Ajax SNAP Neighbourhood Resilience Strategy

Prepared for the Town of Ajax by Toronto and Region Conservation Authority

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Acknowledgements

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Executive Summary

Building on the Ajax Climate Risk & Resiliency Plan's definition of resilience, a **resilient neighbourhood** is one that can "absorb the impacts of climate change and respond by continuing to function and maintain services, while also innovating and evolving to create stronger pathways to reducing the net effects of these impacts" (Town of Ajax, 2019).

This neighbourhood resilience strategy was developed for the Ajax SNAP neighbourhood through a partnership among the Town of Ajax, Region of Durham, and Toronto and Region Conservation Authority (TRCA) to help advance integrated climate and sustainability actions.

Climate action was identified as one of the community's key motivating themes in the High-Level Ajax SNAP Action Plan (TRCA, 2023). With funding support from the Federation of Canadian Municipalities (FCM), this resilience strategy sets out 22 neighbourhood adaptation and resilience strategies that are tailored to this neighbourhood based on extensive community and stakeholder engagement. These strategies were developed based on recommendations gathered through engagement with community members, municipal staff, and other stakeholders, as well as the results of a technical neighbourhood climate change vulnerability assessment.

Overall neighbourhood vulnerability was determined based on the neighbourhood's sensitivity and adaptive capacity to climate change (Figure 1). Sensitivity and adaptive capacity were mainly assessed based on demographic, socio-economic, and environmental characteristics, as well as community input. Higher sensitivity contributes to higher vulnerability. Meanwhile, higher adaptive capacity contributes to lower vulnerability.

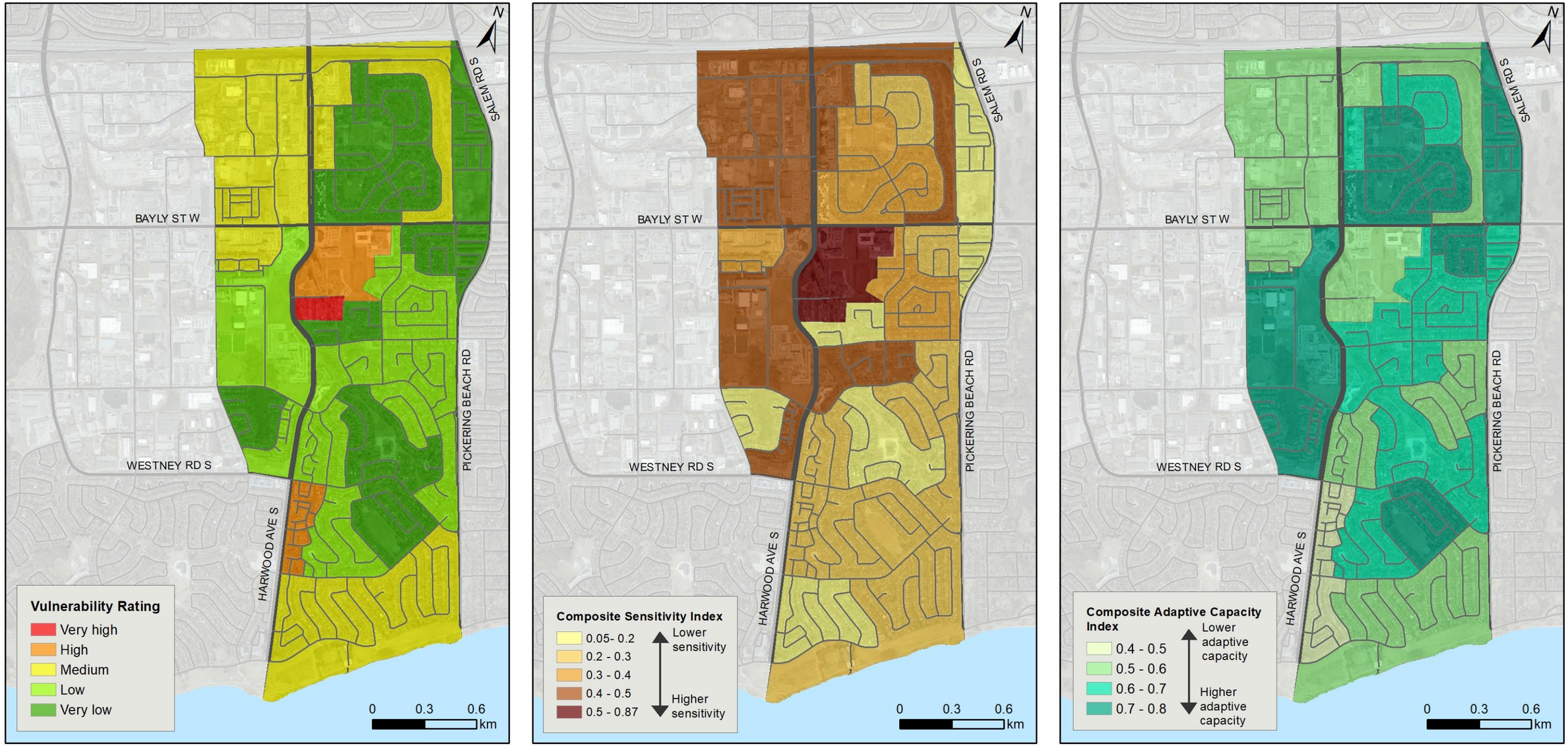

Figure 1. Overall neighbourhood vulnerability (left), composite sensitivity index (middle), and composite adaptive capacity index (right) by dissemination area

The following is a summary of key climate change vulnerabilities and adaptation opportunities identified for the Ajax SNAP neighbourhood.

Key vulnerabilities and adaptation opportunities:

- As extreme heat events become more frequent and intense due to human-caused climate change, the amount of **heat stress** felt by the Ajax SNAP neighbourhood will continue to increase and can be intensified by the urban heat island effect. The impacts of extreme heat are not felt equally; some people are more vulnerable to the impacts of extreme heat than others (e.g., seniors, young children, people with pre-existing conditions, people with limited access to cooling, and people who must spend long hours outdoors). Extreme heat is a key risk for the Ajax SNAP neighbourhood because it has a higher proportion of older adults, people who live alone, and single-parent families, compared to the rest of the town.
- There is an **aging population** in the neighbourhood, which is anticipated to continue to increase. Older adults are often more vulnerable to the impacts of climate change, with intersecting challenges such as limited mobility and pre-existing health conditions. Areas where there is a higher concentration of seniors could be a focus of adaptation and emergency planning efforts.
- Most homes within the neighbourhood were constructed before 1980, especially in areas closer to the waterfront. An **older housing stock** can be at greater risk to the impacts of climate change due to older building standards and aging infrastructure. Already, there has been strong interest and engagement from community members in home retrofit programs such as the South Ajax Home Retrofit Program and Durham Greener Homes. Continuing to deliver and expand on these programs to include other housing types and tenures presents a key opportunity for this neighbourhood.
- The **risk of power outages** is a key concern for neighbourhood residents, which many have experienced from past extreme weather events. Enhancing low-carbon energy resilience is another key opportunity.
- The **risk of flooding** is another key concern in this neighbourhood. While the risk of riverine flooding is low in this neighbourhood, other flooding issues have been experienced in the past, including basement flooding. Further studies are required to confirm the causes of past flooding issues. However, low-lying areas could offer an opportunity for flood risk reduction and outreach within the neighbourhood.
- While trees and vegetation are found throughout the neighbourhood, some areas are greener than others. Opportunities to protect and enhance the **urban forest** in the neighbourhood were identified, including areas that currently lack trees and shade (e.g., in parking lots, at bus stops, near playgrounds, in plazas, and along streets and cycling paths). The management of trees on private property is another key opportunity in this neighbourhood, recognizing that over three quarters of neighbourhood residents have trees on their property.
- Many **parks and open spaces** were identified by the community as valuable community assets. Continuing to maintain and improve the supply of quality parks and open spaces within the neighbourhood is another key opportunity within this neighbourhood.

- The average household income in this neighbourhood tends to be lower than the rest of the town. **Cost of living and affordability** are key concerns within the neighbourhood.
- Currently, most neighbourhood residents commute to work by car and fewer residents commute to work by public transit or active transportation. Based on community engagement, some opportunities to improve **active transportation and access to public transit** were identified including improvements to bus stops (and bus shelters) and improvements to the trail system, especially connections to the waterfront.
- As the neighbourhood continues to change, residents expressed interest in more opportunities to build community connections and a **sense of community** (e.g., through community events/engagements). There is also opportunity to leverage existing community groups/networks. Overall, residents love that they can access everything they need within the neighbourhood.

To help address these vulnerabilities and opportunities, a total of **22 adaptation and resilience strategies** were proposed for this neighbourhood. The following table summarizes the top 10 strategies that received the highest impact and lowest effort ratings based on stakeholder input.

Table 1. Top 10 adaptation and resilience strategies for the Ajax SNAP neighbourhood

Strategy	Impact Rating	Effort Rating
1. **Increase trees and shade in outdoor spaces:** Plant and maintain more diverse native species of trees in public and private spaces such as streets, parks, schools, the Lakeridge Health Ajax-Pickering Hospital, and commercial plazas.	**Very High**	**Moderate**
2. **Promote urban agriculture and farm-to-table programs:** Continue to expand community gardens and other urban agriculture opportunities within the neighbourhood (including greenhouses and rooftop and balcony gardens), building on the success of the St. Andrew's Community Garden and the Indigenous Community and Healing Garden at the Ajax-Pickering Hospital. Support "buy local" campaigns and farm-to-table programs to help improve access to local food, increase food security, and promote agri-food in Durham, supporting Durham Region's Growing Agri-Food Durham plan (2023-2027).	**High**	**Low**
3. **Improve multi-agency response coordination:** Support regular coordination of agencies involved in emergency response to support coordinated responses in the event of an emergency. Support community groups that provide essential services to the community and help build connections among/between groups within the neighbourhood to increase collaboration and coordination.	**High**	**Low**

Strategy	Impact Rating	Effort Rating
4. **Reduce the risk of power outages:** Work with Elexicon Energy and other partners to evaluate energy resilience and explore solutions such as district energy and backup power within the neighbourhood (for both public and private property, including businesses and multi-unit residential buildings).	**Very High**	**High**
5. **Support healthy tower communities:** Build and expand on TRCA's model of Growing Healthy Towers to support the creation of healthy built environments in tower communities within the neighbourhood. Explore opportunities to establish maximum indoor temperature by-laws, especially in rental buildings.	**Very High**	**High**
6. **Replace lost or damaged trees:** When trees are lost or damaged due to extreme weather events or pests and diseases, support the replacement of lost or damaged trees (e.g., in streets, parks, backyards, and along the waterfront). Explore ways to reuse, repurpose, or recycle wood from fallen trees.	**Very High**	**High**
7. **Increase gardens and naturalized areas:** Create/incentivize more pollinator and rain gardens within the neighbourhood (e.g., commercial plazas and boulevards) to support increased biodiversity, stormwater runoff reduction, among other co-benefits. This could focus on existing boulevards, areas with high surface temperature, low-lying areas, and available plantable space. This can be combined with opportunities for community learning and knowledge sharing on gardening, naturalization, and conservation (e.g., through a pollinator/rain garden demonstration site and seed library).	**High**	**Moderate**
8. **Enhance the care of public and private trees:** Support residents and businesses in maintaining healthy trees on their property and identify and manage hazardous trees (e.g., trees that pose a risk to overhead wires). Work with residents and businesses to monitor the distribution and spread of invasive species and pests that may affect plant health, leveraging existing community knowledge (e.g., avid gardeners) and local observations.	**High**	**Moderate**
9. **Foster a sense of community:** Create opportunities for enhancing social capital, by facilitating connections among neighbours of all ages and abilities through initiatives such as community gardens, programming in parks/schools/community centres, street festivals, plazaPOPS, and movie nights.	**High**	**Moderate**

Strategy	Impact Rating	Effort Rating
Continue to inform the community about local assets, events, and initiatives through various communication channels (e.g., through the Ajax SNAP newsletter, letters, emails, social media, and word of mouth).		
10. **Support neighbours helping neighbours:** Investigate best practices and establish a voluntary buddy program where volunteers check in on vulnerable populations (e.g., seniors and people living alone) during extreme weather events to deliver essential items such as food, water, and medication. Special consideration should be given to residents living in multi-unit residential buildings who may lose access to elevators during power outages if the building does not have backup power.	**High**	**Moderate**

This neighbourhood resilience strategy directly aligns with and supports various municipal priorities such as the Ajax Climate Risk & Resiliency Plan (ACRRP) and Implementation Strategy 5-Year Update, Ajax Urban Forest Study, the Durham Community Climate Adaptation Plan (DCCAP), and the Carruthers Creek Watershed Plan (CCWP). Through a collaborative, neighbourhood-based approach, Ajax SNAP helps to align municipal priorities with neighbourhood needs and interests to help achieve the greatest impact for the neighbourhood and town and drive greater local action.

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1. Ajax SNAP Neighbourhood

Launched in 2023, Ajax SNAP is a collaboration between the Town of Ajax, Region of Durham, and Toronto and Region Conservation Authority (TRCA). As the first SNAP neighbourhood to be established in Durham Region, Ajax SNAP is advancing a collaborative, neighbourhood-based approach to urban renewal and climate action in Ajax and Durham.

Since its inception, the Ajax SNAP neighbourhood boundary has expanded based on community feedback to include the commercial, institutional, and other land uses to the west of Harwood Avenue South, as well as the Ajax Waterfront to the south. Currently, the neighbourhood is bounded by Highway 401 to the north, Pickering Beach and Salem Road to the east, the Ajax waterfront to the south, and Dowly Road, Monarch Avenue, and Harwood Avenue South to the west (Figure 1).

Figure 1. Map of the Ajax SNAP neighbourhood boundary

Through a Neighbourhood Screening Process, this neighbourhood was selected for its alignment with multiple sustainability and urban renewal priorities of the Town, Region, and TRCA. These priorities include:

- Low urban forest cover;
- High heat stress;
- Equity-deserving populations;
- A regional health priority area;
- Older buildings with high energy intensity;
- Deep retrofit needs and historic relevance; and
- Planned infrastructure renewal opportunities.

Currently, the neighbourhood is home to nearly 18,500 people, or approximately 13 percent of the town's total population of nearly 139,000 residents (Environics Analytics, 2024). In the past five years (2019-2024), the neighbourhood has grown by approximately nine percent (Environics Analytics, 2024). In the next five years, the neighbourhood is anticipated to grow further by around 15 percent.

There is an aging population in this neighbourhood, which is anticipated to continue to increase. Currently, the median age of neighbourhood residents is 41 years old, which is higher than the town's median age of 38 (Environics Analytics, 2024). Approximately 20 percent of neighbourhood residents (or one in five people) are 65 years or older.

Approximately 44 percent of neighbourhood residents belong to a visible minority group (Environics Analytics, 2024), contributing to a diverse and vibrant community. People who are born outside of Canada make up approximately 34 percent of the neighbourhood's population – many of whom are estimated to have moved to Canada before 2001. Approximately two percent of neighbourhood residents do not speak English or French.

The average household income in Ajax SNAP is estimated to be $110,214, which is lower than the average household income for the town as a whole ($152,063; Environics Analytics, 2024). Cost of living and affordability have been identified as concerns for residents in this neighbourhood.

Most neighbourhood residents currently live in houses (54 percent), and many live in apartments (46 percent). The majority of the housing stock in the area (64 percent) are older homes that were constructed before 1980 (Environics Analytics, 2024).

2. Building Climate-Readiness in Ajax SNAP

Since 2019, the Town has been working to achieve its vision of "A climate-ready Ajax that is Collaborative, Leading, Engaging, Action-oriented, and Resilient" (Ajax Climate Risk & Resiliency Plan [ACRRP], 2019, p. 19). While recognizing that climate change is one of the defining challenges of our time, the Town is also aiming to create a resilient and livable community that is future-ready. Ajax SNAP supports this effort by fostering innovation and partnerships and facilitating individual and community actions at the neighbourhood scale. Through direct engagement with neighbourhood residents, Ajax SNAP helps to align municipal priorities with neighbourhood needs and interests to help achieve the greatest impact for the neighbourhood and town.

A High-Level SNAP Action Plan ("Action Plan") was developed for a portion of the neighbourhood in 2023, following a one-year accelerated SNAP planning approach (TRCA, 2023). Through community engagement, climate action was identified as one of the community's key motivating themes (Figure 2).

Figure 2. Summary of community motivating themes identified in the High-Level Ajax SNAP Action Plan

With grant funding from the Federation of Canadian Municipalities (FCM), the Town of Ajax partnered with TRCA and Durham Region to develop this Neighbourhood Resilience Strategy ("Strategy") to complement the

Action Plan and further advance climate action in this neighbourhood (Figure 3). This directly aligns with and supports several existing plans, policies, and ongoing initiatives, including the ACRRP and Implementation Strategy 5-Year Update, Ajax Urban Forest Study, the Durham Community Climate Adaptation Plan (DCCAP), and the Carruthers Creek Watershed Plan (CCWP), among others.

Figure 3. Overview of the Ajax SNAP action planning process

Adapting the ACRRP's definition to the neighbourhood scale, a **resilient neighbourhood** can be understood as one that has the ability "to absorb the impacts of climate change and respond by continuing to function and maintain services, while also innovating and evolving to create stronger pathways to reducing the net effects of these impacts" (ACRRP, 2019, p. 37). This aligns well with TRCA's neighbourhood model of climate change vulnerability assessment and adaptation, which takes a holistic approach by recognizing the importance of the physical, ecological, social, and economic systems upon which the health and well-being of the neighbourhood depends (Figure 4). This framework recognizes that building neighbourhood resilience requires enhancing community systems and structures to better withstand and respond to the impacts of climate change by taking adaptation measures before an incident occurs and effectively responding and recovering during and after an incident. Enhancing neighbourhood resilience also requires an understanding of how climate change affects people within the neighbourhood differently.

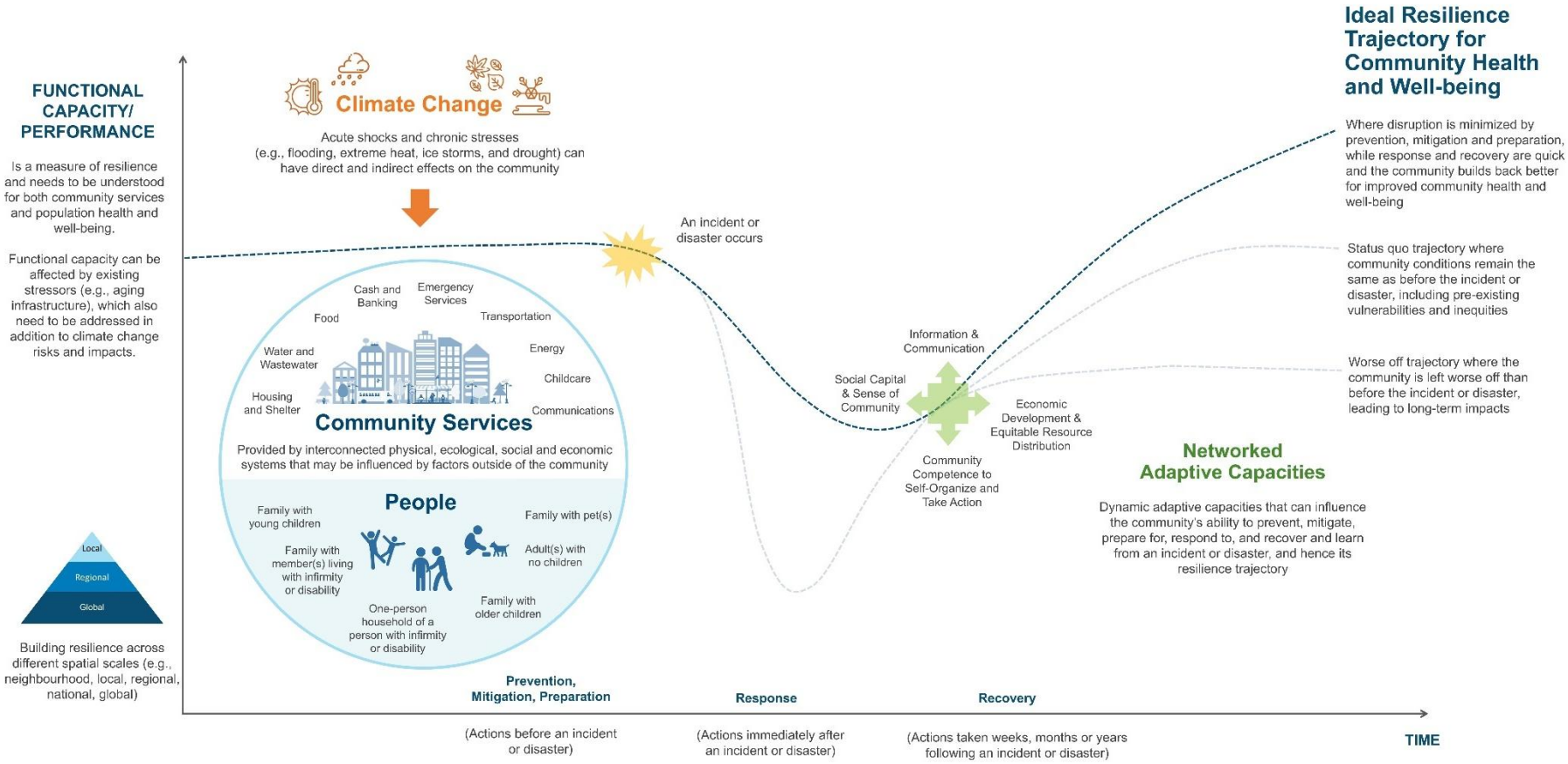


Figure 4. Framework for building community resilience in Ajax SNAP

(adapted from previous SNAP Neighbourhood Resilience Strategies based on Hay and Willibald, 2017; Kwasinski et al. 2016; CRSI 2011; Norris et al. 2008; Cutter et al. 2008)

This Strategy seeks to identify climate adaptation and resilience strategies that are tailored to this neighbourhood by integrating community engagement (Section 3) with a neighbourhood-level climate change vulnerability assessment (Section 4). Building on the Action Plan, this Strategy will support further implementation of the Action Plan's four integrated action areas:

1. **Sustainable Connections to Nature:** A neighbourhood with equitable access to open spaces, with natural areas enhanced for resilience and enjoyment.

2. **Sustainable Community Connections:** A neighbourhood of historical importance with residents who, alongside municipal and regional partners, come together to inspire an innovative sustainable future.

3. **Sustainable Physical Connections:** A "15-minute neighbourhood" with a connected network of amenities and green spaces easily accessed through active transportation and transit.

4. **Sustainable Buildings:** A neighbourhood with sustainable development and redevelopment, with buildings resilient to the impacts of climate change.

Furthermore, this Strategy helps to extend considerations and analysis for an expanded neighbourhood area (Figure 1), which was adopted based on community feedback through the Action Plan development process.

3. Community Engagements and What We Heard

The development of this Strategy was informed by extensive community engagement. It builds on previous community engagements undertaken to support the development of the Action Plan, as well as new engagements over the course of 2024.

Key activities in 2024 include:

- **A Town-wide community survey** for the Ajax Climate Risk & Resiliency Plan (ACRRP) 5-Year Implementation Strategy Update (between February and May). The survey gathered community input on their concerns about climate change, individual risk and preparedness levels, and actions that are needed to adapt and build climate resilience in Ajax. In total, 141 responses were received.

- **Home visits** conducted as part of the South Ajax Home Retrofit Program in 2023 and 2024, which offered free home consultations to residents where staff provide personalized retrofit and incentive recommendations tailored to their home and budget. Through these consultations, residents also shared their insights about top priorities and areas for improvement within the neighbourhood. In total, 90 home visits were completed.

- **An information/activity booth** at the June 8th Fire Safety event, hosted by the Town's Fire Department. At the booth, residents – including young children – explored the impacts of extreme weather events and engaged in discussions about emergency preparedness. Approximately 70 people were engaged.

- **The Ajax Community Forum**, which was held at Town Hall on June 22nd. Through this forum, residents, community leaders, and stakeholders were engaged in mapping community assets, exploring the risks and impacts of climate change, and co-designing neighbourhood solutions. Approximately 35 people attended the forum.

- **A monthly Ajax SNAP Newsletter**, which informs residents within the Ajax SNAP neighbourhood about local activities. These include news about events, workshops, and community planting efforts in the neighbourhood. On average, 180 people received the newsletter each month, with 19 editions issued by the end of 2024 since the launch of the Ajax SNAP.

Through these activities, valuable input was gathered from the community on their perceptions of climate risks and impacts, their lived experiences, and ideas for how to improve resilience and sustainability in their neighbourhood. These activities also help foster stronger connections between residents and local programs, which enables continued engagement within the neighbourhood.

The following provides a brief summary of the top climate risks of greatest concern to the community, which has helped to guide the neighbourhood vulnerability assessment. For more details about the community engagement activities and feedback received, please see Appendix A.

3.1 Perceptions of Climate Change Risks

Through these engagements, several climate-related risks emerged as risks of greatest concern to the community. These include flooding, power outages, poor air quality, extreme heat, freezing rain, and extreme storms (e.g., intense precipitation and windstorms).

Among the identified risks, poor air quality, extreme heat, and freezing rain were associated with the greatest health and safety impacts within the neighbourhood. Freezing rain and wind were associated with the greatest disruptions to services (e.g., power outages, road closures, transit disruptions, etc.). Power outages emerged as a major concern, as they can result from multiple hazards (e.g., ice storm, extreme heat, significant rainfall or snowfall, and strong wind).

The greatest concerns for property damage were associated with wind and ice storms, rain, and snow. Past windstorms have caused damage to homes, businesses, and trees. Meanwhile, past snowstorms have caused accessibility issues (e.g., blocked roads and sidewalks, and transit disruptions).

Tapping into people's perceptions and experiences of climate change and extreme weather events can help drive local climate action. Actions that directly address people's concerns about climate change are more likely to be supported and successfully implemented.

4. Assessing Climate Change Vulnerability in Ajax SNAP

A neighbourhood-scale climate change vulnerability assessment was conducted for Ajax to understand the risks posed by climate change and existing vulnerabilities within the neighbourhood. This assessment combines technical neighbourhood-based analysis with the values and priorities of residents and stakeholders to inform the development of adaptation and resilience strategies that are tailored to the neighbourhood.

This builds on an existing neighbourhood model of climate change vulnerability assessment and adaptation planning developed by TRCA that has been applied in various neighbourhoods across TRCA's jurisdiction. These include the Port Credit Vulnerability Assessment (2016) in Mississauga; Climate Ready County Court (2020) in Brampton; Thornhill SNAP (2022) in Vaughan; and Rexdale SNAP (2023) in Toronto.

This model also aligns with the "Urban Community Resilience Assessment Framework" published by the World Resources Institute (Rangwala et al. 2018), which has been applied in communities around the world. The neighbourhood vulnerability assessment and adaptation planning for the Ajax SNAP neighbourhood was also informed by a literature scan to ensure alignment with the latest best practices.

4.1 Framework for Understanding Climate Risk

Based on the Intergovernmental Panel on Climate Change's (IPCC's) latest Sixth Assessment Report, climate risk is influenced by multiple factors including hazards, exposure, vulnerabilities, and responses (Figure 5).

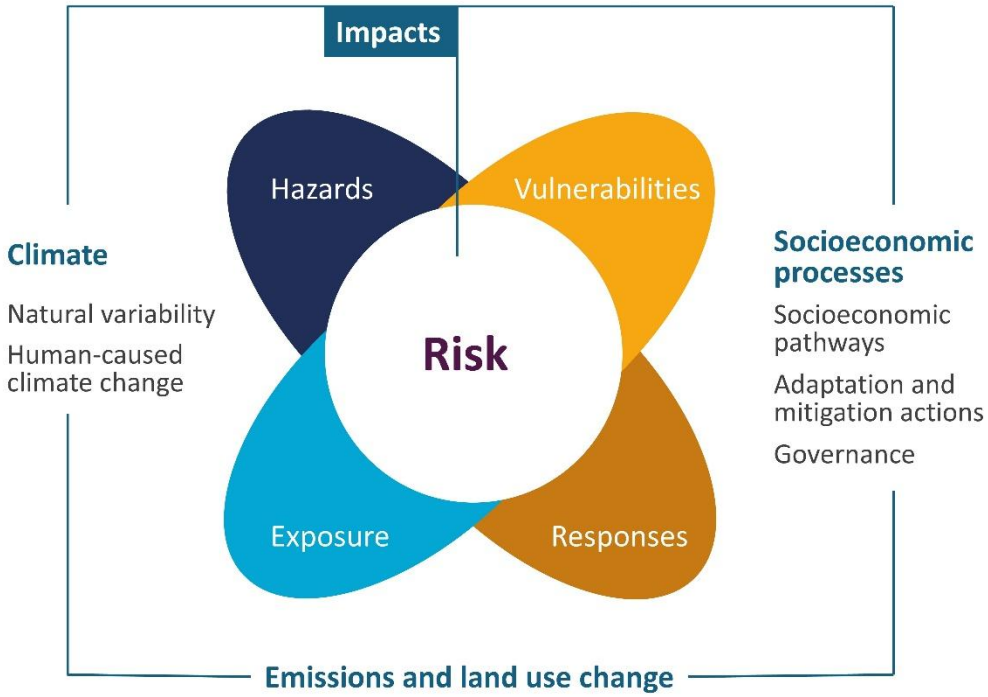


Figure 5. Conceptual framework of risk as a result of climate, exposure, vulnerability, and socio-economic processes (adapted from IPCC, 2022)

Hazard refers to the potential occurrence of a climate-related event or trend that may cause the loss of life, injury, or health impacts, and damage and loss to property, infrastructure, services, livelihoods, and the natural environment.

Exposure refers to the presence of people, livelihoods, ecosystems, environmental functions and services, infrastructure, and assets in places and settings that could be adversely affected by a hazard.

Vulnerability refers to the propensity or predisposition to be adversely affected and encompasses sensitivity (or susceptibility) to harm and lack of capacity to cope and adapt.

- **Sensitivity** refers to the degree to which a system is affected directly or indirectly by climate variability or change.
- **Adaptive capacity** refers to the ability to adjust to potential damage, take advantage of opportunities, and/or respond to consequences.

Response is a recent addition to the IPCC's framing of risk and recognizes the role of human responses. Risks may arise when responses fail to achieve their intended objectives or result in trade-offs or adverse side effects.

This framework offers a helpful foundation for assessing climate risks and vulnerabilities in the Ajax SNAP neighbourhood and developing adaptation and resilience strategies.

4.2 Applying the Climate Risk Framework to Ajax SNAP

The IPCC's climate risk framework was applied in the Ajax SNAP using an indicator-based approach. This approach enables a semi-quantitative assessment that incorporates available geospatial, quantitative, and qualitative data. Neighbourhood-specific data was used as much as possible. If neighbourhood-specific data were unavailable, then data and information from the Town and Region of Durham were utilized.

4.2.1 Climate Vulnerability Indicators

Table **1** presents a summary of the indicators used in the Ajax SNAP climate change vulnerability assessment. The Ajax SNAP neighbourhood's exposure to climate-related hazards was assessed to help understand how climate change is affecting the neighbourhood and potential future impacts. However, the overall vulnerability of the neighbourhood is calculated based on sensitivity and adaptive capacity – in line with the latest IPCC framework (see Section 4.2.3 for further details).

Exposure was based on historical and future climate trends for the Town of Ajax, as well as community input. Meanwhile, the neighbourhood's sensitivity and adaptive capacity to climate variability and change were mainly assessed based on demographic, socio-economic, and environmental characteristics, as well as community input. Response is more challenging to assess and not limited to the neighbourhood level. Therefore, response was not assessed but instead forms a key tenet of the neighbourhood adaptation and resilience strategies (Section 6). For a full list of data sources for each indicator, please see Appendix B.

Table 1. Summary of climate change vulnerability assessment indicators for Ajax SNAP

Exposure	Sensitivity	Adaptive Capacity
• Extreme heat trends (including the urban heat island effect) • Extreme cold • Temperature and precipitation trends • Flooding risk • Snow, ice, and windstorms • Vector-borne diseases trends	• Seniors (65 years or older) • Children (14 years or under) • Residents living alone • People who do not speak English or French • People without a high school diploma • Household income and distribution • Housing tenure (owned, rented, other) • Age of buildings and homes	• Local assets and services • Access to food outlets • Mobility and access to transportation (including public transit and active transportation) • Access to parks and open spaces • Exposure to nature • Presence of air conditioning • Access to drinking water • Communications and sense of community

4.2.2 Normalization

Since the vulnerability analysis involves combining indicators with various units, scales, and values, it is necessary to convert quantitative values into comparable unitless values before aggregation – a process known as normalization.

Various normalization methods have been used in the literature. In this study, the **min-max normalization method** was applied:

$$\mathbf{X_{normalized}} = (\mathbf{X_i} - \mathbf{X_{min}})/(\mathbf{X_{max}} - \mathbf{X_{min}})$$

Where:

$\mathbf{X_i}$: Initial value of the indicator

$\mathbf{X_{min}}$: Minimum value of the indicator

$\mathbf{X_{max}}$: Maximum value of the indicator

$\mathbf{X_{normalized}}$: New value of the normalized indicator (between 0 and 1)

This results in normalized values that range between 0 and 1. For this assessment, 0 is considered most desirable and 1 is considered least desirable. Normalized values were checked to ensure that the direction of the values reflected this scale where lower values indicate a positive (more desirable) state and higher values indicate a negative (or less desirable) state, otherwise the values were inverted. For example, areas with higher vegetation cover are more desirable, therefore the scale was inverted so that the lowest score was assigned to areas with the highest vegetation (or Normalized Difference Vegetation Index).

4.2.3 Aggregation

For quantitative sensitivity indicators and adaptive capacity indicators, the indicator values were each aggregated into a composite index of sensitivity and adaptive capacity, respectively, using an equal weighting approach.

Overall vulnerability was calculated by subtracting the composite adaptive capacity index from the composite sensitivity index:

$$\mathbf{Vulnerability} = \mathbf{Sensitivity} - \mathbf{Adaptive\ Capacity}$$

Vulnerability scores were divided into equal groups of five (or quintiles), ranging from very low vulnerability to very high vulnerability.

5. Assessment Findings

5.1 Exposure

According to the Intergovernmental Panel on Climate Change (IPCC, 2021), the scientific evidence is unequivocal that human activities have caused the warming of our atmosphere, ocean, and land. Globally, average surface temperature has increased by more than 1°C since the pre-industrial period (1850-1900). The impacts of this warming are already being felt in the town of Ajax and across the world. As noted in the Ajax Climate Risk & Resiliency Plan (ACRRP; 2019), examples of these impacts include:

- Localized flooding, including the 2017 floods;
- Significant drought in 2016;
- Violent storm damage, including impacts from the 2013 ice storm;
- Widespread damage from strong winds and thunderstorms following the derecho in May 2022;
- Threats to human health and safety, including vector-borne diseases such as Lyme disease and West Nile virus;
- Ecosystem changes, including impacts of invasive species such as emerald ash borer;
- Disruption to electricity supply; and
- Disruptions to transportation and communication services.

If global concentrations of heat-trapping greenhouse gases (GHGs) continue to rise unabated, more devastating impacts can be anticipated all around the world. According to updated regional climate projections developed by TRCA for Durham Region, area municipalities, and other partners in 2020, the region's climate is expected to continue to get warmer, wetter, and wilder (Delaney et al., 2020). This section describes some of the key climate-related hazards that are anticipated to affect the town and neighbourhood based on the updated climate projections. While updated climate projections are available for both a moderate (RCP4.5) and high (RCP8.5) emissions scenario, this summary focuses on the high emissions scenario to illustrate what Ajax's future climate could look like if global GHG emissions continue to rise past the middle of the century.

5.1.1 Exposure to Extreme Heat

Extreme heat in Ajax is anticipated to increase in frequency, intensity, and severity. Extreme heat is already a leading cause of weather-related illnesses and deaths in Canada and puts everyone's health at risk, especially seniors, young children, people with pre-existing conditions, people with limited access to cooling, and people who must spend long hours outdoors. The number of very hot days with daily maximum temperatures above 30°C is anticipated to increase by approximately 12 days per year by the middle of the century (from eight days in the 1980s to 20 days by the 2050s). By the end of the century, the number of days with temperatures above 30°C is expected to increase even more, reaching approximately 39 days a year.

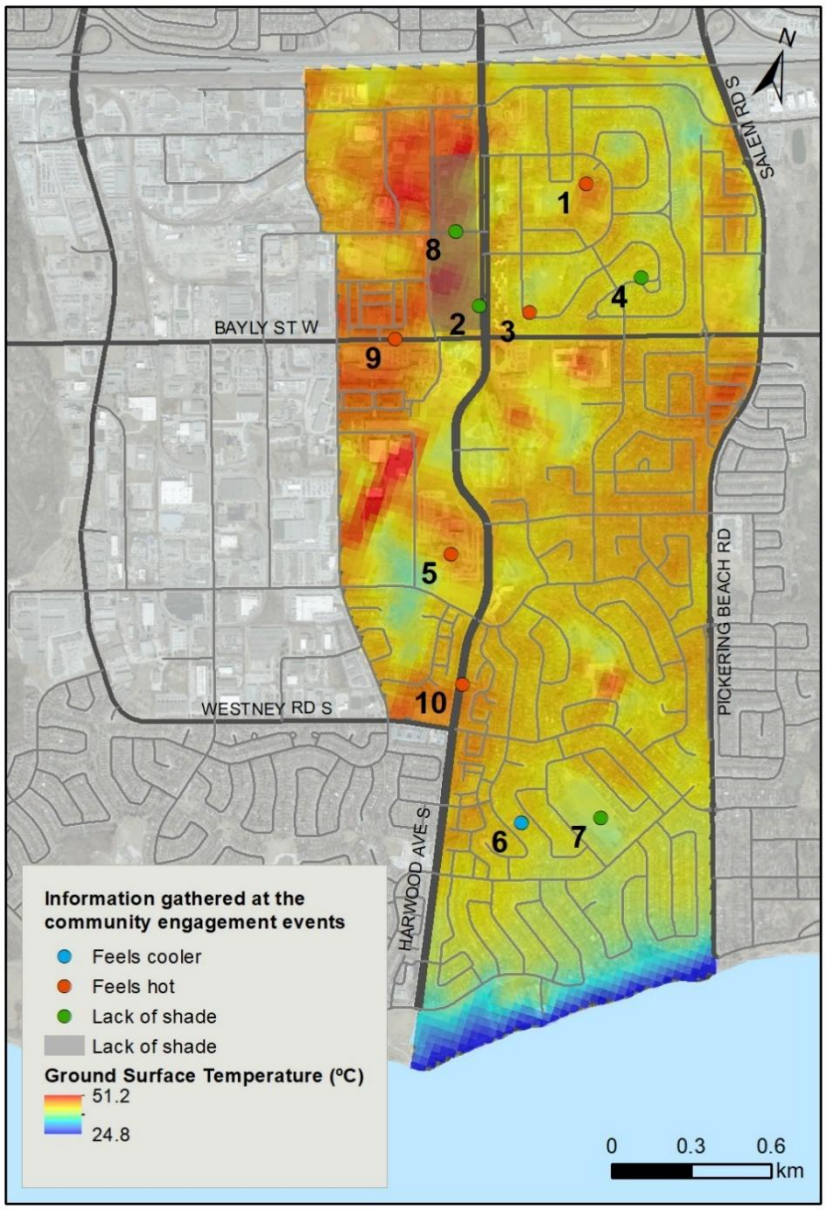
The effects of extreme heat can be exacerbated by the urban heat island effect, where day and night-time temperatures in built-up urban areas tend to be higher than surrounding areas with more trees and vegetation. As a proxy for measuring the presence and impact of the urban heat island effect in Ajax, a heat map was developed (Figure 6). This mapping is based on ground surface temperature derived from Landsat 8 satellite

imagery taken on a typical summer day (July 2, 2020) with minimal cloud cover. Based on this analysis, ground surface temperatures in this neighbourhood ranged from 25˚C to a high of 51˚C.

Notably, areas with more natural land cover, such as parks and water bodies are cooler, while built-up areas and parking lots recorded higher surface temperatures (e.g., commercial plazas and industrial buildings). This measure is a proxy of the surface heat island effect and does not account for factors such as air temperature and humidity.

Figure 6 also presents community input gathered through community engagement, including areas where people feel hot or find a lack of shade. Some notable places include areas along Hardwood Avenue South, Bayly Street, the parking lot at the Lakeridge Health Ajax-Pickering Hospital, and plazas to the north of Bayly Street West along Harwood Avenue South. These locations are characterized by a lack of mature trees and dense impervious cover. Residents also shared personal stories of how past heat events have affected them or people they know, including the loss of a dog during a heatwave, the experience of a heatstroke, and worsened asthma symptoms due to extreme heat.

While the Community Survey for the Ajax Climate Risk & Resiliency Plan (ACRRP) 5-Year Implementation Strategy update was not specific to the Ajax SNAP neighbourhood, only 28 percent of respondents are currently satisfied with the presence of trees providing shading along streets. Respondents also identified Hardwood Avenue South and Bayly Street as areas that lack shade.



Community Input	
1.	**Feels hot** around St. Paul's United Church and St. Timothy's Presbyterian Church due to high amount of asphalt
2.	**Lack of shade** at the bus stop by Tim Hortons on Harwood Avenue South
3.	**Feels hot** in older homes and complexes at Harwood Avenue South and Bayly Street East due to lack of air conditioning
4.	**Lack of shade** as mature trees were removed to put in more parking for rental units around Woodhouse Crescent and replaced with smaller trees
5.	**Feels hot** in the parking lot at the Ajax-Pickering Hospital, which is concerning for patients who may be vulnerable to the impacts of extreme heat
6.	**Feels cooler** in this area due to large trees that provide shade and cooling
7.	**Lack of shade** at the playground in Kinsmen Park
8.	**Lack of shade** trees in this plaza and lack of outdoor shade or weatherized shelter for people who are experiencing homelessness
9.	**Feels hot** along Bayly Street. Young trees provide little shade, and it can be too hot to walk. Also, there are no trees along the new cycling path.
10.	**Feels hot** along Harwood Avenue South

Figure 6. Map of ground surface temperature and community input on extreme heat

5.1.2 Exposure to Extreme Cold

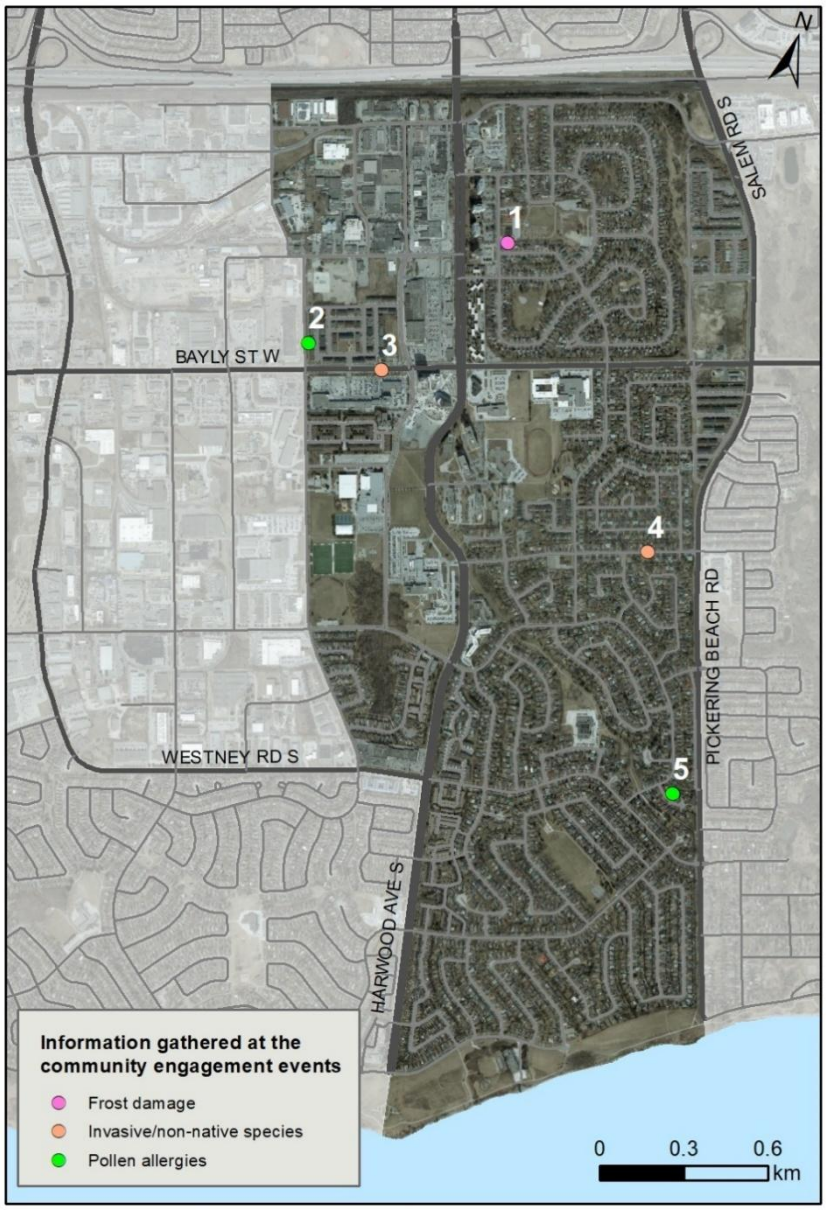
As temperatures warm, the number of extreme cold days are expected to decrease. The average number of days in a year with minimum temperatures below -15°C in Ajax could approach four days by the end of the century compared to the 1980s (23 days per year). As winters are expected to get warmer, the town will likely see less snow and lake ice cover, which can impact traditional outdoor winter recreation as well as natural systems. This decline also means that there will be fewer extreme cold days per year that put people at risk of extreme cold-related illnesses such as hypothermia. However, wider variations in day-to-day temperatures may provide less time for people to acclimatize or adapt to colder conditions when they do occur.

5.1.3 Exposure to Temperature and Precipitation Trends

Average temperatures in Ajax are expected to increase across all seasons by the end of the century under the high emissions scenario compared to the 1980s. Summer average temperature is expected to warm the most by the end of the century – increasing from 17°C to 24°C (or +7°C). Warmer average temperatures are expected to bring hotter summers, warmer winters, and greater variability in temperatures. Warmer winter temperatures can lead to more precipitation falling as rain instead of snow, which can lead to an increased risk of flooding during winter. Warmer winters and a decline in snow cover would also have impacts on the town's natural systems and wildlife.

With warmer temperatures, the air can hold more moisture and increase evaporation, leading to more frequent and severe storms. While precipitation is anticipated to increase, model results vary widely, indicating a higher degree of uncertainty. Winter total precipitation could increase by 10 percent by mid-century and 20 percent by the end of the century, compared to the 1980s. Spring total precipitation is anticipated to see the greatest increase, with a projected rise of 34 percent by the 2050s and 49 percent by the 2080s, compared to the 1980s. This is followed by summer total precipitation, which is anticipated to increase by 26 and 38 percent by mid and late century, though drier summers are possible. Fall precipitation is also expected to increase, but to a lesser extent than the other seasons (increasing by 6 percent by the 2080s). Heavy precipitation events such as the amount of precipitation falling in one day and three days are also anticipated to increase.

As the climate continues to change, residents have already observed some notable impacts in their community (Figure 7). During the June 2024 Ajax SNAP Community Forum, participants noted that they have observed an increase in Japanese beetles and other pests, which they suggest may be associated with recent warming. Participants also noted that past spring frost events have caused damage to plants. There is also concern about the growth and spread of dandelions and increases in pollen, which may affect people with allergies and respiratory conditions.



Community Input	
1.	**Frost damage:** Past spring frost caused damage to plants at St. Andrew's Community Garden
2.	**Pollen allergies:** Concern about pollen allergies
3.	**Invasive/non-native species:** Japanese beetles and other pests are prolific
4.	**Invasive/non-native species:** Bugs were observed in trees in March 2024
5.	**Pollen allergies:** Concern about dandelions

Figure 7. Map of community input on impacts from changing temperature and precipitation patterns

5.1.4 Exposure to Flooding Risk

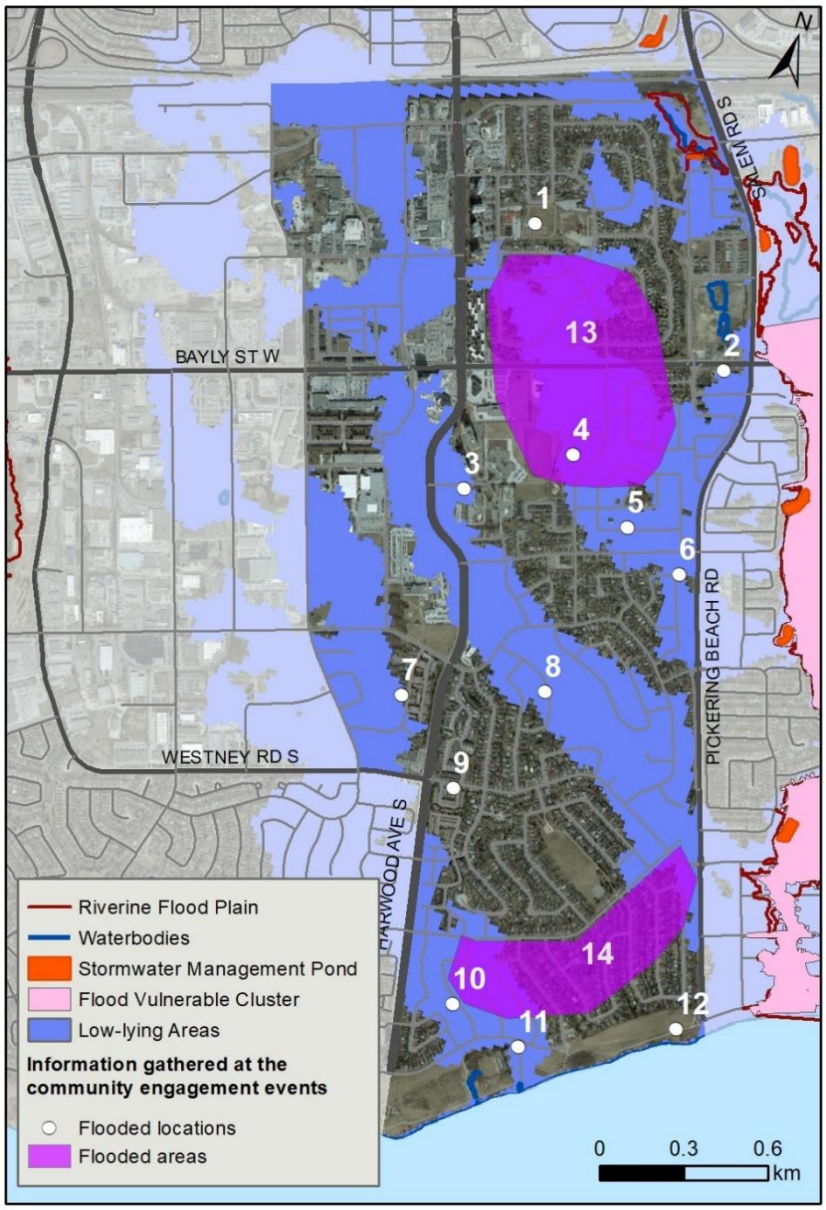
Increases in temperature and precipitation also bring an increased risk of flooding. For example, with warmer winters, more precipitation is anticipated to fall as rain instead of snow, which can increase the risk of flooding during winter when flooding is typically less common. Increases in heavy, intense storms can also overwhelm infrastructure systems, especially older systems that were designed and built according to older standards.

To assess the potential risk of flooding in Ajax SNAP, we first assessed TRCA's riverine flood plain mapping and Flood Vulnerable Clusters (an area within the flood plain where there is a higher concentration of roads and structures at risk of flooding). Based on this information, we found that only a small section of the

neighbourhood to the northeast (including a segment of Achilles Road and surrounding greenspace) is within TRCA's riverine flood plain (Figure 8). This northeast corner of the neighbourhood also consists of a flood plain spill area – an area where flood waters may "spill over" to surrounding areas. Flood plain spill areas can occur naturally or result from downstream barriers that obstruct the passage of flood flows such as undersized bridges or culverts. As flood waters are not physically contained within a valley or stream corridor, the limit and depth of flooding is difficult to determine.

While this may not have direct impacts within the Ajax SNAP neighbourhood, the neighbourhood is situated adjacent to a riverine flood plain to the east of Salem Road South, in which a Flood Vulnerable Cluster is also found. This may result in indirect impacts on neighbourhood residents, such as travel disruptions to and from the neighbourhood in the event of riverine flooding.

In addition to riverine flooding, we also assessed low-lying areas within the neighbourhood to help identify potential areas where ponding and urban flooding may occur (Figure 8). We applied the Height Above Nearest Drainage (HAND) tool used by Rincón and others (2018) to determine elevation relative to the nearest drainage. The HAND tool uses Digital Elevation Model (DEM) data and streams as inputs to generate a potential drainage network and identify low-lying areas. The resulting low-lying areas are shown in blue in Figure 8. When combined with information about past flooding events gathered through community engagement, we found some overlap between these past flooding issues and identified low-lying areas. While correlation does not mean causation, these low-lying areas may offer opportunities for flood risk reduction and outreach.



Community Input
1. St. Andrew's Park floods regularly
2. Water flows through the parking lot
3. Concern about flat-roof buildings around Falby Court and risk of roof leaks
4. Basement flooding – rainwater seeped into leaky basement in 2021
5. The stormwater catch basin is regularly maintained
6. Basement flooding 5 years ago
7. Basement flooding due to snow melt
8-9. Basement flooding
10. Basement flooding and flooded driveways
11. Trees were damaged along the waterfront due to high lake levels in recent years
12. Basement flooding – in April in the past
13-14. Areas that were identified as a concern for flooding: Inundated roads and concern about rental and affordable rental units bearing most risk

Figure 8. Map of potential flood risk and community input on impacts from past flooding events

5.1.5 Exposure to Snow, Ice, or Windstorms

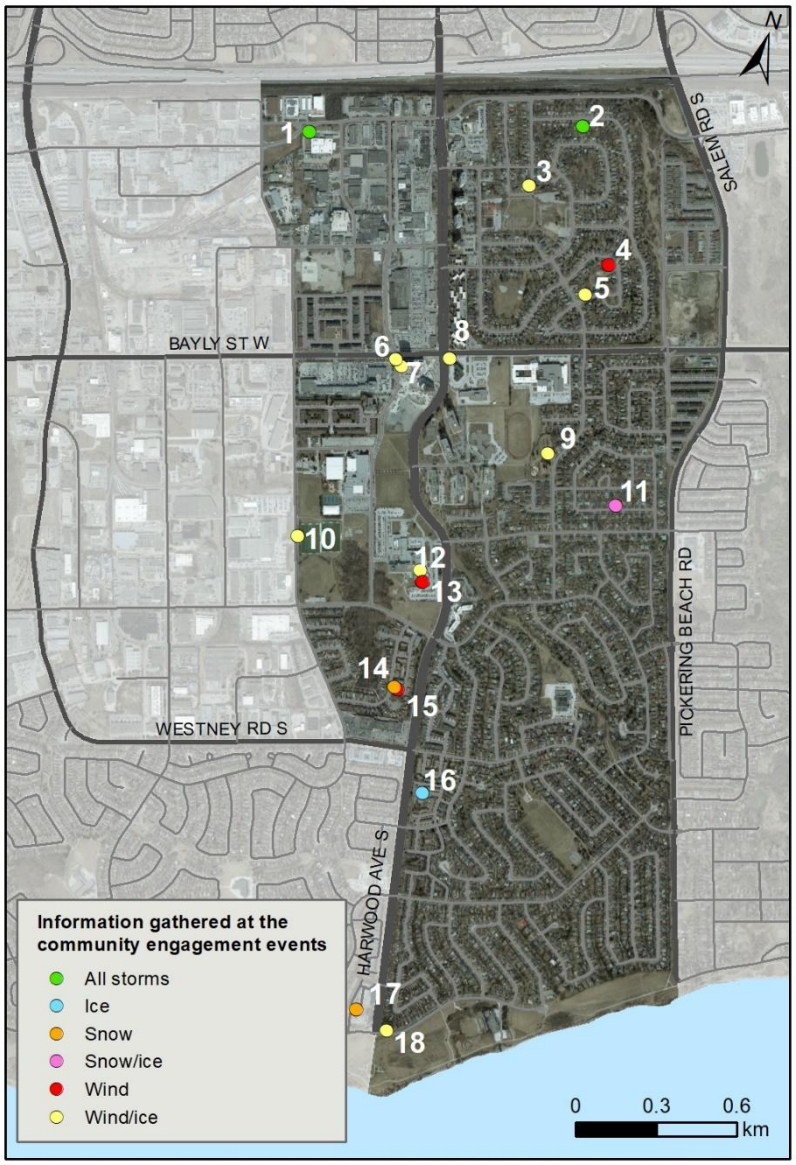
Residents have also experienced impacts from past winter storms and strong wind events (Figure 9). As one participant noted, “Winter storms affect everything and everyone.”

While ice storms have been rare, their impacts can be devastating. In southern Ontario, Klaassen and others (2003) identified 25 ice storms that have occurred between 1844 and 2002 and although rare, ice storms will likely continue to occur under a changing climate. Among these, the 1998 ice storm was the most severe, which resulted in 28 deaths in eastern Canada and 19 deaths in northeastern United States. The December 2013 ice storm was another major ice storm that affected southern Ontario. Residents recalled that power outages lasted

for several days and that damages to trees were widespread throughout the neighbourhood. Many seniors were notably affected, including seniors who lived in buildings without working elevators.

The May 2022 derecho that affected Ontario and Quebec was also top of mind for many residents, which brought high sustained winds and a tornado that touched down in Uxbridge in Durham region. The extreme winds also resulted in damages to trees and property within the neighbourhood.

As residents recalled these past events, they also shared stories about how neighbours helped one another (e.g., helping to clear snow), contributing to a sense of community.



Community Input
1. **All Storms:** Power outages; concerns about people relying on life-saving machines
2. **All Storms:** Seniors were affected by power outages
3. **Wind/Ice:** Mature trees were damaged from past storms and fell on overhead wires causing power outages
4. **Wind:** Damage to roofs and cars from past storms
5. **Wind/Ice:** Power outages due to tree damages from past storms. Seniors in buildings without working elevators.
6. **Wind/Ice:** Power outages from storms
7. **Wind/Ice:** Water supply plant experienced delivery disruptions from past storms
8. **Wind/Ice:** Power outages from past storms
9/10. **Wind/Ice:** Tree damages from past storms
11. **Snow/Ice:** Travel on roads and streets became impaired, even for ambulances
12. **Wind/Ice:** Tree damage from past storms
13. **Wind:** Damage to patios at Harwood Plaza from past storm
14. **Snow:** Roads and streets became inaccessible
15. **Wind:** The 2022 derecho caused damages to large mature trees. Trees fell on houses and backyards.
16. **Ice:** The 2013 storms caused power outages for days. Seniors were reluctant to leave home due to fear of vandalism.
17. **Snow:** Ambulance got stuck during snowstorm in this retirement community
18. **Wind/Ice:** Power outages from past storms

Figure 9. Map of community input on impacts from past snow, ice, and windstorms

5.1.6 Exposure to Vector-borne Diseases

Changes in temperature, precipitation, and humidity as a result of human-caused climate change are creating more favourable conditions for the survival, reproduction, and range expansion of vectors such as mosquitoes and ticks.

Based on data from Public Health Ontario, Lyme disease cases have been rising in Durham region (Figure 10) and much of southern Ontario in recent years. While cases of West Nile virus illness fluctuate over time (Figure 11), it remains a disease of public health significance. In 2023, two new tick-borne diseases (Anaplasmosis and Babesiosis) were designated as diseases of public health significance in Ontario. Fortunately, cases of Anaplasmosis or Babesiosis have yet to be documented in Durham region.

Through community engagement, residents expressed concerns about mosquitoes and identified some risk locations (e.g., standing water near St. Andrew's Community Garden).

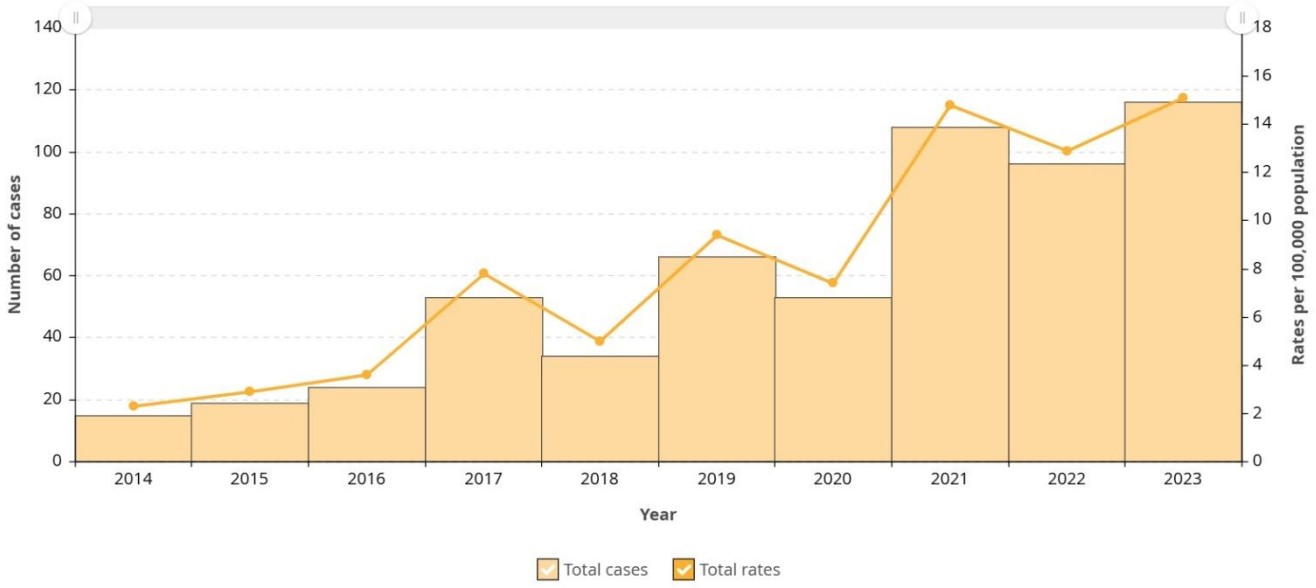


Figure 10. Lyme disease rates and cases in Durham region over time for all ages and sexes
(Public Health Ontario, 2024)

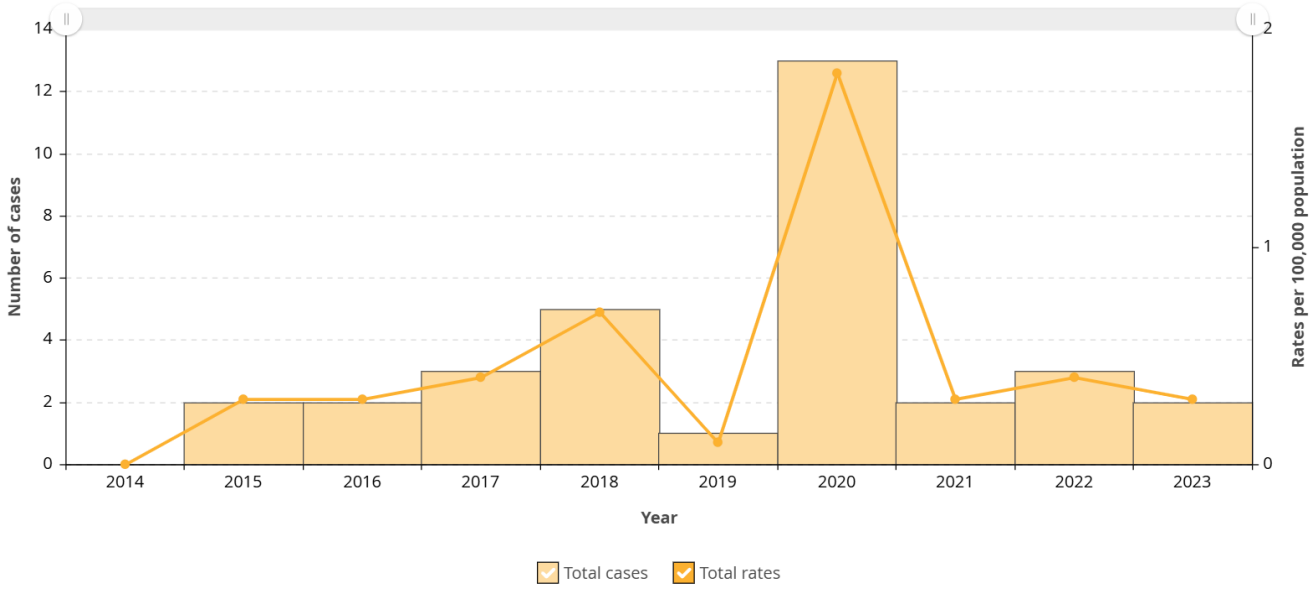


Figure 11. West Nile virus illness rates and cases in Durham region over time for all ages and sexes
(Public Health Ontario, 2024)

5.2 Sensitivity

5.2.1 Seniors and Children

There is an aging population in this neighbourhood, which is anticipated to continue to increase. Currently, the median age for this area is 41 years old, which is higher than the town's median of 38 (Environics Analytics, 2024). Approximately 20 percent of neighbourhood residents are 65 years or older – or one in every five residents. Meanwhile, children (14 years and under) make up approximately 15 percent of the neighbourhood.

Using 2021 Census data, we explored the spatial distribution of seniors and young children within the neighbourhood, who may be more vulnerable to the impacts of climate change. The neighbourhood is divided into 27 dissemination areas (23 are fully covered and four are partially located within the neighbourhood). Dissemination areas are defined by Statistics Canada (2021) as small, relatively stable geographic units that are composed of an average of 400 to 700 people.

Based on the number of seniors (65 years and older) living in each dissemination area, there are three areas where the number of seniors tend to be greater (Figure 12). These areas include apartment buildings to the north and south of Falby Court and towers along Harwood Avenue South and Exeter Road by Kings Crescent.

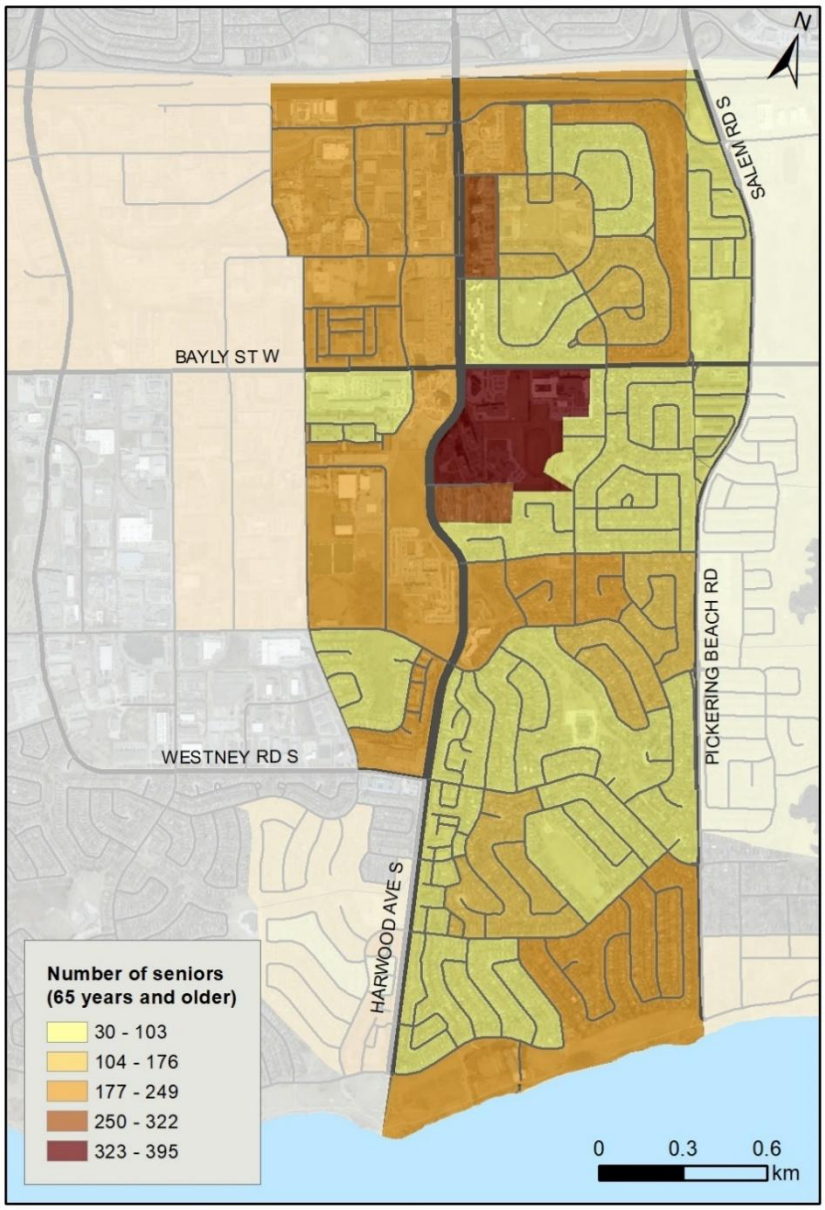


Figure 12. Map of the number of seniors aged 65 years and older by dissemination area
(based on 2021 Census data)

Notably, the area that encompasses apartment buildings to the south of Falby Court is an area where a high number of seniors and young children intersect (Figure 13). Otherwise, families with young children tend to be found more to the north of Bayly Street, west of Harwood Avenue South, and east of Porte/Michaelman/ Hickman Road in this neighbourhood.

Understanding where seniors and young children live within the neighbourhood can help support adaptation planning and outreach initiatives.

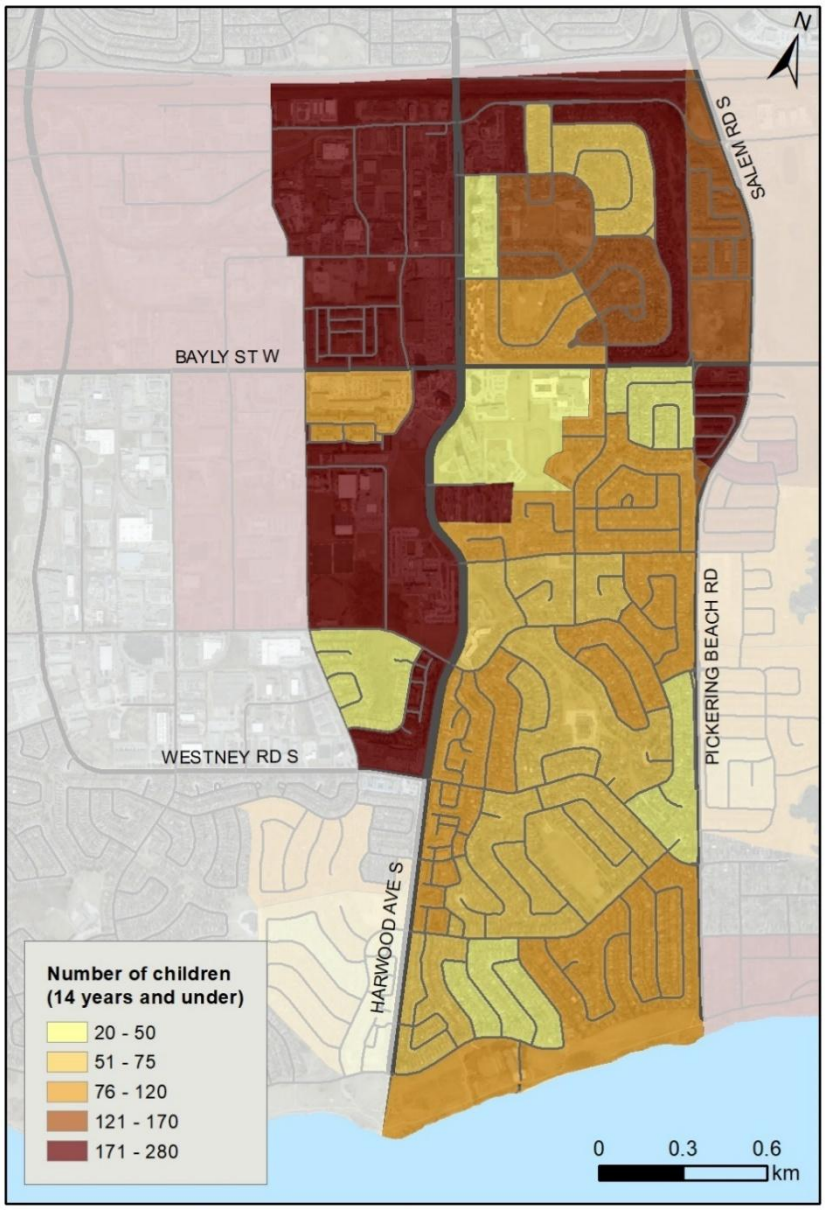


Figure 13. Map of the number of children aged 14 or under by dissemination area
(based on 2021 Census data)

5.2.2 Residents Living Alone

Residents living alone, especially seniors and people with limited mobility, may require additional support during an extreme weather event or disaster. Approximately 28 percent of residents are currently living alone in this neighbourhood, which is higher than the rest of the town (14 percent; Environics Analytics, 2024). This neighbourhood also has a higher proportion of single-parent families (approximately 27 percent), compared to the town (Environics Analytics, 2024).

Figure 14 presents the distribution of residents living alone by dissemination area, using 2021 Census data.

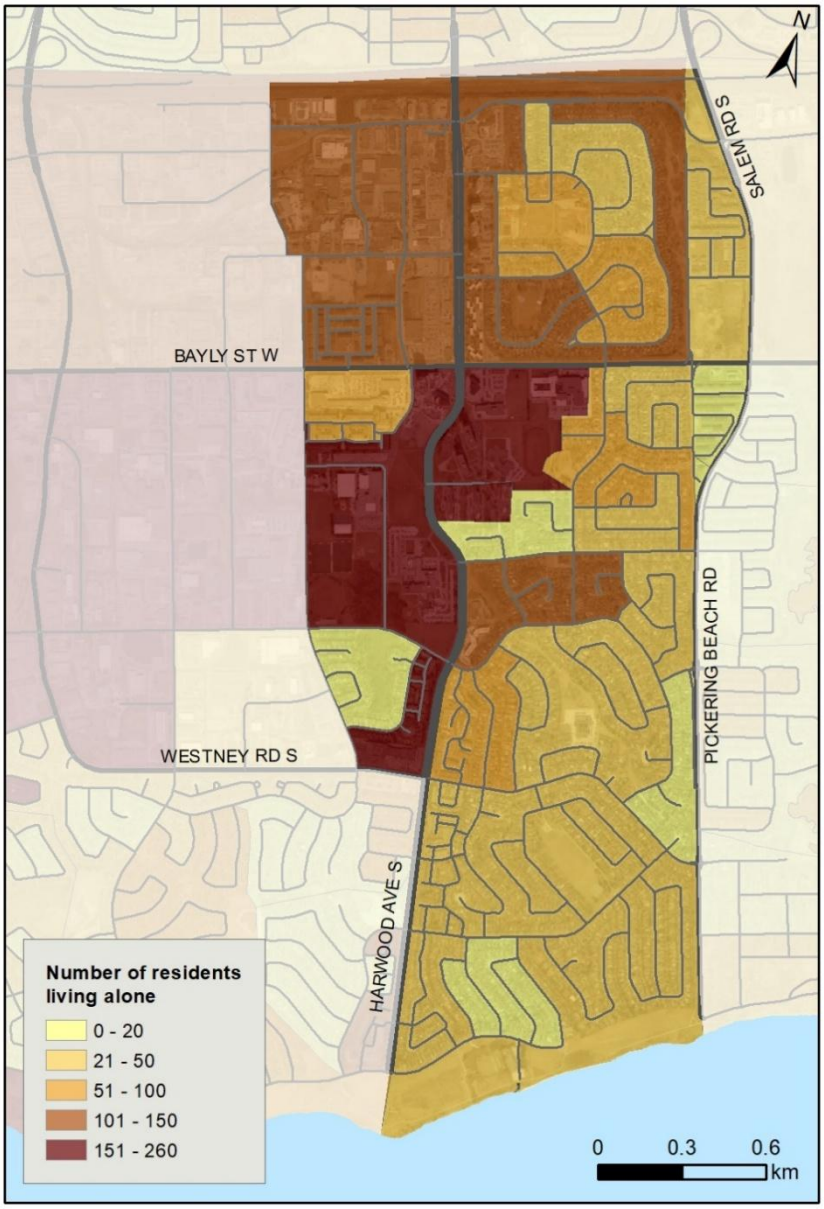


Figure 14. Map of the number of residents living alone by dissemination area
(based on 2021 Census data)

Areas with a greater number of residents living alone include buildings around Falby Court, homes near the Ajax Community Centre and the Lakeridge Health Ajax and Pickering hospital, and an area south of Clements Road West by Harwood Avenue South. Many residents who live alone are also found north of Bayly Street West and in homes around Southside Worship Centre, south of Emperor Street and north of Clements Road East.

5.2.3 Language Barriers

Overall, most neighbourhood residents have knowledge of either English or French, except for approximately two percent of residents (Environics Analytics, 2024). Residents who face language barriers may experience challenges during an event or disaster if communications are only issued in English or French. In order to reach

residents facing language barriers, it is important to ensure that communication messages and materials are translated into various languages or can be understood with few or no words. The top four languages spoken at home, apart from English, include Tamil, Persian, Tagalog, and Urdu (Environics Analytics, 2024).

Figure 15 presents the distribution of residents who do not speak either English or French based on 2021 Census data. An area with a notably high number of residents who do not speak English or French includes homes to the south of Falby Court.

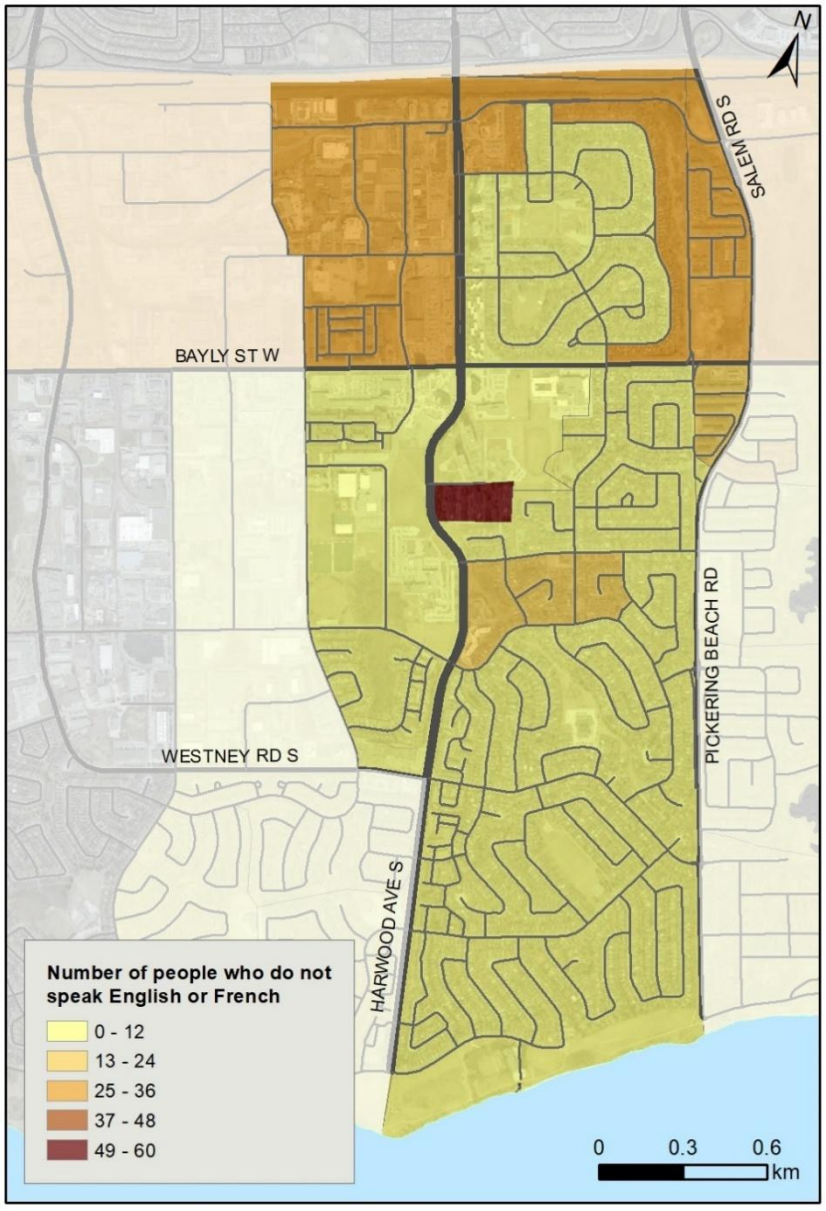


Figure 15. Map of the number of residents who do not speak English or French by dissemination area (based on 2021 Census data)

5.2.4 Educational Attainment

Apart from personal or lived experiences of climate change, people with higher educational attainment tend to have a greater understanding or awareness of climate change. Approximately 14 percent of neighbourhood residents do not have a certificate, diploma or degree, which is comparable to the rest of the town (Environics Analytics, 2024).

Figure 16 presents the distribution of the population without a certificate, diploma or degree by dissemination area based on 2021 Census data. Once again, the area around Falby Court and near Ajax High School appear to have a greater number of people with lower educational attainment.

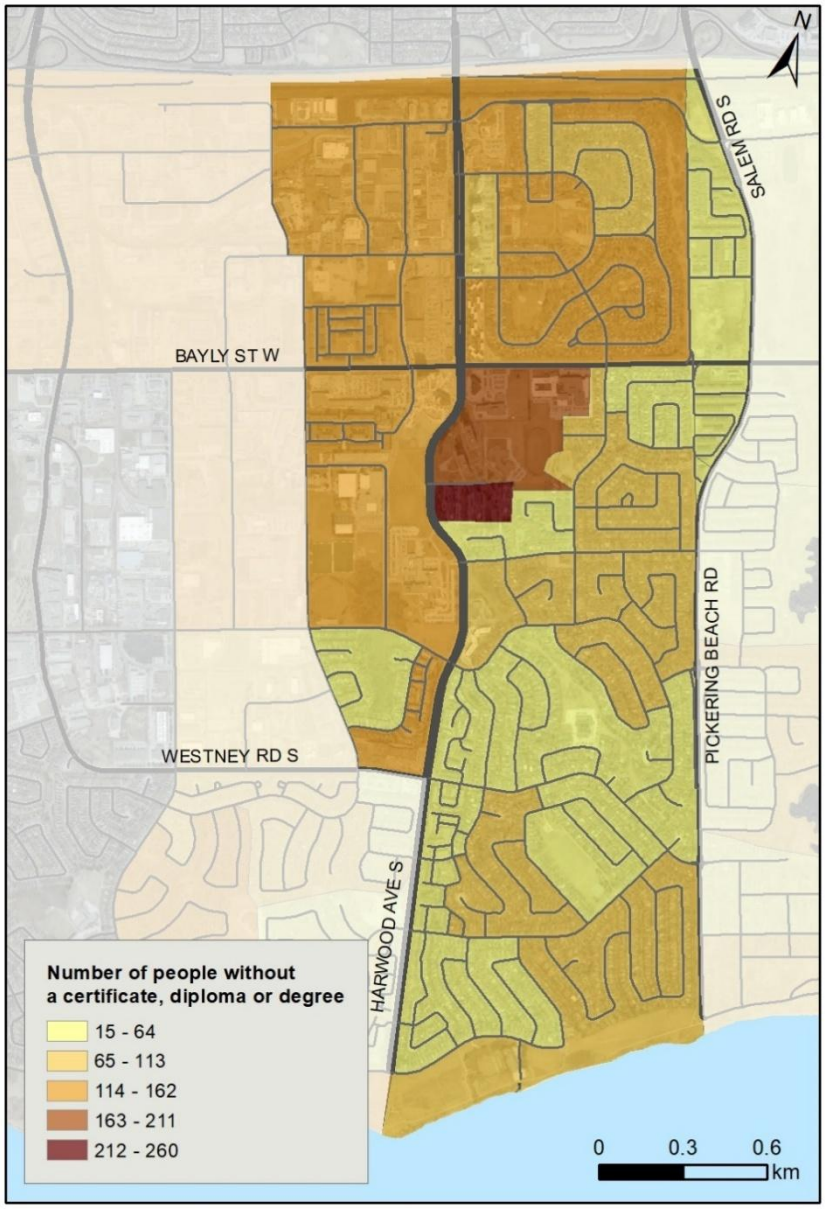


Figure 16. Map of the number of residents without a diploma, certificate or degree by dissemination area (based on 2021 Census data)

5.2.5 Household Income and Distribution

Household income is an indicator of the financial resources that may be available to households in time of need. The average household income in Ajax SNAP is $110,214, which is slightly lower than the rest of the town ($152,063) (Environics Analytics, 2024).

The distribution of household income is another important aspect to consider, as existing inequities can be worsened by the impacts of climate change. In Ajax SNAP, household income distribution is skewed more towards the lower income categories, compared to the rest of the town, which tends to be skewed towards higher income categories (Figure 17).

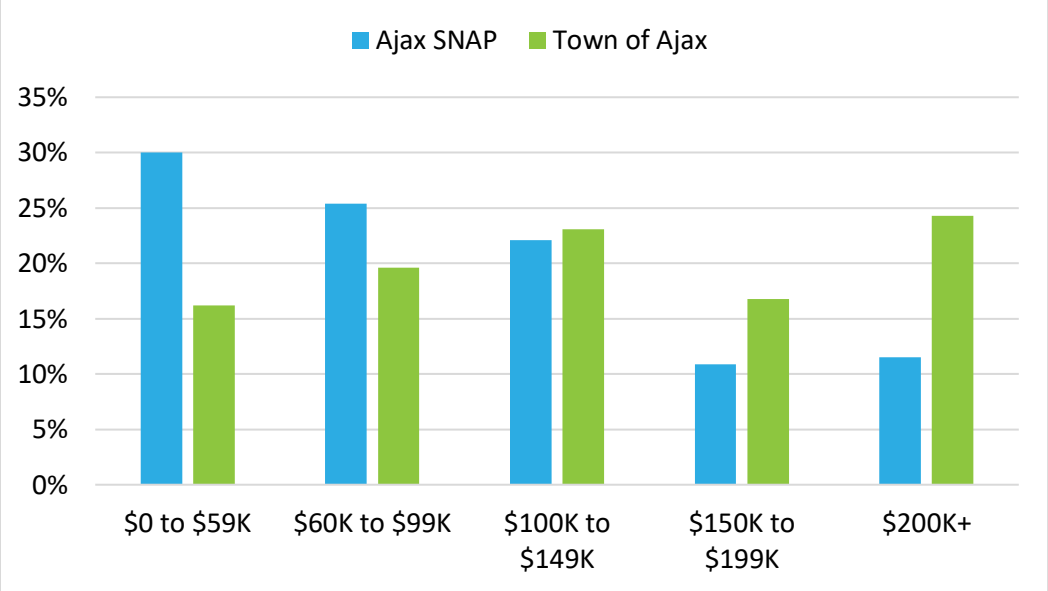


Figure 17. Comparing household income distribution in the Ajax SNAP neighbourhood (blue, left) and Town of Ajax (green, right) (Environics Analytics, 2024)

When we look at how average household income is distributed by dissemination area (Figure 18), the distribution is similar within the neighbourhood, except for one area to the south of Foord Road along Pickering Beach Road that appears to have a lower average household income.

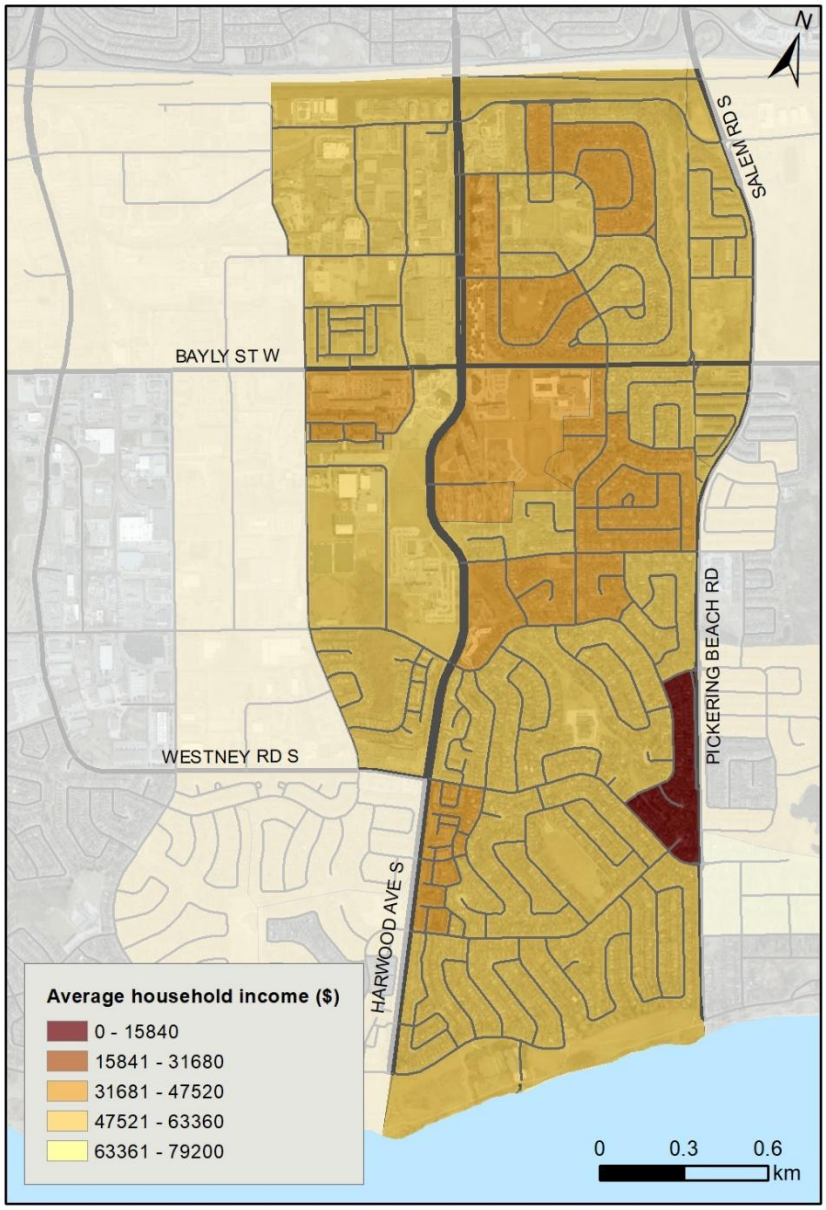


Figure 18. Map of average household income by dissemination area
(based on 2021 Census data)

5.2.6 Housing Tenure

Renters can be at higher risk to the impacts of climate change as they often have to rely on landlords for retrofits and repairs. The proportion of owned and rented dwellings in Ajax SNAP is 44 percent and 56 percent, respectively (Environics Analytics, 2024). Houses comprise of 54 percent of the housing stock, while apartments comprise of 46 percent.

Figure 19 presents the percentage of rented dwellings by dissemination area based on 2021 Census data.

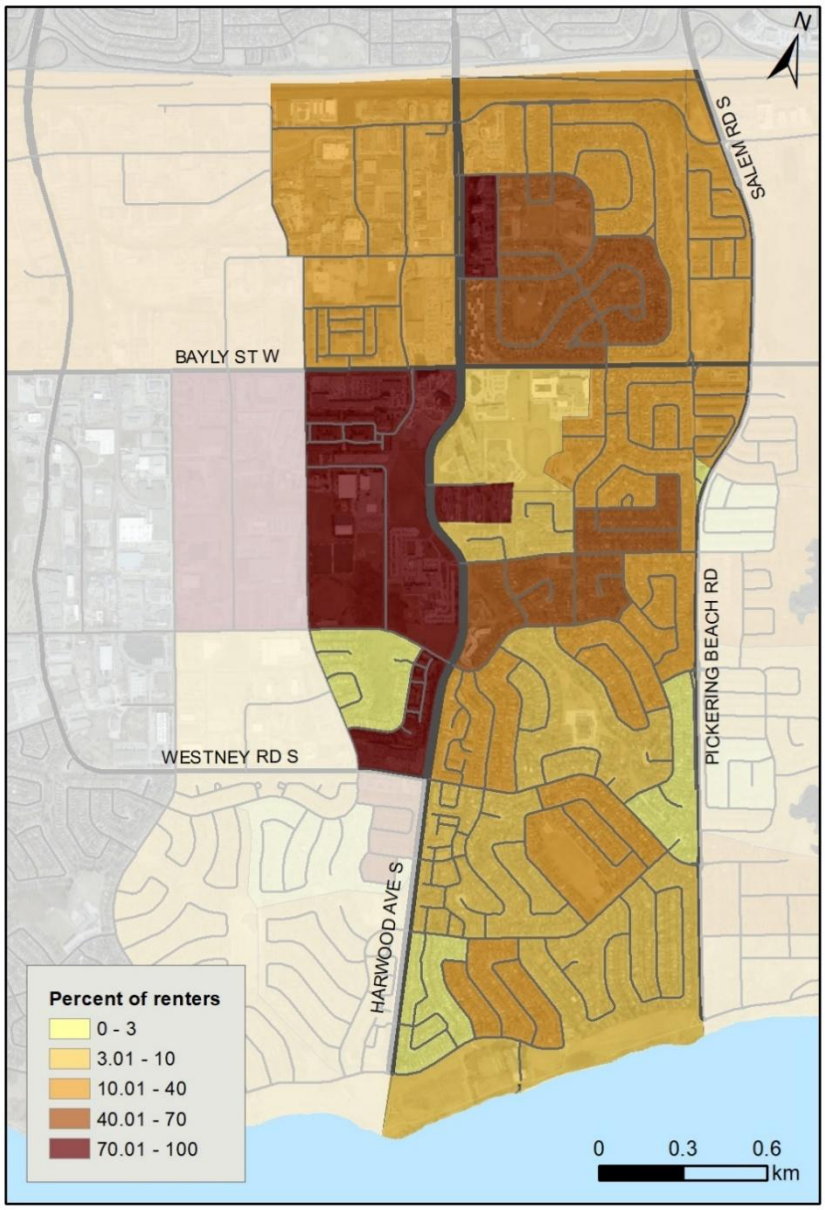


Figure 19. Map of the percentage of rented dwellings by dissemination area
(based on 2021 Census data)

A higher proportion of renters are found in several areas within the neighbourhood including:

- North of Bayly Street East, south of Kings Crescent, and west of Admiral Road;
- South of Bayly Street West, west of Harwood Avenue South, east of Monarch Road, and north of Clements Road West;
- South of Falby Court, by Harwood Avenue South; and
- South of Clements Road West, west of Harwood Avenue South, north of Westney Road South, and east of Frazer Road/Monarch Avenue.

5.2.7 Age of Homes

An older housing stock can be at greater risk to the impacts of climate change due to older building standards and aging systems that are more likely to be less energy efficient and climate resilient. The majority of the housing stock in Ajax SNAP (66 percent) were constructed before 1980, which tends to be older than homes in the rest of the town (Figure 20).

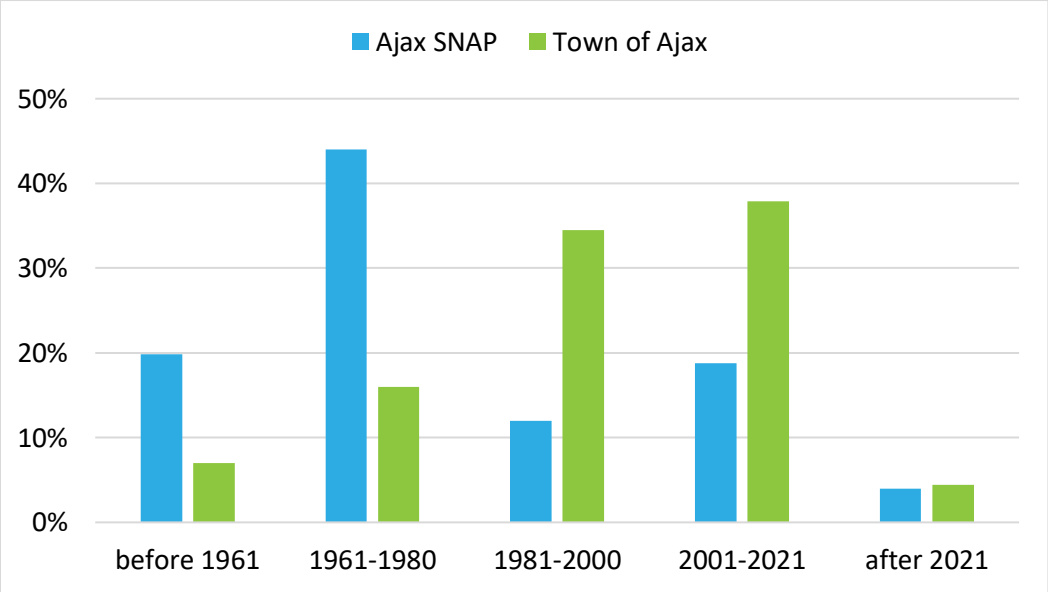


Figure 20. Comparing the age of homes in the Ajax SNAP neighbourhood (blue, left) and Town of Ajax (green, right) (Environics Analytics, 2024)

Based on 2021 Census data, older homes that were built before 1980 are spread throughout the neighbourhood, especially in areas closer to the waterfront (Figure 21).

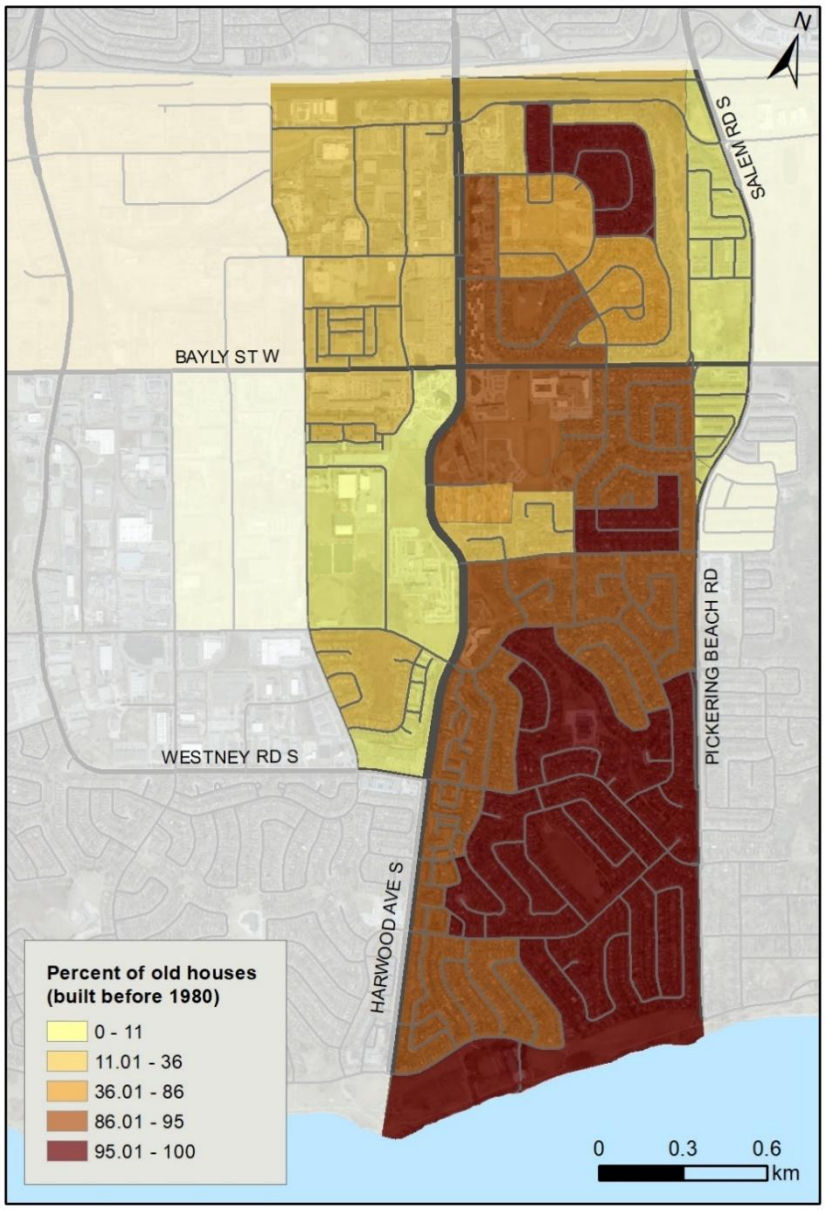


Figure 21. Map of the percentage of homes built before 1980 by dissemination area
(based on 2021 Census data)

5.2.8 Composite Sensitivity Index

Using the indicators with mapping data available through the 2021 Census (Table 2), we developed a composite sensitivity index to bring the indicators together and help identify areas with intersecting factors that contribute to greater sensitivity to the impacts of climate change.

Table 2. Sensitivity indicators used in composite index calculation

Sensitivity Indicator	Source
Number of seniors (65 years and older)	Census, 2021
Number of children (14 years and under)	
Number of residents living alone	
Number of people who do not speak English or French	
Number of people without a certificate, diploma or degree	
Average household income	
Percentage of rented dwellings by dissemination area	
Percentage of homes built before 1980	

The sensitivity indicators were normalized on a scale from 0 to 1 and aggregated based on equal weights. Values closer to 0 represent areas with lower sensitivity, and values closer to 1 represent areas with higher sensitivity (Figure 22). Areas with the greatest sensitivity include homes and buildings to the north and south of Falby Court, where multiple intersecting sensitivity factors were found (e.g., seniors, young children, people living alone, people who may experience language barriers, and people with lower educational attainment). This composite sensitivity index provides a more granular understanding of where people at greater risk to the impacts of climate change live within the neighbourhood to help inform adaptation and resilience strategies.

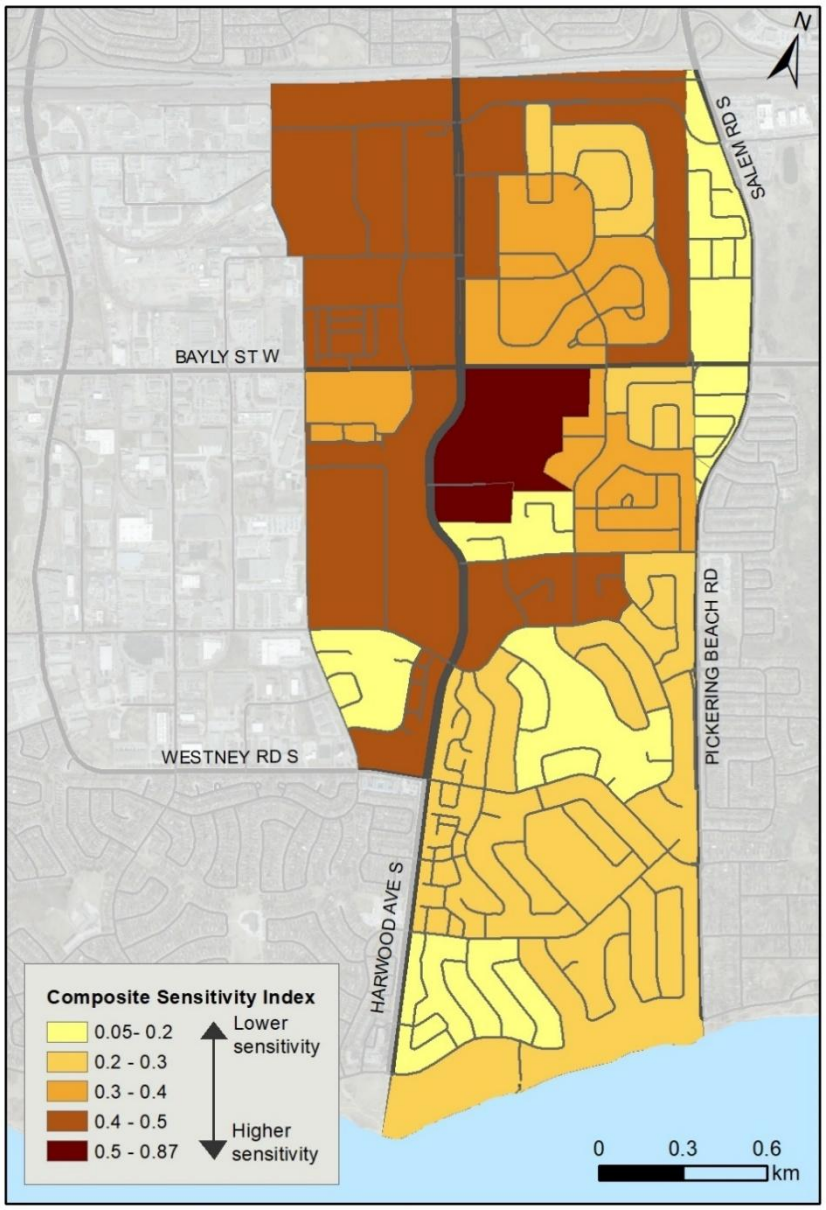
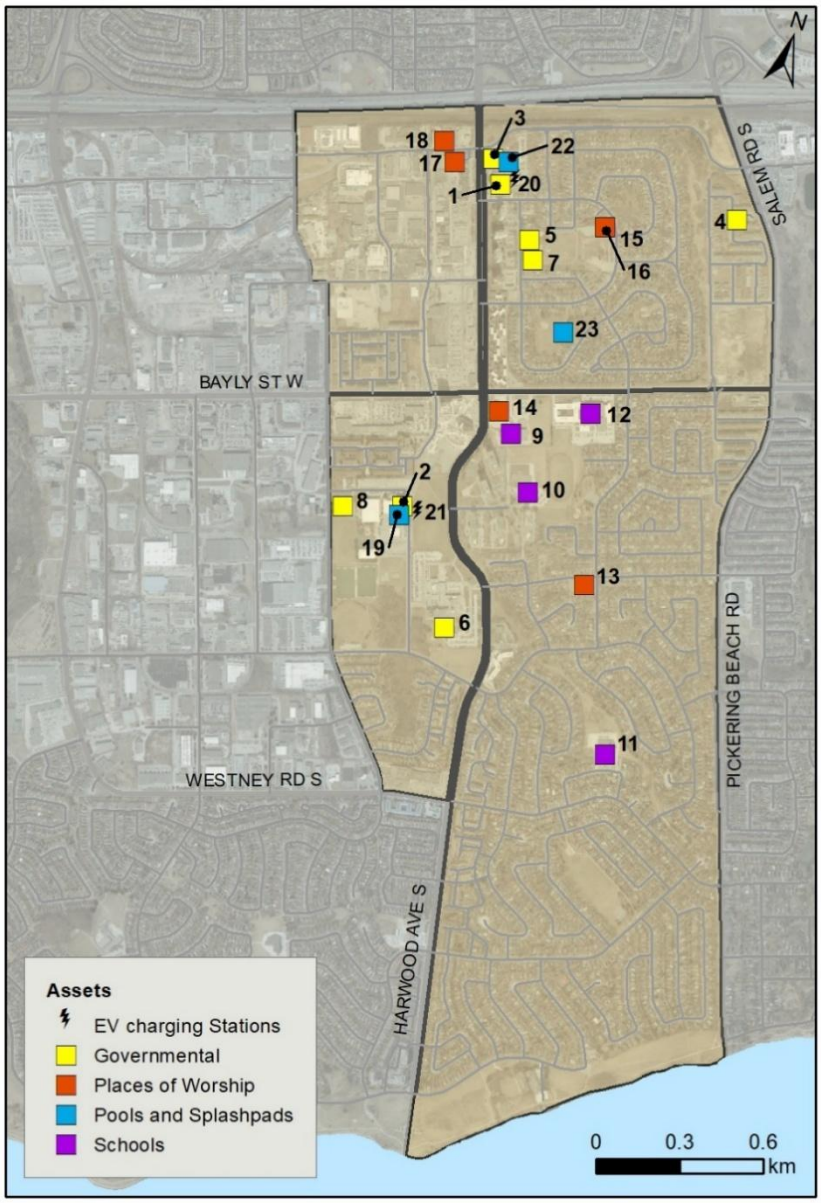


Figure 22. Composite sensitivity index for Ajax SNAP by dissemination area

5.3 Adaptive Capacity

5.3.1 Local Assets and Services

Through community engagement, residents identified important community assets and services that they value within the neighbourhood (Figure 23). These include schools, community centres, libraries, civic centres, community gardens, and the Lakeridge Health Ajax-Pickering Hospital. They represent places that people visit often and potential places that can provide support to residents during normal periods and periods of disruption. Furthermore, two Town facilities within the neighbourhood are equipped with backup generators, including Town Hall and Fire Hall #2 (Town of Ajax, 2024). Furthermore, these facilities served as "Clean Air Quality Centres" in 2023 during poor air quality days due to wildfire smoke.



Community Assets and Services
1. Ajax Town Hall
2. Ajax Community Centre
3. Ajax Public Library
4. Visa Smith Immigration Services
5. Ajax Senior Citizen Friendship
6. Lakeridge Health Ajax-Pickering Hospital
7. St. Andrews Park/Community Garden
8. Ajax Fire Station #2
9. St. Bernadette Catholic School
10. Bolton C. Falby Public School
11. Southwood Park Public School
12. Ajax High School
13. Southside Worship Centre
14. St. Bernadette's Church
15. St. Paul's United Church
16. St. Timothy's Presbyterian Church
17. Masjid Al-Aqsaa
18. Jamia Masjid Sayyidah Zainab
19-20. EV charging Stations
21. Ajax Community Centre Pool
22. Memorial Outdoor Pool
23. Exeter Park Splashpad

Figure 23. Map of community assets and services

5.3.2 Access to Food Outlets

Based on Durham Region's Business Directory and data obtained from OpenStreetMap, 24 food outlets were identified to be located within 800 m (or a 10-minute walking distance) of the Ajax SNAP neighbourhood. These include restaurants, convenience and variety stores that sell food, supermarkets, cafeterias, and a bakery, among others (Figure 24). Within the neighbourhood, most of these food outlets are found along Bayly Street and Harwood Avenue South. Overall, 80 percent of the neighborhood is within a 10-minute (linear) walking distance to a food outlet.

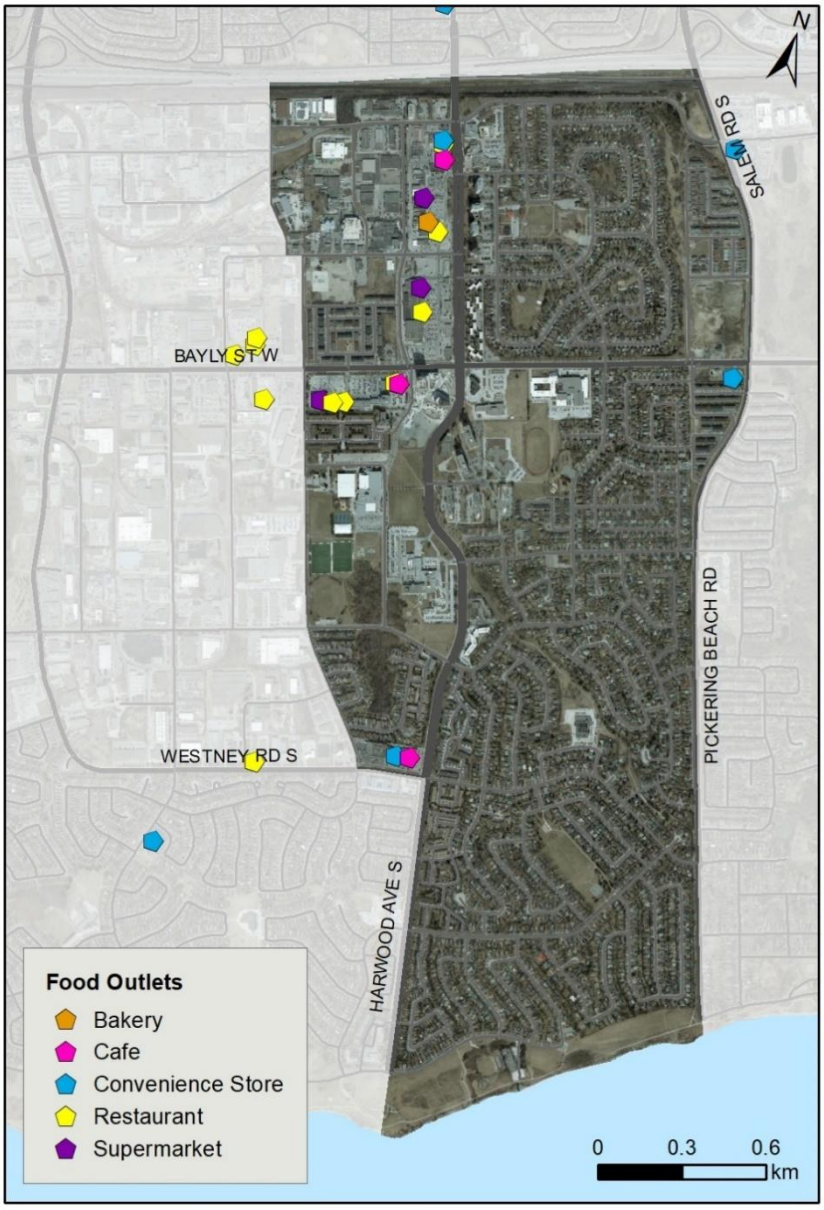


Figure 24. Map of food outlets
(based on Durham Region's Business Directory and OpenStreetMap)

5.3.3 Mobility and Access to Transportation

It is important to understand how people in the neighbourhood move around and what modes of transportation they may be dependent on during normal periods and periods of disruption. Based on Environics Analytics data (2024), the majority of Ajax residents who commute to work do so by car, either as a driver or passenger (36 percent). Only a small percentage of residents commute to work by public transit (3 percent) or by walking (3 percent), and even fewer by cycling (0.2 percent).

Figure 25 illustrates the various travel modes and routes that are available in the neighbourhood.

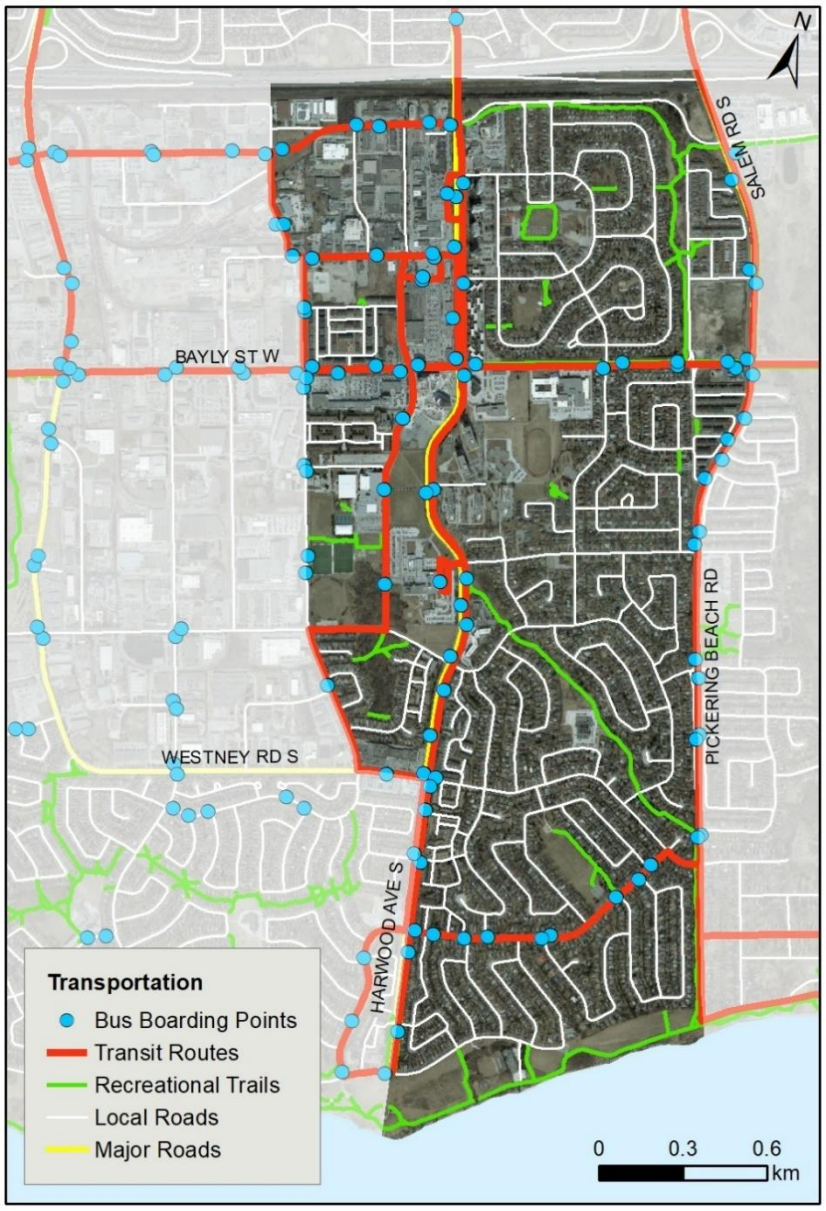


Figure 25. Map of roads, bus stops, transit routes, and recreational trails
(based on Town of Ajax and Durham Region open data)

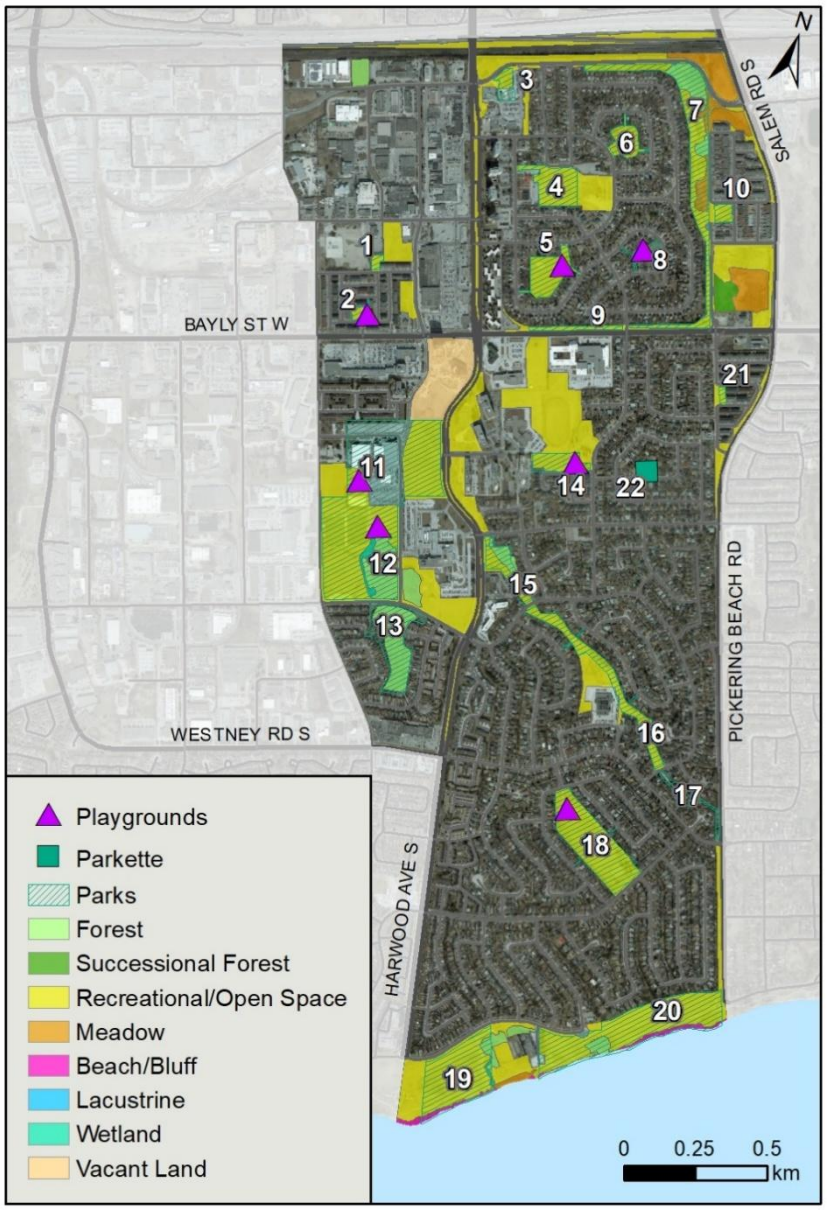
Bus stops and transit routes are primarily located on major roads. Recreational trails are available within the neighbourhood, though some improvements to the trail system have been identified by community members:

- Waterfront trail washes out;
- Add picnic tables with umbrellas along the waterfront trail;
- More multi-use paths; and
- Improved north-south connections to the waterfront.

5.3.4 Access to Parks and Open Spaces

Access to greenspace is important for community health and well-being, supporting physical activity and mental health, among many other benefits. Parks and open spaces are also important for climate mitigation and adaptation by helping to capture and store carbon, reducing and slowing the rate of stormwater runoff, reducing the urban heat island effect, improving water quality, and supporting biodiversity and habitat.

Based on Town of Ajax open data, 17 parks are found within the neighbourhood (Figure 26). Based on TRCA's natural land cover data (2017), various types of natural cover are also found within the neighbourhood. These include forests (10 ha), recreational/open spaces (77 ha), meadows (5 ha), beaches/bluffs (1 ha), and wetlands (0.5 ha). Overall, the neighbourhood is comprised of approximately 106 hectares (ha) of parks and open spaces, which make up approximately 21.5 percent of the neighbourhood area.



Parks and Open Spaces
1. Stonewood Parkette
2. Sundial Central Park
3. Arbour Park
4. St. Andrews Park
5. Exeter Park
6. Forest Park
7. Achilles Road Greenbelt East
8. Woodhouse Park
9. Achilles Road Greenbelt West
10. Porte Road North Parkette
11. Ajax Community Centre
12. Clements Woodlot (North)
13. Clements Woodlot (South)
14. Lord Durham Park
15-17. Ajax Greenbelt
18. Kinsmen Park
19-20. Ajax Waterfront
21. Michaelman Parkette
22. Hurley Parkette

Figure 26. Map of natural cover, parks, and playgrounds
(based on Town of Ajax open data and TRCA's 2017 natural land cover data)

5.3.5 Exposure to Nature

In addition to access to greenspace, regular exposure to nature (e.g., trees and vegetation) is also beneficial to people's health. The Normalized Difference Vegetation Index (NDVI) is a commonly used index to assess vegetation density and health. NDVI values range from -1 and +1, where higher NDVI values generally represent denser vegetation, while lower positive values represent sparser vegetation (e.g., shrubs and grasslands), and very low NDVI values (0.1 and below) represent dead plants, barren rock, sand, snow, water, or impervious surfaces.

Using NDVI data developed for TRCA's Nature-Based Climate Solutions Siting Tool (2024), NDVI values in this neighbourhood range from 0 and 0.48, with the densest vegetation found in the Clements Woodlot (Figure 27). Vegetation is also found throughout the neighbourhood, including on public and private property. Based on Environics data (2024), approximately 76 percent of residents have trees on their property.

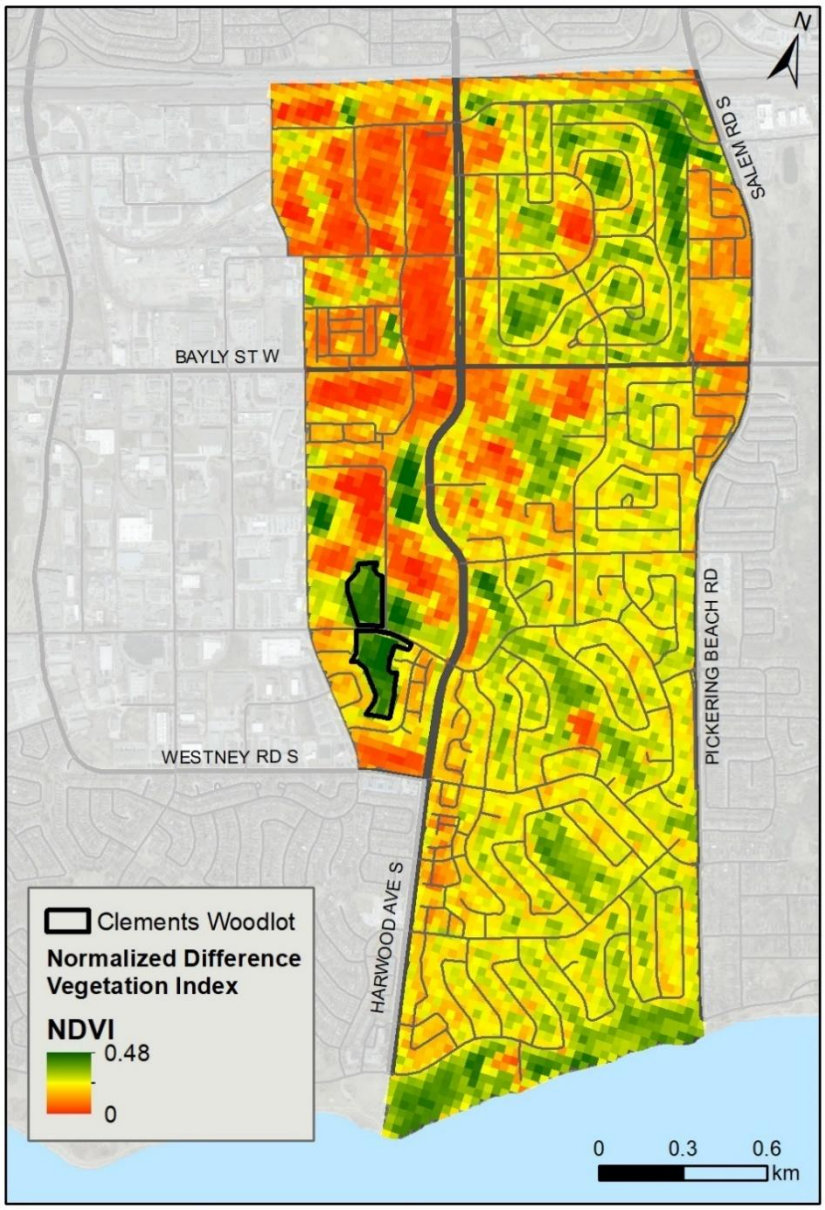


Figure 27. Map of vegetation density and health (or Normalized Difference Vegetation Index)
(based on data from TRCA's Nature-Based Climate Solutions Siting Tool, 2024)

Potential opportunities for increased protection, restoration, and enhancement of natural features and areas were identified in TRCA's Nature-Based Climate Solutions Siting Tool (Lam et al., 2024; Figure 28). The tool brings together a wide range of ecological and socio-economic considerations to prioritize areas that offer the greatest benefits to people, plants, and animals. Within the Ajax SNAP neighbourhood, notable areas that are

recommended for protection include the Clements Woodlot, Ajax Greenbelt, greenspace around Achilles Road in the northeast corner of the neighbourhood, and areas along the waterfront. Areas recommended for restoration are located near existing greenspaces, including areas along the waterfront, Ajax Greenbelt, and greenspace around Achilles Road. The enhancement of existing and creation of new natural features and areas represents a key opportunity in this neighbourhood across different land uses including residential, commercial, industrial, and institutional uses, as well as along transportation corridors.

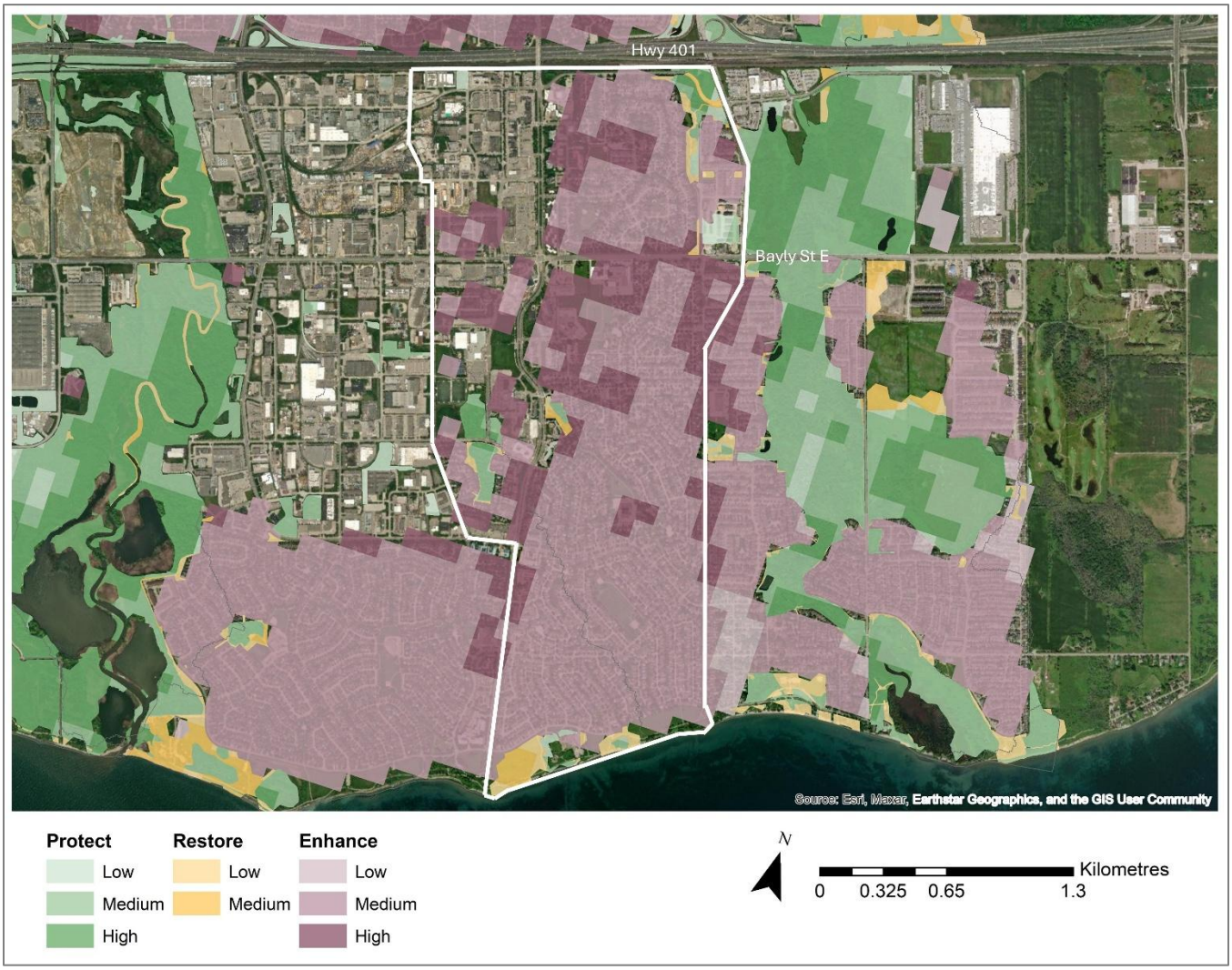


Figure 28. Map of opportunities for increased protection, restoration, and enhancement of natural features and areas in and around the Ajax SNAP neighbourhood
(based on TRCA's Nature-Based Climate Solutions Siting Tool, 2024)

5.3.6 Presence of Air Conditioning

The presence of air conditioning in people's homes can help keep people cool during extreme heat events. Based on Environics data (2024), 26 percent of households do not have air conditioners in their homes. For these residents, it is important to ensure that they have other means to keep cool during extreme heat events,

whether it is access to cooling centres, air-conditioned indoor spaces (e.g., malls), or outdoor spaces with shade and water features (e.g., splash pads, misting stations, and drinking water fountains).

Figure 29 presents the percentage of residential buildings with air conditioning by dissemination area, based on available data provided by the Town of Ajax in 2024.

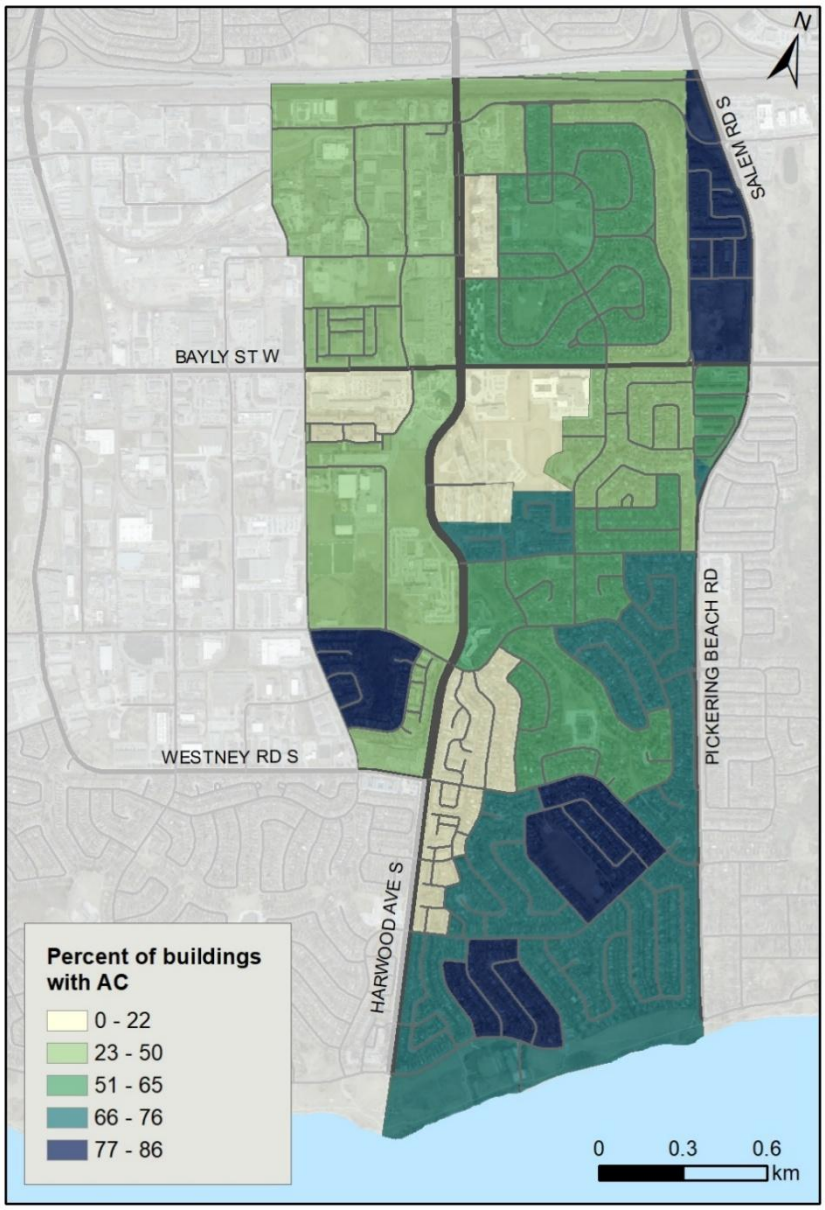


Figure 29. Map of the percentage of homes with air conditioning by dissemination area
(with data provided by the Town of Ajax, 2024)

Areas that appear to lack air conditioning in people's homes include apartment buildings to the north and south of Falby Court, towers along Harwood Avenue South and Exeter Road by Kings Crescent, homes around Lankester Lane, and south of Clements Road East along Harwood Avenue South.

5.3.7 Access to Drinking Water

Access to drinking water is another important service. The vast majority of dwellings in Ajax SNAP (95 percent) have access to municipal drinking water as their main water source (Environics Analytics, 2024). Approximately three percent of dwellings depend on private wells for drinking water. As individual property owners are responsible for private wells, they may face a lack of redundancy or limited resources if their wells are impacted by climate change, either through water quantity or quality impacts.

Notably, the Ajax Water Supply Plant (WSP) is located within the neighbourhood near the waterfront at 75 Lake Driveway East. It supplies drinking water to residents and businesses in Ajax and Pickering and is owned and operated by the Region (Region of Durham, 2024). In November 2024, the Region initiated a Class EA Addendum study, which will "identify a preferred alternative to expand the Ajax WSP to accommodate increased system demand as a result of community growth" (Region of Durham, 2025). Through this multi-year study, there may be opportunities to consider the impacts of climate change and additional community benefits in realizing the project's vision to "continue to supply safe, reliable drinking water to residents and businesses in Ajax and Pickering, and support projected growth to 2051".

5.3.8 Communications and Sense of Community

It is important to understand how people currently receive and share information in order to maximize the reach of official communications. Based on Environics data (2024), the most popular forms of media among residents aged 12 years and older include the radio (62 percent), internet (57 percent), and television (52 percent) based on heavy to medium levels of consumption. Popular online social networks include Facebook, YouTube, Instagram, WhatsApp, TikTok, X (formerly Twitter), LinkedIn, and Reddit, among others (Environics Analytics, 2024).

Through community engagement, residents noted that since the COVID-19 pandemic, there has been an increase in virtual engagement. Residents noted a desire to see the return of more in-person engagements and more opportunities for community members to gather in one place. As noted in the Action Plan, residents love that they can access everything they need within the neighbourhood and that amenities are close by. They also recognize that the neighbourhood is changing and would appreciate more opportunities to build community connections, especially with new neighbours. There may be opportunity to leverage existing community groups/networks. Some examples that were shared by residents include:

- South Ajax Facebook group;
- Durham Probus Club;
- 100 Men Ajax;
- St. Bernadette's Church;
- Ballroom Dance Club (unofficial);
- Rossland Ridge Bible Chapel;
- Nextdoor app;
- Master Gardeners of Durham;
- Business Advisory Center of Durham;
- Ajax Senior Club (St. Andrew's Community Centre);

- Cadets;
- Crafting Club (unofficial); and
- WhatsApp groups for people from the same country.

5.3.9 Composite Adaptive Capacity Index

To create a composite index for adaptive capacity, quantitative indicators were transformed into the scale of dissemination areas (Table 3). Some demographic indicators were already produced at this scale. For others, the average distance or percentage was calculated for each dissemination area. Indicator values were then normalized and aggregated into a composite index (based on equal weights).

Overall, the neighbourhood has a medium or high adaptive capacity (Figure 30). Within the neighbourhood, higher adaptive capacity scores are associated with access to local community assets, parks and recreation areas, food outlets, and healthy vegetation.

Table 3. Adaptive capacity indicators used in composite index calculation

Adaptive Capacity Indicator	Source
Average distance to assets by dissemination area	Community engagement survey, 2023; 2024
Percent of buildings with air conditioning by dissemination area	Census, 2021
Average distance to transit routes and bus boarding points by dissemination area	Durham Region, 2024
Average distance to food outlets by dissemination area	Durham Region, 2024; OpenStreetMap, 2024
Average Normalized Difference Vegetation Index (NDVI) by dissemination area	TRCA, 2020
Average distance to parks and recreation areas by dissemination area	Community engagement survey, 2023; 2024

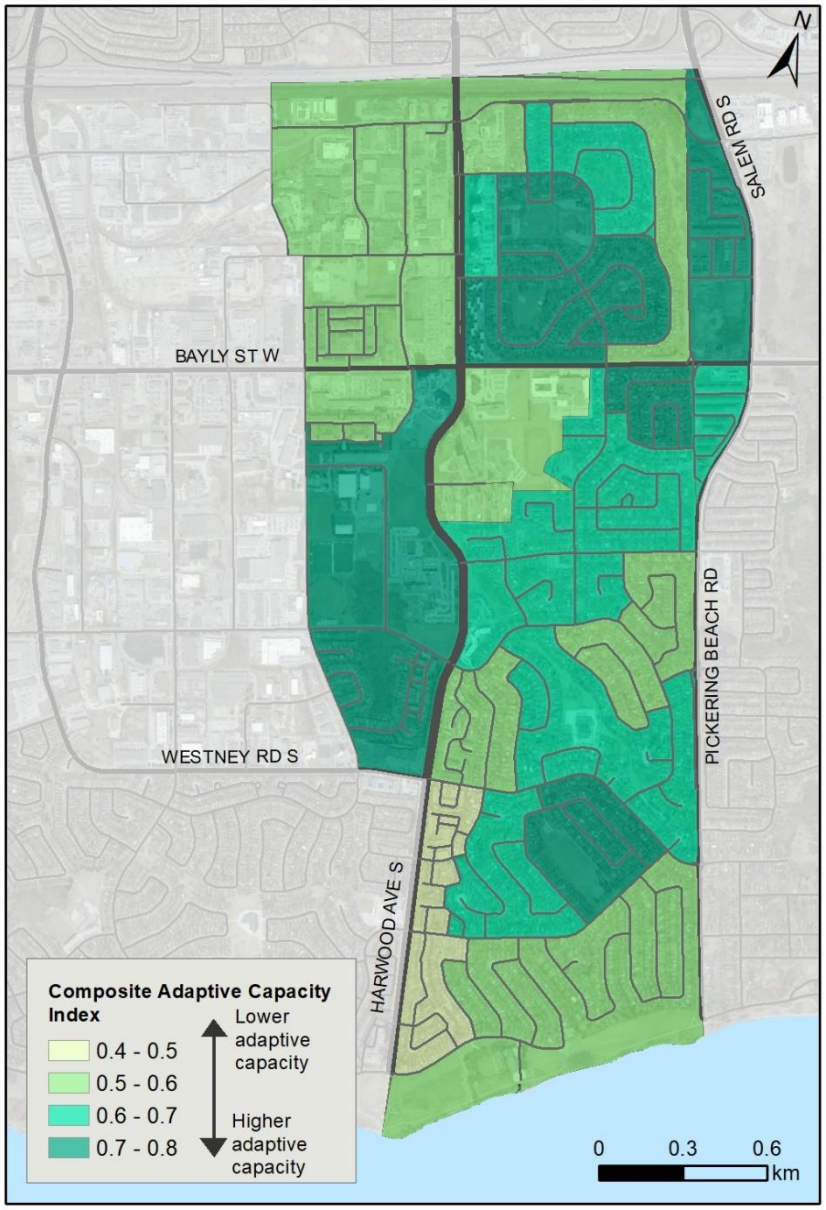


Figure 30. Composite adaptive capacity index by dissemination area

5.4 Overall Neighbourhood Vulnerability

Overall vulnerability was calculated by subtracting adaptive capacity from sensitivity:

$$\textbf{Vulnerability} = \textbf{Sensitivity} - \textbf{Adaptive Capacity}$$

Within the neighbourhood, some areas were found to be more vulnerable than others based on the quantitative indicators of sensitivity and adaptive capacity that were assessed (Figure 31).

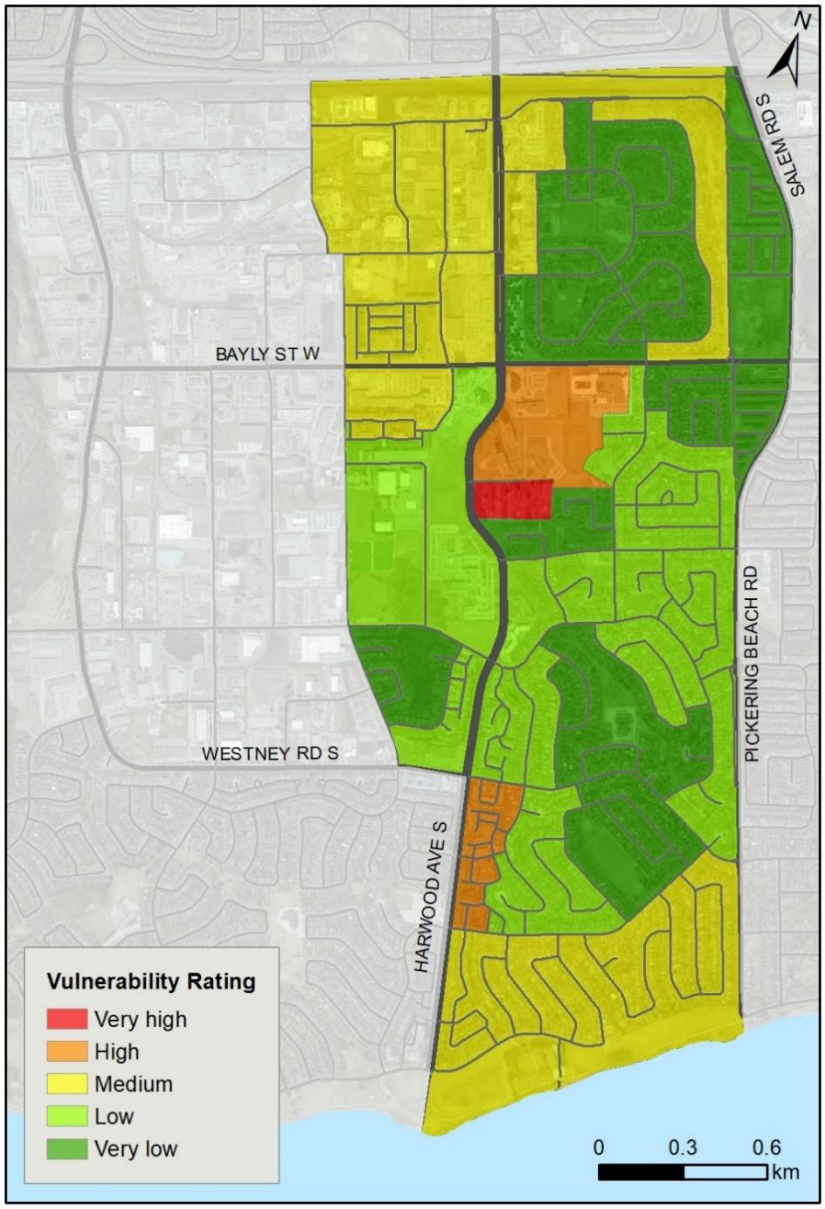


Figure 31. Overall neighbourhood vulnerability by dissemination area

The vulnerability scores represent relative vulnerability within the neighbourhood. Areas with very low or low vulnerability do not mean that they will not experience any climate change impacts. Rather, these areas currently have fewer intersecting factors that contribute to climate change vulnerability, compared to other areas in the neighbourhood.

Notably, three dissemination areas were found to have high or very high vulnerability compared to the rest of the neighbourhood. These represent areas with higher sensitivity and lower adaptive capacity, including:

- Areas to the north and south of Falby Court, and
- An area to the east of Harwood Avenue South and south of Dreyer Drive East.

Based on this assessment, key vulnerabilities and opportunities within the Ajax SNAP neighbourhood include:

- **Heat stress:** Many parts of the neighbourhood already experience high summer surface temperatures (e.g., Harwood Avenue South, Bayly Street, the parking lot at the Ajax-Pickering Hospital, and plazas to the north of Bayly Street West along Harwood Avenue South; Figure 6). This urban heat island effect can worsen the impacts of extreme heat, which are anticipated to increase due to climate change. The impacts of extreme heat are not felt equally; some people are more vulnerable to the impacts of extreme heat than others (e.g., seniors, young children, people with pre-existing conditions, people with limited access to cooling, and people who must spend long hours outdoors). Extreme heat is a key risk for the Ajax SNAP neighbourhood because it has a higher proportion of older adults, people who live alone, and single-parent families, compared to the rest of the town. While this requires validation, some areas in the neighbourhood also appear to lack air conditioning in people's homes (Figure 29).

- **Aging population:** There is an aging population in the neighbourhood, which is anticipated to continue to increase. Older adults are often more vulnerable to the impacts of climate change, with intersecting challenges such as limited mobility and pre-existing health conditions. Areas where there is a higher concentration of seniors could be a focus of adaptation and emergency planning efforts. Based on 2021 Census data, there are three areas within the neighbourhood where the number of seniors tend to be greater (Figure 12). These areas include apartment buildings to the north and south of Falby Court and towers along Harwood Avenue South and Exeter Road by Kings Crescent.

- **Aging housing stock:** Most homes within the neighbourhood were constructed before 1980, especially in areas closer to the waterfront (Figure 21). An older housing stock can be at greater risk to the impacts of climate change due to older building standards and aging systems. Already, there has been strong interest and engagement from community members in home retrofit programs such as the South Ajax Home Retrofit Program and Durham Greener Homes. Continuing to deliver and expand on these programs to include other housing types and tenures presents a key opportunity for this neighbourhood.

- **Risk of power outages:** The risk of power outages is a key concern for neighbourhood residents, which many have experienced during past extreme weather events. Enhancing low-carbon energy resilience is another key opportunity.

- **Risk of flooding:** While the risk of riverine flooding is low in this neighbourhood, other flooding issues have been experienced in the past, including basement flooding. Further studies are required to confirm the causes of past flooding issues. However, low-lying areas could offer an opportunity for flood risk reduction and outreach within the neighbourhood (Figure 8).

- **Urban forest management:** While trees and vegetation are found throughout the neighbourhood, some areas are greener than others (Figure 27). Based on community engagement, some areas have been identified as lacking trees or shade, including parking lots, bus stops, playgrounds, plazas, and along streets and cycling paths. There is also concern about trees being damaged from more extreme weather events and the increasing spread of invasive species and pests. The management of trees on private property is another key opportunity in this neighbourhood, recognizing that over three quarters of neighbourhood residents have trees on their property. Based on TRCA's Nature-Based Climate Solutions Siting Tool (2024), opportunities for enhancing existing or creating new natural features and areas can be found throughout the neighbourhood (Figure 28). These span across different land uses including residential, commercial, industrial, and institutional uses, as well as along transportation corridors. Opportunities for increased protection and restoration of natural features and areas have also been identified, including areas along the waterfront, Ajax Greenbelt, and greenspace around Achilles Road in the northeast corner of the neighbourhood.

- **Access to parks and open spaces:** Many parks and open spaces were identified by the community as valuable community assets. Continuing to maintain and improve the supply of quality parks and open spaces within the neighbourhood is another key opportunity within this neighbourhood.

- **Cost of living and affordability:** The average household income in this neighbourhood tends to be lower than the rest of the town. Cost of living and affordability are key concerns within the neighbourhood.

- **Active transportation and access to public transit:** Currently, most neighbourhood residents who commute to work do so by car and fewer residents commute to work by public transit or active transportation. Based on community engagement, some opportunities were identified including improvements to bus stops (and bus shelters) and improvements to the trail system, especially connections to the waterfront.

- **Sense of community:** As the neighbourhood continues to change, residents expressed interest in more opportunities to build community connections (e.g., through community events/engagements). There is also opportunity to leverage existing community groups/networks. Overall, residents love that they can access everything they need within the neighbourhood and that amenities are close by.

6. Adaptation and Resilience Strategies for Ajax SNAP

A total of 22 adaptation and resilience strategies are proposed for the Ajax SNAP neighbourhood. These strategies were developed based on recommendations gathered through community and stakeholder engagement, as well as the results of the neighbourhood vulnerability assessment.

Applying the phases identified in Figure 4, the strategies have been organized under the following categories:

1. **Prevention/Mitigation** (7 strategies, or 32 percent);
2. **Preparedness** (9 strategies, or 41 percent);
3. **Response** (3 strategies, or 14 percent); and
4. **Recovery and Learning** (3 strategies, or 14 percent).

These phases align with the disaster management cycle (Figure 32) and incorporate response, which is a recently added component in the IPCC's conceptual framework of climate risk (Figure 5). This framework helps to ensure that the strategies identified cover all phases of the disaster management cycle, which are important for disaster management and resilience.

Figure 32. Disaster management cycle

Each strategy was evaluated based on impact and effort as a way to prioritize the proposed strategies:

- **Impact** refers to both program-level impact, which is the impact on those directly participating in the action, as well as the community-level impact, which refers to the impact that partners (e.g. Town of Ajax, Region of Durham, and TRCA) may have on the community.
- **Effort** is the approximate level of effort required to undertake the specific adaptation strategy, or the amount of time and resources needed.

Impact and effort were rated on a five-point scale, ranging from Very High to Very Low, where Very High Impact and Very Low Effort are most desirable.

Table 4 presents an overview of the 22 proposed strategies by category (starting with the most desirable impact/effort rating), along with potential implementation leads. Many of these strategies are interconnected and align with the four integrated action areas identified in the Action Plan, including Sustainable Connections to Nature, Sustainable Community Connections, Sustainable Physical Connections, and Sustainable Buildings. Connections to these integrated action areas are highlighted in Table 4 (last column).

Table 4. Summary of proposed adaptation and resilience strategies for the Ajax SNAP neighbourhood by category and impact/effort rating. Potential primary implementation lead(s) are bolded.

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
PREVENTION/MITIGATION					
1. Increase trees and shade in outdoor spaces	**Very High**	**Moderate**	Plant and maintain more diverse native species of trees in public and private spaces such as streets, parks, schools, hospitals, commercial plazas, and yards. Residents and stakeholders noted the need for more trees and shade along streets, cycling paths (e.g., Bayly Street and Harwood Avenue South), and bus stops to help support improved walkability and active transportation, especially during the summer. More trees and shade are also needed in and around schools and playgrounds (e.g., Southwood Park Public School), commercial plazas (e.g., Harwood Plaza), and the Lakeridge Health Ajax-Pickering Hospital (including the hospital's parking lot) to protect people's health and improve thermal comfort.	**Town, TRCA, Durham Region**, LEAF, Lakeridge Health Ajax and Pickering hospital, businesses, schools	Connections to Nature, Community Connections, Physical Connections, and Buildings
2. Reduce the risk of power outages	**Very High**	**High**	Work with Elexicon Energy and other partners to evaluate energy resilience and explore solutions such as district energy and backup power within the neighbourhood (for both public and private property, including businesses and multi-unit residential buildings). Residents and stakeholders noted that multi-unit residential buildings have been affected by power outages in the past and can particularly affect seniors and people with mobility issues, especially when elevators are not working.	Town, **Elexicon Energy**, Durham Region, Provincial government	Community Connections, Physical Connections

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
3. Increase gardens and naturalized areas	**High**	**Moderate**	Create/incentivize more pollinator and rain gardens within the neighbourhood (e.g., commercial plazas and boulevards) to support increased biodiversity, stormwater runoff reduction, among other co-benefits. This could focus on existing boulevards, areas with high surface temperature, low-lying areas, and available plantable space. This can be combined with opportunities for community learning and knowledge sharing on gardening, naturalization, and conservation (e.g., through a pollinator/rain garden demonstration site and seed library).	**Town, TRCA, STEP, Durham Region**, Lakeridge Health Ajax and Pickering hospital, businesses, schools, LEAF	Connections to Nature, Community Connections, Buildings
4. Enhance the care of public and private trees	**High**	**Moderate**	Over 76 percent of households in the neighbourhood have trees on their property (Environics Analytics, 2024). Support residents and businesses in maintaining healthy trees on their property and identify and manage hazardous trees (e.g., trees that pose a risk to overhead wires). This could build and expand on the LEAF Backyard Tree Planting Program to share information about how to care for trees on their property. Residents also suggested that efforts to reduce the cost of maintaining trees for property owners would be helpful. As part of the Town's ACRRP Implementation Strategy 5-Year Update, a new resilience action has been identified that aligns well with residents' needs – "Action 5.6:	**Town, LEAF, TRCA, Durham Region,** Elexicon Energy, businesses, schools	Connections to Nature, Community Connections, Buildings

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			Develop a pilot program to conserve the mature tree canopy by offering rebates to residents for tree maintenance on private lands." Work with residents and businesses to monitor the distribution and spread of invasive species and pests that may affect plant health, leveraging existing community knowledge (e.g., avid gardeners) and eyes on-the-ground.		
5. Reduce the risk of urban flooding	**High**	**High**	Evaluate the risk of urban flooding and implement measures to reduce urban flood risk and reduce stormwater runoff (e.g., through infrastructure enhancements and Low Impact Development), particularly in low-lying areas and areas that have been affected by flooding in the past. Continue to build and expand on existing programs such as the South Ajax Home Retrofit Program and Durham Greener Homes Program to provide guidance and support to residents about upgrades that are best for their homes and outdoor spaces.	**Town, Durham Region, TRCA**	Community Connections, Physical Connections, Buildings
6. Protect and enhance shoreline health	**High**	**Very High**	Continue to protect, restore, and improve shoreline health (e.g., from higher and lower water levels, reduced ice cover, erosion, and high winds). Relocate infrastructure and property away from hazardous areas, where possible. Where	**Town, TRCA, CLOCA, Durham Region,** Provincial government, Federal government	Connections to Nature, Physical Connections, Buildings

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			relocation is not possible, implement measures to reduce the risk of coastal hazards on infrastructure and property.		
7. Improve safe access to the waterfront	**Moderate**	**Very High**	Continue to improve the trail system connecting to the Waterfront Trail (e.g., north-south connections), providing more well-shaded and safe multi-use paths. Continue to advise the community of any hazardous conditions (e.g., flooded trails) and help identify potential alternative routes.	**Town, TRCA, Durham Region**	Connections to Nature, Physical Connections
PREPAREDNESS					
8. Promote urban agriculture and farm-to-table programs	**High**	**Low**	Continue to expand community gardens and other urban agriculture opportunities within the neighbourhood (including greenhouses and rooftop and balcony gardens), building on the success of the St. Andrew's Community Garden and the Indigenous Community & Healing Garden at the Ajax-Pickering Hospital. Support "buy local" campaigns and farm-to-table programs to help improve access to local food, increase food security, and promote agri-food in Durham (which helps support Growing Agri-Food Durham (2023-2027): A Five-Year Plan to Grow the Agri-Food Industry in Durham Region).	**Town, Durham Region, TRCA,** Durham Integrated Growers (DIG), Durham Food Policy Council, agri-food businesses	Connections to Nature, Community Connections, Physical Connections, and Buildings
9. Support healthy tower communities	**Very High**	**High**	Build and expand on TRCA's model of Growing Healthy Towers to support the creation of healthy built environments in tower	**Town, Durham Region, TRCA,**	Connections to Nature, Community Connections, Physical

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			communities within the neighbourhood. Several areas within the neighbourhood that include apartment buildings and towers were identified to have multiple intersections of factors that contribute to increased sensitivity to climate change (e.g., seniors, people living alone, people who may face language barriers, people with lower educational attainment, and renters). These areas include buildings around Falby Court and Kings Crescent, for example. Some tower communities also appear to lack air conditioning, though further investigation is required for validation. These include apartment buildings to the north and south of Falby Court and towers along Harwood Avenue South and Exeter Road by Kings Crescent. Explore opportunities to establish maximum indoor temperature by-laws, especially in rental buildings.	community groups	Connections, and Buildings
10. Foster a sense of community	**High**	**Moderate**	Create opportunities for enhancing social capital, where neighbours of all ages and abilities can form connections (e.g. through community gardens, programming in parks/schools/community centres, street festivals, plazaPOPS, and movie nights). Residents noted that there are currently few opportunities for the community to gather in one place.	**Town, Durham Region, TRCA,** community groups	Community Connections

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			Continue to inform the community about local assets, events, and initiatives through various communication channels (e.g., through the Ajax SNAP newsletter, letters, emails, social media, and word of mouth).		
11. Support neighbours helping neighbours	**High**	**Moderate**	Investigate best practices and establish a voluntary buddy program where volunteers check in on vulnerable populations (e.g., seniors and people living alone) to bring food, water and other necessary items (e.g., medication) during extreme weather events. Special consideration should be made for residents living in multi-unit residential buildings who may not have access to elevators during power outages if the building does not have backup power.	**Town, Durham Region,** TRCA, community groups	Community Connections
12. Support easy access to local amenities	**High**	**Moderate**	Residents noted that one of the things they love about the neighbourhood is being able to access everything they need. Continue to maintain and enhance this access by supporting healthy, complete communities through a mix of land uses and active transportation. Work with businesses, institutions, and other organizations to ensure continuity of services during extreme weather events.	**Town, Durham Region,** TRCA, businesses, schools, childcare centres, pharmacies, Lakeridge Health Ajax and Pickering hospital	Community Connections, Physical Connections, and Buildings
13. Improve climate risk and emergency	**High**	**Moderate**	Continue to share and amplify information about climate change risks (e.g., extreme heat, flooding, vector-borne diseases, etc.) and what can be done to reduce risk, enhance	**Town, Durham Region, TRCA**	Community Connections

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
preparedness communications			preparedness, and improve the environment (e.g., landscaping, tree planting in backyards, rain barrels, and emergency kits etc.). Continue to develop and share communication tools and resources to support priority populations (e.g., seniors, people with pre-existing conditions, people living alone, etc.).		
14. Advance emergency planning and management	**High**	**Moderate**	Continue to support the integration of climate risks in emergency planning and management such as emergency preparedness training and exercises based on extreme weather events and multiple hazards.	**Town, Durham Region,** TRCA, Provincial government, Federal government	Community Connections
15. More low-carbon and resilient homes	**High**	**High**	Continue to build and expand on existing home retrofit programs such as the South Ajax Home Retrofit Program and Durham Greener Homes to help meet deep retrofit needs within the neighbourhood as most homes were constructed before 1980. Continue to communicate and share resources and opportunities available to the neighbourhood and promote the sharing of success stories (e.g., from neighbour to neighbour).	**Town, Durham Region, Windfall Ecology Centre, TRCA**	Connections to Nature, Community Connections, and Buildings
16. Maintain and expand a network of cooling and clean air centres	**High**	**High**	Create and maintain more public cooling facilities in the neighbourhood (e.g., splash pads, misting stations, drinking water fountains, and public washrooms), including pop-up	**Town, Durham Region,** schools, businesses, Lakeridge Health	Connections to Nature, Community Connections, and Buildings

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			cooling stations in areas where facilities are currently lacking (e.g., in the northeast corner of the neighbourhood) and in areas with high surface temperatures and/or greater concentrations of vulnerable populations. Ensure that cooling facilities (e.g., the splash pad at Exeter Park) are maintained and operating before extreme heat events and inform the community of any service disruptions. Work with partners and community members to expand the network of shelter and relief areas that can also serve as "Clean Air Quality Centres" during poor air quality days (e.g., in the south of the neighbourhood near the waterfront) and "resilience hubs" (for all hazards). Continue to promote a network of cooling and clean air centres (and resilience hubs) in and around the neighbourhood so that residents and visitors are aware of where they can go for relief from extreme heat and/or poor air quality and other emergencies, as appropriate.	Ajax and Pickering hospital	
RESPONSE					
17. Improve multi-agency response coordination	**High**	**Low**	Support regular coordination of agencies involved in emergency response to support	**Town, Durham Region,** TRCA, Provincial	Community Connections

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
			coordinated responses in the event of an emergency. Support community groups that provide essential services to the community and help build connections among/between groups within the neighbourhood to increase collaboration and coordination.	government, community partners	
18. Help people get around during severe weather if travel is necessary	**High**	**Moderate**	Work with transit service providers to provide free transit services during severe weather events so that people who must travel during severe weather can get to where they need to go safely. During extreme heat and/or poor air quality events, provide free shuttle services to help people get to cooling and clean air centres, especially residents who are at higher risk to the impacts of extreme heat and/or poor air quality with limited mobility and people experiencing homelessness.	**Town, Durham Region, Metrolinx**	Community Connections
19. Help people shelter-in-place during severe weather if they can do so safely	**High**	**High**	Work with partners to operate temporary shelters, relief areas, and resilience hubs to provide shelter during severe weather events. For residents who are able to shelter in their homes, work with partners to explore ways to deliver food, water, and other necessities, as required to help reduce travel needs (e.g., through a voluntary buddy program).	**Town, Durham Region,** community partners	Community Connections

Strategy	Impact Rating	Effort Rating	Description	Potential Implementation Lead(s)	Connections to Ajax SNAP's Four Integrated Action Areas
RECOVERY AND LEARNING					
20. Replace lost or damaged trees	**Very High**	**High**	When trees are lost or damaged due to extreme weather events or pests and diseases, support the replacement of lost or damaged trees (e.g., in streets, parks, backyards, and along the waterfront). Explore ways to reuse, repurpose, or recycle wood from fallen trees.	**Town, LEAF, TRCA, Durham Region,** businesses, schools	Connections to Nature, Community Connections, Physical Connections, and Buildings
21. Learn from past climate and weather-related events and near-misses	**High**	**Moderate**	Document, maintain and learn from records of past climate change impacts and disruptions (e.g., through a common database), including near-misses.	**Town, Durham Region,** TRCA	Community Connections
22. Establish recovery principles to guide recovery efforts following climate and weather-related events	**High**	**Moderate**	Work with the community to establish recovery principles to help guide recovery efforts following climate and weather-related events, building on and refining the Town's Emergency Response Plan.	**Town, Durham Region,** TRCA	Community Connections

7. Monitoring and Evaluation Framework

The following provides an initial framework for monitoring and evaluating progress towards implementing the proposed adaptation and resilience strategies. Through the implementation process, it is anticipated that the goals, targets, and indicators will be refined further.

Table 5. A monitoring and evaluation framework for the adaptation and resilience strategies proposed for the Ajax SNAP neighbourhood

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
PREVENTION/MITIGATION			
1. **Increase trees and shade in outdoor spaces**	• Increased tree canopy cover and species diversity across the neighbourhood, especially in priority areas • Increased shade and thermal comfort, especially in priority areas	• Number (and type) of trees planted on public property, especially in priority areas • Number (and type) of trees planted on private property, especially in priority areas • Number of shade structures added in outdoor spaces	• Tree canopy cover and biodiversity metrics • Tree health and survival • Access to shade in outdoor spaces • Urban heat island effect intensity • Actual or perceived thermal comfort
2. **Reduce the risk of power outages**	• Reduced risk of power outages	• Number of study(ies) completed to assess energy resilience • Number of measures implemented to increase energy resilience • Number of building retrofit projects introducing backup power and refuge areas	• Number of people affected by power outages • Average and maximum length of power outages
3. **Increase gardens and naturalized areas**	• Increased gardens across the neighbourhood • Increased naturalized areas across the neighbourhood	• Number/area of gardens created • Number/area of naturalized areas • Number of people engaged through community events • Number of LID measures implemented	• Impervious cover (or pervious to impervious cover ratio) • Amount and rate of stormwater runoff • Biodiversity metrics

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
		• Number of native and drought-tolerant plant species planted	
4. **Enhance the care of public and private trees**	• Increased number/proportion of trees in good health/condition	• Number of people engaged through outreach/engagement • Number of participants in the pilot rebate program • Number of observations reported • Number (or area) of invasive species managed	• Urban forest health/condition • Distribution/spread of invasive pests and diseases • Trees affected by invasive pests and diseases
5. **Reduce the risk of urban flooding**	• Reduced risk of urban flooding • Reduced amount and rate of stormwater runoff	• Number of study(ies) completed to assess urban flood risk • Number of measures implemented to reduce urban flood risk and reduce stormwater runoff, including LID measures • Number of properties affected by urban flooding over time • Number of people engaged through the South Ajax Home Retrofit program	• Costs associated with urban flooding • Number of people/buildings affected by urban flooding
6. **Protect and enhance shoreline health**	• Improved shoreline health • Reduced loss and damages	• Number/length of shoreline restored/enhanced • Number of structures or length of shoreline monitored • Number of measures undertaken to reduce the risk of coastal hazards (e.g., flooding and erosion) on infrastructure and property	• Number/length/area of infrastructure and property at risk to coastal hazards • Costs associated with coastal hazards
7. **Improve safe access to the waterfront**	• Increased number of people with access to trails that connect to the waterfront	• Number/length of trails added • Number of trail users	• Physical activity levels (and other health statistics) • Use of active transportation

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
PREPAREDNESS			
8. **Promote urban agriculture and farm-to-table programs**	• Increased urban agriculture • Increased consumption of local food	• Number/area of community gardens created • Number of people participating in/using community gardens • Number of urban agriculture operators • Urban agriculture yields • Proportion of agri-food products produced and sold locally	• Number of people with access to locally produced food (or improved food security)
9. **Support healthy tower communities**	• Increased physical improvements the built environment in tower communities • Increased social connections in tower communities	• Number of measures implemented to improve the built environment in tower communities • Number of people engaged through outreach/engagement • Number of shade trees planted in parking lots	• Sense of community/belonging • Community satisfaction • Walkability (e.g., walk score) • Access to nature/greenspace • Maximum indoor temperature • Number of households without ability to keep their homes cool
10. **Foster a sense of community**	• Increased social cohesion and sense of belonging	• Number of people engaged through community events/engagement • Number of people using public and third places • Number of resident advocacy and community groups active/engaged • Number of people on newsletter list or number of e-newsletter sign-ups at events	• Sense of community/belonging • Community satisfaction • Mutual aid (or neighbours helping neighbours)
11. **Support neighbours helping neighbours**	• Increased number of people reached	• Number of people engaged • Number of volunteers (or people who sign up)	• Sense of community/ belonging/isolation • Number of people supported during an extreme weather event

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
			• Mutual aid (or neighbours helping neighbours)
12. **Support easy access to local amenities**	• Maintain/improve access to local amenities (during normal periods and periods of disruption) and mobility options (e.g., walking and cycling)	• Number of mixed-use development approved/completed • Number of measures implemented to improve active transportation including number/length of active transportation facilities and number of bike parking spaces • Number of measures implemented to improve access to local amenities • Number of businesses/organizations engaged to improve business continuity	• Walkability (e.g., walk score) • Active transportation modes are preferred modes of transportation (e.g., number of trips completed using active transportation modes) • Complete communities – places that offer and support opportunities for equitable access to many necessities for daily living for people of all ages and abilities, including an appropriate mix of jobs, a full range of housing, transportation options, public service facilities, local stores and services (Provincial Planning Statement, 2024). • Number of businesses/ services disrupted due to extreme weather • Number of transportation disruptions, including blocked sidewalks, cycling paths, and multi-use trails
13. **Improve climate risk and emergency preparedness communications**	• Increased awareness of climate risks and emergency preparedness	• Number of people engaged through outreach/engagement • Number of tools, resources, and/or communications developed/shared • Number of households prepared for at least three days during an emergency	• Awareness/concern for climate change • Awareness of resources related to emergency preparedness • Self-rated emergency preparedness levels

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
14. **Advance emergency planning and management**	• Improved integration of climate-related risks in emergency planning and management	• Number of measures implemented to improve consideration for climate-related risks	• Awareness of climate-related risks among emergency management officials • Emergency response and recovery associated with a climate-related emergency
15. **More low-carbon and resilient homes**	• Reduced residential GHG emissions • Reduced risk of climate-related impacts (e.g., from urban flooding and extreme heat) • Reduced amount and rate of stormwater runoff	• Number of people participating in home retrofit programs • Number of home retrofit projects completed (and type of measures implemented)	• Costs associated with climate change and severe weather events for homeowners and renters
16. **Maintain and expand a network of cooling and clean air centres**	• Increased number of cooling and clean air centres • Increased number of resilience hubs • Increased awareness of cooling and clean air centres and resilience hubs	• Number of splash pads, misting stations, and/or public washrooms added • Number of drinking water fountains or bottle filling stations added • Number of cooling and clean air quality centres created/added • Number of users spending time at a cooling and clean air centre • Number of resilience hubs created/added • Number of users spending time at a resilience hub • Number of service disruptions during extreme heat and/or poor air quality events	• Emergency calls, hospital visits, illnesses and deaths associated with extreme heat and/or poor air quality events • Emergency calls, hospital visits, illnesses and deaths associated with other extreme weather events • Number of residents aware of where they can go during extreme heat and/or poor air quality events and other extreme weather events

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
RESPONSE			
17. **Improve multi-agency response coordination**	• Improved coordination among agencies involved in emergency response • Improved knowledge sharing and coordination among community groups that provide essential services to the community	• Number/frequency of meetings/communications among agencies involved in emergency response • Number of meetings/communications among community groups that provide essential services to the community • Number of new collaborative projects/initiatives • Number of community partners subscribed to Durham Region's Heat Warning and Information System	• Awareness of others' roles and responsibilities • Emergency response and recovery associated with a climate-related emergency • Improved communications and coordination among agencies
18. **Help people get around during severe weather if travel is necessary**	• Reduced car accidents and travel disruptions	• Reduced vehicle use during severe weather • Reduced number of car accidents during severe weather • Number of people using transit during severe weather • Number of people using shuttle services	• Emergency calls, hospital visits, illnesses and deaths associated with travel during severe weather • Response time of first responders
19. **Help people shelter-in-place during severe weather if they can do so safely**	• Reduced number of people who are unable to shelter-in-place in their homes or in temporary shelters, relief areas, or resilience hubs during severe weather	• Number of active temporary shelters, relief areas, and resilience hubs • Number of people using temporary shelters, relief areas, and resilience hubs • Number of measures implemented to help people shelter-in-place in their homes	• Emergency calls, hospital visits, illnesses and deaths associated severe weather

Strategy	Goals and Targets	Example Output Indicators	Example Outcome Indicators
RECOVERY AND LEARNING			
20. **Replace lost or damaged trees**	• Maintain/enhance tree canopy cover and species diversity	• Number of service requests • Number of lost or damaged trees replaced	• Tree canopy cover and biodiversity metrics
21. **Learn from past climate and weather-related events and near-misses**	• Improved history and knowledge of past climate-related impacts	• Number of records created • Number of times records are accessed/shared • Number of post-incident meetings held to review impacts and lessons learned	• Awareness of how climate change is impacting the community and vulnerable populations • Emergency response and recovery associated with a climate-related emergency
22. **Establish recovery principles to guide recovery efforts following climate and weather-related events**	• Improved emergency recovery following climate and weather-related events	• Number of people engaged through outreach/engagement • Number of recovery principles established • Number of plans/protocols developed/updated to help guide recovery	• Emergency recovery associated with a climate-related emergency

8. Quick-Start Projects

Several quick-start projects were implemented during the Strategy development phase to start working towards the direct implementation of the adaptation and resilience strategies being developed and to generate trust and enthusiasm from the community. These projects include:

8.1 Town of Ajax Seed Library

Creating and incentivizing more pollinator gardens has been highlighted as a top priority through the engagement process for the Strategy, which is reflected by Strategy #3 – increase gardens and naturalized areas (Section 6). In response to this public feedback, the Town, in collaboration with TRCA, launched a Seed Library at the Ajax Public Library – Main Branch in 2025. This library allows members of the public to pick up locally sourced vegetable, herb, and flower seeds for free and donate their own seeds to keep the library stocked for the long term. In combination with the Seed Library, the Town and TRCA has hosted tailored workshops to introduce residents to balcony gardening and native seed collecting and saving.

8.2 Town of Ajax Mature Tree Conservation Program

Over 76 percent of households in the neighbourhood have trees on their property (Environics Analytics, 2024) and the maintenance of trees has been highlighted as a top concern for residents, as reflected by Strategy #4 – enhance the care of public and private trees (refer to Section 6). In spring 2025, the Town's Mature Tree Conservation Program was launched to act on this strategy. This pilot program supports the community by offering rebates to residents that maintain their mature tree using qualified arborists to complete the work. Eligible maintenance work includes pruning, cabling, and bracing. Rebates will typically return 25 percent of tree maintenance costs, with a maximum amount of $1,000. This rebate program will help defer removal costs of large trees, thereby extending their benefits, and will assist with preventing power outages and property damage from branch breakage.

8.3 South Ajax Home Retrofit Program

Launched in 2023, the South Ajax Home Retrofit Program is a partnership between the Town of Ajax, Toronto and Region Conservation Authority (TRCA), and Durham Region. It offers free home consultations to residents where staff provide personalized retrofit and incentive recommendations tailored to their home and budget. These home visits are available to residents who live within the Ajax SNAP catchment area and live in detached or semi-detached houses. On top of the home visits, the program offers expert workshops and connections to finance and coaching programs such as Durham Greener Homes. Overall, the program helps residents reduce energy use, water use, and flooding risks, install eco-landscaping and green infrastructure, and enhance neighbourhood climate resilience. This program relates to Strategy #15 - more low-carbon and resilient homes, as further defined in Section 6.

In 2023 and 2024, the program conducted 90 home visits, resulting in 60 energy retrofits – including the installation of heat pumps, insulation, and smart thermostats – alongside 59 ecological landscaping projects like pollinator gardens and tree plantings. Residents have also taken 145 climate resilience actions, from reducing food waste to supporting neighbours during extreme weather events. Additional benefits include 90 rain barrels installed to assist with water conservation and stormwater management. The program will continue in 2025 and will further efforts to make South Ajax a more sustainable, resilient community.

9. Long-Term Implementation

The Ajax SNAP Neighbourhood Resilience Strategy sets out 22 adaptation and resilience strategies for making this neighbourhood more resilient to the current and future impacts of climate change. These strategies build upon the recommendations outlined in the Action Plan and further identify priority areas and actions to advance integrated climate and sustainability action in the neighbourhood. Several quick-start projects are already underway as highlighted in Section 8. Over several years, these strategies will be integrated into the Town of Ajax's Ajax Climate Risk & Resiliency Plan (ACRRP) Implementation Strategy, workplans for relevant Town divisions, including Urban Forestry and Parks and Recreation, as well as the Town's capital project planning process.

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Appendices

Toronto and Region Conservation Authority

Ajax SNAP Engagement Report 2024

Prepared by the TRCA Ajax SNAP Team

May 2025

Table of Contents

SUMMARY

This report highlights the extensive community engagement efforts undertaken as part of the Ajax Sustainable Neighbourhood Action Plan (SNAP) and the development of the Ajax SNAP High-Level Resilience Strategy (the Resilience Strategy) in 2024. These initiatives aimed to gather resident input on climate risks, emergency preparedness, and sustainable community development, while fostering stronger connections between residents and local programs.

Key activities included:

- A Community Survey for the Ajax Climate Risk & Resiliency Plan (ACRRP) 5-Year Implementation Strategy Update was featured on the InMyOpinion (IMO) Ajax webpage between February 14, 2024 to May 13, 2024. The survey gathered 141 responses from residents who provided insights into their concerns about extreme weather events, their preparedness levels, and the actions they are taking to increase household resilience. The survey results will directly inform the next phase of the ACRRP's implementation and guide climate action priorities for the Town of Ajax.
- The Ajax Fire Safety Event was held on June 8, 2024 by the Town's Fire Department. This event engaged 70 residents of all ages in interactive fire safety demonstrations and provided opportunities to discuss the impact of extreme weather on their homes and community safety. Residents also participated in discussions on emergency planning, with some signing up for programs like the SNAP Home Retrofit initiative.
- The Ajax Community Forum was held on June 22, 2024, and played a vital role in addressing the effects of climate change on the neighbourhood. During the Forum, 35 residents, community leaders, and stakeholders collaborated to identify community risks and shape proactive low-carbon resilience measures for the future through activities like asset mapping, risk identification, and co-designing solutions. This forum helped align neighbourhood priorities with broader environmental and socio-economic goals.
- The Ajax SNAP Newsletter is a monthly publication sent to over 180 residents, that continues to inform the community about local events, workshops, and programs. With 19 issues distributed to date, the newsletter is a key tool for keeping residents engaged and connected to opportunities such as community plantings, educational workshops, and climate resilience programs.

Together, these engagement efforts gathered essential feedback and ideas from the community, helping shape future strategies for enhancing neighbourhood resilience, improving public awareness, and ensuring that the Town of Ajax's climate action initiatives align with the needs and priorities of its residents.

COMMUNITY SURVEY: AJAX CLIMATE RISK & RESILIENCY PLAN (ACRRP)

The Ajax Climate Risk & Resiliency Plan (ACRRP) 5-Year Implementation Strategy update included a community survey to gather feedback from residents. The survey was designed to gather insights into the community's concerns related to climate change impacts, their level of preparedness, and their priorities for future action. A total of 141 responses were collected between February 14 and May 13, 2024, by the Town of Ajax.

Survey Methodology:

The survey was promoted through various channels, including a series of in-person and online engagements (Figure 33):

Figure 33. Ajax Winter Fest Booth- February 2024

Key Findings:

The results from the community survey provided crucial insights into residents' perceptions of climate change risks and their preparedness levels. The survey responses highlight the community's concerns about extreme weather events, the effectiveness of existing emergency resources, and the steps individuals are taking to enhance household resilience. The results, organized into five key sections, offer valuable insights that will inform the next phase of the ACRRP's implementation, helping to align the Town's strategies with community needs and expectations. One of the key concerns that was raised was the risk of declining air quality due to extreme weather events such as wildfires (e.g., Figure 2).

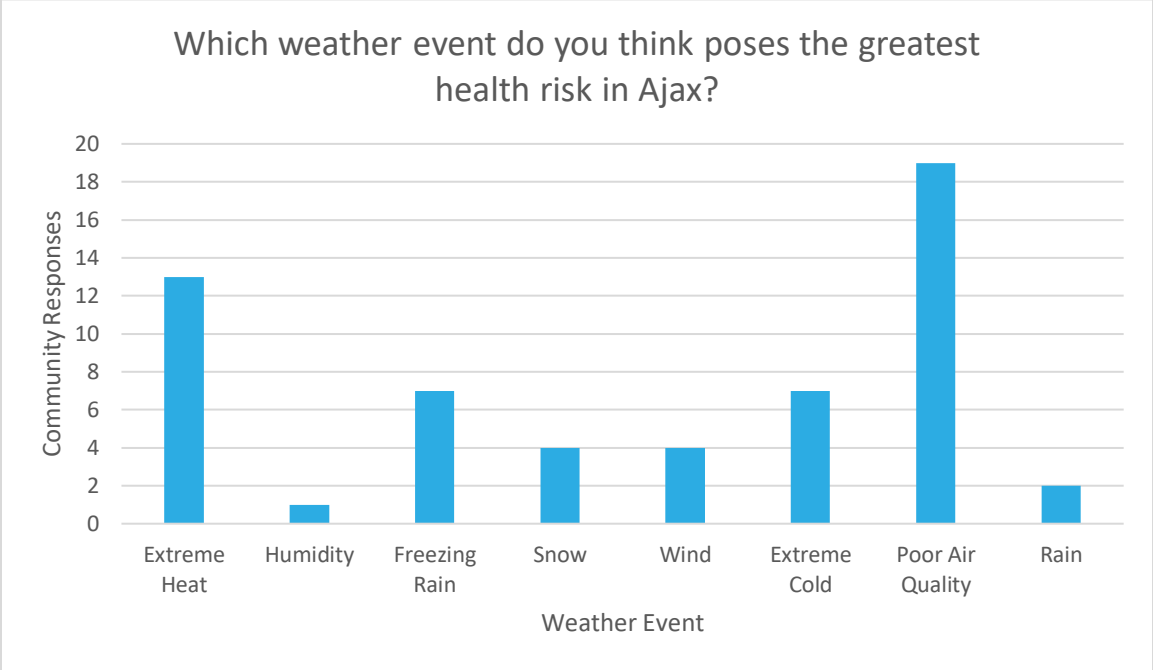

Figure 34. ACRRP Community Survey: Extreme Weather Events Results

Section 1: Insights about the Existing Plan

This section assessed how familiar residents were with the Ajax Climate Risk & Resiliency Plan (ACRRP) and its actions. The results revealed:

- 69% of respondents were either "not familiar" or "not very familiar" with the ACRRP. This indicates a need for enhanced communication and educational efforts to raise awareness about the plan and its objectives.
- A similar trend was observed regarding emergency preparedness, with 57 participants feeling "somewhat informed" or "very informed" about available resources, while others feel less informed.
- Many residents expressed moderate awareness of Town initiatives related to shaded areas, climate resilience, and naturalized urban spaces, demonstrating room for improved outreach and education on these programs (e.g. Figure 3).

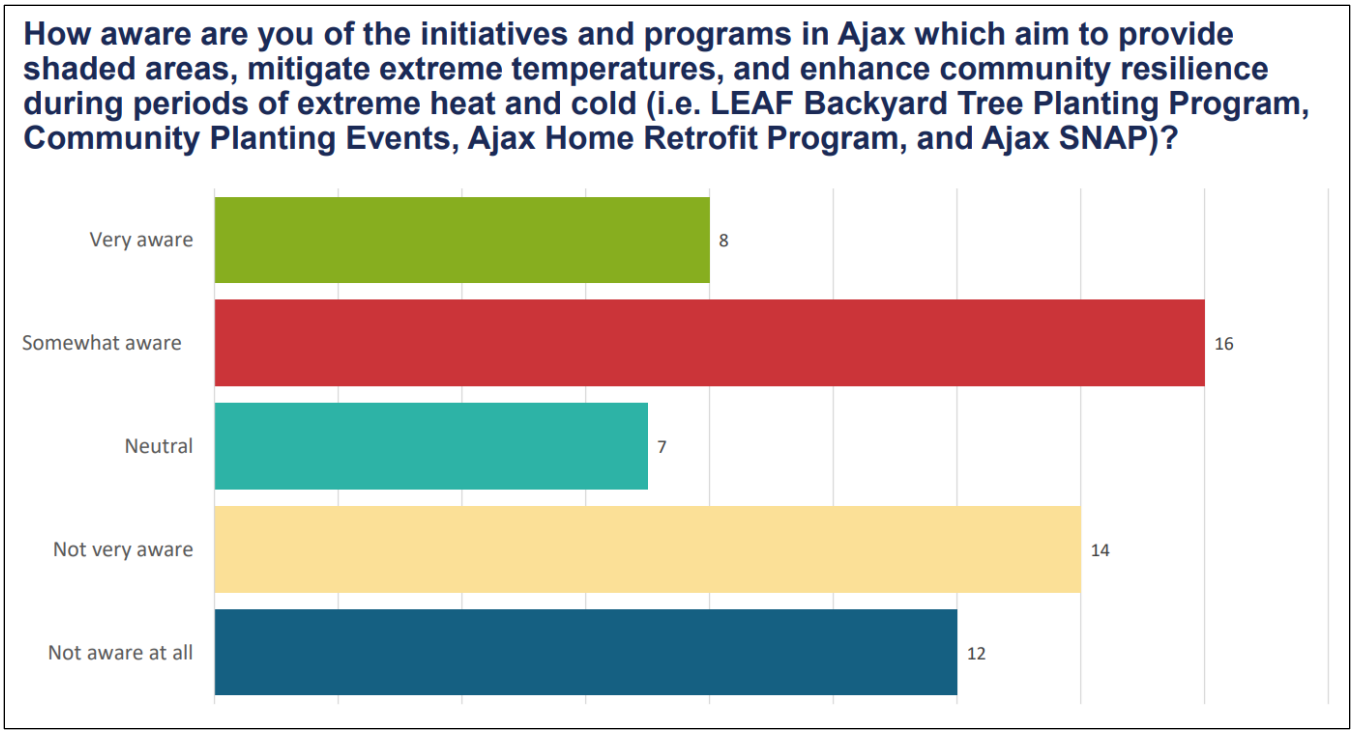

Figure 35. ACRRP Community Survey Results: Town of Ajax Initiative Awareness

Section 2: Extreme Weather Events

The survey explored how residents perceived and experienced different extreme weather events. Key findings included:

- Poor air quality emerged as a new concern, largely attributed to wildfire smoke and increased traffic pollution in recent years. 34% of respondents ranked it as the top public health risk.
- Extreme heat and freezing rain were also noted as major concerns. Freezing rain was cited as the leading cause of service disruptions such as power outages.
- Strong winds and freezing rain were highlighted as primary contributors to damage to buildings and property, with respondents noting their frequent impact on the community.

Section 3: Extreme Heat & Heat Waves

This section focused on residents' preparedness for rising extreme heat and the impacts of heat waves. Results showed:

- 54% of respondents felt “somewhat prepared” for heat waves, though many had not yet experienced significant challenges from past heat events.

Suggested improvements for extreme heat resilience included:

- Creation of community cooling spaces, such as cooling centres and misting areas.
- Enhanced public splash pads and pools.
- Increased efforts in tree planting and shade infrastructure to mitigate the urban heat island effect.
- Improved electrical grid systems to prevent heat-related power outages.

Section 4: Prioritizing Climate Risks:

Residents were asked to prioritize their concerns regarding climate-related risks:

- Power outages during extreme heat events and ice storms were identified as the top concern, highlighting the need for a more resilient power grid.
- Flooding was frequently mentioned as a major concern during periods of heavy rainfall.
- Damage to buildings and trees due to wind events was cited as another critical concern, consistent with previous community responses.

Section 5: Personal/Demographic Information

This section captured demographic details to help contextualize the feedback:

- 44% of participants were from Ward 3, 40% of participants reside within the Ajax SNAP neighbourhood boundary, and 58% were between the ages of 35-64.
- Responses reflected a mix of cultural backgrounds and experiences, with a notable focus on improving engagement with younger generations and seniors who may be more vulnerable to extreme weather.

The results of this community survey provide important insights into how residents understand climate-related risks and their level of preparedness to respond. These findings will be instrumental in shaping the next phase of the Ajax Climate Risk & Resiliency Plan's implementation.

The responses highlight concerns about extreme weather events, the effectiveness of existing emergency preparedness resources, and actions being taken to improve individual and community resilience. These findings will help shape future climate action and resiliency strategies in Ajax, ensuring that community priorities are addressed. Key focus areas for the Town of Ajax include improving public awareness, providing more educational resources, enhancing emergency preparedness, and increasing individual and community resilience through incentives and infrastructure improvements.

AJAX FIRE SAFETY EVENT

The Town's Fire Department hosted a Family Fire Safety Event on June 8, 2024 to introduce families to fire safety practices both indoors and outdoors. The event featured various interactive activities, including a hazard house display, a children's obstacle course, a hose target game, firefighter training demonstrations, and fire safety information handouts. Durham Region, the Electrical Safety Authority, and several other safety organizations also participated.

The event attracted a diverse group of attendees, including families with children and seniors, fostering broad engagement across different age groups (Table 6. Ajax Fire Safety Event - Community Responses on the Risks and Impacts of Extreme Weather Events 4). In total, approximately 70 people participated, contributing to a vibrant and interactive atmosphere focused on community safety and preparedness.

Figure 4. Ajax Fire Safety Event- June 2024

Ajax SNAP Participation:

The Ajax SNAP team hosted a booth at the event, offering activities that included:

- Sharing information about the Ajax SNAP initiative.
- Inviting participants to mark important locations (e.g., community centres, hospitals, and libraries) on a map of the Ajax SNAP neighbourhood.

- Exploring the impact of extreme weather events (e.g., extreme heat, ice storms, windstorms, and flooding) on residents and their families by sharing personal experiences and the words they associated with each event (results shown in Table 6).

Table 6. Ajax Fire Safety Event - Community Responses on the Risks and Impacts of Extreme Weather EventsAlthough most participants live outside of the SNAP neighbourhood, their insights can help illustrate common challenges within the town and broader region. At least two participants were identified as residents of the SNAP neighbourhood.

All attendees had the opportunity to enter a draw to win an emergency kit. 59 participants entered the draw, and four emergency kits were distributed. Several visitors also signed up for the South Ajax Home Retrofit Program. This event allowed residents to engage in discussions about fire safety and extreme weather preparedness, while learning about local programs such as SNAP and municipal emergency planning initiatives.

Table 6. Ajax Fire Safety Event - Community Responses on the Risks and Impacts of Extreme Weather Events

Windstorm	Extreme Heat	Flooding	Ice Storm
• Broken/ falling trees • Power outages • Broken appliances • Damage to the town • Damaged roofs • Blackouts • Damaged power lines • Belongings blown away	• You can't leave the house • Too hot • People can die • Overheating • Dehydration • Seniors are vulnerable • Heat stroke • Burns • Global Warming	• Damage to houses • People can drown • Life threatening • Storms • Heavy rain • Damage to belongings • Loss of invaluable items • Health risks	• Power outages • Getting snowed-in • Icy roads • Falling trees • Hazards while walking • Frequent accidents

AJAX COMMUNITY FORUM

The community forum was held on June 22, 2024, as part of ongoing efforts to develop the Resilience Strategy. This forum played a vital role in exploring the risks and impacts of climate change on the Ajax SNAP neighbourhood through direct community engagement. It also provided an opportunity for residents to collaborate and co-design proactive solutions. By integrating technical neighbourhood-level analysis with the values and priorities of local residents and stakeholders, the Resilience Strategy seeks to create initiatives that support shared environmental, climate, socio-economic, and community goals.

The primary objectives of the forum was to raise awareness about local climate change impacts, engage participants in developing collaborative solutions, and identify community risks and assets. Through interactive activities, attendees contributed valuable insights that will help shape urban renewal and climate actions in the neighbourhood.

Figure 5. Ajax Community Forum- June 2024

Key Activities and Outcomes:

The forum featured a variety of activities, including informal discussions about the Ajax SNAP Action Plan and community assets, as well as structured group activities such as: “4 Seasons in 12 Minutes”, “Risk and Solutions Brainstorming Opportunity”, “Create a Climate Change Metaphor Challenge”, and the “Vote-With-Your-Feet Co-Design Opportunity”. Additionally, the forum featured presentations on the SNAP Action Plan process and key components, updates on the Town of Ajax’s Climate Risks and Resilience Plan 5-Year Implementation Strategy and survey results, as well as an update from Durham Region on regional plans and programs. Participants were also introduced to the Resilience Strategy and had the opportunity to learn about community-based climate actions. Several giveaways, including an air purifier, rain barrel, lawnmower, and five emergency kits, were awarded to forum participants through a draw.

Activity 1: Ajax SNAP Assets Map and Action Plan Review

The forum’s first activity introduced participants to the Ajax SNAP initiative and focused on community asset mapping and reviewing the Action Plan. During this session, attendees were familiarized with the goals of the Ajax SNAP and participated in identifying important community assets in the neighbourhood.

1.1 Asset Mapping:

During this activity, participants reviewed maps of Ajax SNAP community assets and had the opportunity to add missing elements, such as partner organizations, parks, places of worship, and potential sites for an evacuation centre (Figure 36). As an incentive, participants received entries into a draw when they contributed suggestions. Key potential partners identified included Vandermeer Nursery & Garden Centre for pollinator plants, the Town of Ajax for infrastructure planning, St. Andrew's Community Centre for community garden projects, and the library for hosting both in-person and virtual events.

Figure 366. Ajax Community Forum- June 2024: Assets Mapping Activity

Participants also suggested that water and rain garden demonstrations, as well as educational workshops could be hosted at Town Hall and the Library. Additionally, the Town of Ajax was highlighted as a key partner that could create pedestrian crossways, specifically at Kitney Drive and Bayly Street W, to improve infrastructure and connectivity. These suggestions reflect community-driven efforts to enhance local initiatives and strengthen partnerships.

1.2 Action Plan Review:

The Ajax SNAP Action Plan outlines strategies for sustainable neighbourhood development, focusing on enhancing connections to nature, improving physical infrastructure, fostering community cohesion, and promoting sustainable building practices. Key goals include increasing biodiversity, encouraging active transportation, and supporting energy-efficient home retrofits. The plan also emphasizes community engagement and resilience against climate change. During the community forum, this plan was presented to residents, with an overview of its development, key action areas, and integrated approach (Figure 7). This overview was followed by a discussion with community residents to gather feedback and input.

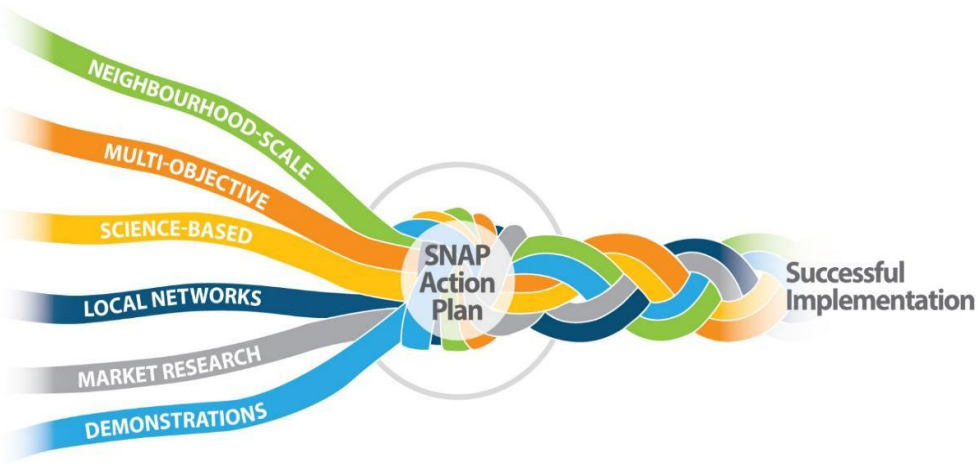

Figure 377. Overview of SNAP's Integrated Approach

Activity 2: 4 Seasons in 12 Minutes

During this activity, participants were asked to identify specific risks to the community for each season. 137 comments were received, and five top issues were identified. These include (listed from most to least mentioned):

- Lack of Shade (Canopy Cover)
- Basement Flooding
- Tree Damage
- Power Outages
- Illnesses related to heat strokes, mosquito-transmitted diseases, E. coli, and vector-borne diseases.

Activity 3: Risk & Solutions Brainstorming Opportunity

In this activity, participants were asked to identify the greatest risks facing the community and to propose solutions to these risks. The most common concerns included:

- Health: Aging population creating need for more services for older adults.
- Economic Impacts: Lack of jobs and rising expenses.
- Immigration Impacts: Increased traffic and difficulty with newcomers adjusting to local laws/rules.
- Housing Affordability: Rising costs for both owning and renting properties.
- Tree Maintenance**:** More incentives needed for tree care by residents.
- Climate Education: A desire for more accurate information about climate change and its political influence.

The proposed solutions:

1. Interpersonal (people-driven): Community engagement through social media (e.g., Facebook groups), neighborhood forums, events, and newsletters.

2. Policy-driven: Mandating zero emissions, improving recycling, and supporting individuals financially, where necessary.
3. Nature-based: Creating wetlands, installing green roofs, and planting native species.
4. Commercial/Technological: Increasing information on solar power, heat pumps, and technological workshops.

Activity 4: Create a Climate Change Metaphor (Group Challenge)

Participants were encouraged to use metaphors and analogies to express their opinions about climate change. This fun and engaging approach allowed them to explore more imaginative and thought-provoking ways to communicate complex ideas and the impacts of climate change.

Activity 5: 'Vote with Your Feet' Co-Design Opportunity

In this activity, participants were given the opportunity to actively shape project ideas, develop solutions, and plan community actions. The goal of this activity was to engage community stakeholders in collaborative discussions. Participants 'voted with their feet' by moving to different areas of the room to contribute to specific topics, each led by a facilitator for guided input. The topics included:

- Mature Tree Care Rebates
- New Park/Existing Park Retrofits
- Community Response Networks/Buddy Systems including Heat Check-ins
- Resilience Hubs/Evacuation Centres
- District Energy/Other Energy Solutions

Community Responses:

- Mature Tree Care Rebates: Participants suggested more incentives for tree maintenance and planting, with appropriate policies to establish accountability. They also proposed community education programs, certification for rebates, and workshops on basic tree care and pruning.
- New Park/Existing Park Retrofits: Ideas included renewable energy in parks, separate lanes for pedestrians and cyclists, increased amenities like water fountains for people and pets, shaded walking paths, and splash pads. Participants also expressed interest in a cricket ground and enhancing parks with more educational signage.
- District Energy/Other Energy Solutions: Participants favoured solar-powered district energy systems, small modular nuclear generators, and incentives for solar power and heat pumps. They also suggested using innovative technologies like solar roofing tiles and highlighted successful examples like the Deep Lake Water Cooling System (Enwave).

This activity allowed the community to actively participate in co-designing future neighbourhood projects, offering valuable insights to shape actionable solutions.

AJAX SNAP NEWSLETTER

The Ajax SNAP Newsletter is a monthly publication sent to residents within the Ajax SNAP neighbourhood who subscribed to receive updates (see Figure 8 for an example). Each edition provides information about local activities, including news about events, workshops, and community planting efforts taking place in the neighbourhood. The newsletter also highlights opportunities and programs, with links and contact details to help residents easily register and get involved.

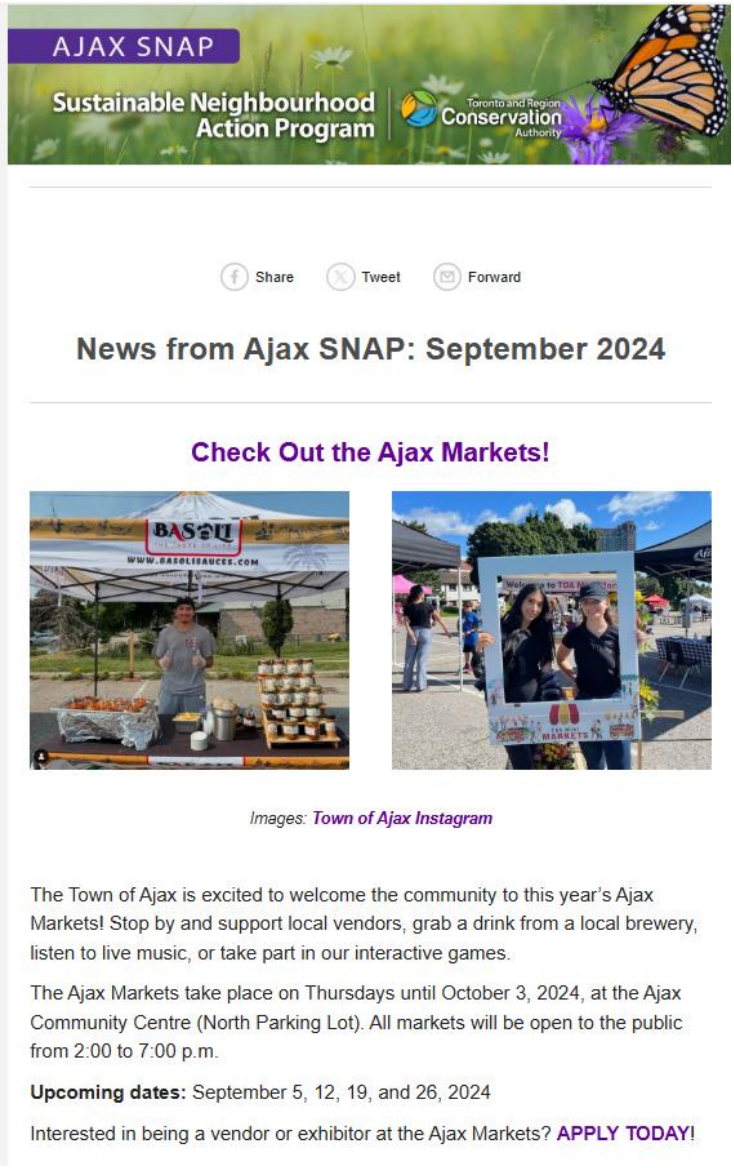

Figure 388. Example of the Ajax SNAP Newsletter (September 2024 edition)

To date, 19 monthly newsletters have been issued (12 in 2024), helping to keep the community informed. On average, 180 residents receive the newsletter each month, with many subscriptions resulting from outreach at local events and home visits. Additionally, the newsletter actively engages residents through surveys that collect

their opinions and feedback, helping to shape future activities. Occasionally, the newsletter also features events and opportunities happening within Durham Region and includes updates on TRCA events hosted in Ajax. This ensures that residents stay informed about both local and regional opportunities and engage in community and environmental initiatives.39

CONCLUSION

This report highlights the significant strides made in fostering community involvement and awareness around climate resilience and sustainability in Ajax. Through a variety of interactive events, workshops, and surveys, 836 neighbourhood residents were engaged in 2024 and have actively contributed to identifying local climate risks, shaping solutions, and supporting sustainable initiatives. The feedback gathered from these engagements has provided invaluable insights into community priorities, particularly concerning climate risks, preparedness, and environmental stewardship.

These engagement efforts have played a pivotal role in guiding the development of the Resilience Strategy and the direction of future actions. By integrating the values, concerns, and suggestions of local residents, the Resilience Strategy aims to create practical, community-driven solutions that enhance neighbourhood resilience and sustainability. Moving forward, the Town of Ajax remains committed to working closely with its residents and stakeholders to ensure that the community is well-prepared for future climate-related challenges while fostering a more sustainable, connected, and resilient neighbourhood.

REFRENCES

Town of Ajax. (2024). *Ajax Climate Risk & Resiliency Plan Implementation Strategy 5-Year Update*. 2025_ACRRP-Implementation-Strategy-Five-Year-Update_Final.pdf

Toronto and Region Conservation Authority. (2024). *Ajax Sustainable Neighbourhood Action Program's High-Level Action Plan.* 2024-03-01_Ajax_SNAP_Action_Plan

Appendix B: List of Data Sources Used in the Ajax SNAP Neighbourhood Climate Change Vulnerability Assessment

Indicator	Data	Link
EXPOSURE		
Extreme heat	Ground Surface Temperature Map (TRCA, 2020) Information gathered at community engagement events (2024)	TRCA Open Data portal
	Information gathered at community engagement events (2024)	n/a
Extreme cold	Based on climate projections developed by TRCA for Durham Region, local municipalities, and partners	Durham climate projections report (2020)
Temperature and precipitation trends	Information gathered at community engagement events (2024)	
Flooding risk	TRCA flood plain mapping	n/a
	TRCA Digital Elevation Model (DEM)	n/a
	TRCA watercourses (2018)	TRCA Open Data portal
	TRCA waterbodies (2018)	TRCA Open Data portal
	Information gathered at community engagement events (2024)	
Snow/ice or windstorms	Information gathered at community engagement events (2024)	
Vector-borne diseases trends	Public Health Ontario (2024)	Public Health Ontario infectious disease trends
	Information gathered at community engagement events (2024)	
SENSITIVITY		
Seniors 65 years or older	Census data (2021)	Ajax Open Data portal
Children under 14	Census data (2021)	
Residents living alone	Census data (2021)	
People who do not speak English or French	Census data (2021)	
People without a high school diploma	Census data (2021)	
Average household income and distribution	Census data (2021)	
Housing tenure (owned, rented, other)	Census data (2021)	
Age of homes	Census data (2021)	
ADAPTIVE CAPACITY		
Local assets and services	Information gathered at community engagement events (2024)	n/a

Indicator	Data	Link
Access to food outlets	Durham Region Open Data Portal Business Directory Data (2024)	Durham Region Open Data portal
	OpenStreetMaps food facilities (2024)	OpenStreetMaps
Mobility and access to transportation	Durham Region transportation data (2024)	Durham Region Open Data portal
Access to parks and open spaces	Town of Ajax parks and recreational areas data (2024)	Ajax Open Data portal
	TRCA land use natural cover (2017)	TRCA Open Data portal
Urban tree canopy coverage and	Based on data developed for TRCA's Nature-Based Climate Solutions Siting Tool (2024)	TRCA's Nature-Based Climate Solutions Siting Tool
Presence of air conditioning	Census data (2021)	Data provided by Town of Ajax
Access to drinking water	Environics data (2024)	n/a
Communications	Environics data (2024)	n/a
Sense of community	Information gathered at community engagement events (2024)	n/a

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