

# RESILIENT TORONTO

ResilientTO Initiative, 2017-2019



## A message from the CRO:

Toronto is one of the fastest growing, most diverse, and safest cities in the world. We are 'having a moment', as Toronto gains global attention as one of the best places to live, work, and play.

The Resilience Strategy is about ensuring Toronto remains a safe and livable city for all. In the face of a changing climate and rapid urbanization, we need to prepare ourselves for the inevitable shocks and stresses cities face in the 21st century.

We are already experiencing a 'hotter, wetter, and wilder' Toronto due to climate change, and protecting the city from extreme weather is a top priority. I was hired as Chief Resilience Officer in May 2017, when a 'wetter and wilder' spring had pushed Lake Ontario to its highest level ever recorded. Ensuring the City of Toronto's investments, services, and policies take into account climate resilience is a key part of the Resilience Strategy.

Toronto is a city of neighbourhoods, and building resilience at the neighbourhood level is win-win. First, addressing neighbourhood stresses like local economic development and housing improves residents' lives day to day. Second, we know households, businesses, and community centres are the first line of defense in any shock. We will work with existing community groups, networks, businesses, and philanthropy to deliver projects that build neighbourhood resilience. This work will prioritize the neighbourhoods which are most vulnerable to shocks.

As we develop the Strategy we will look to Torontonians for your ideas, questions, and directions. Ensuring everyone has the means to participate in the Strategy is a core value of our process. I invite every Torontonian to participate to help shape a safe, inclusive, and livable city.

### Elliott Cappell

Chief Resilience Officer  
City of Toronto

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# RESILIENT TORONTO

## Resilient Toronto & 100RC

The City of Toronto, through the Resilient Toronto initiative, is working to improve our resilience to the physical, social, and economic challenges of the 21st century. In collaboration with the global 100 Resilient Cities Network (100RC), an initiative pioneered by the Rockefeller Foundation that brings together a global community of cities working to build urban resilience, the City is developing a comprehensive Resilience Strategy for Toronto.

The development of the Resilience Strategy is being led by Toronto's Resilience Office and Chief Resilience Officer, and is expected to be complete by early 2019. Through 100RC, the City has the opportunity to foster new relationships with other leading local and global cities, including Vancouver, New York, Mexico City, and Singapore, to share resilience knowledge and best practice.

## What is Resilience?

100RC defines urban resilience as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.”

Building urban resilience requires looking at a city holistically: understanding the systems that make up the city and the interdependencies and risks they may face. By strengthening the underlying fabric of a city and better understanding the potential shocks and stresses it may face, a city can improve its development trajectory and the well-being of its citizens.

By developing the capacity to respond to both shocks – like an ice storm or flooding, and stresses – like a lack of affordable housing or increasing income inequality, a city becomes better equipped to ensure the safety and well-being of its entire population now and in the future.

Resilient cities demonstrate seven qualities that allow them to withstand, respond to, and adapt more readily to shocks and stresses.



**Reflective** by using past experience to inform future decisions



**Resourceful** by recognizing alternative ways to use resources



**Robust** with well-conceived, constructed, and managed systems



**Integrated** through bringing together a range of distinct systems and institutions



**Inclusive** by prioritizing broad consultation to create a sense of shared ownership in decision making



**Redundant** by purposely creating spare capacity to accommodate disruption



**Flexible** with the willingness and ability to adopt alternative strategies in response to changing circumstances

# The Resilience Strategy

The Resilience Strategy will build on existing resilience-related efforts to address climate change and the impacts of extreme weather, while addressing additional challenges specific to our city such as growing inequality, aging infrastructure, and housing and transit issues.

At a time of significant change in our city, the development of a Resilience Strategy gives us the opportunity to support inclusive and climate resilient growth, by asking:

- » How can we support opportunity for all Torontonians?
- » How can we ensure Toronto's growth is climate resilient?



# Shocks & Stresses








## » What are shocks and stresses?

**Shocks** are sudden, sharp events that threaten the immediate well-being of Toronto. These include events like extreme rainfall, floods, and heat waves.






**Stresses** are the daily and chronic challenges that weaken the fabric of Toronto, and weaken the ability of Toronto to bounce back in response to a shock. These include things such as aging infrastructure, housing affordability, and socio-economic inequality.

As part of the Preliminary Resilience Assessment (PRA) process, Toronto's key shocks and stresses were identified. They are:

## Shocks

-  Urban flooding
-  Heat waves
-  Blizzards/cold snap
-  Interruption to energy supply
-  Infrastructure failure
-  Public health emergencies
-  Cyber attacks

## Stresses

-  Poverty & social displacement
-  Lack of affordable housing
-  Traffic congestion & transit expansion
-  Aging infrastructure not sized for a growing population
-  Long term municipal financial sustainability



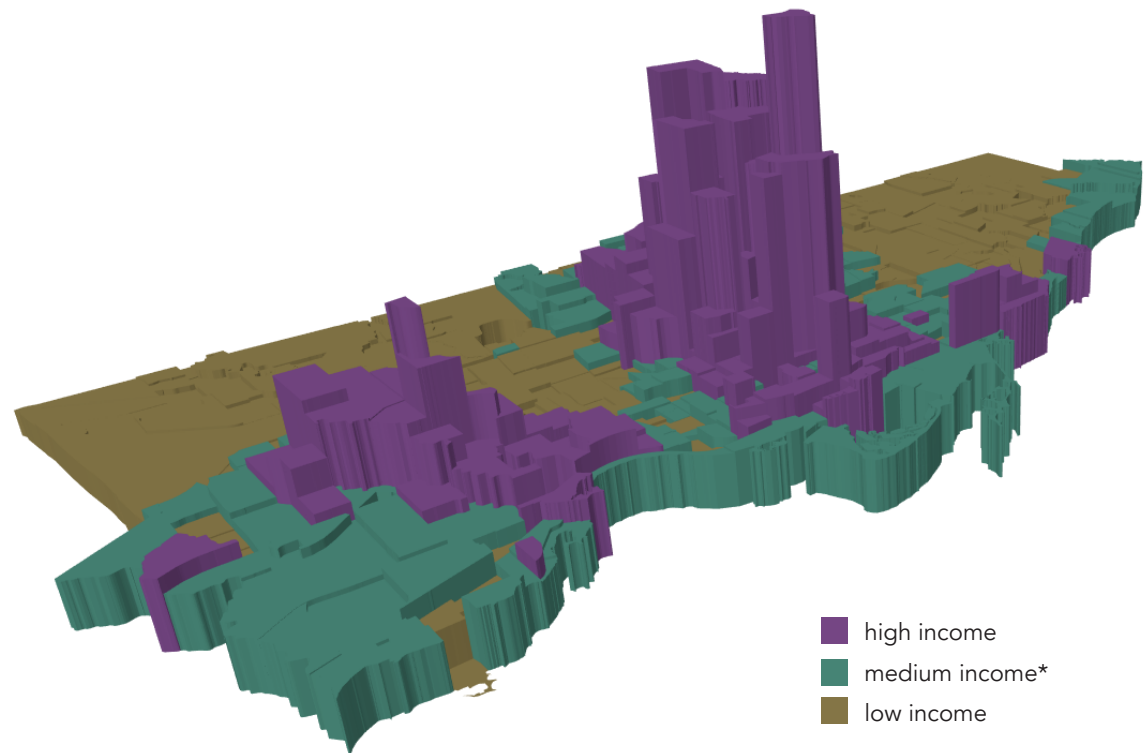
# Neighbourhood Resilience

Toronto is 'having a moment'. The city sits at or near the top of international rankings for quality of life, safety and tax competitiveness. These rankings are validated by the rate of incoming investment, sustained population growth, and by the fact that the city is an economic anchor for Ontario and Canada. We are growing faster than nearly any comparable city in the world.

Our region is home to a growing economy and is emerging as a global centre for technology and innovation. Toronto lives its motto of "diversity our strength", with half the population born outside of Canada and half the population identifying as a visible minority. Our experience and success in living together is a global asset.

## However, our success & prosperity is not shared by all:

- There are significant social and economic disparities that exist in Toronto, primarily between the inner suburbs, where there is a significant concentration of poverty, and more central, transit-friendly neighbourhoods, including the downtown.
- There are three and a half times more Torontonians earning less than \$20,000 per year than those earning over \$100,000 per year.
- One-in-four children in Toronto live in low income households. Among Indigenous families, the rate is higher than 80%, and there are three neighbourhoods in Toronto where the rate is higher than 50%.
- Slow, infrequent, and unreliable transit options limit access to other parts of the city and make moving around a neighbourhood difficult.
- Younger, lower income, non-white, New Canadian, and inner-suburban Torontonians face barriers to participating in city building.
- In 2015, the average employment income for men was 47% higher than for women.
- Racialized individuals experienced low income at nearly twice the rate of non-racialized individuals.



Average Individual Income, City of Toronto, 2015  
([www.neighbourhoodchange.ca](http://www.neighbourhoodchange.ca))

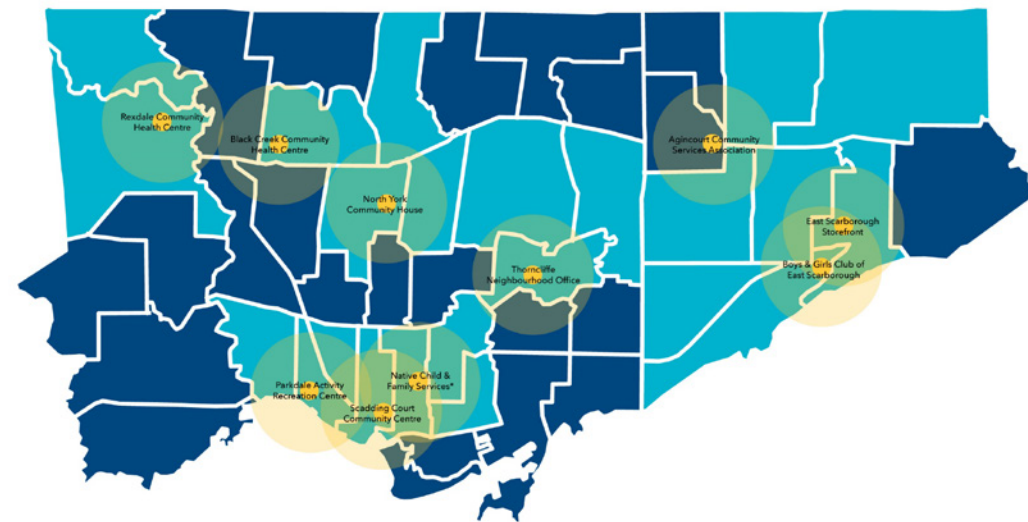
\* 20% above or below the Toronto CMA average for the stated year.



As part of the Resilience Strategy initiative, the City is working with the Toronto Foundation on the [Neighbourhood Resilience Project](#). The Toronto Foundation's Vision 2020 program was created to engage a group of Millennial and Gen-X (Next Gen) philanthropists, and compliments the City's efforts to improve resilience.

The Neighbourhood Resilience Project is aiming to connect community organizations across Toronto to create Resilience Labs that bridge connections across and between local residents, city builders and philanthropists. Led by the community, they will design and fund linked-up responses to local issues and priorities that address the increasing social, physical, environmental, and economic stresses in the 21st century.

Building on the recent Vital Conversations initiative in five neighbourhoods, a unique mix of residents will work with the Next Gen philanthropists and experts to develop local response towards creating a stronger, more equitable, and resilient neighbourhood. It is anticipated that these Resilience Labs will produce new social networks, innovative local responses, and, through these relationships, a potentially more sustainable flow of philanthropic dollars for investment.



For further info, check out:  
<https://torontofoundation.ca/vision2020/>  
<https://torontofoundation.ca/vitalsigns/>



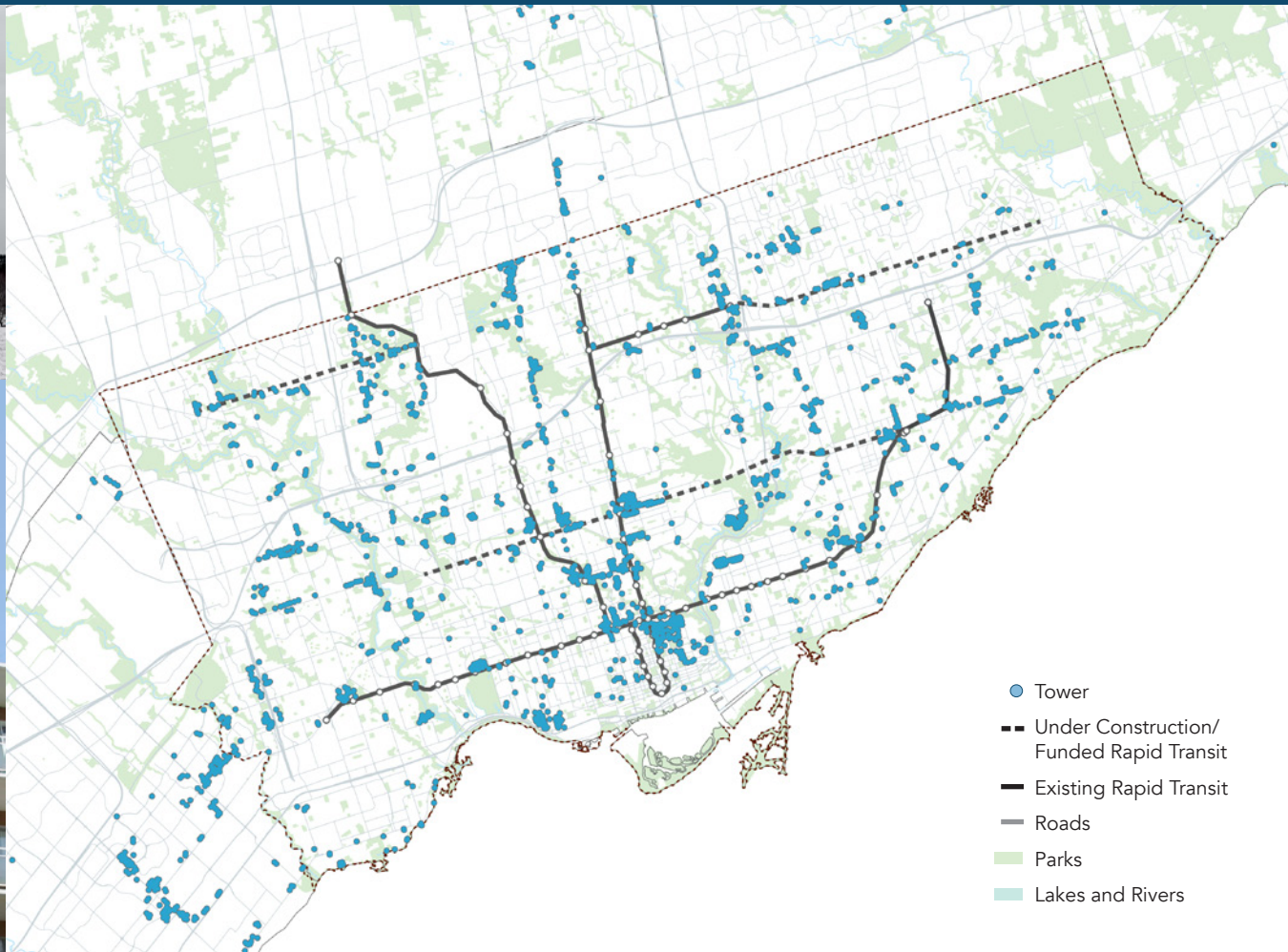
# Towers

In the city of Toronto, there are roughly 1,200 apartment towers of eight or more storeys that were built before 1985 and house over 500,000 people. There are 240,700 units in these towers which represents 45% of Toronto's total rental housing stock, and 18% of all occupied units in the City. Over 80% are privately owned.

These towers house a higher portion of lower-income, visible minority, and New Canadians compared to other housing types. Rents in buildings built before 1990 are 39% lower than those built afterwards, and 4% lower than average market rent for all of Toronto,

representing a critical component of Toronto's affordable market rental stock.

As a group these towers are aging, and some are already in an advanced stage of disrepair. There is a significant opportunity to increase resilience in Toronto by undertaking significant retrofits to these towers to make them more sustainable and more livable, by taking into account the community's needs while maintaining affordability for residents.







Currently, the City of Toronto's Tower Renewal Program is focusing on implementing environmental, social, economic, and cultural improvements in Toronto's towers and surrounding neighbourhoods. The program is delivering site improvement guidance and implementation supports including financing, and enabling change through new zoning that broadly introduces mixed use for the first time in these communities.

In partnership with the Tower Renewal Partnership, the City is undertaking a **Resilient Towers Initiative** as part of the Resilience Strategy. This initiative seeks to catalyse and coordinate community investment, strategies for health and safety in a changing climate, and significant retrofits. A key focus will be placed on finance and delivery to make these investments possible.



#### Benefits of retrofits include:

- Achieving TransformTO's targets for GHG emissions reductions of 40-80% in each tower.
- Improving the quality of the city's rental housing stock, and dramatically improving the livability of the towers for residents.
- Creating thousands of local jobs through a generated investment of billions of dollars into tower neighbourhoods.
- Significantly reducing the city's exposure to the top risks identified through the Resilience Strategy and through the 2017 Hazard and Risk Identification (HiRA).
- Improving solid waste management by 25% or more.
- Reducing water consumption by 30% or more.



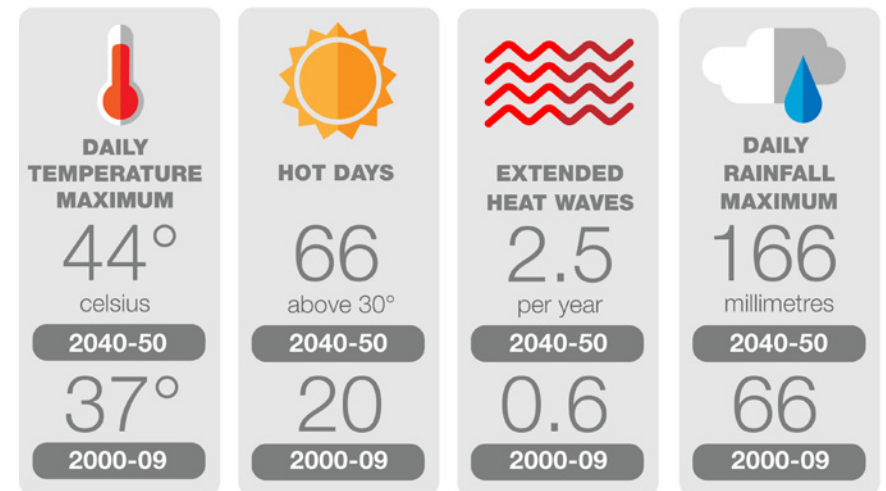
# Climate Resilience

The city is more at risk of climate shocks than at any time in the past 50 years.

Toronto is experiencing rapid urbanization; at the same time, the climate is changing, with an increased variability, frequency, and intensity of climate events. People already considered to be vulnerable will be more likely to experience disproportionate negative impacts of climate change.

As part of the Resilience Strategy, the City is developing a [Climate Resilience Framework](#) and adaptation plan, outlining actions we can take to improve our climate resilience. A key component of the framework will focus on identifying the synergies between climate adaptation action and the climate mitigation work being undertaken as part of TransformTO.

## Toronto's **Future Weather**\*



\*Source: Toronto's Future Weather and Climate Driver Study, 2011

Toronto's Future Weather and Climate Drivers Study found that the city can expect higher average annual and maximum temperatures, more heat waves, and less frequent but much more intense rain events.





# Flooding

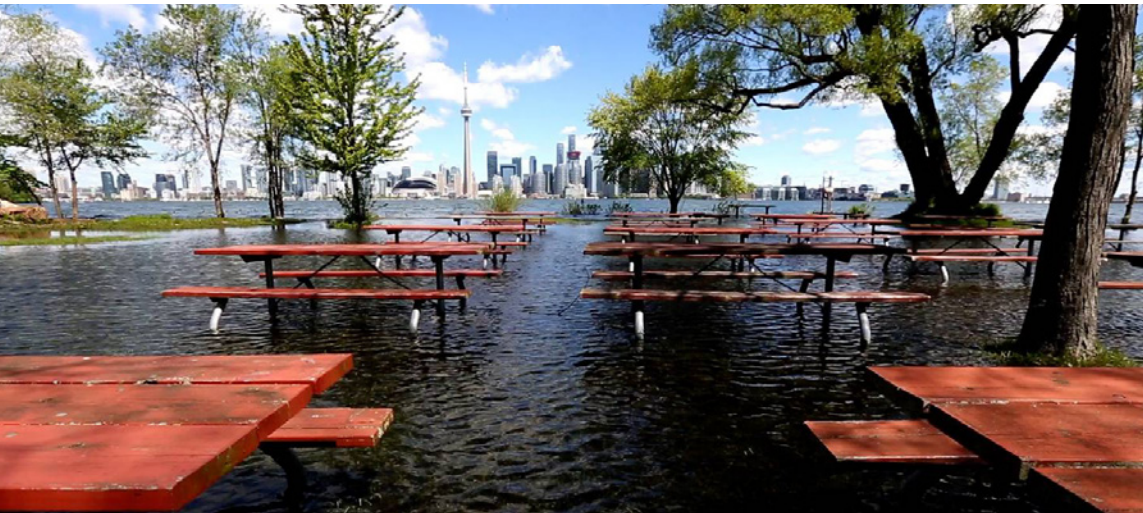
Flooding in Toronto is consistently raised as a key risk and concern for the City and wider public. Most people remember the recent floods that have occurred in Toronto, and the damage they caused.

## Toronto Island Flooding, 2017

Spring 2017 was characterized by record-breaking rainfall in Toronto which, added to snowmelt, raised water levels in Lake Ontario to the highest level since the first reliable measurements of the lake were taken in 1918. The total rainfall from April 1 until May 25 was almost double what is normally seen, with 232 millimeters in 2017 (compared to 125 millimeters on average). The effects of this flooding were felt along the entire length of Toronto's waterfront, and particularly at Toronto Island Park, where over 800 residents, almost 30 businesses, and two schools were forced to adapt to rising waters.

## Toronto flood, July 2013

In July 2013, the city was hit by a major summer storm that dropped between 96.8 and 126 millimetres of rain (as measured at the Toronto islands and Pearson airport respectively) in under two hours, causing significant flooding throughout the city. Over 750,000 lost power, some for over three days, over 4,700 homes were flooded, and 1,400 GO Train commuters were stranded as a result of the flooding at the foot of the Don Valley Parkway. The flooding led to \$1 billion in insurance claims and \$70 million in costs to the City.



**Flooding in July 2013 led to over \$1 billion in insurance claims and \$70 million in costs to the City.**

As part of the Resilience Strategy, the City is working to advance an understanding of urban flooding through the development of an [Urban Flooding Framework](#), which will include:

- Developing a snapshot of Toronto's approach to management of urban flooding and an understanding of current urban flooding risks.
- Identifying a policy framework to ensure the City is resilient and well positioned across its divisions and agencies to manage future urban flood risks resulting from a changing climate.





# Process

## Phase 1: INITIATE

(Jun - Dec 2017)

Phase 1 commenced in June 2017 with the creation of Toronto's Resilience Office and appointment of Chief Resilience Officer (CRO), as well as the completion of a Preliminary Resilience Assessment (PRA).

## Phase 2: STRATEGY DEVELOPMENT

(Jan - Dec 2018)

Starting in January 2018, the development of the Resilience Strategy is being led by the Resilience Office, with significant support from City staff and external partners.

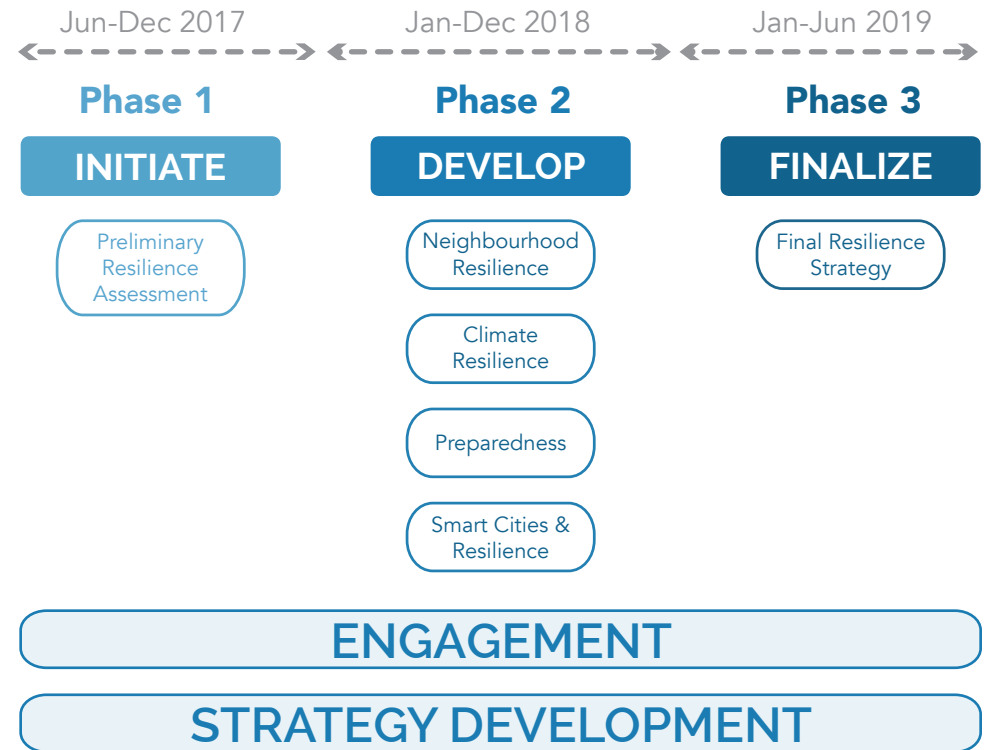
Phase 2 comprises of a series of projects and programs created to support and address the discovery areas identified in the PRA in Phase 1. These projects and programs are being undertaken by both City staff and external partners, and have been grouped into five workstreams:

- Neighbourhood Resilience
- Climate Resilience
- Preparedness & Recovery
- Smart Cities & Resilience
- Engagement

## Phase 3: FINALIZE & IMPLEMENT

(Jan - Jun 2019)

Phase 3 will involve synthesizing results from Phase 2 to produce a final Resilience Strategy in early 2019 for Council approval.





RESILIENT TORONTO