Region and TRCA. These projects will leverage planned capital budgets to achieve innovative elements and to maximize environmental and socio-economic benefits, as well as climate adaptation recommendations. Signature projects will integrate community needs and interests and are expected to garner increased community support and to foster continued collaboration on neighbourhood initiatives.

Implementation of the signature projects will be phased. Some elements will be implemented in the shorter term (phase 1), through the City's capital infrastructure budgets over the next 10 years, while some others will require joint fundraising efforts from the City, TRCA and community partners. Potential sources of funding for phase 2 elements include grants from other levels of government, foundations and the private sector, or crowdfunding. Staff will also work with the City's Municipal Partnership Office on any fundraising initiatives. This aligns with several City strategic plans that encourage partnerships including those with the community and public-private partnerships to leverage additional resources, expediate development, improve accessibility, enhance maintenance and programming needs, etc.

10.1 Gallanough Park Redevelopment

Gallanough Park is a community park centrally located in the Thornhill SNAP neighbourhood. As per the City of Vaughan's Park Redevelopment Strategy community parks are between 0.75 to five hectares and support a balance of active and passive uses and are often coordinated with school sites, where possible, and serves the community located within a 10-minute walk of the park. The 2018 Parks Redevelopment Strategy guides the renewal and redevelopment of municipal parks over a 10-year period (2019-2028). As part of the strategy, Gallanough Park is a candidate for redevelopment. The existing park currently includes playground equipment, an outdoor gazebo, swings and walking trails. The Park is also connected to a number of important community institutions including the Gallanough Resource Centre, the John Arnold Historic House and Thornhill Public School. These connections provide an ideal opportunity to make Gallanough Park into a vibrant and exciting community gathering space.

The Park was identified as a signature project based on feedback received from the community, and given the City's capital plans to construct a stormwater management

facility in the park to alleviate localized, urban flooding, and given the availability of capital funding through the Parks Delivery division, to help revitalize the park infrastructure and amenities. As such, all proposed elements will need to be reviewed in light of the underground storm water structures and any restrictions imposed such as weight restrictions and maintenance access, will need to be considered.

The Vision

Gallanough Park is a hidden gem in the Thornhill neighbourhood. Park revitalization recommendations feature an abundance of activities and experiences for residents, by adapting and enhancing the existing park functions. The goal is to create well connected and cohesive spaces, provide comfortable, enjoyable, safe and continuous experiences, as well as enhance biodiversity for wildlife. Each designated space has its own unique function, that addresses the community's feedback and coordinates with the future underground stormwater management facility.

Previous community engagement related to the proposed stormwater management facility in the park clearly demonstrated the community's understanding of the need for the facility; however, they strongly preferred the City consider an underground facility that would not impede use of the park. Feedback received from the community during SNAP engagement, indicated a strong desire to create a lively, family-oriented park that celebrates cultural, historic and Indigenous heritage where people come for leisure, to connect with others in a safe and inclusive environment. Residents also expressed interest in revitalizing the outdoor amphitheatre connected to Gallanough Resource Centre as a space where small local cultural events could be hosted (e.g., small music events, reading groups, etc.). Suggestions were also made regarding the the Arnold House to have the facility feature more prominently in the park through improved signage and physical connectivity as well as enhanced programming to attract more people to the facility. Staff from both the Gallanough Resource Centre and the Arnold House were consulted and should continue to be kept aware of any site plan revisions as they become more detailed to ensure they respect any Heritage Designation by-laws and existing programming.

Residents indicated an interest in creating a small number of focused activity areas such as a reading garden or fitness station, while maintaining and improving the available open space for unstructured play and for much-loved tobogganing in winter. Many residents suggested the need for expanded playground facilities appropriate for multiple age groups and to allow for multi-sensory play. Many people suggested more seating facilities throughout the park and a desire to extend the existing trail network to make better use of the park in its entirety. In addition, the community suggested both aesthetic and ecological improvements, including incorporation of art, native plantings, more trees, and features that would attract bees, birds and bats. This work would support the City's Monarch Pledge initiative.

Figure 10 - Gallanough Park Concept Plan



ACCESS AND CONNECTIVITY

Improve connections with neighbouring schools, residential areas, streets, and extend trail network within the park itself to create continuous loops. Use permeable materials where appropriate (e.g. where the proposed trail goes over the underground storm water management tank) and ensure trails are well maintained during all seasons.



ECOLOGICAL INTEGRITY

Improve ecological integrity throughout the park by planting new native trees, creating pollinator gardens and planting a diverse selection of native plants and shrubs. Contribute to wildlife habitat with bird and bat boxes, and bee hotels. Include nature-based educational signage.

RECOMMENDED TREE LIST

Burr Oak	Cucumber Magnolia
Swamp White Oak	Hop Hornbeam
Black Walnut	Mitten Tree
Black Willow	Eastern White Cedar
American linden	Eastern White Pine
Catalpa	



GALLANOUGH PARK

PLAYGROUND / FITNESS

Improve existing play area by enhancing multi-level playground. The location of proposed playground does not interfere with existing tobogganing slope and proposed stormwater overland flow route. Natural playground elements allow children to have more opportunities to connect with nature. Proposed play and fitness elements should be designed to accommodate and encourage interaction of all ages and abilities and should incorporate educational signage.



ACTIVITY AREA

Provide for a variety of distinct activity areas within the park to encourage exploration and to maximize functionality throughout the entire park. Areas should be designed to accommodate and encourage interaction of all ages and abilities and should incorporate self-guided and programmed activity types, as well as encourage interaction with nature.



Recommended Elements for Gallanough Park:

- ✓ **New playground equipment** – Accessible options that appeal to multi-age, multi-sensory experience with seating options for parents and caregivers and adjacent to enhanced toboggan hill
- ✓ **Extended trail network** – Provide well-lit trails to all areas of the Park and to improve connectivity with neighbouring institutions
- ✓ **Wayfinding signage** – Promote connection within and beyond park and to encourage environmental learning
- ✓ **Interpretive signage** – Educate visitors on nature, watershed and stormwater management as well as local history and Indigenous perspective
- ✓ **Pollinator gardens, tree plantings and wildlife enhancements** – for contact with nature and ecological integrity
- ✓ **Underground stormwater management facility** – Reduce flooding and erosion potential in receiving creeks and to reduce pollution to the environment
- ✓ **Expanded seating opportunities** – Expanded pavilion and addition of seating among existing trees
- ✓ **Refreshed amphitheatre** – Increased capacity and aesthetics for small, community events
- ✓ **Revitalized patio and renewed connection to Gallanough Resource Centre** – Outdoor seating and gathering space which overlooks Park and improves connection with Gallanough Resource Centre through a revived rear entrance
- ✓ **Renewed engagement and connection with the Arnold House** – Renewed programming and signage to celebrate historical heritage and improved physical connection to Park and potential washroom facility
- ✓ **Additional activity space** – Creation of new activity zone at south-east corner of park
- ✓ **Inclusion of art** – Beautification and to enhance learning experience where feasible through interactive art (e.g., art sculpture linked to water level in underground stormwater facility)

10.2 York Hill District Park Redevelopment

York Hill District Park is a district park located in the southwest of the Thornhill SNAP neighbourhood. As per the City of Vaughan's Park Redevelopment Strategy (2018), district parks are five hectares or more in size and they support a variety of recreational and athletic interests with amenities, such as: sports fields and courts, large skateboard parks, outdoor skating facilities, field houses, picnic shelters, off-leash dog areas and water play facilities. District parks are adjacent to community centres, where possible.

The existing York Hill District Park currently includes: three playground areas, two baseball diamonds, a small gazebo, swings, tennis and basketball courts, an outdoor skating rink and a series of multi-purpose trails. The Park is located adjacent to Blessed Scalabrini and York Hill elementary schools. The Park is also connected to the Garnet A. Williams Community Centre (GAWCC). DANI (Developing and Nurturing Independence), a local non-profit organization currently leases space at the community centre where they operate a day program for adults with special needs. The program runs a number of businesses that are staffed by the program participants, including a café and greenhouse, also located at the community centre. The Park was identified as a signature project based on feedback received from the community combined with the City's capital plans for renovations at GAWCC and the availability of capital funding through Parks Infrastructure Planning and Development to develop a revitalization plan for the Park.

The renovations planned for GAWCC are primarily focused on the interior of the building, including renovated washroom facilities and change room facilities that will be accessible from York Hill District Park (which is why additional washrooms are not being considered for this park). Renovations will also include a revitalized south entrance area, complete with ramp and patio space as well as a water park feature adjacent to the facility. The City is also working on a Pickleball study which may result in identifying tennis courts for shared use through additional line painting.

Figure 11 - York Hill District Park Concept Plan



ACTIVITY/ADVENTURE ZONES

Provide for a variety of distinct activity or adventure zones within the park to encourage exploration and to maximize functionality throughout the entire park. Zones should be designed to accommodate and encourage interaction of all ages and abilities and should incorporate, educational signage related to each zone, and a combination of self-guided and programmed activity types.



GATEWAY FEATURES & WAYFINDING

Amplify gateway features with signage, eco-landscaping and aesthetic improvements to raise community awareness and profile of York Hill District Park. Use artistic and colourful wayfinding signage throughout park and at key spots and adjacent to GAWCC and schools to encourage visitors to explore all Activity Zones and park amenities.



EDUCATION AND INTERPRETATION

Maximize opportunities throughout the park for educational learning (nature-based, Indigenous, sports, agriculture, cultural and historical heritage) and to provide engaging experiences for visitors.



YORK HILL DISTRICT PARK

ACCESS AND CONNECTIVITY

Improve connections with GAWCC, neighbouring schools, businesses and residential areas and extend trail network within the park itself to create continuous loops and access to all Activity Zones within the park. Use permeable materials where appropriate and ensure trails are well maintained during all seasons.



ECOLOGICAL INTEGRITY

Improve ecological integrity throughout the park by planting new native trees, creating pollinator gardens and planting a diverse selection of native plants and shrubs. Contribute to wildlife habitat with bird and bat boxes, and bee hotels. Include nature-based educational signage.



STORMWATER MANAGEMENT

Consider use of permeable surfaces for new hardscaping elements and low impact development (LID) measures to treat stormwater runoff in the park, especially from hard surfaces at GAWCC, and at adjacent schools where practical. LID measures can include bioretention pond, rain gardens, infiltration trench, stormwater harvesting and treatment facilities. Include educational signage on watersheds and sustainable stormwater management.



The Vision

The community's vision for York Hill District Park is one of a cultivated wilderness, which interprets and integrates the rich culture heritage of the neighbourhood with Vaughan's natural landscapes and diverse ecologies, as well as adapts and enhances the existing park amenities and programs through Low Impact Development (LID) for stormwater management and other innovative technologies. The recommended landscape includes more opportunities and new outdoor experiences for gathering and provides a diversity of experiences for contact with nature through pollinator gardens, tree groves, and community gardens.

Feedback received from the community centered on the following main ideas:

- **Access and Connectivity including Expanded and Improved Multi-use Pathways** – Residents noted that there are numerous access points into the park which are not currently well signed or served. Specifically, people who want to access the park from the north of GAWCC must cross through the parking lot which is neither safe nor pleasant. The community would like to see formalized pathways and signage be added to improve access to the park by foot and by bike at this location. In addition, it was recommended that the existing trails be extended to more areas in the park and that they be modified to allow dedicated space and improved safety for all users (e.g., cyclists and pedestrians have separate lanes). Other suggestions included adding more wayfinding signage to direct visitors and to add more visual interest through art and colour.
- **Activity Options for all Ages and Increased Educational Learning** – While the park currently provides for a variety of sports activities, the community expressed an interest in having a wider variety of amenity options that would appeal to all ages and abilities. It was suggested that a series of activity zones be created throughout the park which would each allow for a different user experience and it is recommended that the design of these zones be aligned with the ideas and themes recommended by the community, including environmental learning and/or to celebrate historical and Indigenous heritage and the local arts community. These spaces could also be enhanced through programmed activities and interpretive signage and could serve as learning spaces for the nearby schools.
- **Creation of a Park Focal Feature** – It is recommended that one of the activity zones incorporate a focal feature for the park (e.g., fire pit, pizza oven) that would serve both organic, non-permitted community gatherings as well as organized events. The existing amphitheatre area, which is also a dry, stormwater management facility, is currently being used to host larger, public events such as outdoor concerts; however, these events have been cancelled in the past due to wet

weather which produces standing water in the amphitheatre. Consideration should be given to add an infiltration trench in the center area of the amphitheatre to reduce flooding impacts.

- **Introduction of Urban Agriculture** – Another activity zone could focus on fresh, local food as there were specific suggestions from the community to add a community garden, plant fruit trees and establishment a farmer's market at the Park. The addition of an urban agriculture feature would provide for many learning opportunities and could complement the existing greenhouse operation already onsite. This idea would also present an opportunity to link to the historical heritage of the nearby Springfarm community prior to urbanization.

In addition to the activity zones it was noted that many trees have been lost over the years to disease or weather events. More trees, benches and well shaded seating areas, adjacent to the existing playgrounds, and in general need to be added throughout the park as there are currently limited options in place where people can sit and relax.

Recommended Elements for York Hill Park:

- ✓ **Improved gateway and wayfinding signage** – Refreshed signage at main entrances and addition of wayfinding signage to highlight park activity zones
- ✓ **Improved trails, seating and shade** – Design and expand trails to accommodate all users and to improve connectivity and provide ample shade through tree plantings or shade structures and increase seating options adjacent to activity spaces and to provide areas for quiet and relaxation
- ✓ **Pollinator gardens, tree planting and wildlife enhancements** – Contact with nature and ecological integrity and to promote environmental learning
- ✓ **Activity zones** – Create a series of activity zones geared to all interests, ages and abilities throughout the park to encourage visitors to explore and learn
- ✓ **Fresh local food** – Inclusion of a community garden and potential farmer's market or CSA pick up throughout spring and summer months
- ✓ **Interpretive signage** – Addition of educational signage to complement new features/amenities to help encourage environmental learning as well as to promote historical and Indigenous heritage
- ✓ **Celebration of art** – Incorporate art and colour into all aspects of park design (signage, benches, etc.) and where possible engage involvement from local artists
- ✓ **Greening of GAWCC parking lot and outdoor spaces** – Incorporate bioretention medians, permeable pavement, EV charging stations, and eco-landscaping as part of exterior facility upgrades
- ✓ **Focal feature** – Establish a focal feature to support local celebrations and community connections

10.3 Complete Streets Project (Atkinson Ave, Hilda Ave and Centre Street)

The province of Ontario defines Complete Streets in the 2019 Growth Plan: A Place to Grow as “**streets planned to balance the needs of all road users, including pedestrians, cyclists, transit-users, and motorists.**” The Thornhill SNAP Complete Streets signature project identifies areas of opportunity on three collector roads in the Thornhill SNAP neighbourhood. These roads were identified based on input from the community through the SNAP Visioning Workshop as well as alignment with the City of Vaughan’s Pedestrian and Bicycle Master Plan which recommends these streets as part of the priority cycling network. Sidewalks exist on both sides of the selected roads, but pedestrian connections between sidewalks, mid-block crossings, community amenities and open spaces need to be strengthened. In addition, community feedback indicated numerous suggestions for these streets, including improved walkability and traffic flow, reduction in pedestrian/cyclist crossing distances and times at intersections, midblock crossings, reduction in traffic congestion, implementation of cycling facilities, beautification and planting additional street trees.

The Complete Streets concept was utilized to help guide engagement discussions to ensure that feedback encompassed all potential street users including pedestrians, cyclists, transit users, and motorists while considering the broader SNAP guiding principles recommended by the community, including the need for better walkability and accessibility as well as bikeability, the desire to create interesting destinations, as well as a need to create spaces that encourage community interactions. The objective of the Complete Streets project is to create safe, inviting and vibrant streets and streetscapes that will attract both residents and visitors of all ages and abilities alike, while addressing the sustainability objectives identified for the community, including increased urban forest cover and habitat improvement and sustainable stormwater management. Feedback received from the community is summarized below by user group followed by a summary of general recommendations which address broader SNAP objectives.

Pedestrians

Many of the suggestions presented for pedestrians were focused on safety improvements, including intersection modifications to improve sightlines for drivers to better see pedestrians, reduction in crossing distances and altering timing at crosswalks to permit exclusive pedestrian movement ahead of traffic movement.

Recommendations for separate pedestrian and cycling facilities within the road allowance, and design improvements to provide safer, more predictable experiences for people with mobility challenges or visual impairments were also suggested (e.g., tactile paving/detectable warning surface to increase traction, raised crossings, etc.). While the exact location or type of these interventions would be subject to further technical analysis from the City, many people also expressed the need for improvement of the quality of street life, including more seating and rest areas on these streets, along with

more trees or physical structures to provide shade and protection from the sun and adverse weather. The need for more education and enforcement regarding the rules of the road and proper use of sidewalks, crosswalks and cycling facilities was suggested to improve safety on these streets and throughout the entire community.

Recommended site improvements should coordinate with the City's Engineering design standards as well as City of Vaughan's Inclusive Design Standard, City-Wide Urban Design Guidelines, Mobility Management Strategy (MoveSMART), Pedestrian and Bicycle Master Plan and Pedestrian Capital Program, etc.

Cyclists

All three selected roads are local routes that are part of the priority cycling network as identified in the Pedestrian and Bicycle Master Plan as well as identified as priorities through the SNAP project. A number of safety recommendations were also made, including a preference for separated cycling tracks (from both motorists and pedestrians), attention to street tree maintenance to ensure limbs do not impede cyclists and physical barriers between cyclists, pedestrians and motorists.

Other recommendations included adding more support infrastructure, such as bicycle parking (e.g., at transit stops and key destinations), seating and shaded rest stops (keeping in mind seniors), and water refill stations. It was suggested that new cycling routes be better coordinated with transit routes. Cyclists are currently unsure about how to transition to transit or perhaps don't know this is possible so more signs or education could encourage more uptake. Recommendations were provided for more signage to be posted at bike parking and transit stops to educate users on how to transport their bikes on the bus.

Transit Users

Suggestions for transit users were primarily centered on improvements at existing bus stop locations. It was recommended that all bus stops include benches or seating, shade and/or shelter as well as safety features (e.g., wired emergency buttons). Additional signage, or improved signage at bus stops was also suggested to provide more clarity about which buses stop at that location or to provide more direction to other bus stop locations nearby. It was also noted that the frequency of buses should be increased to give riders more options and that coordinating fares between transit systems (e.g., YRT, TTC and Viva) was important to encourage more users. All recommended transit improvements should be in alignment with existing York Region transit plans and strategies.

Motorists

Many of the recommendations for motorists were focused on improving traffic flow. It was suggested that traffic lights at the intersections of both Hilda and Clark, and Hilda and Steeles, be assessed to see if further timing improvements could be made to help manage traffic congestion. Traffic improvements should be multi-modal in nature. The City recently approved the Mobility Management Strategy which includes upgrades to signalized intersections and integration of Intelligent Transportation Systems through the Mobility Management and Control Program.

Other Recommendations

The community also provided numerous suggestions for improving the visual appearance and attractiveness of these streets primarily through more colour and addition of art and more street trees. It was specifically noted that the existing wooden fence “walls” that line Hilda and portions of Atkinson and Centre could be a good platform for adding murals or to soften their appearance with plantings. The creation of mini destinations and rest areas that are both attractive and serve a practical function was suggested as an opportunity to encourage more active pedestrian/cycling circulation and social activity. These areas could be designed to be creative and inviting through the inclusion of pollinator gardens/native planting beds, art, seating, bike parking, wayfinding signage, etc. These spaces would help to create a sense of place on these streets by adding life and character and would ultimately attract more users. Installing art features at intersections, and painting colourful cross walks are features that could play a double function to add beautification and vibrancy to the roads while also act as a traffic calming features. Any potential art installation should conform with the City’s Public Art Program.

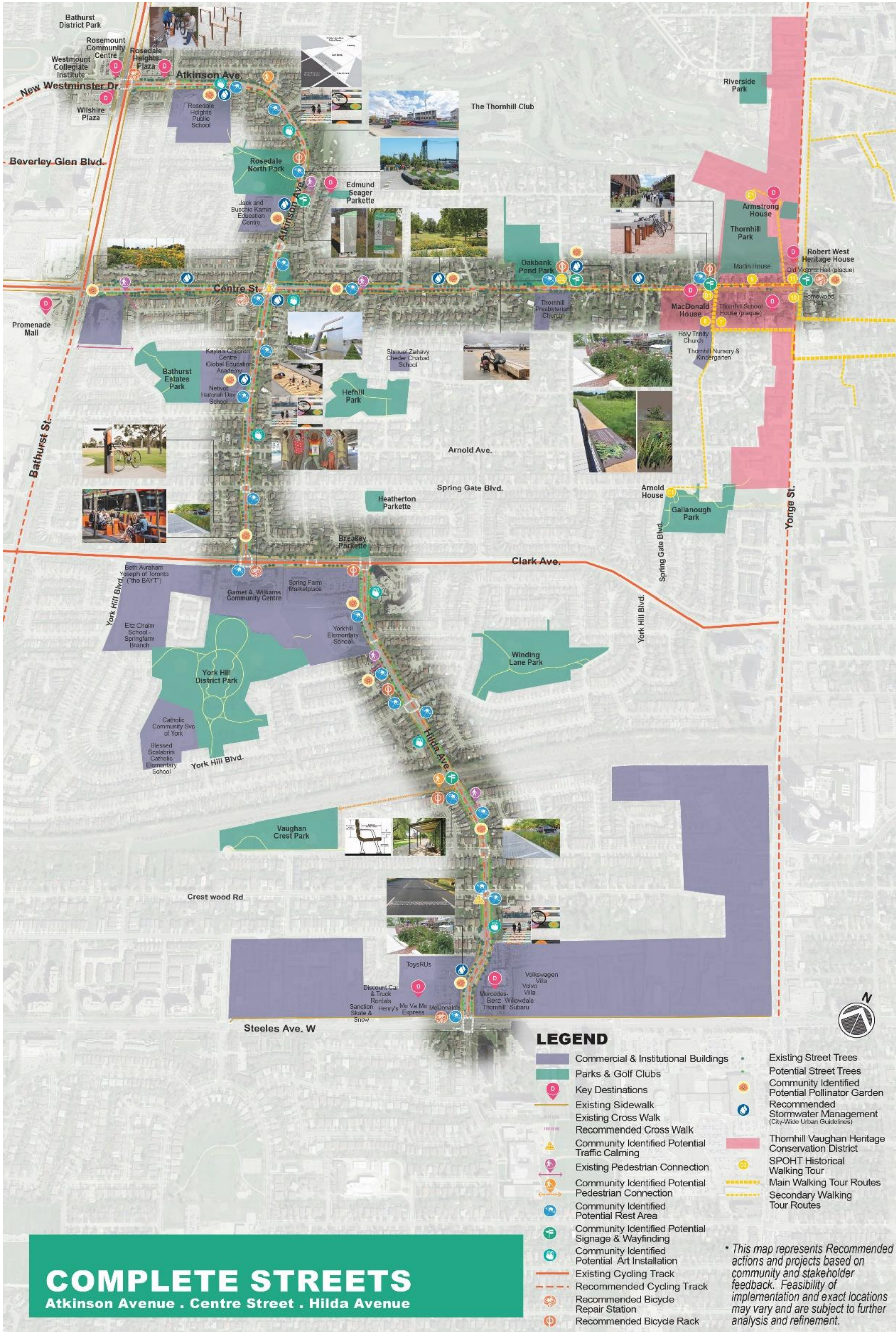
In addition to creating new areas of interest, a number of existing locations were identified where the community would like to see improvements. There was a lot of interest in celebrating the historical heritage of this area through signage and programming, and in particular, creation of a village-like feel on Centre Street and promoting the unique character of the Heritage Conservation District, including MacDonald House. Oakbank Pond Park was another area where residents wanted to see improvements, including more greenery, benches, bike parking, addition of interpretive signage to educate visitors about the ecological and stormwater function of the pond and increased recreational opportunities (e.g., extending trails and bring back ice skating).

The City continues to develop social media outreach materials and annually reviews and expands on the communication plan around walking, cycling, and driving etiquette, equipment needs and rules as well as emerging legislation around e-scooters and e-bikes. This communication can be leveraged to promote and highlight the Complete Streets recommendations as they come to fruition.

Recommended Elements for Complete Streets Project:

- ✓ **Pedestrian improvements** – Incorporate safety improvements and amenities to make pedestrian experience more enjoyable
- ✓ **Cycling infrastructure** – Support City plans for in-boulevard cycling tracks and addition of supporting infrastructure
- ✓ **Traffic improvements** – Investigate intersection modifications and traffic signal adjustments to improve traffic flow
- ✓ **Destination improvements** – At Oak Bank Pond Park and MacDonald House and creation of village feel on centre and connection to Heritage Conservation District
- ✓ **Creation of mini destinations and rest areas** – Add life to the streets, encourage social interaction and provide practical benefit
- ✓ **Greening of streets** – Addition of street trees and planting beds/rain gardens to provide shade and to treat stormwater runoff where possible
- ✓ **Education and awareness** – Develop an educational campaign to educate users about proper use of space (sidewalks, cycling tracks, rules of road)
- ✓ **Celebration of art, history and cultural heritage** – Incorporate art and colour and interpretive signage to celebrate historical heritage and landmarks

Figure 12 - Complete Streets Concept Plan



RECOMMENDED IMPROVEMENTS FOR PEDESTRIANS



- Implement predictable, consistent infrastructure to help those with disabilities and mobility issues. Consider surface materials to improve traction (e.g. tactile paving/detectable warning surfaces) and to provide a stormwater management function (e.g. permeable surfacing). Recommended site improvement will coordinate with AODA, City of Vaughan's Inclusive Design Standard, and City-wide Urban Design Guidelines.
- Implement more seating, shade (e.g. trees, gazebos, shade canopies) and shelter/weather protection opportunities. Seating and shelter will encourage more people to walk on street, and will create comfortable outdoor space for community interaction. Recommended site improvement will coordinate with City of Vaughan's Inclusive Design Standard, and City-wide Urban Design Guidelines.
- Provide separated facilities for pedestrians and cyclists within the road allowance and consider improving/implementing pedestrian crossing at key locations.



RECOMMENDED IMPROVEMENTS FOR CYCLISTS



- Provide separated in-boulevard infrastructure for cycling to improve comfort and safety of those riding bikes.
- Ensure adequate street lighting and visibility for bicycle use.
- Consider the year-round implications for cycling infrastructure (e.g. winter snow or low hanging branches)
- Provide ancillary cycling infrastructure to support users based on City-Wide Urban Guidelines. (e.g. bike parking, repair stations, washroom facilities). Recommended locations may vary.
- The pedestrian and cycling networks are coordinated with the transit network as per policies within the Official Plan.
- Provide more instructional/educational signage on how to transport bicycles on public transit.
- Provide more community-wide education and enforcement for rules of the road, including cyclists, e-scooters and e-bikes.



RECOMMENDED IMPROVEMENTS FOR TRANSIT USERS



- Improve signage at bus stops to clarify route information (e.g. which bus stops at that location) and provide additional signage to direct users to the next bus throughout the neighbourhood.
- Consider addition of wayfinding signage at bus stops to inform users of nearby amenities and to encourage users to explore the neighbourhood.
- Add shade structures/shelters, seating, and safety measures at bus stops and make strategic stops highly visible.
- Continue to advocate for fare coordination between independent transit systems (e.g. TTC, YRT, and VIVA)
- Increase frequency of buses to give riders more options.



RECOMMENDED IMPROVEMENTS FOR DRIVERS



- Consider implications to drivers sight lines and road conditions for driving (eg. low hanging branches and debris free catch basins to prevent roadway flooding)
- Consider traffic calming measures where appropriate (e.g. narrower lanes, planted gardens and trees in center island, trees with larger canopies). Measures and locations are subject to the City's further analysis.
- Provide more community-wide education and enforcement for rules of the road, including cyclists, e-scooters and e-bikes



IMPROVEMENTS OF WALKABILITY & ACCESSIBILITY



- Improve connections with GAWCC, neighbouring parks and schools, businesses and residential areas and extend trail network to create continuous walking loops.
- Provide seating and shade structure for resting and more instructional signage on directions and options for walking loops. Implement native shade trees and pollinator gardens and incorporate measures to ensure health and longevity.
- Implement comfortable and beautiful outdoor spaces with stop/rest stations, and areas to encourage community interaction.
- Implement wayfinding & interpretive signage so people are encouraged to explore more of their neighbourhood (e.g. promote destinations, historical heritage, ecological adventures, local services/amenities). The location of recommended wayfinding & interpretive signage responds to community request and follows City-wide Urban Design Guidelines.



ENVIRONMENTAL FUNCTIONALITY



- Improve biodiversity by planting a diverse selection of native trees and perennials. Native trees provide shade for pedestrians, cyclists, and drivers. Some tree species (e.g. Black Walnut and Catalpa) on the recommended tree list help maintain clean air and some (e.g. Black Willow and Mitten Tree) release chemicals in the air that benefit health and reduce anxiety. Native perennials in the bio-retention swale and pollinator garden contribute to wildlife habitats. Consider to add tree ID tags and brief introduction by community at key locations. Tree and pollinator garden locations are approximate and subject to further analysis from the City of Vaughan.
- Consider using recycled materials, such as recycled plastic and high density paper composite, as seating materials and consider use of natural materials, such as stone and reclaimed ash trees to create seating.
- Improve safety and access through incorporation of measures to reduce flood risk or mitigate associated impacts for street users at key locations on Centre Street (Centre & Atkinson, Centre at SE corner of Oakbank Pond).
- Consider using bio-retention swales, rain gardens, and infiltration trenches along Centre Street to mitigate flood risks by reducing peak flow and upgrade existing grass trench. Recommended locations coordinate with the Green Approach of City-Wide Urban Guidelines.
- Consider promoting environmental education through creative art and signage (e.g. art work could indicate the stormwater process or highlight native plants and pollinators).
- Consider using innovative energy for shade structure, signage, and lighting, such as solar panels and vertical wind turbines.



RECOMMENDED TREE LIST

- | | |
|-----------------|--------------|
| Burr Oak | Catalpa |
| Swamp White Oak | Hackberry |
| Red Oak | Tulip Tree |
| Black Walnut | Hop Hornbeam |
| Black Willow | Mitten Tree |
| American linden | |

COMPLETE STREETS

Atkinson Avenue . Centre Street . Hilda Avenue

10.4 Thornhill Home Retrofit Program

Based on public engagement results, a conceptual design was developed for a pilot Home Retrofit Program tailored to the Thornhill neighbourhood. The concept incorporates guiding principles from the Residential Retrofits Integrated Action Area. The program will offer support services and educational activities to help homeowners decide on key actions to be implemented at their homes and to make the retrofit



Image courtesy of TRCA

process as straightforward as possible. As per the guiding principles, the program will support actions across multiple sustainability and resilience themes (e.g., energy, water, stormwater management, eco-landscaping and flood prevention and social themes such as aging in place).

In addition, the proposed activities will help homeowners access existing incentive programs and continue the City's efforts to plan for a Local Improvement Charges financing program for energy retrofits.



Images of Residential Retrofit Programs Delivered in Other SNAP Neighbourhoods
(Images courtesy of TRCA)

Recommended Program Elements

The main offering of the program will include:

- ✓ **In-person home visits** – In-person home visits will be made available to Thornhill SNAP residents. The home visits will be marketed to homeowners as an opportunity to learn about ways to save money on their water and energy bills or to learn about

ways to make their homes more efficient and resilient. The objective of the home visit will be to learn about specific homeowner interests and concerns, to discuss retrofit options both inside and outside of the home and to share knowledge on existing incentive and financing programs that could support the implementation of retrofits.

- ✓ **Concierge service** – The City, together with other municipalities, is exploring program models and funding options to provide a ‘home energy coach’ or ‘concierge’ service for residents. Once homeowners express interest in moving forward with recommended retrofits, a one-stop shop concierge service will be offered to make the renovation process straightforward. The concierge service will help homeowners arrange energy audits, prioritize projects and budget, source contractors, secure building permits, oversee work and ensure quality control. In addition, the service will help homeowners apply to existing incentive and financing programs to help them pay for the retrofits. The proposed concierge service will be modeled after the existing Low Income Home Winterproofing Program and Home Assistance Program offered by Enbridge and IESO, with the difference that they will not be free for the homeowner.

To complement the main offering, other secondary activities will be offered to share knowledge with homeowners on key retrofits and encourage them to take action:

- ✓ **Online workshops and webinars** – A series of live and pre-recorded webinars and workshops will be offered to the Thornhill SNAP community, focused on key indoor and outdoor actions and DIY projects that can generate positive impact in terms of energy and water conservation, stormwater management and improved property resilience.
- ✓ **On-line resource library and portal** – An online resource library will be developed to connect homeowners with information and tools to help them increase their knowledge and provide practical guidance for a range of retrofit interests. The library will consist of articles, fact sheets, DIY instructions, video compilations and links to other resources and sources of information that can provide further assistance. The online portal would also allow homeowners the opportunity to receive direct advice and support from a team of technical experts.
- ✓ **Community workshops** – Once COVID-19 restrictions are lifted, in person workshops will be offered to provide hands-on learning opportunities for residents in the Thornhill SNAP community. Educational workshops will be developed to target key priorities identified by residents and to address specific retrofit interests. Workshops would be led by technical experts and where feasible, resident champions will be encouraged to participate to share relevant, personal experience related to the topic. Where possible, tours will be organized to complement the

workshop to allow homeowners to experience real-life installations and to benefit from neighbour-to-neighbour learning.

- ✓ **Discovery Center Trailer** – To facilitate hands on learning and knowledge transfer, the purchase and development of a Discovery Centre Trailer (DCT) is proposed. The DCT would be outfitted with relevant, low carbon, market-ready technology applicable to the residential market. This would allow for the transport of low carbon displays and materials for programming to occur within the Thornhill SNAP community.
- ✓ **Home demonstration project** – A home demonstration project could be implemented to build momentum and excitement for the RRP, to demonstrate what can be achieved and to motivate other residents to make upgrades in their own homes. Interested homeowners would apply and submit photos and details of retrofit plans. A selection committee would choose the successful applicant who would receive select product donations and in exchange, would agree to have the retrofit process documented through photos, articles, interviews and tours.

Further public engagement, including focus groups will be required to finalize the design of the program. As with other SNAP residential programs, it is recommended that this program is delivered through a collaborative effort between the City of Vaughan, TRCA, Utilities and other organizations or businesses. A next step will be the identification of roles for the different stakeholders, based on interest and expertise, and the development of partnerships. A likely source of funding for initial implementation of the program is the Federation of Canadian Municipalities' Community Efficiency Financing initiative.

Supporting COVID-19 Recovery through a greener, healthier neighbourhood

The global COVID-19 pandemic has had far reaching impacts. The need to physically distance and even isolate at times underscores the value of local green space in helping to provide physical and mental relief and the importance of neighbourhood connections. The Thornhill SNAP Action Plan supports neighbourhood health and resilience and seeks to support COVID-19 recovery through:

- Supporting physical and mental health through increased opportunities for active living and access to fresh produce
- Increasing local high-quality greenspace and opportunities for more contact with nature
- Providing alternative outdoor transportation options through a safe and active transportation network
- Increasing opportunities for improved neighbourhood connections and relationship building

11.0 Other Notable Projects

11.1 Oakbank Pond Park

Revitalization of Oakbank Pond Park, located on the north side of Centre Street, was raised by many residents throughout the SNAP engagement process. The community is interested in enhancements to both the ecological integrity of the pond, as well as improvements to park amenities and increased recreational opportunities to help achieve the full potential of this park as a vibrant community space. These improvements will also assist in achieving the overall sustainability objectives identified in the SNAP Action Plan.



Image courtesy of TRCA

According to A History of Vaughan Township (Reaman, George, 1970), Oakbank Pond, previously known as Thornhill Pond has been an attractive feature in the community since at least the mid-1800s. The present-day pond functions as a stormwater management facility to provide stormwater control for runoff from the upstream drainage area. While the pond is still considered to be an engineered structure, the pond has transitioned over the years into a more naturalized feature with much vegetation growth and introduction of aquatic life. This naturalized feature is viewed by many residents as an oasis and an opportunity to experience nature in the City; however, this transition to a more naturalized state has also generated problems at the site. The pond provides an attractive home for Canada Geese which has led to a decline in water quality and overall aesthetics in the pond. By-law notices posted around the pond directing visitors to not feed the geese appear not to be working. Additional education and enforcement are needed. Other factors contributing to the decline in water quality include property maintenance practices, within the catchment area, which are contributing fertilizers, pesticides and other pollutants into the pond. Vegetation growth around the pond, while providing much needed water quality benefits and deterring geese nesting, is viewed by some community members to be unattractive and a nuisance because it obstructs views of the pond.

The Thornhill SNAP team convened a meeting of City staff and TRCA staff in September 2020. The purpose of the meeting was to review work completed to date, discuss ongoing efforts and/or any planned projects for the site and to identify potential next steps. It was noted that both the City of Vaughan and TRCA have continued to undertake work at the site to help manage the situation, including vegetation controls,

ongoing waterfowl monitoring and population management, water quality monitoring, water quality treatment, addition of a pond aeration system and recent improvements to the boardwalk and viewing platform. While these efforts have served to improve conditions or prevent further decline, a long-term, sustainable solution is still needed that will balance the many challenging interests at the site. It was determined by staff that the first step needed is an investigation into the pond operations to confirm if the pond is operating as per the original design and to determine if the original design needs to be refined to improve flow conditions through the pond. Staff suspect that the pond was originally oversized (e.g., there is not enough land area contributing runoff to warrant the size of the existing pond) and therefore there is not enough water flowing through the pond and the water remains stagnant. The City indicated that a consultant has been retained to monitor inflow and outflow from the pond and further investigation to assess the outlet structure condition is needed. Resolution of the stormwater concerns remains the top priority for the site. Once the full extent of the problem has been identified staff can begin to formulate a long-term, multifaceted plan to address both the technical and community interests for the site. The SNAP team will work with community members and stakeholders to support the ongoing investigation and to facilitate development of the long-term plan.

The following next steps were identified:

- Establish an informal working group including staff from City of Vaughan and TRCA and host regular meetings as needed to develop long-term plan
- Monitor inflow and outflow from the pond for a period of two years
- Investigate outlet control structure to determine if operating as per design
- Continue with seasonal water quality treatment as budget allows, or until long-term solution has been identified
- Review design drawings and drainage area plan to evaluate effectiveness of initial pond design
- Continue to monitor water quality to determine if aeration system is helping to improve conditions
- Seek approval for educational signage and other amenity improvements that could proceed in the short term

11.2 Ryerson Partnership Projects

In 2020, TRCA and the City of Vaughan developed a partnership with Ryerson University for students in Urban and Regional Planning (3rd and 4th year and graduate students) to provide real-world project experience. This partnership has benefitted the SNAP team as well by providing the necessary resources to investigate and accelerate progress on two projects identified in the Thornhill SNAP Action Plan. For each project, students were tasked with undertaking site research, including a review of the Thornhill SNAP documentation and progress to date, site reconnaissance, mapping exercises, precedent project research, attendance at client meetings and preparation of presentation materials and final report documents. The project information developed by the students provides a comprehensive overview of background and existing conditions and outlines potential opportunities and constraints for each of the initiatives. This information provides an excellent foundation the SNAP team will later use to advance these projects during implementation phase of the Action Plan.

The projects have been guided and supported by TRCA and City of Vaughan staff, and provide a great basis for developing a vision, but will require additional technical and feasibility analysis as well as public consultation. To date, Ryerson students have worked on the following two projects:

Linear Trail Project

Through the Thornhill SNAP engagement process, residents identified an interest in formalizing a linear trail/park system through the existing vacant lands adjacent to the CN Rail Corridor which runs east- west across Block 1 of the Thornhill SNAP community. This area is currently being used by local residents for walking and other recreational purposes; however, the trail has not been

formalized and public safety remains a concern given the proximity to the active rail corridor. As part of a separate exercise, the City of Vaughan had also identified this corridor as an area of interest and had initiated discussions with respective property owners in late 2020 to begin scoping out partnership opportunities. One potential partnership exists through the Reena, an organization which provides housing and supports to individuals with developmental disabilities in Vaughan and the GTA. Reena owns two properties on Crestwood Road which back onto the linear corridor. Reena has applied and was approved for funding through a federal program to construct several



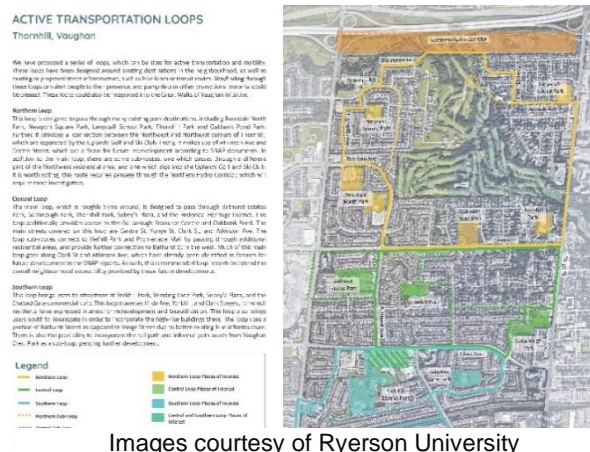
Images courtesy of Ryerson University

greenhouses and accessible gardens at these properties. In discussions with the City, Reena has raised the opportunity to dedicate a portion of the rear yards to create up to fourteen parking spaces, some accessible, that could help facilitate development of trail access at the west end of the corridor. The trail initiative may be identified for study through detailed feasibility subject to future City budget approvals.

Given these interests, the Ryerson students were tasked with undertaking a technical feasibility study to identify both opportunities and barriers to development of these vacant lands. Students looked at existing topography, stormwater runoff, accessibility, tree canopy cover, surrounding land use, and community demographics. Students also researched local and regional precedent projects to document what has been achieved in other jurisdictions and to garner inspiration for this project. Guiding principles from the “Connecting People, Places and Ecosystems” Integrated Action Area were integrated. Finally, additional research was also conducted into local guidelines that could provide relevant guidance should the project proceed. This project, if implemented would provide for increased pedestrian safety, improved recreational amenities, improved wayfinding and increased ecological function. Implementation of this trail could serve to provide a formal connection between the areas to the north and south of the CN corridor, a connection many residents have expressed a need for, and could serve as an important linkage to local social infrastructure and greenspace to the Yonge Steeles Corridor Secondary Plan area which is planned for significant residential intensification at the corner of Yonge Street and Steeles.

Active Transportation Plan

As part of this initiative students developed a *Multigenerational Active Transportation Opportunities Plan* for Thornhill-Vaughan, which complements the City's Pedestrian and Bicycle Master Plan, Active Together Master Plan, the Age-Friendly City Initiative, among others. These plans outline the City's proposed cycling and trail networks and provide direction for parks, open space, recreational activities with consideration for the City's aging population. As a result of community input received through the SNAP project and these C neighbourhood were identified as priorities for r Multi-modal transportation improvements includ accessibility improvements, transit stop improve improvements for motorists, cyclists and pedes



Images courtesy of Ryerson University

along Clark Avenue between Bathurst and Yonge Streets (within the SNAP study area) in 2020. Atkinson Avenue, Centre Street, and Hilda Avenue have all been identified for active transportation improvements including the implementation of separated cycling facilities within the next 5-10 years and have been identified as a Complete Streets signature project in the Thornhill SNAP Action Plan. Complementary to these plans and SNAP work completed to date, the primary objective of the *Multigenerational Active Transportation Opportunities Plan* was to identify additional gaps and barriers and to seek out solutions and neighbourhood level opportunities to enhance the active transportation network in the community. This includes maximizing strategic connections and linkages to green space (e.g., parks and valley lands), key destinations (e.g., schools, business district, etc.) and services (e.g., transit, retail outlets, medical centres, etc.). The Plan integrates the principles from the “Connecting People Places and Ecosystems” Integrated Action Area. It also provides recommendations for improved wayfinding, safety considerations, and user amenities to enhance the overall user experience while facilitating convenient, safe, and pleasant transportation options that residents and visitors of all ages and abilities will be eager to use for both commuting and recreational purposes. The economic and health benefits of engaging in active transportation will be used to develop an educational campaign designed to increase the level of resident participation within the Thornhill community.

12.0 Climate Adaptation Recommendations

A total of 24 adaptation and resilience strategies were identified in the High-Level Resilience Strategy for Thornhill. These strategies were developed based on recommendations gathered through community engagement as well as the results of the vulnerability assessment described earlier in this report. The strategies have been organized under the following categories which align with the Disaster Management Cycle and help to ensure that the strategies identified cover all phases of the cycle, which are important for disaster management and resilience:

1. **Prevention/ Mitigation** (11 strategies, or 46 percent)
2. **Preparedness** (8 strategies, or 33 percent)
3. **Response** (3 strategies, or 13 percent)
4. **Recovery and Learning** (2 strategies, or 8 percent)

The recommended actions outlined in these strategies will be incorporated into the Integrated Action Area initiatives and Signature Projects where appropriate and/or feasible. Additional effort will be made during the implementation phase to identify opportunities and partners that can help implement these strategies and to ensure that community benefits are fully realized.

Table 6 - Thornhill SNAP Climate Adaptation Strategies

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)
1. Prevention/ Mitigation				
Trees on Public Property	Very High	Low	Plant and maintain more diverse native species of trees in public spaces (including streets and parks), particularly in the southern section of Thornhill where street tree species diversity is lower than the northern section. Residents and stakeholders noted the need for more trees and shade in parks (e.g., Hefhill Park, Yorkhill Park, Rosedale Park North, and Bathurst Estates Park), and along streets (e.g., Steeles Avenue, Spring Gate Boulevard, Clark Avenue, Yonge Street, and Highway 407), including plantings in median strips. When public trees are lost or damaged due to extreme weather events or pests and diseases, as park trees have in the past, a protocol should be in place to replace lost or damaged trees.	City, TRCA
Public Outdoor Cooling Spaces	Very High	Moderate	Consider adding splash pads, more public outdoor pools, drinking water fountains or bottle filling stations within the neighbourhood and increase shade along streets and around playgrounds and parks to help residents cool off during extreme heat events, including low-income residents and those who are homeless or precariously housed. These measures are particularly important in areas with high surface temperatures (e.g., Spring Farm Marketplace and commercial areas along Steeles Avenue and Yonge Street), and areas with greater concentrations of vulnerable populations (e.g., schools, childcare centres, and senior residences, etc.	City

Urban Heat Island Mitigation	Very High	Moderate	Implement measures to reduce the urban heat island effect (such as green roofs, community gardens or rain gardens, trees on public and private property, and natural cover) in areas with high summer surface temperatures (e.g., Spring Farm Marketplace and commercial areas along Steeles Avenue and Yonge Street), and areas with greater concentrations of vulnerable populations (e.g., schools, childcare centres, and senior residences, etc).	City, TRCA, LEAF, Property Owners/Managers, Homeowners
Climate Change Communications	Moderate	Very Low	Educate the public about climate change risks (e.g., extreme heat, flooding, Lyme disease, etc.) and what can be done to reduce risk, enhance preparedness, and improve the environment (e.g., landscaping, tree planting in backyards, and rain barrels, etc.), building on the lessons learned and awareness raised through the pandemic.	City, TRCA, LEAF, Property Owners/Managers, Homeowners
Access to Green Space	High	Moderate	Improve access to green space (e.g., by removing fencing, increasing trails and connectivity within and across golf courses, implementing the South York Greenbelt Project and increasing the number of community gardens).	City, York Region, TRCA, Golf Courses
Stormwater Infrastructure	High	Moderate	Implement Low Impact Development (LID), where possible, to improve stormwater management (quality and quantity) and regularly inspect and maintain culverts and other stormwater infrastructure.	City, York Region, TRCA, Residents
Flood Risk Mitigation	High	Moderate	Where relocation of infrastructure, buildings or structures from the flood plain is not possible, implement measures to reduce the risk of flooding by enhancing flood preparedness through communications and outreach, and encouraging or supporting implementation of site-level protection measures (e.g., floodproofing, basement flooding prevention and mitigative measures, etc.). Visit the following for more information about how to prepare for flooding: https://trca.ca/conservation/flood-risk-management/prepare/	City, TRCA

Power Outage Mitigation	Moderate	Moderate	Work with utilities to identify resilience measures to prevent or mitigate the risk of power outages (e.g., from ice storms or wind storms).	City, Utilities
Snow and Leaf Removal	Moderate	Moderate	Offer free snow or leaf removal programs for seniors (who constitute 20 percent of Thornhill's population) to ensure drains do not clog. Residents suggested that youth programming could help support seniors in the community.	City, TRCA, Residents
Active Transportation and Transit	High	Moderate	Increase opportunities for active transportation for people for all ages and abilities (e.g., through sidewalks and accessibility improvements, mid-block crossings, in-boulevard cycle tracks, bike parking and recreational trails) and access to public transit (particularly access to transit in areas further away from Yonge Street and Steeles Avenue). Infrastructure should be complemented with education and outreach (e.g., how to load a bike onto a bus bike rack, how to use a cycle track, pedestrian safety tips, etc.).	City, York Region, York Region Transit
Relocation of Flood Vulnerable Structures	High	Very High	Relocate infrastructure, buildings, or structures away from the flood plain, where feasible. Many properties within TRCA's jurisdiction were developed in areas of natural hazards (e.g., in flood-prone areas or within wetlands) prior to the introduction of TRCA's Regulation. Redevelopment of these properties represent an opportunity to reduce the risk to life and property due to flooding, or to relocate buildings and structures away from sensitive natural areas, while allowing for moderate expansion where permitted under TRCA's policies. Visit the following for more information about TRCA's permitting process: https://trca.ca/planning-permits/replacing-an-existing-home/	City, York Region, TRCA, Province

2. Preparedness

Sense of Community	High	Very Low	Create opportunities for enhancing social capital, where neighbours of all ages and abilities can meet one another, particularly for seniors and residents living alone (e.g., through community gardens, programming in parks or community centres, block parties, Thornhill Festival, and programming that connects seniors with youth).	City, TRCA, Local Organizations, Residents
Personal Preparedness	High	Low	Host personal preparedness events in the neighbourhood (e.g., at community centres) which can be used to help inform residents and answer their questions about emergency preparedness (e.g., where they can go in case of an event, how would they get to those places or know where to go?).	City, TRCA, York Region
Flood Preparedness Outreach and Engagement	Moderate	Low	Enhance flood preparedness through outreach and engagement with infrastructure owners/operators, property owners and renters. Visit the following for more information about how to prepare for flooding: https://trca.ca/conservation/flood-risk-management/prepare/	City, TRCA
Emergency Kits	Moderate	Low	Continue the City's public education and outreach campaign to help residents recognize that they are more resilient than they might think and encourage residents to create their own emergency kits.	City, TRCA
Local Food	High	Moderate	Enhance access to local food by establishing or supporting the establishment of local food sales, collaborating with existing and well established farmer's markets, identifying suitable lands and supporting community access for community gardens/allotment gardens and backyard farming/harvest share programs that are supported by rainwater harvesting.	City, TRCA, York Region Food Network

Critical Infrastructure Preparedness	High	Moderate	Continue to conduct emergency management planning (e.g., critical infrastructure analysis through HIRA) and training exercises that engage multiple stakeholders, including public and private infrastructure owners/operators. It is important that multiple stakeholders are engaged in order to address interdependent risks (e.g., if one system fails, how might this affect another system?). Systems that can affect the neighbourhood may be located outside of the neighbourhood (these systems were not included in the Thornhill neighbourhood vulnerability assessment).	City, TRCA, York Region, Utilities
Risk and Emergency Communications	Moderate	Low	Inform residents of what to do during extreme weather events and how to share information in case of power outage (e.g., no Internet or television) and language barriers. Approximately 3 percent of residents have no knowledge of English or French, and 9 percent of residents do not have access to the Internet. For example, encourage people to check on their neighbours, disseminate information in multiple languages or simple visuals that do not require much explanation, and leverage technology that may still be available during power outages (e.g., cell phones, radio, etc.).	City, TRCA

Backup Power and Distributed Energy Systems	High	High	<p>Evaluate and encourage the availability of backup power and distributed energy systems within the neighbourhood (for both public and private property, including businesses and multi-unit residential buildings). Distributed energy systems (e.g., solar panels, combined heat and power plants, energy storage facilities, and natural gas-fuelled generators) can help increase redundancy.</p> <p>During the power outage following the ice storm in 2013, a resident recalled that they had to go to a coffee shop for breakfast and found that the rest of the community also showed up. People will seek out places with power during a power outage.</p>	City, Property Owners/Managers, Utilities
3. Response				
Support for Vulnerable Residents	High	Moderate	<p>Establish a volunteer buddy- system (e.g., where households can be paired with senior residents, people with disabilities, or residents living alone) to conduct wellness checks and offer support during times of emergency. Explore opportunities to build strong connections between the resident network, local agencies and organizations, and the City to help them navigate quickly during an event. Approximately 21 percent of households are composed by people living alone. Residents living in multi-unit residential buildings may not have access to elevators during power outage if the building does not have backup power.</p>	City

Resilience Hubs	High	High	<p>Establish community resilience hubs – places where residents can go for shelter and basic needs in case of an emergency. Particularly, residents and stakeholders noted community centres (including Garnet A. Williams) as potential locations for resilience hubs.</p> <p>For facilities that are not owned by the City or Region (e.g., places of worship and schools), explore the possibility of turning these facilities into community resilience hubs by connecting facility owners/operators with the City's Office of Emergency Management to understand and meet requirements to become emergency centres.</p>	City, York Region, TRCA
Support for the Homeless	Moderate	Moderate	Provide support to homeless populations during flooding and other extreme weather events.	City, Region
4. Recovery and Learning				
Recovery Planning	Moderate	Low	Explore opportunities to engage businesses and residents in recovery planning (e.g., to help set priorities and/or support roll-out) to help the City/neighbourhood build back better after an event. Possible engagement initiatives include focus groups, participation in working groups/advisory committees, surveys, and workshops.	City, TRCA, York Region
Continuous Learning	High	Moderate	Document, maintain and learn from records of past climate change impacts and disruptions (e.g., through a common database).	City, TRCA, York Region

13.0 Measuring Success

The Thornhill SNAP has been designed to address environmental and socio-economic priorities and to provide guidance related to improving the overall resilience of the Thornhill community. The plan supports numerous municipal, and Conservation Authority plans and strategies. To measure impact and success over time, a framework of long-term neighbourhood-scale goals and targets has been developed, based on themes identified in the Sustainability Framework.

Table 7 - Sustainability Goals and Targets

Sustainability Theme	Goals	Targets and Outcomes
Energy and Climate	<ol style="list-style-type: none"> 1. Reduced GHG generation to support the City's Climate Emergency target of reducing per capita emissions by 2-3 tonnes eCO₂ by 2030 2. Improved neighbourhood resilience to extreme climate events, through the implementation of the Thornhill Resilience Strategy. 	<ol style="list-style-type: none"> 1. Reduced GHG <ul style="list-style-type: none"> • Deep energy retrofits implemented in 230 homes by 2031 (or an average of 23 homes/ year) • Energy consumption reduced from Institutional and Commercial sectors • GHG emissions reduced and move toward carbon neutrality for City of Vaughan facilities • Uptake in rooftop solar installations increased • Use of EVs increased through education and the implementation of charging stations • Active transportation increased through programing and improved infrastructure for existing facilities and development of new facilities 2. Improved Resilience – no quantitative targets/outcomes identified

Stormwater Management and Water Efficiency

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Reduced number of flood calls and improved stormwater quality and quantity 2. Reduced inflow and infiltration (I/I) into the sanitary system 3. Reduced water consumption to support York Region's water target of 150 liters/capita/day | <ol style="list-style-type: none"> 1. Reduced flood calls and improved stormwater <ul style="list-style-type: none"> • Total area (ha) with stormwater quantity and quality controls increased • At least 25mm of runoff from a 4-hour Chicago storm detained on site for a minimum of 48 hrs and a minimum of 5 mm of runoff retention through at source controls • 80% of Total Suspended Solids removed from urban runoff • Use of salt on hard surfaces reduced through the employment of best practices aimed at optimizing salt use while maintaining the same level of road safety • Number of trees and low impact development projects increased to promote retention, evapotranspiration and rainwater harvesting • Impervious connected areas and overall level of imperviousness reduced where feasible • Number of flood prevention measures increased in and around homes • Cleaning/ maintaining increased at drainage outlets at street level and ensuring underground stormwater quality control infrastructure such as OGS and filtration devices are regularly maintained 2. Reduced inflow and infiltration <ul style="list-style-type: none"> • Number of sump pumps and downspouts connected to the sanitary system reduced • Leaks into the sanitary system reduced 3. Reduced water consumption <ul style="list-style-type: none"> • Number of indoor water conservation actions increased in homes, MURBs, institutions and businesses. • Irrigation needs reduced by increasing the number of water efficient landscapes, increasing use of drought tolerant species, and implementing rainwater reuse projects in all land uses • Number of water conservation actions increased in swimming pools |
|---|--|

		<ul style="list-style-type: none"> For new development, 10% water conservation beyond Ontario Building Code requirements achieved as supported by York Region Official Plan policy 5.2.22
Ecosystem Integrity	1. Increased total canopy cover to support York Region's recommended cover range for the City of Vaughan which includes:	1. Increased total canopy cover <ul style="list-style-type: none"> Overall canopy cover increased to 25% by 2031 and 35% by 2051 Natural cover increased and habitat quality, biological diversity and pollinator health improved Stewardship of local natural areas and the urban forest improved Improved fish habitat by reducing fish barriers in the Don River
Waste / Materials Management	1. Reduced waste to help achieve York Region's target of generating a maximum of 289Kg Waste/ Capita / Year, including:	1. Reduced waste <ul style="list-style-type: none"> Food waste reduced by 15% from 2014 to 2031 (from 84 kg to 71kg) Curbside garbage generation reduced by 20% (from 82 kg to 66 kg)
Health and Well-Being	1. Improved residents' physical and mental health through physical retrofits and programing that promote improved air quality, reduced extreme heat conditions, active living, contact with nature, access to outdoor recreational spaces, social interaction and access to fresh local food	No quantitative targets/outcomes identified

Livable Places and Community Connections	1. Improved quality of life for all residents through the creation of engaging, meaningful opportunities and unique spaces that encourage community cohesion and inclusion, sense of belonging and civic pride	No quantitative targets/outcomes identified
Culture, Heritage and Education	<ol style="list-style-type: none"> 1. Improved access to the arts, through installations and cultural events 2. Improved appreciation and celebration of the distinct historical, and Indigenous culture and heritage 3. Improved education of environmental issues 	No quantitative targets/outcomes identified
Access and Mobility	1. Increased use of sustainable modes of transportation both for commute and recreation through the improvement of active transportation and EV infrastructure and through education and programming	No quantitative targets/outcomes identified

As various projects and programs are implemented in the Thornhill neighbourhood, their contribution toward these neighbourhood Goals and Targets will be tracked through ongoing monitoring and evaluation and recorded in a Performance Monitoring Plan. It is recommended that the City consider a feasibility assessment of the proposed evaluation framework when determining implementation options and approaches. Appendix A contains an example of various output and outcome indicators that could be used to track each of the Integrated Action Areas as well as a summary of the various sustainability objectives they support. Baseline conditions are available for many of the indicators, and where not available, will be obtained prior to work being undertaken (see also Spotlight: Enhancing the Urban Forest below, for an example of how the ecological integrity goals and targets can be achieved). Appendix B contains an example of indicators that could be used to track progress related to the resilience strategies presented in this report.

Spotlight: Enhancing the Urban Forest

The existing total canopy cover in the Thornhill SNAP is 22%. This includes all trees in the Terrestrial Natural Heritage System (TNHS) and all urban trees (i.e. street trees, residential trees, trees in parks, etc.). A tree planting opportunity analysis was completed by TRCA. This analysis looked at available plantable space outside of the TNHS and then calculated how many trees could be planted in those spaces. The analysis revealed that a total of 16,570 trees could be planted in the Thornhill SNAP neighbourhood across all land use types (see breakdown below).

The 2031 total canopy cover target set by York Region for the City of Vaughan is 25% (again, this accounts for TNHS *and* urban trees). To achieve 25% cover in Thornhill we would only need to increase the existing cover by 3%, or 3,534 trees (note that achieving the target in the Thornhill SNAP does not mean the target is also met City-wide).

Focus on planting trees in strategic locations, like road right-of-ways, residential properties and adjacent to commercial and institutional buildings will have the biggest impact in terms of combating the urban heat island effect and addressing areas of heat stress as identified in Figure 3 of this report, and in helping address extreme heat events.

Thornhill SNAP Tree Planting Opportunity Analysis Results (number of trees by land use type):

- 5955 in residential front and rear yards
- 7392 along residential road right of ways
- 41 in public parking lots (through retrofits)
- 398 on pervious land on institutional properties
- 294 on pervious land on commercial properties
- 2490 in parks



Image courtesy of TRCA

14.0 Implementation and Next Steps

With the strategic planning phases complete, Integrated Action Areas and Signature Projects identified and neighbourhood Goals and Targets established in the Neighbourhood Action Plan, the next step is to move implementation forward. The SNAP process starts identifying potential implementation partnerships and collaboration opportunities during the planning phase. Many of these opportunities arise during the engagement process.

Given the integrated nature of the recommended projects, diverse partners and roles are considered in a preliminary implementation framework (see Table 8). This framework serves as a high-level guide to identify lead roles, potential collaborators or partners, estimated implementation timeframes and potential funding sources. This framework is a living document and will be updated with additional details as projects are prioritized and engagement with stakeholders advances towards the implementation stage.

Immediate next steps include:

1. **Implementation committees / working groups** – Establish implementation committees/working groups for each of the signature projects and other major initiatives. Committees will be comprised of technical staff, interested residents and community stakeholders. The role of these committees will be to refine project and program plans, develop partnerships, gather widespread support, assist with fundraising efforts and provide ongoing input throughout the implementation of these projects.
2. **Thornhill Home Retrofit Program** – Finalize detailed design, including program offerings, schedule, delivery partners, and marketing strategy for the Home Retrofit Program. Program content and schedule will be partially dependent on City of Vaughan receiving federal funding to develop and administer the Local Improvement Charges program as outlined earlier in this report.
3. **Gallanough stormwater management facility and park redevelopment** – Detailed design for the Gallanough stormwater facility is underway and being led by the City of Vaughan Infrastructure Delivery staff, with construction projected to begin late fall 2021. Initiate detailed design for park redevelopment after the construction of the stormwater facility is completed, ensuring SNAP guiding principles and community design concepts are incorporated and tender implementation of Phase 1 Park Redevelopment to be funded with the City's Capital Budget. Initiate fundraising to help cover costs associated with Phase 2 of the Park Redevelopment.

4. **Garnet A. Williams Community Centre retrofits and York Hill Park redevelopment** – Proceed as planned with tendering for implementation of Garnet A. Williams Community Centre renovations and York Hill Park Phase 1 improvements, including building renovations, water play feature and exterior entrance accessibility improvements. Initiate detailed design for Phase 2 park redevelopment ensuring SNAP guiding principles and community design concepts are incorporated and tender implementation of Phase 2 Park Redevelopment, to be funded with the City's Capital Budget. Initiate fundraising to help cover costs associated with Phase 2 of the Park Redevelopment.
5. **Progress tracking dashboard** – Develop a monitoring dashboard that will not only allow TRCA and the City of Vaughan to track progress on output and outcome indicators towards the achievement of neighbourhood goals, but will also allow community members to input actions undertaken in private property. TRCA and City of Vaughan Staff are currently working on the design of the dashboard (refer to Appendix C for Preliminary Thornhill SNAP Monitoring Hub framework).
6. **Green infrastructure** – Initiate implementation of a tree planting strategy, based on the tree planting opportunity analysis completed by TRCA and in conjunction with ongoing plans by the Urban Forestry department through a series of community planting events. These quick start projects provide for community engagement opportunities and help maintain momentum and excitement for the SNAP. They also offer an opportunity to cross promote other neighbourhood initiatives and to identify volunteers and resident champions that may take a lead role throughout the implementation phase. TRCA and City staff are already working collaboratively on this initiative.
7. **Council endorsement** – Secure City of Vaughan Council endorsement for the Thornhill SNAP Action Plan in September, 2021.

Other key components to support the successful implementation of the SNAP Action Plan include:

- Strive to secure multi-year allocation of municipal funds, to be used as seed funding toward fundraising efforts from non-municipal sources
- Continue ongoing community outreach to build capacity for neighbourhood leadership in implementation and project sustainability, and to continue to inform future local SNAP direction
- Continue ongoing coordination between local projects to streamline required community engagement points, and realize implementation and construction efficiencies
- Develop a Performance Monitoring Plan and conduct ongoing monitoring, including tracking of short-term outputs and longer-term outcomes

Table 8 - Preliminary Implementation Framework

Integrated Action Area	Potential Lead	Potential Supporting Partners/Collaborators	Estimated Timeframe	Potential Funding Sources
Connected People, Places and Ecosystems				
i) Active Transportation	City of Vaughan, York Region, York Region Transit	<ul style="list-style-type: none"> • TRCA • Region • Clean Air Partnership • Local cycling clubs and bike shops • Uplands and Thornhill Golf Clubs • CN Rail • Enbridge • Hydro One • Smart Commute • Community members 	1-15 years	<ul style="list-style-type: none"> • Capital funding • Government grants • NGO grants • Fundraising and donations
ii) Green Infrastructure	TRCA, City of Vaughan	<ul style="list-style-type: none"> • LEAF • Local community groups (e.g., Thornhill Garden and Historical Society) • Private institutions, MUR building owners and businesses • Green Infrastructure Ontario • Residents 	1-10 years	<ul style="list-style-type: none"> • York Region, City of Vaughan and TRCA • Provincial and Federal grants • Foundation grants • Private Sector donations

iii) Parks and Open Space Revitalization	City of Vaughan	<ul style="list-style-type: none"> • TRCA • SFRA • Local community groups and service clubs (e.g., Lions) • Private Institutions and MUR building owners • Community members 	1-20 years	<ul style="list-style-type: none"> • Capital funding through Parks Planning and Delivery • Private Property Owner investment • Provincial and Federal grants • Foundation grants • Private Sector donations
iv) Programming and events for education, culture and community connections	Community Members, City of Vaughan, TRCA	<ul style="list-style-type: none"> • Gallanough Resource Centre • Local BIA, Chamber of Commerce • Emerging Volunteer Group (expressed interest to lead/support this initiative) 	ongoing	<ul style="list-style-type: none"> • Ontario Arts Council • Provincial and Federal grants • Local Crowdfunding • Foundation grants • Private Sector donations
Residential Retrofits				
	City of Vaughan,	<ul style="list-style-type: none"> • TRCA • Windfall Ecology • Local utility providers • Local service providers and suppliers • NGOs • Residents 	1-5 years	<ul style="list-style-type: none"> • Tentative funding from FCM Efficiency Fund for implementation of Local Improvement Charges and a Thornhill Home Retrofit Pilot • Provincial and Federal grants • Foundation grants

Greening and Humanization of MUR, Commercial and Institutional Properties

Property Owners/Managers	<ul style="list-style-type: none"> • TRCA • City of Vaughan • Local utility providers • NGOs • Tenants (businesses and residential) • BIA and Chamber of Commerce 	1-20 years	<ul style="list-style-type: none"> • Property owners • Provincial and Federal grants • Foundation grants • Crowdfunding for actions on institutional properties.
--------------------------	---	------------	--

Gallanough Park

City of Vaughan, TRCA	<ul style="list-style-type: none"> • Gallanough Resource Centre • Northwoods Montessori • Springfarm Ratepayers Association • Society for Preservation of Historic Thornhill • Local service clubs (e.g., Lions) • Thornhill Public School • Community members 	<ul style="list-style-type: none"> • 2021-2022 SWM facility design and construction • 2022-Phase 1 park redevelopment • 1-15 years Phase 2 park redevelopment 	<ul style="list-style-type: none"> • Capital funding for SWM facility • Capital funding for park redevelopment • Provincial and Federal grants • Foundation grants • Crowdfunding
-----------------------	---	--	--

York Hill Park

City of Vaughan, TRCA	<ul style="list-style-type: none"> • DANI • Springfarm Ratepayers Association • Society for Preservation of Historic Thornhill • Local service clubs (e.g., Lions) • York Hill Elementary School • Blessed Scalabrini Catholic School • Community members 	1-10 years	<ul style="list-style-type: none"> • Capital funding for park revitalization (Phase 1) • Provincial and Federal grants • NGO grants • Fundraising and donations
--------------------------	--	------------	---

Complete Streets

City of Vaughan, TRCA	<ul style="list-style-type: none"> • Region (transit) • Springfarm Ratepayers Association • Smart Commute • Local businesses • Art Organizations • NGOs working on animating streets 	1-10 years	<ul style="list-style-type: none"> • Capital funding for cycling infrastructure • Provincial and Federal grants • Foundation Grants
--------------------------	--	------------	--

Quick Start Projects – Implementation is Underway – Early implementation and quick start projects have been integrated into the action planning process to build community interest and excitement, and to further inform the Action Plan direction. The SNAP team has already begun working with homeowners and businesses in the Thornhill Community.

- **Home Efficiency Retrofit Orientation (HERO)** – A free, two-hour workshop was hosted to help homeowners understand the benefits of and how to incorporate energy efficiency retrofits in their home renovation plans and to provide information about available rebates and incentives. The HERO Program was designed to bridge energy efficiency literacy gaps, increase home-owner AIDA (Awareness/Interest/Desire/Action), and accelerate deeper multi-measure sustainability and energy conservation retrofits.
- **Business and tower outreach** – The SNAP team, in partnership with Partners in Project Green and City of Vaughan Economic and Cultural Development office delivered a free webinar for business and tower owners to discuss available programs to help reduce energy, waste and water costs, to offer strategies to gain and retain customers through environmental initiatives and to inform owners how to take advantage of available incentives and rebates.
- **Oakbank Pond pollinator garden** – The SNAP team secured funding through TD Friends of the Environment to design and plant a pollinator bed and install educational signage at Oakbank Pond Park. This will be a community event hosted in fall of 2021 and will be designed to educate residents about the important role pollinators play in our environment and will hopefully encourage more people to consider using pollinator plants in their own gardens.

Appendix A - Example Monitoring and Evaluation Framework for Integrated Action Areas*

Integrated Action Areas	Example Output and Outcome Indicators	Sustainability Theme Addressed
1. Connected People Places and Ecosystems – Green Infrastructure Planning	<p>Output indicators:</p> <ul style="list-style-type: none"> • area (include unit) of improved habitat through restoration • # and species of trees and shrubs planted • # of LID actions by land use • Area (m²) of connected impervious area reduced • # of urban agriculture plots/ fruit trees • # of participants engaged through community/allotment gardens or urban agriculture/food related programs • Lbs of food grown • # of residents engaged in nature-based programming • hours of contact with nature <p>Outcome indicators:</p> <ul style="list-style-type: none"> • % increase in urban forest cover • Area (ha) or % increase in meadow/natural cover • % reduction in invasive species • mm of rainwater retained, infiltrated, evapotranspired • % of TSS removed 	<ul style="list-style-type: none"> • Energy and Climate • Stormwater Management and Water Efficiency • Ecosystem Integrity • Health and Well-being • Livable Places and Community Connections • Culture, Heritage and Education

1. Connected People Places and Ecosystems –	<p>Output Indicators:</p> <ul style="list-style-type: none"> • Kms of active transportation facilities built by category (sidewalks, cycle tracks and bike lanes, multi-use recreational trails, etc.) • # of bike racks implemented • # of residents engaged in active transportation programming • # of educational materials produced to promote the benefits and opportunities for active transportation • # of residents walking or cycling as a form of recreation • Frequency of residents walking or cycling as a form of recreation • # hours per week of sedentary behaviour • # minutes per week engaging in moderate to vigorous levels of physical activity (including gardening, AT, etc.) 	<ul style="list-style-type: none"> • Energy and Climate • Health and Well-being • Livable Places and Community Connections • Access and Mobility • Culture, Heritage and Education
<p>Active Transportation Planning</p>	<p>Outcome Indicators:</p> <ul style="list-style-type: none"> • # of residents commuting through active transportation • Frequency in a given week residents use active modes of transportation for commuting and leisure • Tonnes of GHG reduced by shifting from car use to active transportation 	
1. Connected People Places and Ecosystems –	<p>Output Indicators:</p> <ul style="list-style-type: none"> • # of innovative projects implemented in parks that achieve multiple sustainability themes • # of art installations, educational signs, event venues • # of residents volunteering in park initiatives • # of articles/ publications/ awards on park projects 	<ul style="list-style-type: none"> • Energy and Climate • Stormwater Management and Water Efficiency • Ecosystem Integrity • Health and Well-being • Livable Places and Community Connections • Access and Mobility • Culture, Heritage and Education
<p>Parks and Open Space Planning</p>	<p>Outcome indicators:</p> <ul style="list-style-type: none"> • # of parks revitalized to achieve multiple themes from the sustainability framework • % of residents satisfied 	

1. Connected People Places and Ecosystems –	<p>Output indicators:</p> <ul style="list-style-type: none"> • # of participants in activities that encourage community connections • # of Indigenous participants/community engaged through programming • # of learning hours • # of events that encourage community connections 	<ul style="list-style-type: none"> • Energy and Climate • Health and Well-being • Livable Places and Community Connections • Culture, Heritage and Education
<p>Education, Culture and Community Programming</p>	<p>Outcome indicators:</p> <ul style="list-style-type: none"> • % of residents that feel a strong sense of community 	
2. Residential Retrofits	<p>Output indicators:</p> <ul style="list-style-type: none"> • # of homeowners engaged • # of homeowners participating in Residential Retrofit Program • # of residents applying to existing utility/ gov. incentives, or participating in LIC financing program • # of actions implemented by theme (eco-landscaping, energy, water, flood control, waste reduction, EVs) • # of homes retrofitted <p>Outcome indicators:</p> <ul style="list-style-type: none"> • Tonnes of GHG/ eCO2 reduced • KWh of Energy Reduced • Mm of rainwater retained • Lts of water saved • # of flood calls to the City • Tons of waste diverted from the landfill 	<ul style="list-style-type: none"> • Energy and Climate • Stormwater Management and Water Efficiency • Ecosystem Integrity • Waste / Materials Management • Health and Well-being • Livable Places and Community Connections • Access and Mobility • Culture, Heritage and Education

3.Greening and Humanization of MUR, Institutional and Commercial Properties	<p>Output indicators:</p> <ul style="list-style-type: none"> • # of institutions/ MUR/ commercial properties engaged. • # of actions implemented, by theme (eco-landscaping, energy, water, flood control, waste reduction, sustainable transportation) • # of spaces/ improvements that encourage community cohesion, education and culture implemented <p>Outcome indicators:</p> <ul style="list-style-type: none"> • % of residents satisfied • Tonnes of GHG/ eCO2 reduced • KWh of Energy Reduced • Mm of rainwater retained • Lts of water saved • Tons of waste diverted from the landfill 	<ul style="list-style-type: none"> • Energy and Climate • Stormwater Management and Water Efficiency • Ecosystem Integrity • Waste / Materials Management • Health and Well-being • Livable Places and Community Connections • Access and Mobility • Culture, Heritage and Education
--	---	--

*Note: This table represents example indicators that may be measured during implementation of the Action Plan. This list will be refined based on the specific projects and initiatives that are ultimately implemented.

Appendix B - Example Monitoring and Evaluation Framework for the Adaptation and Resilience Strategies*

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
1. Prevention/ Mitigation			
Trees on Public Property	<ul style="list-style-type: none"> Increased tree cover and increased tree species diversity in public spaces (in Blocks 1 and 2, and the neighbourhood overall) 	<ul style="list-style-type: none"> Number of street trees planted Number of park trees planted Proportion of tree species planted 	<ul style="list-style-type: none"> Number or percent of healthy trees in public spaces Biodiversity indices for public trees Distribution and percent of urban forest cover
Public Outdoor Cooling Spaces	<ul style="list-style-type: none"> Increased number or percent of people with access to outdoor cooling measures during extreme heat events 	<ul style="list-style-type: none"> Number of splash pads installed Number of drinking water fountains or bottle filling stations installed Number of street trees planted Number of park trees planted 	<ul style="list-style-type: none"> Number of park visitors, especially during extreme heat days Number of people using splashpads, especially during extreme heat days Number of people using outdoor pools, especially during extreme heat days Number of water bottles refilled Reduced heat-related illnesses and hospitalizations Cooler temperatures in and around playgrounds and parks
Urban Heat Island Mitigation	<ul style="list-style-type: none"> Reduced ground surface temperatures during summer 	<ul style="list-style-type: none"> Number of urban heat island mitigation measures implemented 	<ul style="list-style-type: none"> Ground surface temperature during summer

Climate Change Communications	<ul style="list-style-type: none"> • Increased knowledge and awareness of climate change, its risks and impacts, and actions that can be taken locally 	<ul style="list-style-type: none"> • Number of posts/newsletters disseminated • Number of events held • Number of people reached 	<ul style="list-style-type: none"> • Knowledge and awareness of climate change
Access to Green Space	<ul style="list-style-type: none"> • Improved access to green space 	<ul style="list-style-type: none"> • Number of improvements made 	<ul style="list-style-type: none"> • Satisfaction levels • Green space usage
Stormwater Infrastructure	<ul style="list-style-type: none"> • LIDs are implemented across the neighbourhood, and culverts and stormwater infrastructure are regularly inspected and in good condition 	<ul style="list-style-type: none"> • Number of LIDs implemented • Number of inspections per year • Number of maintenance work completed 	<ul style="list-style-type: none"> • Distribution and types of LIDs implemented (e.g., quantity, quality, or both) • Number or percent of stormwater assets in excellent or good condition
Flood Risk Mitigation	<ul style="list-style-type: none"> • Reduced impacts of riverine and urban flooding (e.g., basement flooding) 	<ul style="list-style-type: none"> • Number of flood risk mitigation measures undertaken • Number of flood vulnerable infrastructure, buildings or structures reached/addressed 	<ul style="list-style-type: none"> • Number of flood calls • Cost of riverine flooding damages of flood vulnerable infrastructure, buildings, or structures • Severity of riverine flooding damages of flood vulnerable infrastructure, buildings, or structures
Power Outage Mitigation	<ul style="list-style-type: none"> • Reduced risks and impacts of power outages (e.g., from ice storms and windstorms) 	<ul style="list-style-type: none"> • Number of resilience measures implemented 	<ul style="list-style-type: none"> • Number of climate-related power outages in a year • Number of people affected by climate-related power outages

Snow and Leaf Removal	<ul style="list-style-type: none"> • Increase in the timely removal of snow and leaves 	<ul style="list-style-type: none"> • Number of seniors enrolled in the program • Number of snow and leaf removal services performed per year • Number of communications to educate the public about leaf and snow removal 	<ul style="list-style-type: none"> • Improved drainage system • Number of flood calls
Active Transportation and Transit	<ul style="list-style-type: none"> • Increased walking, cycling and public transit ridership 	<ul style="list-style-type: none"> • Number of improvements made (e.g., to sidewalks, cycling facilities, recreational trails, and transit) • Number of participants in programs to encourage active transportation and transit use 	<ul style="list-style-type: none"> • Mode share (walking, cycling, and public transit)
Relocation of Flood Vulnerable Structures	<ul style="list-style-type: none"> • Reduced impacts of riverine flooding 	<ul style="list-style-type: none"> • Number of infrastructure, buildings, or structures relocated (e.g., through redevelopment) 	<ul style="list-style-type: none"> • Cost of riverine flooding damages of flood vulnerable infrastructure, buildings, or structures • Severity of riverine flooding damages of flood vulnerable infrastructure, buildings, or structures
2. Preparedness			
Sense of Community	<ul style="list-style-type: none"> • Increased sense of community 	<ul style="list-style-type: none"> • Number of community events/programs delivered to enhance social interaction 	<ul style="list-style-type: none"> • Sense of community

Personal Preparedness	<ul style="list-style-type: none"> • Increase in personal preparedness 	<ul style="list-style-type: none"> • Number of residents engaged 	<ul style="list-style-type: none"> • Number of people with home emergency kits
Flood Preparedness Outreach and Engagement	<ul style="list-style-type: none"> • Increase in flood preparedness 	<ul style="list-style-type: none"> • Number of information materials (e.g., flyers) disseminated • Number of events held • Number of people reached 	<ul style="list-style-type: none"> • Knowledge and awareness of flooding
Emergency Kits	<ul style="list-style-type: none"> • Increase in personal preparedness 	<ul style="list-style-type: none"> • Number of residents engaged 	<ul style="list-style-type: none"> • Number of people with home emergency kits
Local Food	<ul style="list-style-type: none"> • Increase in the growth and sale of local food 	<ul style="list-style-type: none"> • Number of community gardens established • Number of farmer's markets established 	<ul style="list-style-type: none"> • Community garden yield • Amount or value of local food sold at farmer's markets
Critical Infrastructure Preparedness	<ul style="list-style-type: none"> • Increase in critical infrastructure resilience 	<ul style="list-style-type: none"> • Critical infrastructure assessment(s) completed 	<ul style="list-style-type: none"> • Number or extent of service disruptions
Risk and Emergency Communications	<ul style="list-style-type: none"> • Increased personal preparedness and information sharing 	<ul style="list-style-type: none"> • Number of people reached 	<ul style="list-style-type: none"> • Knowledge and awareness of personal preparedness
Backup Power and Distributed Energy Systems	<ul style="list-style-type: none"> • Increased backup power availability 	<ul style="list-style-type: none"> • Number of buildings and facilities equipped with backup power • Length of backup power capacity (in hours, days, or weeks) 	<ul style="list-style-type: none"> • Number of people without power or access to buildings with backup power during a power outage

3. Response

Support for Vulnerable Residents	<ul style="list-style-type: none"> • All vulnerable residents can be reached 	<ul style="list-style-type: none"> • Number of contacts • Extent of the neighbourhood/ vulnerable populations covered 	<ul style="list-style-type: none"> • Number of vulnerable people reached during extreme weather events
Resilience Hubs	<ul style="list-style-type: none"> • Increase in resilience hub spaces 	<ul style="list-style-type: none"> • Number of resilience hubs created 	<ul style="list-style-type: none"> • Number of people served (during normal periods and periods of emergency)
Support for the Homeless	<ul style="list-style-type: none"> • Homeless populations can be supported 	<ul style="list-style-type: none"> • Number of people reached 	<ul style="list-style-type: none"> • Number of people supported

4. Recovery and Learning

Recovery Planning	<ul style="list-style-type: none"> • Increased public engagement in and awareness of recovery planning 	<ul style="list-style-type: none"> • Number of people or organizations engaged 	<ul style="list-style-type: none"> • Local knowledge is integrated into the City's Recovery Plan
Continuous Learning	<ul style="list-style-type: none"> • Improved documentation of and learning from past impacts and disruptions 	<ul style="list-style-type: none"> • Records added and maintained • User traffic (e.g., of a database) 	<ul style="list-style-type: none"> • Lessons learned documented and shared internally and externally

*Note: This table illustrates a range of example indicators that could be used to track progress related specifically to the resilience strategies. It is recognized that these indicators may also be used to track progress toward the sustainability goals and objectives.

Appendix C - Thornhill SNAP Preliminary Monitoring Hub Framework

Objective

The objective of the Thornhill SNAP Monitoring Hub is to create a public facing platform dedicated to the scale of the Thornhill SNAP Neighbourhood boundaries where residents from within the neighbourhood, as well as staff can input and visualize tracking of actions across SNAP's areas of interest, including environmental sustainability, community resilience, engagement metrics and socio-economic indicators.

Technical Platform

The Monitoring Hub will be hosted on the Toronto and Region Conservation Authority (TRCA) website and will be publicly accessible. The Hub will be developed using a series of ArcGIS Survey 123 forms and ArcGIS dashboards which allow for both geo-spatial information and real time data to be analyzed and then displayed in a user-friendly format. The dashboard will be used by the SNAP team (including TRCA staff and municipal staff) to track and monitor project achievements, individual actions and community engagement over time. The Hub will also allow for direct user input. This functionality will allow individual residents and stakeholders to directly input their own information about specific actions or progress they have taken in their home or on their property. Resident actions will be geo-referenced and displayed on an interactive map on the Hub. Users visiting the Hub will be able to view results by hovering over individual pins to view a list of actions taken at that location. These individual results will be collated with the larger metrics for the broader community so that individuals can clearly see how their actions are contributing to the overall progress of the Action Plan. The dashboards will be designed so that new metrics or information can be displayed on the Hub in the future as new projects and initiatives are undertaken and new metrics are tracked. This approach will ensure that the Hub is consistently providing a comprehensive snapshot of progress within the community.

Monitoring Hub Metrics

The following list includes the proposed metrics to be displayed on the Hub and can be expanded or minimized to reflect specific neighbourhood actions and priorities. TRCA GIS staff will create a Survey123 form that will allow SNAP staff to enter in the stats for each of these indicators at regular intervals throughout the year. The Hub will be designed to allow for querying data based on specific attributes, for example single or multiple years (it is also noted that this Hub will be used by various SNAP neighbourhoods so that additional querying will be possible by SNAP neighbourhood, by municipality, etc.).

Environmental Outcomes

- # of home retrofit actions (significant)
- # of homeowners who voluntarily disclose Energuide rating
- # of parks/open spaces retrofitted
- # of multi-unit residential buildings with environmental initiatives implemented
- # of home demonstrations sites with GI
- # of commercial/ institutional properties with environmental initiatives implemented
- # of native trees and shrubs planted
- # pollinator gardens created
- Average # of residents engaged per year
- # of events
- tCO2e reduced
- # of water conservation actions
- # energy conservation actions
- # landscaping/urban agriculture actions
- # stormwater management actions

Social Outcomes

- # of people engaged per year
- # of events that encourage community connections
- # events that provided access to nature
- # of new local groups created as a result of SNAP
- # of new community gardens (# or area cultivated)
- Kg of surplus harvest donated to meal programs
- # of homes that implemented urban agriculture actions

Economic Outcomes

- # of home retrofits related to flood prevention
- # of people engaged in skills training (total, or average annual?)
- # of events that relate to skills training (total, over the years)
- # learner hours delivered
- # commercial buildings implementing energy or GHG savings projects

Engagement Outcomes

- How many events did we run that contributed to economic benefits?
- How many events did we run that contributed to health and well-being?
- How many events did we run that encouraged intergenerational connections?
- How many hours of programming (for any event type or for a specific event type) were offered in a given year or over multiple years?
- What was the total number of participants, by event type in a given year or over multiple years?

- Provide # adults, # youth and total number in a given year and across multiple years
- What was the total number of participant hours?
- What was the total number of programming hours offered in a given year and across multiple years?
- What was the total for volunteer hours, by event type or for all events, in a given year or over multiple years?
- # learner hours

Resident Action Form – Interactive Input and Mapping Section

The following questions will be created into an online form using Survey123 that residents and stakeholders can fill in to document any actions they have taken at their home or on their own property. In addition to this fillable form, the monitoring Hub will also include a map area where any actions submitted by residents (through this form) will be represented by a pin on a map. When users hover over a pin, a pop-up window will open and will display a list of the actions undertaken at that location (no personal information will be provided).

General Information

- First Name
- Last Name
- Email Address
- Phone Number
- Home Address including postal code (please note this should be the address where the actions you report on below took place).
- Consent to be contacted by SNAP – Yes/No
- Consent to share information on the SNAP website - Y/N (information would not include name/phone/email, but only what actions were undertaken at that location – public users would be able to hover over a pin and a pop up would appear with a list of the actions undertaken at that location)

What actions did you take?

1. Did you implement any of the following **eco-landscaping or urban agriculture** actions at your property? Yes/No
 - Created or expanded vegetable garden
 - Created garden or increased other shrub planting/landscaping using native plants and/or pollinator plants
 - Planted fruit tree
 - Planted shade tree
 - Requested a boulevard tree from the City
 - Install a gypsy moth trap or hand-pick caterpillars
- b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.

2. Did you implement any of the following **stormwater management** actions at your property? Yes/No
 - Installed a rain barrel
 - Disconnected a downspout
 - Corrected/moved/added downspout
 - Installed a raingarden
 - Installed an infiltration trench or soak away pit
- b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.
3. Did you implement any of the following **water conservation** actions at your property? Yes/No
 - Installed low flow toilet
 - Installed water efficient laundry washer
 - Installed water efficient dish washer
 - Installed tap aerators
 - Installed low flow shower heads
 - Installed water conservation upgrades to pool (i.e., use a pool cover, lower water temperature, add windbreaks, turn off non-essential water features, repair leaks, clean filters only when needed, upgrade filter to a cartridge model)
- b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.
4. Did you implement any of the following **flood protection** actions at your property? Yes/No
 - Cleared eavestroughs
 - Corrected slope of land or extended downspouts to direct water away from house
 - Fixed leaks/seal cracks in foundation
 - Installed new roof
 - Sealed around basement windows
 - Installed backwater valve
 - Installed sump pump
 - Cleaned leaves away from catch basin(s) in front of your house
- b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.

5. Did you implement any of the following **energy conservation** actions at your property? Yes/No

- Completed air sealing or draft proofing
- Installed attic insulation
- Installed basement insulation
- Installed energy efficient air conditioner
- Installed energy efficient dryer
- Installed energy efficient freezer
- Installed energy efficient fridge
- Installed energy efficient furnace
- Installed energy efficient water heater
- Installed exterior wall insulation
- Installed new windows or doors
- Sealed windows
- Installed solar panels
- Installed SMART/programable thermostat
- Purchased an electric vehicle
- Replaced 3 or more bulbs to LED
- Installed energy efficient pool heating system (i.e. solar heater, thermal blanket, etc.)
- Installed a Heat Pump

b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.

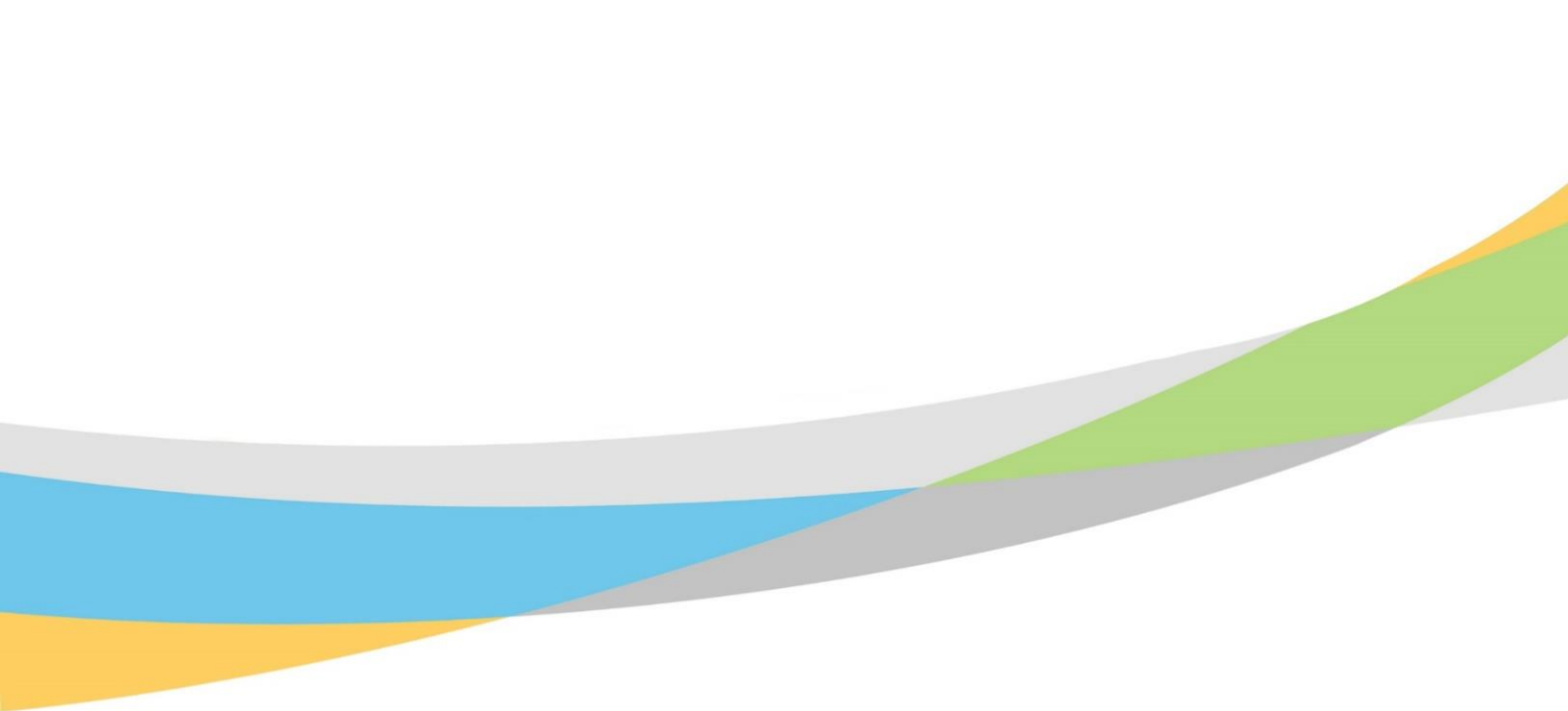
c. If you answered yes above, did you receive any grants/government assistance to complete any of these works? Yes/No

6. Did you implement any of the following **emergency preparedness/resilience** actions at your property? Yes/No

- Installed a back-up power system (i.e., generator)
- Prepared/purchased a home emergency kit
- Trimmed/pruned loose or dead tree limbs that could fall on my house
- Arranged for a buddy system with another neighbour (buddies check in on each other and provide help when needed during an emergency)

b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.

7. Did you implement any of the following **waste reduction** actions at your property? Yes/No
- Repurposed a rain barrel
 - Donated surplus vegetable harvest
 - Started composting kitchen waste
 - Participated in a community swap or donated used items/textiles
 - Reduced use of single use plastic products
- b. If you answered yes above, how many of the listed actions did you initiate? Please check all that apply.



www.trca.ca

